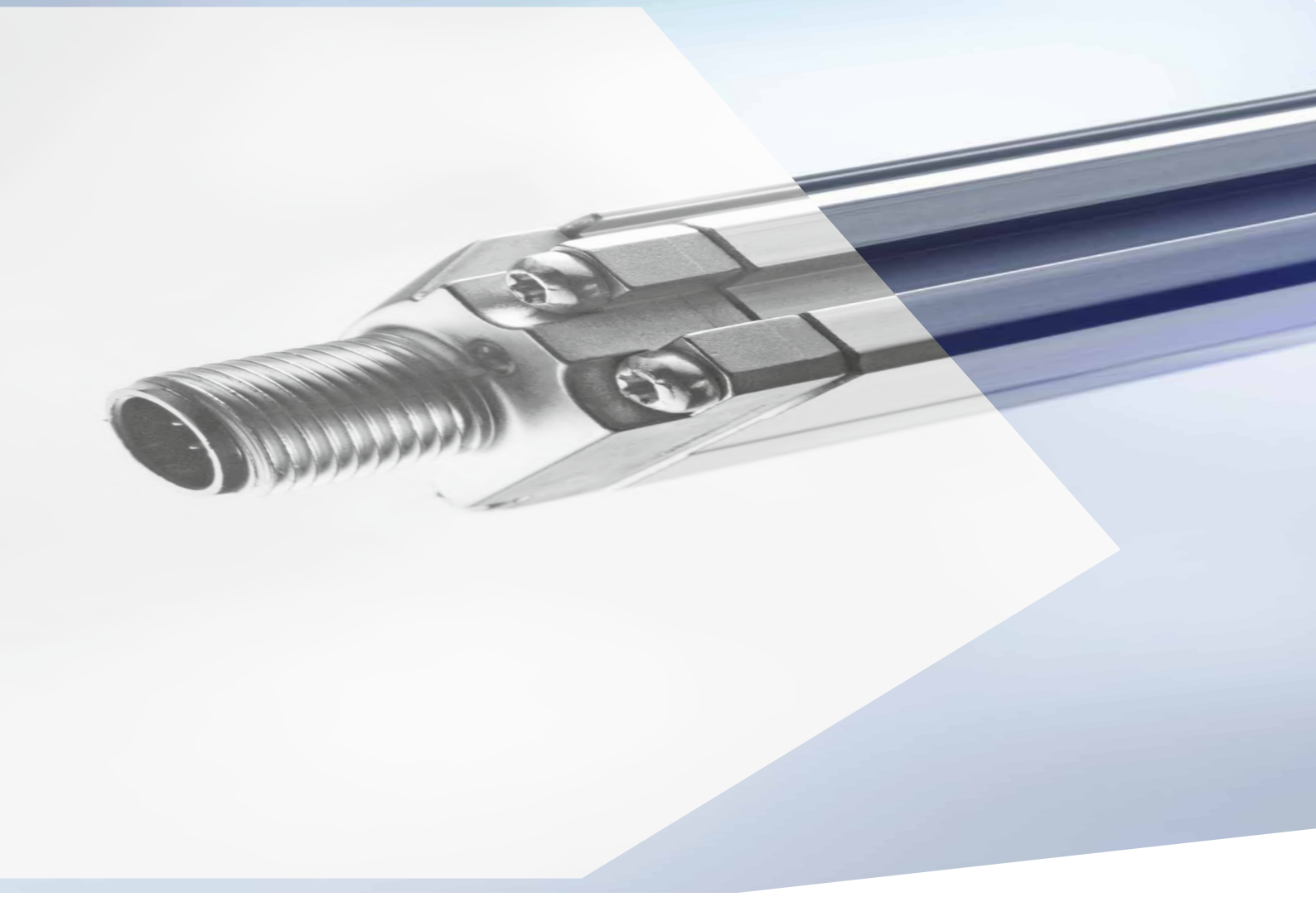


Catalog BALLUFF

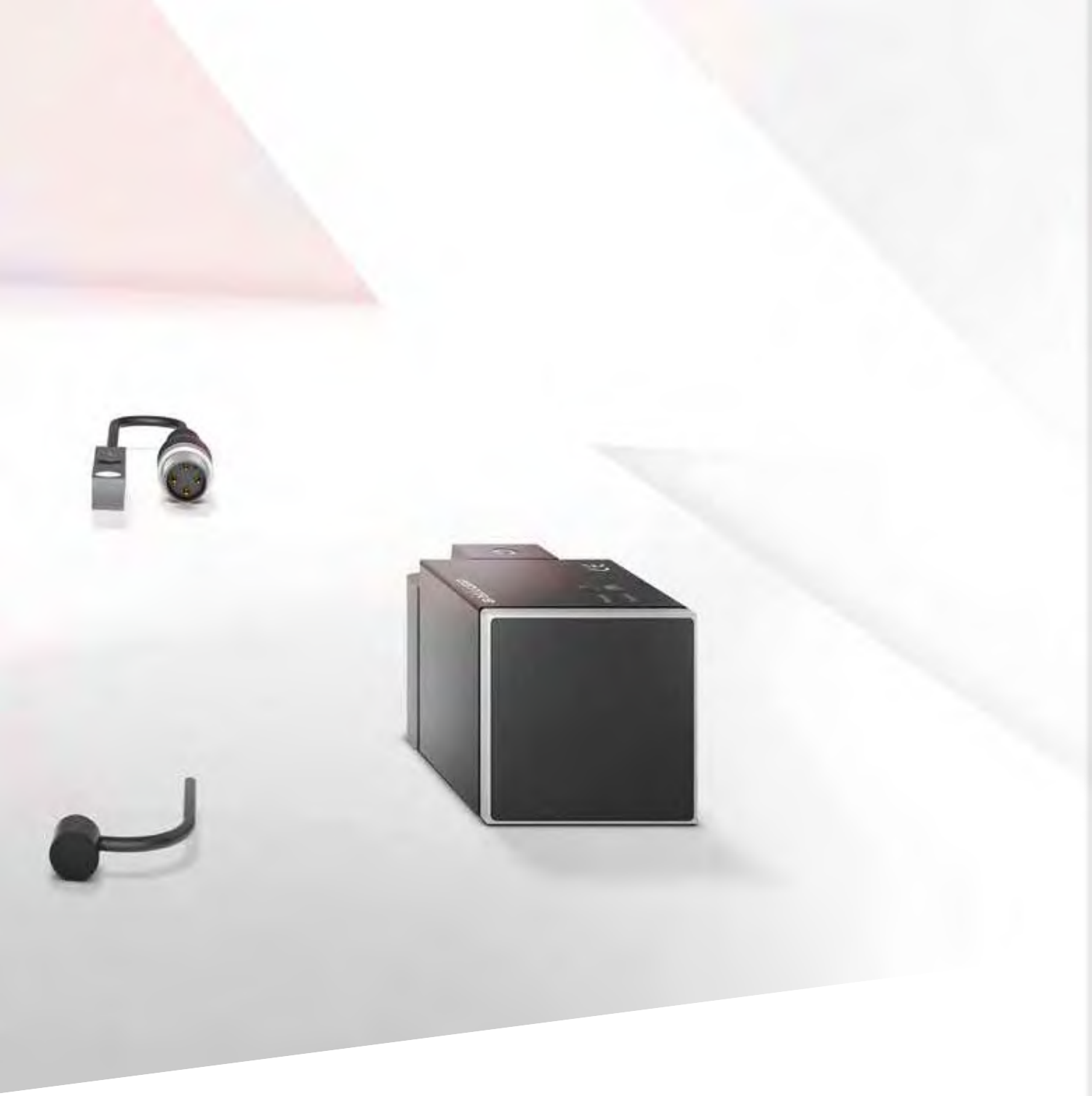
Sensors part 1

Архангельск (8182)63-90-72
Астана (7172)727-132
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81
Киргизия (996)312-96-26-47
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Россия (495)268-04-70
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Казахстан (772)734-952-31
Сургут (3462)77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

balluff.nt-rt.ru || bfd@nt-rt.ru

Highest quality and accuracy for automation

INDUCTIVE SENSORS



Automation is almost inconceivable without inductive sensors. Wherever processes are automated, non-contact position detection of metallic objects, freedom from wear, and reliability are in demand.
Whether in machine building, electronics production, in the automobile, foods or plastics industry.

At Balluff you are offered a wide range of inductive sensors in various form factors for virtually any application: from standard sensors to sensors with extended switching distance, hygiene-approved, high-pressure and Ex sensors, Factor 1 or all-metal sensors. They are also available with additional ceramic or PTFE coating, for example to prevent weld splatter from adhering. You will also find all-metal with Factor 1 in our range.

Balluff inductive sensors are used to monitor, control and automate your processes and conditions. With the highest level of quality – even in extreme environments.

The most important benefits

- Suitable for a variety of applications
- Contact-free and therefore wear-free
- Resistant to dirt
- Short-circuit protected
- In configurations from 3 mm Ø to 80 × 80 mm square dimensions

PNP normally open	**BES03Z6** BES G03EC-PSC10B-EP02	**BES0409** BES G03EC-PSC10B-EP00,3-GS49	
PNP normally closed			
Dimension	Ø 3 x 22 mm	Ø 3 x 22 mm	
Style	D3.0	D3.0	
Installation	flush	flush	
Range	1 mm	1 mm	
Switching frequency	3500 Hz	3500 Hz	
Housing material	Stainless steel	Stainless steel	
Material sensing surface	PBT	PBT	
Connection	Cable, 2.00 m, PUR	Cable with connector, M8x1-Male, 3-pin, 0.30 m, PUR	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 114	Page 114	




	BES0122 BES G04EC-PSC08B-S26G	BES012F BES G04ED-PSC15B-S26G	BES012H BES G04ED-PSC50F-EP02	BES012J BES G04ED-PSC50F-EP05
	BES0120 BES G04EC-POC08B-S26G			
	Ø 4 x 29 mm	Ø 4 x 35 mm	Ø 4 x 35 mm	Ø 4 x 35 mm
	D4.0	D4.0	D4.0	D4.0
	flush	flush	non-flush	non-flush
	0.8 mm	1.5 mm	5 mm	5 mm
	5000 Hz	3000 Hz	3000 Hz	3000 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	PBT	PBT	PET-C	PET-C
	Connector, M5x0.5-Male	Connector, M5x0.5-Male	Cable, 2.00 m, PUR	Cable, 5.00 m, PUR
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 114	Page 114	Page 114	Page 114

PNP normally open	**BES012K** BES G04ED-PSC50F-S26G	**BES01P0** BES M04EC-PSD06B-BP02	
PNP normally closed			
NPN normally open		**BES03ZJ** BES M04EC-NSC10B-EP02	
Dimension	Ø 4 x 44 mm	Ø 4 x 22 mm	
Style	D4.0	M4x0.5	
Installation	non-flush	flush	
Range	5 mm	0.6 mm	
Switching frequency	3000 Hz	3500 Hz	
Housing material	Stainless steel	Stainless steel	
Material sensing surface	PET-C	PBT	
Connection	Connector, M5x0.5-Male	Cable, 2.00 m, PUR	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 114	Page 115	




	BES03Z8 BES M04EC-PSC10B-EP02	**BES040R** BES M04EC-PSC10B-EP00,3-GS49	**BES051J** BES M05ED-PSC10B-EP00,2-097	**BES012Z** BES M05EC-PSC08B-S26G
			BES051L BES M05ED-POC10B-EP00,3-097	
				BES012W BES M05EC-NSC08B-S26G
	Ø 4 x 22 mm	Ø 4 x 22 mm	Ø 5 x 27 mm	Ø 5 x 29 mm
	M4x0.5	M4x0.5	M5x0.5	M5x0.5
	flush	flush	flush	flush
	1 mm	1 mm	1 mm	0.8 mm
	3500 Hz	3500 Hz	5000 Hz	3000 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	PBT	PBT	PBT	PBT
	Cable, 2.00 m, PUR	Cable with connector, M8x1-Male, 3-pin, 0.30 m, PUR	Cable, 0.20 m, PUR	Connector, M5x0.5-Male
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 115	Page 115	Page 115	Page 115

PNP normally open	**BES013A** BES M05ED-PSC15B-S26G	**BES013E** BES M05ED-PSC50F-EP02	
PNP normally closed	**BES0137** BES M05ED-POC15B-S26G		
NPN normally closed	**BES0130** BES M05ED-NOC15B-S26G		
Dimension	Ø 5 x 35 mm	Ø 5 x 35 mm	
Style	M5x0.5	M5x0.5	
Installation	flush	non-flush	
Range	1.5 mm	5 mm	
Switching frequency	3000 Hz	3000 Hz	
Housing material	Stainless steel	Stainless steel	
Material sensing surface	PBT	PET-C	
Connection	Connector, M5x0.5-Male	Cable, 2.00 m, PUR	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 115	Page 115	




	BES013F BES M05ED-PSC50F-EP05	**BES013C** BES M05ED-PSC50F-EP00,3-GS04	**BES013H** BES M05ED-PSC50F-S26G **BES0139** BES M05ED-POC50F-S26G	**BES025U** BES G06K40-PSC15B-FP02
	Ø 5 x 35 mm	Ø 5 x 35 mm	Ø 5 x 44 mm	Ø 6.5 x 6 mm
	M5x0.5	M5x0.5	M5x0.5	D6.5
	non-flush	non-flush	non-flush	flush
	5 mm	5 mm	5 mm	1.5 mm
	3000 Hz	3000 Hz	3000 Hz	3000 Hz
	Stainless steel	Stainless steel	Stainless steel	PBT
	PET-C	PET-C	PET-C	PBT
	Cable, 5.00 m, PUR	Cable with connector, M12x1-Male, 4-pin, 0.30 m, PUR	Connector, M5x0.5-Male	Cable, 2.00 m, PUR
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP65
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 115	Page 115	Page 116	Page 116

PNP normally open	**BES0256** BES G06E60-PSC15B-EP02	**BES025L** BES G06EA-PSC15B-EP01	
PNP normally closed	**BES0251** BES G06E60-POC15B-EP02		
Dimension	Ø 6.5 x 6 mm	Ø 6.5 x 10 mm	
Style	D6.5	D6.5	
Installation	flush	flush	
Range	1.5 mm	1.5 mm	
Switching frequency	3000 Hz	3000 Hz	
Housing material	Stainless steel	Stainless steel	
Material sensing surface	PBT	PBT	
Connection	Cable, 2.00 m, PUR	Cable, 1.00 m, PUR	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 116	Page 116	

	BES025M BES G06EA-PSC15B-EP02	**BES0258** BES G06E60-PSC20B-EP02	**BES03ZA** BES G06K40-PSC20B-FP02	**BES0254** BES G06E60-PSC15B-EP00,3-GS49
	BES025H BES G06EA-POC15B-EP02			
	Ø 6.5 x 10 mm	Ø 6.5 x 6 mm	Ø 6.5 x 6 mm	Ø 6.5 x 6 mm
	D6.5	D6.5	D6.5	D6.5
	flush	flush	flush	flush
	1.5 mm	2 mm	2 mm	1.5 mm
	3000 Hz	3000 Hz	1500 Hz	3000 Hz
	Stainless steel	Stainless steel	PBT	Stainless steel
	PBT	PBT	PBT	PBT
	Cable, 2.00 m, PUR	Cable, 2.00 m, PUR	Cable, 2.00 m, PUR	Cable with connector, M8x1-Male, 3-pin, 0.30 m, PUR
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP65	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 116	Page 116	Page 116	Page 116

PNP normally open		**BES0257** BES G06E60-PSC20B-EP00,3-GS49	
PNP normally closed	**BES051H** BES G06E60-POC15B-EP01-GS49		
Dimension	Ø 6.5 x 6 mm	Ø 6.5 x 6 mm	
Style	D6.5	D6.5	
Installation	flush	flush	
Range	1.5 mm	2 mm	
Switching frequency	3000 Hz	3000 Hz	
Housing material	Stainless steel	Stainless steel	
Material sensing surface	PBT	PBT	
Connection	Cable with connector, M8x1-Ma-le, 3-pin, 1.00 m, PUR	Cable with connector, M8x1-Ma-le, 3-pin, 0.30 m, PUR	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 116	Page 116	




	BES025N BES G06EA-PSD15B-S49G	**BES03R9** BES G06EE-PSC20B-S49G-003	**BES03P4** BES G06EH-PSC20B-S49G	**BES038Y** BES G06EI-PSC30B-S49G
	Ø 6.5 x 18 mm	Ø 6.5 x 40 mm	Ø 6.5 x 55 mm	Ø 6.5 x 60 mm
	D6.5	D6.5	D6.5	D6.5
	flush	flush	flush	quasi-flush
	1.5 mm	2 mm	2 mm	3 mm
	3000 Hz	700 Hz	1500 Hz	1200 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	PBT	PBT	PBT	PBT
	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 3-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP68
	CE, cULus, EAC, WEEE	cULus, CE, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 116	Page 116	Page 116	Page 117

PNP normally open	**BES000E** BES G06ED-PSC40F-BP02	**BES0005** BES G06EB-PSC40F-S49G	
NPN normally open	**BES0008** BES G06ED-NSC40F-BP02		
Dimension	Ø 6.5 x 30 mm	Ø 6.5 x 30 mm	
Style	D6.5	D6.5	
Installation	non-flush	non-flush	
Range	4 mm	4 mm	
Switching frequency	4000 Hz	4000 Hz	
Housing material	Stainless steel	Stainless steel	
Material sensing surface	PBT	PBT	
Connection	Cable, 2.00 m, PUR	Connector, M8x1-Male, 3-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C, Temperature drift max. (% of Sr) >15% between 50…70 °C	-25...70 °C, Temperature drift max. (% of Sr) >15% between 50…70 °C	
IP rating	IP68	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 117	Page 117	

	BES01NP BES G06EF-PSC40F-S49G	**BES03P5** BES G06EH-PSC40F-S49G	**BES03EJ** BES G06MH-PSC30B-BP00,3-GS49	
	Ø 6.5 x 50 mm	Ø 6.5 x 60 mm	Ø 6.5 x 45 mm	
	D6.5	D6.5	D6.5	
	non-flush	non-flush	quasi-flush	
	4 mm	4 mm	3 mm	
	4000 Hz	4000 Hz	1000 Hz	
	Stainless steel	Stainless steel	Brass, Chrome-plated	
	PBT	PBT	PBT	
	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 3-pin	Cable with connector, M8x1-Male, 3-pin, 0.30 m, PUR	
	10...30 VDC	10...30 VDC	10...30 VDC	
	-25...70 °C, Temperature drift max. (% of Sr) >15% between 50…70 °C	-25...70 °C, Temperature drift max. (% of Sr) >15% between 50…70 °C	-25...70 °C	
	IP68	IP68	IP67	
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, EAC, WEEE	
	Page 117	Page 117	Page 117	

PNP normally open	**BES05WE** BES G06EI-PSC40B-S49G	**BES012R** BES G08EG-PSC15B-BP05	
Dimension	Ø 6.5 x 60 mm	Ø 8 x 45 mm	
Style	D6.5	D8.0	
Installation	quasi-flush	flush	
Range	4 mm	1.5 mm	
Switching frequency	1100 Hz	3000 Hz	
Housing material	Stainless steel	Stainless steel	
Material sensing surface	PBT	PBT	
Connection	Connector, M8x1-Male, 3-pin	Cable, 5.00 m, PUR	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP68	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 117	Page 117	




	BES01NY BES G08EG-PSC15B-BV02	BES012T BES G08EG-PSC15B-BV05	BES012L BES G08EE-PSC20B-BP02	BES026M BES M08E60-PSC15B-EP02
	Ø 8 x 45 mm	Ø 8 x 45 mm	Ø 8 x 35 mm	Ø 8 x 6 mm
	D8.0	D8.0	D8.0	M8x1
	flush	flush	flush	flush
	1.5 mm	1.5 mm	2 mm	1.5 mm
	3000 Hz	3000 Hz	1500 Hz	3000 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	PBT	PBT	PBT	PBT
	Cable, 2.00 m, PVC	Cable, 5.00 m, PVC	Cable, 2.00 m, PUR	Cable, 2.00 m, PUR
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP68	IP68	IP68	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 117	Page 117	Page 118	Page 118

PNP normally open	**BES0275** BES M08EA-PSC15B-EP02		
PNP normally closed		**BES00CR** BES M08EF-POC15B-BP02-003	
NPN normally open		**BES00CN** BES M08EF-NSC15B-BP02-003	
Dimension	Ø 8 x 10 mm	Ø 8 x 40 mm	
Style	M8x1	M8x1	
Installation	flush	flush	
Range	1.5 mm	1.5 mm	
Switching frequency	3000 Hz	1000 Hz	
Housing material	Stainless steel	Stainless steel	
Material sensing surface	PBT	PBT	
Connection	Cable, 2.00 m, PUR	Cable, 2.00 m, PUR	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 118	Page 118	




	BES014K BES M08EF-PSC15B-BP02	**BES0034** BES M08MI-PSC15B-BP02	**BES0036** BES M08MI-PSC15B-BP05	
				BES0031 BES M08MI-POC15B-BV03
		BES002H BES M08MI-NSC15B-BV03		
	Ø 8 x 40 mm	Ø 8 x 50 mm	Ø 8 x 50 mm	Ø 8 x 50 mm
	M8x1	M8x1	M8x1	M8x1
	flush	flush	flush	flush
	1.5 mm	1.5 mm	1.5 mm	1.5 mm
	3000 Hz	1000 Hz	1000 Hz	5000 Hz
	Stainless steel	Brass, nickel plated	Brass, nickel plated	Brass, Nickel-free coated
	PBT	PA 12	PA 12	PBT
	Cable, 2.00 m, PUR	Cable, 2.00 m, PUR	Cable, 5.00 m, PUR	Cable, 3.00 m, PVC
	10...30 VDC	12...30 VDC	12...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP68	IP67	IP67	IP68
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 118	Page 118	Page 118	Page 118

PNP normally open		**BES0037** BES M08MI-PSC15B-BV02	
PNP normally closed	**BES0032** BES M08MI-POC15B-BV05		
NPN normally open			
Dimension	Ø 8 x 50 mm	Ø 8 x 50 mm	
Style	M8x1	M8x1	
Installation	flush	flush	
Range	1.5 mm	1.5 mm	
Switching frequency	1000 Hz	5000 Hz	
Housing material	Brass, nickel plated	Brass, Nickel-free coated	
Material sensing surface	PA 12	PBT	
Connection	Cable, 5.00 m, PVC	Cable, 2.00 m, PVC	
Operating voltage Ub	12...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 118	Page 118	




	BES0389 BES M08EE-PSC20B-EP05-511	**BES00CW** BES M08EF-PSC20B-BP02-003	**BES003F** BES M08MI-PSC20B-BP02	**BES003J** BES M08MI-PSC20B-BP05
			BES002P BES M08MI-NSC20B-BV02	
	Ø 8 x 30 mm	Ø 8 x 40 mm	Ø 8 x 50 mm	Ø 8 x 50 mm
	M8x1	M8x1	M8x1	M8x1
	flush	flush	flush	flush
	2 mm	2 mm	2 mm	2 mm
	1000 Hz	700 Hz	700 Hz	700 Hz
	Stainless steel	Stainless steel	Brass, nickel plated	Brass, nickel plated
	PBT	PBT	PA 12	PA 12
	Cable, 5.00 m, PUR	Cable, 2.00 m, PUR	Cable, 2.00 m, PUR	Cable, 5.00 m, PUR
	10...30 VDC	10...30 VDC	12...30 VDC	12...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 118	Page 118	Page 118	Page 118

PNP normally open	**BES03TL** BES M08MI-PSC20B-BP10	**BES003K** BES M08MI-PSC20B-BV02	
PNP normally closed			
Dimension	Ø 8 x 50 mm	Ø 8 x 50 mm	
Style	M8x1	M8x1	
Installation	flush	flush	
Range	2 mm	2 mm	
Switching frequency	700 Hz	5000 Hz	
Housing material	Brass, nickel plated	Brass, Nickel-free coated	
Material sensing surface	PA 12	PBT	
Connection	Cable, 10.00 m, PUR	Cable, 2.00 m, PVC	
Operating voltage Ub	12...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 118	Page 118	




	BES003M BES M08MI-PSC20B-BV05		BES0276 BES M08EA-PSC20B-EP00,3-GS49	BES0277 BES M08EA-PSD15B-S49G
		BES03TH BES M08MI-POC20B-BV02		BES0270 BES M08EA-POD15B-S49G
	Ø 8 x 50 mm	Ø 8 x 50 mm	Ø 8 x 10 mm	Ø 8 x 18 mm
	M8x1	M8x1	M8x1	M8x1
	flush	flush	flush	flush
	2 mm	2 mm	2 mm	1.5 mm
	700 Hz	5000 Hz	3000 Hz	3000 Hz
	Brass, nickel plated	Brass, Nickel-free coated	Stainless steel	Stainless steel
	PA 12	PBT	PBT	PBT
	Cable, 5.00 m, PVC	Cable, 2.00 m, PVC	Cable with connector, M8x1-Male, 3-pin, 0.30 m, PUR	Connector, M8x1-Male, 3-pin
	12...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP68	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 118	Page 118	Page 118	Page 118

PNP normally open	**BES013N** BES M08EC-PSC15B-S49G	**BES013M** BES M08EC-PSC15B-S04G	
PNP normally closed	**BES013K** BES M08EC-POC15B-S49G		
NPN normally open	**BES013J** BES M08EC-NSC15B-S49G		
Dimension	Ø 8 x 30 mm	Ø 8 x 33 mm	
Style	M8x1	M8x1	
Installation	flush	flush	
Range	1.5 mm	1.5 mm	
Switching frequency	3000 Hz	3000 Hz	
Housing material	Stainless steel	Stainless steel	
Material sensing surface	PBT	PBT	
Connection	Connector, M8x1-Male, 3-pin	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP68	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 119	Page 119	




	BES0147 BES M08EE-PSC15B-S49G	**BES0146** BES M08EE-PSC15B-S04G	**BES01P7** BES M08EG-PSC15B-S49G	
	BES0143 BES M08EE-POC15B-S49G	**BES0142** BES M08EE-POC15B-S04G		**BES01PE** BES M08EH-POC15B-S04G
		BES013Y BES M08EE-NSC15B-S04G		**BES01PC** BES M08EH-NSC15B-S04G
	Ø 8 x 40 mm	Ø 8 x 43 mm	Ø 8 x 50 mm	Ø 8 x 58 mm
	M8x1	M8x1	M8x1	M8x1
	flush	flush	flush	flush
	1.5 mm	1.5 mm	1.5 mm	1.5 mm
	3000 Hz	3000 Hz	5000 Hz	3000 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	PBT	PBT	PBT	PBT
	Connector, M8x1-Male, 3-pin	Connector, M12x1-Male, 4-pin	Connector, M8x1-Male, 3-pin	Connector, M12x1-Male, 4-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-40...85 °C	-25...70 °C
	IP68	IP68	IP68	IP68
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 119	Page 119	Page 119	Page 119

PNP normally open		**BES003C** BES M08MI-PSC15B-S49G	
PNP normally closed	**BES03P6** BES M08MI-POC15B-S49G		
NPN normally open	**BES002K** BES M08MI-NSC15B-S49G		
Dimension	Ø 8 x 59 mm	Ø 8 x 60 mm	
Style	M8x1	M8x1	
Installation	flush	flush	
Range	1.5 mm	1.5 mm	
Switching frequency	1000 Hz	5000 Hz	
Housing material	Brass, nickel plated	Brass, Nickel-free coated	
Material sensing surface	PA 12	PBT	
Connection	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 3-pin	
Operating voltage Ub	12...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 119	Page 119	




		BES0027 BES M08MH1-PSC15B-S04G	**BES0278** BES M08EA-PSD20B-S49G	**BES013P** BES M08EC-PSC20B-S49G
	BES0026 BES M08MH1-POC15B-S04G			**BES013L** BES M08EC-POC20B-S49G
	BES0024 BES M08MH1-NSC15B-S04G			
	Ø 8 x 65 mm	Ø 8 x 65 mm	Ø 8 x 18 mm	Ø 8 x 30 mm
	M8x1	M8x1	M8x1	M8x1
	flush	flush	flush	flush
	1.5 mm	1.5 mm	2 mm	2 mm
	1000 Hz	1000 Hz	3000 Hz	1500 Hz
	Brass, nickel plated	Brass, nickel plated	Stainless steel	Stainless steel
	PA 12	PA 12	PBT	PBT
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 3-pin
	12...30 VDC	12...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP68
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 119	Page 119	Page 118	Page 119

PNP normally open	**BES014A** BES M08EE-PSC20B-S49G	**BES0149** BES M08EE-PSC20B-S04G-101	
PNP normally closed	**BES0145** BES M08EE-POC20B-S49G		
NPN normally open			
Dimension	Ø 8 x 40 mm	Ø 8 x 43 mm	
Style	M8x1	M8x1	
Installation	flush	flush	
Range	2 mm	2 mm	
Switching frequency	1500 Hz	1500 Hz	
Housing material	Stainless steel	Stainless steel	
Material sensing surface	PBT	ceramic coated	
Connection	Connector, M8x1-Male, 3-pin	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP68	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 119	Page 119	




	BES01PH BES M08EH-PSC20B-S04G		**BES003P** BES M08MI-PSC20B-S49G	**BES0028** BES M08MH1-PSC20B-S04G
			BES0033 BES M08MI-POC20B-S49G	**BES03T5** BES M08MH1-POC20B-S04G
		BES002U BES M08MI-NSC20B-S49G		**BES0025** BES M08MH1-NSC20B-S04G
	Ø 8 x 58 mm	Ø 8 x 59 mm	Ø 8 x 60 mm	Ø 8 x 65 mm
	M8x1	M8x1	M8x1	M8x1
	flush	flush	flush	flush
	2 mm	2 mm	2 mm	2 mm
	1500 Hz	700 Hz	5000 Hz	700 Hz
	Stainless steel	Brass, nickel plated	Brass, Nickel-free coated	Brass, nickel plated
	PBT	PA 12	PBT	PA 12
	Connector, M12x1-Male, 4-pin	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 3-pin	Connector, M12x1-Male, 4-pin
	10...30 VDC	12...30 VDC	10...30 VDC	12...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP68	IP67	IP68	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 119	Page 119	Page 119	Page 119

PNP normally open	**BES0427** BES M08EE-PSC25B-S49G	**BES054N** BES M08MI-PSC30B-S49G	
PNP normally closed			
NPN normally open			
Dimension	Ø 8 x 40 mm	Ø 8 x 60 mm	
Style	M8x1	M8x1	
Installation	flush	flush	
Range	2.5 mm	3 mm	
Switching frequency	5000 Hz	1200 Hz	
Housing material	Stainless steel	Brass, Nickel-free coated	
Material sensing surface	PBT	PBT	
Connection	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 3-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	0...60 °C	-25...70 °C	
IP rating	IP68	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 120	Page 120	




	BES02W9 BES M08MH1-PSC30B-S04G	BES000Y BES M08ED-PSC40F-BP02		BES0016 BES M08EG-PSC40F-BP02
				BES0014 BES M08EG-POC40F-BP02
	BES02W7 BES M08MH1-NSC30B-S04G	BES000T BES M08ED-NSC40F-BV02	BES0013 BES M08EG-NSC40F-BV02	
	Ø 8 x 63 mm	Ø 8 x 30 mm	Ø 8 x 50 mm	Ø 8 x 50 mm
	M8x1	M8x1	M8x1	M8x1
	flush	non-flush	non-flush	non-flush
	3 mm	4 mm	4 mm	4 mm
	1200 Hz	4000 Hz	4000 Hz	4000 Hz
	Brass, Nickel-free coated	Stainless steel	Stainless steel	Stainless steel
	PBT	PBT	PBT	PBT
	Connector, M12x1-Male, 4-pin	Cable, 2.00 m, PUR	Cable, 2.00 m, PVC	Cable, 2.00 m, PUR
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C, Temperature drift max. (% of Sr) >15% between 50…70 °C	-25...70 °C, Temperature drift max. (% of Sr) >15% between 50…70 °C	-25...70 °C, Temperature drift max. (% of Sr) >15% between 50…70 °C
	IP68	IP68	IP68	IP68
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 120	Page 120	Page 120	Page 120

PNP normally open	**BES01P3** BES M08ED-PSC25F-S04G	**BES01P8** BES M08EG-PSC25F-S04G	
PNP normally closed		**BES01P6** BES M08EG-POC25F-S04G	
NPN normally open		**BES01P5** BES M08EG-NSC25F-S04G	
Dimension	Ø 8 x 43 mm	Ø 8 x 58 mm	
Style	M8x1	M8x1	
Installation	non-flush	non-flush	
Range	2.5 mm	2.5 mm	
Switching frequency	2000 Hz	2000 Hz	
Housing material	Stainless steel	Stainless steel	
Material sensing surface	PBT	PBT	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP68	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 120	Page 120	




	BES000M BES M08EB-PSC40F-S49G	BES014M BES M08EF-PSC40F-S49G	BES001J BES M08EH-PSC40F-S49G	BES01P9 BES M08EG1-PSC40F-S04G
	BES000L BES M08EB-POC40F-S49G		BES001F BES M08EH-POC40F-S49G	
			BES001C BES M08EH-NSC40F-S49G	
	Ø 8 x 30 mm	Ø 8 x 50 mm	Ø 8 x 60 mm	Ø 8 x 63 mm
	M8x1	M8x1	M8x1	M8x1
	non-flush	non-flush	non-flush	non-flush
	4 mm	4 mm	4 mm	4 mm
	4000 Hz	4000 Hz	4000 Hz	4000 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	PBT	PBT	PBT	PBT
	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 3-pin	Connector, M12x1-Male, 3-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C, Temperature drift max. (% of Sr) >15% between 50…70 °C	-25...70 °C, Temperature drift max. (% of Sr) >15% between 50…70 °C	-25...70 °C, Temperature drift max. (% of Sr) >15% between 50…70 °C	-25...70 °C, Temperature drift max. (% of Sr) >15% between 50…70 °C
	IP68	IP68	IP68	IP68
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 120	Page 121	Page 121	Page 121

PNP normally open	**BES001H** BES M08EH-PSC40F-S04G	**BES054Z** BES M08EH1-PSC60F-S49G	
PNP normally closed	**BES001E** BES M08EH-POC40F-S04G	**BES0550** BES M08EH1-POC60F-S49G	
NPN normally open	**BES001A** BES M08EH-NSC40F-S04G		
Dimension	Ø 8 x 63 mm	Ø 8 x 60 mm	
Style	M8x1	M8x1	
Installation	non-flush	non-flush	
Range	4 mm	6 mm	
Switching frequency	4000 Hz	1200 Hz	
Housing material	Stainless steel	Stainless steel	
Material sensing surface	PBT	PBT	
Connection	Connector, M12x1-Male, 3-pin	Connector, M8x1-Male, 3-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C, Temperature drift max. (% of Sr) >15% between 50…70 °C	-25...70 °C	
IP rating	IP68	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 121	Page 121	

	BES058J BES M08EH1-PSC60F-S04G	BES05U9 BES M08MM-PSC40B-BP00,3-GS04		
		BES05UA BES M08MM-NSC40B-BP00,3-GS04		
	Ø 8 x 63 mm	Ø 8 x 60 mm		
	M8x1	M8x1		
	non-flush	quasi-flush		
	6 mm	4 mm		
	1200 Hz	1200 Hz		
	Stainless steel	Brass, Nickel-free coated		
	PBT	PBT		
	Connector, M12x1-Male, 4-pin	Cable with connector, M12x1-Male, 3-pin, 0.3 m, PUR		
	10...30 VDC	10...30 VDC		
	-25...70 °C	-25...70 °C		
	IP68	IP67		
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE		
	Page 121	Page 121		

PNP normally open	**BES05U8** BES M08MM-PSC40B-BP00,3-GS49	**BES01ZW** BES M08MI-PSC40B-S49G	
NPN normally open		**BES01ZT** BES M08MI-NSC40B-S49G	
normally open			
Dimension	Ø 8 x 60 mm	Ø 8 x 60 mm	
Style	M8x1	M8x1	
Installation	quasi-flush	quasi-flush	
Range	4 mm	4 mm	
Switching frequency	1200 Hz	1200 Hz	
Housing material	Brass, Nickel-free coated	Brass, Nickel-free coated	
Material sensing surface	PBT	PBT	
Connection	Cable with connector, M8x1-Male, 3-pin, 0.3 m, PUR	Connector, M8x1-Male, 3-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 121	Page 121	




	BES02W6 BES M08MH-PSC40B-S49G-507	**BES04TU** BES G10ED-PSC08B-EP00,3-GS49		
			BES02C9 BES 516-449-B0-L-05	**BES027M** BES 516-207-B0-E-03
	Ø 8 x 60 mm	Ø 10 x 27 mm	Ø 12 x 60 mm	Ø 12 x 60 mm
	M8x1	D10.0	M12x1	M12x1
	quasi-flush	flush	flush	flush
	4 mm	0.8 mm	2 mm	2 mm
	500 Hz	5000 Hz	25 Hz	1000 Hz
	Brass, Chrome-plated	Stainless steel	Brass, nickel plated	Stainless steel
	PBT	PBT	PA 12	PA 12
	Connector, M8x1-Male, 3-pin	Cable with connector, M8x1-Male, 3-pin, 0.30 m, PUR	Cable, 5.00 m, PVC	Cable, 3.00 m, PVC
	10...30 VDC	10...30 VDC	20...250 VAC	20...250 VDC/20...250 VAC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, EAC, cULus, WEEE
	Page 122	Page 122	Page 122	Page 122

PNP normally open		**BES00E5** BES M12MD-PSC40B-BP02-003	
NPN normally open			
normally open	**BES027N** BES 516-207-B0-E-05		
Dimension	Ø 12 x 60 mm	Ø 12 x 33 mm	
Style	M12x1	M12x1	
Installation	flush	flush	
Range	2 mm	4 mm	
Switching frequency	1000 Hz	2500 Hz	
Housing material	Stainless steel	Brass, Nickel-free coated	
Material sensing surface	PA 12	PBT	
Connection	Cable, 5.00 m, PVC	Cable, 2.00 m, TPU	
Operating voltage Ub	20...250 VDC/20...250 VAC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP68	
Approval/Conformity	CE, EAC, cULus, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 122	Page 122	




			BES0062 BES M12MI-PSC40B-BP03	**BES0064** BES M12MI-PSC40B-BV02
	BES0057 BES M12MI-NSC40B-BV03	**BES0058** BES M12MI-NSC40B-BV05		
	Ø 12 x 53 mm	Ø 12 x 53 mm	Ø 12 x 53 mm	Ø 12 x 53 mm
	M12x1	M12x1	M12x1	M12x1
	flush	flush	flush	flush
	4 mm	4 mm	4 mm	4 mm
	2500 Hz	2500 Hz	2500 Hz	2500 Hz
	Brass, Nickel-free coated	Brass, Nickel-free coated	Brass, Nickel-free coated	Brass, Nickel-free coated
	PBT	PBT	PBT	PBT
	Cable, 3.00 m, PVC	Cable, 5.00 m, PVC	Cable, 3.00 m, TPU	Cable, 2.00 m, PVC
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP68	IP68	IP68	IP68
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 122	Page 122	Page 122	Page 122

PNP normally open	**BES0001** BES M12MI-PSC40B-BV03	**BES0065** BES M12MI-PSC40B-BV05	
PNP normally closed			
PNP normally open/normally closed			
Dimension	Ø 12 x 53 mm	Ø 12 x 53 mm	
Style	M12x1	M12x1	
Installation	flush	flush	
Range	4 mm	4 mm	
Switching frequency	2500 Hz	2500 Hz	
Housing material	Brass, Nickel-free coated	Brass, Nickel-free coated	
Material sensing surface	PBT	PBT	
Connection	Cable, 3.00 m, PVC	Cable, 5.00 m, PVC	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP68	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 122	Page 122	




	BES00PW BES 516-325-G-E4-C-S4-00,5		BES035E BES 516-325-SA45	BES00PK BES 516-325-E5-C-S4
				BES00YT BES 516-370-E5-C-S4
		BES032M BES 516-113-SA3-S4-C		
	Ø 12 x 33 mm	Ø 12 x 70 mm	Ø 12 x 31 mm	Ø 12 x 45 mm
	M12x1	M12x1	M12x1	M12x1
	flush	flush	flush	flush
	4 mm	1.5 mm	2 mm	2 mm
	2500 Hz	2000 Hz	1000 Hz	3500 Hz
	Brass, Nickel-free coated	Stainless steel	Brass, nickel plated	Brass, Nickel-free coated
	PBT	PA 12	PA 12	PBT
	Cable with connector, M12x1-Male, 3-pin, 0.50 m, TPU	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...85 °C	-25...70 °C	-25...70 °C
	IP68	IP68	IP67	IP68
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 122	Page 122	Page 122	Page 123

PNP normally open	**BES0060** BES M12MI-PSC20B-S04G		
normally open			
IO-Link		**BES04FK** BES M12MI-PSIC20C-S04G	
Dimension	Ø 12 x 65 mm	Ø 12 x 65 mm	
Style	M12x1	M12x1	
Installation	flush	flush	
Range	2 mm	0.5...2 mm	
Switching frequency	3500 Hz	2000 Hz	
Housing material	Brass, Nickel-free coated	Brass, Nickel-free coated	
Material sensing surface	PBT	LCP	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	10...30 VDC	12...30 VDC	
Ambient temperature	-25...70 °C	-25...85 °C	
IP rating	IP68	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 123	Page 123	




				BES01C8 BES 516-325-S4-C
	BES02FP BES 515-449-SA7-S21	**BES027U** BES 516-207-S21-E	**BES027W** BES 516-207-S27-E	
	Ø 12 x 70 mm	Ø 12 x 70 mm	Ø 12 x 70 mm	Ø 12 x 70 mm
	M12x1	M12x1	M12x1	M12x1
	flush	flush	flush	flush
	2 mm	2 mm	2 mm	2 mm
	10 Hz	1000 Hz	1000 Hz	3500 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	PA 12	PA 12	PA 12	PBT
	Connector, 1/2“-20 UNF-2A-Male	Connector, 1/2“-20 UNF-2A-Male	Connector, M12x1-Male	Connector, M12x1-Male, 4-pin
	35...250 VAC	20...250 VDC/20...250 VAC	20...250 VDC/20...250 VAC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-40...85 °C
	IP67	IP67	IP67	IP68
	CE, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 123	Page 123	Page 123	Page 123

PNP normally open			
PNP normally closed		**BES01K6** BES 516-370-S4-C	
PNP normally open/normally closed	**BES0161** BES 516-113-S4-C		
Dimension	Ø 12 x 70 mm	Ø 12 x 70 mm	
Style	M12x1	M12x1	
Installation	flush	flush	
Range	2 mm	2 mm	
Switching frequency	3500 Hz	3500 Hz	
Housing material	Stainless steel	Stainless steel	
Material sensing surface	PBT	PBT	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-40...85 °C	-40...85 °C	
IP rating	IP68	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 123	Page 123	




	BES00PZ BES 516-325-G-E5-C-S49	BES00EF BES M12ME-PSC40B-S04G-003	BES00PY BES 516-325-G-E5-C-S4	BES014W BES M12EE-PSC40B-S04G
	Ø 12 x 44 mm	Ø 12 x 45 mm	Ø 12 x 45 mm	Ø 12 x 45 mm
	M12x1	M12x1	M12x1	M12x1
	flush	flush	flush	flush
	4 mm	4 mm	4 mm	4 mm
	2500 Hz	2500 Hz	2500 Hz	2000 Hz
	Brass, Nickel-free coated	Brass, Nickel-free coated	Brass, Nickel-free coated	Stainless steel
	LCP	PBT	PBT	LCP
	Connector, M8x1-Male, 3-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...85 °C
	IP67	IP68	IP68	IP68
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 123	Page 123	Page 123	Page 123

PNP normally open		**BES0068** BES M12MI-PSC40B-S04G	
PNP normally closed	**BES00Z0** BES 516-370-G-E5-C-S4	**BES005N** BES M12MI-POC40B-S04G	
NPN normally open		**BES0059** BES M12MI-NSC40B-S04G	
normally open			
Dimension	Ø 12 x 45 mm	Ø 12 x 65 mm	
Style	M12x1	M12x1	
Installation	flush	flush	
Range	4 mm	4 mm	
Switching frequency	2500 Hz	2500 Hz	
Housing material	Brass, Nickel-free coated	Brass, Nickel-free coated	
Material sensing surface	PBT	PBT	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 3-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP68	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 123	Page 123	




	BES02FU BES M12EI-PSC40B-S04G		BES01C7 BES 516-325-G-S4-C	BES03AR BES 516-325-G-S4-L
		BES027T BES 516-207-G-S21-E		
	Ø 12 x 65 mm	Ø 12 x 70 mm	Ø 12 x 70 mm	Ø 12 x 70 mm
	M12x1	M12x1	M12x1	M12x1
	flush	flush	flush	flush
	4 mm	4 mm	4 mm	4 mm
	1000 Hz	500 Hz	2500 Hz	600 Hz
	Stainless steel	Stainless steel	Brass, Nickel-free coated	Brass, nickel plated
	LCP	PA 12	PBT	LCP
	Connector, M12x1-Male, 4-pin	Connector, 1/2“-20 UNF-2A-Male	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	10...30 VDC	20...250 VDC/20...250 VAC	10...30 VDC	10...30 VDC
	-25...85 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP68	IP67	IP68	IP67
	CE, cULus, EAC, WEEE	CE, EAC, cULus, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 124	Page 123	Page 123	Page 124

PNP normally open			
normally open	**BES0285** BES 516-209-B0-E-03	**BES0286** BES 516-209-B0-E-05	
normally closed	**BES028F** BES 516-210-B0-E-03		
Dimension	Ø 12 x 60 mm	Ø 12 x 60 mm	
Style	M12x1	M12x1	
Installation	non-flush	non-flush	
Range	4 mm	4 mm	
Switching frequency	600 Hz	600 Hz	
Housing material	Stainless steel	Stainless steel	
Material sensing surface	PA 12	PA 12	
Connection	Cable, 3.00 m, PVC	Cable, 5.00 m, PVC	
Operating voltage Ub	20...250 VDC/20...250 VAC	20...250 VDC/20...250 VAC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	
Productview	Page 124	Page 124	




	BES00UY BES 516-356-E5-C-S4	BES036T BES 516-356-SA26-S4-C		
			BES028A BES 516-209-S21-E	BES0330 BES 516-209-SA1-S21-E
	Ø 12 x 50 mm	Ø 12 x 61 mm	Ø 12 x 70 mm	Ø 12 x 70 mm
	M12x1	M12x1	M12x1	M12x1
	non-flush	non-flush	non-flush	non-flush
	4 mm	4 mm	4 mm	4 mm
	2500 Hz	1000 Hz	600 Hz	600 Hz
	Brass, Nickel-free coated	Stainless steel	Stainless steel	Stainless steel
	PBT	PA 12	PA 12	PA 12
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, 1/2“-20 UNF-2A-Male	Connector, 1/2“-20 UNF-2A-Male
	10...30 VDC	10...30 VDC	20...250 VDC/20...250 VAC	20...250 VDC/20...250 VAC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP68	IP68	IP67	IP67
	CE, cULus, EAC, WEEE	CE, EAC, WEEE	CE, cULus, EAC, WEEE	CE, EAC, WEEE
	Page 124	Page 124	Page 124	Page 124

PNP normally open	**BES01H6** BES 516-356-S4-C	**BES036R** BES 516-356-SA24-S4-C	
PNP normally open/normally closed			
Dimension	Ø 12 x 70 mm	Ø 12 x 70 mm	
Style	M12x1	M12x1	
Installation	non-flush	non-flush	
Range	4 mm	4 mm	
Switching frequency	2500 Hz	1500 Hz	
Housing material	Stainless steel	Stainless steel	
Material sensing surface	PBT	PA 12	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-40...85 °C	-40...85 °C	
IP rating	IP68	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, EAC, WEEE	
Productview	Page 124	Page 125	




		BES01PY BES M12MD-PSC80F-S04G	**BES01PN** BES M12EG-PSC80F-S04G	**BES004N** BES M12MG-PSC80F-S04G
	BES0178 BES 516-131-S4-C			
	Ø 12 x 70 mm	Ø 12 x 45 mm	Ø 12 x 60 mm	Ø 12 x 60 mm
	M12x1	M12x1	M12x1	M12x1
	non-flush	non-flush	non-flush	non-flush
	4 mm	8 mm	8 mm	8 mm
	2500 Hz	1000 Hz	1000 Hz	1000 Hz
	Stainless steel	Brass, Nickel-free coated	Stainless steel	Brass, Nickel-free coated
	PBT	PBT	PBT	PBT
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-40...85 °C	-25...70 °C	-40...85 °C	-25...70 °C
	IP68	IP68	IP68	IP68
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 124	Page 125	Page 125	Page 125

PNP normally open		**BES02WK** BES M12MC1-PSC10F-S04G	
PNP normally closed			
normally open	**BES0289** BES 516-209-G-S21-E		
Dimension	Ø 12 x 70 mm	Ø 12 x 45 mm	
Style	M12x1	M12x1	
Installation	non-flush	non-flush	
Range	8 mm	10 mm	
Switching frequency	600 Hz	600 Hz	
Housing material	Stainless steel	Brass, Nickel-free coated	
Material sensing surface	PA 12	PBT	
Connection	Connector, 1/2“-20 UNF-2A-Male	Connector, M12x1-Male, 3-pin	
Operating voltage Ub	20...250 VDC/20...250 VAC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...85 °C	
IP rating	IP67	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 124	Page 125	




	BES02WR BES M12MF1-PSC10F-S04G	BES02WM BES M12MD1-PSC60B-S04G	BES02WZ BES M12MG1-PSC60B-S04G BES02WY BES M12MG1-POC60B-S04G	BES01ZN BES M12MI-PSH80B-S04G
	Ø 12 x 60 mm	Ø 12 x 45 mm	Ø 12 x 60 mm	Ø 12 x 65 mm
	M12x1	M12x1	M12x1	M12x1
	non-flush	quasi-flush	quasi-flush	quasi-flush
	10 mm	6 mm	6 mm	8 mm
	600 Hz	1000 Hz	1000 Hz	300 Hz
	Brass, Nickel-free coated	Brass, Nickel-free coated	Brass, Nickel-free coated	Brass, nickel plated
	PBT	PBT	PBT	LCP
	Connector, M12x1-Male, 3-pin	Connector, M12x1-Male, 3-pin	Connector, M12x1-Male, 3-pin	Connector, M12x1-Male, 4-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...55 VDC
	-25...85 °C	-25...85 °C	-25...85 °C	0...60 °C
	IP68	IP68	IP68	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, EAC, WEEE
	Page 125	Page 123	Page 125	Page 125

PNP normally open			
normally open	**BES02AU** BES 516-420-E4-L-02	**BES02AW** BES 516-420-E4-L-05	
Dimension	Ø 18 x 56 mm	Ø 18 x 56 mm	
Style	M18x1	M18x1	
Installation	flush	flush	
Range	5 mm	5 mm	
Switching frequency	25 Hz	25 Hz	
Housing material	Brass, nickel plated	Brass, nickel plated	
Material sensing surface	PA 12	PA 12	
Connection	Cable, 2.00 m, PVC	Cable, 5.00 m, PVC	
Operating voltage Ub	20...250 VAC	20...250 VAC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 126	Page 126	




	BES0083 BES M18MI-PSC50B-BV03			
		BES028L BES 516-211-E4-E-03	**BES028N** BES 516-211-E4-E-PU-05	**BES028U** BES 516-211-E6-E-05
	Ø 18 x 55 mm	Ø 18 x 61.5 mm	Ø 18 x 61.5 mm	Ø 18 x 71 mm
	M18x1	M18x1	M18x1	M18x1
	flush	flush	flush	flush
	5 mm	5 mm	5 mm	5 mm
	2000 Hz	250 Hz	250 Hz	250 Hz
	Brass, Nickel-free coated	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated
	PBT	PA 12	PA 12	PA 12
	Cable, 3.00 m, PVC	Cable, 3.00 m, PVC	Cable, 5.00 m, PUR	Cable, 5.00 m, PVC
	10...30 VDC	20...250 VDC/20...250 VAC	20...250 VDC/20...250 VAC	20...250 VDC/20...250 VAC
	-40...85 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP68	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	Page 126	Page 126	Page 126	Page 126

PNP normally open	**BES04F1** BES M18MD-PSC80B-BP05-003	**BES008E** BES M18MI-PSC80B-BV02	
NPN normally open			
Dimension	Ø 18 x 36 mm	Ø 18 x 55 mm	
Style	M18x1	M18x1	
Installation	flush	flush	
Range	8 mm	8 mm	
Switching frequency	150 Hz	1300 Hz	
Housing material	Brass, nickel plated	Brass, Nickel-free coated	
Material sensing surface	PBT	PBT	
Connection	Cable, 5.00 m, PUR	Cable, 2.00 m, PVC	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-40...85 °C	
IP rating	IP67	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 126	Page 126	




			BES0089 BES M18MI-PSC80B-BP03	**BES008F** BES M18MI-PSC80B-BV03
	BES007H BES M18MI-NSC80B-BP03	**BES007J** BES M18MI-NSC80B-BV03		
	Ø 18 x 55 mm	Ø 18 x 55 mm	Ø 18 x 55 mm	Ø 18 x 55 mm
	M18x1	M18x1	M18x1	M18x1
	flush	flush	flush	flush
	8 mm	8 mm	8 mm	8 mm
	1300 Hz	1300 Hz	1300 Hz	1300 Hz
	Brass, Nickel-free coated	Brass, Nickel-free coated	Brass, Nickel-free coated	Brass, Nickel-free coated
	PBT	PBT	PBT	PBT
	Cable, 3.00 m, PUR	Cable, 3.00 m, PVC	Cable, 3.00 m, PUR	Cable, 3.00 m, PVC
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP68	IP68	IP68	IP68
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 126	Page 126	Page 126	Page 126

PNP normally open	**BES008H** BES M18MI-PSC80B-BV05	**BES00R5** BES 516-326-E4-C-S4-00,2	
Dimension	Ø 18 x 55 mm	Ø 18 x 36 mm	
Style	M18x1	M18x1	
Installation	flush	flush	
Range	8 mm	5 mm	
Switching frequency	1300 Hz	1000 Hz	
Housing material	Brass, Nickel-free coated	Brass, nickel plated	
Material sensing surface	PBT	PA 12	
Connection	Cable, 5.00 m, PVC	Cable with connector, M12x1-Male, 4-pin, 0.20 m, PUR	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-40...85 °C	-25...70 °C	
IP rating	IP68	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 126	Page 126	




	BES00EY BES M18ME-PSC50B-S04G-003	BES00R6 BES 516-326-E5-C-S4	BES02ET BES 515-326-E5-T-S4	BES0086 BES M18MI-PSC50B-S04G
	Ø 18 x 46 mm	Ø 18 x 44.5 mm	Ø 18 x 45 mm	Ø 18 x 66 mm
	M18x1	M18x1	M18x1	M18x1
	flush	flush	flush	flush
	5 mm	5 mm	5 mm	5 mm
	2000 Hz	1000 Hz	500 Hz	2000 Hz
	Brass, Nickel-free coated	Brass, nickel plated	Stainless steel	Brass, Nickel-free coated
	PBT	PBT	PA 12	PBT
	Connector, M12x1-Male, 3-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 3-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-40...85 °C	-25...70 °C	-40...105 °C	-40...85 °C
	IP68	IP67	IP68	IP68
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 127	Page 126	Page 127	Page 127

PNP normally open		**BES02EU** BES 515-326-S4-C	
PNP normally closed			
PNP normally open/normally closed			
normally open	**BES028R** BES 516-211-E5-E-S27		
Dimension	Ø 18 x 70.5 mm	Ø 18 x 83 mm	
Style	M18x1	M18x1	
Installation	flush	flush	
Range	5 mm	5 mm	
Switching frequency	400 Hz	900 Hz	
Housing material	Brass, nickel plated	Stainless steel	
Material sensing surface	PA 12	PA 12	
Connection	Connector, M12x1-Male	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	20...250 VDC/20...250 VAC	10...30 VDC	
Ambient temperature	-25...70 °C	-40...85 °C	
IP rating	IP67	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 127	Page 127	




	BES01CW BES 516-326-S4-C		BES00RC BES 516-326-G-E5-C-S4	BES02P3 BES 516-326-SA96-G-E5-Y-S4
	BES01JW BES 516-367-S4-C			
		BES015N BES 516-105-S4-C		
	Ø 18 x 83 mm	Ø 18 x 83 mm	Ø 18 x 44.5 mm	Ø 18 x 44.5 mm
	M18x1	M18x1	M18x1	M18x1
	flush	flush	flush	flush
	5 mm	5 mm	8 mm	8 mm
	900 Hz	500 Hz	200 Hz	200 Hz
	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated
	PA 12	PA 12	PBT	ceramic coated
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP68	IP68	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 127	Page 127	Page 126	Page 126

PNP normally open	**BES008L** BES M18MI-PSC80B-S04G	**BES02H0** BES M18EI-PSC80B-S04G	
PNP normally closed	**BES03RP** BES M18MI-POC80B-S04G		
NPN normally open	**BES007M** BES M18MI-NSC80B-S04K		
normally open			
Dimension	Ø 18 x 66 mm	Ø 18 x 65 mm	
Style	M18x1	M18x1	
Installation	flush	flush	
Range	8 mm	8 mm	
Switching frequency	1300 Hz	700 Hz	
Housing material	Brass, Nickel-free coated	Stainless steel, Ceramic	
Material sensing surface	PBT	PBT	
Connection	Connector, M12x1-Male, 3-pin	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-40...85 °C	-40...85 °C	
IP rating	IP68	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 127	Page 127	

		BES0496 BES M18MI2-PSC80B-S04G		
	BES02ZE BES M18MN-USU80B-S21G		**BES02C5** BES 516-437-E4-L-02	
	Ø 18 x 70 mm	Ø 18 x 83 mm	Ø 18 x 61.5 mm	
	M18x1	M18x1	M18x1	
	flush	flush	non-flush	
	8 mm	8 mm	8 mm	
	30 Hz	1000 Hz	25 Hz	
	Brass, nickel plated	Brass, Nickel-free coated	Brass, nickel plated	
	PBT	PBT	PA 12	
	Connector, 1/2“-20 UNF-2A-Male, 3-pin	Connector, M12x1-Male, 4-pin	Cable, 2.00 m, PVC	
	20...300 VDC/20...250 VAC	10...30 VDC	20...250 VAC	
	-25...70 °C	-25...70 °C	-25...70 °C	
	IP67	IP68	IP67	
	CE, EAC, cULus, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
	Page 128	Page 128	Page 128	

PNP normally open		**BES00WM** BES 516-360-E5-Y-S4	
normally open	**BES0292** BES 516-213-E4-E-03		
Dimension	Ø 18 x 61.5 mm	Ø 18 x 54 mm	
Style	M18x1	M18x1	
Installation	non-flush	non-flush	
Range	8 mm	8 mm	
Switching frequency	250 Hz	200 Hz	
Housing material	Brass, nickel plated	Brass, nickel plated	
Material sensing surface	PA 12	PA 12	
Connection	Cable, 3.00 m, PVC	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	20...250 VDC/20...250 VAC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, EAC, cULus, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 128	Page 128	




	BES02C7 BES 516-437-E5-L-S21	BES0296 BES 516-213-E5-E-S21	BES0297 BES 516-213-E5-E-S27	BES0298 BES 516-213-E5-E-S5
	Ø 18 x 65 mm	Ø 18 x 70.5 mm	Ø 18 x 70.5 mm	Ø 18 x 80 mm
	M18x1	M18x1	M18x1	M18x1
	non-flush	non-flush	non-flush	non-flush
	8 mm	8 mm	8 mm	8 mm
	25 Hz	250 Hz	250 Hz	250 Hz
	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated
	PA 12	PA 12	PA 12	PA 12
	Connector, 1/2“-20 UNF-2A-Male	Connector, 1/2“-20 UNF-2A-Male	Connector, M12x1-Male	Connector, 7/8“-16 UN-Male
	20...250 VAC	20...250 VAC	20...250 VAC	20...250 VDC/20...250 VAC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 128	Page 128	Page 128	Page 128

PNP normally open	**BES01HY** BES 516-360-S4-C	**BES03RM** BES M18MG-PSC16F-S04G	
PNP normally open/normally closed			
Dimension	Ø 18 x 83 mm	Ø 18 x 66 mm	
Style	M18x1	M18x1	
Installation	non-flush	non-flush	
Range	8 mm	16 mm	
Switching frequency	600 Hz	430 Hz	
Housing material	Brass, nickel plated	Brass, Nickel-free coated	
Material sensing surface	PA 12	PBT	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 3-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-40...85 °C	
IP rating	IP68	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 129	Page 129	

	BES0070 BES M18MG-PSC16F-S04K	**BES01HW** BES 516-360-G-S4-H		
			BES016W BES 516-123-G-S4-H	
	Ø 18 x 65 mm	Ø 18 x 83 mm	Ø 18 x 83 mm	
	M18x1	M18x1	M18x1	
	non-flush	non-flush	non-flush	
	16 mm	16 mm	16 mm	
	800 Hz	80 Hz	80 Hz	
	Brass, Nickel-free coated	Brass, nickel plated	Brass, nickel plated	
	PBT	PA 12	PA 12	
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
	10...30 VDC	10...55 VDC	10...55 VDC	
	-25...70 °C	-25...70 °C	-25...70 °C	
	IP67	IP68	IP68	
	CE, cULus, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	
	Page 129	Page 129	Page 129	

PNP normally open	**BES05EY** BES M18MG-PSC20F-S04G	**BES05ER** BES M18ME-PSC12B-S04G	
NPN normally open			
normally open			
Dimension	Ø 18 x 66 mm	Ø 18 x 46 mm	
Style	M18x1	M18x1	
Installation	—	quasi-flush	
Range	20 mm	12 mm	
Switching frequency	400 Hz	550 Hz	
Housing material	Brass, Nickel-free coated	Brass, Nickel-free coated	
Material sensing surface	PBT	PBT	
Connection	Connector, M12x1-Male, 3-pin	Connector, M12x1-Male, 3-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP68	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 126	Page 129	




	BES05EU BES M18MI-PSC12B-S04G	BES00RE BES 516-327-E4-Y-01,5	BES00A1 BES M30MI-PSC10B-BV03	
			BES009E BES M30MI-NSC10B-BV03	
				BES029L BES 516-215-E4-E-03
	Ø 18 x 66 mm	Ø 30 x 36 mm	Ø 30 x 56 mm	Ø 30 x 61.5 mm
	M18x1	M30x1.5	M30x1.5	M30x1.5
	—	flush	flush	flush
	12 mm	10 mm	10 mm	10 mm
	550 Hz	200 Hz	400 Hz	150 Hz
	Brass, Nickel-free coated	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated
	PBT	PA 12	PA 12	PA 12
	Connector, M12x1-Male, 3-pin	Cable, 1.50 m, PVC	Cable, 3.00 m, PVC	Cable, 3.00 m, PVC
	10...30 VDC	10...30 VDC	12...30 VDC	20...250 VDC/20...250 VAC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP68	IP68	IP68	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, EAC, cULus, WEEE
	Page 125	Page 129	Page 129	Page 129

PNP normally open		**BES00RT** BES 516-327-G-E4-Y-03	
PNP normally closed			
normally open	**BES029M** BES 516-215-E4-E-05		
Dimension	Ø 30 x 61.5 mm	Ø 30 x 36 mm	
Style	M30x1.5	M30x1.5	
Installation	flush	flush	
Range	10 mm	15 mm	
Switching frequency	150 Hz	100 Hz	
Housing material	Brass, nickel plated	Brass, nickel plated	
Material sensing surface	PA 12	PA 12	
Connection	Cable, 5.00 m, PVC	Cable, 3.00 m, PVC	
Operating voltage Ub	20...250 VDC/20...250 VAC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP68	
Approval/Conformity	CE, EAC, cULus, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 129	Page 129	




		BES00AA BES M30MI-PSC15B-BV02	**BES00AC** BES M30MI-PSC15B-BV03	
	BES00LR BES 516-3028-G-E4-Y-PU-05			**BES00LT** BES 516-3028-G-E4-Y-S4-01
	Ø 30 x 36 mm	Ø 30 x 53 mm	Ø 30 x 53 mm	Ø 30 x 36 mm
	M30x1.5	M30x1.5	M30x1.5	M30x1.5
	flush	flush	flush	flush
	15 mm	15 mm	15 mm	15 mm
	100 Hz	100 Hz	100 Hz	100 Hz
	Brass, nickel plated	Brass, Nickel-free coated	Brass, Nickel-free coated	Brass, nickel plated
	PA 12	PA 12	PA 12	PA 12
	Cable, 5.00 m, TPU	Cable, 2.00 m, PVC	Cable, 3.00 m, PVC	Cable with connector, M12x1-Male, 4-pin, 1.00 m, PUR
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP68	IP67	IP67	IP68
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 129	Page 129	Page 129	Page 130

PNP normally open	**BES00RP** BES 516-327-E5-Y-S4	**BES02F0** BES 515-327-E5-T-S4	
normally open			
Dimension	Ø 30 x 44.5 mm	Ø 30 x 45 mm	
Style	M30x1.5	M30x1.5	
Installation	flush	flush	
Range	10 mm	10 mm	
Switching frequency	200 Hz	200 Hz	
Housing material	Brass, nickel plated	Stainless steel	
Material sensing surface	PA 12	PA 12	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-40...105 °C	
IP rating	IP67	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 130	Page 130	




	BES00A3 BES M30MI-PSC10B-S04G	**BES00A4** BES M30MI-PSC10B-S04K		
			BES0316 BES 516-418-E5-L-S27	**BES02E9** BES 515-215-E5-E-S21
	Ø 30 x 65 mm	Ø 30 x 65 mm	Ø 30 x 65 mm	Ø 30 x 70.5 mm
	M30x1.5	M30x1.5	M30x1.5	M30x1.5
	flush	flush	flush	flush
	10 mm	10 mm	10 mm	10 mm
	400 Hz	400 Hz	25 Hz	150 Hz
	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	Stainless steel
	PA 12	PA 12	PA 12	PA 12
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male	Connector, 1/2"-20 UNF-2A-Male
	12...30 VDC	12...30 VDC	20...250 VAC	20...250 VDC/20...250 VAC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP68	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 130	Page 130	Page 130	Page 130

PNP normally open		**BES02F1** BES 515-327-S4-C	
PNP normally closed			
PNP normally open/normally closed			
normally open	**BES029W** BES 516-215-E5-E-S5		
Dimension	Ø 30 x 80 mm	Ø 30 x 83 mm	
Style	M30x1.5	M30x1.5	
Installation	flush	flush	
Range	10 mm	10 mm	
Switching frequency	150 Hz	300 Hz	
Housing material	Brass, nickel plated	Stainless steel	
Material sensing surface	PA 12	PA 12	
Connection	Connector, 7/8“-16 UN-Male	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	20...250 VDC/20...250 VAC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 130	Page 131	




	BES01EE BES 516-327-S4-C		BES00RW BES 516-327-G-E5-Y-S4	BES00AF BES M30MI-PSC15B-S04G
			BES00LU BES 516-3028-G-E5-Y-S4	
		BES0167 BES 516-114-S4-C		
	Ø 30 x 83 mm	Ø 30 x 83 mm	Ø 30 x 44.5 mm	Ø 30 x 65 mm
	M30x1.5	M30x1.5	M30x1.5	M30x1.5
	flush	flush	flush	flush
	10 mm	10 mm	15 mm	15 mm
	300 Hz	300 Hz	100 Hz	100 Hz
	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	Brass, Nickel-free coated
	PA 12	PA 12	PA 12	PA 12
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP68	IP68	IP68	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 131	Page 131	Page 130	Page 131

PNP normally open	**BES01EA** BES 516-327-G-S4-C	**BES01EC** BES 516-327-G-S4-H	
PNP normally open/normally closed			
normally open			
Dimension	Ø 30 x 83 mm	Ø 30 x 83 mm	
Style	M30x1.5	M30x1.5	
Installation	flush	flush	
Range	15 mm	15 mm	
Switching frequency	100 Hz	150 Hz	
Housing material	Brass, Nickel-free coated	Brass, Nickel-free coated	
Material sensing surface	PA 12	PA 12	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	10...30 VDC	10...55 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, EAC, WEEE	
Productview	Page 131	Page 131	




			BES00AY BES M30MM-PSC30F-BV02	**BES00Y0** BES 516-362-E5-Y-S4
	BES0166 BES 516-114-G-S4-H			
		BES02A5 BES 516-217-E4-E-03		
	Ø 30 x 83 mm	Ø 30 x 61.5 mm	Ø 30 x 76.5 mm	Ø 30 x 57 mm
	M30x1.5	M30x1.5	M30x1.5	M30x1.5
	flush	non-flush	non-flush	non-flush
	15 mm	15 mm	30 mm	15 mm
	150 Hz	100 Hz	300 Hz	100 Hz
	Brass, Nickel-free coated	Brass, nickel plated	Brass, Nickel-free coated	Brass, nickel plated
	PA 12	PA 12	PBT	PA 12
	Connector, M12x1-Male, 4-pin	Cable, 3.00 m, PVC	Cable, 2.00 m, PVC	Connector, M12x1-Male, 4-pin
	10...55 VDC	20...250 VDC/20...250 VAC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP68	IP67	IP67	IP67
	CE, EAC, WEEE	CE, EAC, cULus, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 131	Page 131	Page 131	Page 131

PNP normally open			
normally open	**BES02AC** BES 516-217-E5-E-S27	**BES02AE** BES 516-217-E5-E-S5	
Dimension	Ø 30 x 70.5 mm	Ø 30 x 80 mm	
Style	M30x1.5	M30x1.5	
Installation	non-flush	non-flush	
Range	15 mm	15 mm	
Switching frequency	100 Hz	100 Hz	
Housing material	Brass, nickel plated	Brass, nickel plated	
Material sensing surface	PA 12	PA 12	
Connection	Connector, M12x1-Male	Connector, 7/8“-16 UN-Male	
Operating voltage Ub	20...250 VDC/20...250 VAC	20...250 VDC/20...250 VAC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 131	Page 131	

	BES02FN BES 515-362-S4-C	**BES01JE** BES 516-362-S4-C	**BES00AZ** BES M30MM-PSC30F-S04K	**BES01JC** BES 516-362-G-S4-H
	Ø 30 x 83 mm	Ø 30 x 83 mm	Ø 30 x 83 mm	Ø 30 x 83 mm
	M30x1.5	M30x1.5	M30x1.5	M30x1.5
	non-flush	non-flush	non-flush	non-flush
	15 mm	15 mm	30 mm	30 mm
	100 Hz	100 Hz	300 Hz	70 Hz
	Stainless steel	Brass, nickel plated	Brass, Nickel-free coated	Brass, nickel plated
	PA 12	PA 12	PBT	PA 12
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...55 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP68	IP68	IP67	IP68
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, EAC, WEEE
	Page 131	Page 131	Page 132	Page 131

PNP normally open	**BES02YJ** BES M30MG1-PSC40F-S04G	**BES02YM** BES M30MI1-PSC22B-S04G	
PNP normally closed		**BES02YL** BES M30MI1-POC22B-S04G	
Dimension	Ø 30 x 73.5 mm	Ø 30 x 73.5 mm	
Style	M30x1.5	M30x1.5	
Installation	non-flush	quasi-flush	
Range	40 mm	22 mm	
Switching frequency	100 Hz	200 Hz	
Housing material	Brass, Chrome-plated	Brass, Chrome-plated	
Material sensing surface	PBT	PBT	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP54	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	cULus, CE, EAC, WEEE	
Productview	Page 132	Page 132	




	BES0341 BES 516-3009-SA2-M0-C-05	BES01FJ BES 516-347-M0-C-03	BES01FK BES 516-347-M0-C-05	BES01FM BES 516-347-M0-C-PU-05
	50 x 25 x 10 mm	50 x 25 x 10 mm	50 x 25 x 10 mm	50 x 25 x 10 mm
	block style	block style	block style	block style
	flush	flush	flush	flush
	2.5 mm	5 mm	5 mm	5 mm
	1000 Hz	500 Hz	500 Hz	500 Hz
	Aluminum	Aluminum, Die casting	Aluminum, Die casting	Aluminum
	PBT	PBT	PBT	PBT
	Cable, 5.00 m, PUR	Cable, 3.00 m, PVC	Cable, 5.00 m, PVC	Cable, 5.00 m, PUR
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE
	Page 132	Page 132	Page 132	Page 132

PNP normally open			
PNP normally open/normally closed	**BES017H** BES 516-133-M0-C-PU-05	**BES032R** BES 516-133-SA3-C-PU-04	
Dimension	50 x 25 x 10 mm	50 x 25 x 10 mm	
Style	block style	block style	
Installation	flush	flush	
Range	5 mm	5.6 mm	
Switching frequency	500 Hz	500 Hz	
Housing material	Aluminum	Aluminum	
Material sensing surface	PBT	PBT	
Connection	Cable, 5.00 m, PUR	Cable, 4.00 m, PUR	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, EAC, WEEE	CE, EAC, WEEE	
Productview	Page 132	Page 132	

	BES01FN BES 516-347-M0-C-S4-00,2	BES01FT BES 516-347-M0-C-S49-00,2		BES01FR BES 516-347-M0-C-S49
			BES0153 BES 516-133-M0-C-S4-00,2	
	50 x 25 x 10 mm	50 x 25 x 10 mm	50 x 25 x 10 mm	59 x 25 x 10 mm
	block style	block style	block style	block style
	flush	flush	flush	flush
	5 mm	5 mm	5 mm	5 mm
	500 Hz	500 Hz	500 Hz	500 Hz
	Aluminum	Aluminum	Aluminum	Aluminum
	PBT	PBT	PBT	PBT
	Cable with connector, M12x1-Male, 4-pin, 0.20 m, PUR	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PUR	Cable with connector, M12x1-Male, 4-pin, 0.20 m, PUR	Connector, M8x1-Male, 3-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP65
	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE
	Page 132	Page 132	Page 132	Page 132

PNP normally open			
NPN normally open			
normally open	**BES02CT** BES R05KB-USU20B-EV02	**BES02CU** BES R05KB-USU20B-EV03	
Dimension	40 x 12 x 26 mm	40 x 12 x 26 mm	
Style	40x12x26	40x12x26	
Installation	flush	flush	
Range	2 mm	2 mm	
Switching frequency	400 Hz	400 Hz	
Housing material	PA 12	PA 12	
Material sensing surface	PA 12	PA 12	
Connection	Cable, 2.00 m, PVC	Cable, 3.00 m, PVC	
Operating voltage Ub	20...250 VDC/20...250 VAC	20...250 VDC/20...250 VAC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, EAC, WEEE	CE, EAC, WEEE	
Productview	Page 133	Page 133	




		BES01Z5 BES R05KB-PSC20B-EP05		**BES01ZA** BES R05KB-PSC40B-EV02
	BES01YZ BES R05KB-NSC20B-EP05			
			BES02CY BES R05KB-USU40B-EV02	
	40 x 12 x 26 mm	40 x 12 x 26 mm	40 x 12 x 26 mm	40 x 12 x 26 mm
	40x12x26	40x12x26	40x12x26	40x12x26
	flush	flush	flush	flush
	2 mm	2 mm	4 mm	4 mm
	2000 Hz	400 Hz	400 Hz	400 Hz
	PA 12	PA 12	PA 12	PA 12
	PA 12	PA 12	PA 12	PA 12
	Cable, 5.00 m, PUR	Cable, 5.00 m, PUR	Cable, 2.00 m, PVC	Cable, 2.00 m, PVC
	10...30 VDC	10...30 VDC	20...250 VDC/20...250 VAC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 133	Page 133	Page 133	Page 133

PNP normally open	**BES01ZC** BES R05KB-PSC40B-EV03	**BES01Z8** BES R05KB-PSC40B-EP00,3-GS04	
PNP normally closed			
NPN normally open			
Dimension	40 x 12 x 26 mm	40 x 12 x 26 mm	
Style	40x12x26	40x12x26	
Installation	flush	flush	
Range	4 mm	4 mm	
Switching frequency	400 Hz	400 Hz	
Housing material	PA 12	PA 12	
Material sensing surface	PA 12	PA 12	
Connection	Cable, 3.00 m, PVC	Cable with connector, M12x1-Male, 4-pin, 0.30 m, PUR	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 133	Page 133	




	BES01Z7 BES R05KB-PSC20B-S49A	BES01ZE BES R05KB-PSC40B-S49A	BES01N5 BES 517-398-NO-C-03	BES01N6 BES 517-398-NO-C-05
	BES048A BES R05KB-POC20B-S49A	BES01Z2 BES R05KB-POC40B-S49A		
			BES01NH BES 517-399-NO-C-03	
	40 x 12 x 26 mm	40 x 12 x 26 mm	30 x 10.5 x 16.5 mm	30 x 10.5 x 16.5 mm
	40x12x26	40x12x26	block style	block style
	flush	flush	flush	flush
	2 mm	4 mm	2 mm	2 mm
	400 Hz	400 Hz	2500 Hz	2500 Hz
	PA 12	PA 12	PBT, GF20	PBT, GF20
	PA 12	PA 12	PBT, GF20	PBT, GF20
	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 3-pin	Cable, 3.00 m, PVC	Cable, 5.00 m, PVC
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP65	IP65
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 133	Page 133	Page 133	Page 133

PNP normally open	**BES01N8** BES 517-398-NO-C-PU-03	**BES01N9** BES 517-398-NO-C-PU-05	
PNP normally closed			
Dimension	30 x 10.5 x 16.5 mm	30 x 10.5 x 16.5 mm	
Style	block style	block style	
Installation	flush	flush	
Range	2 mm	2 mm	
Switching frequency	2500 Hz	2500 Hz	
Housing material	PBT, GF20	PBT, GF20	
Material sensing surface	PBT, GF20	PBT, GF20	
Connection	Cable, 3.00 m, PUR	Cable, 5.00 m, PUR	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP65	IP65	
Approval/Conformity	CE, EAC, WEEE	CE, EAC, WEEE	
Productview	Page 133	Page 133	




		BES01NA BES 517-398-NO-C-S49-00,2	**BES01N1** BES 517-398-N1-C	**BES01N2** BES 517-398-N2-C
	BES01MM BES 517-351-NO-C-03	**BES01MT** BES 517-351-NO-C-S49-00,2		
	30 x 10.5 x 16.5 mm	30 x 10.5 x 16.5 mm	30 x 10.5 x 16.5 mm	30 x 10.5 x 16.5 mm
	block style	block style	block style	block style
	flush	flush	flush	flush
	2 mm	2 mm	2 mm	2 mm
	2500 Hz	2500 Hz	2500 Hz	2500 Hz
	PBT, GF20	PBT, GF20	PBT, GF20	PBT, GF20
	PBT, GF20	PBT, GF20	PBT, GF20	PBT, GF20
	Cable, 3.00 m, PVC	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PUR	Connector, DIN 46244	Connector, DIN 46244
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP65	IP65	IP00	IP00
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, EAC, WEEE
	Page 133	Page 134	Page 134	Page 134

PNP normally open	**BES033J** BES 516-300-S279		
PNP normally open/normally closed			
NPN normally open	**BES033H** BES 516-300-S255		
NPN normally open/normally closed		**BES01W0** BES R01ZC-NAC70B-BP05	
Dimension	30 x 20 x 10 mm	32 x 20 x 8 mm	
Style	block style	32x20x8	
Installation	flush	flush	
Range	2 mm	7 mm	
Switching frequency	1500 Hz	150 Hz	
Housing material	Aluminum	Zinc, Die casting	
Material sensing surface	PBT	PA 12	
Connection	Cable, 5.00 m, PVC	Cable, 5.00 m, PUR	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP65	IP67	
Approval/Conformity	CE, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 134	Page 134	




		BES01WE BES R01ZC-PSC70B-BP00.2-GS49	**BES01WF** BES R01ZC-PSC70B-BP00.3-GS49	**BES048Z** BES R01ZC-PSC70B-BZ00,2-GS04-110
	BES01W4 BES R01ZC-PAC70B-BP03			
	32 x 20 x 8 mm	32 x 20 x 8 mm	32 x 20 x 8 mm	32 x 20 x 8 mm
	32x20x8	32x20x8	32x20x8	32x20x8
	flush	flush	flush	flush
	7 mm	7 mm	7 mm	7 mm
	150 Hz	150 Hz	150 Hz	150 Hz
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	PA 12	PA 12	PA 12	ceramic coated
	Cable, 3.00 m, PUR	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PUR	Cable with connector, M8x1-Male, 3-pin, 0.30 m, PUR	Cable with connector, M12x1-Male, 4-pin, 0.20 m, TPU
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 134	Page 134	Page 134	Page 134

PNP normally open			
PNP normally open/normally closed	**BES01W2** BES R01ZC-PAC70B-BP00.2-GS04	**BES0314** BES R01ZC-PAC70B-BP00.2-GS04-107	
Polarized normally open			
Dimension	32 x 20 x 8 mm	32 x 20 x 8 mm	
Style	32x20x8	32x20x8	
Installation	flush	flush	
Range	7 mm	7 mm	
Switching frequency	150 Hz	150 Hz	
Housing material	Zinc, Die casting	Zinc, Die casting	
Material sensing surface	PA 12	ceramic coated	
Connection	Cable with connector, M12x1-Male, 4-pin, 0.20 m, PUR	Cable with connector, M12x1-Male, 4-pin, 0.20 m, PUR	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 134	Page 135	




				BES022Z BES 517-3036-I02-C-S4
	BES01W3 BES R01ZC-PAC70B-BP00.5-GS04			
		BES030E BES Z03K-GSS10B-EP00,15-GS04-006	**BES030F** BES Z03K-GSS10B-EP00,8-GS04-006	
	32 x 20 x 8 mm	26 x 26 x 43 mm	26 x 26 x 43 mm	26 x 26 x 68.5 mm
	32x20x8	26x26	26x26	26x26
	flush	flush	flush	flush
	7 mm	10 mm	10 mm	10 mm
	150 Hz	250 Hz	250 Hz	500 Hz
	Zinc, Die casting	PA	PA	PA 12
	PA 12	PA	PA	PA 12
	Cable with connector, M12x1-Male, 4-pin, 0.50 m, PUR	Cable with connector, M12x1-Male, 4-pin, 0.15 m, PUR	Cable with connector, M12x1-Male, 4-pin, 0.80 m, PUR	Connector, M12x1-Male, 4-pin
	10...30 VDC	10...36 VDC	10...36 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE
	Page 134	Page 135	Page 135	Page 135

PNP normally open		**BES052M** BES Q40KFA-PSY20B-DV02	
PNP normally open/normally closed	**BES02TN** BES IKU-031.28-S4		
Dimension	300 x 35 x 47 mm	40 x 40 x 54.5 mm	
Style	block style	40x40	
Installation	non-flush	flush	
Range	30 mm	20 mm	
Switching frequency	50 Hz	40 Hz ±15 Hz	
Housing material	Plastic	PBT	
Material sensing surface	Plastic	PBT	
Connection	Connector, M12x1-Male, 4-pin	Cable, 2.00 m, PVC	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP65	IP67	
Approval/Conformity	CE, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 135	Page 135	




	BES0555 BES Q40KFC-PSY20B-DV02			
				BES0201 BES 517-132-M3-H
	40 x 40 x 54.5 mm	120 x 40 x 40 mm	120 x 40 x 40 mm	120 x 40 x 40 mm
	40x40	40x40	40x40	40x40
	flush	flush	flush	flush
	20 mm	15 mm	15 mm	15 mm
	40 Hz ±15 Hz	100 Hz	100 Hz	100 Hz
	PBT	PBT	Aluminum, Die casting PBT	PBT
	PBT	PBT	PBT	PBT
	Cable, 2.00 m, PVC	Screw terminals	Screw terminals	Screw terminals
	10...30 VDC	20...250 VDC/20...250 VAC	20...250 VDC/20...250 VAC	10...55 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, EAC, WEEE
	Page 135	Page 135	Page 135	Page 136

PNP normally open			
PNP normally open/normally closed	**BES0209** BES 517-132-M6-H	**BES020A** BES 517-132-M6-H-S4	
Dimension	120 x 40 x 40 mm	132.5 x 40 x 40 mm	
Style	40x40	40x40	
Installation	flush	flush	
Range	20 mm	20 mm	
Switching frequency	50 Hz	50 Hz	
Housing material	PBT	PBT	
Material sensing surface	PBT	PBT	
Connection	Screw terminals	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	10...55 VDC	10...55 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, EAC, WEEE	CE, EAC, WEEE	
Productview	Page 136	Page 136	




	BES021W BES Q40KFU-PSC20B-S04G			
		BES0217 BES Q40KFU-PAC20B-S04G	BES03PN BES Q40KHU-PAC20B-S04G	
	40 x 40 x 62 mm	40 x 40 x 62 mm	40 x 40 x 65 mm	120 x 40 x 40 mm
	40x40	40x40	40x40	40x40
	flush	flush	flush	non-flush
	20 mm	20 mm	20 mm	20 mm
	50 Hz	50 Hz	50 Hz	100 Hz
	PBT	PBT	Zinc, Die casting PBT	PBT
	PBT	PBT	PBT	PBT
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Screw terminals
	10...30 VDC	10...30 VDC	10...30 VDC	20...250 VDC/20...250 VAC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 136	Page 136	Page 136	Page 135

PNP normally open			
PNP normally open/normally closed			
normally open/normally closed	**BES0244** BES 517-223-U4-E	**BES023Y** BES 517-223-M5-E	
Dimension	120 x 40 x 40 mm	120 x 40 x 40 mm	
Style	40x40	40x40	
Installation	non-flush	non-flush	
Range	20 mm	30 mm	
Switching frequency	100 Hz	100 Hz	
Housing material	Aluminum, Die casting PBT	PBT	
Material sensing surface	PBT	PBT	
Connection	Screw terminals	Screw terminals	
Operating voltage Ub	20...250 VDC/20...250 VAC	20...250 VDC/20...250 VAC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 135	Page 135	

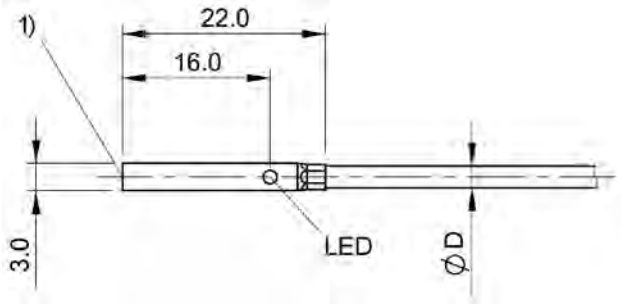
				BES0236 BES 517-385-V-C-S4
		BES0206 BES 517-132-M5-H	**BES020C** BES 517-132-M7-H	
	BES0247 BES 517-223-U5-E			
	120 x 40 x 40 mm	120 x 40 x 40 mm	120 x 40 x 40 mm	132.5 x 40 x 40 mm
	40x40	40x40	40x40	40x40
	non-flush	non-flush	non-flush	non-flush
	30 mm	30 mm	40 mm	25 mm
	100 Hz	60 Hz	50 Hz	50 Hz
	Aluminum, Die casting PBT	PBT	PBT	PBT
	PBT	PBT	PBT	PBT
	Screw terminals	Screw terminals	Screw terminals	Connector, M12x1-Male, 4-pin
	20...250 VDC/20...250 VAC	10...55 VDC	10...55 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE
	Page 135	Page 136	Page 136	Page 136

PNP normally open	**BES021Z** BES Q40KFU-PSC30F-S04G		
PNP normally open/normally closed		**BES021E** BES Q40KFU-PAC30F-S04G	
Dimension	40 x 40 x 62 mm	40 x 40 x 62 mm	
Style	40x40	40x40	
Installation	non-flush	non-flush	
Range	30 mm	30 mm	
Switching frequency	50 Hz	50 Hz	
Housing material	PBT	PBT	
Material sensing surface	PBT	PBT	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 136	Page 136	

		BES0308 BES Q40KFU-PSC40F-S04G-012		
	BES020E BES 517-132-M7-H-S4		**BES030C** BES Q80KA-PAC50B-S04Q-U	
	132.5 x 40 x 40 mm	40 x 40 x 66 mm	112 x 80 x 40 mm	
	40x40	40x40	80x80	
	non-flush	non-flush	flush	
	40 mm	40 mm	50 mm	
	50 Hz	60 Hz	70 Hz	
	PBT	PA	PPE	
	PBT	PA	PPE	
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
	10...55 VDC	10...36 VDC	10...36 VDC	
	-25...70 °C	-25...70 °C	-25...70 °C	
	IP67	IP67	IP67	
	CE, EAC, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	
	Page 136	Page 136	Page 136	

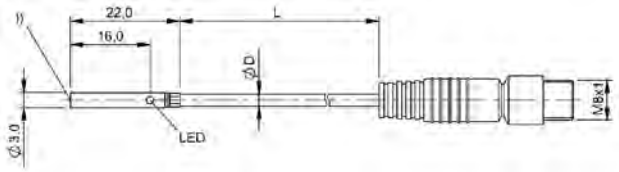
PNP normally open/normally closed	**BES023P** BES 517-139-M4-H		
normally open/normally closed		**BES022R** BES 517-460-U5-L-D	
Dimension	80 x 80 x 40 mm	80 x 80 x 40 mm	
Style	80x80	80x80	
Installation	flush	non-flush	
Range	40 mm	50 mm	
Switching frequency	50 Hz	10 Hz	
Housing material	PBT	PBT	
Material sensing surface	PBT	PBT	
Connection	Screw terminals	Screw terminals	
Operating voltage Ub	10...55 VDC	20...250 VAC	
Ambient temperature	-15...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, EAC, WEEE	CE, EAC, WEEE	
Productview	Page 136	Page 137	

	BES023R BES 517-139-M5-H	**BES024F** BES 517-224-M5-E	**BES023W** BES 517-139-U5-H-S4	
	80 x 80 x 40 mm	40 x 80 x 80 mm	80 x 80 x 40 mm	
	80x80	80x80	80x80	
	non-flush	non-flush	non-flush	
	50 mm	50 mm	50 mm	
	100 Hz	10 Hz	100 Hz	
	PBT	PBT	PBT	
	PBT	PBT	PBT	
	Screw terminals	Screw terminals	Connector, M12x1-Male, 4-pin	
	10...55 VDC	20...250 VAC	10...55 VDC	
	-25...70 °C	-25...70 °C	-25...70 °C	
	IP67	IP67	IP67	
	CE, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
	Page 136	Page 137	Page 137	



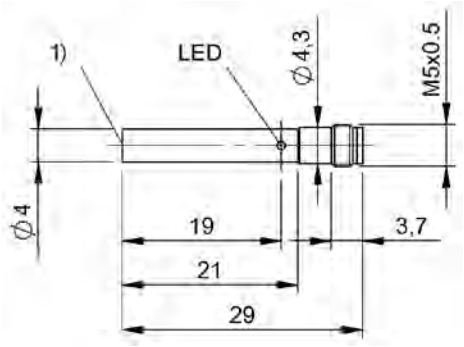
1) Sensing surface

BES03Z6



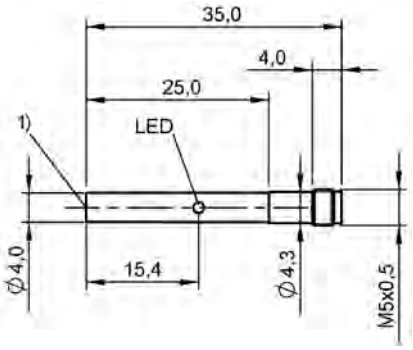
1) Sensing surface

BES0409



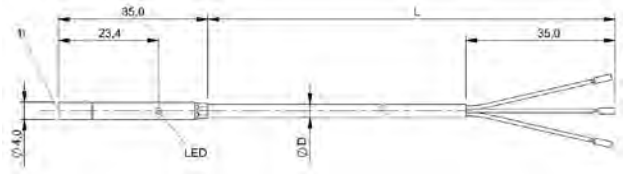
1) Sensing surface

BES0122, BES0120



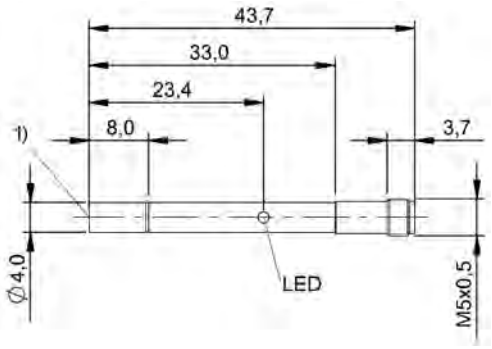
1) Sensing surface

BES012F



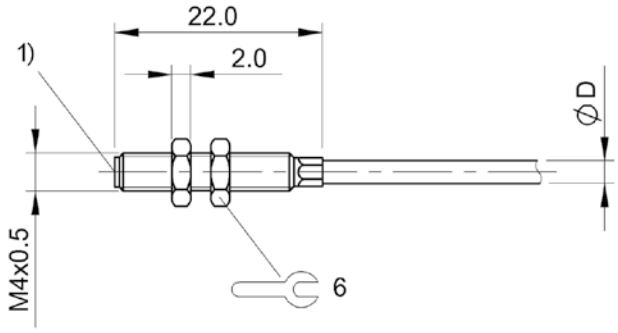
1) Sensing surface

BES012H, BES012J



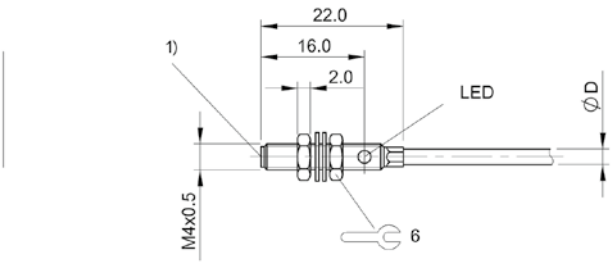
1) Sensing surface

BES012K

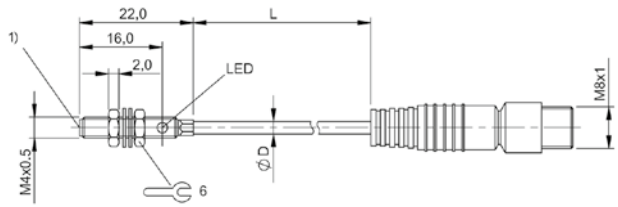


1) Sensing surface

BES01P0

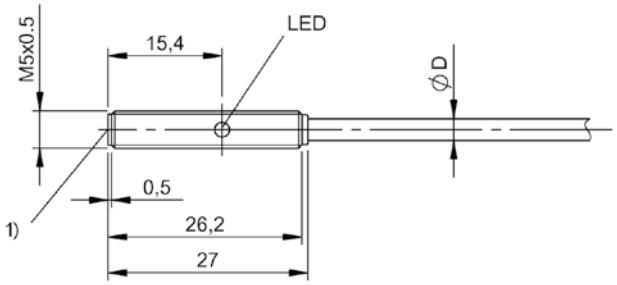


BES03ZJ, BES03Z8



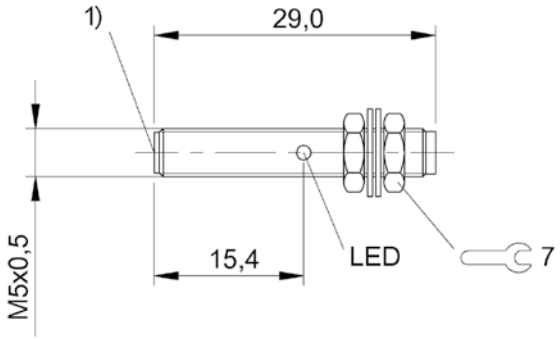
1) Sensing surface

BES040R



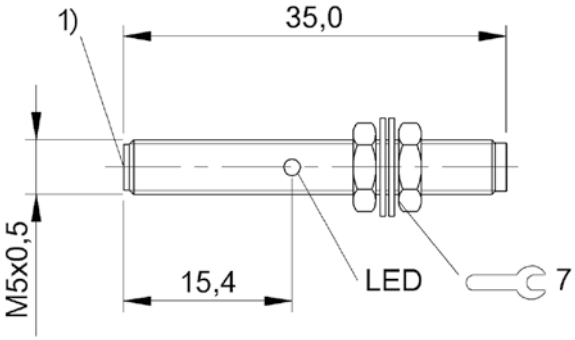
1) Sensing surface

BES051J, BES051L



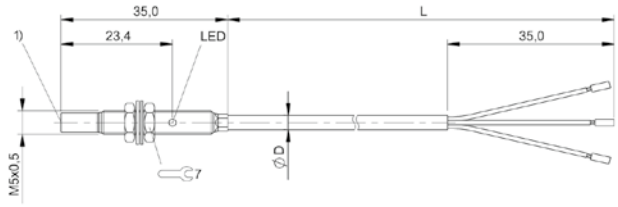
1) Sensing surface

BES012W, BES012Z



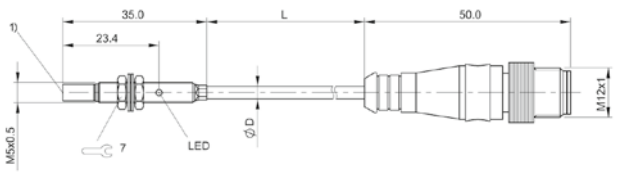
1) Sensing surface

BES0130, BES013A, BES0137



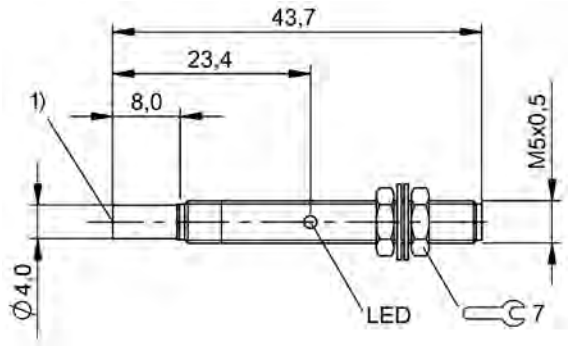
1) Sensing surface

BES013E, BES013F



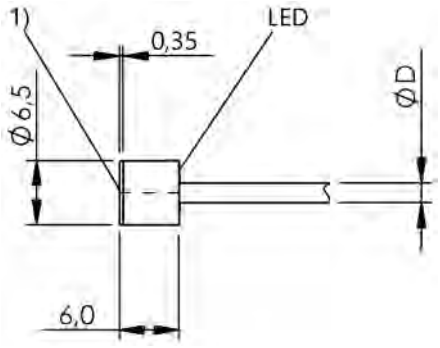
1) Sensing surface

BES013C



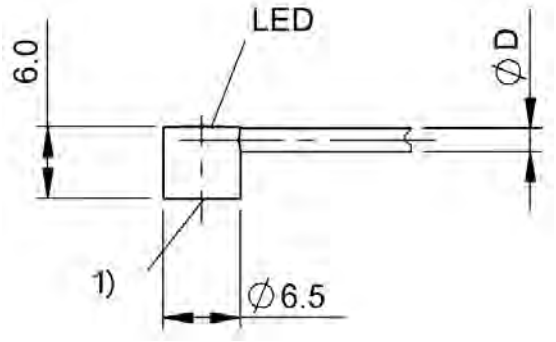
1) Sensing surface

BES013H, BES0139



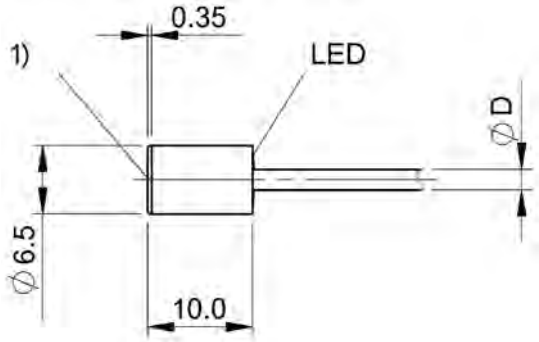
1) Sensing surface

BES0256, BES0251, BES0258



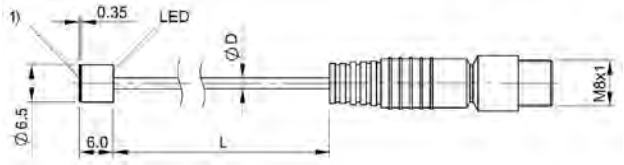
1) Sensing surface

BES025U, BES03ZA



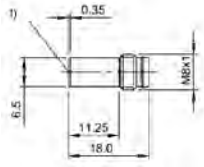
1) Sensing surface

BES025L, BES025M, BES025H



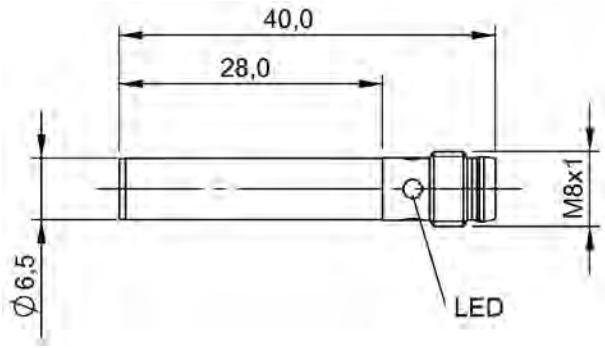
1) Sensing surface

BES0254, BES051H, BES0257

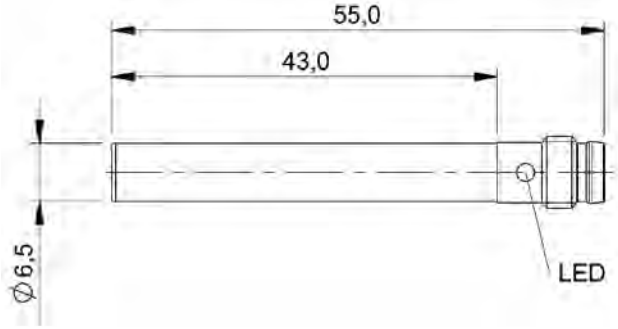


1) Sensing surface

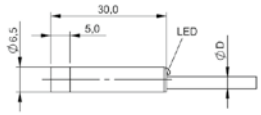
BES025N



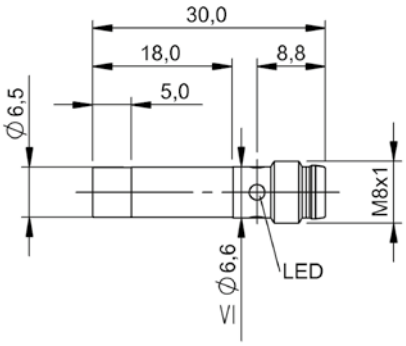
BES03R9



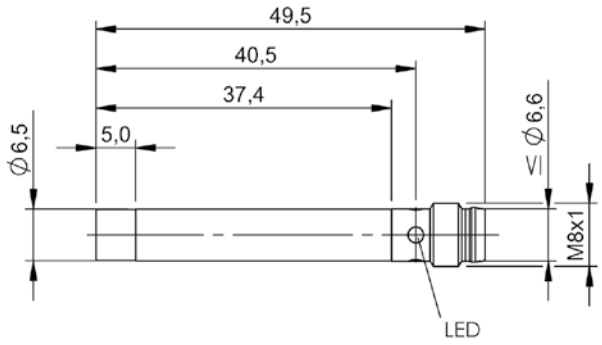
BES03P4



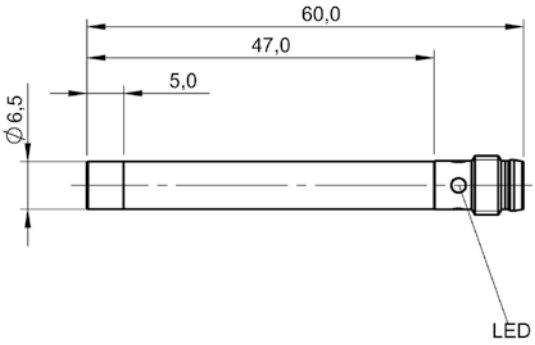
BES0008, BES000E



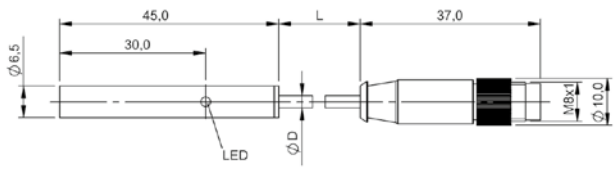
BES0005



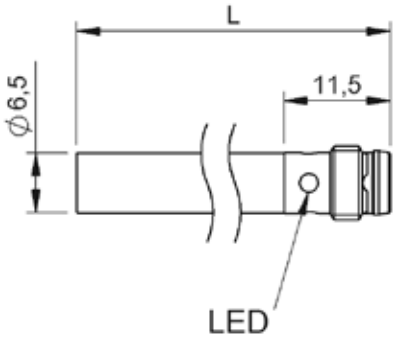
BES01NP



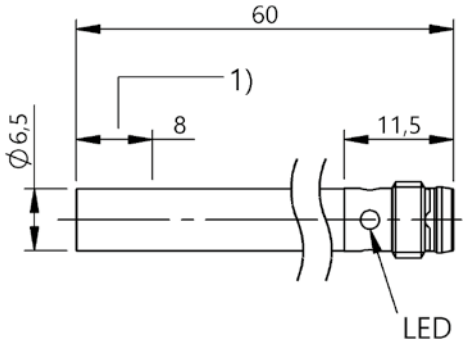
BES03P5



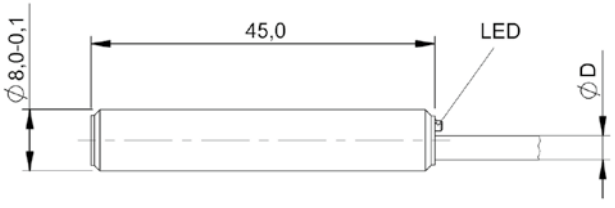
BES03EJ



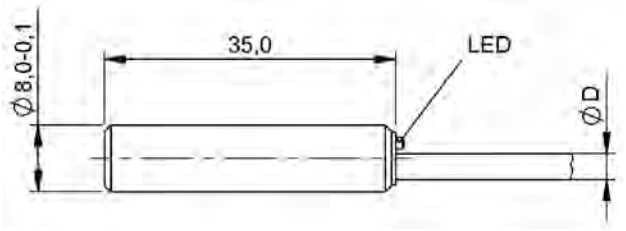
BES038Y



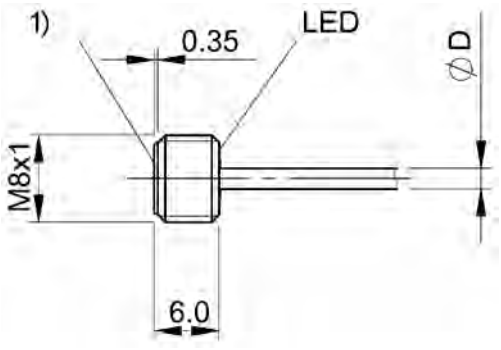
BES05WE



BES012R, BES01NY, BES012T

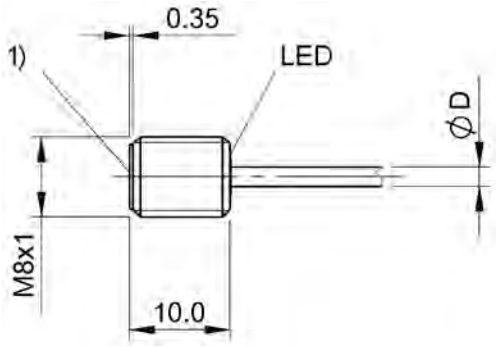


BES012L



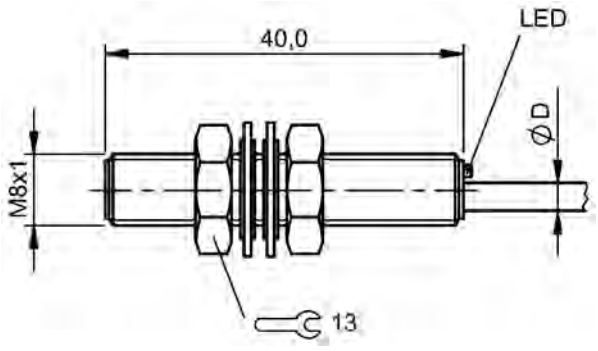
1) Sensing surface

BES026M

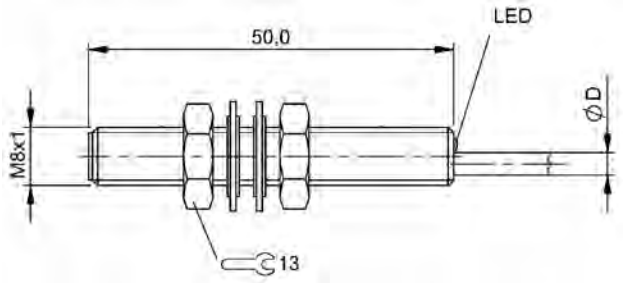


1) Sensing surface

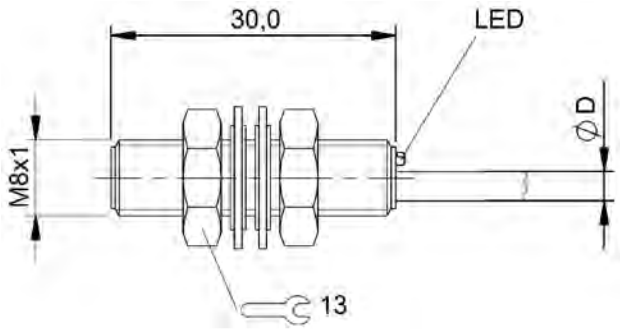
BES0275



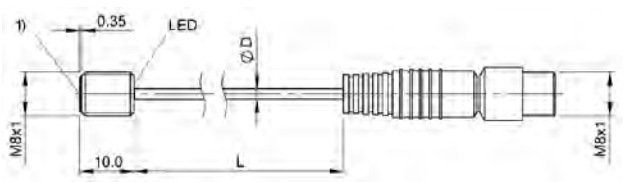
BES00CN, BES014K, BES00CR, BES00CW



BES002H, BES0034, BES0036, BES0031, BES0032, BES0037, BES002P, BES003F, BES003J, BES03TL, BES003K, BES003M, BES03TH

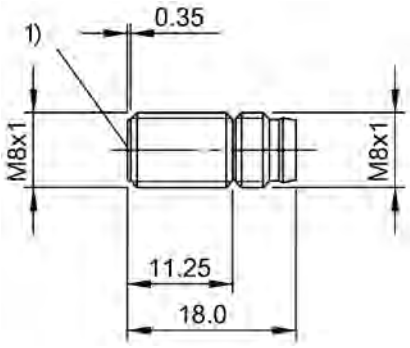


BES0389



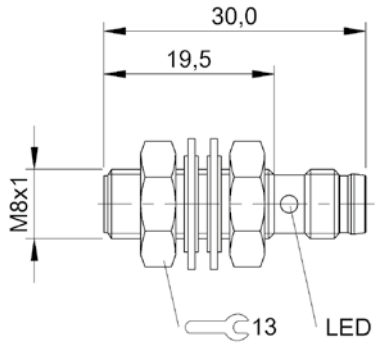
1) Sensing surface

BES0276

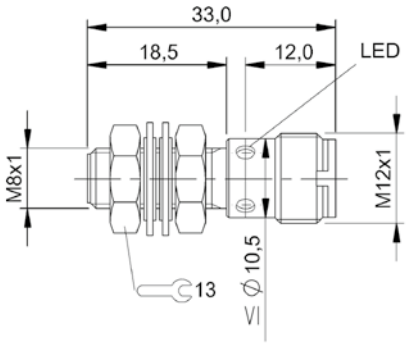


1) Sensing surface

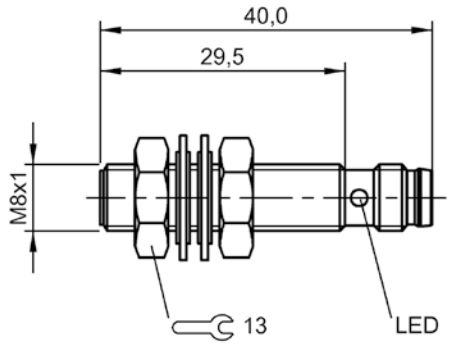
BES0277, BES0270, BES0278



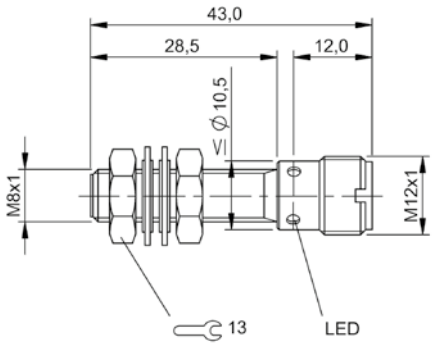
BES013J, BES013N, BES013K, BES013P, BES013L



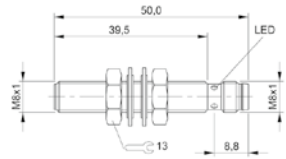
BES013M



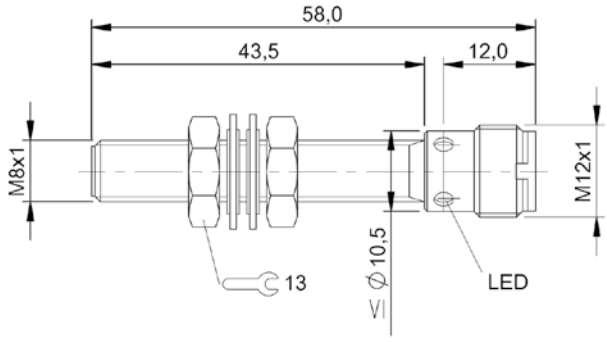
BES0147, BES0143, BES014A, BES0145



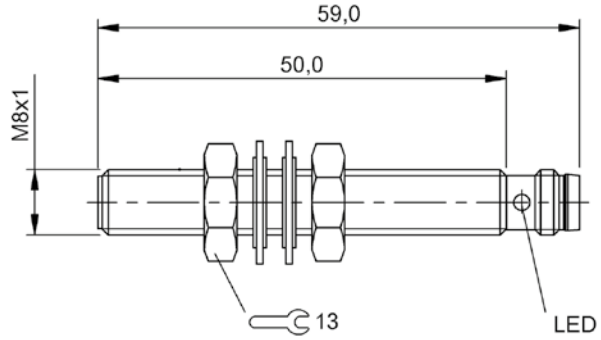
BES013Y, BES0146, BES0142, BES0149



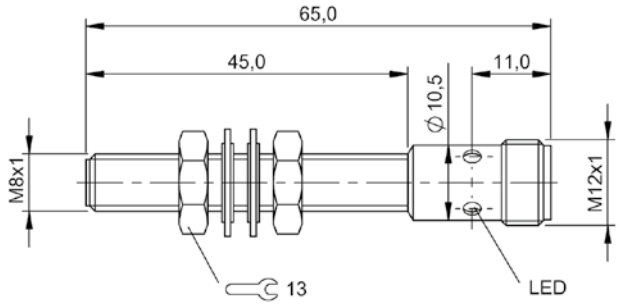
BES01P7



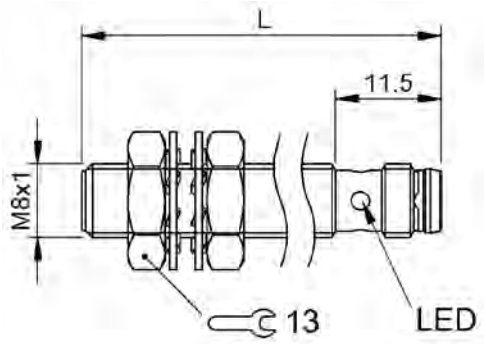
BES01PC, BES01PE, BES01PH



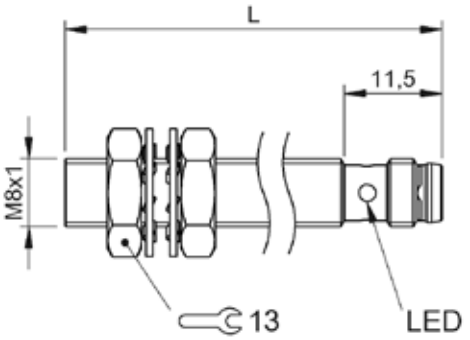
BES002K, BES03P6, BES003C, BES002U, BES0033, BES003P



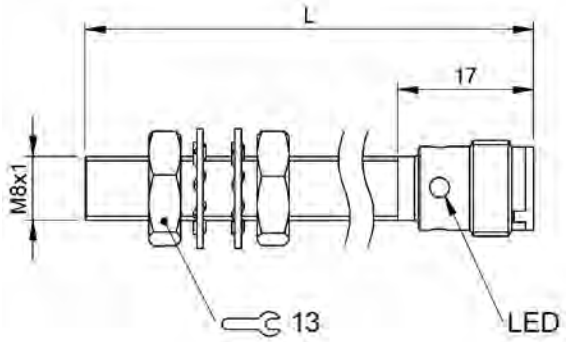
BES0024, BES0026, BES0027, BES0025, BES0028, BES03T5



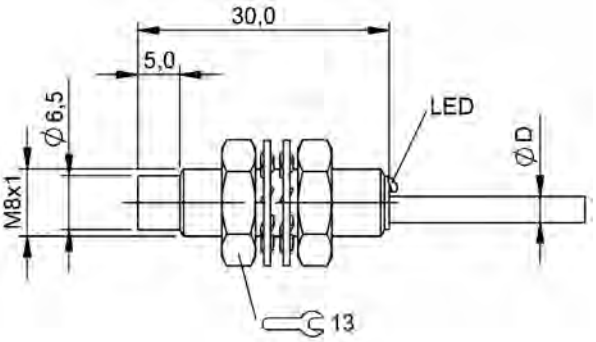
BES0427



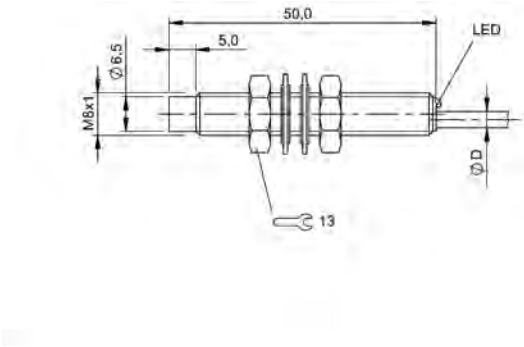
BES054N



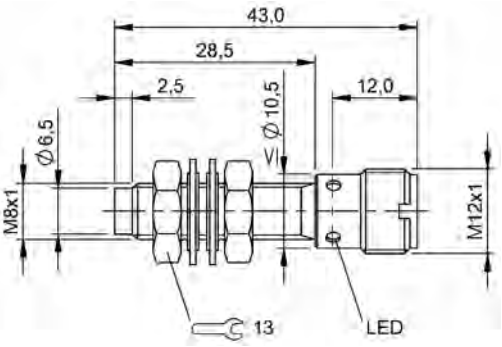
BES02W7, BES02W9



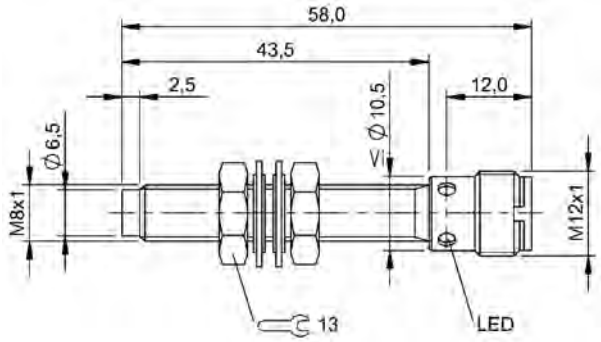
BES000T, BES000Y



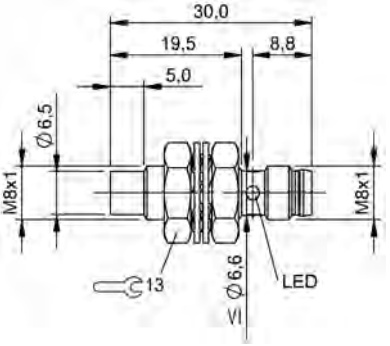
BES0013, BES0016, BES0014



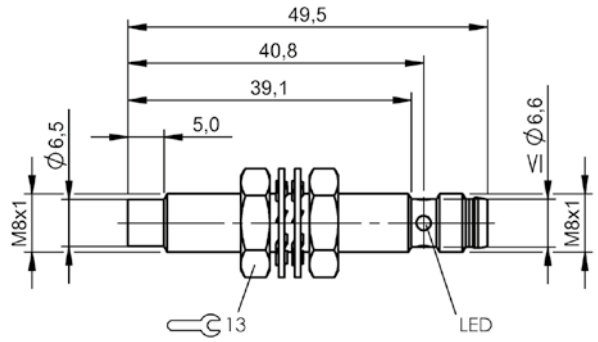
BES01P3



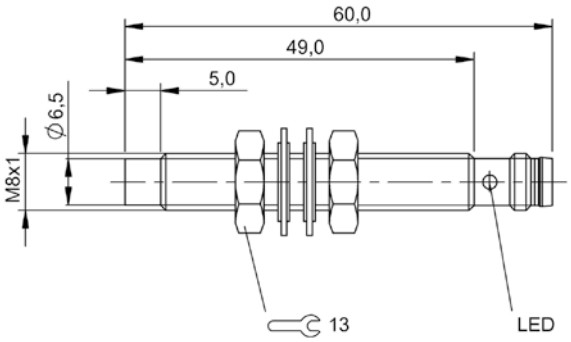
BES01P5, BES01P8, BES01P6



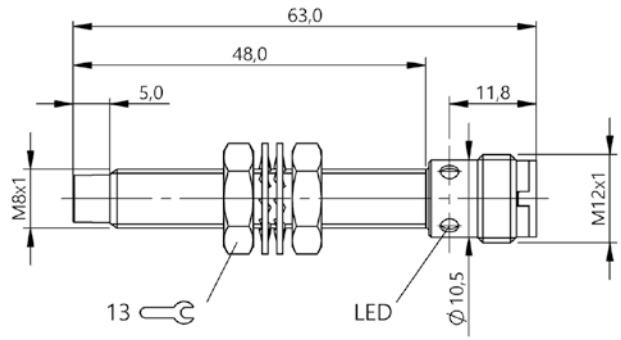
BES000M, BES000L



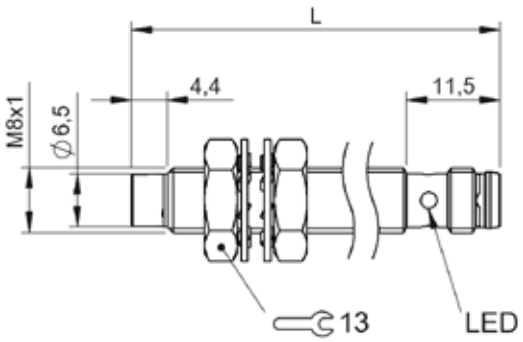
BES014M



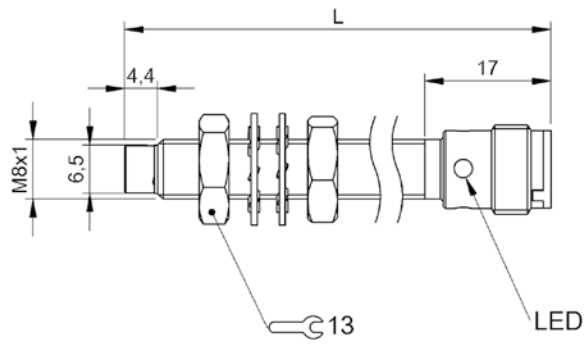
BES001C, BES001J, BES001F



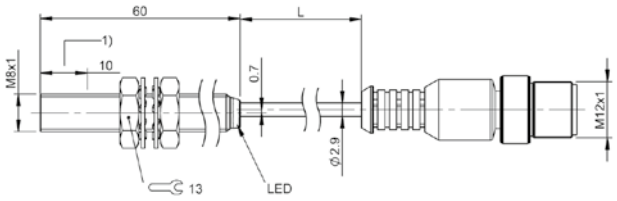
BES001A, BES01P9, BES001H, BES001E



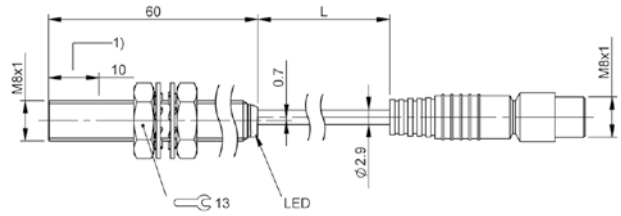
BES054Z, BES0550



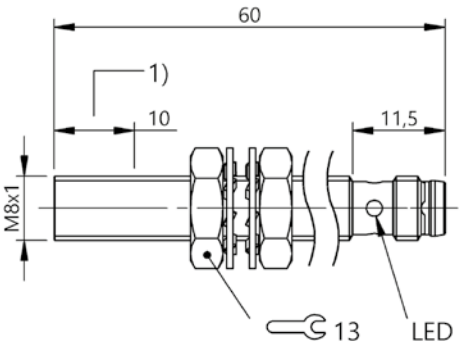
BES058J



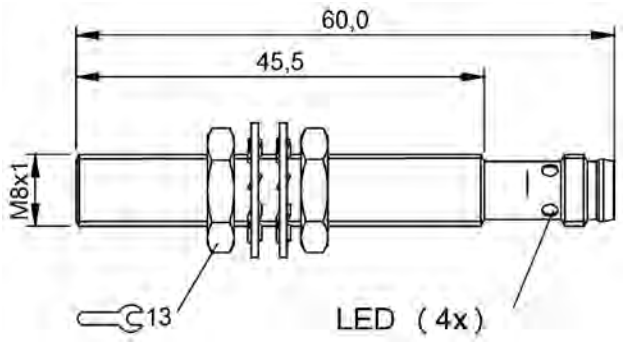
BES05UA, BES05U9



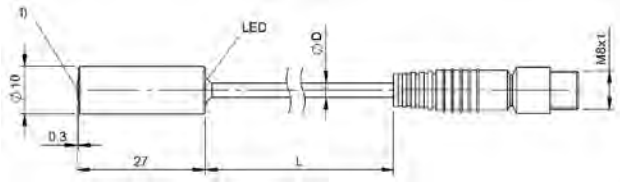
BES05U8



BES01ZT, BES01ZW

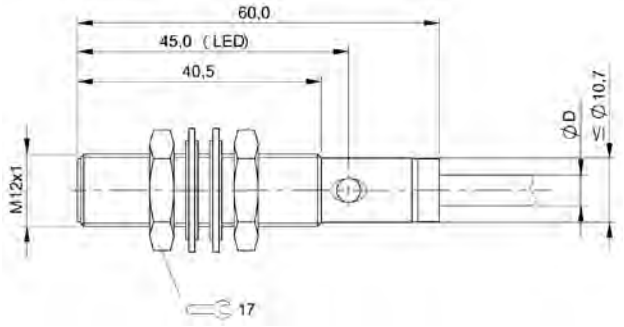


BES02W6

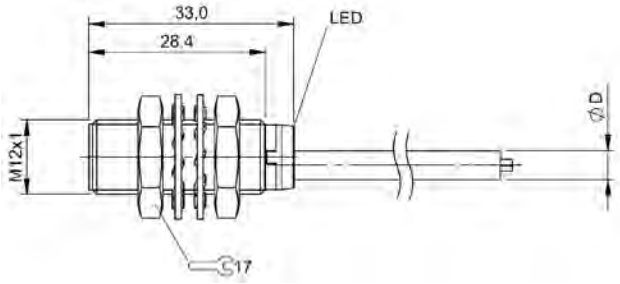


1) Sensing surface

BES04TU

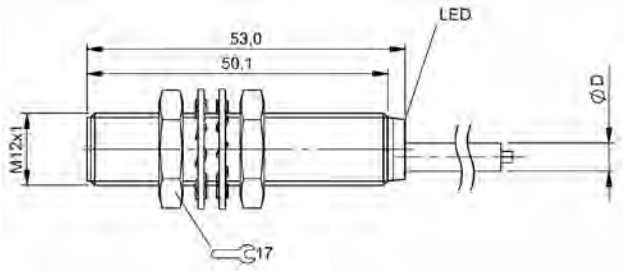


BES02C9, BES027M, BES027N

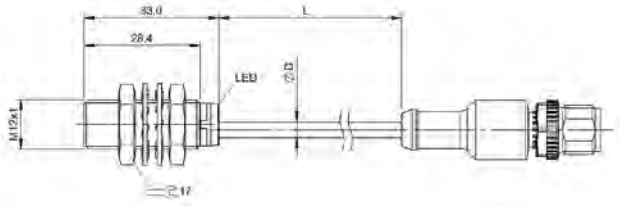


1) Sensing surface

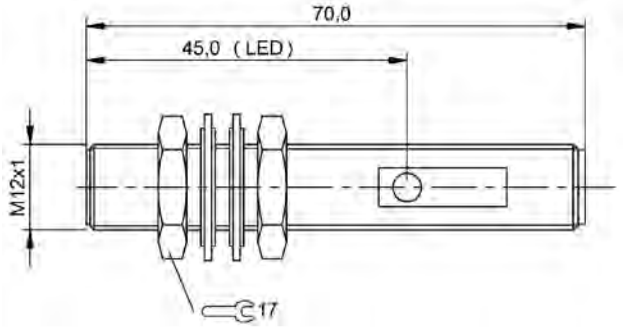
BES00E5



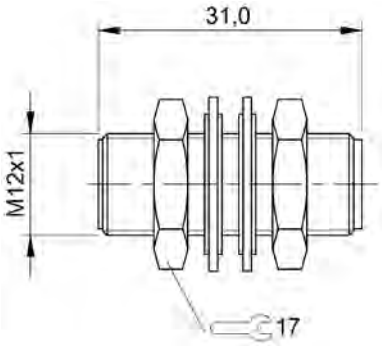
BES0057, BES0058, BES0062, BES0064, BES0001, BES0065



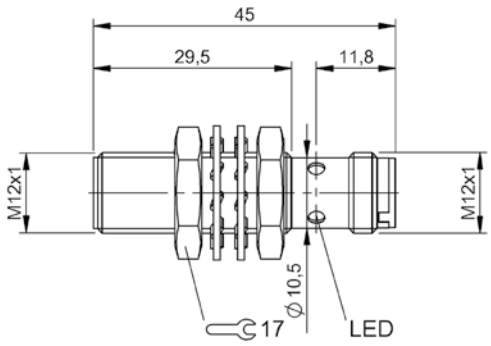
BES00PW



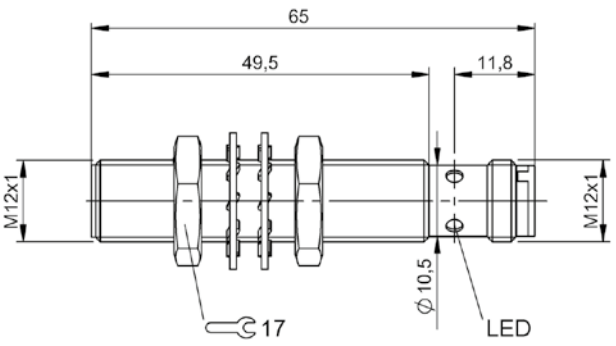
BES032M



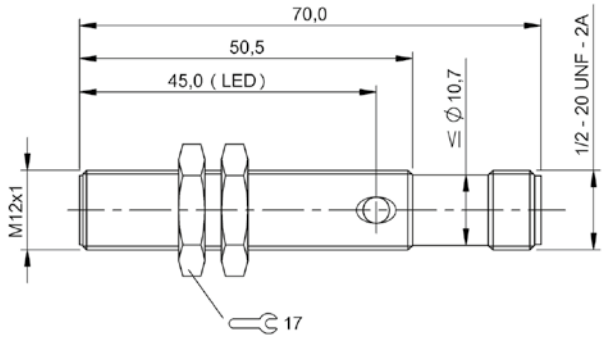
BES035E



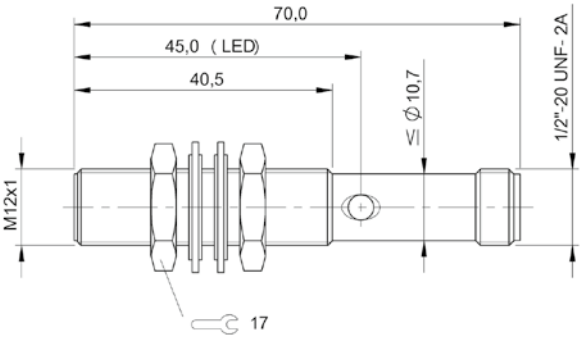
BES00PK, BES00YT, BES00EF, BES00PY, BES00Z0, BES02WM



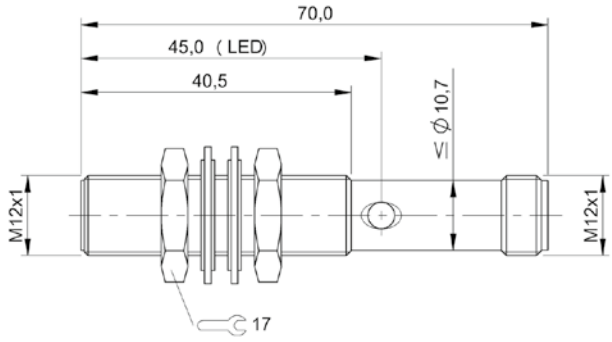
BES0060, BES04FK, BES0059, BES005N, BES0068



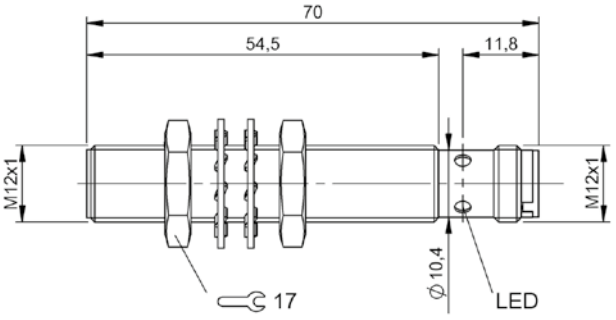
BES02FP



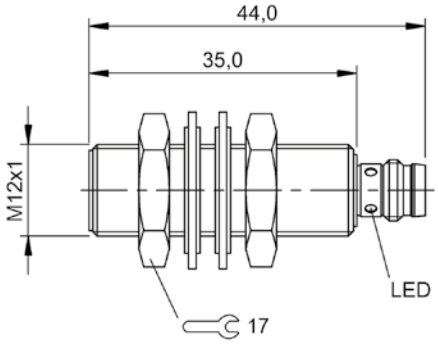
BES027U



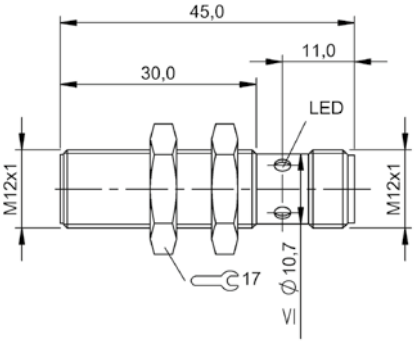
BES027W



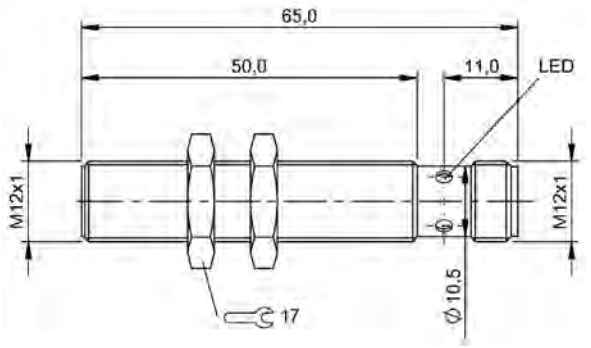
BES01C8, BES0161, BES01K6, BES01C7



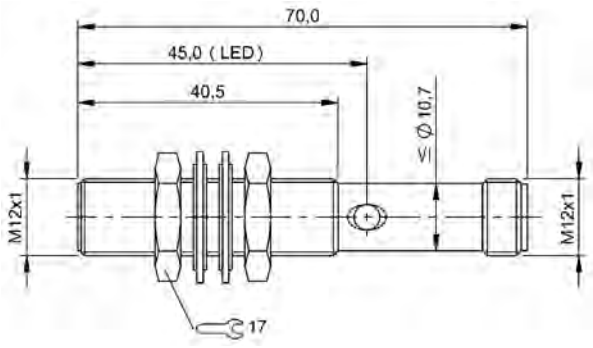
BES00PZ



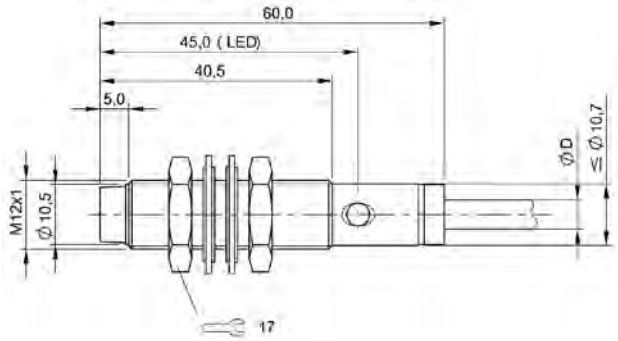
BES014W



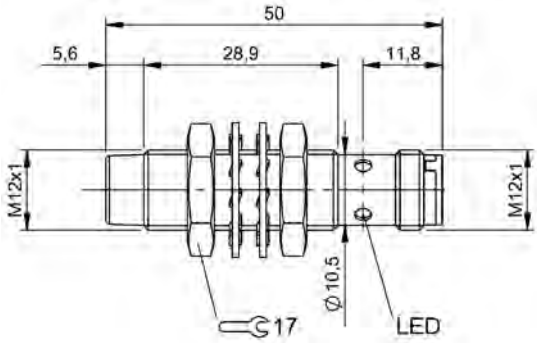
BES02FU



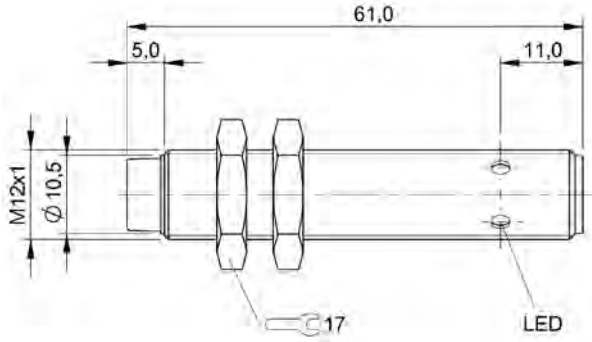
BES03AR



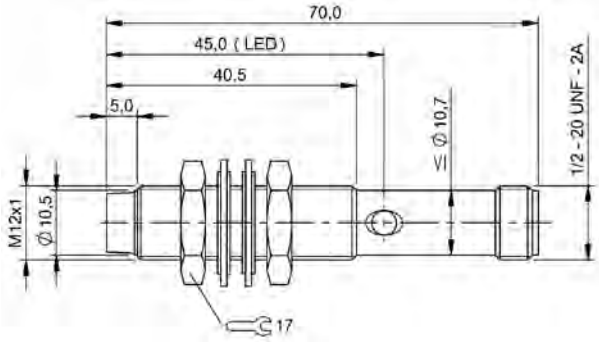
BES0285, BES0286, BES028F



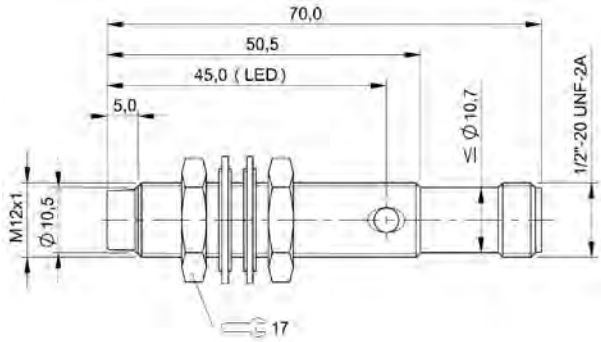
BES00UY



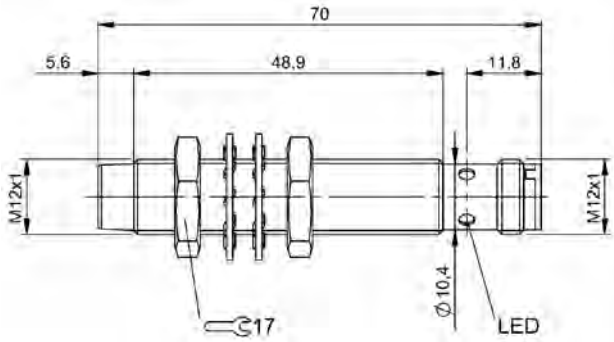
BES036T



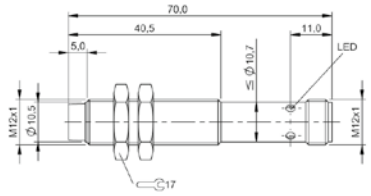
BES028A, BES0289



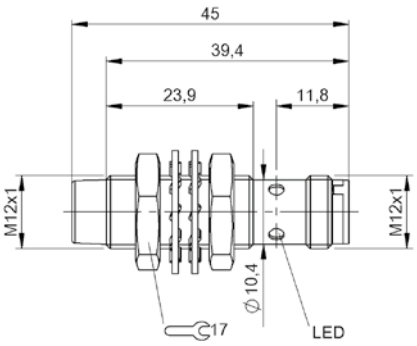
BES0330



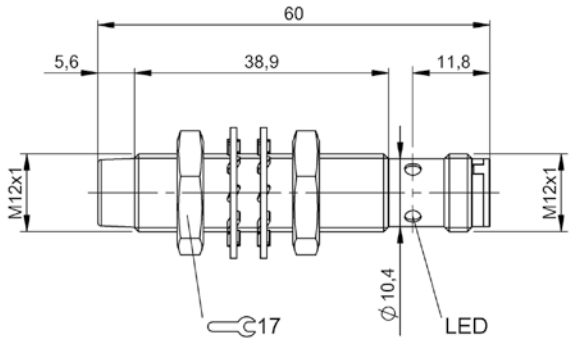
BES01H6, BES0178



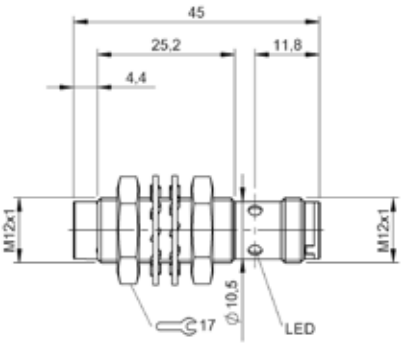
BES036R



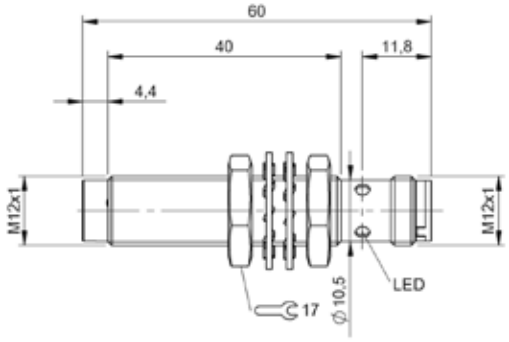
BES01PY



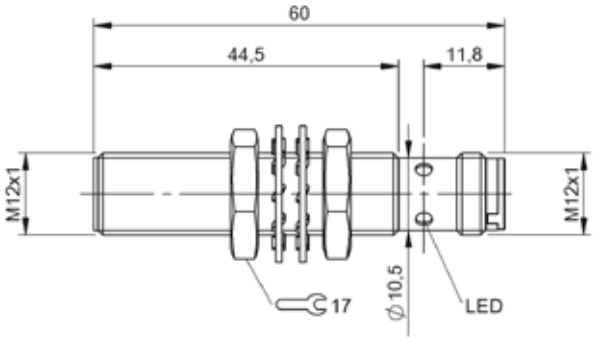
BES01PN, BES004N



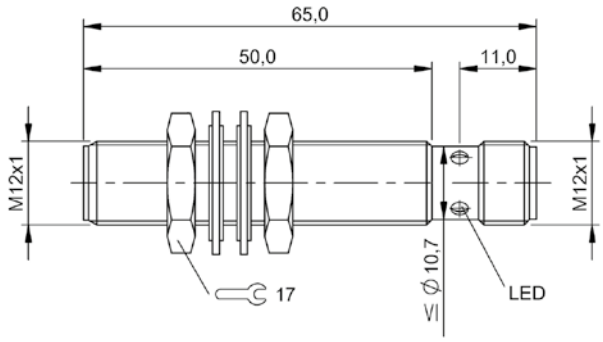
BES02WK



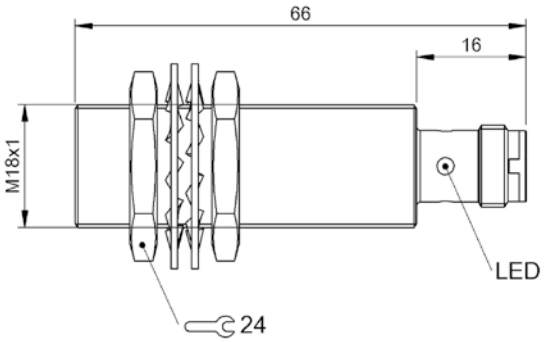
BES02WR



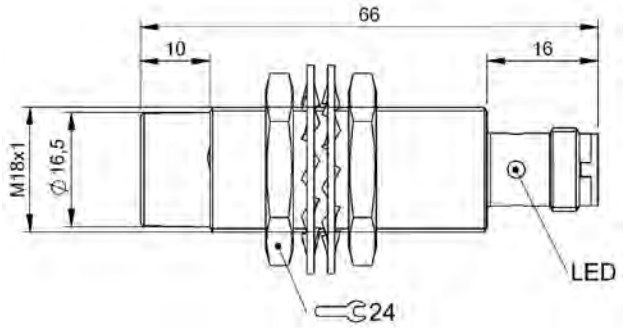
BES02WZ, BES02WY



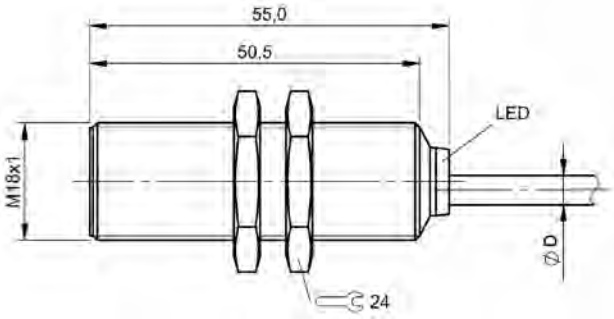
BES01ZN



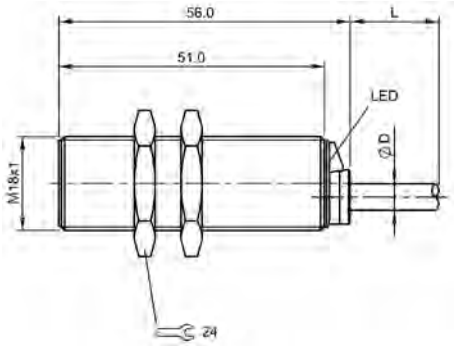
BES05EU



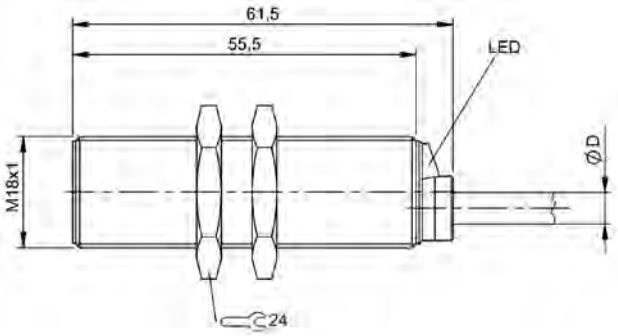
BES05EY



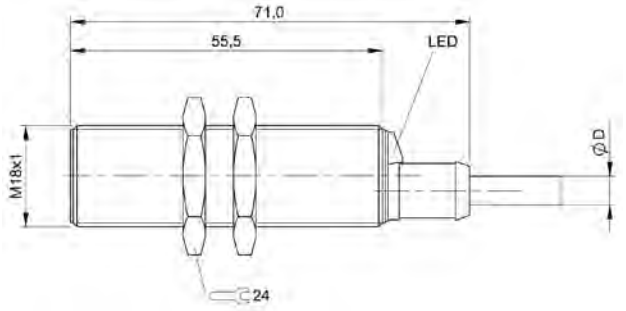
BES0083, BES008E, BES007H, BES007J, BES0089, BES008F, BES008H



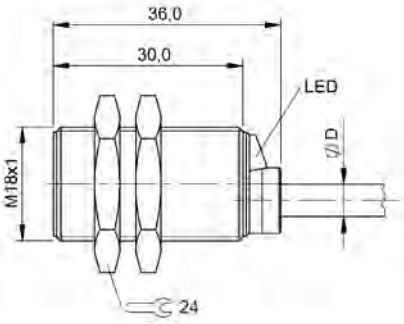
BES02AU, BES02AW



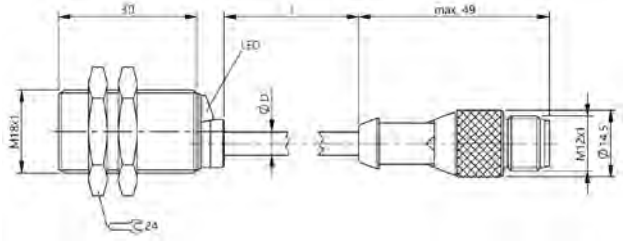
BES028L, BES028N



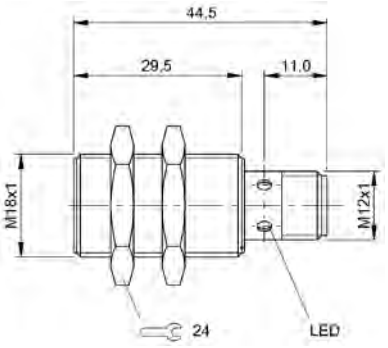
BES028U



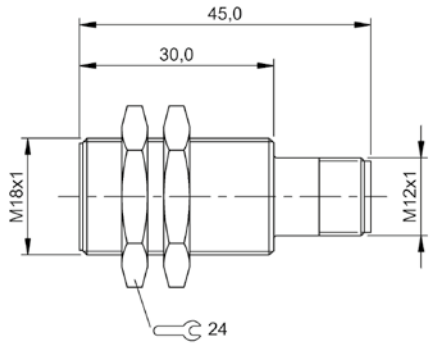
BES04F1



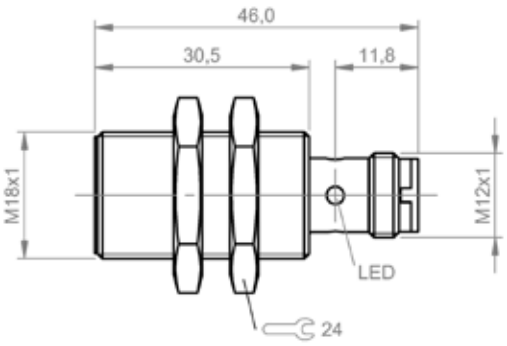
BES00R5



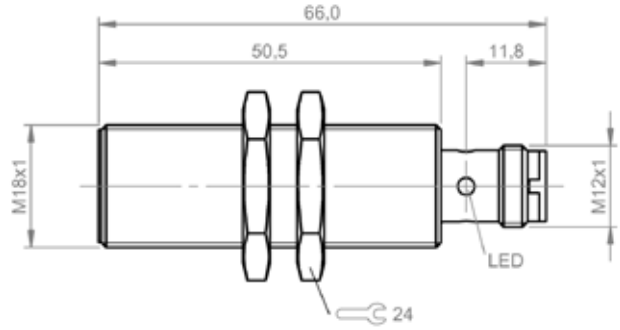
BES00R6, BES00RC, BES02P3



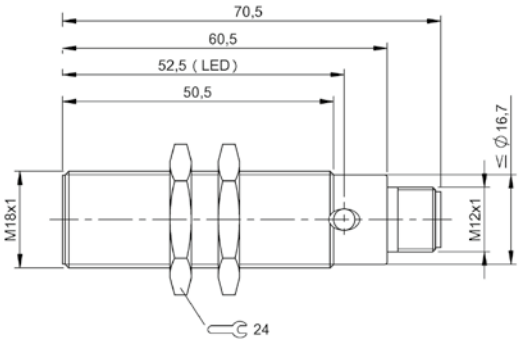
BES02ET



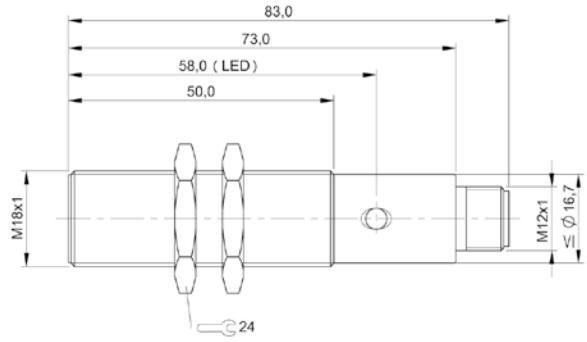
BES00EY



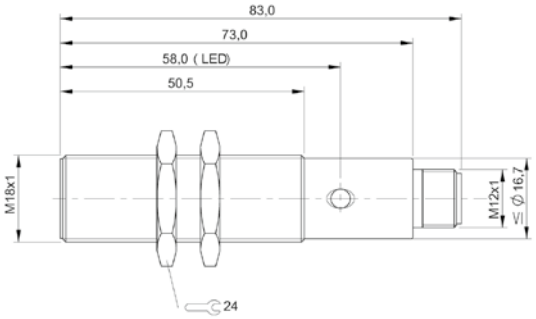
BES0086, BES008L, BES03RP



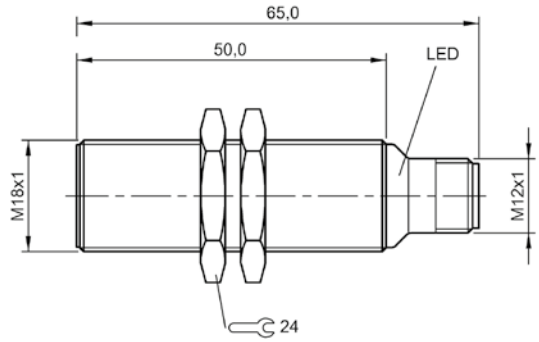
BES028R



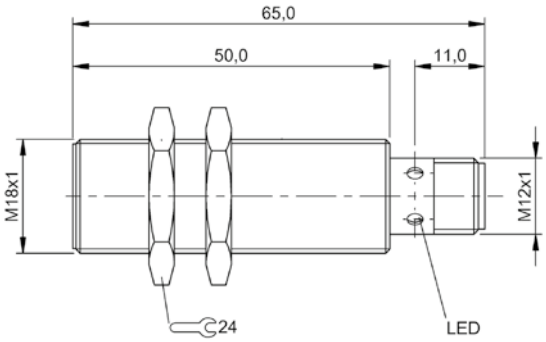
BES02EU



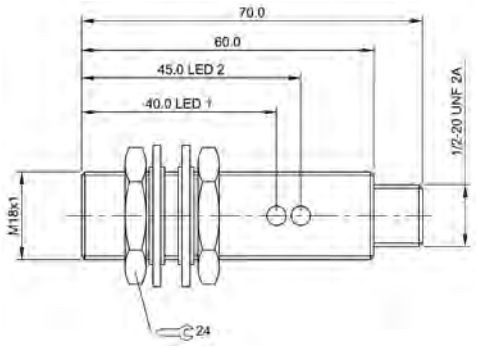
BES01CW, BES015N, BES01JW



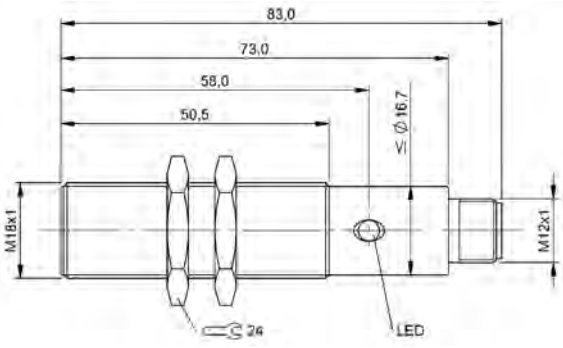
BES007M



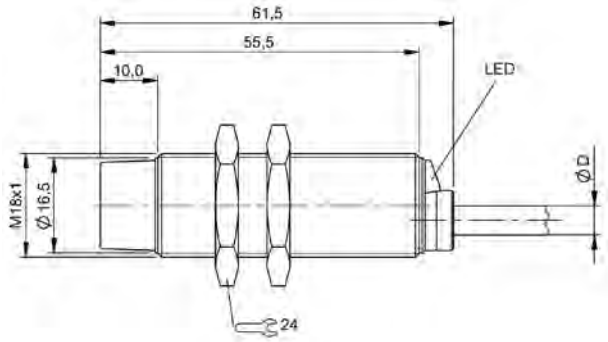
BES02H0



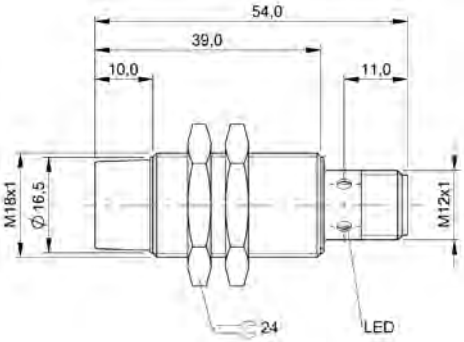
BES02ZE



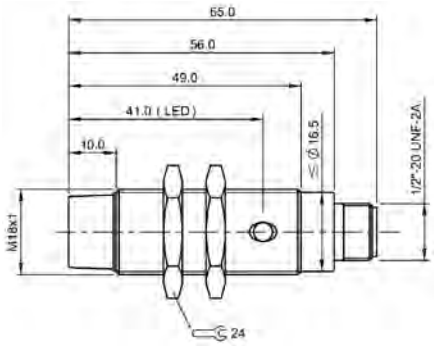
BES0496



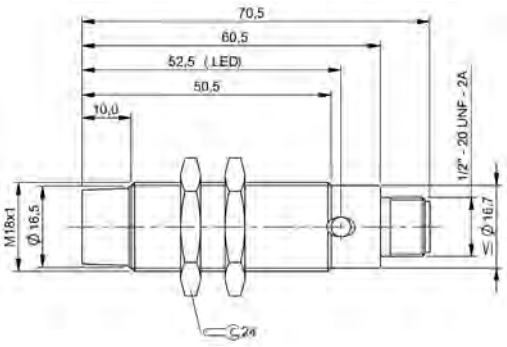
BES02C5, BES0292



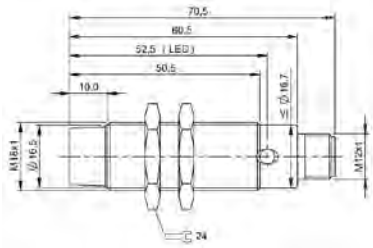
BES00WM



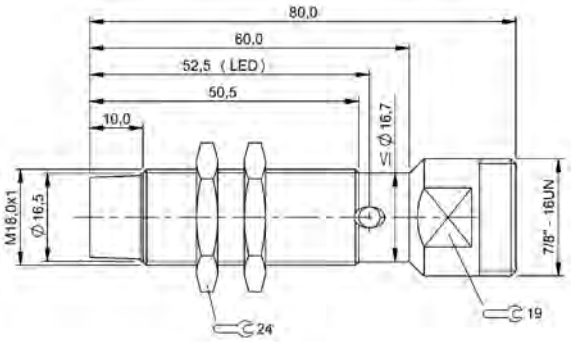
BES02C7



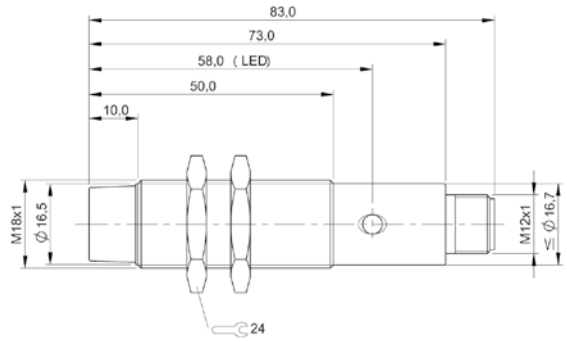
BES0296



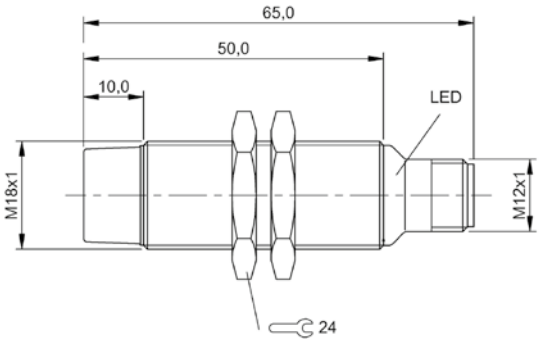
BES0297



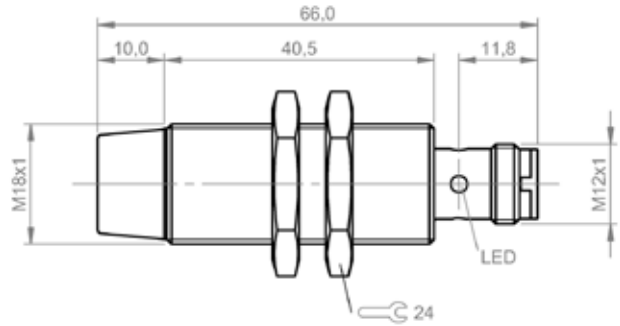
BES0298



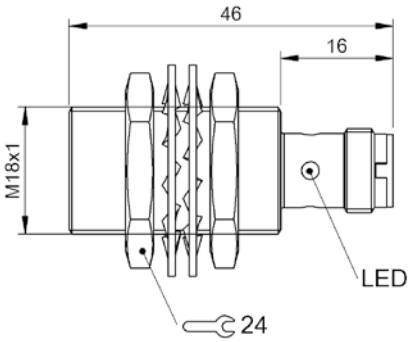
BES01HY, BES01HW, BES016W



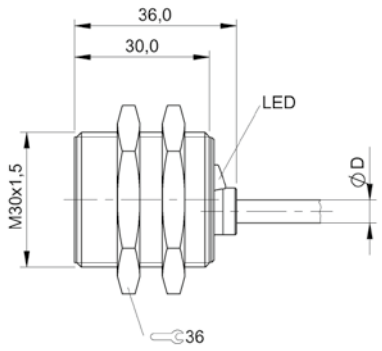
BES0070



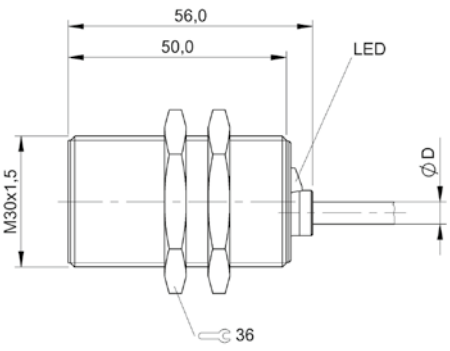
BES03RM



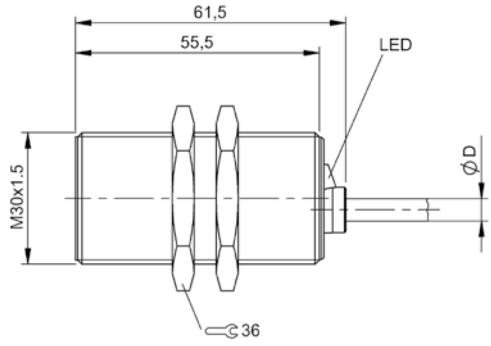
BES05ER



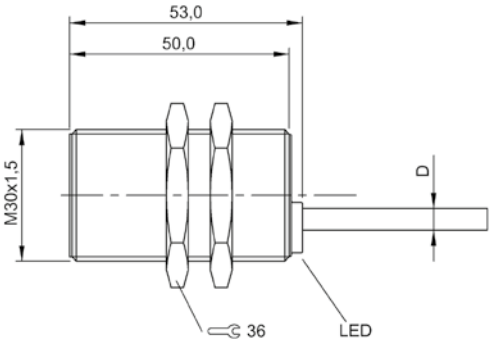
BES00RE, BES00RT, BES00LR



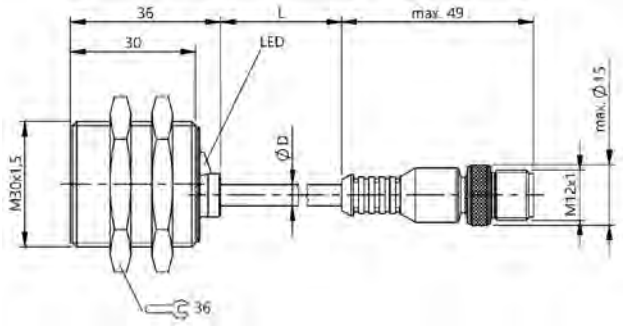
BES009E, BES00A1



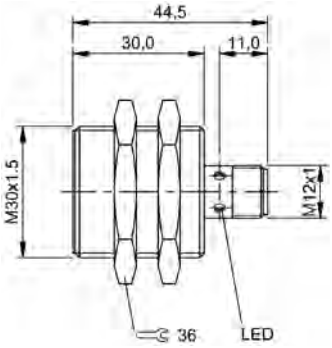
BES029L, BES029M



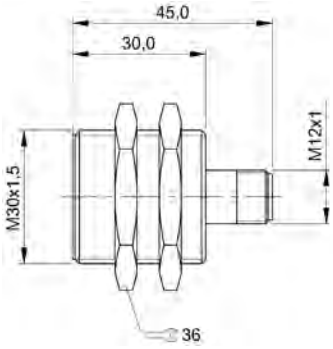
BES00AA, BES00AC



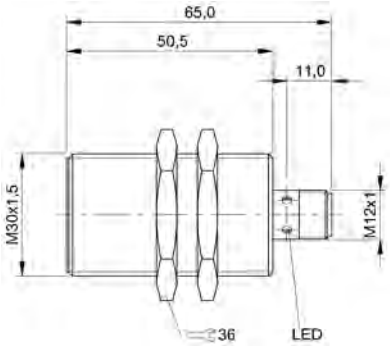
BES00LT



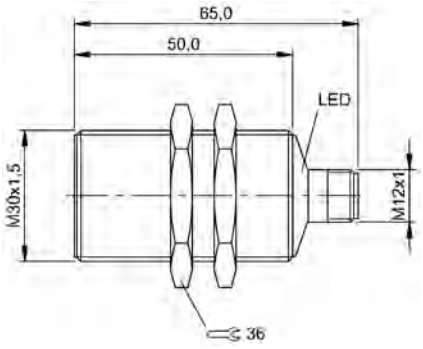
BES00RP, BES00RW, BES00LU



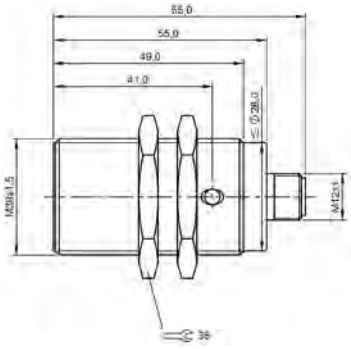
BES02F0



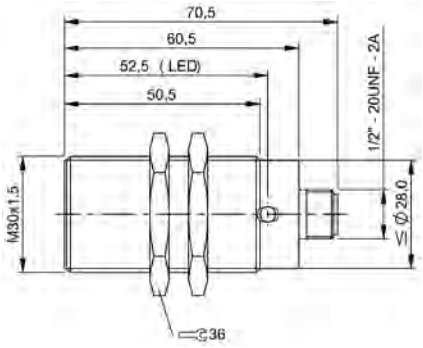
BES00A3



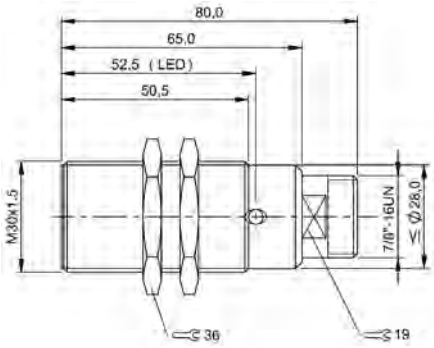
BES00A4



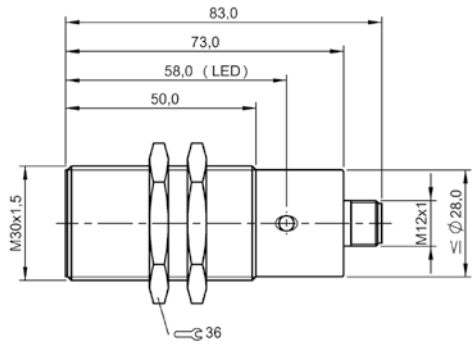
BES0316



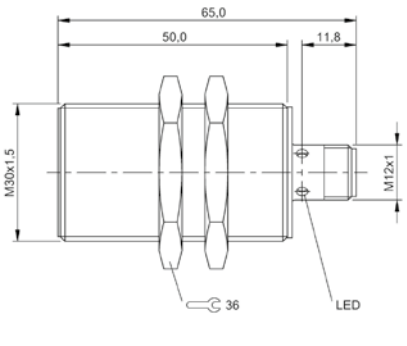
BES02E9



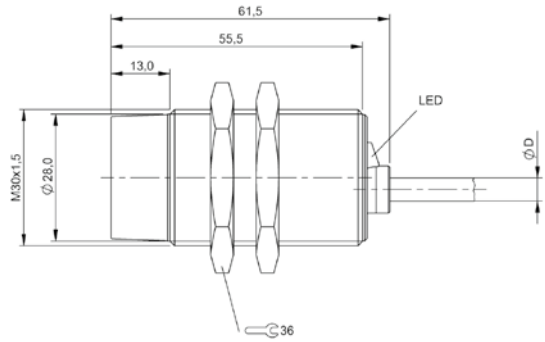
BES029W



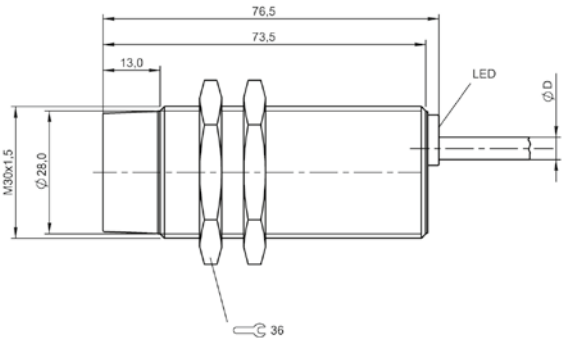
BES02F1, BES01EE, BES0167, BES01EA, BES01EC, BES0166



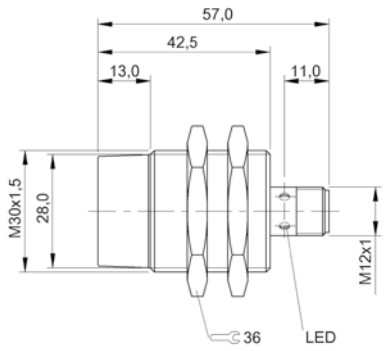
BES00AF



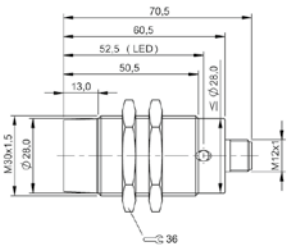
BES02A5



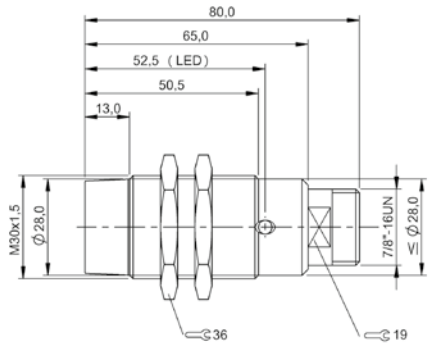
BES00AY



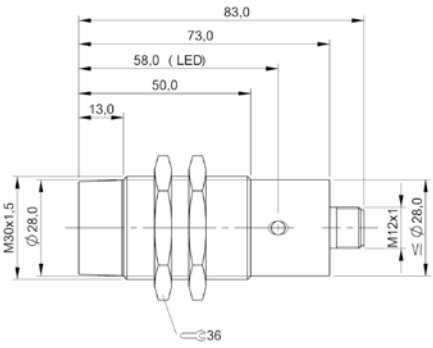
BES00Y0



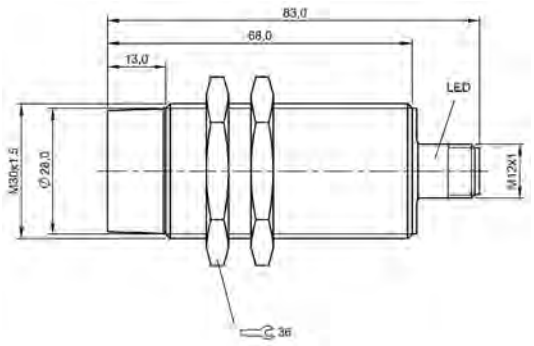
BES02AC



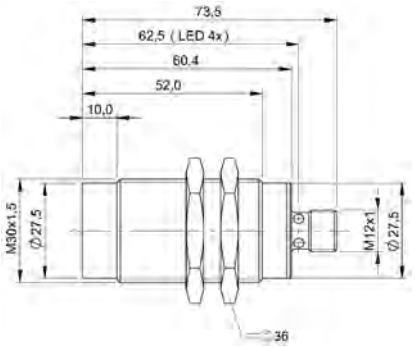
BES02AE



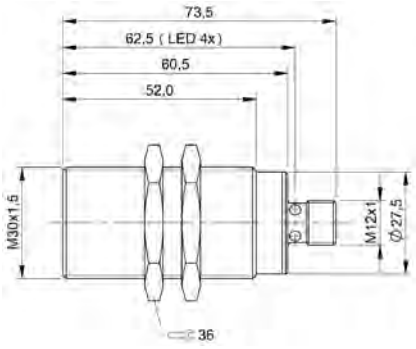
BES02FN, BES01JE, BES01JC



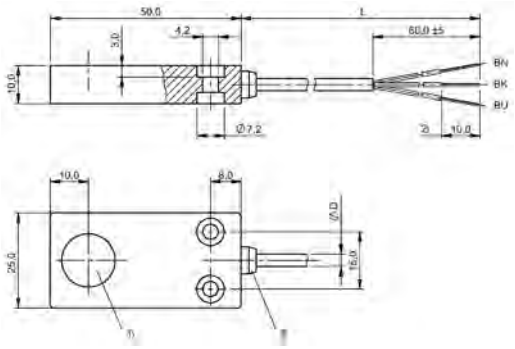
BES00AZ



BES02YJ

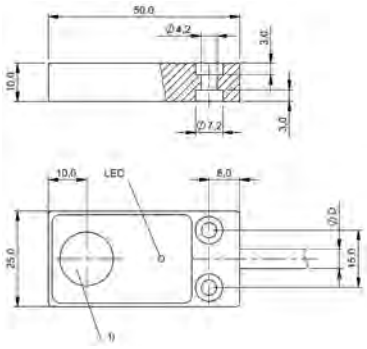


BES02YM, BES02YL



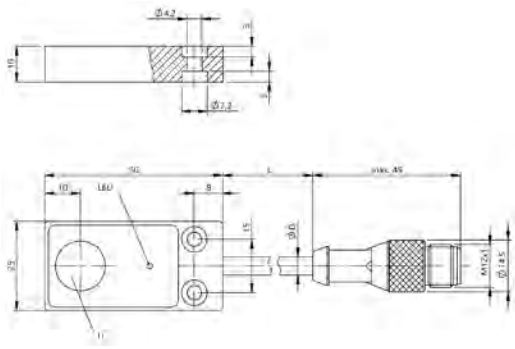
1) Sensing surface, 2) tinned, 3) LED red

BES0341



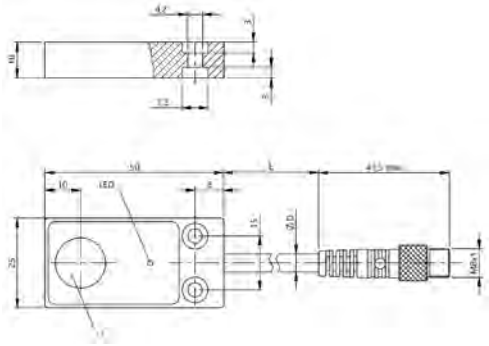
1) Sensing surface

BES01FJ, BES01FK, BES01FM, BES017H, BES032R



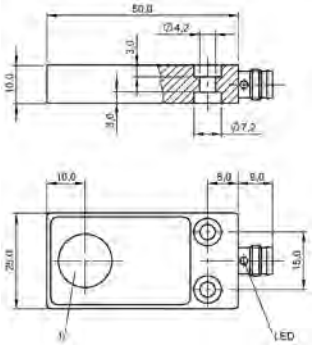
1) Sensing surface

BES01FN, BES0153



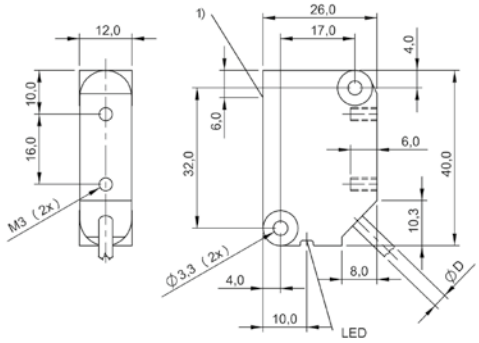
1) Sensing surface

BES01FT



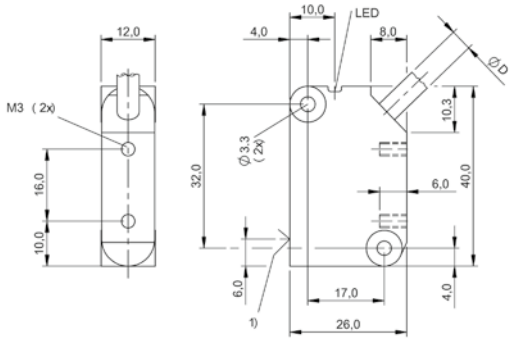
1) Sensing surface

BES01FR



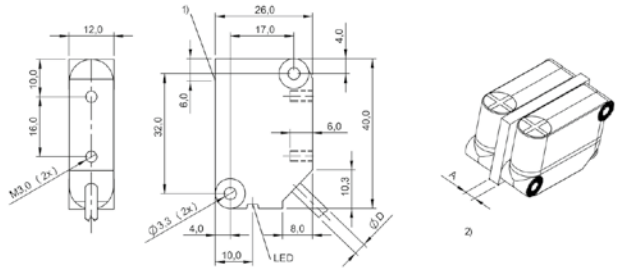
1) Sensing surface Ø8

BES02CT, BES02CU, BES01Z5



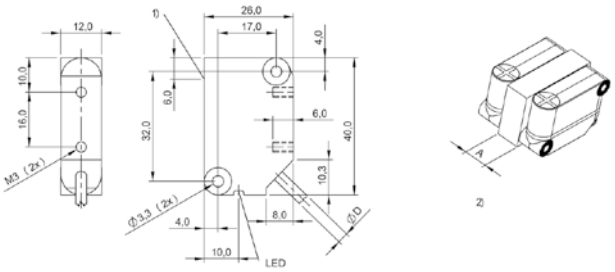
1) Sensing surface Ø8

BES01YZ



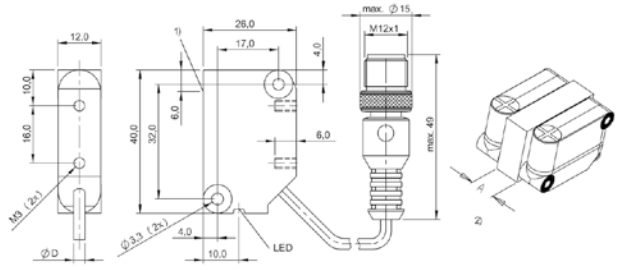
1) Sensing surface Ø8, 2) see remarks

BES02CY



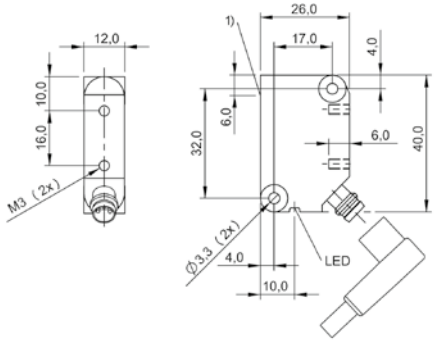
1) Sensing surface Ø8, 2) see remarks

BES01ZA, BES01ZC



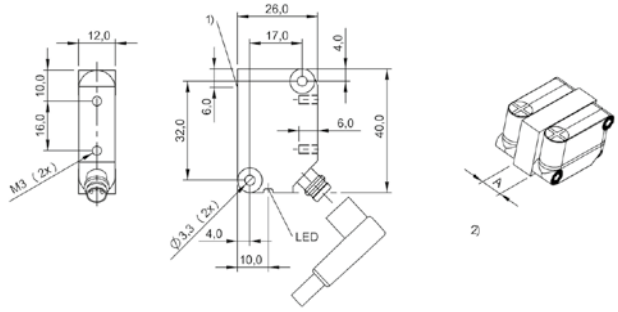
1) Sensing surface Ø8, 2) see remarks

BES01Z8



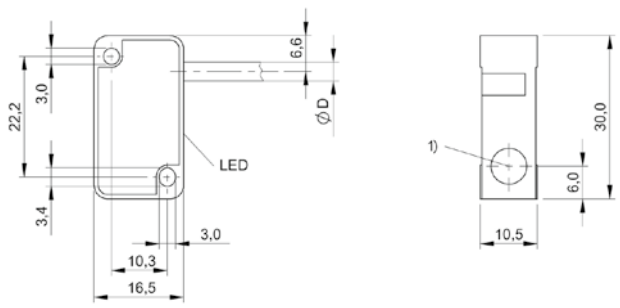
1) Sensing surface Ø8

BES01Z7, BES048A



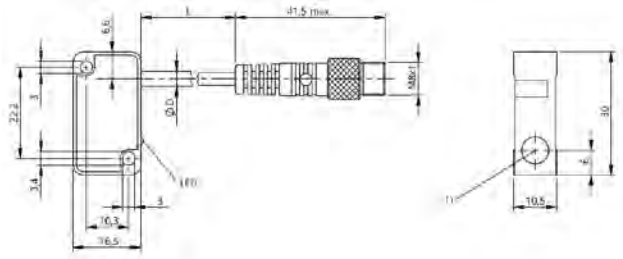
1) Sensing surface Ø8, 2) see remarks

BES01ZE, BES01Z2



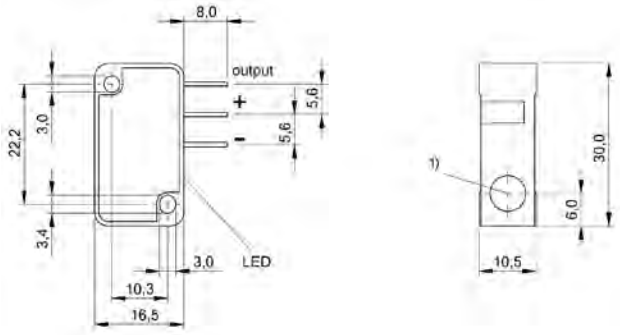
1) Sensing surface

BES01NH, BES01N5, BES01N6, BES01N8, BES01N9, BES01MM



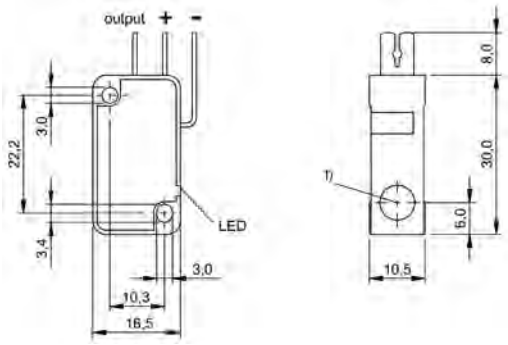
1) Sensing surface

BES01NA, BES01MT



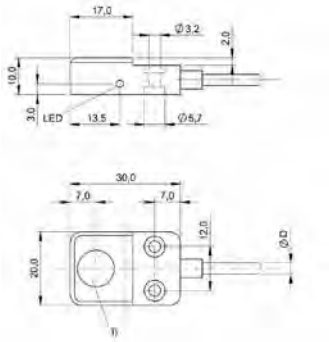
1) Sensing surface

BES01N1



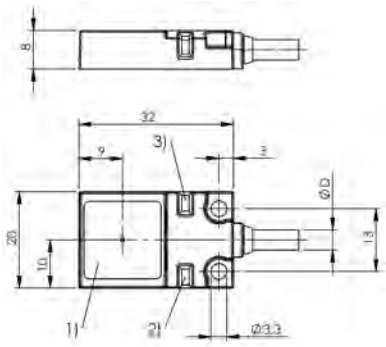
1) Sensing surface

BES01N2



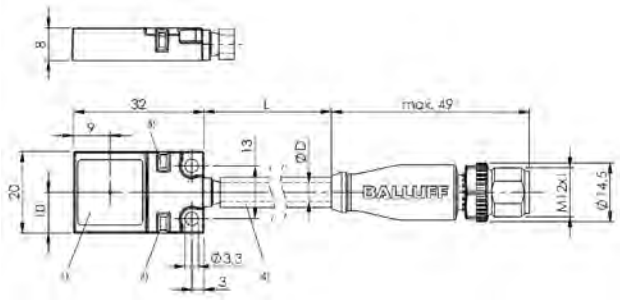
1) Sensing surface

BES033H, BES033J



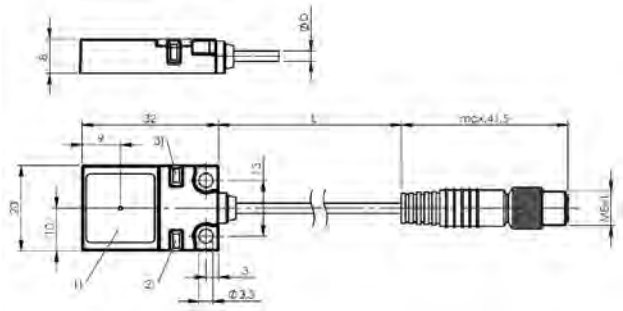
1) Sensing surface, 2) LED green, 3) LED yellow

BES01W0, BES01W4



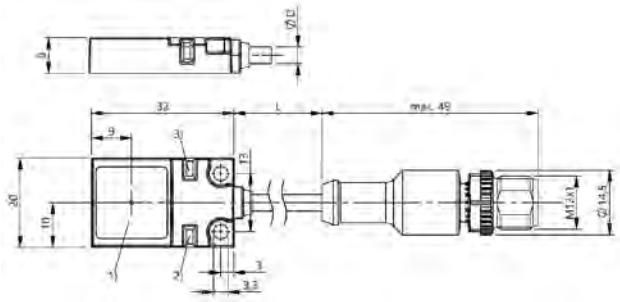
1) Sensing surface, 2) LED green, 3) LED yellow, 4) Silicon tube D=7mm

BES048N, BES048Z



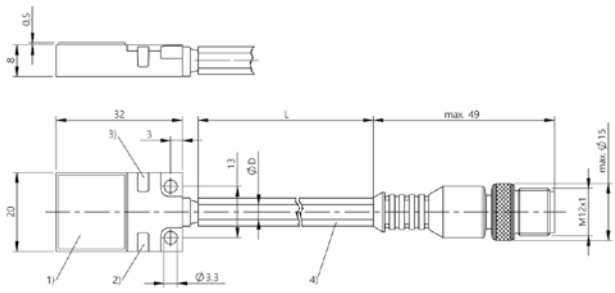
1) Sensing surface, 2) LED green, 3) LED yellow

BES01WE, BES01WF



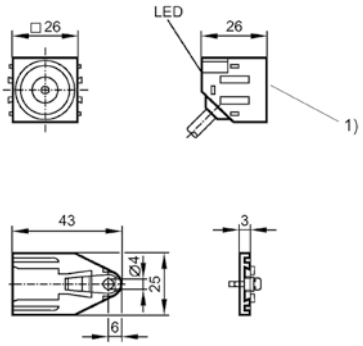
1) Sensing surface, 2) LED green, 3) LED yellow

BES01W2, BES01W3



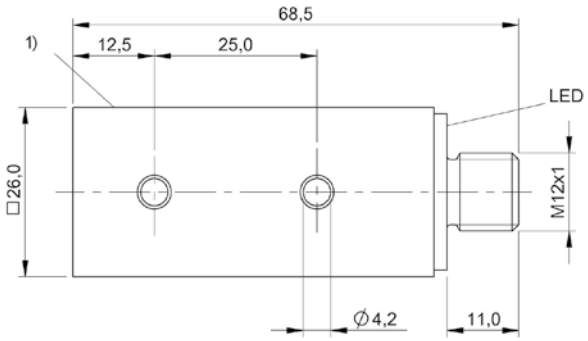
1) Sensing surface, 2) LED green, 3) LED yellow, 4) Silicon tube D=7mm

BES0314



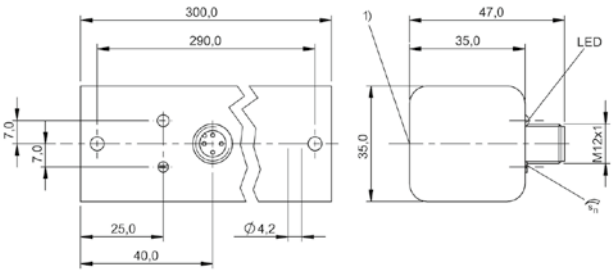
1) Sensing surface

BES030E, BES030F



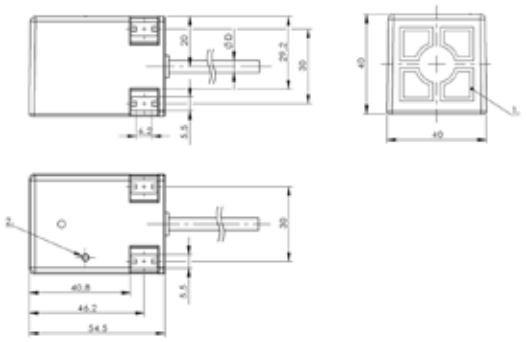
1) Sensing surface

BES022Z



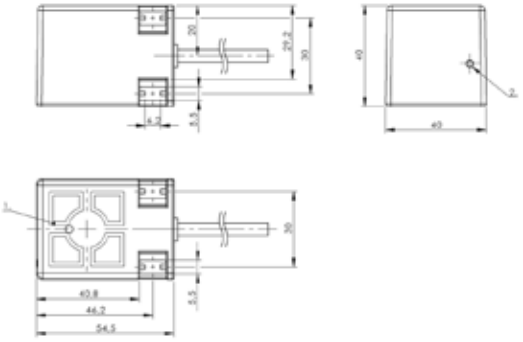
1) Sensing surface

BES02TN



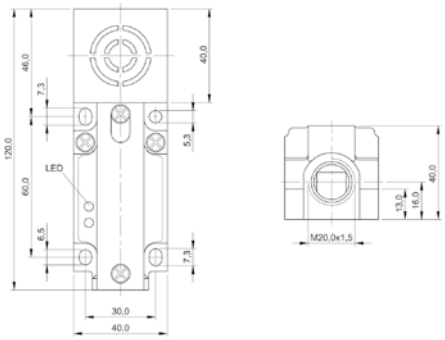
1) Sensing surface, 2) LED yellow

BES052M

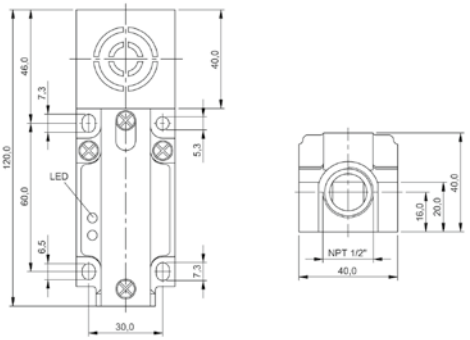


1) Sensing surface, 2) LED yellow

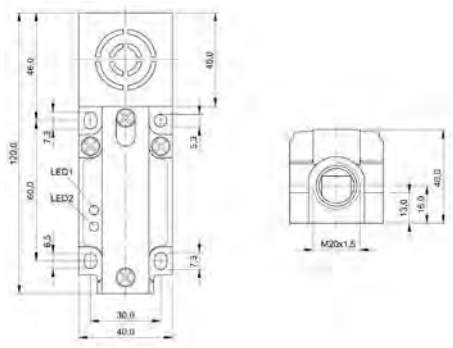
BES0555



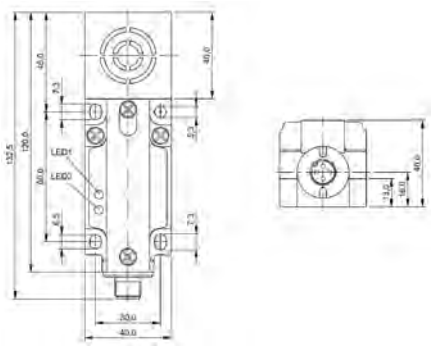
BES020Y, BES020Z, BES023Y



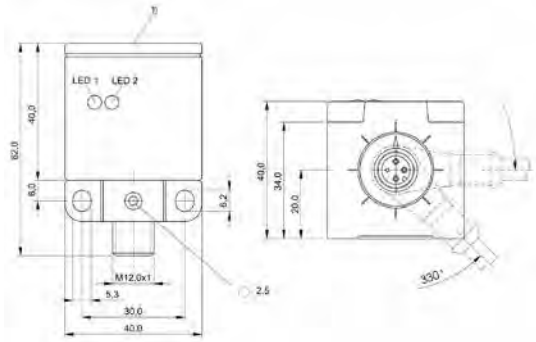
BES0241, BES0244, BES0247



BES0201, BES0209, BES0206, BES020C

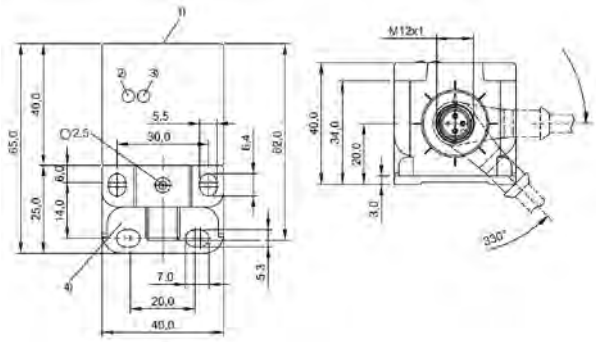


BES020A, BES0236, BES020E



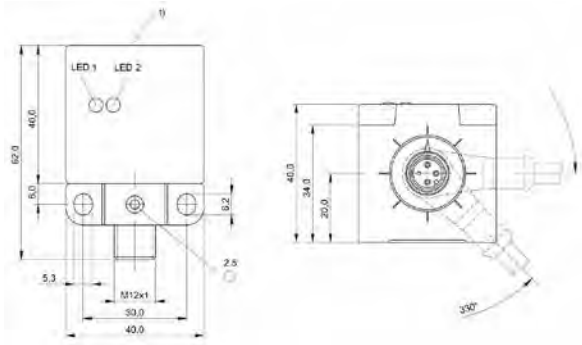
1) Sensing surface

BES021W, BES0217



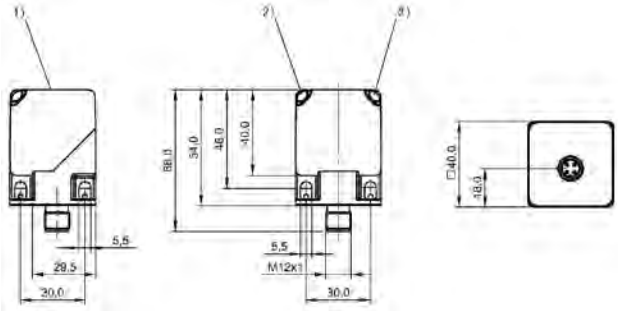
1) Sensing surface, 2) LED function indicator, 3) LED Power, 4) Metal

BES03PN



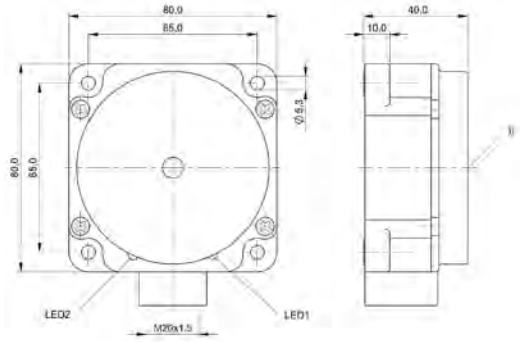
1) Sensing surface

BES021Z, BES021E



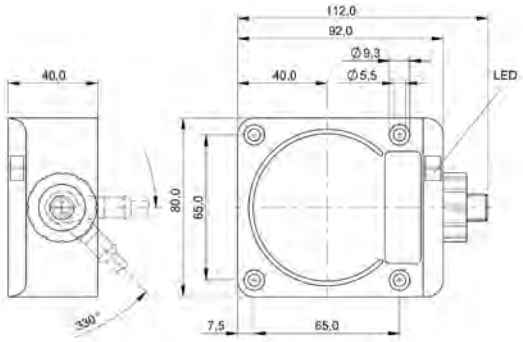
1) Sensing surface, 2) LED yellow, 3) LED green

BES0308

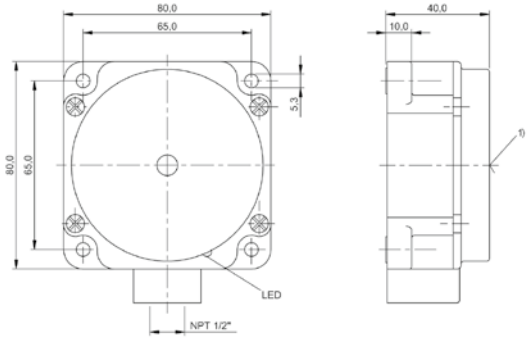


1) Sensing surface

BES023P, BES023R

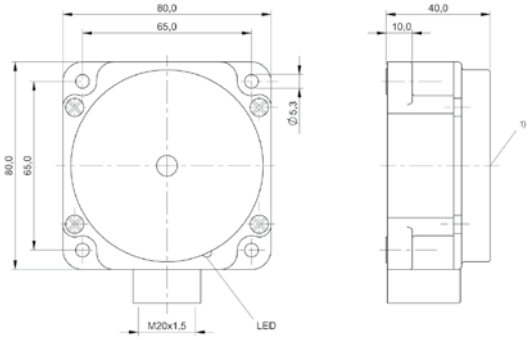


BES030C



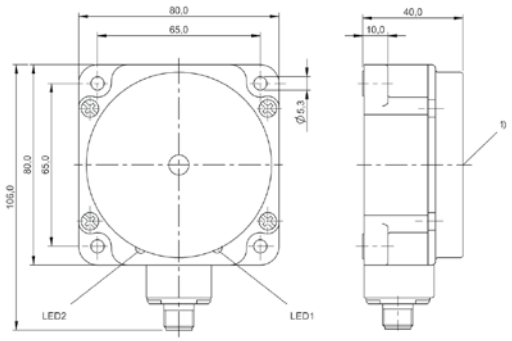
1) Sensing surface

BES022R



1) Sensing surface

BES024F



1) Sensing surface

BES023W

Polarized normally open	**BES001L** BES M08MG-GSC20B-BV02		
Non-polarized normally open		**BES001P** BES M08MG-USC20B-BP03	
Dimension	Ø 8 x 40 mm	Ø 8 x 40 mm	
Style	M8x1	M8x1	
Installation	for flush mounting	for flush mounting	
Range	2 mm	2 mm	
Switching output	polarized normally open (NO)	non-polarized normally open (NO)	
Switching frequency	1500 Hz	1500 Hz	
Housing material	Brass	Brass	
Surface protection	Nickel-free coated	Nickel-free coated	
Material sensing surface	PBT	PBT	
Connection	Cable, 2.00 m, PVC	Cable, 3.00 m, PUR	
Operating voltage Ub	10...36 VDC	10...36 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Protection degree	IP67	IP66	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	
Productview	Page 152	Page 152	




			BES0021 BES M08MG-GSC20B-BP03	
	BES001T BES M08MG-USC20B-BV02	**BES001U** BES M08MG-USC20B-BV03		**BES001W** BES M08MG-USC20B-BV05
	Ø 8 x 40 mm	Ø 8 x 40 mm	Ø 8 x 40 mm	Ø 8 x 40 mm
	M8x1	M8x1	M8x1	M8x1
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	2 mm	2 mm	2 mm	2 mm
	non-polarized normally open (NO)	non-polarized normally open (NO)	polarized normally open (NO)	non-polarized normally open (NO)
	1500 Hz	1500 Hz	1500 Hz	1500 Hz
	Brass	Brass	Brass	Brass
	Nickel-free coated	Nickel-free coated	Nickel-free coated	Nickel-free coated
	PBT	PBT	PBT	PBT
	Cable, 2.00 m, PVC	Cable, 3.00 m, PVC	Cable, 3.00 m, PUR	Cable, 5.00 m, PVC
	10...36 VDC	10...36 VDC	10...36 VDC	10...36 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP66	IP66	IP67	IP66
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	Page 152	Page 152	Page 152	Page 152

Polarized normally open			
Non-polarized normally open			
Non-polarized normally closed	**BES004T** BES M12MG-USC30B-BV02	**BES03HH** BES M08MG-UOC20B-BV03	
Dimension	Ø 12 x 43 mm	Ø 8 x 40 mm	
Style	M12x1	M8x1	
Installation	for flush mounting	for flush mounting	
Range	3 mm	2 mm	
Switching output	non-polarized normally open (NO)	non-polarized normally closed (NC)	
Switching frequency	1300 Hz	1500 Hz	
Housing material	Brass	Brass	
Surface protection	Nickel-free coated	Nickel-free coated	
Material sensing surface	PA 12	PBT	
Connection	Cable, 2.00 m, PVC	Cable, 3.00 m, PVC	
Operating voltage Ub	10...36 VDC	10...36 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	
Productview	Page 152	Page 152	




	BES001Z BES M08MG-GSC20B-BP00,3-GS04	BES0324 BES M08MG-GSC20B-BP00,3-GS04-101	BES0022 BES M08ME1-GSC20B-S04G	BES001Y BES M08ME1-USC20B-S04G
	Ø 8 x 40 mm	Ø 8 x 40 mm	Ø 8 x 50 mm	Ø 8 x 50 mm
	M8x1	M8x1	M8x1	M8x1
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	2 mm	2 mm	2 mm	2 mm
	polarized normally open (NO)	polarized normally open (NO)	polarized normally open (NO)	non-polarized normally open (NO)
	1500 Hz	1500 Hz	1500 Hz	1500 Hz
	Brass	Brass	Brass	Brass
	Nickel-free coated	Nickel-free coated	Nickel-free coated	Nickel-free coated
	PBT	ceramic coated	PBT	PBT
	Cable with connector, M12x1 connector, 4-pin, 0.30 m, PUR	Cable with connector, M12x1 connector, 4-pin, 0.30 m, PUR	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	10...36 VDC	10...30 VDC	10...36 VDC	10...36 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	Page 152	Page 152	Page 152	Page 152

Polarized normally open			
Polarized normally closed			
Non-polarized normally open	**BES004P** BES M12MG-USC30B-BP03	**BES004T** BES M12MG-USC30B-BV02	
Non-polarized normally closed			
Dimension	Ø 12 x 43 mm	Ø 12 x 43 mm	
Style	M12x1	M12x1	
Installation	for flush mounting	for flush mounting	
Range	3 mm	3 mm	
Switching output	non-polarized normally open (NO)	non-polarized normally open (NO)	
Switching frequency	1300 Hz	1300 Hz	
Housing material	Brass	Brass	
Surface protection	Nickel-free coated	Nickel-free coated	
Material sensing surface	PA 12	PA 12	
Connection	Cable, 3.00 m, PUR	Cable, 2.00 m, PVC	
Operating voltage Ub	10...36 VDC	10...36 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	
Productview	Page 152	Page 152	




	BES0046 BES M12MG-GSC30B-BV03			
	BES0474 BES M12MG-GOC30B-BV03			
		BES004U BES M12MG-USC30B-BV03	**BES004W** BES M12MG-USC30B-BV05	
				BES03HM BES M12MG-UOC30B-BV03
	Ø 12 x 43 mm	Ø 12 x 43 mm	Ø 12 x 43 mm	Ø 12 x 43 mm
	M12x1	M12x1	M12x1	M12x1
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	3 mm	3 mm	3 mm	3 mm
	polarized normally open (NO)	non-polarized normally open (NO)	non-polarized normally open (NO)	non-polarized normally closed (NC)
	1300 Hz	1300 Hz	1300 Hz	1300 Hz
	Brass	Brass	Brass	Brass
	Nickel-free coated	Nickel-free coated	Nickel-free coated	Nickel-free coated
	PA 12	PA 12	PA 12	PA 12
	Cable, 3.00 m, PVC	Cable, 3.00 m, PVC	Cable, 5.00 m, PVC	Cable, 3.00 m, PVC
	10...36 VDC	10...36 VDC	10...36 VDC	10...36 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	Page 152	Page 152	Page 152	Page 152

Polarized normally open	**BES0042** BES M12MG-GSC30B-BP00,3-GS04	**BES0326** BES M12MG-GSC30B-BP00,3-GS04-101	
Non-polarized normally open			
Dimension	Ø 12 x 43 mm	Ø 12 x 43 mm	
Style	M12x1	M12x1	
Installation	for flush mounting	for flush mounting	
Range	3 mm	3 mm	
Switching output	polarized normally open (NO)	polarized normally open (NO)	
Switching frequency	1300 Hz	1300 Hz	
Housing material	Brass	Brass	
Surface protection	Nickel-free coated	Nickel-free coated	
Material sensing surface	PA 12	LCP PTFE	
Connection	Cable with connector, M12x1 connector, 4-pin, 0.30 m, PUR	Cable with connector, M12x1 connector, 4-pin, 0.30 m, PUR	
Operating voltage Ub	10...36 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	
Productview	Page 152	Page 152	




	BES039W BES M12MG-GSC30B-BX00,3-GS04-U	BES003Z BES M12MF-GSC30B-S04G		
			BES0041 BES M12MF-USC30B-S04G	BES0073 BES M18MG-USC70B-BV02
	Ø 12 x 43 mm	Ø 12 x 50 mm	Ø 12 x 50 mm	Ø 18 x 46 mm
	M12x1	M12x1	M12x1	M18x1
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	3 mm	3 mm	3 mm	7 mm
	polarized normally open (NO)	polarized normally open (NO)	non-polarized normally open (NO)	non-polarized normally open (NO)
	1300 Hz	1300 Hz	1300 Hz	600 Hz
	Brass	Brass	Brass	Brass
	coated, PTFE	Nickel-free coated	Nickel-free coated	Nickel-free coated
	LCP PTFE	PA 12	PA 12	PA 12
	Cable with connector, M12x1 connector, 4-pin, 0.30 m, PUR	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Cable, 2.00 m, PVC
	10...36 VDC	10...36 VDC	10...36 VDC	10...36 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	Page 152	Page 152	Page 152	Page 152

Polarized normally open			
Non-polarized normally open	**BES0074** BES M18MG-USC70B-BV03	**BES0071** BES M18MG-USC70B-BP03	
Dimension	Ø 18 x 46 mm	Ø 18 x 46 mm	
Style	M18x1	M18x1	
Installation	for flush mounting	for flush mounting	
Range	7 mm	7 mm	
Switching output	non-polarized normally open (NO)	non-polarized normally open (NO)	
Switching frequency	600 Hz	600 Hz	
Housing material	Brass	Brass	
Surface protection	Nickel-free coated	Nickel-free coated	
Material sensing surface	PA 12	PA 12	
Connection	Cable, 3.00 m, PVC	Cable, 3.00 m, PUR	
Operating voltage Ub	10...36 VDC	10...36 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	
Productview	Page 152	Page 152	

	BES006C BES M18MG-GSC70B-BP00,3-GS04	BES03FJ BES M18MG-GSC70B-BX00,3-GS04-U	BES0069 BES M18MF-GSC70B-S04K	BES006A BES M18MF-USC70B-S04K
	Ø 18 x 46 mm	Ø 18 x 46 mm	Ø 18 x 50 mm	Ø 18 x 50 mm
	M18x1	M18x1	M18x1	M18x1
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	7 mm	7 mm	7 mm	7 mm
	polarized normally open (NO)	polarized normally open (NO)	polarized normally open (NO)	non-polarized normally open (NO)
	600 Hz	600 Hz	600 Hz	600 Hz
	Brass	Brass	Brass	Brass
	Nickel-free coated	coated, PTFE	Nickel-free coated	Nickel-free coated
	PA 12	LCP PTFE	PA 12	PA 12
	Cable with connector, M12x1 connector, 4-pin, 0.30 m, PUR	Cable with connector, M12x1 connector, 4-pin, 0.30 m, PUR	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	10...36 VDC	10...36 VDC	10...36 VDC	10...36 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	Page 153	Page 153	Page 153	Page 153

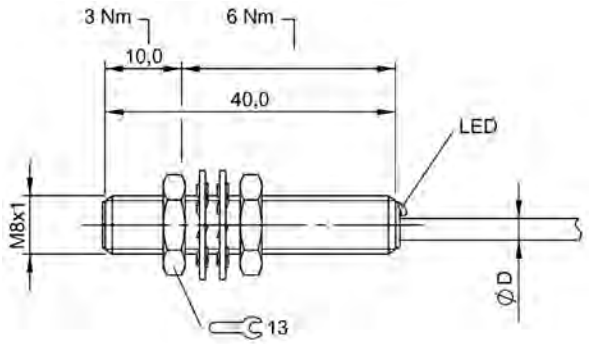
Polarized normally open	**BES0328** BES M18MF-GSC70B-S04G	**BES03FH** BES M18MF-GSC70B-S04G-U	
Non-polarized normally open			
Dimension	Ø 18 x 51 mm	Ø 18 x 51 mm	
Style	M18x1	M18x1	
Installation	for flush mounting	for flush mounting	
Range	7 mm	7 mm	
Switching output	polarized normally open (NO)	polarized normally open (NO)	
Switching frequency	600 Hz	600 Hz	
Housing material	Brass	Brass	
Surface protection	Nickel-free coated	coated, PTFE	
Material sensing surface	PA 12	LCP PTFE	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	10...36 VDC	10...36 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	
Productview	Page 153	Page 153	



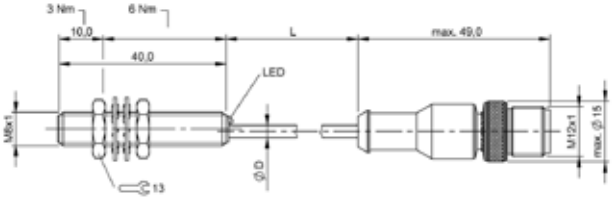

		BES008R BES M30MF-GSC15B-BV02		
	BES02NR BES M18MF-USC70B-S04G		**BES0091** BES M30MF-USC15B-BV02	**BES0092** BES M30MF-USC15B-BV03
	Ø 18 x 51 mm	Ø 30 x 42.5 mm	Ø 30 x 42.5 mm	Ø 30 x 42.5 mm
	M18x1	M30x1.5	M30x1.5	M30x1.5
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	7 mm	15 mm	15 mm	15 mm
	non-polarized normally open (NO)	polarized normally open (NO)	non-polarized normally open (NO)	non-polarized normally open (NO)
	600 Hz	400 Hz	400 Hz	400 Hz
	Brass	Brass	Brass	Brass
	Nickel-free coated	Nickel-free coated	Nickel-free coated	Nickel-free coated
	PA 12	PA 12	PA 12	PA 12
	Connector, M12x1 connector, 4-pin	Cable, 2.00 m, PVC	Cable, 2.00 m, PVC	Cable, 3.00 m, PVC
	10...36 VDC	10...36 VDC	10...36 VDC	10...36 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	Page 153	Page 153	Page 153	Page 153

Polarized normally open		**BES027K** BES M30MF-GSC15B-BX00,3-GS04-U	
Non-polarized normally open	**BES008Z** BES M30MF-USC15B-BP03		
Dimension	Ø 30 x 42.5 mm	Ø 30 x 42.5 mm	
Style	M30x1.5	M30x1.5	
Installation	for flush mounting	for flush mounting	
Range	15 mm	15 mm	
Switching output	non-polarized normally open (NO)	polarized normally open (NO)	
Switching frequency	400 Hz	400 Hz	
Housing material	Brass	Brass	
Surface protection	Nickel-free coated	coated, PTFE	
Material sensing surface	PA 12	LCP PTFE	
Connection	Cable, 3.00 m, PUR	Cable with connector, M12x1 connector, 4-pin, 0.30 m, PUR	
Operating voltage Ub	10...36 VDC	10...36 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	
Productview	Page 153	Page 153	

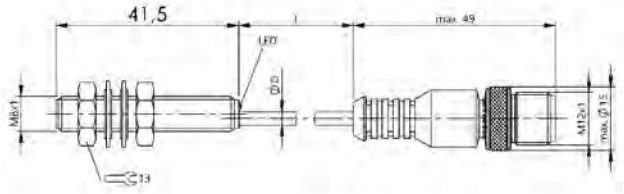
	BES008W BES M30MF-GSC15B-S04K		BES03KL BES M30MF-GSC15B-S04G-U	
		BES0094 BES M30MF-USC15B-S04K		
	Ø 30 x 50 mm	Ø 30 x 50 mm	Ø 30 x 51 mm	
	M30x1.5	M30x1.5	M30x1.5	
	for flush mounting	for flush mounting	for flush mounting	
	15 mm	15 mm	15 mm	
	polarized normally open (NO)	non-polarized normally open (NO)	polarized normally open (NO)	
	400 Hz	400 Hz	400 Hz	
	Brass	Brass	Brass	
	Nickel-free coated	Nickel-free coated	coated, PTFE	
	PA 12	PA 12	LCP PTFE	
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
	10...36 VDC	10...36 VDC	10...36 VDC	
	-25...70 °C	-25...70 °C	-25...70 °C	
	IP67	IP67	IP67	
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	
	Page 153	Page 153	Page 154	



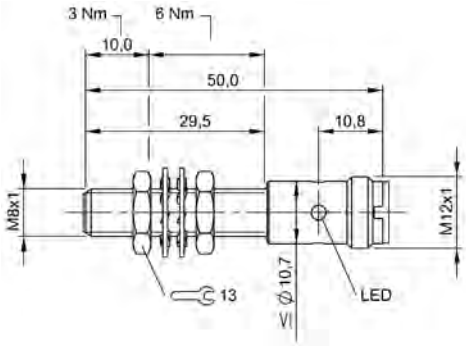
BES001L, BES001P, BES001T, BES001U, BES0021, BES001W, BES03HH



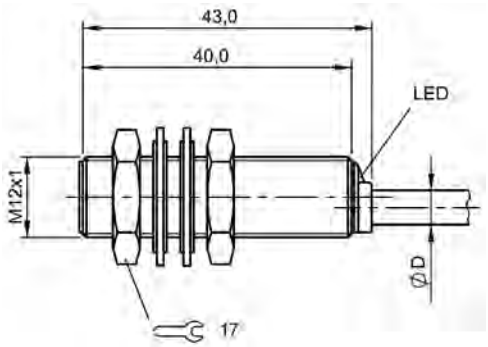
BES001Z



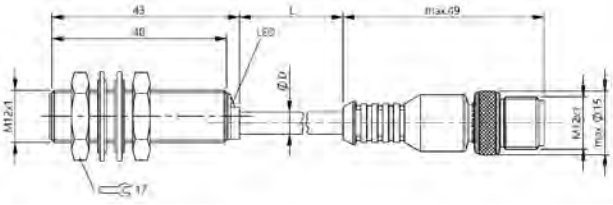
BES0324



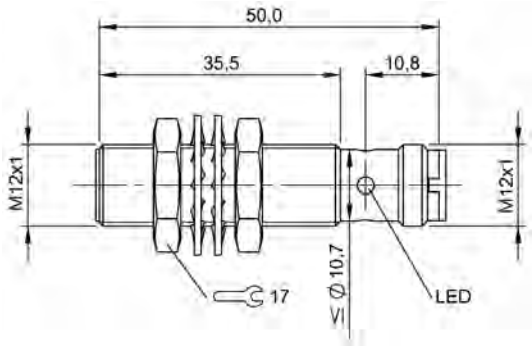
BES0022, BES001Y



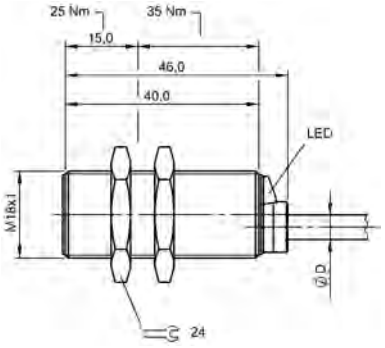
BES004P, BES004T, BES0046, BES0474, BES004U, BES004W, BES03HM



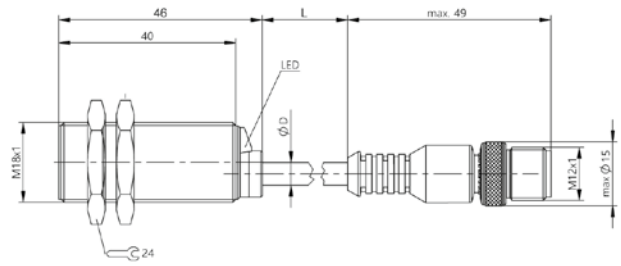
BES0042, BES0326, BES039W



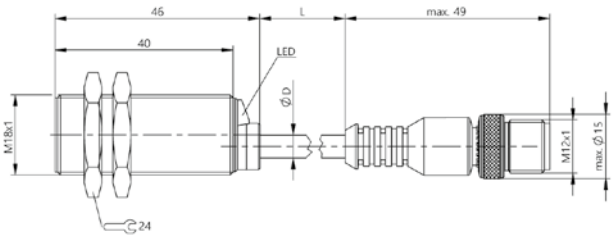
BES003Z, BES0041



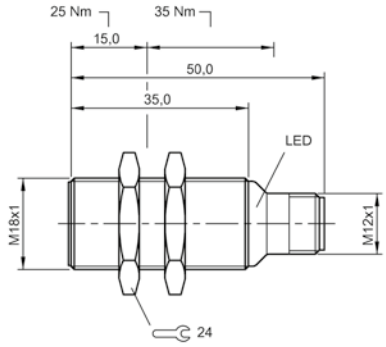
BES0073, BES0074, BES0071



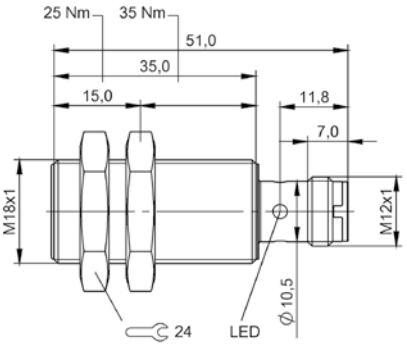
BES006C



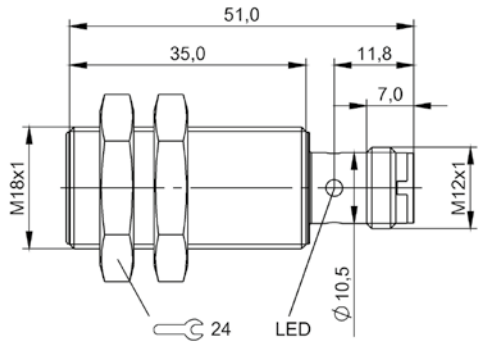
BES03FJ



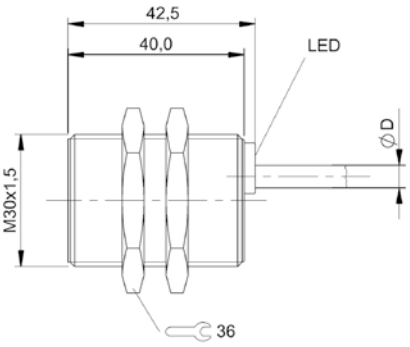
BES0069, BES006A



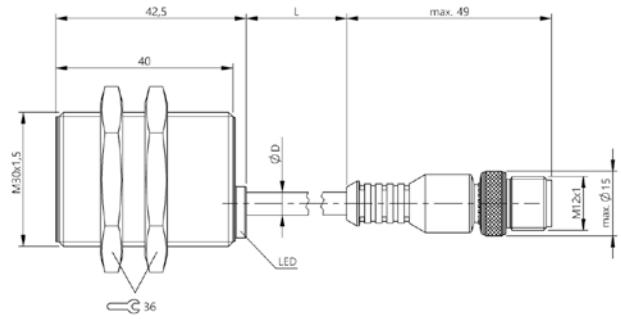
BES0328, BES02NR



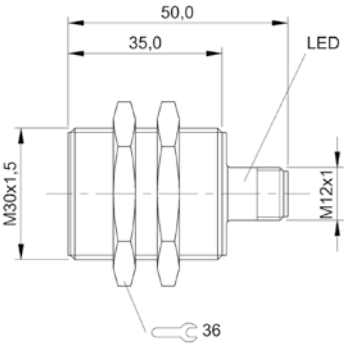
BES03FH



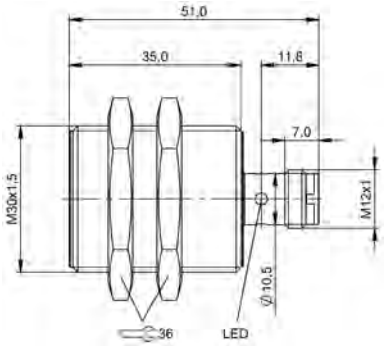
BES008R, BES0091, BES0092, BES008Z



BES027K



BES008W, BES0094



BES03KL

PNP normally open	**BHS006U** BHS G409N-PSD10-EP02	**BHS007J** BHS G409N-PSD10-EP00,3-GS49	
NPN normally open	**BHS006Y** BHS G409N-NSD10-EP02		
Dimension	Ø 4.2 x 32 mm	Ø 4.2 x 32 mm	
Style	D4.2	D4.2	
Installation	for flush mounting	for flush mounting	
Installation length from contact surface	—	—	
Range	1 mm	1 mm	
Switching frequency	3000 Hz	3000 Hz	
Housing material	Stainless steel	Stainless steel	
Surface protection	—	—	
Material sensing surface	Ceramic	Ceramic	
Connection	Cable, 2.00 m, PUR	Cable with connector, M8x1 connector, 3-pin, 0.30 m, PUR	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...80 °C	-25...80 °C	
Pressure rating max.	500 bar	500 bar	
Magnetic field immune	—	—	
Protection degree	IP68	IP68	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	
Productview	Page 178	Page 178	




	BHS006N BHS G403N-PSD10-S26	**BHS005H** BHS G408N-PSC10-S49	**BES055Y** BES M05EE1-PSC08B-EV00,9-116	**BES03H6** BES M05EG-PSC08B-BP02
	Ø 4.2 x 40.5 mm	Ø 4.2 x 47 mm	Ø 5 x 42 mm	Ø 5 x 42 mm
	D4.2	D4.2	M5x0.5	M5x0.5
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	—	—	—	—
	1 mm	1 mm	0.8 mm	0.8 mm
	3000 Hz	3000 Hz	5000 Hz	3000 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	—	—	—	—
	Ceramic	Ceramic	Ceramic	Ceramic
	Connector, M5x0.5 plug	Connector, M8x1 connector, 3-pin	Cable, 0.92 m, PVC	Cable, 2.00 m, PUR
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...80 °C	-25...80 °C	-25...70 °C	-25...70 °C
	500 bar	500 bar	10 bar	10 bar
	—	—	—	—
	IP68	IP68	IP67	IP67
	CE, cULus, EAC	CE, cULus, EAC	EAC, CE, cULus	CE, cULus, EAC
	Page 178	Page 178	Page 178	Page 179

PNP normally open	**BES03JM** BES M05EG-PSC08B-BP00,2-GS49	**BES03NZ** BES M05ED-PSC08B-BP02-R50	
PNP normally closed			
NPN normally open	**BES0315** BES M05EG-NSC08B-BP00,2-GS49		
Dimension	Ø 5 x 42 mm	Ø 5 x 27 mm	
Style	M5x0.5	M5x0.5	
Installation	for flush mounting	for flush mounting	
Installation length from contact surface	—	—	
Range	0.8 mm	0.8 mm	
Switching frequency	3000 Hz	3000 Hz	
Housing material	Stainless steel	Stainless steel	
Surface protection	—	—	
Material sensing surface	Ceramic	Ceramic	
Connection	Cable with connector, M8x1 connector, 3-pin, 0.20 m, PUR	Cable, 2.00 m, PUR	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Pressure rating max.	10 bar	50 bar	
Magnetic field immune	—	—	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC	cULus, CE, EAC	
Productview	Page 179	Page 179	




	BES03L7 BES M05ED-PSD08B-BP02-R03	BES03LC BES M05ED-PSD08B-BP00,3-GS49-R03 BES03LE BES M05ED-POD08B-BP00,3-GS49-R03	BES034K BES 516-324-SA17-05	BES03UY BES M08EE1-PSC20B-S49G-S BES03Z3 BES M08EE1-NSC20B-S49G-S
	Ø 5 x 27 mm	Ø 5 x 27 mm	Ø 8 x 45 mm	Ø 8 x 50 mm
	M5x0.5	M5x0.5	M8x1	M8x1
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	–	–	–	–
	0.8 mm	0.8 mm	1.2 mm	2 mm
	3000 Hz	3000 Hz	1500 Hz	100 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	–	–	–	–
	Ceramic	Ceramic	PA 12	Stainless steel (1.4404)
	Cable, 2.00 m, PUR	Cable with connector, M8x1 connector, 3-pin, 0.30 m, PUR	Cable, 5.00 m, PVC	Connector, M8x1 connector, 3-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	100 bar	100 bar	10 bar	80 bar
	–	–	–	–
	IP67	IP67	IP68	IP67
	CE, cULus, EAC	CE, cULus, EAC	CE, EAC	CE, cULus, EAC
	Page 179	Page 179	Page 179	Page 179

PNP normally open			
NPN normally open	**BES02N3** BES M08EH1-NSC20B-S04G-S	**BES02N4** BES M08EH1-NSC20B-S04G-S01	
Dimension	Ø 8 x 65 mm	Ø 8 x 65 mm	
Style	M8x1	M8x1	
Installation	for flush mounting	for flush mounting	
Installation length from contact surface	—	—	
Range	2 mm	2 mm	
Switching frequency	750 Hz	750 Hz	
Housing material	Stainless steel	Stainless steel	
Surface protection	—	coated, PTFE	
Material sensing surface	Stainless steel	Stainless steel	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Pressure rating max.	80 bar	80 bar	
Magnetic field immune	—	—	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	
Productview	Page 179	Page 179	

	BHS0039 BES 516-300-S289-BO-D-PU-05	BHS0058 BHS A407N-PSD15-BP02	BHS0054 BHS A404N-PSC15-S49	BHS0050 BHS A402N-PSC15-S49
	Ø 8 x 34 mm	Ø 6.5 x 31.3 mm	Ø 6.5 x 45 mm	Ø 6.5 x 55 mm
	M8x1	D6.5	D6.5	D6.5
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	—	—	—	—
	1.5 mm	1.5 mm	1.5 mm	1.5 mm
	1000 Hz	4000 Hz	4000 Hz	4000 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	—	—	—	—
	Ceramic	Ceramic	Ceramic	Ceramic
	Cable, 5.00 m, PUR	Cable, 2.00 m, PUR	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...80 °C	-25...80 °C	-25...80 °C
	100 bar	500 bar	500 bar	500 bar
	—	—	—	—
	IP67	IP68	IP68	IP68
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	Page 180	Page 180	Page 180	Page 180

PNP normally open	**BHS003A** BES 516-300-S291-S4-D	**BES02NA** BES M12EI-PSC40B-S04G-S	
NPN normally open			
Normally open			
Dimension	Ø 12 x 56 mm	Ø 12 x 65 mm	
Style	M12x1	M12x1	
Installation	for flush mounting	for flush mounting	
Installation length from contact surface	—	—	
Range	1.5 mm	4 mm	
Switching frequency	2000 Hz	500 Hz	
Housing material	Stainless steel	Stainless steel	
Surface protection	—	—	
Material sensing surface	EP	Stainless steel	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...80 °C	-25...70 °C	
Pressure rating max.	50 bar	60 bar	
Magnetic field immune	—	—	
Protection degree	IP68	IP67	
Approval/Conformity	CE, EAC	CE, cULus, EAC	
Productview	Page 180	Page 180	




	BES02NC BES M12EI-PSC40B-S04G-S01	BES02WH BES M12EG1-PSC60Z-S04G-S11		
				BHS0008 BES 516-200-S2/1.250“-S21
			BHS0006 BES 516-200-S2/1.025“-S5	
	Ø 12 x 65 mm	Ø 12 x 60 mm	64.2 x 48 x 26.04 mm	64.2 x 48 x 31.75 mm
	M12x1	M12x1	D12.7	D12.7
	for flush mounting	quasi-flush	for flush mounting	for flush mounting
	—	—	—	—
	4 mm	6 mm	2 mm	2 mm
	500 Hz	400 Hz	50 Hz	50 Hz
	Stainless steel	Stainless steel	Stainless steel (1.4104) Zinc, die-cast	Stainless steel Zinc, Die casting
	coated, PTFE	—	nickel plated	nickel plated
	Stainless steel	Stainless steel	Ceramic	Ceramic
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, 7/8“-16 UN plug	Connector, 1/2“-20 UNF2A-Male
	10...30 VDC	10...30 VDC	20...250 VDC/20...250 VAC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	60 bar	80 bar	207 bar	207 bar
	—	—	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)
	IP67	IP67	IP67	IP67
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	Page 180	Page 180	Page 178	Page 178

PNP normally open	**BHS003M** BES 516-300-S295/1.250“-S4		
Normally open		**BHS0009** BES 516-200-S2/1.250“-S5	
Dimension	51 x 48 x 31.75 mm	64.2 x 48 x 31.75 mm	
Style	D12.7	D12.7	
Installation	for flush mounting	for flush mounting	
Installation length from contact surface	—	—	
Range	2 mm	2 mm	
Switching frequency	10 Hz	50 Hz	
Housing material	Stainless steel Zinc, Die casting	Stainless steel (1.4104) Zinc, die-cast	
Surface protection	nickel plated	nickel plated	
Material sensing surface	Ceramic	Ceramic	
Connection	Connector, M12x1 connector, 4-pin	Connector, 7/8“-16 UN plug	
Operating voltage Ub	10...30 VDC	20...250 VDC/20...250 VAC	
Ambient temperature	-25...70 °C	-25...70 °C	
Pressure rating max.	207 bar	207 bar	
Magnetic field immune	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	
Productview	Page 178	Page 178	




	BHS0041 BES 516-300-S295/2.062"-S4			
		BHS000T BES 516-200-S2/2.062"-S21	**BHS000U** BES 516-200-S2/2.062"-S5	**BHS0014** BES 516-200-S2/2.875"-S5
	51 x 48 x 52.37 mm	64.2 x 48 x 52.37 mm	64.2 x 48 x 52.37 mm	64.2 x 48 x 73.03 mm
	D12.7	D12.7	D12.7	D12.7
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	—	—	—	—
	2 mm	2 mm	2 mm	2 mm
	10 Hz	50 Hz	50 Hz	50 Hz
	Stainless steel Zinc, Die casting	Stainless steel Zinc, Die casting	Stainless steel (1.4104) Zinc, die-cast	Stainless steel Zinc, Die casting
	nickel plated	nickel plated	nickel plated	nickel plated
	Ceramic	Ceramic	Ceramic	Ceramic
	Connector, M12x1 connector, 4-pin	Connector, 1/2"-20 UNF2A-Male	Connector, 7/8"-16 UN plug	Connector, 7/8"-16 UN plug
	10...30 VDC	20...250 VDC/20...250 VAC	20...250 VDC/20...250 VAC	20...250 VDC/20...250 VAC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	207 bar	207 bar	207 bar	207 bar
	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)
	IP67	IP67	IP67	IP67
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	Page 178	Page 178	Page 178	Page 178

PNP normally open		BHS0030 BES 516-300-S260-S4-D	
Normally open	BHS0019 BES 516-200-S2/4.560"-S5		
Dimension	64.2 x 48 x 115.82 mm	Ø 10 x 37 mm	
Style	D12.7	D10.0	
Installation	for flush mounting	for flush mounting	
Installation length from contact surface	—	—	
Range	2 mm	1.5 mm	
Switching frequency	50 Hz	2000 Hz	
Housing material	Stainless steel (1.4104) Zinc, die-cast	Stainless steel	
Surface protection	nickel plated	—	
Material sensing surface	Ceramic	EP	
Connection	Connector, 7/8"-16 UN plug	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	20...250 VDC/20...250 VAC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...80 °C	
Pressure rating max.	207 bar	350 bar	
Magnetic field immune	magnetic field immune (AC/DC)	—	
Protection degree	IP67	IP68	
Approval/Conformity	CE, cULus, EAC	CE, EAC	
Productview	Page 178	Page 181	




	BHS0028 BES 516-300-S205-D-PU-03	**BHS0029** BES 516-300-S205-D-PU-05	**BES042M** BES 516-300-S337-S4-D	**BES042L** BES 516-300-S338-S4-D
	Ø 12 x 37 mm	Ø 12 x 37 mm	Ø 12 x 56 mm	Ø 12 x 56 mm
	M12x1	M12x1	M12x1	M12x1
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	–	–	–	–
	1.5 mm	1.5 mm	1.5 mm	1.5 mm
	2000 Hz	2000 Hz	1000 Hz	1000 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	–	–	–	–
	EP	EP	EP	EP
	Cable, 3.00 m, PUR	Cable, 5.00 m, PUR	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...80 °C	-25...80 °C	-25...80 °C	-25...80 °C
	350 bar	350 bar	350 bar	350 bar
	–	–	–	–
	IP68	IP68	IP68	IP68
	CE, EAC	CE, EAC	CE, cULus, EAC	CE, cULus, EAC
	Page 181	Page 181	Page 180	Page 181

PNP normally open	**BHS004N** BES 516-300-S321-S4-D	**BHS002H** BES 516-300-S240-D-PU-03	
Dimension	Ø 12 x 78 mm	Ø 12 x 47 mm	
Style	M12x1	M12x1	
Installation	for flush mounting	for flush mounting	
Installation length from contact surface	—	—	
Range	1.5 mm	1.5 mm	
Switching frequency	1000 Hz	2000 Hz	
Housing material	Stainless steel	Stainless steel	
Surface protection	—	—	
Material sensing surface	EP	EP	
Connection	Connector, M12x1 connector, 4-pin	Cable, 3.00 m, PUR	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...80 °C	-25...80 °C	
Pressure rating max.	350 bar	500 bar	
Magnetic field immune	—	—	
Protection degree	IP68	IP68	
Approval/Conformity	CE, EAC	CE, cULus, EAC	
Productview	Page 181	Page 181	

	BHS002J BES 516-300-S240-D-PU-05	BHS001F BES 516-300-S135-D-PU-05	BHS0032 BES 516-300-S262-S4-D	BHS002Y BES 516-300-S249-S4-D
	Ø 12 x 47 mm	Ø 12 x 61 mm	Ø 12 x 50 mm	Ø 12 x 56 mm
	M12x1	M12x1	M12x1	M12x1
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	—	—	—	17.9 mm
	1.5 mm	1.5 mm	1.5 mm	1.5 mm
	2000 Hz	1000 Hz	2000 Hz	2000 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	—	—	—	—
	EP	EP	EP	EP
	Cable, 5.00 m, PUR	Cable, 5.00 m, PUR	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...80 °C	-25...80 °C	-25...90 °C	-25...80 °C
	500 bar	500 bar	500 bar	500 bar
	—	—	—	—
	IP68	IP68	IP68	IP68
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	Page 181	Page 181	Page 181	Page 180

PNP normally open	**BHS0033** BES 516-300-S265-S4-D	**BHS005Y** BHS B249V-PSD15-S04	
Dimension	Ø 12 x 56 mm	Ø 12 x 56 mm	
Style	M12x1	M12x1	
Installation	for flush mounting	for flush mounting	
Installation length from contact surface	14.9 mm	18 mm	
Range	1.5 mm	1.5 mm	
Switching frequency	2000 Hz	400 Hz	
Housing material	Stainless steel	Stainless steel	
Surface protection	—	—	
Material sensing surface	EP	Ceramic	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...80 °C	-25...120 °C	
Pressure rating max.	500 bar	500 bar	
Magnetic field immune	—	—	
Protection degree	IP68	IP68	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	
Productview	Page 181	Page 181	

	BHS0061 BHS B265V-PSD15-S04	**BHS0021** BES 516-300-S162-S4-D	**BHS001L** BES 516-300-S135-S4-D	**BHS005R** BHS B135V-PSD15-S04
	Ø 12 x 56 mm	Ø 12 x 69 mm	Ø 12 x 78 mm	Ø 12 x 78 mm
	M12x1	M12x1	M12x1	M12x1
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	15 mm	–	–	–
	1.5 mm	1.5 mm	1.5 mm	1.5 mm
	400 Hz	2000 Hz	1000 Hz	400 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	–	–	–	–
	Ceramic	EP	EP	Ceramic
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...120 °C	-25...80 °C	-25...80 °C	-25...80 °C
	500 bar	500 bar	500 bar	500 bar
	–	–	–	–
	IP68	IP68	IP68	IP68
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	Page 182	Page 182	Page 181	Page 182

PNP normally open		**BHS0022** BES 516-300-S163-S4-D	
PNP normally open/normally closed	**BHS0001** BES 516-100-S45-S4-D		
Dimension	Ø 12 x 78 mm	Ø 12 x 93 mm	
Style	M12x1	M12x1	
Installation	for flush mounting	for flush mounting	
Installation length from contact surface	—	—	
Range	1.5 mm	1.5 mm	
Switching frequency	1000 Hz	1000 Hz	
Housing material	Stainless steel	Stainless steel	
Surface protection	—	—	
Material sensing surface	EP	EP	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...80 °C	-25...80 °C	
Pressure rating max.	500 bar	500 bar	
Magnetic field immune	—	—	
Protection degree	IP68	IP68	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	
Productview	Page 181	Page 182	

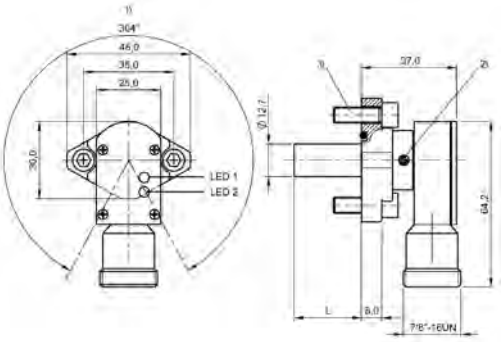
	BHS004C BES 516-300-S300-S4-D	**BHS005U** BHS B135V-PSD25-S04-003	**BES02NK** BES M18EI-PSC72B-S04G-S01	**BES02Y1** BES M18EF1-PSC20F-S04G-S
	Ø 12 x 93 mm	Ø 12 x 78 mm	Ø 18 x 65 mm	Ø 18 x 63.5 mm
	M12x1	M12x1	M18x1	M18x1
	for flush mounting	for flush mounting	for flush mounting	non-flush
	—	—	—	—
	1.5 mm	2.5 mm	7.2 mm	20 mm
	1000 Hz	400 Hz	250 Hz	200 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	—	—	coated, PTFE	—
	EP	Ceramic	Stainless steel	Stainless steel
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...80 °C	-25...90 °C	-25...70 °C	-25...70 °C
	500 bar	500 bar	40 bar	60 bar
	—	—	—	—
	IP68	IP68	IP67	IP67
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	Page 182	Page 182	Page 182	Page 182

PNP normally open	**BES02Y3** BES M18EG1-PSC10Z-S04G-S11	**BHS001N** BES 516-300-S144-S4-D	
Dimension	Ø 18 x 63.5 mm	Ø 18 x 73 mm	
Style	M18x1	M18x1	
Installation	quasi-flush	for flush mounting	
Installation length from contact surface	—	—	
Range	10 mm	1.5 mm	
Switching frequency	200 Hz	1000 Hz	
Housing material	Stainless steel	Stainless steel	
Surface protection	—	—	
Material sensing surface	Stainless steel	EP	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...80 °C	
Pressure rating max.	60 bar	350 bar	
Magnetic field immune	—	—	
Protection degree	IP67	IP68	
Approval/Conformity	CE, cULus, EAC	CE, EAC	
Productview	Page 182	Page 183	

	BHS004A BES 516-300-S299-S4-D	**BHS0026** BES 516-300-S190-S4	**BHS0027** BES 516-300-S203	
	Ø 18 x 55 mm	Ø 18 x 58 mm	Ø 18 x 61 mm	
	M18x1	M18x1	M18x1	
	for flush mounting	for flush mounting	for flush mounting	
	—	—	—	
	1.5 mm	3 mm	3 mm	
	2000 Hz	400 Hz	1000 Hz	
	Stainless steel	Stainless steel	Stainless steel	
	—	—	—	
	EP	PEEK	PEEK	
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M18x1 connector, 4-pin	
	10...30 VDC	10...30 VDC	10...30 VDC	
	-25...80 °C	-25...80 °C	-25...80 °C	
	500 bar	500 bar	500 bar	
	—	—	—	
	IP68	IP68	IP68	
	CE, EAC	CE, EAC	CE, EAC	
	Page 183	Page 183	Page 183	

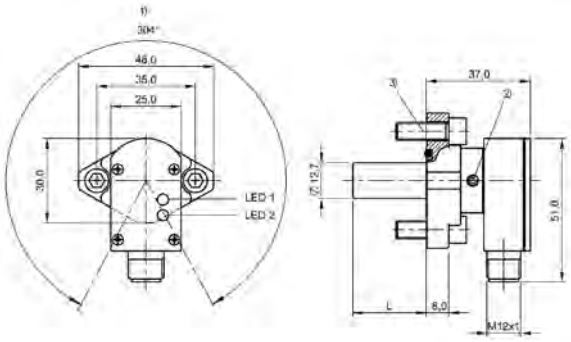
PNP normally open	**BES02YF** BES M30EG1-PSC20Z-S04G-S11	**BES02YC** BES M30EE1-PSC40F-S04G-S	
NAMUR			
Dimension	Ø 30 x 63.5 mm	Ø 30 x 63.5 mm	
Style	M30x1.5	M30x1.5	
Installation	for flush mounting	non-flush	
Installation length from contact surface	—	—	
Range	20 mm	40 mm	
Switching frequency	100 Hz	100 Hz	
Housing material	Stainless steel	Stainless steel	
Surface protection	—	—	
Material sensing surface	1.4305 stainless steel	1.4305 stainless steel	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Pressure rating max.	40 bar	40 bar	
Magnetic field immune	—	—	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	
Productview	Page 183	Page 183	

	BHS006M BES 516-300-S331-S4-D			
	Ø 16.66 x 50 mm			
	G3/8“			
	for flush mounting			
	—			
	1.5 mm			
	2000 Hz			
	Stainless steel			
	—			
	EP			
	Connector, M12x1 connector, 4-pin			
	10...30 VDC			
	-25...90 °C			
	500 bar			
	—			
	IP68			
	CE, cULus, EAC			
	Page 183			



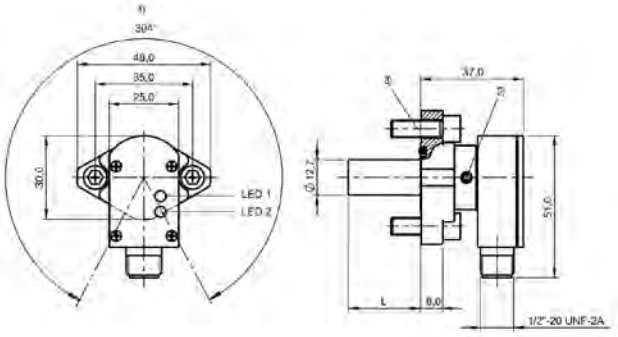
1) Housing rotatable 304°, 2) Tightening torque 1...1.5 Nm, 3) Tightening torque 16.5 Nm

BHS0006, BHS0009, BHS000U, BHS0019, BHS0014



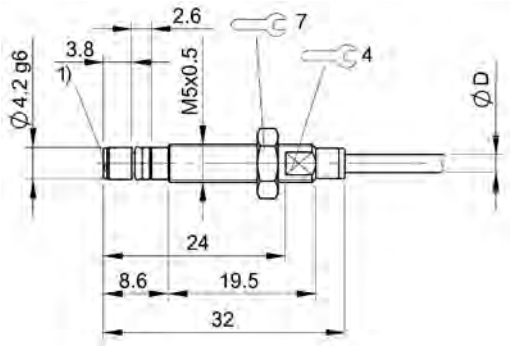
1) Housing rotatable 304°, 2) Tightening torque 1...1.5 Nm, 3) Tightening torque 16.5 Nm

BHS0041, BHS003M



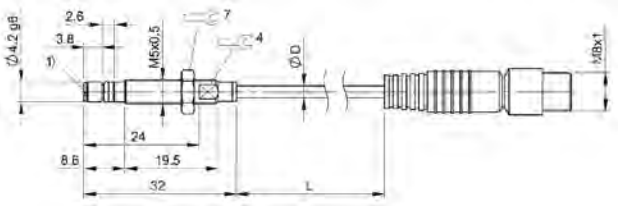
1) Housing rotatable 304°, 2) Tightening torque 1...1.5 Nm, 3) Tightening torque 16.5 Nm

BHS0008, BHS000T



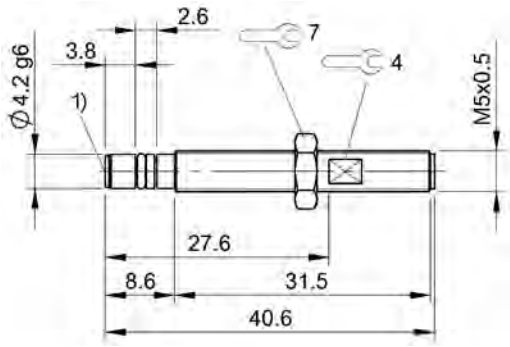
1) Sensing surface

BHS006Y, BHS006U



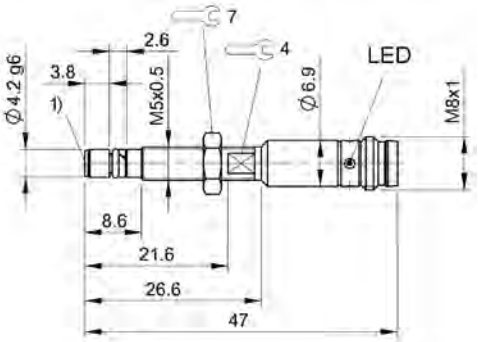
1) Sensing surface

BHS007J



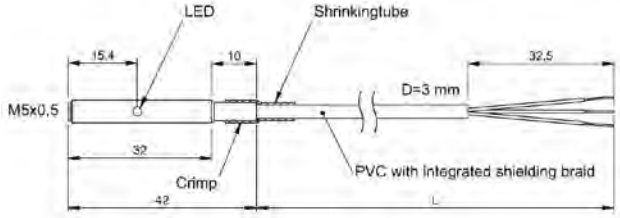
1) Sensing surface

BHS006N

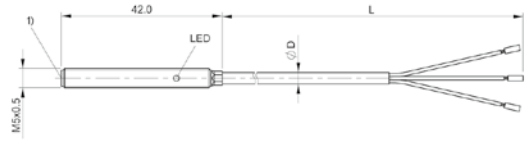


1) Sensing surface

BHS005H

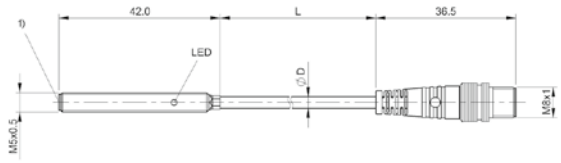


BES055Y



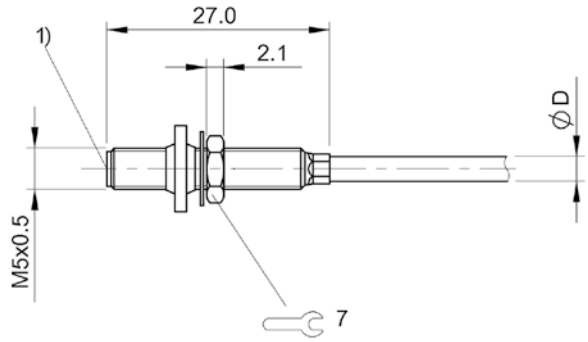
1) Sensing surface

BES03H6



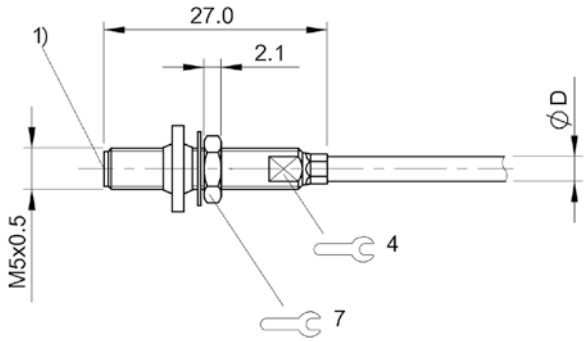
1) Sensing surface

BES0315, BES03JM



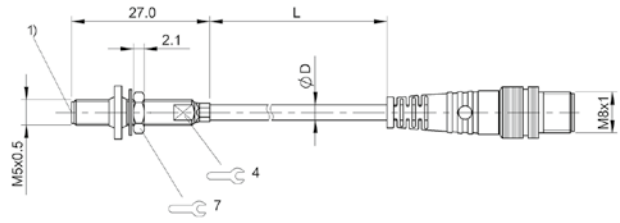
1) Sensing surface

BES03NZ



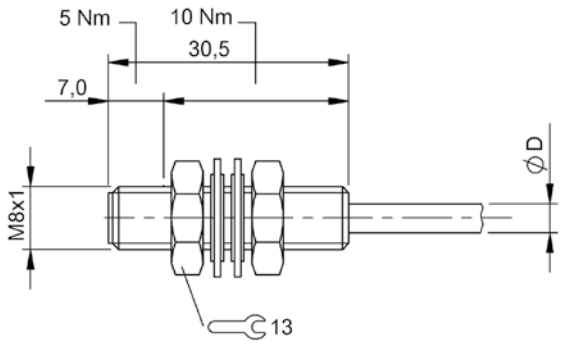
1) Sensing surface

BES03L7

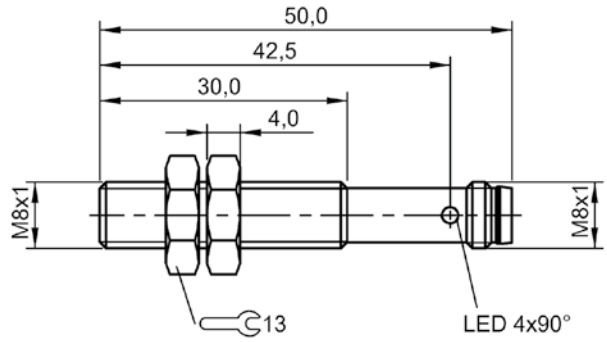


1) Sensing surface

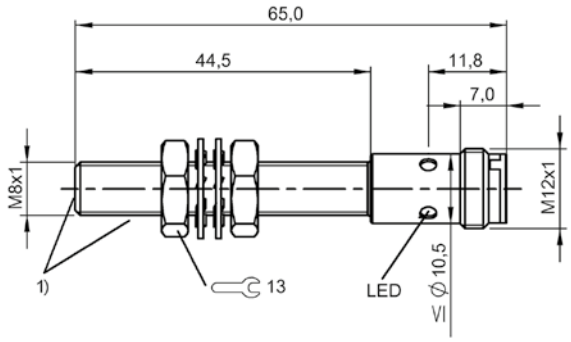
BES03LC, BES03LE



BES034K

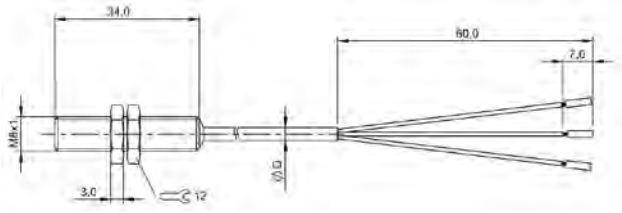


BES03UY, BES03Z3

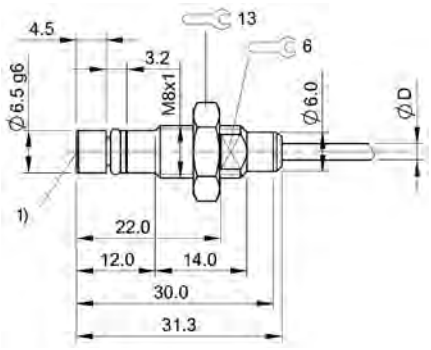


1) Pressure resistant area

BES02N3, BES02N4

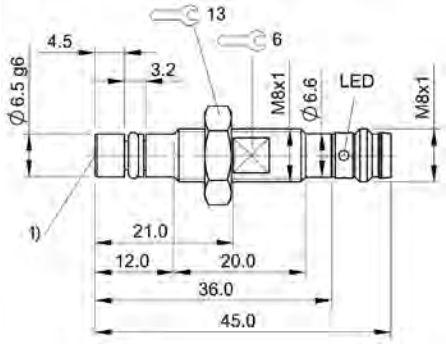


BHS0039



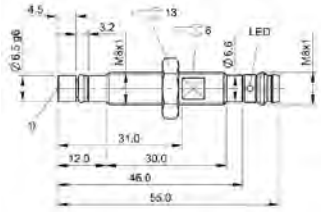
1) Sensing surface

BHS0058



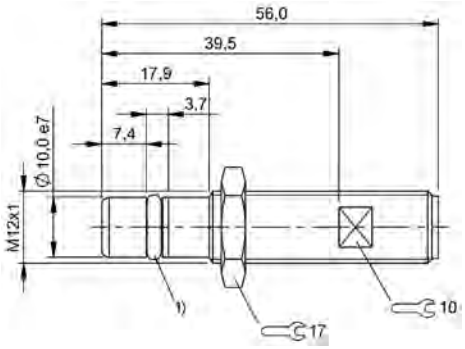
1) Sensing surface

BHS0054



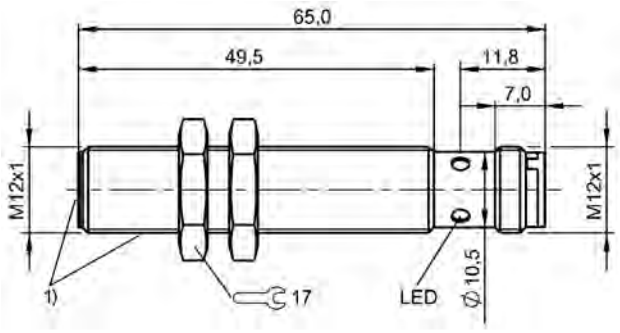
1) Sensing surface

BHS0050



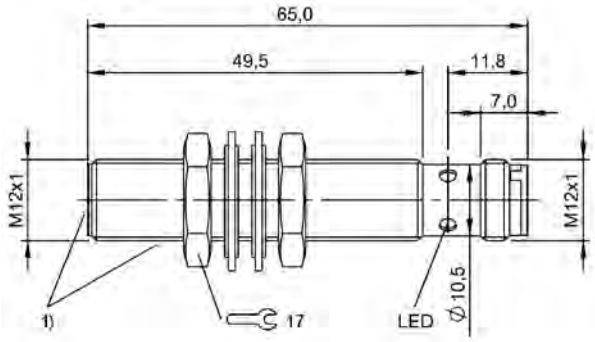
1) O-Ring with thrust ring

BHS003A, BES042M, BHS002Y



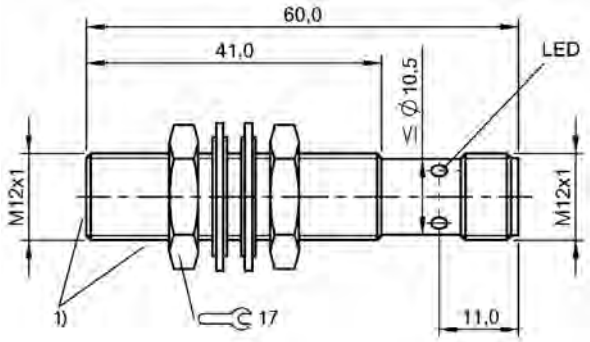
1) Pressure resistant area

BES02NA



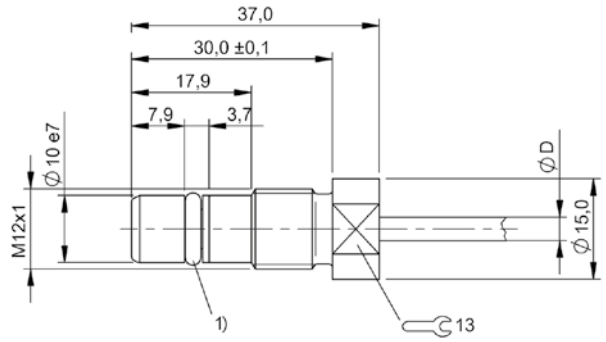
1) Pressure resistant area

BES02NC



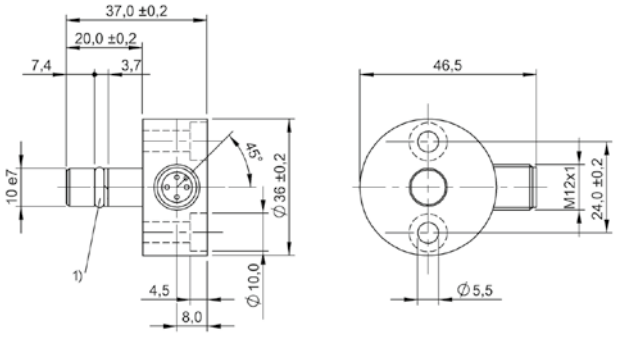
1) Pressure resistant area

BES02WH



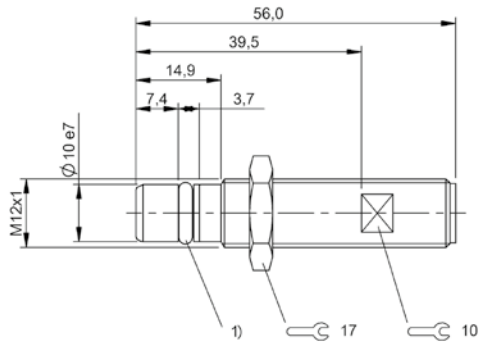
1) O-Ring with thrust ring

BHS0028, BHS0029



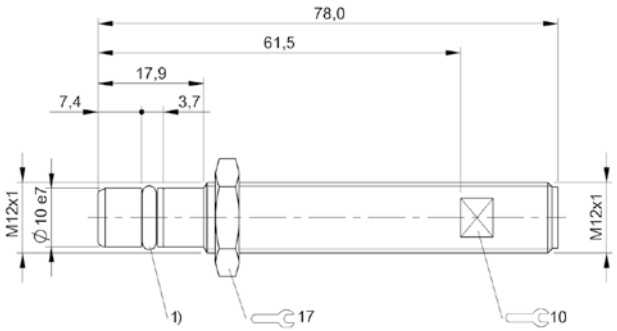
1) O-Ring with thrust ring

BHS0030



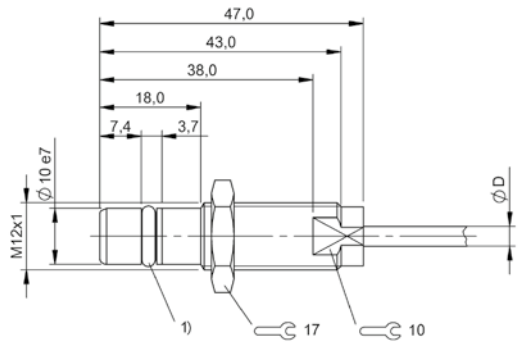
1) O-Ring with thrust ring

BES042L, BHS0033



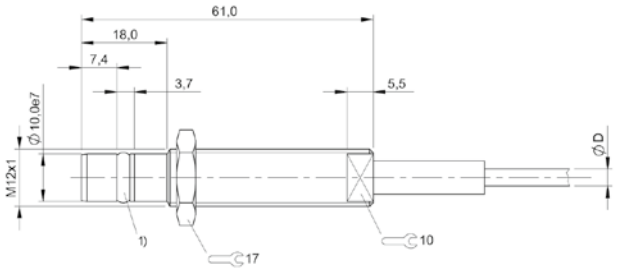
1) O-Ring with thrust ring

BHS004N, BHS001L, BHS0001



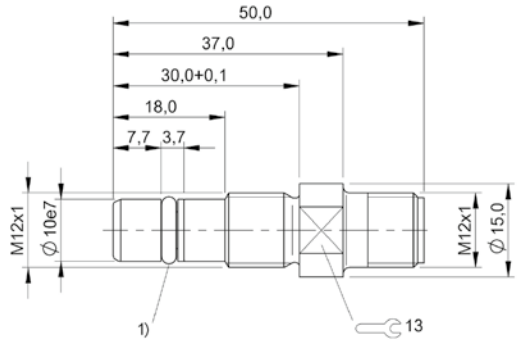
1) O-Ring with thrust ring

BHS002H, BHS002J



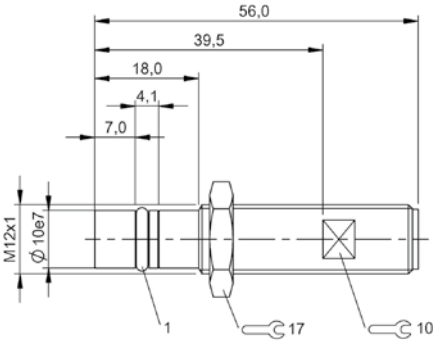
1) O-Ring with thrust ring

BHS001F



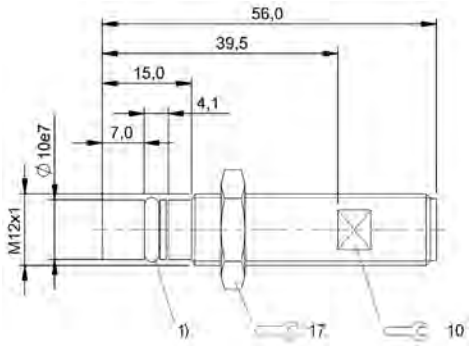
1) O-Ring with thrust ring

BHS0032



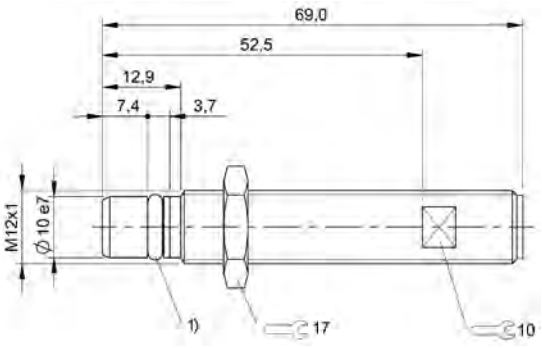
1) O-Ring with thrust ring

BHS005Y



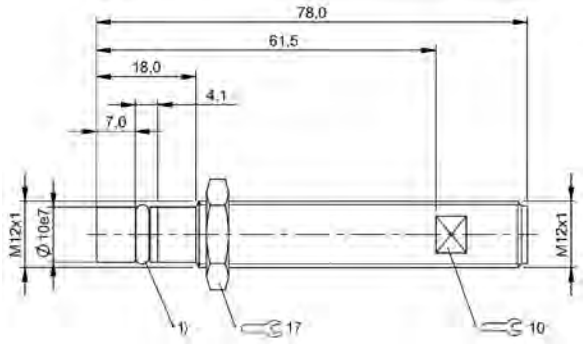
1) O-Ring with thrust ring

BHS0061



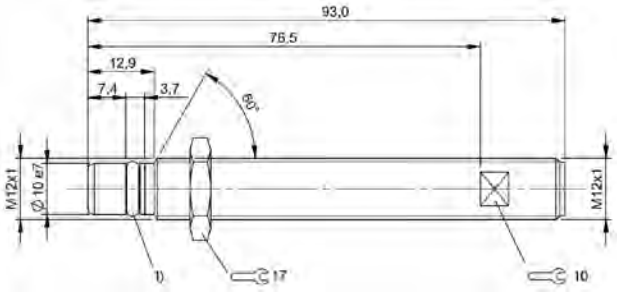
1) O-Ring with thrust ring

BHS0021



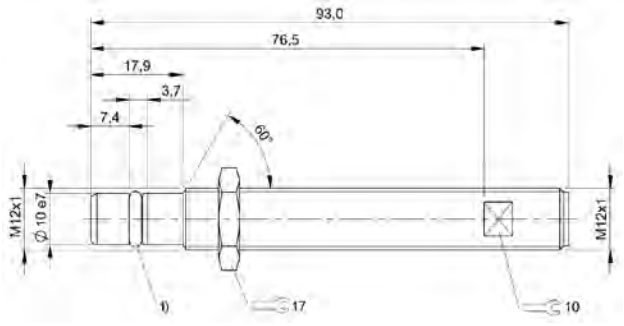
1) O-Ring with thrust ring

BHS005R, BHS005U



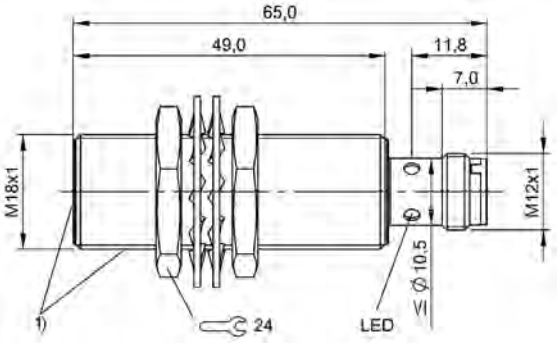
1) O-Ring with thrust ring

BHS0022



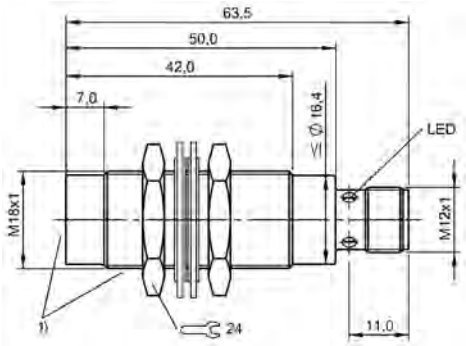
1) O-Ring with thrust ring

BHS004C



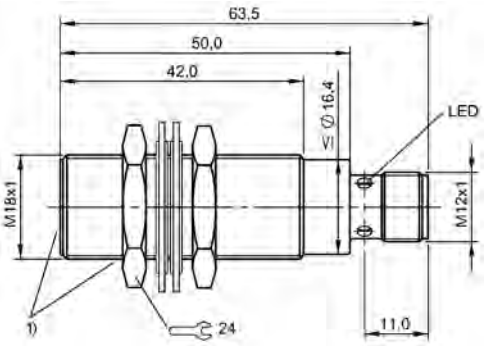
1) Pressure resistant area

BES02NK



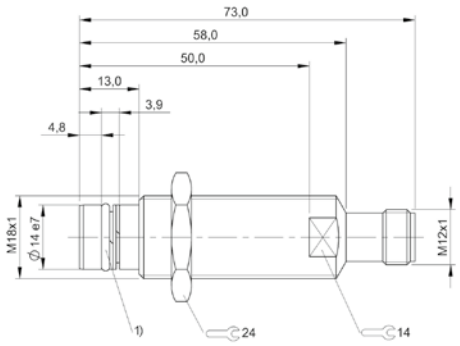
1) Pressure resistant area

BES02Y1



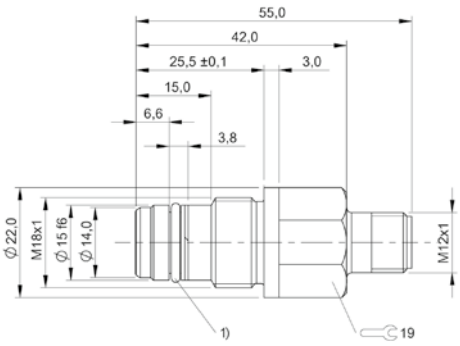
1) Pressure resistant area

BES02Y3



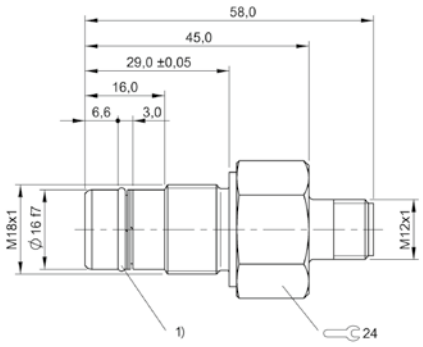
1) O-Ring with thrust ring

BHS001N



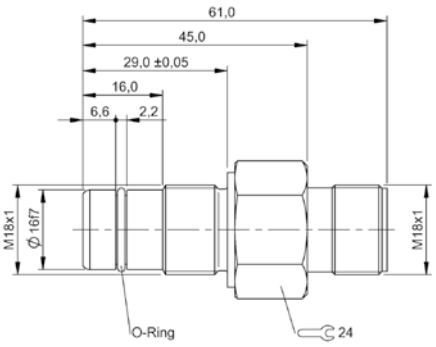
1) O-Ring with thrust ring

BHS004A

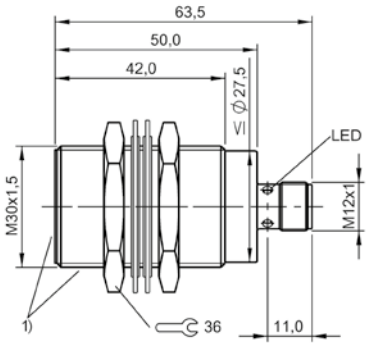


1) O-Ring with thrust ring

BHS0026

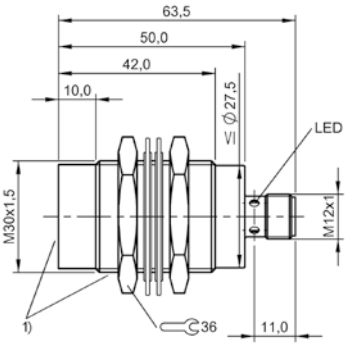


BHS0027



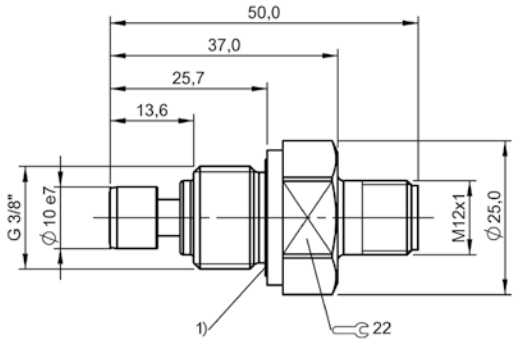
1) Pressure resistant area

BES02YF



1) Pressure resistant area

BES02YC



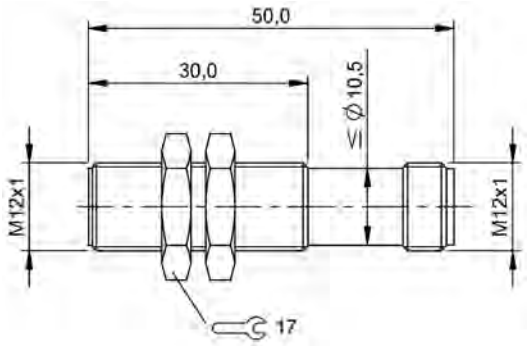
1) Sealing ring

BHS006M

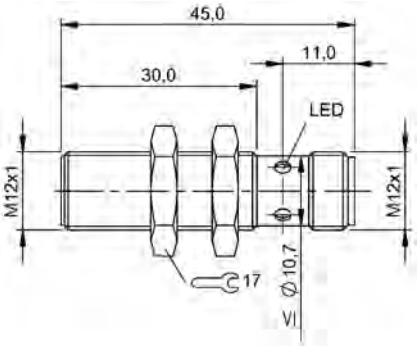
PNP normally open	**BES0444** BES M12EE1-PSY20B-S04G-L01	**BES0433** BES M12EE-PSC40B-S04G-L01	
Dimension	Ø 12 x 50 mm	Ø 12 x 45 mm	
Style	M12x1	M12x1	
Installation	for flush mounting	for flush mounting	
Range	2 mm	4 mm	
Switching frequency	800 Hz	2000 Hz	
Housing material	Stainless steel (1.4571)	Stainless steel (1.4404)	
Material sensing surface	PEEK	LCP	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-40...105 °C	-25...85 °C	
Protection degree	IP68	IP68	
Approval/Conformity	CE, cULus, EAC, Ecolab, FDA compliant	CE, cULus, EAC, FDA compliant	
Productview	Page 186	Page 186	



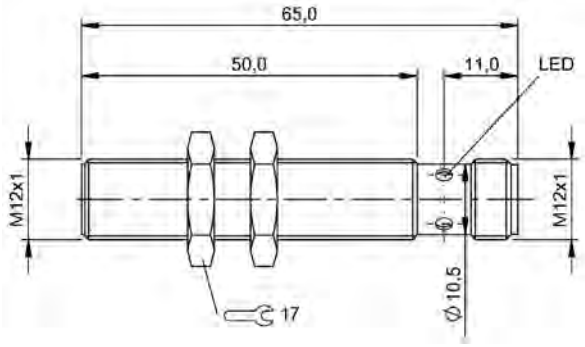

	BES0435 BES M12EI-PSC40B-S04G-L01	**BES0443** BES M12EE1-PSY40F-S04G-L01	**BES0441** BES M18EE1-PSY50B-S04G-L01	**BES0437** BES M18EI-PSC80B-S04G-L01	
	Ø 12 x 65 mm	Ø 12 x 54.5 mm	Ø 18 x 45 mm	Ø 18 x 65 mm	
	M12x1	M12x1	M18x1	M18x1	
	for flush mounting	non-flush	for flush mounting	for flush mounting	
	4 mm	4 mm	5 mm	8 mm	
	1000 Hz	400 Hz	500 Hz	700 Hz	
	Stainless steel (1.4404)	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4404)	
	LCP	PEEK	PEEK	PEEK	
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
	-25...85 °C	-40...105 °C	-40...105 °C	-40...85 °C	
	IP68	IP68	IP68	IP68	
	CE, cULus, EAC, Ecolab, FDA compliant	CE, cULus, EAC, Ecolab, FDA compliant	CE, cULus, EAC, Ecolab, FDA compliant	CE, cULus, EAC, Ecolab, FDA compliant	
	Page 186	Page 186	Page 186	Page 186	



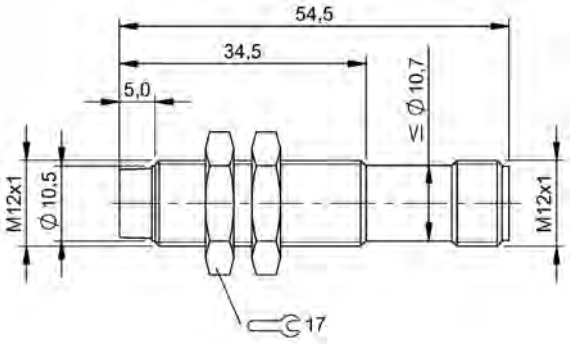
BES0444



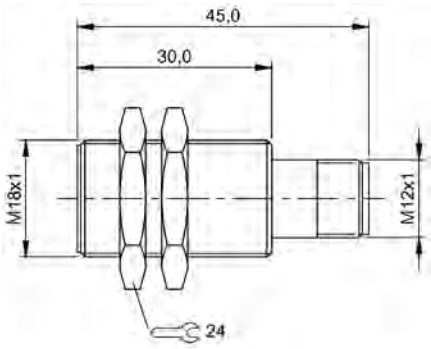
BES0433



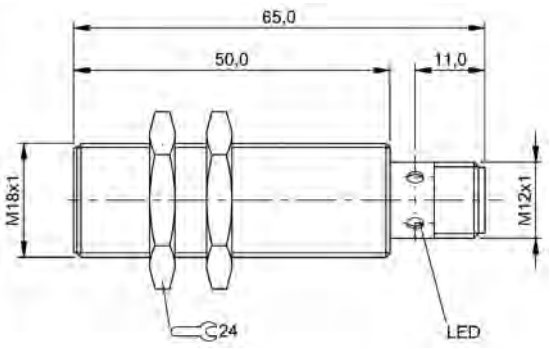
BES0435



BES0443



BES0441



BES0437

PNP normally open	**BES02YR** BES M08EG-PSC15A-S49G-W	**BES02YT** BES M08EG1-PSC15A-S04G-W	
Dimension	Ø 8 x 49 mm	Ø 8 x 57 mm	
Style	M8x1	M8x1	
Installation	flush	flush	
Range	1.5 mm	1.5 mm	
Interface	—	—	
Switching frequency	2000 Hz	2000 Hz	
Housing material	Stainless steel (1.4301), PTFE coated	Stainless steel (1.4301), PTFE coated	
Material sensing surface	PBT/PTFE	PBT/PTFE	
Connection	Connector, M8x1-Male, 3-pin	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Pressure rating max.	—	—	
Magnetic field immune	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	
Ex category	—	—	
IP rating	IP67	IP67	
Approval/Conformity	CE, EAC, WEEE	CE, EAC, WEEE	
Additional features	Factor 1, Weld immune	Factor 1, Weld immune	
Productview	Page 198	Page 198	

	BES03YP BES M08MG1-PSC20A-S04G-W	BES02JZ BES M12MF1-PSC30A-S04G-W	BES02K0 BES M12MF1-PSC30A-S04G-W01	
	Ø 8 x 65 mm	Ø 12 x 50 mm	Ø 12 x 50 mm	
	M8x1	M12x1	M12x1	
	flush	flush	flush	
	2 mm	3 mm	3 mm	
	—	—	—	
	1000 Hz	2000 Hz	2000 Hz	
	Brass, PTFE coated	Brass, PTFE coated	Brass, PTFE coated	
	LCP	LCP/PTFE	Ceramic	
	Connector, M12x1-Male, 3-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
	10...30 VDC	10...30 VDC	10...30 VDC	
	-25...70 °C	-25...70 °C	-25...70 °C	
	—	—	—	
	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	
	—	—	—	
	IP67	IP67	IP67	
	CE, EAC, cULus, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
	Factor 1, Weld immune	Factor 1, Weld immune	Weld immune, Factor 1	
	Page 198	Page 198	Page 198	

PNP normally open	**BES02K4** BES M12ML-PSC30A-S04G-W01	**BES05KT** BES M12MI-PSC40A-S04G-W08	
Dimension	Ø 12 x 65 mm	Ø 12 x 65 mm	
Style	M12x1	M12x1	
Installation	flush	flush	
Range	3 mm	4 mm	
Interface	—	—	
Switching frequency	2000 Hz	2000 Hz	
Housing material	Brass, PTFE coated	Brass, PTFE coated	
Material sensing surface	ceramic coated	PBT	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 3-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-40...85 °C	
Pressure rating max.	—	—	
Magnetic field immune	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	
Ex category	—	—	
IP rating	IP67	IP68	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, EAC, WEEE	
Additional features	Factor 1, Weld immune	Factor 1, Extended temperature range, Housing resistant to weld spatter, weld-immune (magnetic field 100kA/m)	
Productview	Page 198	Page 198	




	BES02K5 BES M12ML-PSC80E-S04G-W	**BES05PR** BES M18ME-PSC80A-S04G-W10	**BES05PN** BES M18MI-PSC80A-S04G-W09	**BES05PP** BES M18MI-PSC80A-S04G-W10
	Ø 12 x 65 mm	Ø 18 x 46 mm	Ø 18 x 66 mm	Ø 18 x 66 mm
	M12x1	M18x1	M18x1	M18x1
	non-flush	flush	flush	flush
	8 mm	8 mm	8 mm	8 mm
	—	—	—	—
	2000 Hz	2000 Hz	2000 Hz	2000 Hz
	Brass, PTFE coated	Brass, PTFE coated	Brass, PTFE coated	Brass, PTFE coated
	LCP/PTFE	PBT	PBT, PTFE coated	PBT
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 3-pin	Connector, M12x1-Male, 3-pin	Connector, M12x1-Male, 3-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-40...85 °C	-40...85 °C	-40...85 °C
	—	—	—	—
	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)
	—	—	—	—
	IP67	IP67, IP68	IP67, IP68	IP67, IP68
	CE, cULus, EAC, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	Factor 1, Weld immune	Factor 1, Extended temperature range, Housing resistant to weld spatter	Factor 1, Extended temperature range, Housing resistant to weld spatter	Factor 1, Extended temperature range, Housing resistant to weld spatter
	Page 198	Page 199	Page 199	Page 199

PNP normally open	**BES05AL** BES M18ME-PSC12E-S04G-W08	**BES05AM** BES M18MI-PSC12E-S04G-W08	
Dimension	Ø 18 x 56 mm	Ø 18 x 76 mm	
Style	M18x1	M18x1	
Installation	non-flush	non-flush	
Range	12 mm	12 mm	
Interface	—	—	
Switching frequency	2000 Hz	2000 Hz	
Housing material	Brass, PTFE coated	Brass, PTFE coated	
Material sensing surface	PBT	PBT	
Connection	Connector, M12x1-Male, 3-pin	Connector, M12x1-Male, 3-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-40...85 °C	-40...85 °C	
Pressure rating max.	—	—	
Magnetic field immune	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	
Ex category	—	—	
IP rating	IP67, IP68	IP67, IP68	
Approval/Conformity	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	
Additional features	Factor 1, Extended temperature range, Housing resistant to weld spatter	Factor 1, Extended temperature range, Housing resistant to weld spatter	
Productview	Page 199	Page 199	

	BES02KM BES M30ML-PSC10A-S04G-W	**BES02KN** BES M30ML-PSC10A-S04G-W01	**BES0454** BES M30MI-PSC15A-S04G-W12	**BES04AH** BES R01EC-PSC50A-BP00,3-GS04-W50
	Ø 30 x 65 mm	Ø 30 x 65 mm	Ø 30 x 65 mm	32 x 20 x 8 mm
	M30x1.5	M30x1.5	M30x1.5	32x20x8
	flush	flush	flush	flush
	10 mm	10 mm	15 mm	5 mm
	—	—	—	—
	600 Hz	600 Hz	750 Hz	20 Hz
	Brass, PTFE coated	Brass, PTFE coated	Brass, PTFE coated	Stainless steel
	LCP/PTFE	ceramic coated	PPS	Stainless steel
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 3-pin	Cable with connector, M12x1-Male, 4-pin, 0.30 m, PUR
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	—	—	—	—
	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)
	—	—	—	—
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, EAC, cULus, WEEE	CE, cULus, EAC, WEEE
	Factor 1, Weld immune	Factor 1, Weld immune	Factor 1, Weld immune	Factor 1, Weld immune
	Page 199	Page 199	Page 199	Page 200

PNP normally open	**BES04RE** BES R01EC-PSC50A-BS00,3-GS04-W51	**BES049Y** BES R01EC-PSC50A-BP00,3-GS04-W51	
PNP normally open/normally closed			
Dimension	32 x 20 x 8 mm	32 x 20 x 8 mm	
Style	32x20x8	32x20x8	
Installation	flush	flush	
Range	5 mm	5 mm	
Interface	—	—	
Switching frequency	20 Hz	20 Hz	
Housing material	Stainless steel, PTFE coated	Stainless steel, PTFE coated	
Material sensing surface	Stainless steel, W51 ceramic coating	Stainless steel, W51 ceramic coating	
Connection	Cable with connector, M12x1-Male, 4-pin, 0.30 m, Silicone	Cable with connector, M12x1-Male, 4-pin, 0.30 m, PUR	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Pressure rating max.	—	—	
Magnetic field immune	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	
Ex category	—	—	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Additional features	Factor 1, Housing resistant to weld spatter, Weld immune	Factor 1, Housing resistant to weld spatter, Weld immune	
Productview	Page 200	Page 200	

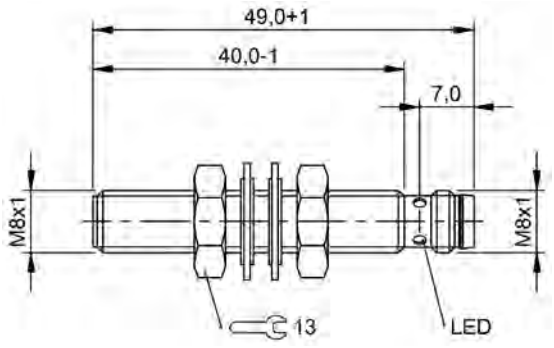



	BES021P BES Q40KFU-PSC15A-S04G		BES021T BES Q40KFU-PSC15A-S04G-W01	BES021U BES Q40KFU-PSC20A-S04G
		BES022K BES Q40KFU-PAC15A-S04G		
	40 x 40 x 62 mm	40 x 40 x 62 mm	40 x 40 x 62 mm	40 x 40 x 62 mm
	40x40	40x40	40x40	40x40
	flush	flush	flush	flush
	15 mm	15 mm	15 mm	20 mm
	–	–	–	–
	400 Hz	400 Hz	400 Hz	400 Hz
	PBT	PBT	PBT, partly coated	PBT
	PBT	PBT	ceramic coated	PBT
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	–	–	–	–
	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)
	–	–	–	–
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Factor 1, Weld immune	Factor 1	Factor 1, Weld immune	Factor 1
	Page 200	Page 200	Page 200	Page 200

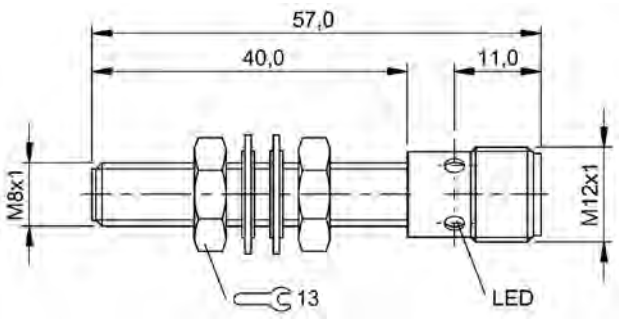
PNP normally open		**BES0222** BES Q40KFU-PSC35Z-S04G-011	
PNP normally open/normally closed	**BES0457** BES Q40KFU-PAC20A-S04G-W01		
Dimension	40 x 40 x 62 mm	40 x 40 x 62 mm	
Style	40x40	40x40	
Installation	flush	flush on one side	
Range	20 mm	35 mm	
Interface	—	—	
Switching frequency	400 Hz	250 Hz	
Housing material	PBT, partly coated	PBT	
Material sensing surface	ceramic coated	PBT	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-10...60 °C	
Pressure rating max.	—	—	
Magnetic field immune	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	
Ex category	—	—	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Additional features	Factor 1	Factor 1	
Productview	Page 200	Page 200	



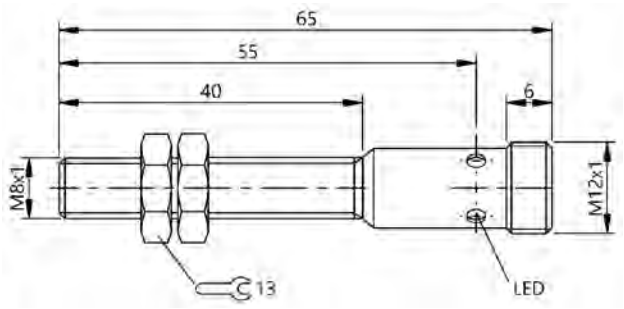

			BES0223 BES Q40KFU-PSC40E-S04G	
	BES021H BES Q40KFU-PAC35E-S04G	**BES021K** BES Q40KFU-PAC35E-S04G-W01		**BES021M** BES Q40KFU-PAC40E-S04G
	40 x 40 x 62 mm	40 x 40 x 62 mm	40 x 40 x 62 mm	40 x 40 x 62 mm
	40x40	40x40	40x40	40x40
	non-flush	non-flush	non-flush	non-flush
	35 mm	35 mm	40 mm	40 mm
	–	–	–	–
	250 Hz	250 Hz	100 Hz	100 Hz
	PBT	PBT, partly coated	PBT	PBT
	PBT	ceramic coated	PBT	PBT
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-10...70 °C	-10...70 °C	-10...70 °C	-10...70 °C
	–	–	–	–
	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)
	–	–	–	–
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Factor 1	Factor 1, Weld immune	Factor 1	Factor 1
	Page 200	Page 200	Page 200	Page 200



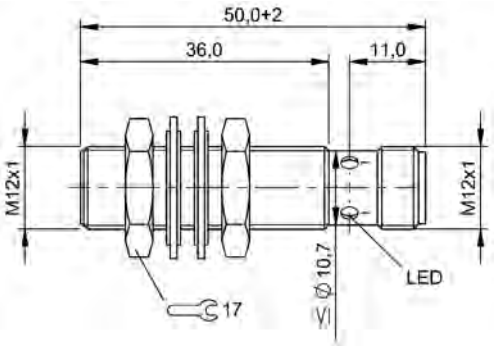
BES02YR



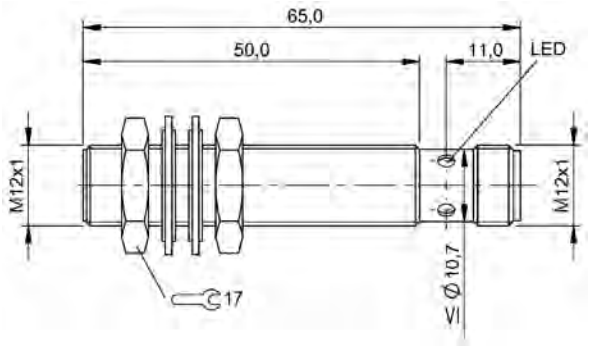
BES02YT



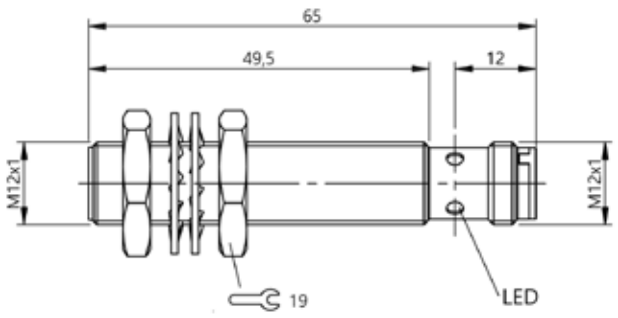
BES03YP



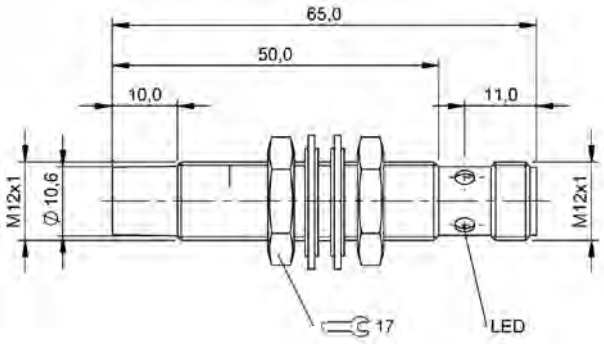
BES02JZ, BES02K0



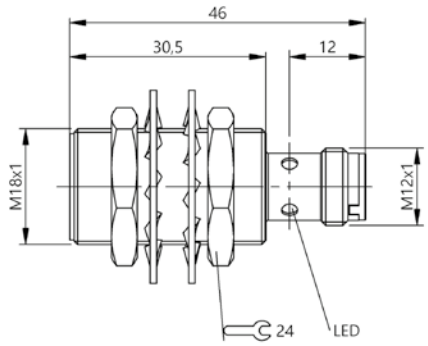
BES02K4



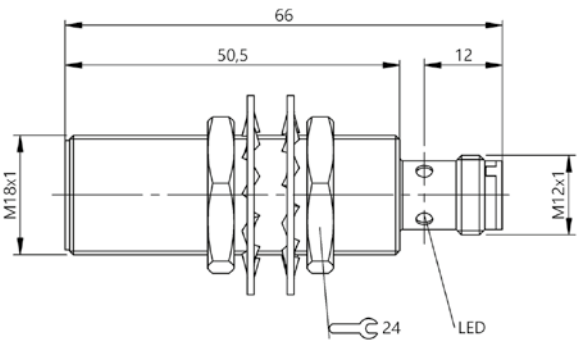
BES05KT



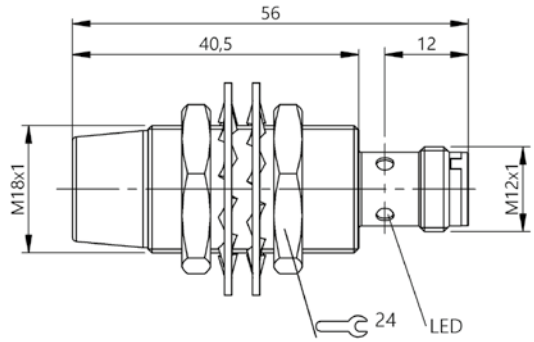
BES02K5



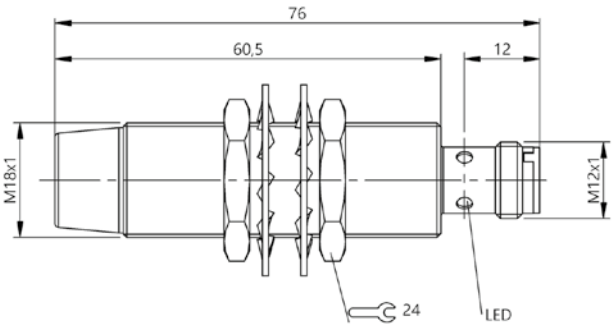
BES05PR



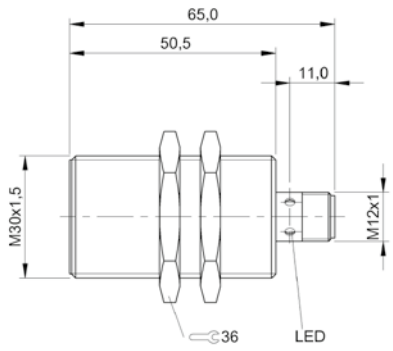
BES05PN, BES05PP



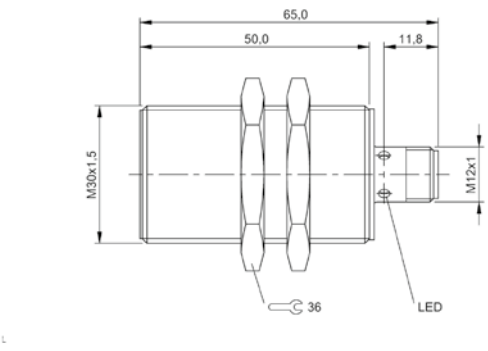
BES05AL



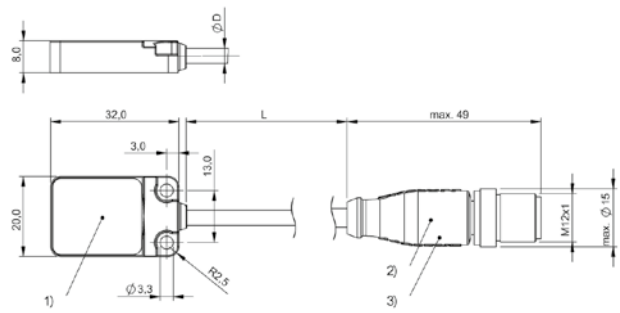
BES05AM



BES02KM, BES02KN

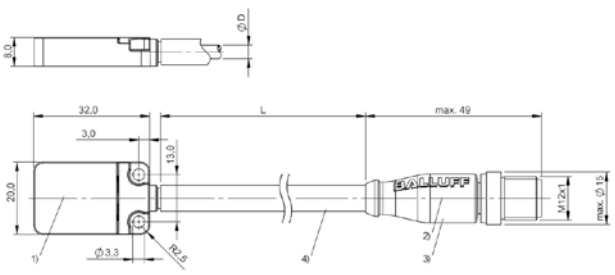


BES0454



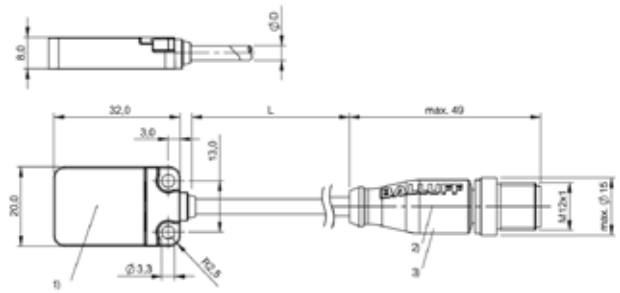
1) Sensing surface, 2) LED yellow, 3) LED green

BES04AH



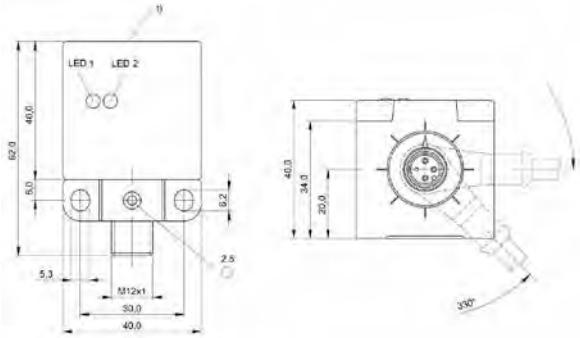
1) Sensing surface, 2) LED green, 3) LED yellow, 4) Silicon tube D=7mm

BES049Y



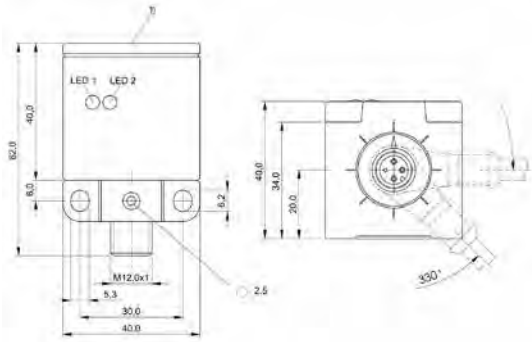
1) Sensing surface, 2) LED green, 3) LED yellow

BES04RE



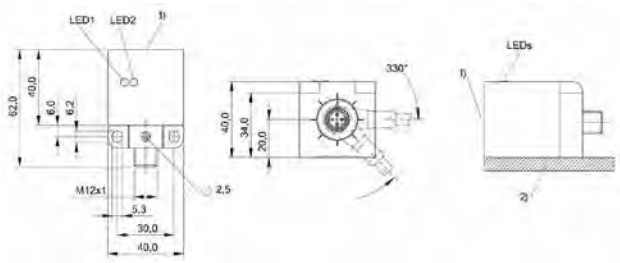
1) Sensing surface

BES021P, BES022K, BES021T, BES021H, BES021K, BES0223, BES021M



1) Sensing surface

BES021U, BES0457



1) Sensing surface, 2) Metal plate

BES0222

PNP normally open	**BES02YZ** BES M08EG1-PSC15S-S04G-S	**BES02N5** BES M08EH1-PSC20B-S04G-S	
Dimension	Ø 8 x 64.5 mm	Ø 8 x 65 mm	
Style	M8x1	M8x1	
Installation	for flush mounting	for flush mounting	
Range	1.5 mm	2 mm	
Switching frequency	20 Hz	750 Hz	
Housing material	Stainless steel	Stainless steel	
Surface protection	—	—	
Material sensing surface	Stainless steel	Stainless steel	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Magnetic field immune	—	—	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	
Additional features	—	—	
Productview	Page 208	Page 208	

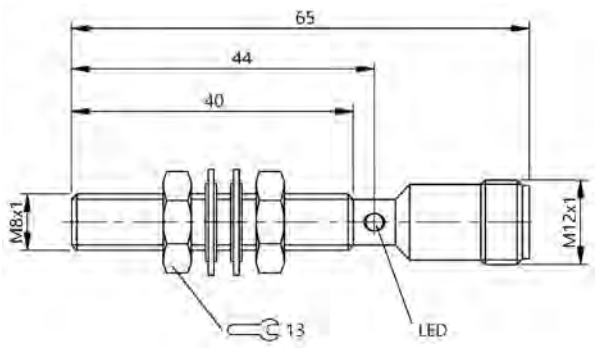
	BES02N6 BES M08EH1-PSC20B-S04G-S01	BES02Z3 BES M12EG1-PSC20S-S04G-S	BES02Z2 BES M12EG1-PSC20N-S04G-S	BES04Z5 BES M12EI-PSC40A-S04G-S
	Ø 8 x 65 mm	Ø 12 x 65 mm	Ø 12 x 65 mm	Ø 12 x 65 mm
	M8x1	M12x1	M12x1	M12x1
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	2 mm	2 mm	2 mm	4 mm
	750 Hz	50 Hz	50 Hz	80 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	coated, PTFE	—	—	—
	Stainless steel, coated	Stainless steel	Stainless steel	Stainless steel
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	—	—	—	magnetic field immune (AC/DC)
	IP67	IP67	IP67	IP67
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	Housing resistant to weld spatter	—	—	Factor 1, Weld immune
	Page 208	Page 208	Page 208	Page 208

PNP normally open	**BES0567** BES M12EI-PSC40A-S04G-S02	**BES0510** BES M12EI-PSC40S-S04G-S	
Dimension	Ø 12 x 65 mm	Ø 12 x 65 mm	
Style	M12x1	M12x1	
Installation	for flush mounting	for flush mounting	
Range	4 mm	4 mm	
Switching frequency	80 Hz	70 Hz	
Housing material	Stainless steel	Stainless steel	
Surface protection	weld spatter resistant, coated	—	
Material sensing surface	Stainless steel, coated	Stainless steel	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Magnetic field immune	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	
Additional features	Factor 1, Weld immune, Housing resistant to weld spatter	Damping: Steel	
Productview	Page 208	Page 208	

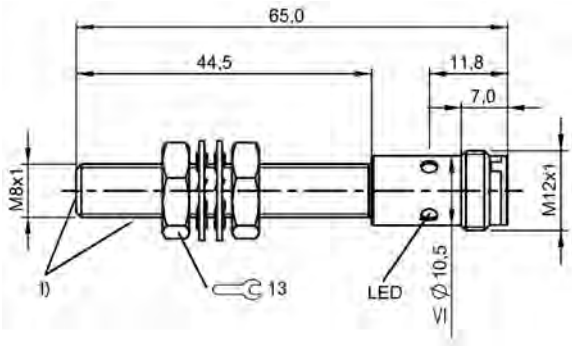
	BES0511 BES M12EI-PSC40N-S04G-S	**BES02Z9** BES M18EG1-PSC50S-S04G-S	**BES02Z8** BES M18EG1-PSC50N-S04G-S	**BES05K7** BES M18EG1-PSC80A-S04G-S
	Ø 12 x 65 mm	Ø 18 x 66 mm	Ø 18 x 66 mm	Ø 18 x 56 mm
	M12x1	M18x1	M18x1	M18x1
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	4 mm	5 mm	5 mm	8 mm
	70 Hz	15 Hz	15 Hz	110 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	—	—	—	—
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 3-pin
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	magnetic field immune (AC/DC)	—	—	magnetic field immune (AC/DC)
	IP67	IP67	IP67	IP68
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	Damping: Alloys	—	—	Factor 1
	Page 208	Page 208	Page 208	Page 208

PNP normally open	**BES05NC** BES M18EG1-PSC80A-S04G-S02	**BES05K8** BES M18EG1-PSC80S-S04G-S	
Dimension	Ø 18 x 56 mm	Ø 18 x 56 mm	
Style	M18x1	M18x1	
Installation	for flush mounting	for flush mounting	
Range	8 mm	8 mm	
Switching frequency	110 Hz	110 Hz	
Housing material	Stainless steel	Stainless steel	
Surface protection	weld spatter resistant, coated	—	
Material sensing surface	Stainless steel, coated	Stainless steel	
Connection	Connector, M12x1 connector, 3-pin	Connector, M12x1 connector, 3-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Magnetic field immune	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	
Protection degree	IP68	IP68	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	
Additional features	Factor 1	Damping: Steel	
Productview	Page 209	Page 208	

	BES05K9 BES M18EG1-PSC80N-S04G-S	**BES02ZJ** BES M30EG1-PSC80S-S04G-S	**BES02ZH** BES M30EG1-PSC80N-S04G-S	
	Ø 18 x 56 mm	Ø 30 x 66 mm	Ø 30 x 66 mm	
	M18x1	M30x1.5	M30x1.5	
	for flush mounting	for flush mounting	for flush mounting	
	8 mm	8 mm	8 mm	
	110 Hz	15 Hz	15 Hz	
	Stainless steel	Stainless steel	Stainless steel	
	—	—	—	
	Stainless steel	Stainless steel	Stainless steel	
	Connector, M12x1 connector, 3-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
	10...30 VDC	10...30 VDC	10...30 VDC	
	-25...70 °C	-25...70 °C	-25...70 °C	
	magnetic field immune (AC/DC)	—	—	
	IP68	IP67	IP67	
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	
	Damping: Alloys	—	—	
	Page 208	Page 209	Page 209	

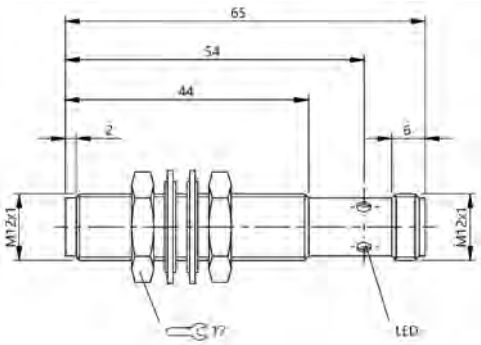


BES02YZ

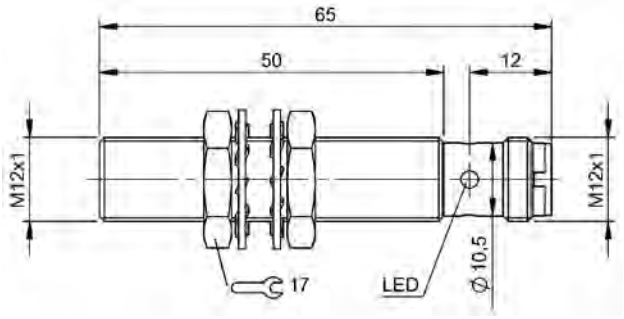


1) Range of compressive strength

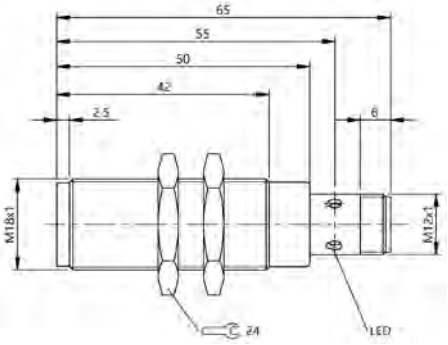
BES02N5, BES02N6



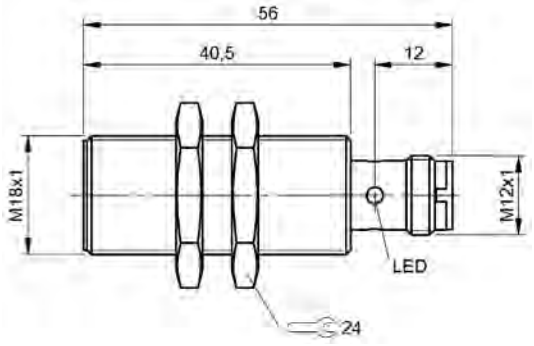
BES02Z3, BES02Z2



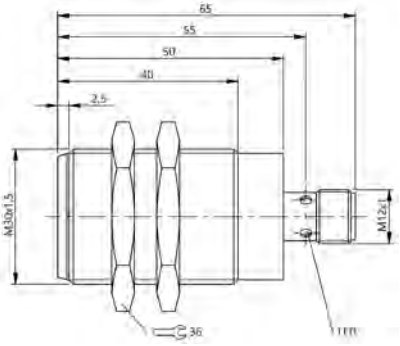
BES0510, BES0511



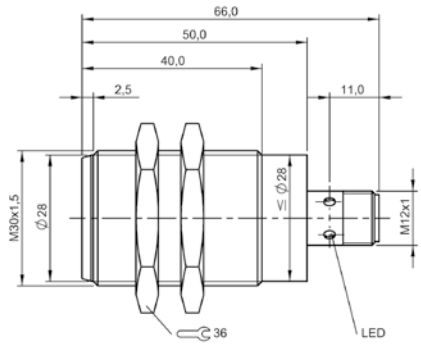
BES02Z9, BES02Z8



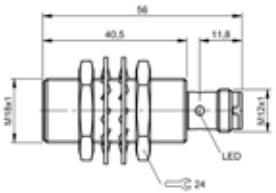
BES05K8, BES05K9



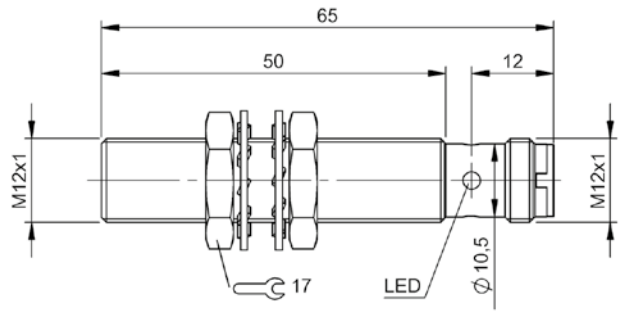
BES02ZJ



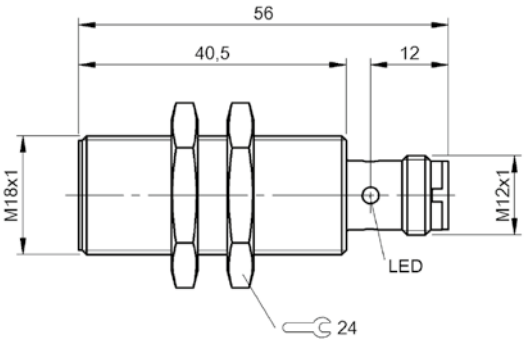
BES02ZH



BES05NC



BES04Z5, BES0567



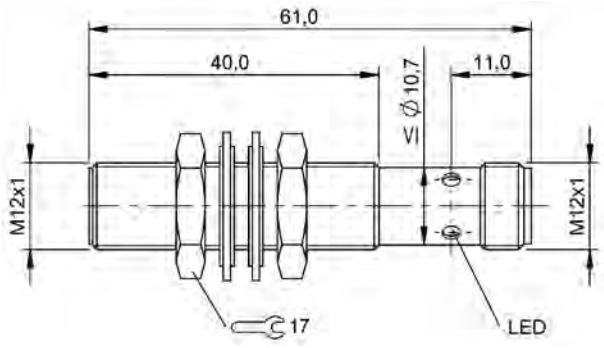
BES05K7

PNP normally open	**BES02J5** BES 516-325-S4-CW	
Dimension	Ø 12 x 61 mm	
Style	M12x1	
Installation	for flush mounting	
Range	2 mm	
Switching frequency	1000 Hz	
Housing material	Stainless steel	
Surface protection	coated, PTFE	
Material sensing surface	PTFE	
Connection	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	10...30 VDC	
Ambient temperature	-25...70 °C	
Magnetic field immune	magnetic field immune (AC/DC)	
Protection degree	IP67	
Approval/Conformity	cULus, CE, EAC	
Productview	Page 214	

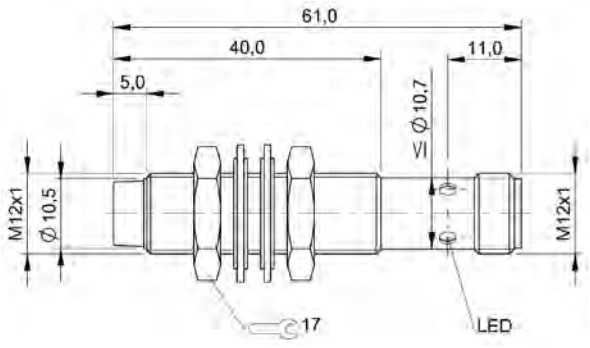
	BES02JM BES 516-356-S4-CW	BES02J9 BES 516-326-S4-CW	BES02JH BES 516-327-S4-CW
	Ø 12 x 61 mm	Ø 18 x 65 mm	Ø 30 x 65 mm
	M12x1	M18x1	M30x1.5
	non-flush	for flush mounting	for flush mounting
	4 mm	5 mm	10 mm
	1000 Hz	500 Hz	100 Hz
	Stainless steel	Brass	Brass
	coated, PTFE	coated, PTFE	coated, PTFE
	PTFE	PTFE	PTFE
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C
	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)
	IP67	IP67	IP67
	cULus, CE, EAC	cULus, CE, EAC	CE, cULus, EAC
	Page 214	Page 214	Page 214

PNP normally open	**BES0481** BES R01ZC-PSC50B-BZ03-V02	
Dimension	32 x 20 x 8 mm	
Style	block style	
Installation	for flush mounting	
Range	5 mm	
Switching frequency	100 Hz	
Housing material	Zinc, die-cast	
Surface protection	—	
Material sensing surface	PA 12	
Connection	Cable, 3.00 m, TPU	
Operating voltage Ub	10...30 VDC	
Ambient temperature	-25...70 °C	
Magnetic field immune	magnetic field immune (AC/DC)	
Protection degree	IP67	
Approval/Conformity	CE, cULus, EAC	
Productview	Page 214	

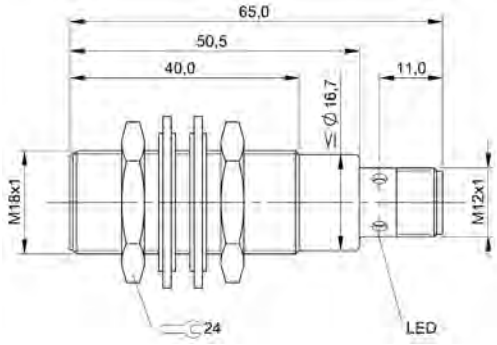
	BES048J BES R01ZC-PSC50B-BZ00,2-GS04-V02	**BES0493** BES R01ZC-PSC50B-BZ00,2-GS49-V02	**BES048W** BES R01ZC-PSC50B-BZ00,5-GS04-V02
	32 x 20 x 8 mm	32 x 20 x 8 mm	32 x 20 x 8 mm
	block style	block style	block style
	for flush mounting	for flush mounting	for flush mounting
	5 mm	5 mm	5 mm
	100 Hz	100 Hz	100 Hz
	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
	—	—	—
	PA 12	PA 12	PA 12
	Cable with connector, M12x1 connector, 4-pin, 0.20 m, TPU	Cable with connector, M8x1 connector, 3-pin, 0.20 m, TPU	Cable with connector, M12x1 connector, 4-pin, 0.50 m, TPU
	10...30 VDC	10...30 VDC	10...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C
	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)
	IP67	IP67	IP67
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	Page 214	Page 214	Page 214



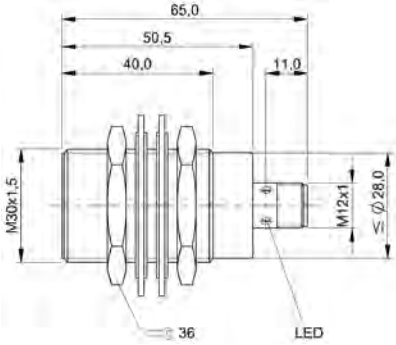
BES02J5



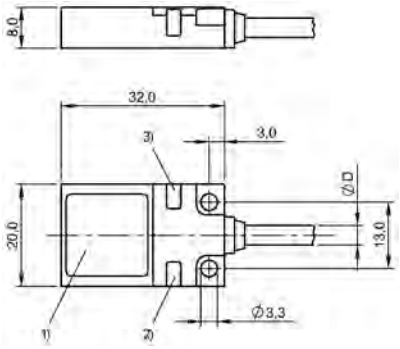
BES02JM



BES02J9

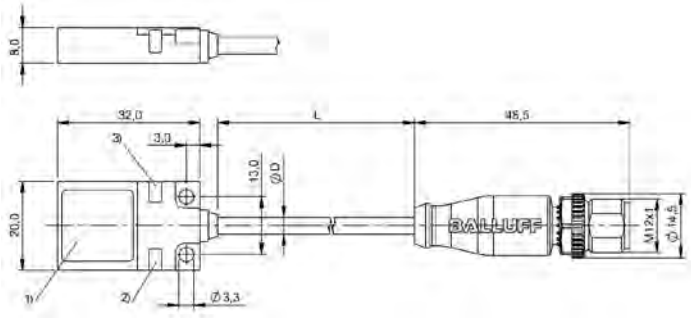


BES02JH



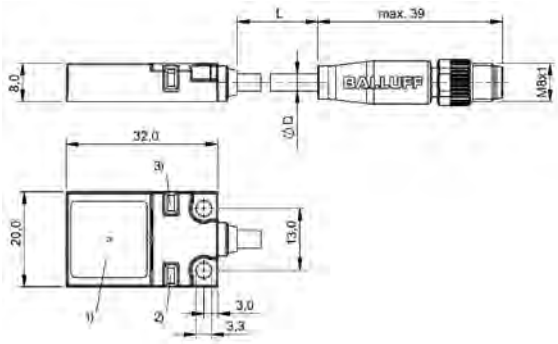
1) Sensing surface, 2) LED green, 3) LED yellow

BES0481



1) Sensing surface, 2) LED green, 3) LED yellow

BES048J, BES048W



1) Sensing surface, 2) LED green, 3) LED yellow

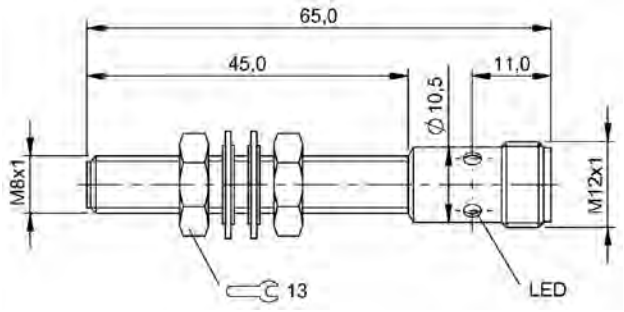
BES0493

PNP normally open	**BES02PU** BES M08MH1-PSC20B-S04G-101	**BES02PW** BES M08MH1-PSC30B-S04G-101	
Dimension	Ø 8 x 65 mm	Ø 8 x 66 mm	
Style	M8x1	M8x1	
Installation	for flush mounting	quasi-flush	
Range	2 mm	3 mm	
Switching frequency	700 Hz	1000 Hz	
Housing material	Brass	Brass	
Surface protection	nickel plated	Chrome-plated	
Material sensing surface	ceramic coated	ceramic coated	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	12...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Magnetic field immune	—	—	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC	CE, EAC	
Productview	Page 220	Page 220	

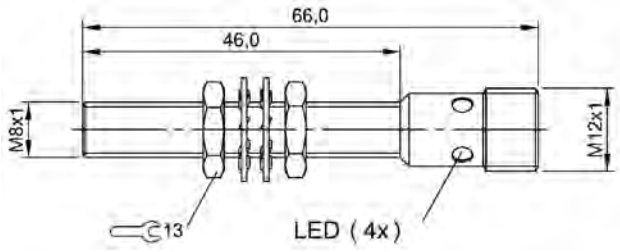
	BES056A BES M12EI-PSC40B-S04G-S03	**BES02KC** BES M18MI-PSC70B-S04G-W	**BES056C** BES M18EI-PSC72B-S04G-S03	
	Ø 12 x 65 mm	Ø 18 x 65 mm	Ø 18 x 65 mm	
	M12x1	M18x1	M18x1	
	for flush mounting	for flush mounting	for flush mounting	
	4 mm	7 mm	7.2 mm	
	500 Hz	50 Hz	250 Hz	
	Stainless steel	Brass	Stainless steel	
	weld spatter resistant	coated, PTFE	weld spatter resistant	
	Stainless steel	LCP PTFE	Stainless steel	
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
	10...30 VDC	10...30 VDC	10...30 VDC	
	-25...70 °C	5...60 °C	-25...70 °C	
	—	magnetic field immune (AC/DC)	—	
	IP67	IP67	IP67	
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	
	Page 220	Page 220	Page 220	

PNP normally open	**BES048K** BES R01ZC-PSC50B-BZ00,2-GS04-W05	**BES048N** BES R01ZC-PSC50B-BZ00,2-GS04-W13	
Dimension	32 x 20 x 8 mm	32 x 20 x 8 mm	
Style	block style	block style	
Installation	for flush mounting	for flush mounting	
Range	5 mm	5 mm	
Switching frequency	100 Hz	100 Hz	
Housing material	Zinc, die-cast	Zinc, die-cast	
Surface protection	partly coated	partly coated	
Material sensing surface	ceramic coated	ceramic coated	
Connection	Cable with connector, M12x1 connector, 4-pin, 0.20 m, TPU	Cable with connector, M12x1 connector, 4-pin, 0.20 m, TPU	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Magnetic field immune	magnetic field immune (AC/DC)	magnetic field immune (AC/DC)	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	
Productview	Page 220	Page 220	

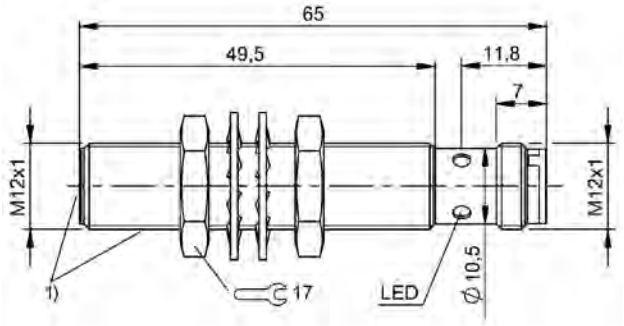
	BES048Y BES R01ZC-PSC70B-BZ00,2-GS04-108			
	32 x 20 x 8 mm			
	block style			
	for flush mounting			
	7 mm			
	150 Hz			
	Zinc, die-cast			
	partly coated			
	ceramic coated			
	Cable with connector, M12x1 connector, 4-pin, 0.20 m, TPU			
	10...30 VDC			
	-25...70 °C			
	—			
	IP67			
	CE, cULus, EAC			
	Page 220			



BES02PU

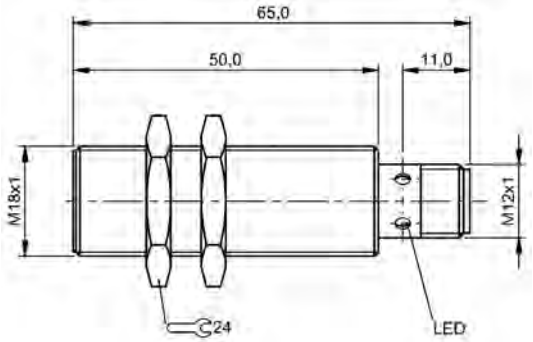


BES02PW

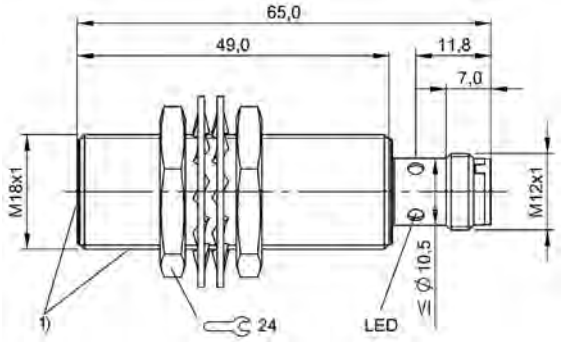


1) Pressure resistant area

BES056A

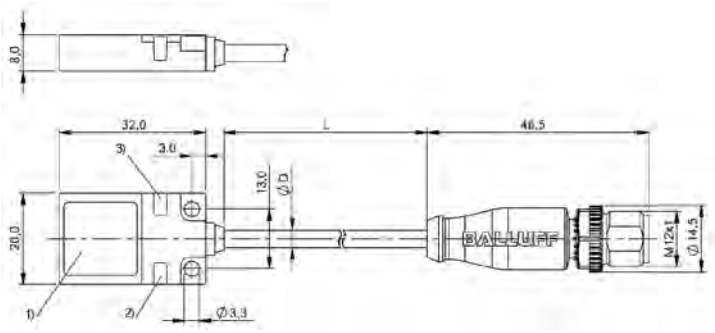


BES02KC



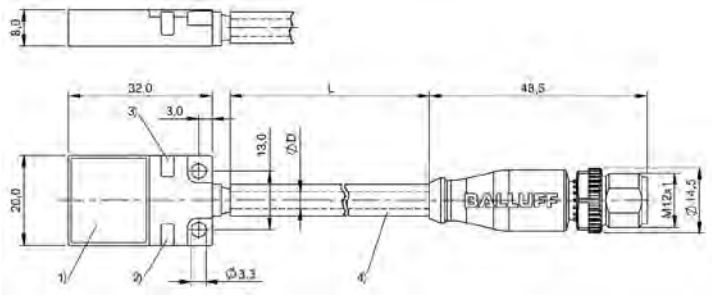
1) Pressure resistant area

BES056C



1) Sensing surface, 2) LED green, 3) LED yellow

BES048K, BES048Y



1) Sensing surface, 2) LED green, 3) LED yellow, 4) Silicon tube D=7mm

BES048N

PNP normally open	**BES05RP** BES M05ED-PSD08B-ES02-T	**BES05RR** BES M05ED-PSD08B-ES05-T	
Dimension	Ø 5 x 27 mm	Ø 5 x 27 mm	
Style	M5x0.5	M5x0.5	
Installation	flush	flush	
Range	0.8 mm	0.8 mm	
Switching frequency	1.5 kHz	1.5 kHz	
Housing material	Stainless steel (1.4104)	Stainless steel (1.4104)	
Material sensing surface	Ceramic	Ceramic	
Connection	Cable, 2 m, Silicone	Cable, 5 m, Silicone	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	0...135 °C	0...135 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	
Productview	Page 232	Page 232	

	BES05RN BES M05ED-PSD08B-ES01-GS49-T	**BES05FN** BES M08EM-PSD20B-ET05-T	**BES04CK** BES 515-325-SA74-D-TF-02	
	Ø 5 x 27 mm	Ø 8 x 60 mm	Ø 12 x 62 mm	
	M5x0.5	M8x1	M12x1	
	flush	flush	flush	
	0.8 mm	2 mm	2 mm	
	1.5 kHz	600 Hz	200 Hz	
	Stainless steel (1.4104)	Stainless steel	Stainless steel	
	Ceramic	LCP	PEEK	
	Cable with connector, M8x1, 1 m, Silicone	Cable, 5.0 m, PTFE	Cable, 2.00 m, PTFE	
	10...30 VDC	10...30 VDC	10...30 VDC	
	0...135 °C	0...140 °C	-25...160 °C	
	IP67	IP50	IP68	
	CE, EAC, cULus, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	
	Page 232	Page 232	Page 232	

PNP normally open	**BES02HU** BES 516-325-SA19-03	**BES02HW** BES 516-325-SA19-05	
PNP normally open/normally closed			
Dimension	Ø 12 x 75 mm	Ø 12 x 75 mm	
Style	M12x1	M12x1	
Installation	flush	flush	
Range	2 mm	2 mm	
Switching frequency	1000 Hz	1000 Hz	
Housing material	Brass, nickel plated	Brass, nickel plated	
Material sensing surface	PEEK	PEEK	
Connection	Cable, 3.00 m, Silicone	Cable, 5.00 m, Silicone	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...120 °C	-25...120 °C	
IP rating	IP68	IP68	
Approval/Conformity	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	
Productview	Page 232	Page 232	

	BES04CL BES 515-356-SA35-D-TF-02	**BES043T** BES 515-326-SA49-D-TF-02	**BES04AT** BES 515-326-SA49-D-TF-05	
				BES02H5 BES 516-105-SA2-05
	Ø 12 x 66 mm	Ø 18 x 95 mm	Ø 18 x 95 mm	Ø 18 x 95.5 mm
	M12x1	M18x1	M18x1	M18x1
	non-flush	flush	flush	flush
	4 mm	5 mm	5 mm	5 mm
	200 Hz	200 Hz	200 Hz	500 Hz
	Stainless steel (1.4571)	Stainless steel	Stainless steel	Brass, nickel plated
	PEEK	PEEK	PEEK	PBT
	Cable, 2.00 m, PTFE	Cable, 2.00 m, PTFE	Cable, 5.00 m, PTFE	Cable, 5.00 m, Silicone
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...160 °C	-25...160 °C	-25...160 °C	-25...120 °C
	IP68	IP68	IP68	IP67
	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE
	Page 232	Page 232	Page 232	Page 232

PNP normally open	**BES05N4** BES M18ED-PSC50B-GT05-T		
PNP normally open/normally closed		**BES02H6** BES 516-105-SA5	
Dimension	Ø 18 x 35 mm	Ø 18 x 83 mm	
Style	M18x1	M18x1	
Installation	flush	flush	
Range	5 mm	5 mm	
Switching frequency	9 Hz	500 Hz	
Housing material	Stainless steel	Brass, nickel plated	
Material sensing surface	LCP	PBT	
Connection	Connector, M12x1-Male, 4-pin, 5.0 m, PTFE	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	0...230 °C	-25...120 °C	
IP rating	IP50	IP67	
Approval/Conformity	CE, EAC, WEEE	CE, EAC, WEEE	
Productview	Page 233	Page 233	

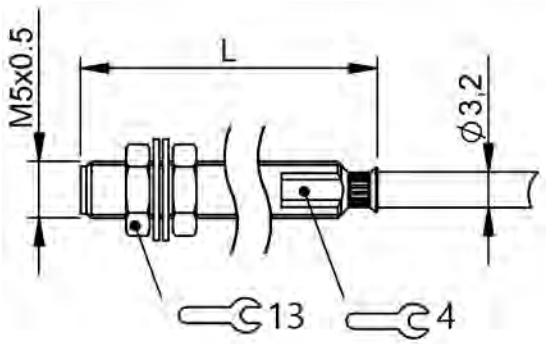
	BES04C7 BES 515-360-SA13-D-TF-05	BES02H7 BES 516-114-SA1-05	BES043W BES 515-327-SA22-D-TF-02	BES04AU BES 515-327-SA22-D-TF-05
	Ø 18 x 103 mm	Ø 30 x 91.5 mm	Ø 30 x 100 mm	Ø 30 x 100 mm
	M18x1	M30x1.5	M30x1.5	M30x1.5
	non-flush	flush	flush	flush
	8 mm	10 mm	10 mm	10 mm
	200 Hz	300 Hz	200 Hz	200 Hz
	Stainless steel	Brass, nickel plated	Stainless steel	Stainless steel
	PEEK	PBT	PEEK	PEEK
	Cable, 5.00 m, PTFE	Cable, 5.00 m, Silicone	Cable, 2.00 m, PTFE	Cable, 5.00 m, PTFE
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...160 °C	-25...120 °C	-25...160 °C	-25...160 °C
	IP68	IP67	IP68	IP68
	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE
	Page 233	Page 233	Page 233	Page 233

PNP normally open	**BES05N5** BES M30N1-PSC10B-GT05-T		
PNP normally open/normally closed		**BES02HE** BES 516-125-SA1-05	
Dimension	Ø 30 x 74 mm	Ø 30 x 91 mm	
Style	M30x1.5	M30x1.5	
Installation	flush	non-flush	
Range	10 mm	15 mm	
Switching frequency	9 Hz	100 Hz	
Housing material	Stainless steel	Brass, nickel plated	
Material sensing surface	LCP	PA 12	
Connection	Connector, M12x1, 4-pin, 5.0 m, PTFE	Cable, 5.00 m, Silicone	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	0...230 °C	-25...120 °C	
IP rating	IP50	IP67	
Approval/Conformity	CE, EAC, WEEE	CE, EAC, WEEE	
Productview	Page 233	Page 233	

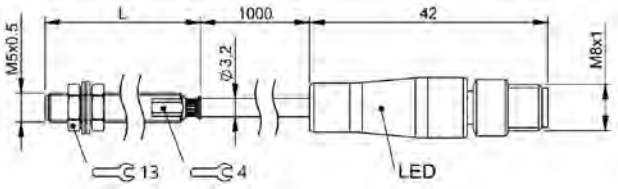



	BES043Y BES 515-362-SA4-D-TF-02	**BES04C8** BES 515-362-SA4-D-TF-05	**BES05N7** BES Q08EC-PSD20B-ES05	**BES05N8** BES Q12EC-PSD40B-ES05
	Ø 30 x 110 mm	Ø 30 x 110 mm	8 x 8 x 55 mm	12 x 12 x 59 mm
	M30x1.5	M30x1.5	8x8	12x12
	non-flush	non-flush	flush	flush
	15 mm	15 mm	2 mm	4 mm
	200 Hz	200 Hz	500 Hz	500 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	PEEK	PEEK	LCP	LCP
	Cable, 2.00 m, PTFE	Cable, 5.00 m, PTFE	Cable, 5.0 m, Silicone	Cable, 5.0 m, Silicone
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...160 °C	-25...160 °C	-25...140 °C	-25...130 °C
	IP68	IP68	IP65	IP65
	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE
	Page 233	Page 233	Page 234	Page 234

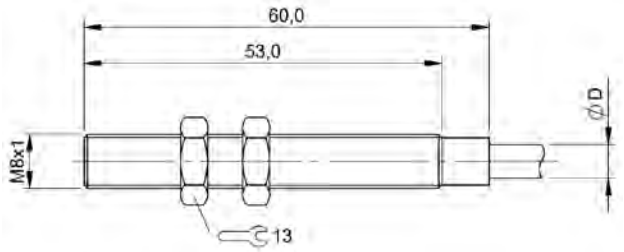
PNP normally open		**BES05N9** BES Q40KG-PSD25F-S04G	
For switching amplifier	**BES05N6** BES Q40KG-X20F-SZ03		
Dimension	40 x 40 x 66.6 mm	40 x 40 x 70.7 mm	
Style	40x40	40x40	
Installation	non-flush	non-flush	
Range	20 mm	25 mm	
Switching frequency	100 Hz	100 Hz	
Housing material	Stainless steel	Stainless steel (1.4305) LCP	
Material sensing surface	LCP	LCP	
Connection	Connector, LEMO connec-tor-Special connector, 2-pin	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	10...30 VDC	10...35 VDC	
Ambient temperature	0...230 °C	0...150 °C	
IP rating	IP50	IP67	
Approval/Conformity	CE, EAC, WEEE	CE, EAC, WEEE	
Productview	Page 234	Page 234	



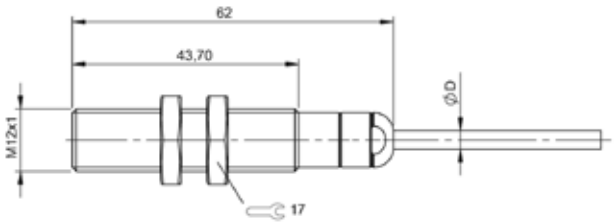
BES05RP, BES05RR



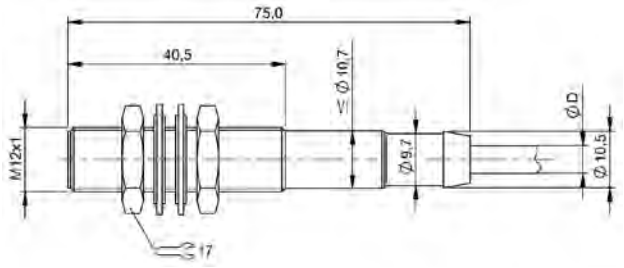
BES05RN



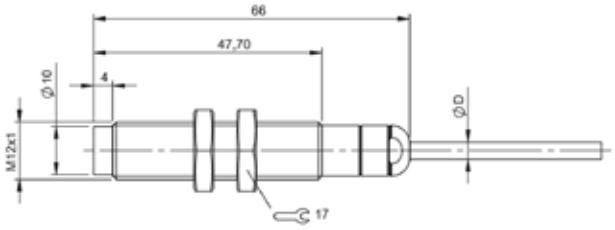
BES05FN



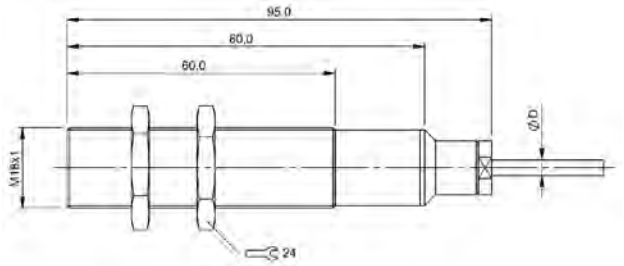
BES04CK



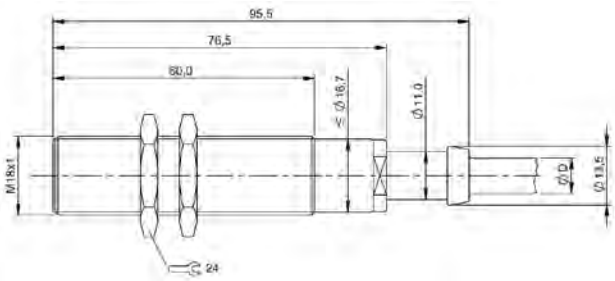
BES02HU, BES02HW



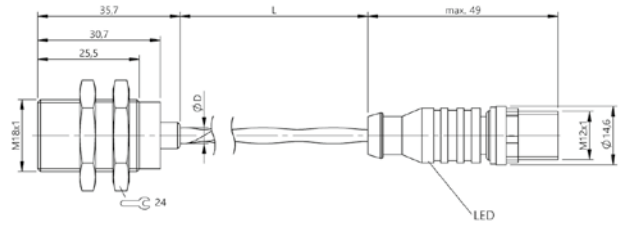
BES04CL



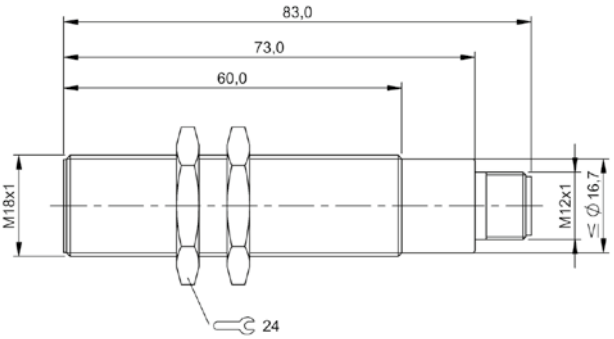
BES043T, BES04AT



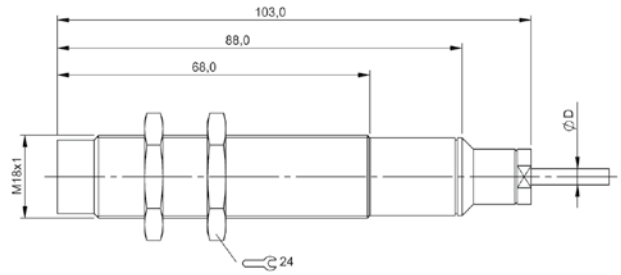
BES02H5



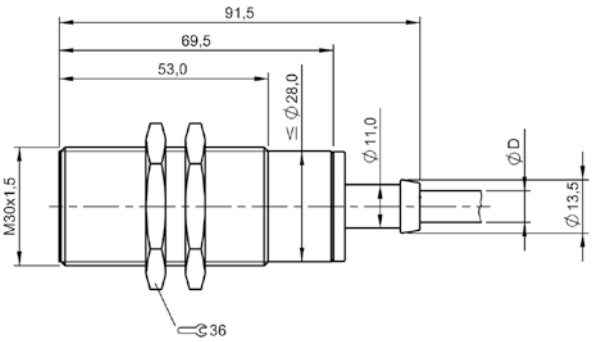
BES05N4



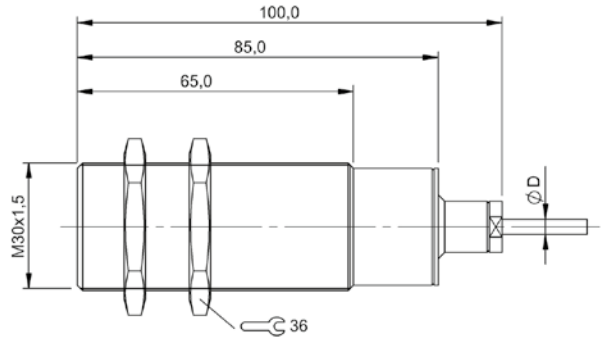
BES02H6



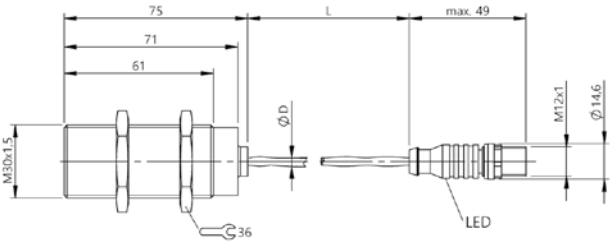
BES04C7



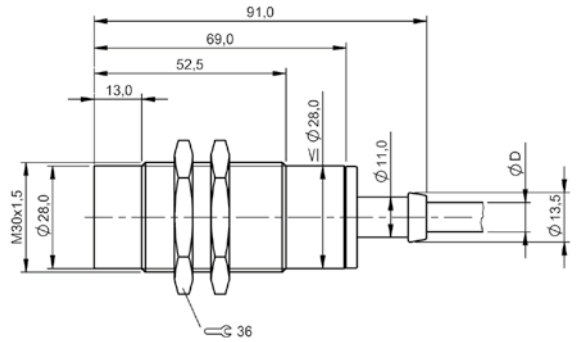
BES02H7



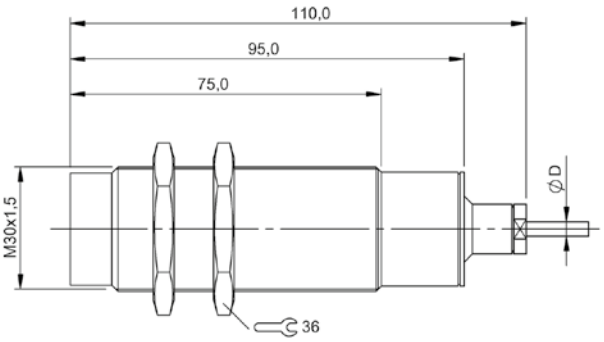
BES043W, BES04AU



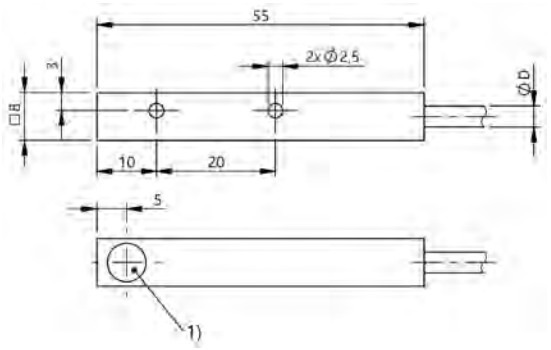
BES05N5



BES02HE

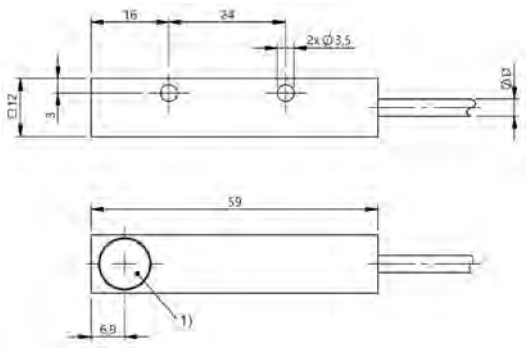


BES043Y, BES04C8



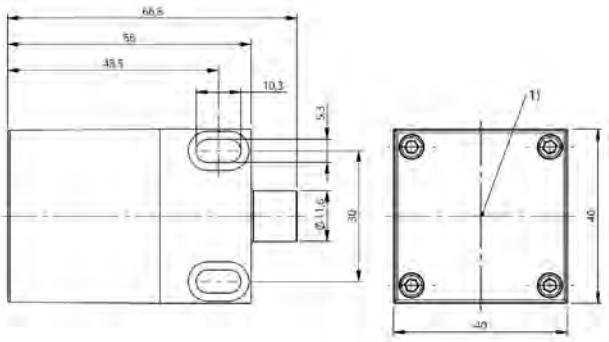
1) Sensing surface

BES05N7



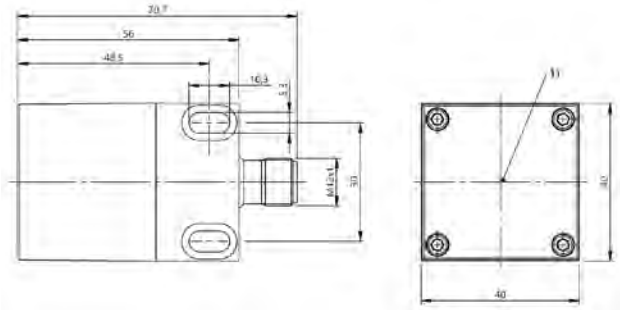
1) Sensing surface

BES05N8



1) Sensing surface

BES05N6



1) Sensing surface

BES05N9

NAMUR	**BES02ZR** BES G06MD-GNX10B-EV02-EEX	**BES02ZT** BES M08MD-GNX10B-EV02-EEX		
PNP normally open			**BES05M3** BES M12EG2-PSC20B-BV02-EXF	
Dimension	Ø 6.5 x 30 mm	Ø 8 x 30 mm	Ø 12 x 59 mm	
Style	D6.5	M8x1	M12x1	
Installation	for flush mounting	for flush mounting	for flush mounting	
Range	1 mm	1 mm	2 mm	
Switching frequency	2000 Hz	2000 Hz	180 Hz	
Housing material	Brass	Brass	Stainless steel	
Surface protection	Nickel-free coated	Nickel-free coated	—	
Material sensing surface	PBT	PBT	Stainless steel	
Connection	Cable, 2.00 m, PVC	Cable, 2.00 m, PVC	Cable, PUR	
Operating voltage Ub	7.7...9 VDC	7.7...9 VDC	10...30 VDC	
Ambient temperature	-20...70 °C	-20...70 °C	-5...60 °C	
Pressure rating max.	—	—	—	
Ex category	ATEX: 2G (EPL Gb) ATEX: 1D (EPL Da)	ATEX: 2G (EPL Gb) ATEX: 1D (EPL Da)	ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEx: EPL Gc IECEx: EPL Dc	
Protection degree	IP67	IP67	IP67	
Approval/Conformity	CE, EAC, ATEX, cCSAus, FM	CE, EAC, ATEX, cCSAus, FM	CE, EAC, IECEx, ATEX	
Productview	Page 248	Page 248	Page 248	





		BES05NE BES M12MG2-GNX20B-BT02-EXA	**BES05NM** BES M12MG2-GNX20B-BT02-EXB	**BHS004L** BES 516-300-S318-S4-N	
	BES05L6 BES M12MF2-PSC20B-BV02-EXE				**BHS002W** BES 516-300-S249-NEX-S4-D
	Ø 12 x 59 mm	Ø 12 x 62 mm	Ø 12 x 62 mm	Ø 12 x 56 mm	Ø 12 x 56 mm
	M12x1	M12x1	M12x1	M12x1	M12x1
	for flush mounting	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	2 mm	2 mm	2 mm	1.5 mm	1.5 mm
	300 Hz	—	—	1000 Hz	2000 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	—	—	—	—	—
	LCP	PEEK	PTFE	POM	EP
	Cable, PUR	Cable, FEP	Cable, FEP	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	10...30 VDC	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	10...30 VDC
	-20...60 °C	-20...60 °C, depending on Ex category	-20...60 °C, depending on Ex category	-25...70 °C	-25...80 °C
	—	—	—	500 bar	500 bar
	ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEx: EPL Gc IECEx: EPL Dc	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 2G (EPL Gb)	ATEX: 3G (EPL Gc)
	IP67	IP68	IP68	IP68	IP68
	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, ATEX
	Page 248	Page 248	Page 248	Page 248	Page 248



NAMUR	**BHS0034** BES 516-300-S266-S4	**BHS004K** BES 516-300-S315-S4-N		
PNP normally open			**BHS005P** BHS B135V-PSD15-NEX-S04	
Dimension	Ø 12 x 56 mm	Ø 12 x 56 mm	Ø 12 x 78 mm	
Style	M12x1	M12x1	M12x1	
Installation	for flush mounting	for flush mounting	for flush mounting	
Range	1.5 mm	1.5 mm	1.5 mm	
Switching frequency	1000 Hz	1000 Hz	400 Hz	
Housing material	Stainless steel	Stainless steel	Stainless steel	
Surface protection	—	—	—	
Material sensing surface	POM	POM	Ceramic	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	7.7...9 VDC	7.7...9 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	-25...100 °C	
Pressure rating max.	500 bar	500 bar	500 bar	
Ex category	ATEX: 2G (EPL Gb)	ATEX: 2G (EPL Gb)	ATEX: 3G (EPL Gc)	
Protection degree	IP68	IP68	IP68	
Approval/Conformity	CE, EAC	CE, EAC, IECEx, ATEX	CE, EAC, ATEX	
Productview	Page 248	Page 248	Page 249	





	BES05MW BES M12MG2-GNX20B-S04G-EXC	**BES02ZU** BES M12ME-GNX40B-S04G-EEX	**BES05L7** BES M12MF2-PSC40F-BV02-EXE	**BES05NF** BES M12MG2-GNX40F-BT02-EXA	**BES05NN** BES M12MG2-GNX40F-BT02-EXB
	Ø 12 x 65 mm	Ø 12 x 45 mm	Ø 12 x 61 mm	Ø 12 x 66 mm	Ø 12 x 66 mm
	M12x1	M12x1	M12x1	M12x1	M12x1
	for flush mounting	for flush mounting	non-flush	non-flush	non-flush
	2 mm	4 mm	1.5 mm	4 mm	4 mm
	—	700 Hz	300 Hz	—	—
	Brass	Brass	Stainless steel	Stainless steel	Stainless steel
	nickel plated	Nickel-free coated	—	—	—
	PA	PBT	LCP POM	PEEK	PTFE
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Cable, PUR	Cable, FEP	Cable, FEP
	7.7...9 VDC	7.7...9 VDC	10...30 VDC	7.7...9 VDC	7.7...9 VDC
	-20...60 °C, depending on Ex category	-20...70 °C	-20...60 °C	-20...60 °C, depending on Ex category	-20...60 °C, depending on Ex category
	—	—	—	—	—
	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEx: EPL Gc IECEx: EPL Dc	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)
	IP67	IP67	IP67	IP68	IP68
	CE, EAC, IECEx, ATEX	CE, EAC, cCSAus, FM	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX
	Page 249	Page 249	Page 249	Page 249	Page 249



NAMUR	**BES05MY** BES M12MG2-GNX40F-S04G-EXC			
PNP normally open		**BES05M4** BES M18EG2-PSC50B-BV02-EXF	**BES05L2** BES M18MF2-PSC50B-BV02-EXD	
Dimension	Ø 12 x 70 mm	Ø 18 x 57 mm	Ø 18 x 60 mm	
Style	M12x1	M18x1	M18x1	
Installation	non-flush	for flush mounting	for flush mounting	
Range	4 mm	5 mm	5 mm	
Switching frequency	—	180 Hz	300 Hz	
Housing material	Brass	Stainless steel	Brass	
Surface protection	nickel plated	—	nickel plated	
Material sensing surface	PA	Stainless steel	PA	
Connection	Connector, M12x1 connector, 4-pin	Cable, PUR	Cable, PUR	
Operating voltage Ub	7.7...9 VDC	10...30 VDC	18...27 VDC	
Ambient temperature	-20...60 °C, depending on Ex category	-10...60 °C	-20...60 °C	
Pressure rating max.	—	—	—	
Ex category	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEx: EPL Gc IECEx: EPL Dc	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	
Protection degree	IP67	IP67	IP67	
Approval/Conformity	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	
Productview	Page 249	Page 249	Page 250	




		BES05NH BES M18MH2-GNX50B-BT02-EXA	**BES05NP** BES M18MH2-GNX50B-BT02-EXB	**BES05MZ** BES M18MH2-GNX50B-S04G-EXC	
	BES05L8 BES M18MF2-PSC50B-BV02-EXE				
	Ø 18 x 60 mm	Ø 18 x 67 mm	Ø 18 x 67 mm	Ø 18 x 67 mm	
	M18x1	M18x1	M18x1	M18x1	
	for flush mounting	for flush mounting	for flush mounting	for flush mounting	
	5 mm	5 mm	5 mm	5 mm	
	300 Hz	—	—	—	
	Brass	Stainless steel	Stainless steel	Brass	
	nickel plated	—	—	nickel plated	
	PA	PEEK	PTFE	PA	
	Cable, PUR	Cable, FEP	Cable, FEP	Connector, M12x1 connector, 4-pin	
	10...30 VDC	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	
	-20...60 °C	-20...60 °C, depending on Ex category	-20...60 °C, depending on Ex category	-20...60 °C, depending on Ex category	
	—	—	—	—	
	ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEx: EPL Gc IECEx: EPL Dc	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	
	IP67	IP68	IP68	IP67	
	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	
	Page 250	Page 250	Page 250	Page 250	



NAMUR	**BES02ZW** BES M18ME1-GNX80B-S04G-EEX			
PNP normally open		**BES05L3** BES M18MF2-PSC80F-BV02-EXD	**BES05L9** BES M18MF2-PSC80F-BV02-EXE	
Dimension	Ø 18 x 46 mm	Ø 18 x 69 mm	Ø 18 x 69 mm	
Style	M18x1	M18x1	M18x1	
Installation	for flush mounting	non-flush	non-flush	
Range	8 mm	5.5 mm	5.5 mm	
Switching frequency	400 Hz	300 Hz	300 Hz	
Housing material	Brass	Brass	Brass	
Surface protection	Nickel-free coated	nickel plated	nickel plated	
Material sensing surface	PBT	PA POM	PA POM	
Connection	Connector, M12x1 connector, 4-pin	Cable, PUR	Cable, PUR	
Operating voltage Ub	7.7...9 VDC	18...27 VDC	10...30 VDC	
Ambient temperature	-20...70 °C	-20...60 °C	-20...60 °C	
Pressure rating max.	—	—	—	
Ex category	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEx: EPL Gc IECEx: EPL Dc	
Protection degree	IP67	IP67	IP67	
Approval/Conformity	CE, EAC, cCSAus, FM	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	
Productview	Page 250	Page 250	Page 250	





	BES05NJ BES M18MH2-GNX80F-BT02-EXA	BES05NR BES M18MH2-GNX80F-BT02-EXB	BES05N0 BES M18MH2-GNX80F-S04G-EXC		
				BES05M5 BES M30EG2-PSC10B-BV02-EXF	BES05L4 BES M30MF2-PSC10B-BV02-EXD
	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 30 x 59 mm	Ø 30 x 62 mm
	M18x1	M18x1	M18x1	M30x1.5	M30x1.5
	non-flush	non-flush	non-flush	for flush mounting	for flush mounting
	8 mm	8 mm	8 mm	10 mm	10 mm
	—	—	—	180 Hz	300 Hz
	Stainless steel	Stainless steel	Brass	Stainless steel	Brass
	—	—	nickel plated	—	nickel plated
	PEEK	PTFE	PA	Stainless steel	PA
	Cable, FEP	Cable, FEP	Connector, M12x1 connector, 4-pin	Cable, PUR	Cable, PUR
	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	10...30 VDC	18...27 VDC
	-20...60 °C, depending on Ex category	-20...60 °C, depending on Ex category	-20...60 °C, depending on Ex category	-20...60 °C	-20...60 °C
	—	—	—	—	—
	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEx: EPL Gc IECEx: EPL Dc	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)
	IP68	IP68	IP67	IP67	IP67
	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX
	Page 250	Page 250	Page 251	Page 251	Page 251



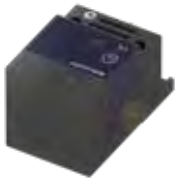
NAMUR		**BES05NK** BES M30MH2-GNX10B-BT02-EXA	**BES05NT** BES M30MH2-GNX10B-BT02-EXB	
PNP normally open	**BES05LA** BES M30MF2-PSC10B-BV02-EXE			
Dimension	Ø 30 x 62 mm	Ø 30 x 68 mm	Ø 30 x 68 mm	
Style	M30x1.5	M30x1.5	M30x1.5	
Installation	for flush mounting	for flush mounting	for flush mounting	
Range	10 mm	10 mm	10 mm	
Switching frequency	300 Hz	—	—	
Housing material	Brass	Stainless steel	Stainless steel	
Surface protection	nickel plated	—	—	
Material sensing surface	PA	PEEK	PTFE	
Connection	Cable, PUR	Cable, FEP	Cable, FEP	
Operating voltage Ub	10...30 VDC	7.7...9 VDC	7.7...9 VDC	
Ambient temperature	-20...60 °C	-20...60 °C, depending on Ex category	-20...60 °C, depending on Ex category	
Pressure rating max.	—	—	—	
Ex category	ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEx: EPL Gc IECEx: EPL Dc	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	
Protection degree	IP67	IP68	IP68	
Approval/Conformity	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	
Productview	Page 251	Page 251	Page 251	



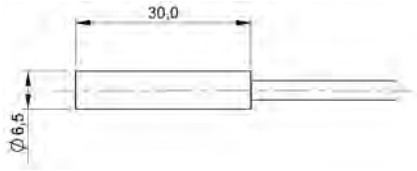


	BES05N1 BES M30MH2-GNX10B-S04G-EXC	**BES02ZY** BES M30ME1-GNX15B-S04G-EEX			**BES05NL** BES M30MH2-GNX15F-BT02-EXA
			BES05L5 BES M30MF2-PSC15F-BV02-EXD	**BES05LC** BES M30MF2-PSC15F-BV02-EXE	
	Ø 30 x 68 mm	Ø 30 x 50 mm	Ø 30 x 74 mm	Ø 30 x 74 mm	Ø 30 x 77 mm
	M30x1.5	M30x1.5	M30x1.5	M30x1.5	M30x1.5
	for flush mounting	for flush mounting	non-flush	non-flush	non-flush
	10 mm	15 mm	12 mm	12 mm	15 mm
	—	100 Hz	300 Hz	300 Hz	—
	Brass	Brass	Brass	Brass	Stainless steel
	nickel plated	Nickel-free coated	nickel plated	nickel plated	—
	PA	PBT	PA POM	PA POM	PEEK
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Cable, PUR	Cable, PUR	Cable, FEP
	7.7...9 VDC	7.7...9 VDC	18...27 VDC	10...30 VDC	7.7...9 VDC
	-20...60 °C, depending on Ex category	-20...70 °C	-20...60 °C	-20...60 °C	-20...60 °C, depending on Ex category
	—	—	—	—	—
	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEx: EPL Gc IECEx: EPL Dc	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)
	IP67	IP67	IP67	IP67	IP68
	CE, EAC, IECEx, ATEX	CE, EAC, cCSAus, FM	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX
	Page 251	Page 251	Page 251	Page 251	Page 252

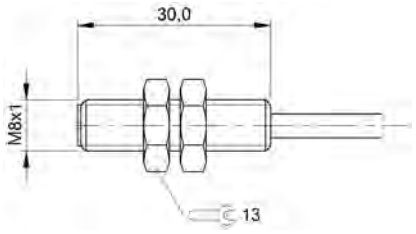
NAMUR	**BES05NU** BES M30MH2-GNX15F-BT02-EXB	**BES05N2** BES M30MH2-GNX15F-S04G-EXC	**BES02ZZ** BES Q40KFU-GNX20B-S92G-EEX	
Dimension	Ø 30 x 77 mm	Ø 30 x 77 mm	40 x 40 x 66 mm	
Style	M30x1.5	M30x1.5	block style	
Installation	non-flush	non-flush	for flush mounting	
Range	15 mm	15 mm	20 mm	
Switching frequency	—	—	200 Hz	
Housing material	Stainless steel	Brass	PPE PPS	
Surface protection	—	nickel plated	—	
Material sensing surface	PTFE	PA	PPE	
Connection	Cable, FEP	Connector, M12x1-Male, connector, 4-pin	Connector, M12x1-Male, connector, 5-pin	
Operating voltage Ub	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	
Ambient temperature	-20...60 °C, depending on Ex category	-20...60 °C, depending on Ex category	-20...70 °C	
Pressure rating max.	—	—	—	
Ex category	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 2G (EPL Gb) ATEX: 1D (EPL Da)	
Protection degree	IP68	IP67	IP67	
Approval/Conformity	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, cCSAus, FM	
Productview	Page 252	Page 252	Page 252	



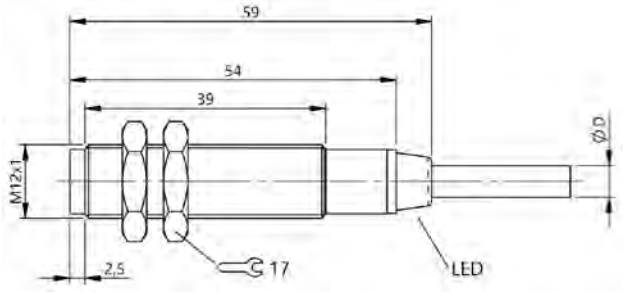
	BES0300 BES Q40KFU-GNX35F-S92G-EEX				
	40 x 40 x 66 mm				
	block style				
	non-flush				
	35 mm				
	100 Hz				
	PPE PPS				
	—				
	PPE				
	Connector, M12x1-Male, connector, 5-pin				
	7.7...9 VDC				
	-20...70 °C				
	—				
	ATEX: 2G (EPL Gb) ATEX: 1D (EPL Da)				
	IP67				
	CE, EAC, cCSAus, FM				
	Page 252				



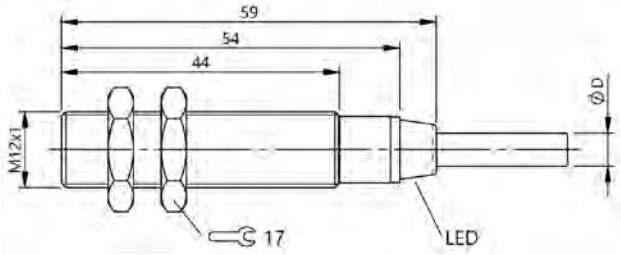
BES02ZR



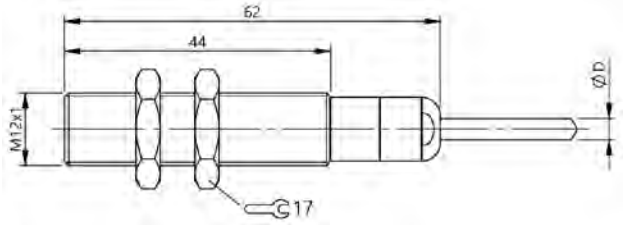
BES02ZT



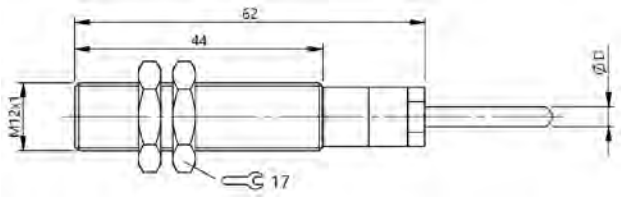
BES05M3



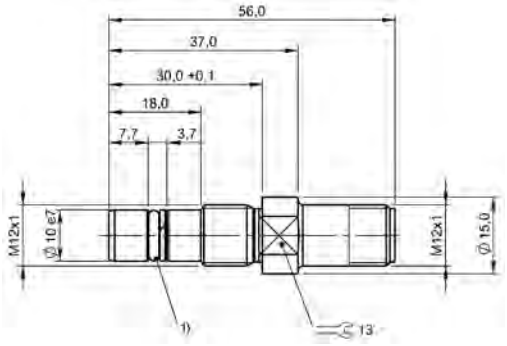
BES05L6



BES05NE

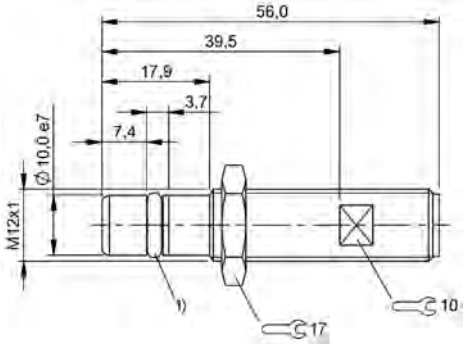


BES05NM



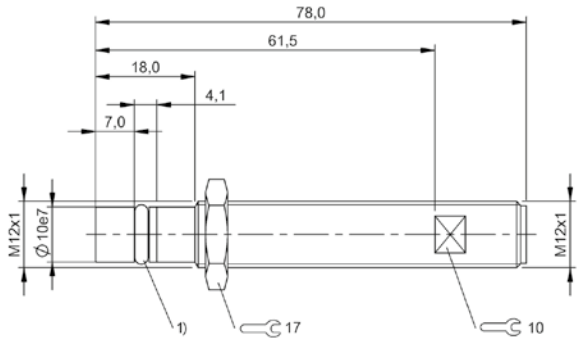
1) O-Ring with thrust ring

BHS004L



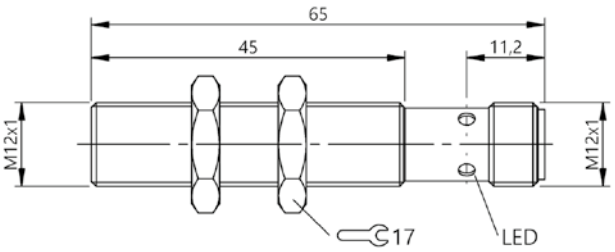
1) O-Ring with thrust ring

BHS002W, BHS0034, BHS004K

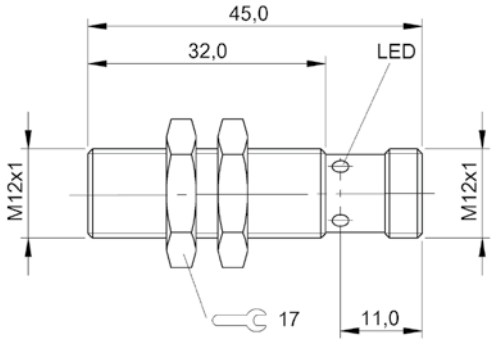


1) O-Ring with thrust ring

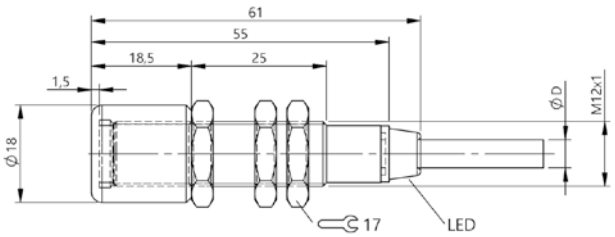
BHS005P



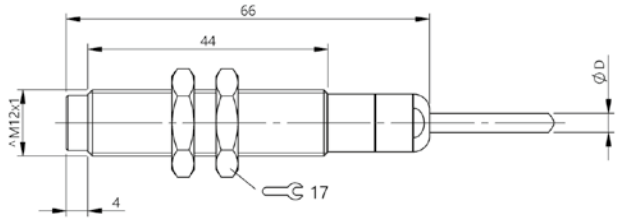
BES05MW



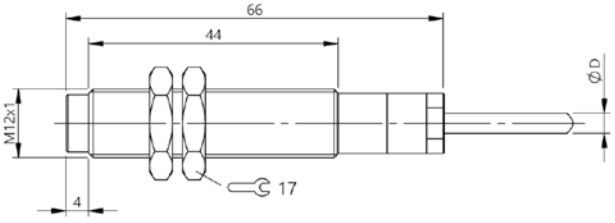
BES02ZU



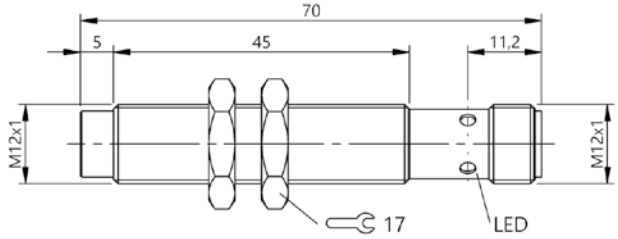
BES05L7



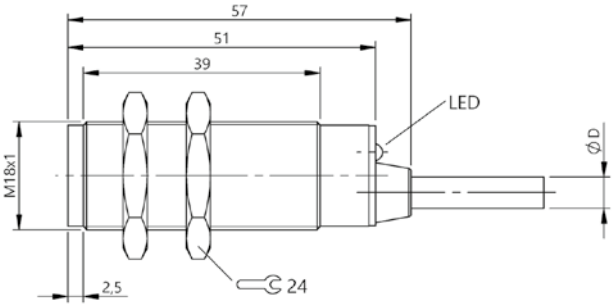
BES05NF



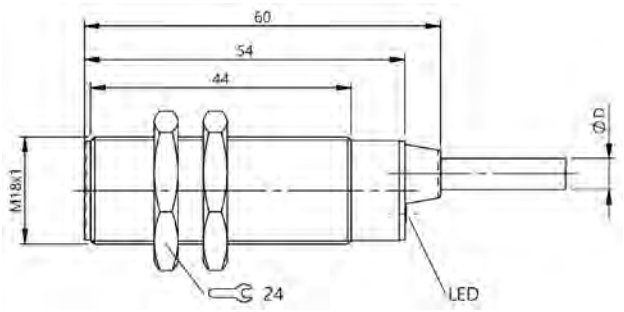
BES05NN



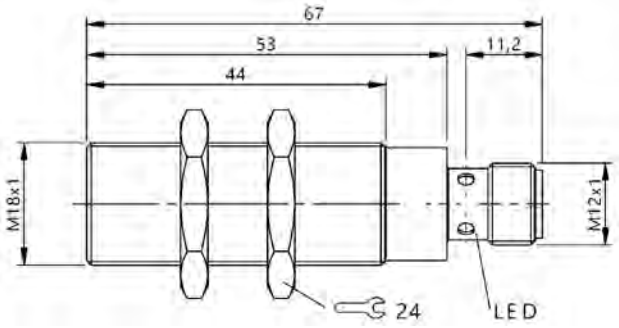
BES05MY



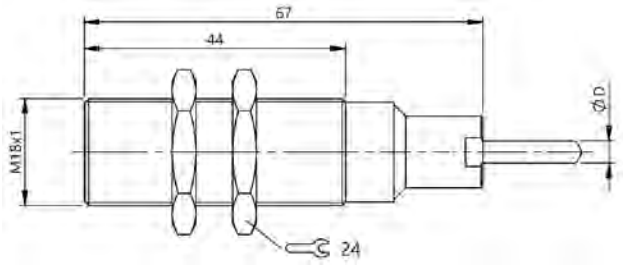
BES05M4



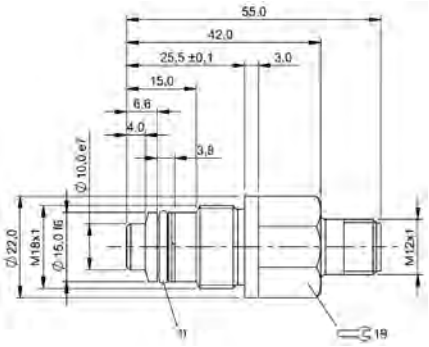
BES05L2, BES05L8



BES05NH, BES05MZ

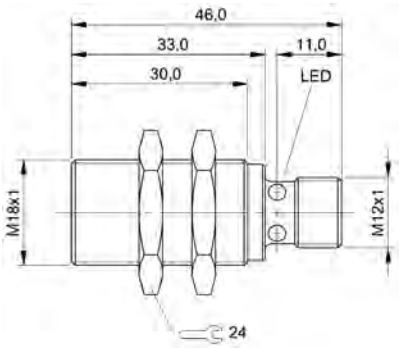


BES05NP

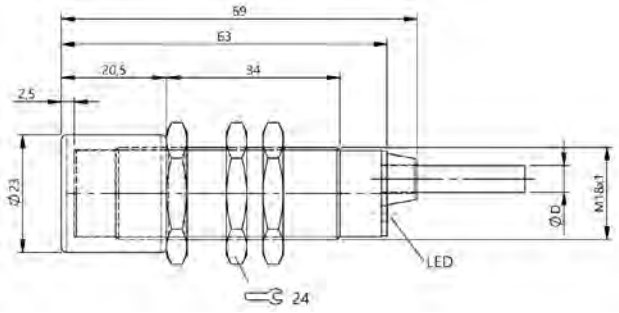


1) O-Ring with thrust ring

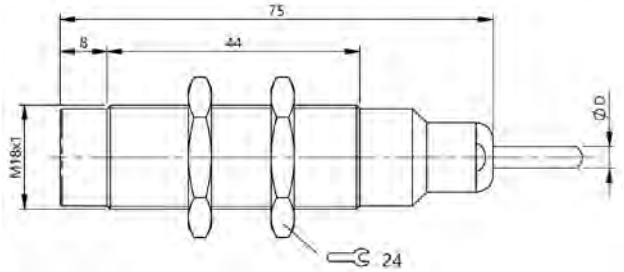
BHS004H



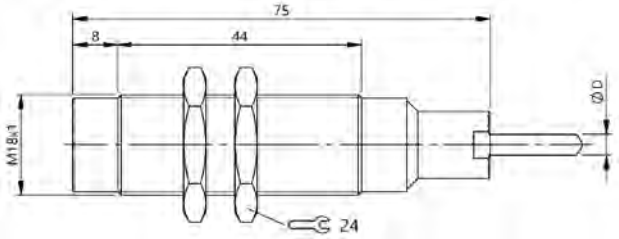
BES02ZW



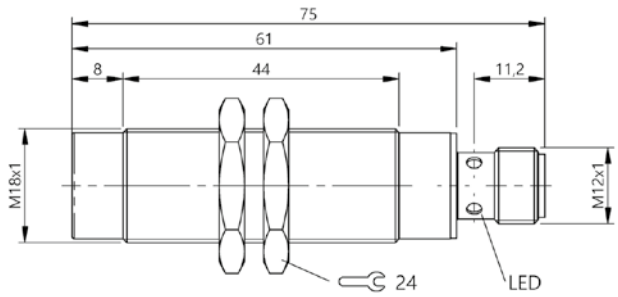
BES05L3, BES05L9



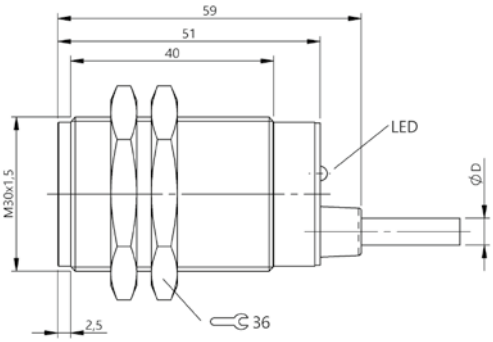
BES05NJ



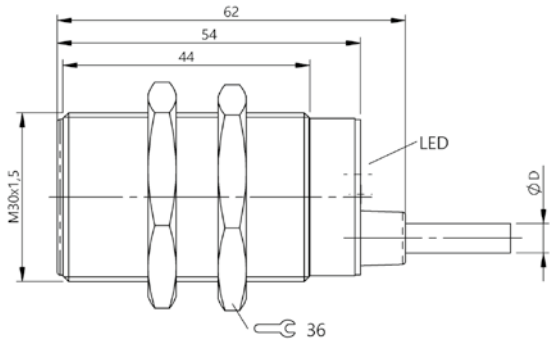
BES05NR



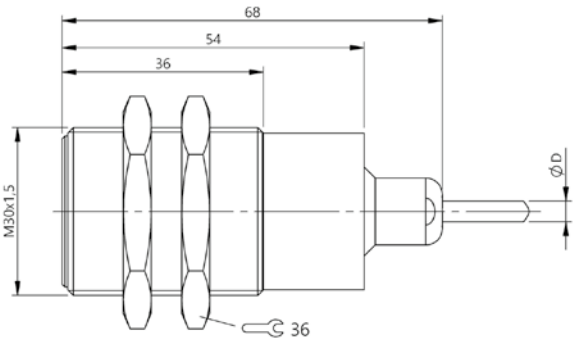
BES05N0



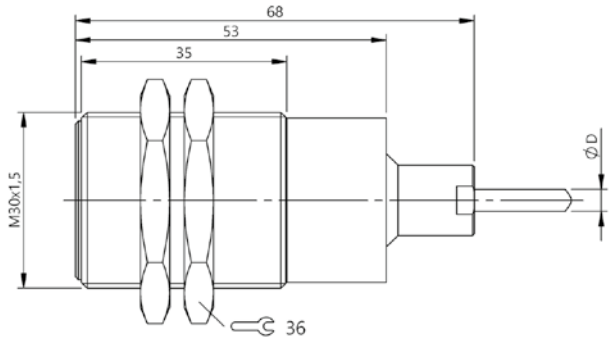
BES05M5



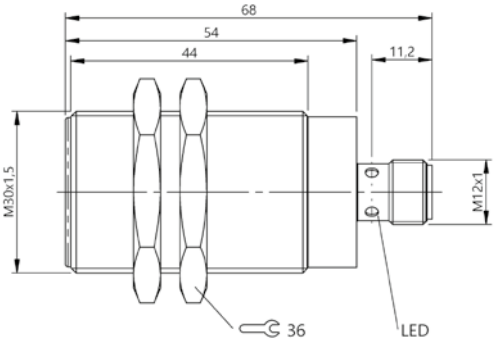
BES05L4, BES05LA



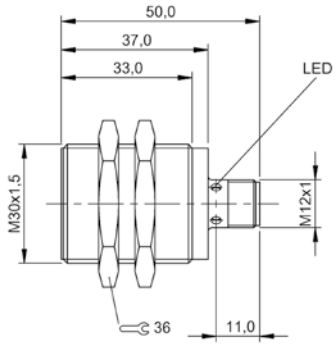
BES05NK



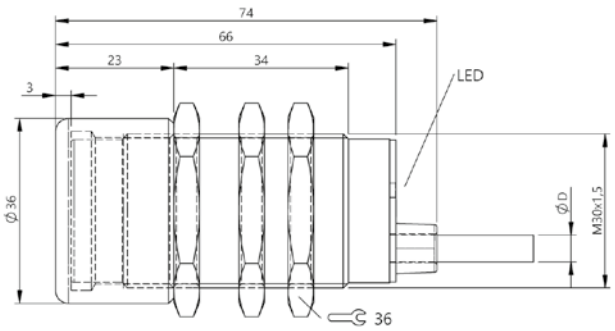
BES05NT



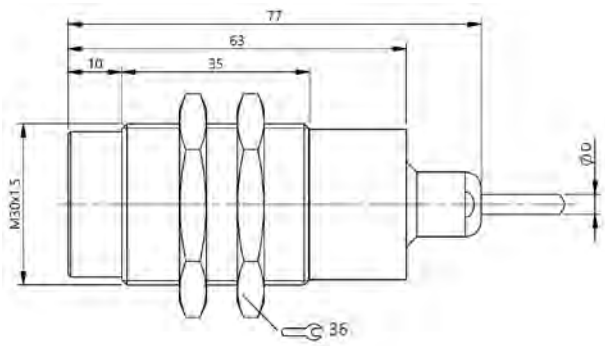
BES05N1



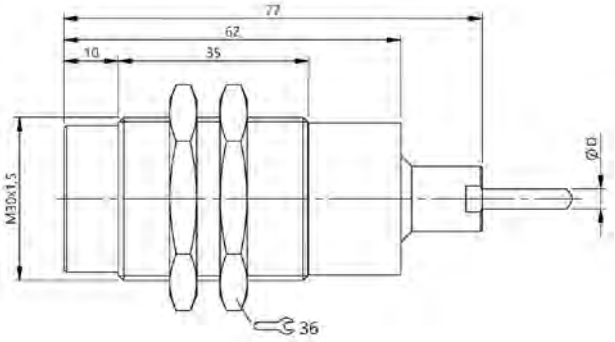
BES02ZY



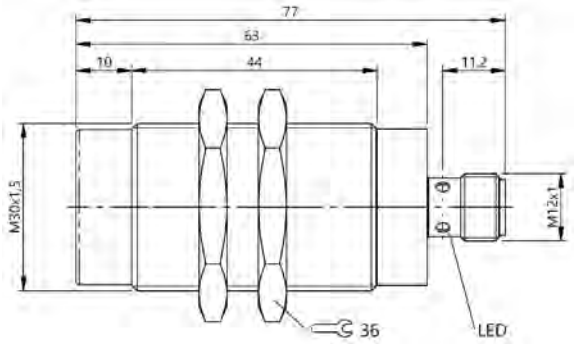
BES05L5, BES05LC



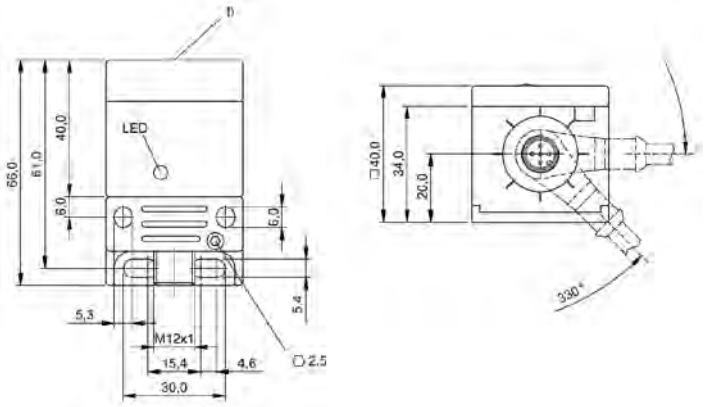
BES05NL



BES05NU



BES05N2



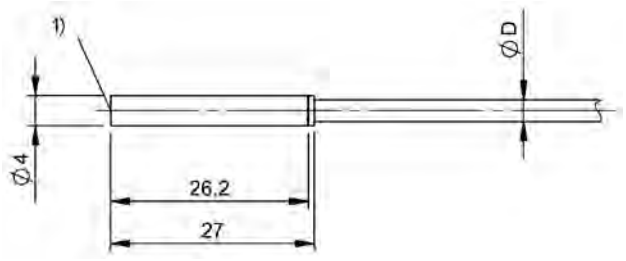
1) Sensing surface

BES02ZZ, BES0300

	BES050N BES G04ED-GNX08B-EP02	**BES02L6** BES 516-3005-FO-N-03	**BES050P** BES M05ED-GNX08B-EP02	
Dimension	Ø 4 x 27 mm	Ø 5 x 24.5 mm	Ø 5 x 27 mm	
Style	D4.0	M5x0.5	M5x0.5	
Installation	flush	flush	flush	
Range	0.8 mm	0.8 mm	0.8 mm	
Interface	NAMUR	NAMUR	NAMUR	
Switching frequency	2500 Hz	2000 Hz	2500 Hz	
Housing material	Stainless steel	Stainless steel	Stainless steel	
Material sensing surface	PBT	PBT	PBT	
Connection	Cable, 2.00 m, PUR	Cable, 3.00 m, PVC	Cable, 2.00 m, PUR	
Operating voltage Ub	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 256	Page 256	Page 256	

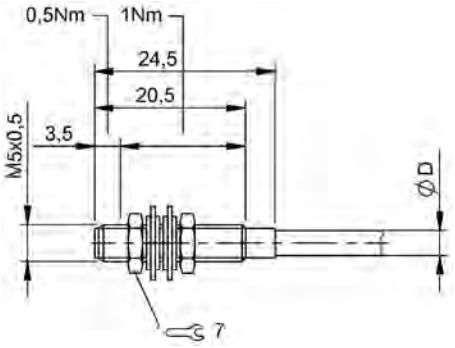



	BES02LA BES 516-324-E0-N-03	BES02LE BES 516-325-E3-N-PU-05	BES0568 BES Q08ZC-GNX15B-EP02	BES03M5 BES R04KC-GNX15B-EP02	
	Ø 8 x 45.5 mm	Ø 12 x 30 mm	40 x 8 x 8 mm	16 x 8 x 4 mm	
	M8x1	M12x1	8x8	16x8x4.7	
	flush	flush	flush	flush	
	1.2 mm	2 mm	1.5 mm	1.5 mm	
	NAMUR	NAMUR	NAMUR	NAMUR	
	2000 Hz	1000 Hz	5000 Hz	8000 Hz	
	Stainless steel	Brass, nickel plated	Zinc, Die casting, coated	PA 6, GF30	
	PBT	PA 12	PBT	PA 6	
	Cable, 3.00 m, PVC	Cable, 5.00 m, PUR	Cable, 2.00 m, PUR	Cable, 2.00 m, PUR	
	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	
	IP67	IP67	IP67	IP67	
	CE, EAC, WEEE	CE, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
	Page 256	Page 256	Page 256	Page 256	

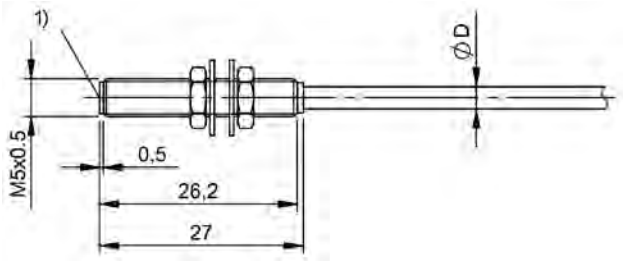


1) Sensing surface

BES050N

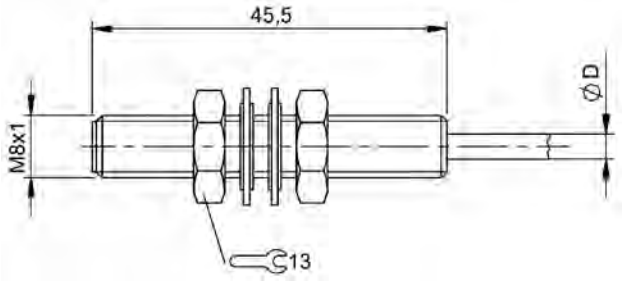


BES02L6

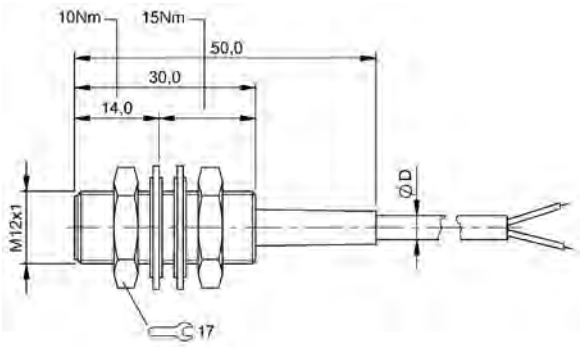


1) Sensing surface

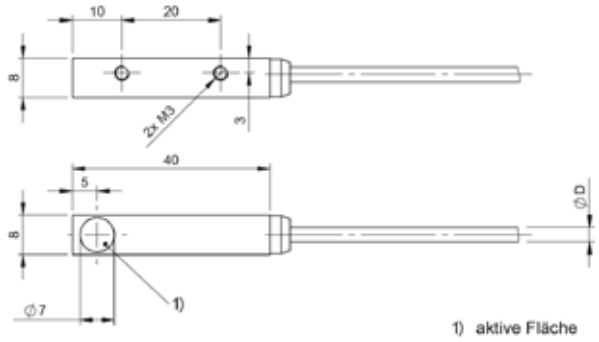
BES050P



BES02LA

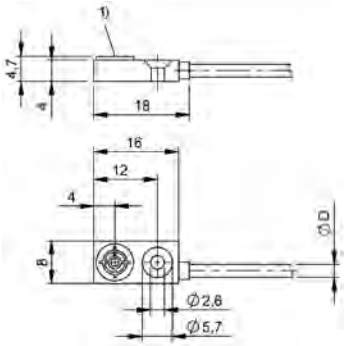


BES02LE



1) Sensing surface

BES0568

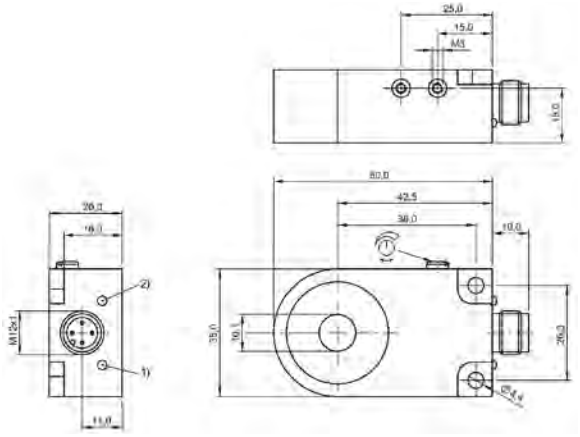


1) Sensing surface

BES03M5

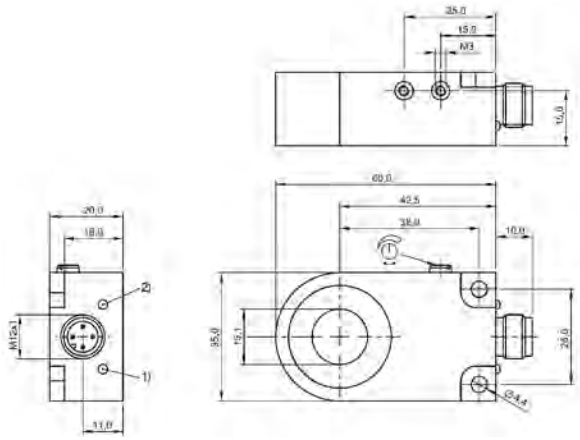
PNP normally open	**BES03JA** BES IKVS-010.23-G-S4	**BES03JC** BES IKVS-015.23-G-S4	
Dimension	60 x 35 x 20 mm	60 x 35 x 20 mm	
Style	block style	block style	
Pass-through	10.1 mm	15.1 mm	
Target size min.	Ball D = 2 mm	Ball D = 3 mm	
Range	—	—	
Switching frequency	16 Hz	16 Hz	
Housing material	Plastic	Plastic	
Material sensing surface	Plastic	Plastic	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
Protection degree	IP65	IP65	
Approval/Conformity	CE, EAC	CE, EAC	
Productview	Page 260	Page 260	

	BES03JH BES IKVS-025.23-G-S4	BES0429 BES Z06K-PSC16F-BP00,1-GS04	BES0428 BES Z06K-PSC16F-S49G	
	60 x 35 x 20 mm	78.5 x 17 x 11.9 mm	78.5 x 17 x 11.9 mm	
	block style	block style	block style	
	25.1 mm	—	—	
	Ball D = 4 mm	M3x5 screw	M3x5 screw	
	—	16 mm	16 mm	
	16 Hz	10 Hz	10 Hz	
	Plastic	PA 6.6	PA 6.6	
	Plastic	—	—	
	Connector, M12x1 connector, 4-pin	Cable with connector, M12x1 connector, 4-pin, 0.10 m, PUR	Connector, M8x1 connector, 3-pin	
	10...30 VDC	10...30 VDC	10...30 VDC	
	-25...70 °C	-25...70 °C	-25...70 °C	
	IP65	IP67	IP67	
	CE, EAC	CE, EAC	CE, EAC	
	Page 260	Page 261	Page 261	



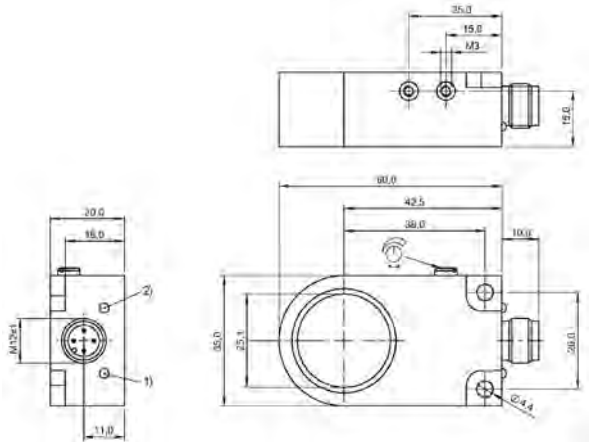
1) LED function indicator, 2) LED operating voltage

BES03JA



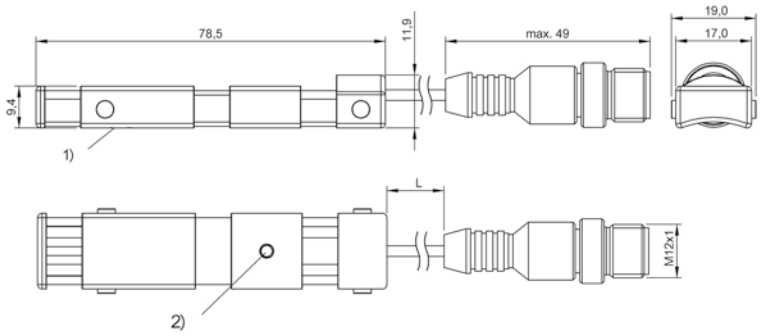
1) LED function indicator, 2) LED operating voltage

BES03JC



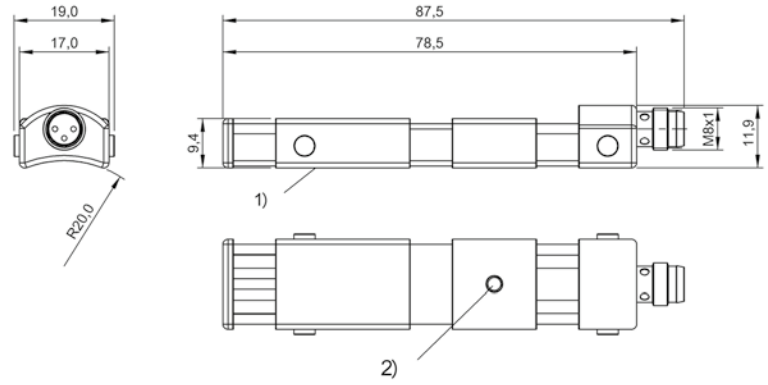
1) LED function indicator, 2) LED operating voltage

BES03JH



1) Sensing surface, 2) LED yellow

BES0429



BES0428

	BAW000J BAW G06EE-UAF20B-EP03-K	BAW000T BAW M08EI-UAD15B-BP03	
Dimension	Ø 6.5 x 30.5 mm	Ø 8 x 51.5 mm	
Style	D6.5	M8x1	
Installation	flush	flush	
Range	0.5...2 mm	0.5...1.5 mm	
Interface	—	—	
Analog output	Analog, voltage 0...10 V Analog, temperature	Analog, voltage 0...10 V	
Output characteristic	falling on approach	falling on approach	
Limit frequency –3 dB	1000 Hz	1000 Hz	
Switching output	—	—	
Switching frequency	—	—	
Repeat accuracy per BWN	±10 µm	±8 µm	
Non-linearity max.	±45 µm	±30 µm	
Housing material	Stainless steel	Stainless steel	
Material sensing surface	PBT	PBT	
Connection	Cable, 3.00 m, PUR	Cable, 3.00 m, PUR	
Operating voltage Ub	21.6...26.4 VDC	15...30 VDC	
Ambient temperature	10...60 °C	-10...70 °C	
Pressure rating max.	—	—	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 270	Page 270	




	BAW0040 BAW Z08E0-UAD20B-S04G-H11	BAW004K BAW M12ME-UAC35C-S04G	BAW006A BAW M12MF-IAC35C-S04G	BAW0069 BAW M12MF-ICC35C-S04G
	Ø 12 x 78 mm	Ø 12 x 45 mm	Ø 12 x 45 mm	Ø 12 x 45 mm
	M12x1	M12x1	M12x1	M12x1
	flush	flush	flush	flush
	0.5...2 mm	0.2...3.5 mm	0.2...3.5 mm	0.2...3.5 mm
	—	—	—	—
	Analog, voltage 0...10 V	Analog, voltage 0...10 V	Analog, current 0…20 mA	Analog, current 4…20 mA
	falling on approach	falling on approach	falling on approach	falling on approach
	1000 Hz	1000 Hz	1000 Hz	1000 Hz
	—	—	—	—
	—	—	—	—
	±8 µm	±7 µm	±7 µm	±7 µm
	±45 µm	±35 µm	±53 µm	±53 µm
	Stainless steel	Brass, Nickel-free coated	Brass, Nickel-free coated	Brass, Nickel-free coated
	Ceramic	PBT	PBT	PBT
	Connector, M12x1-Male, 3-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	15...30 VDC	15...30 VDC	16...30 VDC	16...30 VDC
	-25...85 °C	-40...80 °C	-40...80 °C	-40...80 °C
	500 bar	—	—	—
	IP68	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 270	Page 270	Page 270	Page 270

	BAW004M BAW M12MI-BLC35C-S04G	BAW004H BAW M12ME-UAC70G-S04G	
Dimension	Ø 12 x 65 mm	Ø 12 x 50 mm	
Style	M12x1	M12x1	
Installation	flush	non-flush	
Range	0.2...3.5 mm	0.2...7 mm	
Interface	IO-Link 1.1 12 bits	—	
Analog output	—	Analog, voltage 0...10 V	
Output characteristic	falling on approach	falling on approach	
Limit frequency –3 dB	1000 Hz	1000 Hz	
Switching output	—	—	
Switching frequency	—	—	
Repeat accuracy per BWN	±7 µm	±7 µm	
Non-linearity max.	±35 µm	±70 µm	
Housing material	Brass, Nickel-free coated	Brass, Nickel-free coated	
Material sensing surface	PBT	LCP	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Operating voltage Ub	18...30 VDC	15...30 VDC	
Ambient temperature	-40...80 °C	-40...80 °C	
Pressure rating max.	—	—	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 270	Page 270	




	BAW0056 BAW M12MH-BLC70G-S04G	BAW0011 BAW M12ME-UAD50B-BP01	BAW001T BAW M18ME-ICC50B-BP03	BAW0026 BAW M18ME-UAE50B-S04G-K
	Ø 12 x 65 mm	Ø 12 x 30 mm	Ø 18 x 36 mm	Ø 18 x 44.5 mm
	M12x1	M12x1	M18x1	M18x1
	non-flush	quasi-flush	flush	flush
	0.2...7 mm	1...5 mm	1...5 mm	1...5 mm
	IO-Link 1.1 12 bits	—	—	—
	—	Analog, voltage 0...10 V Analog, temperature	Analog, current 4…20 mA	Analog, voltage 0…10 V Analog, temperature
	falling on approach	falling on approach	falling on approach	falling on approach
	1000 Hz	1000 Hz	500 Hz	500 Hz
	—	—	—	—
	—	—	—	—
	±14 µm	±10 µm	±8 µm	±8 µm
	±70 µm	±160 µm	±120 µm	±120 µm
	Brass, Nickel-free coated	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated
	LCP	PA 12	PBT	PBT
	Connector, M12x1-Male, 4-pin	Cable, 1.00 m, PUR	Cable, 3.00 m, PUR	Connector, M12x1-Male, 4-pin
	18...30 VDC	15...30 VDC	15...30 VDC	21.6...26.4 VDC
	-40...80 °C	0...60 °C	-10...70 °C	-10...70 °C
	—	—	—	—
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 270	Page 271	Page 271	Page 271

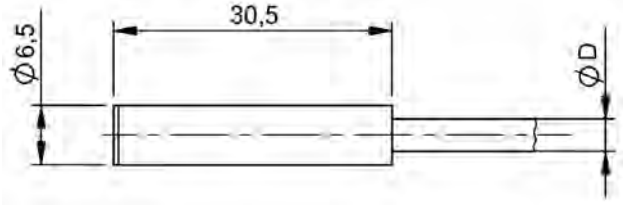
	BAW002F BAW M18MI-BLC50B-S04G	BAW002H BAW M18MI-IAC50B-S04G	
Dimension	Ø 18 x 65 mm	Ø 18 x 65 mm	
Style	M18x1	M18x1	
Installation	flush	flush	
Range	1...5 mm	1...5 mm	
Interface	IO-Link 1.1 10 bit	—	
Analog output	—	Analog, current 0…20 mA	
Output characteristic	falling on approach	falling on approach	
Limit frequency –3 dB	500 Hz	500 Hz	
Switching output	—	—	
Switching frequency	—	—	
Repeat accuracy per BWN	±10 µm	±8 µm	
Non-linearity max.	±120 µm	±120 µm	
Housing material	Brass, nickel plated	Brass, nickel plated	
Material sensing surface	PBT	PBT	
Connection	Connector, M12x1-Male, 3-pin	Connector, M12x1-Male, 3-pin	
Operating voltage Ub	18...30 VDC	10...30 VDC	
Ambient temperature	-10...70 °C	-10...70 °C	
Pressure rating max.	—	—	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 271	Page 271	



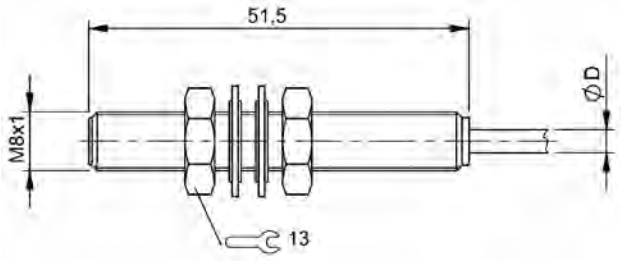

	BAW0029 BAW M18MG-UAC16F-S04G-K	BAW005Y BAW M30EE-ICD10B-S04G-L01	BAW002W BAW M30ME-UAC10B-S04G	BAW002Y BAW M30ME-UAC15F-S04G
	Ø 18 x 65 mm	Ø 30 x 44.5 mm	Ø 30 x 44.5 mm	Ø 30 x 57 mm
	M18x1	M30x1.5	M30x1.5	M30x1.5
	non-flush	flush	flush	non-flush
	4...16 mm	2...10 mm	2...10 mm	3...15 mm
	—	—	—	—
	Analog, voltage 0…10 V Analog, temperature	Analog, current 4…20 mA	Analog, voltage 0...10 V	Analog, voltage 0...10 V
	falling on approach	falling on approach	falling on approach	falling on approach
	500 Hz	500 Hz	500 Hz	350 Hz
	—	—	—	—
	—	—	—	—
	±200 µm	±10 µm	±10 µm	±12 µm
	±360 µm	±300 µm	±240 µm	±360 µm
	Brass, nickel plated	Stainless steel	Brass, nickel plated	Brass, nickel plated
	PBT	PEEK	PBT	PBT
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 3-pin	Connector, M12x1-Male, 3-pin	Connector, M12x1-Male, 3-pin
	15...30 VDC	15...30 VDC	15...30 VDC	15...30 VDC
	10...60 °C	-10...70 °C	-10...70 °C	-10...70 °C
	—	—	—	—
	IP67	IP68	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 271	Page 271	Page 271	Page 271

	BAW005Z BAW R03KC-UAA40B-BP03-505	BAW003E BAW Z01AC-UAD50B-DP03-K	
Dimension	10 x 6 x 30 mm	38.5 x 14 x 17 mm	
Style	block style	block style	
Installation	flush	non-flush	
Range	1...4 mm	1...5 mm	
Interface	—	—	
Analog output	Analog, voltage 0...10 V	Analog, voltage 0…10 V Analog, temperature	
Output characteristic	falling on approach	falling on approach	
Limit frequency –3 dB	1000 Hz	1000 Hz	
Switching output	—	—	
Switching frequency	—	—	
Repeat accuracy per BWN	±35 µm	±10 µm	
Non-linearity max.	±150 µm	±120 µm	
Housing material	PA 6, GF30	Aluminum, Anodized	
Material sensing surface	PA 6, GF30	PA 12	
Connection	Cable, 3.00 m, PUR	Cable, 3.00 m, PUR	
Operating voltage Ub	21.6...26.4 VDC	15...30 VDC	
Ambient temperature	0...70 °C	-10...60 °C	
Pressure rating max.	—	—	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 272	Page 272	

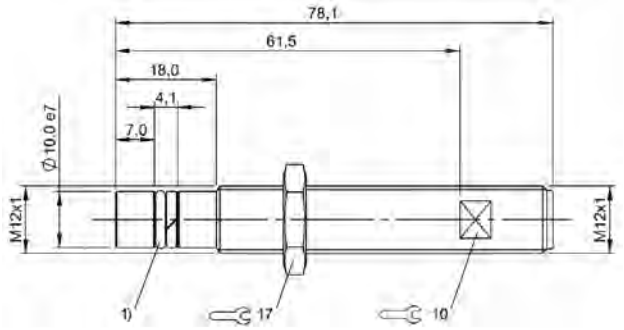
BAW003W BAW Z05AC-BLD50B-BP00,75-GS04	BAW0034 BAW R06AC-UAF20B-S49G		
30 x 38.5 x 16.5 mm	30 x 20 x 8 mm		
block style	block style		
non-flush	flush		
1...5 mm	0.5...2 mm		
IO-Link 1.1 10 bit	—		
—	Analog, voltage 0...10 V		
falling on approach	falling on approach		
200 Hz	1000 Hz		
—	—		
—	—		
±12 µm	±12 µm		
±150 µm	±45 µm		
Aluminum, Anodized	Aluminum, Anodized		
LCP	PBT		
Cable with connector, M12x1-Male, 4-pin, 0.75 m, PUR	Connector, M8x1-Male, 3-pin		
18...30 VDC	21.6...26.4 VDC		
-10...60 °C	-10...70 °C		
—	—		
IP67	IP67		
CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE		
Page 272	Page 272		



BAW000J

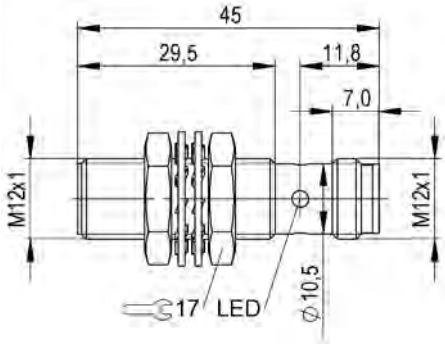


BAW000T

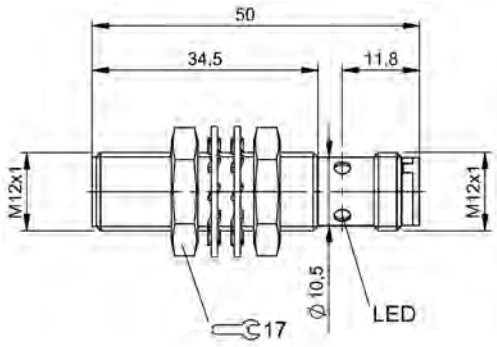


1) O-Ring with thrust ring

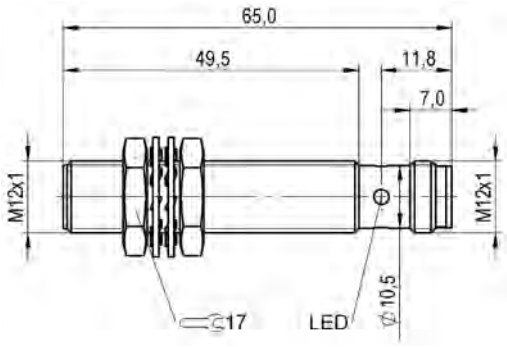
BAW0040



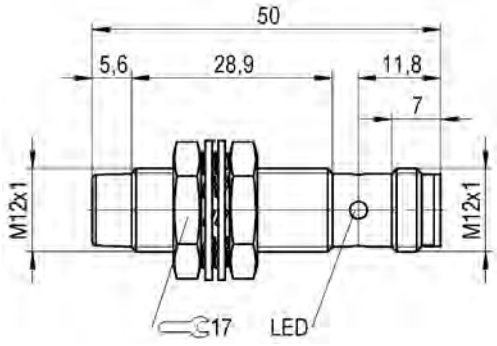
BAW004K



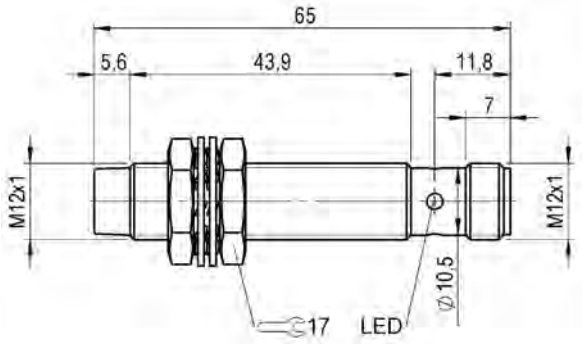
BAW006A, BAW0069



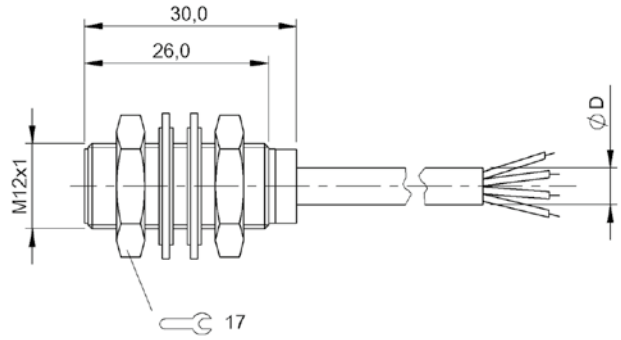
BAW004M



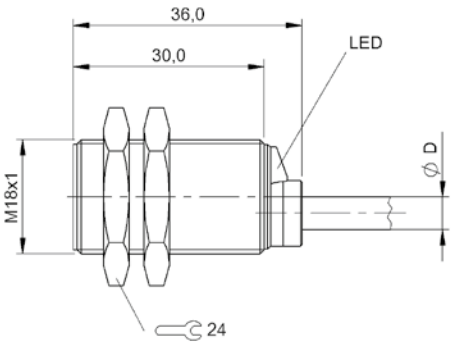
BAW004H



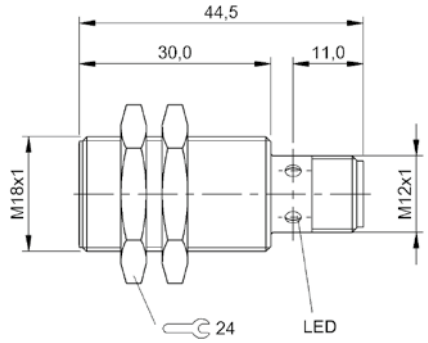
BAW0056



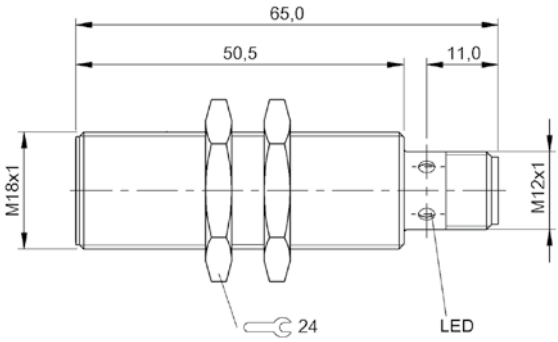
BAW0011



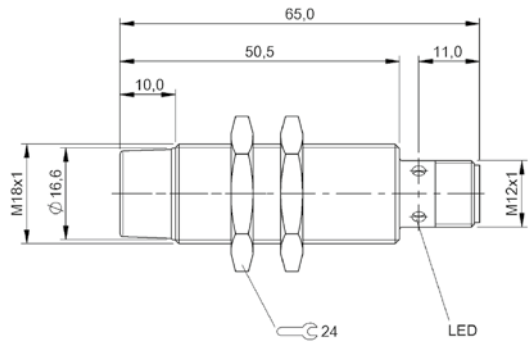
BAW001T



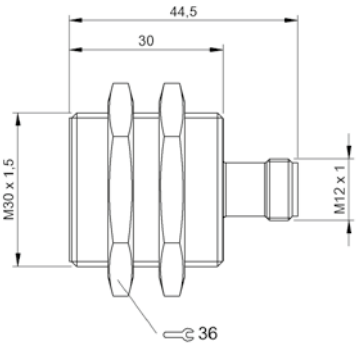
BAW0026



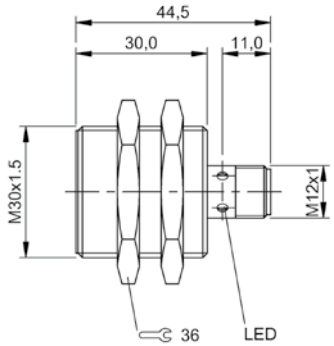
BAW002F, BAW002H



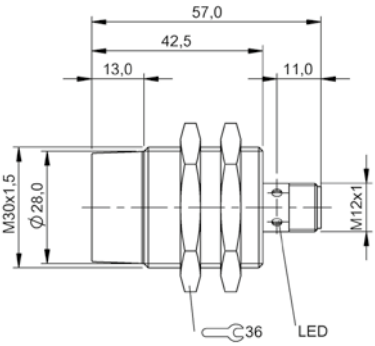
BAW0029



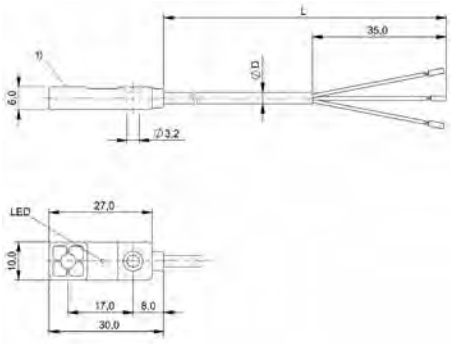
BAW005Y



BAW002W

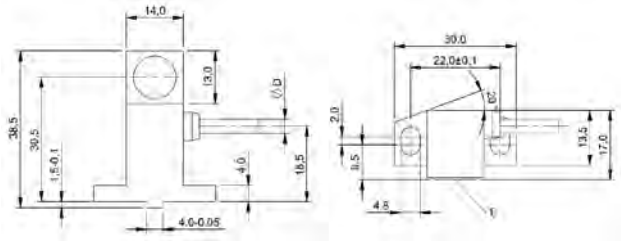


BAW002Y



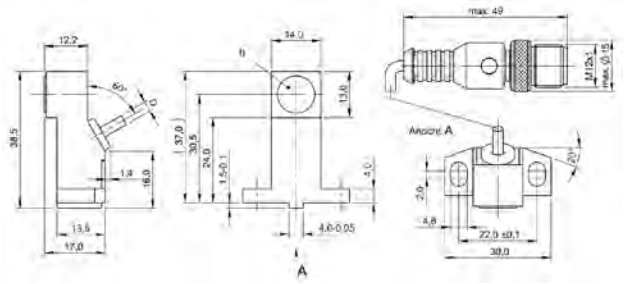
1) Sensing surface

BAW005Z



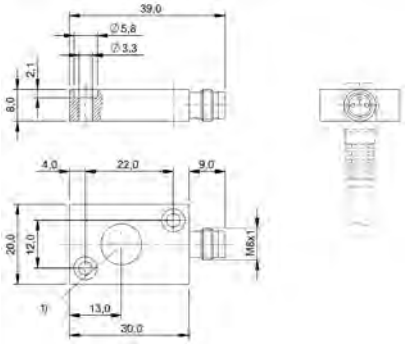
1) Sensing surface

BAW003E



1) Sensing surface

BAW003W



1) Sensing surface

BAW0034

	BIP001U BIP AD2-T017-01-EB02	**BIP001W** BIP CD2-T017-01-EB02	
Dimension	35 x 35 x 31 mm	—	
Style	block style	—	
Connection	Cable, 2.00 m, PUR	Cable, 2.00 m, PUR	
Cable shield	yes	yes	
Housing material	PA	PA	
Measuring range	0...17 mm	0...17 mm	
Interface	—	—	
Analog output	Analog, voltage 0...10 V	Analog, current 4…20 mA	
Output characteristic	Adjustable	Adjustable	
Repeat accuracy per BWN	±50 µm	±50 µm	
Non-linearity max.	±250 µm	±250 µm	
Operating voltage Ub	15...30 VDC	15...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, cURus, EAC, WEEE	CE, cURus, EAC, WEEE	
Productview	Page 280	Page 280	

	BIP001Y BIP LD2-T017-01-EP00,5-S4	BIP001K BIP AD2-T017-04-BP02	BIP001L BIP CD2-T017-04-BP02	BIP001M BIP LD2-T017-04-BP00,5-S4
	35 x 35 x 31 mm	30 x 18 x 40.5 mm	30 x 18 x 40.5 mm	30 x 18 x 40.5 mm
	block style	block style	block style	block style
	Cable with connector, M12x1-Male, 3-pin, 0.5 m, PUR	Cable, 2 m, PUR	Cable, 2 m, PUR	Cable with connector, M12x1 connector, 3-pin, 0.5 m, PUR
	no	yes	yes	yes
	PA	PA	PA	PA
	0...17 mm	0...17 mm	0...17 mm	0...17 mm
	IO-Link 1.1	—	—	IO-Link 1.1
	—	Analog, voltage 0...10 V	Analog, current 4...20 mA	—
	—	Adjustable	Adjustable	—
	±50 µm	±50 µm	±50 µm	±40 µm
	±250 µm	±250 µm	±250 µm	±250 µm
	18...30 VDC	15...30 VDC	15...30 VDC	18...30 VDC
	-25...70 °C	-25...70 °C	-25...70 °C, Temperature drift is between -10…70 °C	-25...70 °C
	IP67	IP67	IP67	IP67
	CE, cURus, EAC, WEEE	CE, cURus, EAC	CE, cURus, EAC	CE, cURus, EAC
	Page 280	Page 281	Page 281	Page 281

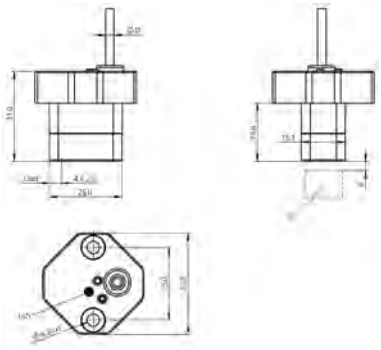
	BIP000L BIP AD2-T030-02-S4	BIP0002 BIP AD2-B040-02-S4	
Dimension	52 x 30 x 16 mm	70 x 30 x 16 mm	
Style	block style	block style	
Connection	Connector, M12x1-Male, 3-pin	Connector, M12x1-Male, 3-pin	
Cable shield	—	—	
Housing material	PA	PA	
Measuring range	0...30 mm	0...40 mm	
Interface	—	—	
Analog output	Analog, voltage 0...10 V	Analog, voltage 0...10 V	
Output characteristic	Adjustable	Adjustable	
Repeat accuracy per BWN	±100 µm	±100 µm	
Non-linearity max.	±500 µm	±500 µm	
Operating voltage Ub	15...30 VDC	15...30 VDC	
Ambient temperature	-25...85 °C	-25...85 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, cURus, EAC, WEEE	CE, cURus, EAC, WEEE	
Productview	Page 280	Page 280	

	BIP0005 BIP CD2-B040-02-S4	BIP0004 BIP LD2-T040-02-S4	BIP000M BIP ED2-B048-03-S75	BIP001J BIP LD2-T048-03-S75
	70 x 30 x 16 mm	70 x 30 x 16 mm	64 x 21 x 22 mm	64 x 21 x 22 mm
	block style	block style	block style	block style
	Connector, M12x1-Male, 3-pin	Connector, M12x1-Male, 3-pin	Connector, M8x1-Male, 4-pin	Connector, M8x1-Male, 4-pin
	—	—	—	—
	PA	PA	PBT	PBT
	0...40 mm	0...40 mm	0...48 mm	0...48 mm
	—	IO-Link 1.0	—	IO-Link 1.1
	Analog, current 4…20 mA	—	Analog, voltage 0...10 V Analog, current 4...20 mA	—
	Adjustable	—	Adjustable	—
	±100 µm	±100 µm	±80 µm	±80 µm
	±500 µm	±500 µm	±400 µm	±400 µm
	15...30 VDC	18...30 VDC	16...30 VDC	18...30 VDC
	-25...85 °C	-25...85 °C	-25...85 °C	-25...85 °C
	IP67	IP67	IP67	IP67
	CE, cURus, EAC, WEEE	CE, cURus, EAC, WEEE	CE, cURus, EAC, WEEE	CE, cURus, EAC, WEEE
	Page 280	Page 280	Page 280	Page 280

	BIP000C BIP ED2-B070-03-S75	BIP001H BIP LD2-T070-03-S75	
Dimension	92.5 x 21 x 22 mm	92.5 x 21 x 22 mm	
Style	block style	block style	
Connection	Connector, M8x1-Male, 4-pin	Connector, M8x1-Male, 4-pin	
Cable shield	—	—	
Housing material	PBT	PBT	
Measuring range	0...70 mm	0...70 mm	
Interface	—	IO-Link 1.1	
Analog output	Analog, voltage 0...10 V Analog, current 4...20 mA	—	
Output characteristic	Adjustable	—	
Repeat accuracy per BWN	±80 µm	±80 µm	
Non-linearity max.	±300 µm	±300 µm	
Operating voltage Ub	16...30 VDC	18...30 VDC	
Ambient temperature	-25...85 °C	-25...85 °C	
IP rating	IP67	IP67	
Approval/Conformity	CE, cURus, EAC, WEEE	CE, cURus, EAC, WEEE	
Productview	Page 281	Page 281	

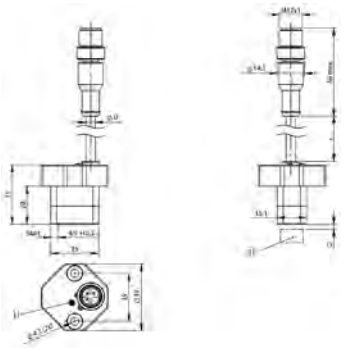



	BIP000E BIP ED2-B103-03-S75	BIP0014 BIP LD2-T103-03-S75	BIP000R BIP ED2-B133-03-S75	BIP001F BIP LD2-T133-03-S75
	121 x 21 x 22 mm	121 x 21 x 22 mm	149.5 x 21 x 22 mm	149.5 x 21 x 22 mm
	block style	block style	block style	block style
	Connector, M8x1-Male, 4-pin	Connector, M8x1-Male, 4-pin	Connector, M8x1-Male, 4-pin	Connector, M8x1-Male, 4-pin
	—	—	—	—
	PBT	PBT	PBT	PBT
	0...103 mm	0...103 mm	0...133 mm	0...133 mm
	—	IO-Link 1.1	—	IO-Link 1.1
	Analog, voltage 0...10 V Analog, current 4...20 mA	—	Analog, voltage 0...10 V Analog, current 4...20 mA	—
	Adjustable	—	Adjustable	—
	±80 µm	±80 µm	±80 µm	±80 µm
	±300 µm	±300 µm	±400 µm	±400 µm
	16...30 VDC	18...30 VDC	16...30 VDC	18...30 VDC
	-25...85 °C	-25...85 °C	-25...85 °C	-25...85 °C
	IP67	IP67	IP67	IP67
	CE, cURus, EAC, WEEE	CE, cURus, EAC, WEEE	CE, cURus, EAC, WEEE	CE, cURus, EAC, WEEE
	Page 281	Page 281	Page 281	Page 281



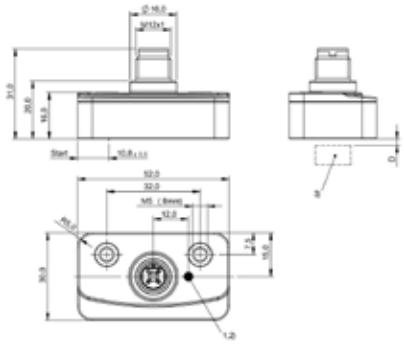
1) LED function indicator, 2) LED function indicator, 3) Teach-In button

BIP001U, BIP001W



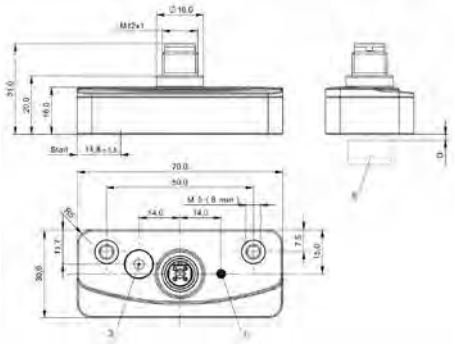
1) LED function indicator, 3) Encoder

BIP001Y



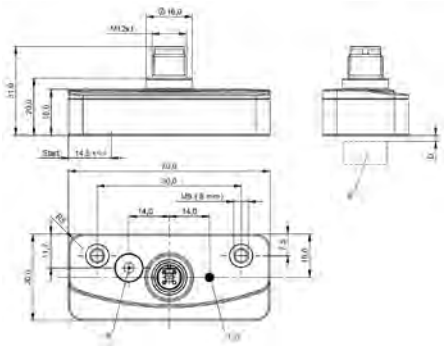
1) LED function indicator, 2) LED function indicator, 3) Encoder

BIP000L



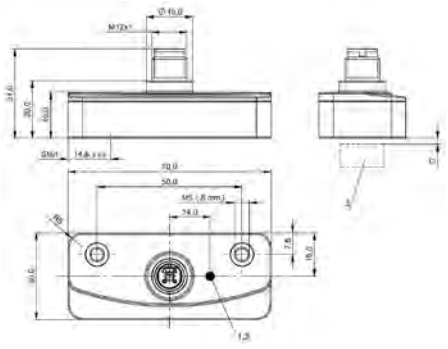
1) LED function indicator, 3) Teach-In button, 4) Encoder

BIP0002



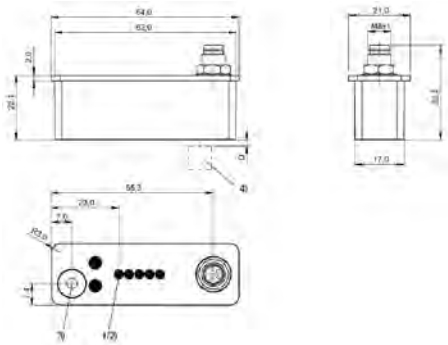
1) LED function indicator, 2) LED function indicator, 3) Teach-In button, 4) Encoder

BIP0005



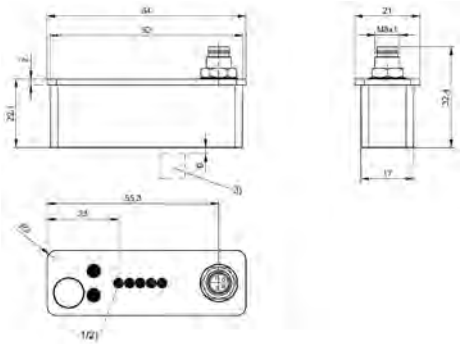
1) LED function indicator, 2) LED function indicator, 3) Encoder

BIP0004



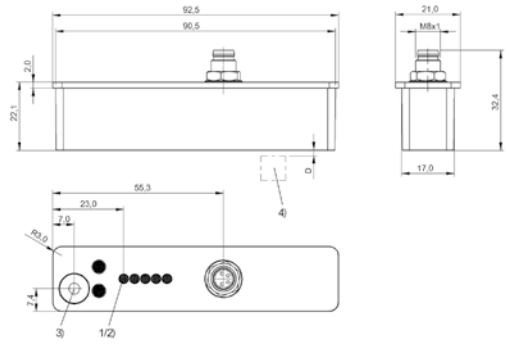
1) LED function indicator, 2) LED function indicator, 3) Teach-In button, 4) Encoder

BIP000M



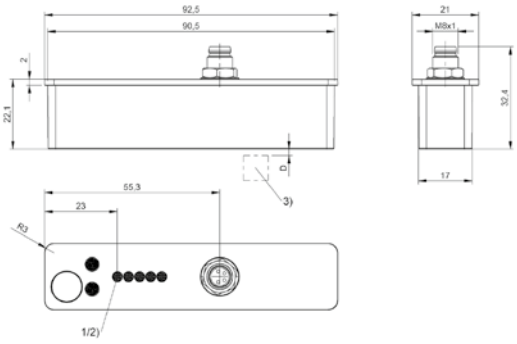
1) LED Power, 2) LED function indicator, 3) Encoder

BIP001J



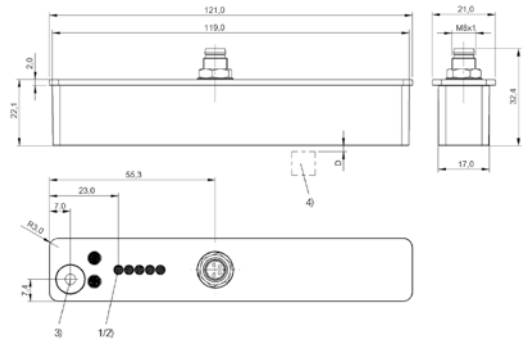
1) LED function indicator, 2) LED function indicator, 3) Teach-In button, 4) Encoder

BIP000C



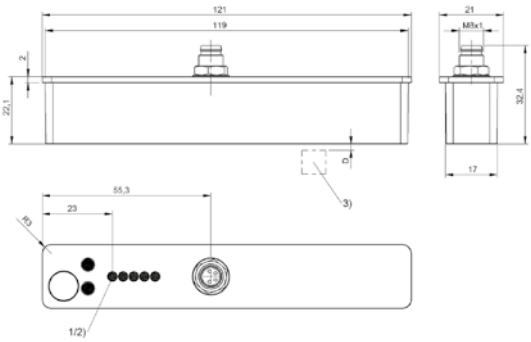
1) LED Power, 2) LED function indicator, 3) Encoder

BIP001H



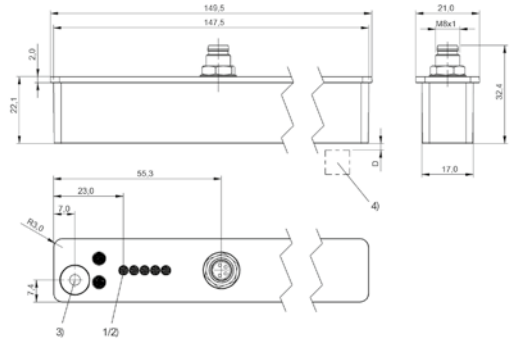
1) LED function indicator, 2) LED function indicator, 3) Teach-In button, 4) Encoder

BIP000E



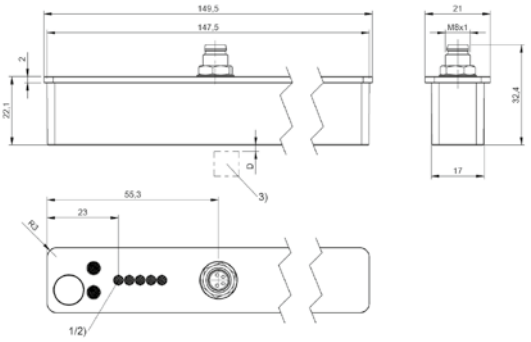
1) LED Power, 2) LED function indicator, 3) Encoder

BIP0014



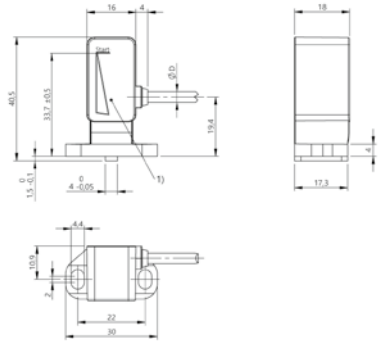
1) LED function indicator, 2) LED function indicator, 3) Teach-In button, 4) Encoder

BIP000R



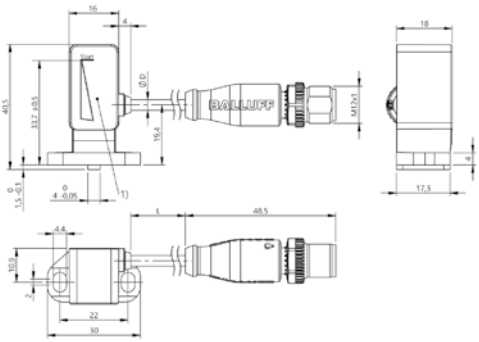
1) LED Power, 2) LED function indicator, 3) Encoder

BIP001F



1) Sensing surface

BIP001K, BIP001L



1) Sensing surface

BIP001M

Features

- High resolution and repeatability
- Insensitive to shock, vibration and noise fields
- Absolute analog output signal rising or falling
- Guided sensor element
- 32 kHz sampling rate
- Potential-free
- Non-contact operating principle

	BIW1-A310 BIW1-**A**310-M_ _ _ _-P1-S115	
Analog output U_A / I_A	A (0...+10 V)	
Repeat accuracy	10 µm	
Sampling rate	typ. 32 kHz	
Non-linearity max.	≤ 0.02%	
Operating voltage	18...30 V DC	
Operating temperature	–20...+85 °C	
Degree of protection as per IEC 60529	IP 54	
Approval/Conformity	cULus, CE	
Housing material	Anodized aluminum	
Connection	M12 connector, 8-pin standard	

Calculation example:
BIW1-...-M0100-P1-S115
Nominal length 100
A = 200
B = 110
C = 80

Ordering example:

BIW1-_ 310-M_ _ _ _-P1-S115

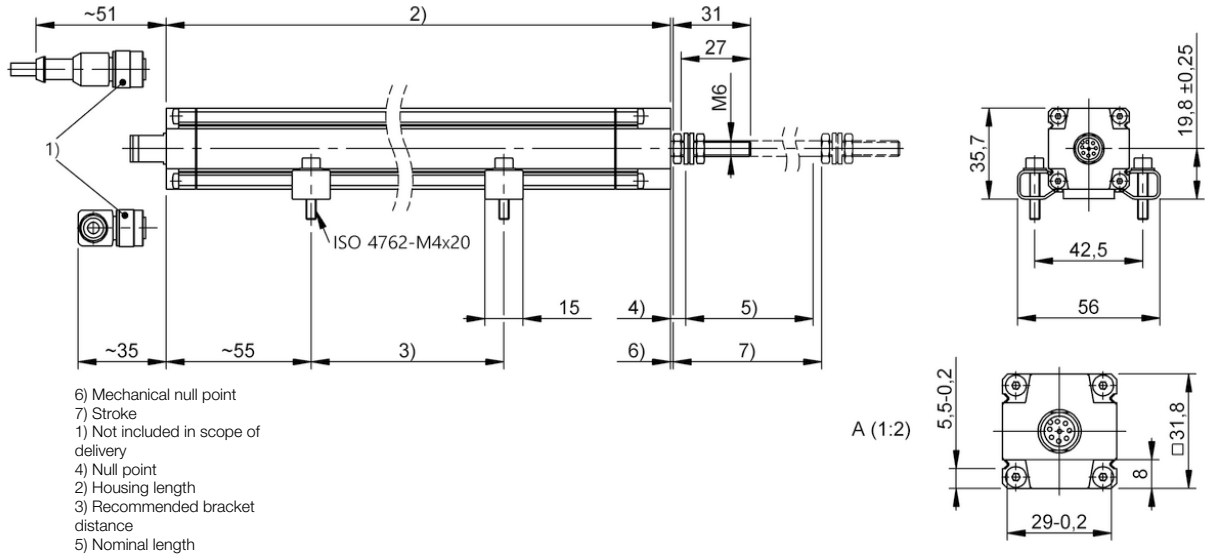
Output signal

A	0...+10 V
E	4...20 mA
C	0...20 mA
G	–10...+10 V

Standard nominal length [mm]

0075	0100	0130	0150
0175	0225	0260	0300
0360	0375	0400	0450
0500	0600	0650	0750
			0775

	BIW1-E310 BIW1-**E**310-M_ _ _ _-P1-S115	BIW1-C310 BIW1-**C**310-M_ _ _ _-P1-S115	BIW1-G310 BIW1-**G**310-M_ _ _ _-P1-S115
	E (4...20 mA)	C (0...20 mA)	G (–10...+10 V)
	10 µm	10 µm	10 µm
	typ. 32 kHz	typ. 32 kHz	typ. 32 kHz
	≤ 0.02%	≤ 0.02%	≤ 0.02%
	18...30 V DC	18...30 V DC	18...30 V DC
	–20...+85 °C	–20...+85 °C	–20...+85 °C
	IP 54	IP 54	IP 54
	cULus, CE	cULus, CE	cULus, CE
	Anodized aluminum	Anodized aluminum	Anodized aluminum
	M12 connector, 8-pin standard	M12 connector, 8-pin standard	M12 connector, 8-pin standard



6) Mechanical null point
7) Stroke
1) Not included in scope of delivery
4) Null point
2) Housing length
3) Recommended bracket distance
5) Nominal length

Object and level detection with patented technology

CAPACITIVE SENSORS

Balluff's capacitive sensors detect fluids, granulates and powders in direct contact or through a non-metallic container wall. As stick-on sensors, they fit flexibly to the housing shape and are easily removable. Moisture, foam and deposits of any kind are compensated for, even through glass and plastic walls up to 10 mm thick. This makes them ideal as level detection sensors for conductive media while guaranteeing high application security.

Our capacitive sensors are available in various form factors, even especially small ones.

The most important benefits

- Contact-free and therefore wear-free
- Bounceless output signal
- Foam and residue compensation

PNP normally open	**BCS001L** BCS G06T4E1-PSM15C-EP02	**BCS001R** BCS G06T4D2-PSM15C-S49G	
Dimension	Ø 6.5 x 42 mm	Ø 6.5 x 54 mm	
Series	G06	G06	
Thread (A)	—	—	
Installation	for flush mounting	for flush mounting	
Connection	Cable, 2.00 m, PUR	Connector, M8x1-Male, 3-pin	
Switching frequency	100 Hz	100 Hz	
Interface	—	—	
Range	0.1...1.5 mm	0.1...1.5 mm	
Sensitivity	Switching distance adjustable	Switching distance adjustable	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	
Material sensing surface	PTFE	PTFE	
Ambient temperature	-10...70 °C	-10...70 °C	
Operating voltage Ub	11...30 VDC	11...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
IP rating	IP65	IP65	
Productview	Page 296	Page 296	




	BCS0026 BCS M08T4E1-PSM15C-EP02	BCS002A BCS M08T4E2-PSM15C-S49G	BCS002T BCS G10T4H-PSM40C-EP02	BCS00PU BCS M12BBI1-PSC40D-EP02
	Ø 8 x 42 mm	Ø 8 x 54 mm	Ø 10 x 50 mm	Ø 12 x 61 mm
	M08	M08	G10	M12
	M8x1	M8x1	—	M12x1
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	Cable, 2.00 m, PUR	Connector, M8x1-Male, 3-pin	Cable, 2.00 m, PUR	Cable, 2.00 m, PUR
	100 Hz	100 Hz	100 Hz	100 Hz
	—	—	—	—
	0.1...1.5 mm	0.1...1.5 mm	1...4 mm	1...4 mm
	Switching distance adjustable	Switching distance adjustable	Switching distance adjustable	Switching distance adjustable
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	PBT
	PTFE	PTFE	PTFE	PBT
	-10...70 °C	-10...70 °C	-30...70 °C	-25...85 °C
	11...30 VDC	11...30 VDC	12...35 VDC	10...30 VDC
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	IP65	IP65	IP65	IP67
	Page 296	Page 296	Page 296	Page 296

PNP normally open	**BCS00PJ** BCS M12BBG2-PSC40D-S04K	**BCS00AU** BCS M12TTG1-PSM40C-ET02	
PNP/NPN normally open/normally closed			
Dimension	Ø 12 x 75 mm	Ø 12 x 50 mm	
Series	M12	M12	
Thread (A)	M12x1	M12x1	
Installation	for flush mounting	for flush mounting	
Connection	Connector, M12x1-Male, 4-pin	Cable, 2.00 m, PUR	
Switching frequency	100 Hz	100 Hz	
Interface	—	—	
Range	1...4 mm	4 mm	
Sensitivity	Switching distance adjustable	—	
Housing material	PBT	PTFE	
Material sensing surface	PBT	PTFE	
Ambient temperature	-25...85 °C	-30...60 °C	
Operating voltage Ub	10...30 VDC	12...35 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
IP rating	IP67	IP65	
Productview	Page 297	Page 297	




	BCS00R4 BCS M12B4I1-PSC40D-EP02	**BCS00P0** BCS M12B4G2-PSC40D-S04K		
			BCS017H BCS M12K4G1-GSM50C-EP02	**BCS017K** BCS M12K4D2-GSM50C-S04G
	Ø 12 x 61 mm	Ø 12 x 75 mm	Ø 12 x 50 mm	Ø 12 x 60 mm
	M12	M12	M12	M12
	M12x1	M12x1	M12x1	M12x1
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	Cable, 2.00 m, PUR	Connector, M12x1-Male, 3-pin	Cable, 2 m, PUR	Connector, M12x1-Male, 4-pin
	100 Hz	100 Hz	100 Hz	100 Hz
	—	—	—	—
	1...4 mm	1...4 mm	0.5...5 mm	0.5...5 mm
	Switching distance adjustable	Switching distance adjustable	Switching distance teachable	Switching distance teachable
	Stainless steel (1.4305)	Stainless steel (1.4305)	Stainless steel (1.4404)	Stainless steel (1.4404)
	PBT	PBT	PEEK	PEEK
	-25...85 °C	-25...85 °C	-10...80 °C	-10...80 °C
	10...30 VDC	10...30 VDC	12...30 VDC	12...30 VDC
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	IP67	IP67	IP67	IP67
	Page 297	Page 297	Page 296	Page 296

PNP normally open	**BCS00NZ** BCS M18BBN1-PSC80D-EP02	**BCS00M8** BCS M18BBI3-PSC80D-S04K	
NPN normally open	**BCS00M2** BCS M18BBN1-NSC80D-EP02		
NPN normally closed			
Dimension	Ø 18 x 75 mm	Ø 18 x 88.5 mm	
Series	M18	M18	
Thread (A)	M18x1	M18x1	
Installation	for flush mounting	for flush mounting	
Connection	Cable, 2.00 m, PUR	Connector, M12x1-Male, 3-pin	
Switching frequency	100 Hz	100 Hz	
Interface	—	—	
Range	1...8 mm	1...8 mm	
Sensitivity	Switching distance adjustable	Switching distance adjustable	
Housing material	PBT	PBT	
Material sensing surface	PBT	PBT	
Ambient temperature	-25...85 °C	-25...85 °C	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
IP rating	IP67	IP67	
Productview	Page 297	Page 297	

	BCS00MF BCS M18B4I3-PSC80D-S04K	BCS003A BCS D30T401-PSC15C-EP02	BCS00NM BCS M30BBI1-PSC15D-EP02	BCS00NA BCS M30BBI2-PSC15D-S04K
		BCS003F BCS D30T401-NOC15C-EP02		
	Ø 18 x 88.5 mm	Ø 30 x 4 mm	Ø 30 x 65.5 mm	Ø 30 x 79 mm
	M18	D30	M30	M30
	M18x1	—	M30x1.5	M30x1.5
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	Connector, M12x1-Male, 3-pin	Cable, 2.00 m, PUR	Cable, 2.00 m, PUR	Connector, M12x1-Male, 3-pin
	100 Hz	100 Hz	100 Hz	100 Hz
	—	—	—	—
	1...8 mm	2...15 mm	2...15 mm	2...15 mm
	Switching distance adjustable	Switching distance adjustable	Switching distance adjustable	Switching distance adjustable
	Stainless steel (1.4305)	Stainless steel (1.4301)	PBT	PBT
	PBT	PTFE	PBT	PBT
	-25...85 °C	-30...70 °C	-25...85 °C	-25...85 °C
	10...30 VDC	10...35 VDC	10...30 VDC	10...30 VDC
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	IP67	IP67	IP67	IP67
	Page 297	Page 297	Page 298	Page 298

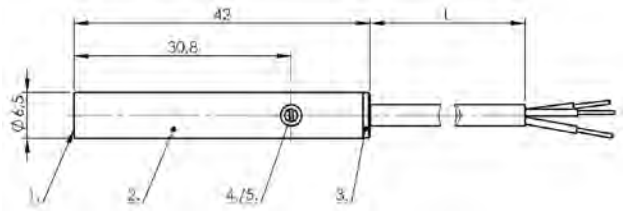
PNP normally open			
PNP normally open/normally closed programmable	**BCS004K** BCS M30BBM3-PPC20C-EP02	**BCS004M** BCS M30BBM2-PPM20C-S04G	
PNP/NPN normally open/normally closed programmable			
Dimension	Ø 30 x 82 mm	Ø 30 x 87 mm	
Series	M30	M30	
Thread (A)	M30x1.5	M30x1.5	
Installation	for flush mounting	for flush mounting	
Connection	Cable, 2.00 m, PUR	Connector, M12x1-Male, 4-pin	
Switching frequency	100 Hz	100 Hz	
Interface	—	—	
Range	1...20 mm	1...20 mm	
Sensitivity	Switching distance adjustable	Switching distance adjustable	
Housing material	PBT	PBT	
Material sensing surface	PBT	PBT	
Ambient temperature	-30...70 °C	-30...70 °C	
Operating voltage Ub	10...35 VDC	10...35 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
IP rating	IP66	IP66	
Productview	Page 298	Page 298	




	BCS00MR BCS M30B4I2-PSC15D-S04K		BCS00UJ BCS G3400I2-PSC15D-S04K	
		BCS004T BCS M30B4M2-PPM20C-S04G		
				BCS003K BCS D500002-YPC25C-EV02
	Ø 30 x 79 mm	Ø 30 x 87 mm	Ø 34 x 77 mm	Ø 50 x 10 mm
	M30	M30	G34	D50
	M30x1.5	M30x1.5	—	—
	for flush mounting	for flush mounting	for flush mounting	for flush mounting
	Connector, M12x1-Male, 3-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Cable, 2.00 m, PVC
	100 Hz	100 Hz	100 Hz	50 Hz
	—	—	—	—
	2...15 mm	1...20 mm	2...15 mm	2...25 mm
	Switching distance adjustable	Switching distance adjustable	Switching distance adjustable	Switching distance adjustable
	Stainless steel (1.4305) PBT	Stainless steel (1.4301)	POM	POM
	PBT	PBT	POM	POM
	-25...85 °C	-30...70 °C	-5...85 °C	-30...60 °C
	10...30 VDC	10...35 VDC	10...30 VDC	10...30 VDC
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	IP67	IP66	IP67	IP67
	Page 298	Page 298	Page 298	Page 298

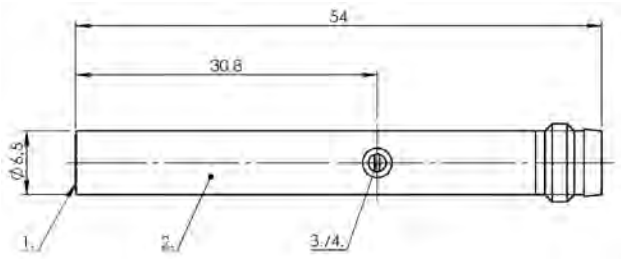
PNP normally open	**BCS012N** BCS R08RRE-PIM80C-EP00,3-GS04	**BCS012T** BCS R08RRE-PSM80C-EP00,3-GS75	
PNP normally closed		**BCS012U** BCS R08RRE-POM80C-EP00,3-GS75	
PNP/NPN normally open/normally closed programmable			
Dimension	34 x 16 x 8 mm	34 x 16 x 8 mm	
Series	R08	R08	
Thread (A)	—	—	
Installation	for flush mounting	for flush mounting	
Connection	Cable with connector, M12x1-Male, 4-pin, 0.30 m, PUR	Cable with connector, 4-pin, 0.30 m, PUR	
Switching frequency	50 Hz	50 Hz	
Interface	IO-Link 1.1	—	
Range	1...8 mm	1...8 mm	
Sensitivity	Switching distance adjustable	Switching distance teachable	
Housing material	PP	PP	
Material sensing surface	PP	PP	
Ambient temperature	-25...70 °C	-25...70 °C	
Operating voltage Ub	18...30 VDC	12...30 VDC	
Approval/Conformity	cULus, CE, IO-Link, WEEE, EAC	cULus, CE, WEEE, EAC	
IP rating	IP67	IP67	
Productview	Page 299	Page 299	

	BCS012A BCS R08RRE-PSM80C-EP02	**BCS00U6** BCS Q40BBAA-PSC20C-EP00,3-GS49		
	BCS012C BCS R08RRE-POM80C-EP02	**BCS00U5** BCS Q40BBAA-POC20C-EP00,3-GS49		
			BCS00TR BCS Q40BBAA-GPC20C-EP02	
	34 x 16 x 8 mm	40 x 40 x 10 mm	40 x 40 x 10 mm	
	R08	Q40	Q40	
	—	—	—	
	for flush mounting	for flush mounting	for flush mounting	
	Cable, 2.00 m, PUR	Cable with connector, M8x1-Male, 3-pin, 0.30 m, PUR	Cable, 2.00 m, PUR	
	50 Hz	100 Hz	100 Hz	
	—	—	—	
	1...8 mm	1...20 mm	1...20 mm	
	Switching distance teachable	Switching distance adjustable	Switching distance adjustable	
	PP	PBT	PBT	
	PP	PBT	PBT	
	-25...70 °C	-5...85 °C	-5...85 °C	
	12...30 VDC	10...30 VDC	10...30 VDC	
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
	IP67	IP67	IP67	
	Page 299	Page 299	Page 299	



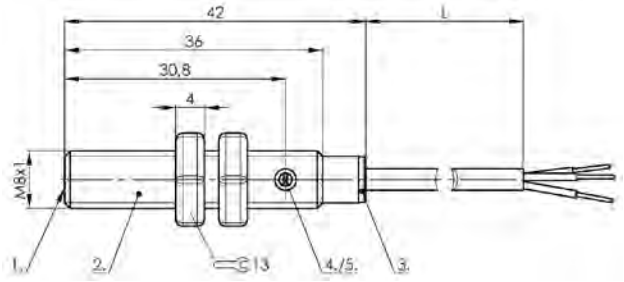
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED function indicator

BCS001L



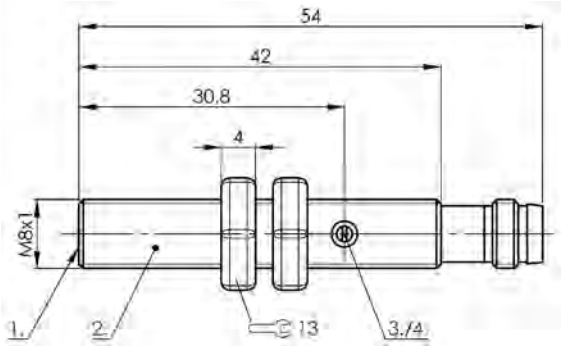
1) Sensing surface, 2) Housing, 3) Potentiometer, 4) LED function indicator

BCS001R



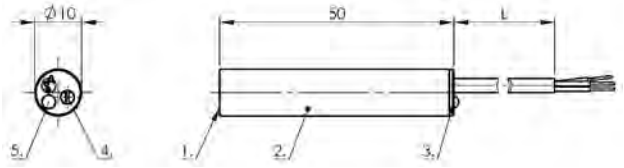
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED function indicator

BCS0026



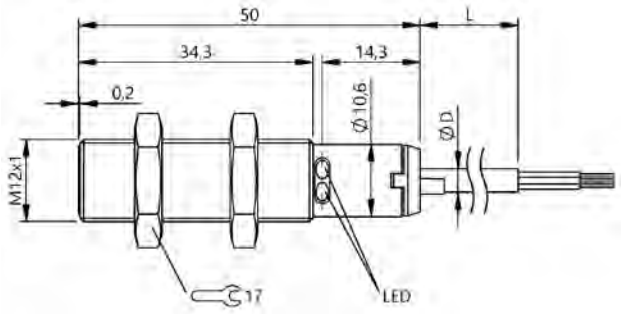
1) Sensing surface, 2) Housing, 3) Potentiometer, 4) LED function indicator

BCS002A

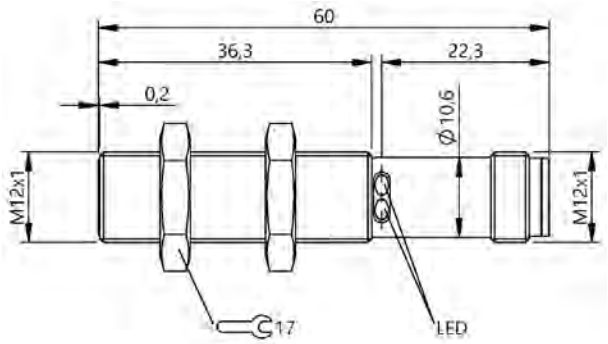


1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED function indicator

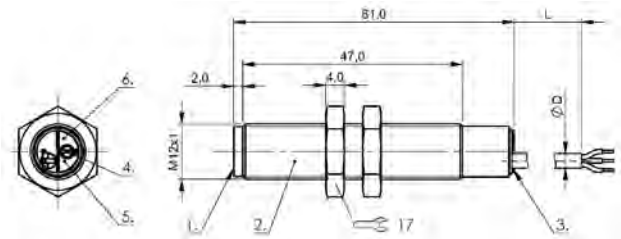
BCS002T



BCS017H

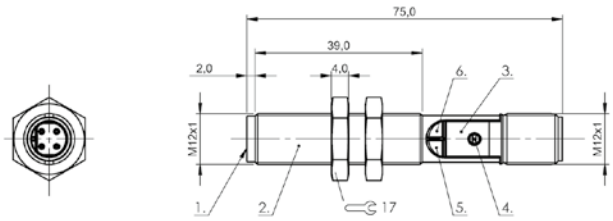


BCS017K



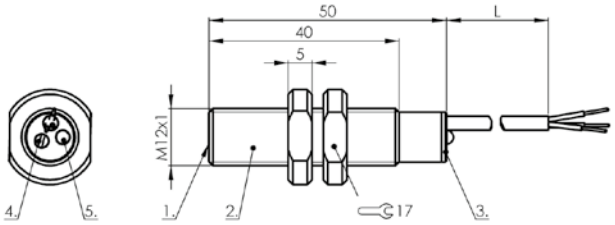
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED Power, 6) LED function indicator

BCS00PU



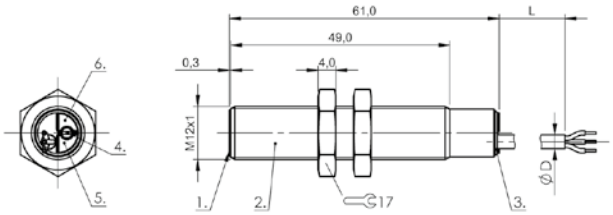
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED Power, 6) LED function indicator

BCS00PJ



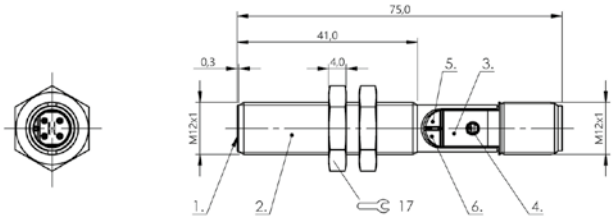
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED function indicator

BCS00AU



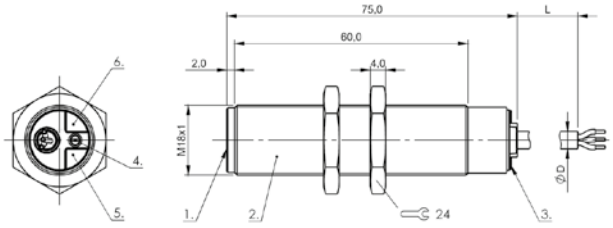
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED Power, 6) LED function indicator

BCS00R4



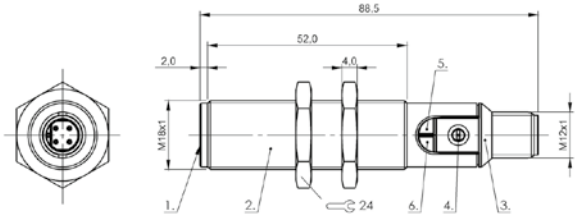
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED Power, 6) LED function indicator

BCS00P0



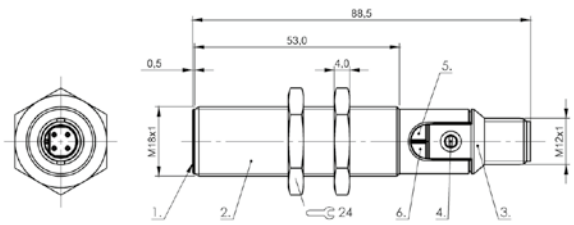
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED Power, 6) LED function indicator

BCS00M2, BCS00NZ



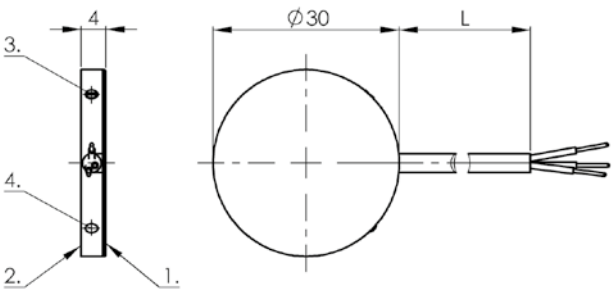
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED Power, 6) LED function indicator

BCS00M8



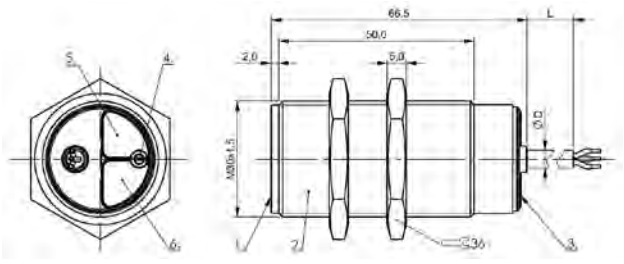
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED Power, 6) LED function indicator

BCS00MF



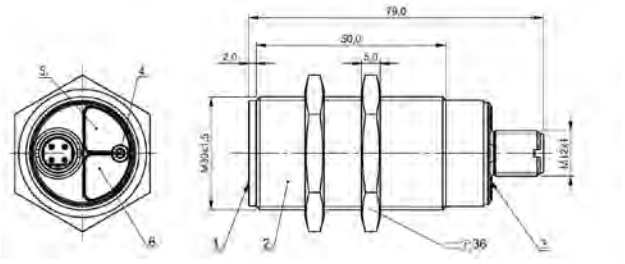
1) Sensing surface, 2) Housing, 3) Potentiometer, 4) LED function indicator

BCS003F, BCS003A



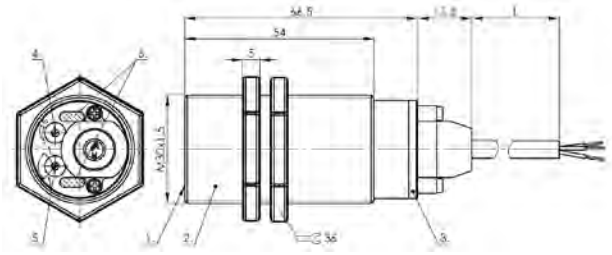
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED Power,
6) LED function indicator

BCS00NM



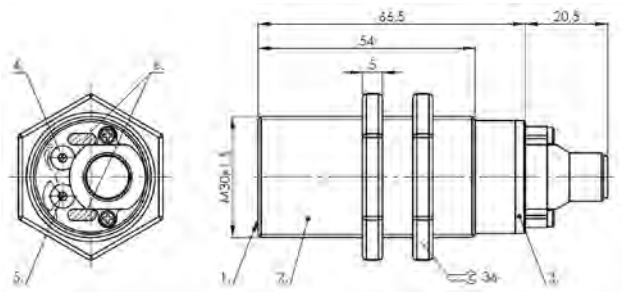
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED Power,
6) LED function indicator

BCS00NA



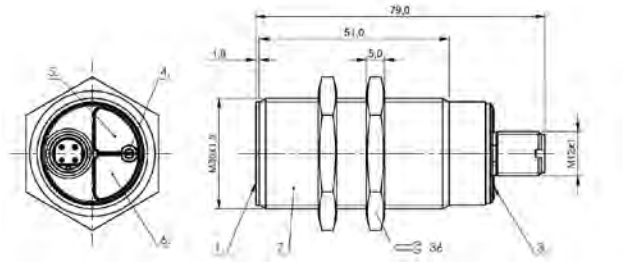
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) NO or NC selectable,
6) LED function indicator

BCS004K



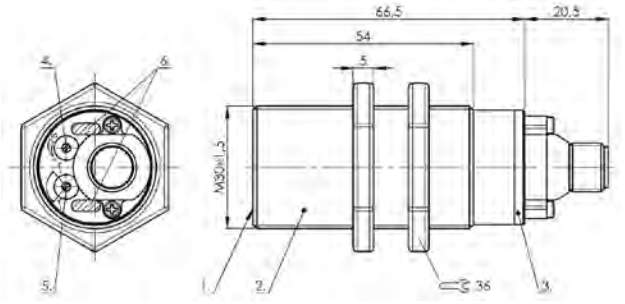
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) NO or NC selectable,
6) LED function indicator

BCS004M



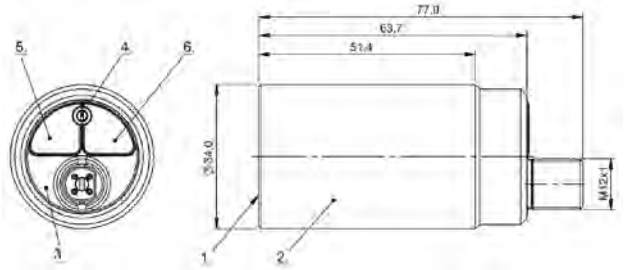
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED Power,
6) LED function indicator

BCS00MR



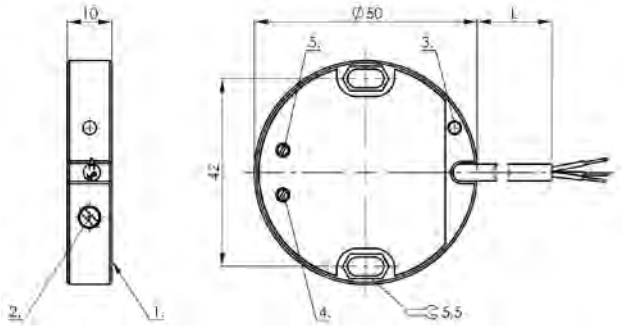
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) NO or NC selectable,
6) LED function indicator

BCS004T



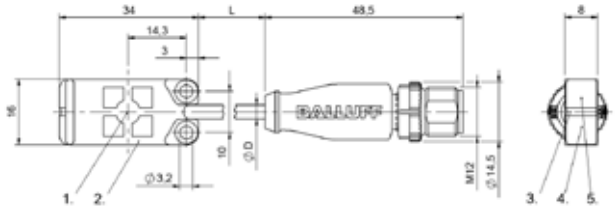
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED Power,
6) LED function indicator

BCS00UJ



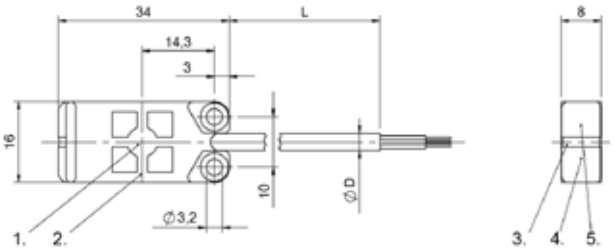
1) Sensing surface, 2) Potentiometer, 3) LED function indicator, 4) NO or NC selectable,
5) PNP or NPN selectable

BCS003K



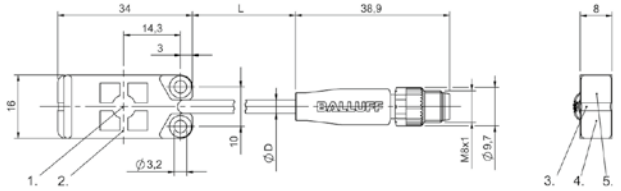
1) Sensing surface, 2) Housing, 3) Cover, 4) Power indicator green, 5) Function indicator yellow

BCS012N



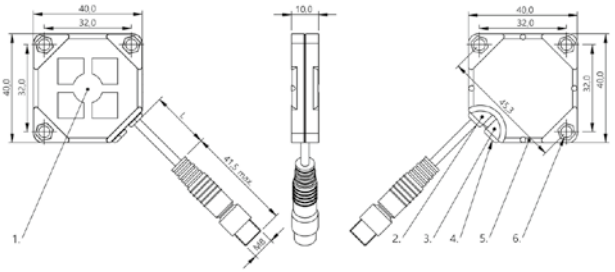
1) Sensing surface, 2) Housing, 3) Cover, 4) Power indicator green, 5) Function indicator yellow

BCS012A, BCS012C



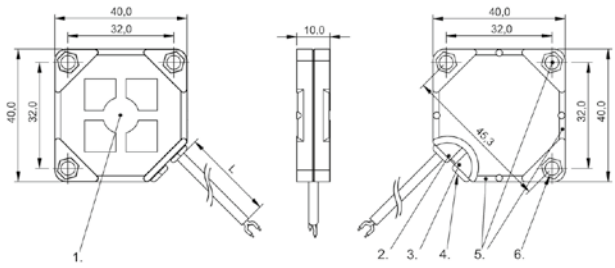
1) Sensing surface, 2) Housing, 3) Cover, 4) Power indicator green, 5) Function indicator yellow

BCS012T, BCS012U



1) Sensing surface, 2) Power indicator green, 3) Function indicator yellow,
4) Potentiometer, 5) Fastening: Cable tie, 6) Fastening: screw 3xM3

BCS00U6, BCS00U5



1) Sensing surface, 2) Power indicator green, 3) Function indicator yellow, 4) Potentiometer,
5) Fastening: Cable tie, 6) Fastening: screw 3xM3

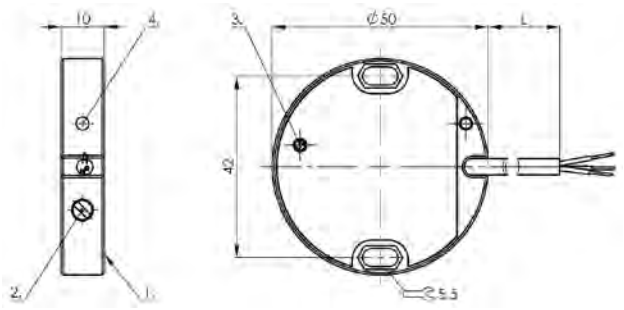
BCS00TR

PNP normally open		
PNP normally closed		
PNP normally open/normally closed programmable	**BCS0084** BCS D500004-PPCFAC-EV02	
Dimension	Ø 50 x 10 mm	
Series	D50	
Installation	flush with container outer wall	
Connection	Cable, 2.00 m, PVC	
Switching frequency	2 Hz	
Interface	—	
Sensitivity	media-dependent, adjustable	
Function	Smart Level 15	
Additional features	Electrically conductive media, Foam and residue compensation	
Housing material	POM	
Material sensing surface	POM	
Ambient temperature	-10...60 °C	
Operating voltage Ub	10...35 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	
IP rating	IP67	
Productview	Page 304	

	BCS012P BCS R08RRE-PIMFHC-EP00,3-GS04	BCS012Z BCS R08RRE-PSMFHC-EP00,3-GS75	BCS012H BCS R08RRE-PSMFHC-EP02
		BCS0130 BCS R08RRE-POMFHC-EP00,3-GS75	BCS012J BCS R08RRE-POMFHC-EP02
	34 x 16 x 8 mm	34 x 16 x 8 mm	34 x 16 x 8 mm
	R08	R08	R08
	flush with container outer wall	flush with container outer wall	flush with container outer wall
	Cable with connector, M12x1-Male, 4-pin, 0.30 m, PUR	Cable with connector, M8x1-Male, 4-pin, 0.30 m, PUR	Cable, 2.00 m, PUR
	10 Hz	10 Hz	10 Hz
	IO-Link 1.1	—	—
	teachable depending on media	teachable depending on media	teachable depending on media
	Smart Level 50	Smart Level 50	Smart Level 50
	Electrically conductive media, Foam and residue compensation	Electrically conductive media, Foam and residue compensation	Electrically conductive media, Foam and residue compensation
	PP	PP	PP
	PP	PP	PP
	-25...70 °C	-25...70 °C	-25...70 °C
	18...30 VDC	12...30 VDC	12...30 VDC
	cULus, IO-Link, CE, WEEE, EAC	cULus, CE, WEEE, EAC	CE, cULus, EAC, WEEE
	IP67	IP67	IP67
	Page 304	Page 304	Page 304

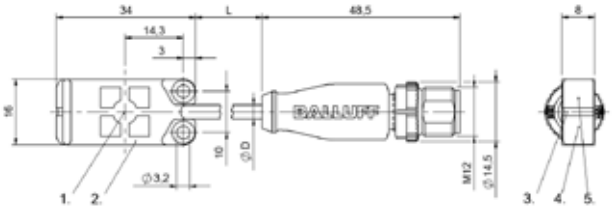
PNP normally open	**BCS0134** BCS Q40BBAA-PSCFHC-EP00,3-GS49	
PNP normally closed	**BCS0135** BCS Q40BBAA-POCFHC-EP00,3-GS49	
NPN normally open programmable		
PNP/NPN normally open/normally closed programmable		
Dimension	40 x 40 x 10 mm	
Series	Q40	
Installation	flush with container outer wall	
Connection	Cable with connector, M8x1-Male, 3-pin, 0.30 m, PUR	
Switching frequency	10 Hz	
Interface	—	
Sensitivity	media-dependent, adjustable	
Function	Smart Level 50	
Additional features	Electrically conductive media, Foam and residue compensation	
Housing material	PBT	
Material sensing surface	PBT	
Ambient temperature	-5...85 °C	
Operating voltage Ub	10...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	
IP rating	IP67	
Productview	Page 304	

		BCS018A BCS Q40BBAA-PSICFHC-EP00,3-GS04	
	BCS0133 BCS Q40BBAA-GPCFHC-EP02		
	40 x 40 x 10 mm	40 x 40 x 10 mm	
	Q40	Q40	
	flush with container outer wall	flush with container outer wall	
	Cable, 2.00 m, PUR	Cable with connector, M12x1-Male, 3-pin, 0.30 m, PUR	
	10 Hz	10 Hz	
	—	IO-Link 1.1	
	media-dependent, adjustable	teachable depending on media	
	Smart Level 50	Smart Level 50	
	Electrically conductive media, Foam and residue compensation	Electrically conductive media, Foam and residue compensation	
	PBT	PBT	
	PBT	PBT	
	-5...85 °C	-20...80 °C	
	10...30 VDC	10...30 VDC	
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE, IO-Link	
	IP67	IP67	
	Page 304	Page 304	



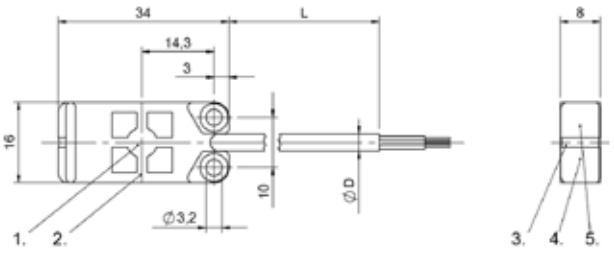
1) Sensing surface, 2) Potentiometer, 3) NO or NC selectable, 4) LED function indicator

BCS0084



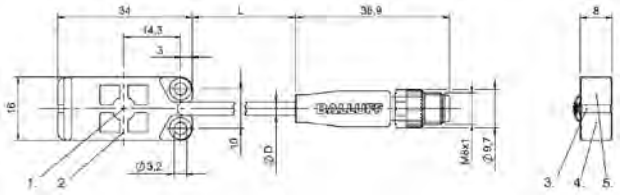
1) Sensing surface, 2) Housing, 3) Cover, 4) Power indicator green, 5) Function indicator yellow

BCS012P



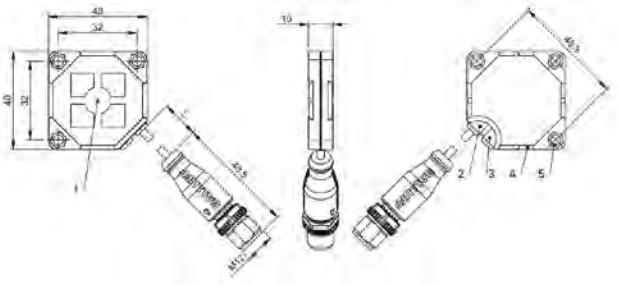
1) Sensing surface, 2) Housing, 3) Cover, 4) Power indicator green, 5) Function indicator yellow

BCS012H, BCS012J



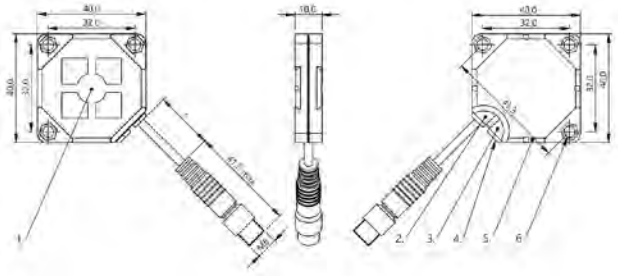
1) Sensing surface, 2) Housing, 3) Cover, 4) Power indicator green, 5) Function indicator yellow

BCS012Z, BCS0130



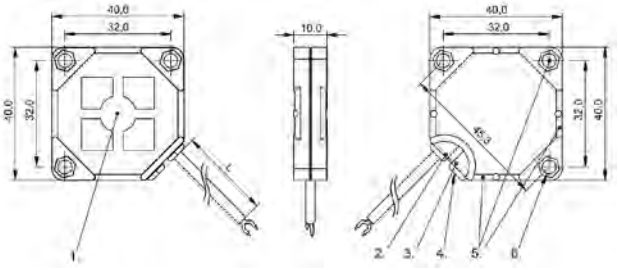
1) Sensing surface, 2) Power indicator green, 3) Function indicator yellow,
4) Fastening: Cable tie, 5) Fastening: screw 3xM3

BCS018A



1) Sensing surface, 2) Power indicator green, 3) Function indicator yellow, 4) Potentiometer,
5) Fastening: Cable tie, 6) Fastening: screw 3xM3

BCS0134, BCS0135



1) Sensing surface, 2) Power indicator green, 3) Function indicator yellow, 4) Potentiometer,
5) Fastening: Cable tie, 6) Fastening: screw 3xM3

BCS0133

PNP normally open	**BCS001Y** BCS G06T4E1-PSM30G-EP02	**BCS0022** BCS G06T4D2-PSM30G-S49G	
PNP normally closed			
Dimension	Ø 6.5 x 42 mm	Ø 6.5 x 54 mm	
Series	G06	G06	
Thread (A)	—	—	
Installation	non-flush	non-flush	
Connection	Cable, 2.00 m, PUR	Connector, M8x1-Male, 3-pin	
Switching frequency	100 Hz	100 Hz	
Interface	—	—	
Range	0.1...3 mm	0.1...3 mm	
Sensitivity	Switching distance adjustable	Switching distance adjustable	
Function	—	—	
Additional features	—	—	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	
Material sensing surface	PTFE	PTFE	
Ambient temperature	-10...70 °C	-10...70 °C	
Operating voltage Ub	11...30 VDC	11...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
IP rating	IP65	IP65	
Productiew	Page 318	Page 318	

	BCS002M BCS M08T4E2-PSM30G-S49G	BCS00R0 BCS M12BBG1-PSC80H-EP02	BCS00PN BCS M12BBE2-PSC80H-S04K	BCS006Z BCS M12TTG1-PSM80G-ET02
		BCS00R1 BCS M12BBG1-POC80H-EP02	BCS00PP BCS M12BBE2-POC80H-S04K	BCS0070 BCS M12TTG1-POM80G-ET02
	Ø 8 x 54 mm	Ø 12 x 61 mm	Ø 12 x 75 mm	Ø 12 x 53 mm
	M08	M12	M12	M12
	M8x1	M12x1	M12x1	M12x1
	non-flush	non-flush	non-flush	non-flush
	Connector, M8x1-Male, 3-pin	Cable, 2.00 m, PUR	Connector, M12x1-Male, 3-pin	Cable, 2.00 m, PTFE
	100 Hz	100 Hz	100 Hz	100 Hz
	—	—	—	—
	0.1...3 mm	1...8 mm	1...8 mm	1...8 mm
	Switching distance adjustable	Switching distance adjustable	Switching distance adjustable	Switching distance adjustable
	—	—	—	—
	—	—	—	—
	Stainless steel (1.4301)	PBT	PBT	PTFE
	PTFE	PBT	PBT	PTFE
	-10...70 °C	-25...85 °C	-25...85 °C	-30...70 °C
	11...30 VDC	10...30 VDC	10...30 VDC	12...35 VDC
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	IP65	IP67	IP67	IP65
	Page 318	Page 318	Page 318	Page 319

PNP normally open	**BCS00PC** BCS M12B4G1-PSC80H-EP02	**BCS00P4** BCS M12B4E2-PSC80H-S04K	
PNP normally closed			
Push-pull Normally open (NO)			
Dimension	Ø 12 x 61 mm	Ø 12 x 75 mm	
Series	M12	M12	
Thread (A)	M12x1	M12x1	
Installation	non-flush	non-flush	
Connection	Cable, 2.00 m, PUR	Connector, M12x1-Male, 3-pin	
Switching frequency	100 Hz	100 Hz	
Interface	—	—	
Range	1...8 mm	1...8 mm	
Sensitivity	Switching distance adjustable	Switching distance adjustable	
Function	—	—	
Additional features	—	—	
Housing material	Stainless steel (1.4305)	Stainless steel (1.4305)	
Material sensing surface	PBT	PBT	
Ambient temperature	-25...85 °C	-25...85 °C	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
IP rating	IP67	IP67	
Productiew	Page 318	Page 318	




		BCS008A BCS M18TTI2-PSCFAG-AT02	**BCS00LL** BCS M18BBH1-PSC15H-EP02	**BCS00LM** BCS M18BBG2-PSC15H-S04K
				BCS00LT BCS M18BBG2-POC15H-S04K
	BCS0179 BCS M12K4D2-GSM80G-S04G			
	Ø 12 x 60 mm	Ø 18 x 73 mm	Ø 18 x 75.5 mm	Ø 18 x 88.5 mm
	M12	M18	M18	M18
	M12x1	M18x1	M18x1	M18x1
	non-flush	non-flush	non-flush	non-flush
	Connector, M12x1-Male, 4-pin	Cable, 2.00 m, PTFE	Cable, 2.00 m, PUR	Connector, M12x1-Male, 4-pin
	100 Hz	2 Hz	100 Hz	100 Hz
	—	—	—	—
	0.5...8 mm	—	2...15 mm	2...15 mm
	Switching distance teachable	media-dependent, adjustable	Switching distance adjustable	Switching distance adjustable
	—	Smart Level 15	—	—
	—	Electrically conductive media, Foam and residue compensation	—	—
	Stainless steel (1.4404)	PTFE	PBT	PBT
	PEEK	PTFE	PBT	PBT
	-10...80 °C	-10...60 °C	-25...85 °C	-25...85 °C
	12...30 VDC	10...35 VDC	10...30 VDC	10...30 VDC
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	IP67	IP66	IP67	IP67
	Page 318	Page 319	Page 319	Page 319

PNP normally open	**BCS0073** BCS M18TTI2-PSC15G-AT02	**BCS00ME** BCS M18B4G2-PSC15H-S04K	
PNP normally open/normally closed programmable			
Dimension	Ø 18 x 73 mm	Ø 18 x 88.5 mm	
Series	M18	M18	
Thread (A)	M18x1	M18x1	
Installation	non-flush	non-flush	
Connection	Cable, 2.00 m, PTFE	Connector, M12x1-Male, 4-pin	
Switching frequency	100 Hz	100 Hz	
Interface	—	—	
Range	2...15 mm	2...15 mm	
Sensitivity	Switching distance adjustable	Switching distance adjustable	
Function	—	—	
Additional features	—	—	
Housing material	PTFE	Stainless steel (1.4305)	
Material sensing surface	PTFE	PBT	
Ambient temperature	-30...70 °C	-25...85 °C	
Operating voltage Ub	10...35 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
IP rating	IP67	IP67	
Productiew	Page 319	Page 319	

	BCS006A BCS M18T4G2-PSC15G-S04G		**BCS0086** BCS M30TTH2-PSCFAG-AT02	**BCS00NT** BCS M30BBE1-PSC25H-EP02
		BCS007Y BCS M30BBM2-PPCFAG-S04G		
	Ø 18 x 75 mm	Ø 30 x 87 mm	Ø 30 x 72 mm	Ø 30 x 65.5 mm
	M18	M30	M30	M30
	M18x1	M30x1.5	M30x1.5	M30x1.5
	non-flush	non-flush	non-flush	non-flush
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Cable, 2.00 m, PTFE	Cable, 2.00 m, PUR
	100 Hz	2 Hz	2 Hz	100 Hz
	—	—	—	—
	2...15 mm	—	—	1...25 mm
	Switching distance adjustable	media-dependent, adjustable	media-dependent, adjustable	Switching distance adjustable
	—	Smart Level 15	Smart Level 15	—
	—	Electrically conductive media, Foam and residue compensation	Electrically conductive media, Foam and residue compensation	—
	Stainless steel (1.4301)	PBT	PTFE	PBT
	PTFE	PBT	PTFE	PBT
	-30...70 °C	-10...60 °C	-10...60 °C	-25...85 °C
	10...35 VDC	10...35 VDC	10...35 VDC	10...30 VDC
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	IP67	IP67	IP67	IP67
	Page 319	Page 319	Page 319	Page 320

PNP normally open	**BCS00NH** BCS M30BBE2-PSC25H-S04K		
PNP normally open/normally closed programmable		**BCS007F** BCS M30BBM2-PPC30G-S04G	
Dimension	Ø 30 x 78.5 mm	Ø 30 x 87 mm	
Series	M30	M30	
Thread (A)	M30x1.5	M30x1.5	
Installation	non-flush	non-flush	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Switching frequency	100 Hz	100 Hz	
Interface	—	—	
Range	1...25 mm	1...30 mm	
Sensitivity	Switching distance adjustable	Switching distance adjustable	
Function	—	—	
Additional features	—	—	
Housing material	PBT	PBT	
Material sensing surface	PBT	PBT	
Ambient temperature	-25...85 °C	-30...70 °C	
Operating voltage Ub	10...30 VDC	10...35 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
IP rating	IP67	IP66	
Productiew	Page 320	Page 320	




	BCS0077 BCS M30TTH2-PSC30G-AT02	**BCS00N6** BCS M30B4E1-PSC25H-EP02	**BCS00MY** BCS M30B4E2-PSC25H-S04K	**BCS007L** BCS M30T4M2-PPC30G-S04G
	Ø 30 x 72 mm	Ø 30 x 65.5 mm	Ø 30 x 78.5 mm	Ø 30 x 86.5 mm
	M30	M30	M30	M30
	M30x1.5	M30x1.5	M30x1.5	M30x1.5
	non-flush	non-flush	non-flush	non-flush
	Cable, 2.00 m, PTFE	Cable, 2.00 m, PUR	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	100 Hz	100 Hz	100 Hz	100 Hz
	—	—	—	—
	2...30 mm	1...25 mm	1...25 mm	1...30 mm
	Switching distance adjustable	Switching distance adjustable	Switching distance adjustable	Switching distance adjustable
	—	—	—	—
	—	—	—	—
	PTFE	Stainless steel (1.4305)	Stainless steel (1.4305)	Stainless steel (1.4301)
	PTFE	PBT	PBT	PTFE
	-30...70 °C	-25...85 °C	-25...85 °C	-30...70 °C
	10...35 VDC	10...30 VDC	10...30 VDC	10...35 VDC
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	IP67	IP67	IP67	IP66
	Page 320	Page 320	Page 320	Page 320

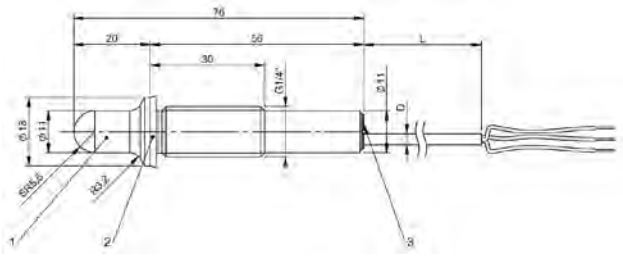
PNP normally open	**BCS0105** BCS S44KK01-PSCFAG-EP00,3-GS49		
PNP normally closed			
PNP normally open/normally closed programmable		**BCS010L** BCS S44KK01-GPCFAG-EP02	
PNP/NPN normally open/normally closed codierbar			
Dimension	Ø 12 x 62.5 mm	Ø 12 x 62.5 mm	
Series	S44	S44	
Thread (A)	M12x1	M12x1	
Installation	non-flush	non-flush	
Connection	Cable with connector, M8x1-Male, 3-pin, 0.30 m, PUR	Cable, 2.00 m, PUR	
Switching frequency	5 Hz	5 Hz	
Interface	—	—	
Range	—	—	
Sensitivity	media-dependent, adjustable	media-dependent, adjustable	
Function	Smart Level 15	Smart Level 15	
Additional features	Electrically conductive media, Foam and residue compensation	Electrically conductive media, Foam and residue compensation	
Housing material	PEEK	PEEK	
Material sensing surface	PEEK	PEEK	
Ambient temperature	-5...105 °C, UL approval valid up to 85 °C	-5...105 °C, UL approval valid up to 85 °C	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, WEEE, cULus, EAC	CE, WEEE, cULus, EAC	
IP rating	IP67	IP67	
Productiew	Page 320	Page 320	




	BCS00ZL BCS S44KK01-PSCFNG-EP00,3-GS49		BCS0109 BCS S44KK02-PSCFAG-EP00,3-GS49	
			BCS010A BCS S44KK02-POCFAG-EP00,3-GS49	
		BCS010N BCS S44KK03-GPCFAG-EP02		BCS010M BCS S44KK02-GPCFAG-EP02
	Ø 12 x 62.5 mm	Ø 13.7 x 62.5 mm	Ø 11.9 x 62.5 mm	Ø 11.9 x 62.5 mm
	S44	S44	S44	S44
	M12x1	NPT 1/4“	G 1/4“	G 1/4“
	non-flush	non-flush	non-flush	non-flush
	Cable with connector, M8x1-Male, 3-pin, 0.30 m, PUR	Cable, 2.00 m, PUR	Cable with connector, M8x1-Male, 3-pin, 0.30 m, PUR	Cable, 2.00 m, PUR
	10 Hz	5 Hz	5 Hz	5 Hz
	—	—	—	—
	—	—	—	—
	media-dependent, adjustable	media-dependent, adjustable	media-dependent, adjustable	media-dependent, adjustable
	—	Smart Level 15	Smart Level 15	Smart Level 15
	—	Electrically conductive media, Foam and residue compensation	Electrically conductive media, Foam and residue compensation	Electrically conductive media, Foam and residue compensation
	PEEK	PEEK	PEEK	PEEK
	PEEK	PEEK	PEEK	PEEK
	-5...105 °C	-5...105 °C, UL approval valid up to 85 °C	-5...105 °C, UL approval valid up to 85 °C	-5...105 °C, UL approval valid up to 85 °C
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	CE, WEEE, EAC	CE, WEEE, cULus, EAC	CE, WEEE, cULus, EAC	CE, WEEE, cULus, EAC
	IP67	IP67	IP67	IP67
	Page 320	Page 320	Page 321	Page 321

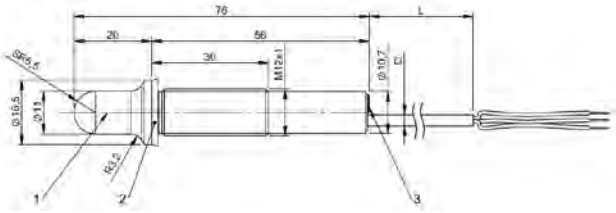
PNP normally open			
PNP normally closed			
PNP/NPN normally open/normally closed programmable	**BCS018T** BCS S30KK01-GPSFHF-EV05	**BCS018Z** BCS S30KK02-GPSFHF-EV05	
Dimension	Ø 18 x 76 mm	Ø 16.8 x 76 mm	
Series	—	—	
Thread (A)	G 1/4“	M12x1	
Installation	non-flush	non-flush	
Connection	Cable, 3-pin, 5 m, PVC	Cable, 3-pin, 5 m, PVC	
Switching frequency	5 Hz	5 Hz	
Interface	—	—	
Range	—	—	
Sensitivity	media-dependent, adjustable	media-dependent, adjustable	
Function	—	—	
Additional features	—	—	
Housing material	PEEK	PEEK	
Material sensing surface	PEEK	PEEK	
Ambient temperature	-10...105 °C	-10...105 °C	
Operating voltage Ub	18...30 VDC	18...30 VDC	
Approval/Conformity	CE, WEEE, FDA compliant, EAC	CE, WEEE, FDA compliant, EAC	
IP rating	IP68	IP68	
Productiew	Page 318	Page 318	

	BCS011E BCS S04K501-PICFNG-S04G-T50	BCS011F BCS S04K501-PSCFNG-S04G-T50		
		BCS011H BCS S04K501-POCFNG-S04G-T50		
	Ø 30 x 96 mm	Ø 30 x 96 mm		
	S04	S04		
	G 1/2“	G 1/2“		
	non-flush	non-flush		
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin		
	5 Hz	5 Hz		
	IO-Link 1.1	—		
	—	—		
	teachable depending on media	teachable depending on media		
	Smart Level 100	Smart Level 100		
	Electrically conductive media, Foam and residue compensation, CIP/SIP capable	Electrically conductive media, Foam and residue compensation, CIP/SIP capable		
	Stainless steel (1.4404)	Stainless steel (1.4404)		
	PEEK	PEEK		
	-40...85 °C	-40...85 °C		
	18...30 VDC	12...30 VDC		
	CE, IO-Link, EAC, WEEE, cULus LISTED, designed according to EHEDG specifications, FDA compliant	CE, WEEE, IO-Link, cULus LISTED, EAC, designed according to EHEDG specifications, FDA compliant		
	IP68	IP68		
	Page 321	Page 321		



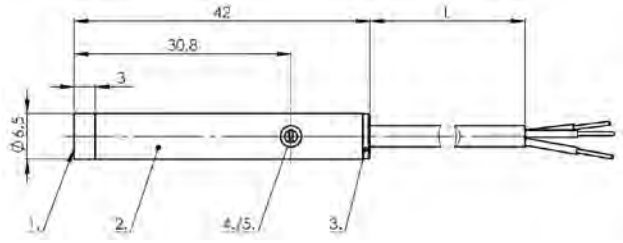
1) Sensing surface, 2) Sealing ring, 3) Potentiometer

BCS018T



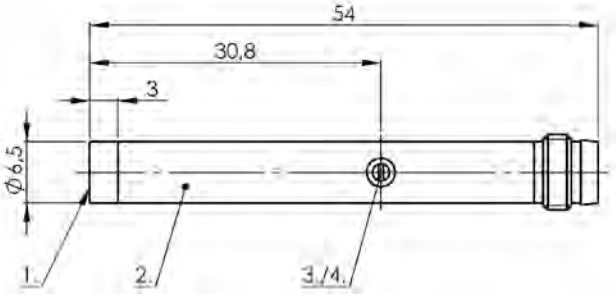
1) Sensing surface, 2) Flat gasket, 3) Potentiometer

BCS018Z



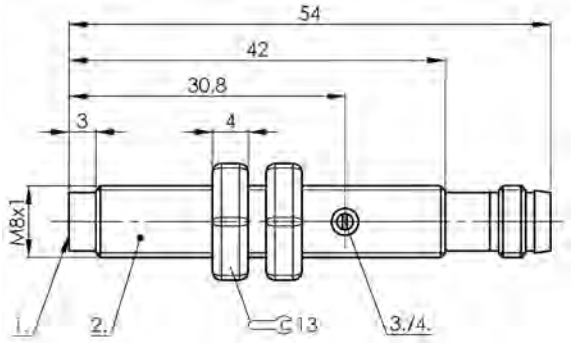
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED function indicator

BCS001Y



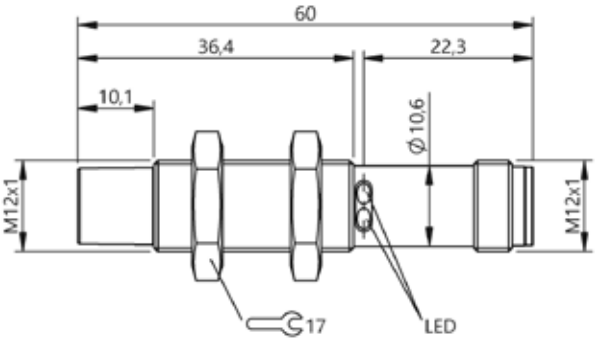
1) Sensing surface, 2) Housing, 3) Potentiometer, 4) LED function indicator

BCS0022

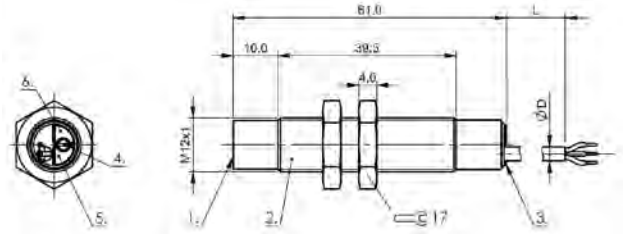


1) Sensing surface, 2) Housing, 3) Potentiometer, 4) LED function indicator

BCS002M

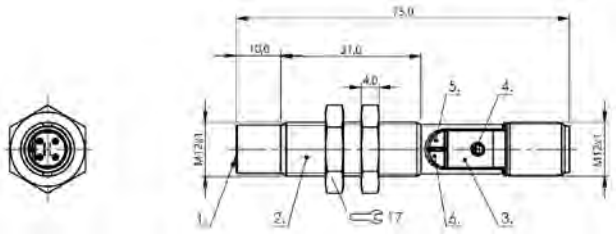


BCS0179



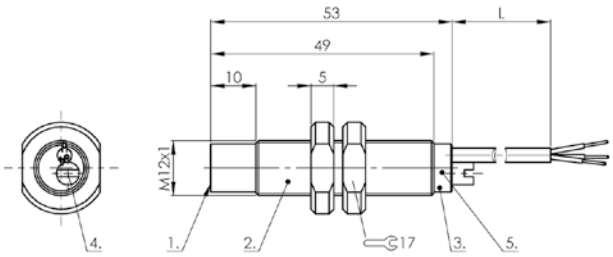
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED Power, 6) LED function indicator

BCS00R0, BCS00R1, BCS00PC



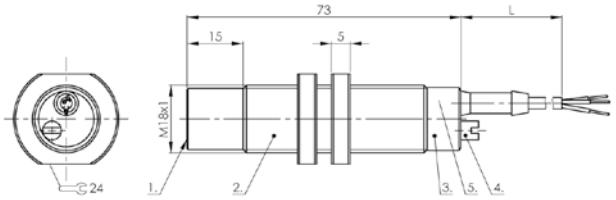
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED Power, 6) LED function indicator

BCS00PN, BCS00PP, BCS00P4



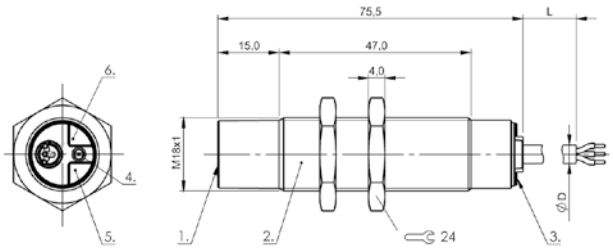
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED function indicator

BCS006Z, BCS0070



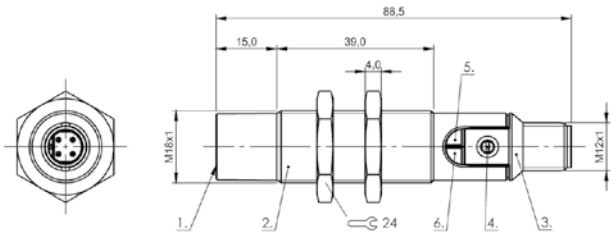
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED function indicator

BCS008A



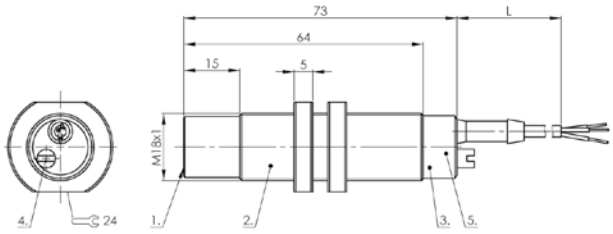
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED Power, 6) LED function indicator

BCS00LL



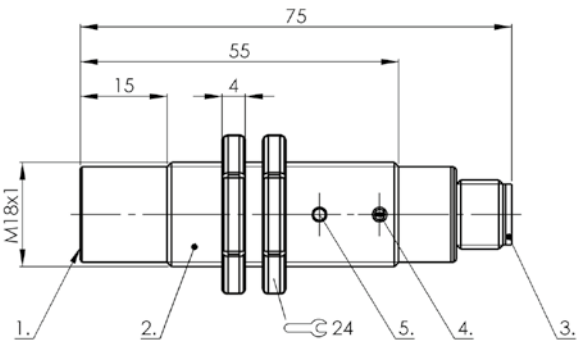
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED Power, 6) LED function indicator

BCS00LM, BCS00LT, BCS00ME



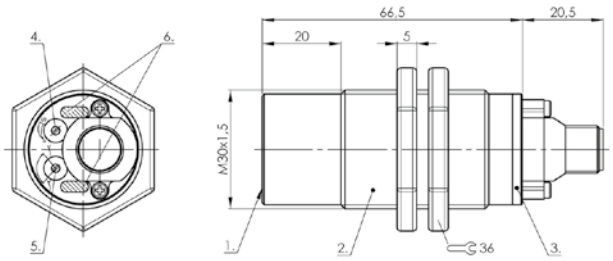
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED function indicator

BCS0073



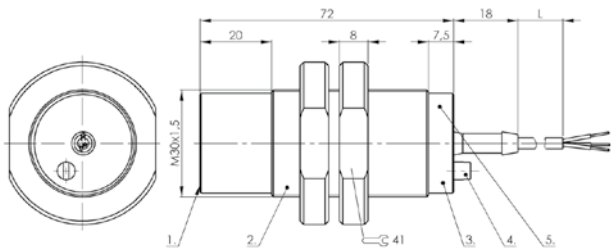
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED function indicator

BCS006A



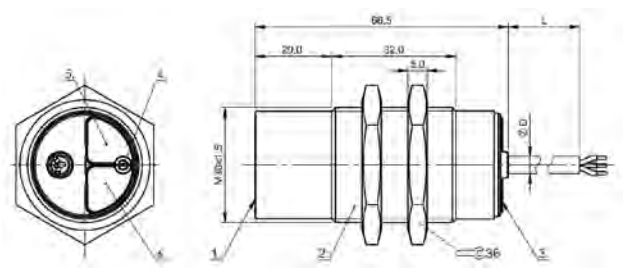
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) NO or NC selectable, 6) LED function indicator

BCS007Y



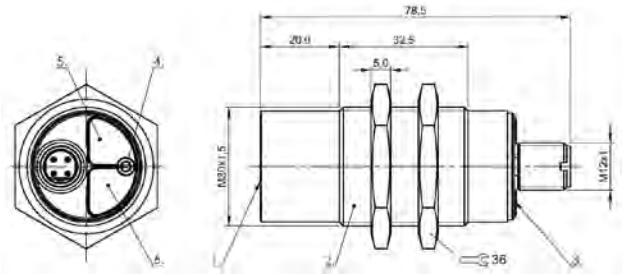
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED function indicator

BCS0086



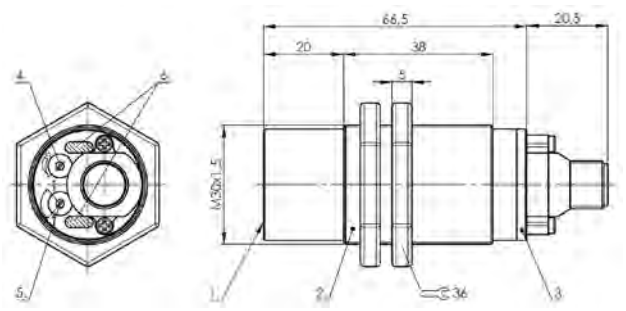
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED Power, 6) LED function indicator

BCS00NT, BCS00N6



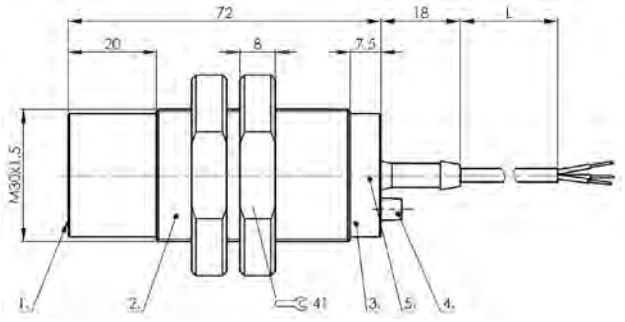
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED Power, 6) LED function indicator

BCS00NH, BCS00MY



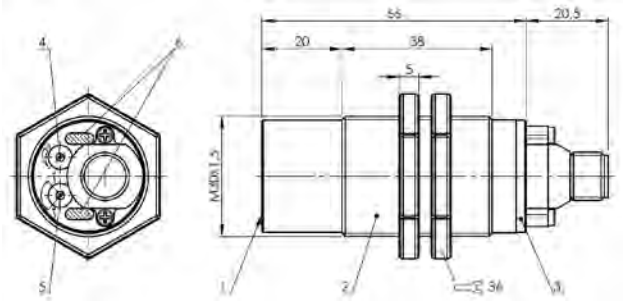
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) NO or NC selectable, 6) LED function indicator

BCS007F



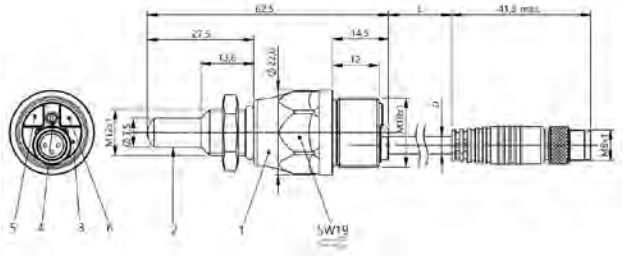
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) LED function indicator

BCS0077



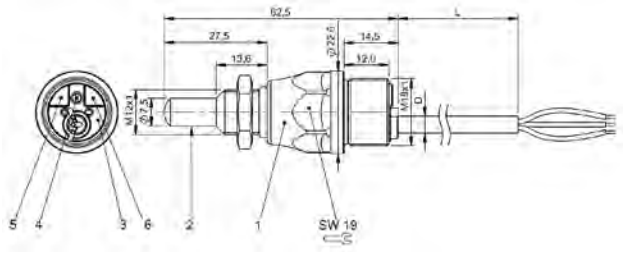
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) NO or NC selectable, 6) LED function indicator

BCS007L



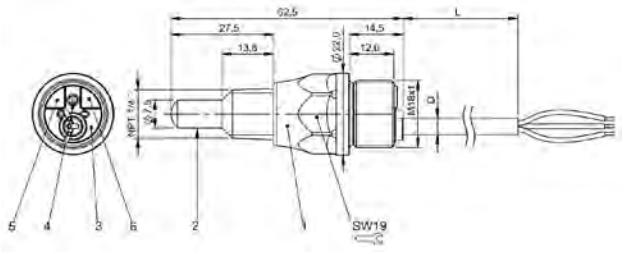
1) Housing, 2) Sensing surface, 3) Cover, 4) Potentiometer, 5) Function indicator yellow, 6) Power indicator green

BCS0105, BCS00ZL



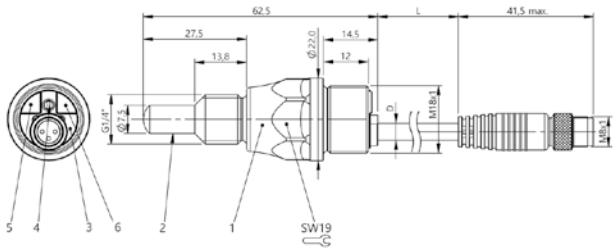
1) Housing, 2) Sensing surface, 3) Cover, 4) Potentiometer, 5) Function indicator yellow, 6) Power indicator green

BCS010L



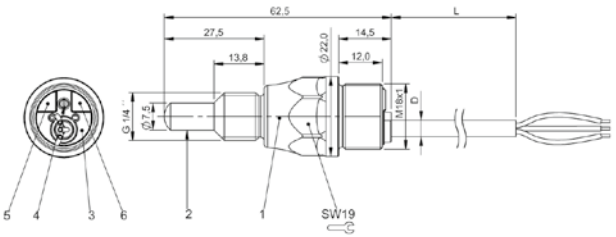
1) Housing, 2) Sensing surface, 3) Cover, 4) Potentiometer, 5) Function indicator yellow, 6) Power indicator green

BCS010N



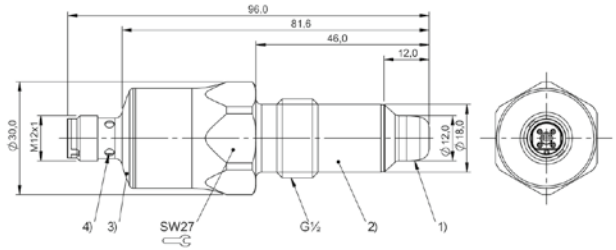
1) Housing, 2) Sensing surface, 3) Cover, 4) Potentiometer, 5) Function indicator yellow, 6) Power indicator green

BCS0109, BCS010A



1) Housing, 2) Sensing surface, 3) Cover, 4) Potentiometer, 5) Function indicator yellow, 6) Power indicator green

BCS010M



1) Sensing surface, 2) Housing, 3) Cover, 4) LED function indicator

BCS011E, BCS011F, BCS011H

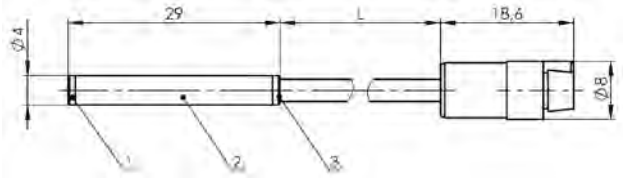
	BCS0010 BCS G04T4D-XXS10C-EP02-GZ01-002	BCS0012 BCS G06T4B-XXS15C-EP02-GZ01-002	
Dimension	Ø 4 x 29 mm	Ø 6.5 x 18 mm	
Series	G04	G06	
Thread (A)	—	—	
Installation	for flush mounting	for flush mounting	
Connection	Cable with connector, Special connector-Special connector, 2.00 m, PUR	Cable with connector, Special connector-Special connector, 2.00 m, PUR	
Interface	Special interface	Special interface	
Range	0.1...1 mm	0.1...1.5 mm	
Sensitivity	adjustable on base unit	adjustable on base unit	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	
Material sensing surface	PTFE	PTFE	
Ambient temperature	-30...80 °C	-30...80 °C	
Approval/Conformity	CE, cULus	CE, cULus	
Protection degree	IP67	IP67	
Productview	Page 328	Page 328	

	BCS0013 BCS G06T4B-XXS30G-EP02-GZ01-002	**BCS0016** BCS G10T4B-XXS40C-EP02-GZ01-002	**BCS0017** BCS G10T4C-XXS80G-EP02-GZ01-002	**BCS0011** BCS M05T4C-XXS10C-EP02-GZ01-002
	Ø 6.5 x 19 mm	Ø 10 x 20 mm	Ø 10 x 24 mm	Ø 5 x 29 mm
	G06	G10	G10	M05
	—	—	—	M5x0.5
	non-flush	for flush mounting	non-flush	for flush mounting
	Cable with connector, Special connector-Special connector, 2.00 m, PUR	Cable with connector, Special connector-Special connector, 2.00 m, PUR	Cable with connector, Special connector-Special connector, 2.00 m, PUR	Cable with connector, Special connector-Special connector, 2.00 m, PUR
	Special interface	Special interface	Special interface	Special interface
	0.1...3 mm	0.1...4 mm	1...8 mm	0.1...1 mm
	adjustable on base unit	adjustable on base unit	adjustable on base unit	adjustable on base unit
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	PTFE	PTFE	PTFE	PTFE
	-30...80 °C	-30...80 °C	-30...80 °C	-30...80 °C
	CE, cULus	CE, cULus	CE, cULus	CE, cULus
	IP67	IP67	IP67	IP67
	Page 328	Page 328	Page 328	Page 328

	BCS0014 BCS M08T4C-XXS15C-EP02-GZ01-002	BCS0015 BCS M08T4C1-XXS30G-EP02-GZ01-002	
Dimension	Ø 8 x 25 mm	Ø 8 x 28 mm	
Series	M08	M08	
Thread (A)	M8x1	M8x1	
Installation	for flush mounting	non-flush	
Connection	Cable with connector, Special connector-Special connector, 2.00 m, PUR	Cable with connector, Special connector-Special connector, 2.00 m, PUR	
Interface	Special interface	Special interface	
Range	0.1...1.5 mm	0.1...3 mm	
Sensitivity	adjustable on base unit	adjustable on base unit	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	
Material sensing surface	PTFE	PTFE	
Ambient temperature	-30...80 °C	-30...80 °C	
Approval/Conformity	CE, cULus	CE, cULus	
Protection degree	IP67	IP67	
Productview	Page 328	Page 328	

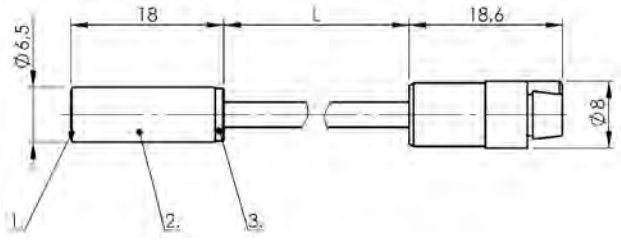
	BCS0019 BCS M12T4D1-XXS80G-EP02-GZ01-002	BCS001A BCS D18T403-XXS30C-EP02-GZ01-002	BCS001C BCS D18T404-XXS50C-EP02-GZ01-002	BCS001F BCS D22T405-XXS10C-EP02-GZ01-002
	Ø 12 x 34 mm	Ø 18 x 2.5 mm	Ø 18 x 4 mm	Ø 22 x 4 mm
	M12	D18	D18	D22
	M12x1	—	—	—
	non-flush	for flush mounting	for flush mounting	for flush mounting
	Cable with connector, Special connector-Special connector, 2.00 m, PUR	Cable with connector, Special connector-Special connector, 2.00 m, PVC	Cable with connector, Special connector-Special connector, 2.00 m, PUR	Cable with connector, Special connector-Special connector, 2.00 m, PUR
	Special interface	Special interface	Special interface	Special interface
	1...8 mm	0.1...3 mm	1...5 mm	1...10 mm
	adjustable on base unit	adjustable on base unit	adjustable on base unit	adjustable on base unit
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	PTFE	PTFE	PTFE	PTFE
	-30...80 °C	-30...70 °C	-30...80 °C	-30...80 °C
	CE, cULus	CE, cULus	CE, cULus	CE, cULus
	IP67	IP66	IP66	IP66
	Page 329	Page 329	Page 329	Page 329

	BCS001H BCS D22T408-XXS10C-EP02-GZ01-002		
Dimension	Ø 22 x 10 mm		
Series	D22		
Thread (A)	—		
Installation	for flush mounting		
Connection	Cable with connector, Special connector-Special connector, 2.00 m, PUR		
Interface	Special interface		
Range	1...10 mm		
Sensitivity	adjustable on base unit		
Housing material	Stainless steel (1.4301)		
Material sensing surface	PTFE		
Ambient temperature	-30...80 °C		
Approval/Conformity	CE, cULus		
Protection degree	IP66		
Productview	Page 329		



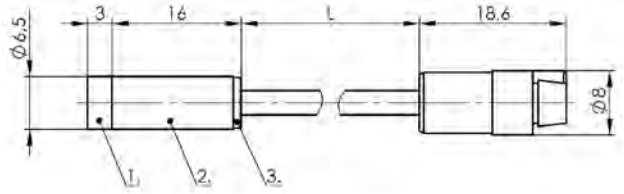
1) Sensing surface, 2) Housing, 3) Cover

BCS0010



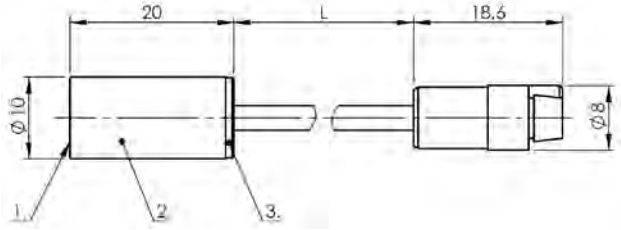
1) Sensing surface, 2) Housing, 3) Cover

BCS0012



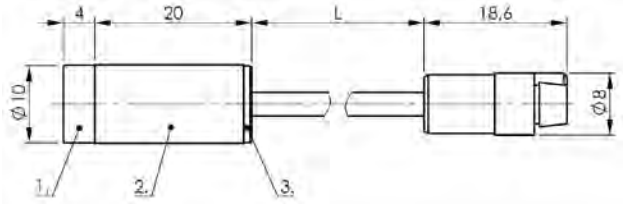
1) Sensing surface, 2) Housing, 3) Cover

BCS0013



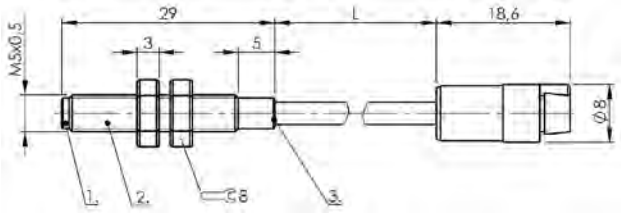
1) Sensing surface, 2) Housing, 3) Cover

BCS0016



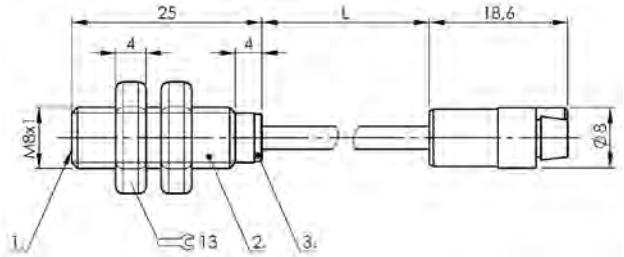
1) Sensing surface, 2) Housing, 3) Cover

BCS0017



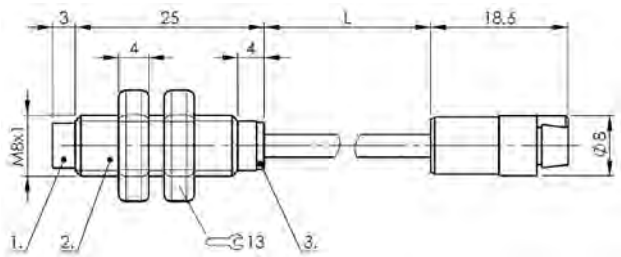
1) Sensing surface, 2) Housing, 3) Cover

BCS0011



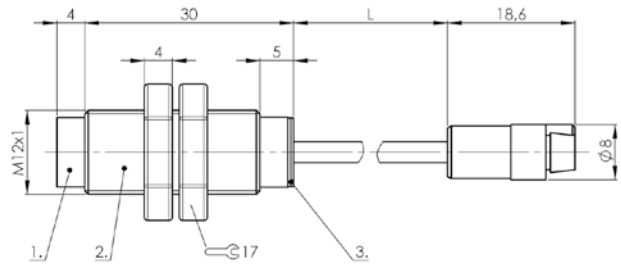
1) Sensing surface, 2) Housing, 3) Cover

BCS0014



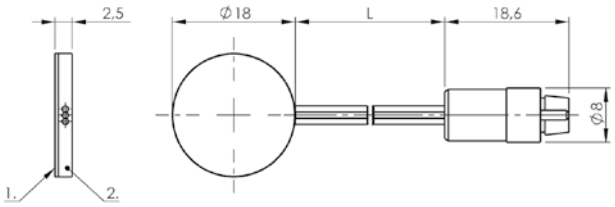
1) Sensing surface, 2) Housing, 3) Cover

BCS0015



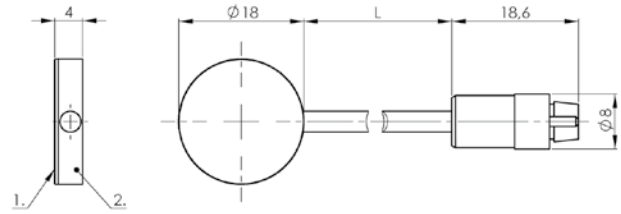
1) Sensing surface, 2) Housing, 3) Cover

BCS0019



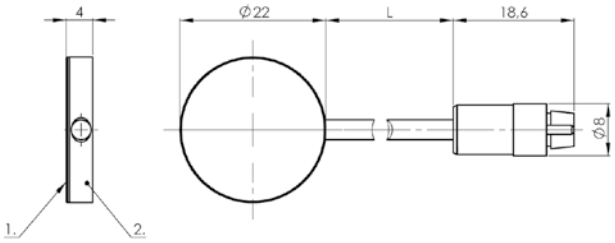
1) Sensing surface, 2) Housing

BCS001A



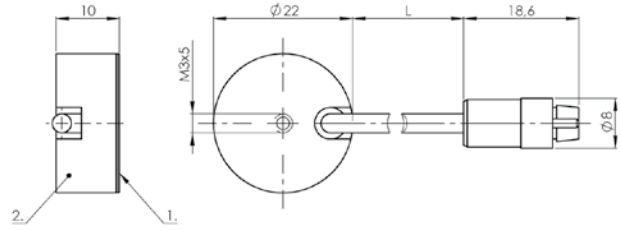
1) Sensing surface, 2) Housing

BCS001C



1) Sensing surface, 2) Housing

BCS001F

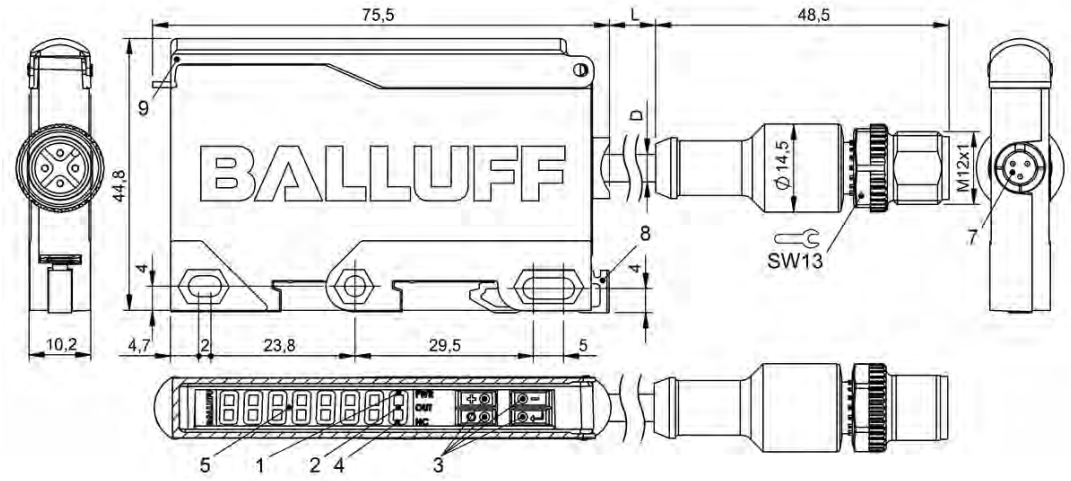


1) Sensing surface, 2) Housing

BCS001H

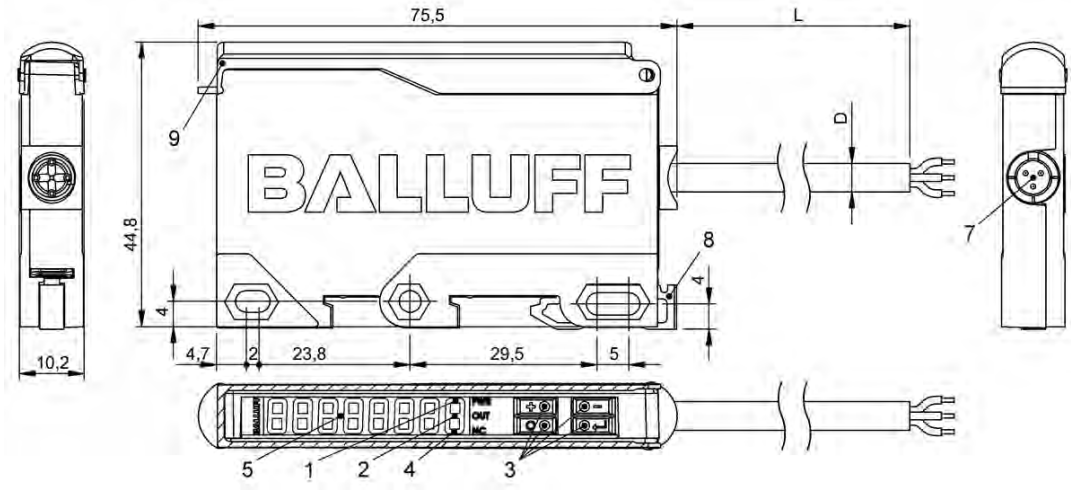
PNP/NPN normally open/normally closed programmable	**BAE00LC** BAE SA-CS-027-YI-BP00,3-GS04		
Analog, voltage 0...10 V/current 4...20 mA		**BAE00KJ** BAE SA-CS-026-YP-BP02	
Dimension	10.5 x 45 x 75.5 mm	10.5 x 45 x 75.5 mm	
Connection	Cable with connector, M12x1 connector, 4-pin, 0.30 m, PUR	Cable, 2.00 m, PUR	
Switching frequency	50 Hz	100 Hz	
Interface	IO-Link 1.1	—	
Housing material	PBT	PBT	
Ambient temperature	-10...70 °C	-10...70 °C	
Operating voltage Ub	18...30 VDC	15...30 VDC	
Approval/Conformity	CE, IO-Link, cULus	CE, cULus	
Protection degree	IP40	IP40	
Time function	On/off delay time programmable	On/off delay time programmable	
Productview	Page 332	Page 332	

		BAE00KH BAE SA-CS-025-YP-BP02	**BAE00L9** BAE SA-CS-025-YP-BP00,3-GS04	
	BAE00LA BAE SA-CS-026-YP-BP00,3-GS04			
	10.5 x 45 x 75.5 mm	10.5 x 45 x 75.5 mm	10.5 x 45 x 75.5 mm	
	Cable with connector, M12x1, 0.30 m, PUR	Cable, 2.00 m, PUR	Cable with connector, M12x1, 0.30 m, PUR	
	100 Hz	100 Hz	100 Hz	
	—	—	—	
	PBT	PBT	PBT	
	-10...70 °C	-10...70 °C	-10...70 °C	
	15...30 VDC	12...30 VDC	12...30 VDC	
	CE, cULus	CE, cULus	CE, cULus	
	IP40	IP40	IP40	
	On/off delay time programmable	—	—	
	Page 332	Page 333	Page 333	



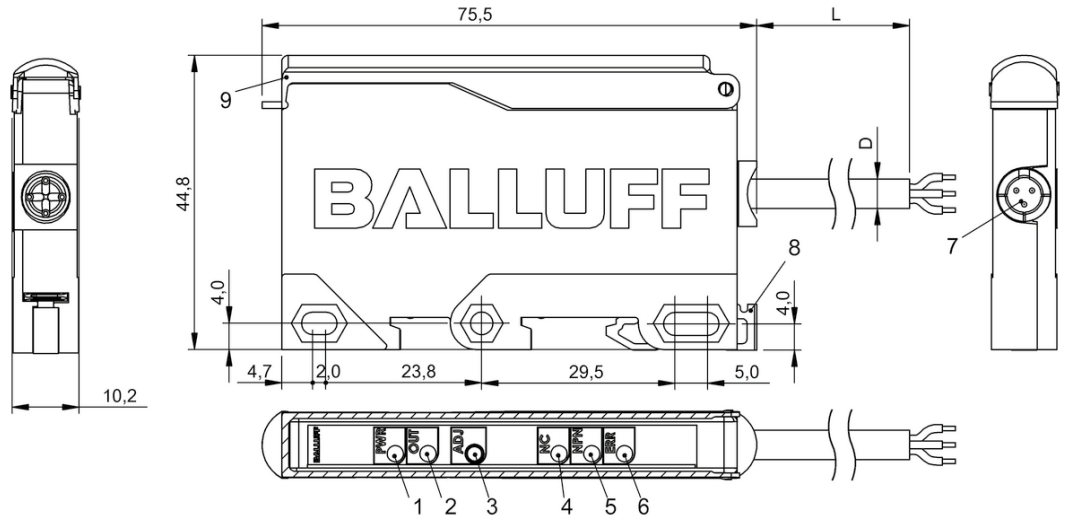
1) LED Power, 2) LED function indicator, 3) 4x operating keys, 4) LED N.C. function active, 5) 7x seven-segment display, 7) Plug connection sensor, 8) DIN rail mount 35mm, 9) Flap

BAE00LC, BAE00LA



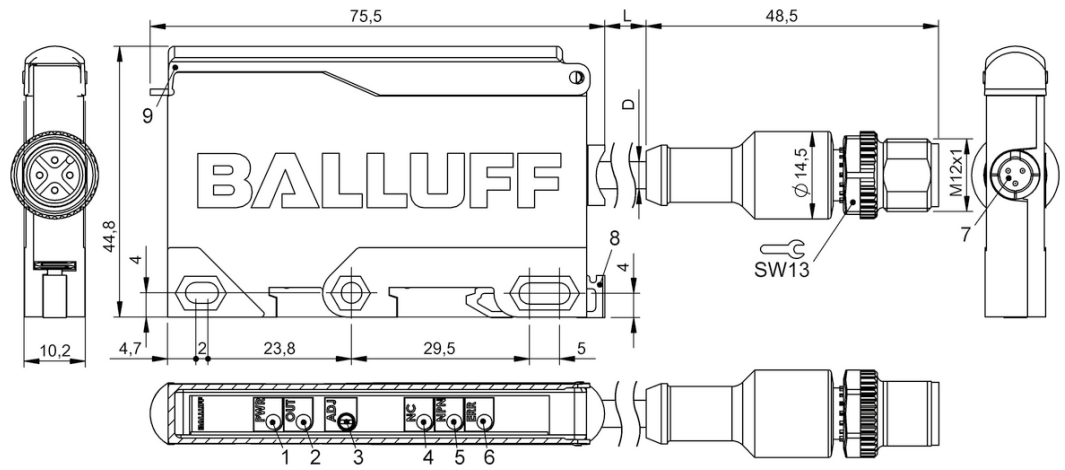
1) LED Power, 2) LED function indicator, 3) 4x operating keys, 4) LED N.C. function active, 5) 7x seven-segment display, 7) Plug connection sensor, 8) DIN rail mount 35mm, 9) Flap

BAE00KJ



1) LED Power, 2) LED function indicator, 3) Sn, 4) LED N.C. function active, 5) Switching stage NPN, active, 6) LED Error, 7) Plug connection sensor, 8) DIN rail mount 35mm, 9) Flap

BAE00KH



1) LED Power, 2) LED function indicator, 3) Sn, 4) LED N.C. function active, 5) Switching stage NPN, active, 6) LED Error, 7) Plug connection sensor, 8) DIN rail mount 35mm, 9) Flap

BAE00L9

Normally open		**BCS000K** BCS M18KM3-UST80G-BV02	
Normally closed		**BCS000J** BCS M18KM3-U0T80G-BV02	
Analog, current falling on approach			
With sensor amplifier	**BCS013E** BCS Z094401-XXS20B-SZ02-T07		
Dimension	Ø 18 x 38.5 mm	Ø 18 x 84 mm	
Series	Z09	M18	
Thread (A)	M12x1	M18x1	
Installation	for flush mounting	non-flush	
Connection	Connector-triaxial plug	Cable, 2.00 m, PVC	
Switching frequency	5 Hz	40 Hz	
Interface	Special interface	—	
Range	0.1...2 mm	0...6.5 mm	
Sensitivity	adjustable on base unit	Switching distance adjustable	
Housing material	Stainless steel (1.4104)	PBT	
Material sensing surface	Stainless steel (1.4301) epoxy	PBT	
Ambient temperature	0...180 °C	-25...80 °C	
Pressure rating max.	150 bar	—	
Operating voltage Ub	—	20...250 VDC/20...250 VAC	
Approval/Conformity	CE	CE	
Protection degree	IP68	IP67	
Productview	Page 340	Page 340	

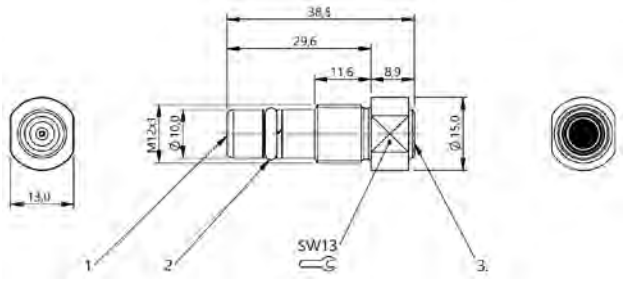
	BCW0001 BCW M18B4M1-ICM80C-DV02			
		BCS00A3 BCS S10T401-XXSFNC-SZ02-T07	**BCS00A1** BCS M18T4H1-XXS10H-SZ02-T08	
	Ø 18 x 70 mm	Ø 18 x 61 mm	Ø 18 x 65 mm	
	M18	S10	M18	
	M18x1	M18x1	M18x1	
	for flush mounting	non-flush	non-flush	
	Cable, 2.00 m, PVC	Connector, Special connector-Special connector	Connector, Special connector-Special connector	
	100 Hz	5 Hz	50 Hz	
	—	Special interface	Special interface	
	0...8 mm	—	1...10 mm	
	—	adjustable on base unit	adjustable on base unit	
	Stainless steel	Stainless steel (1.4301)	Stainless steel (1.4301)	
	PBT	PTFE	PTFE	
	10...55 °C	-10...180 °C	-180...250 °C	
	—	6 bar	—	
	12...35 VDC	—	—	
	CE, cULus	CE	CE	
	IP67	IP68	IP66	
	Page 340	Page 340	Page 340	

PNP normally open/normally closed	**BCS00W7** BCS G20L4Q-PAC10C-EV03-D03		
Normally open		**BCS000W** BCS M30KN2-UST15G-AV02	
Normally closed		**BCS000U** BCS M30KN2-UOT15G-AV02	
With sensor amplifier			
Dimension	Ø 20 x 81 mm	Ø 30 x 99 mm	
Series	G20	M30	
Thread (A)	—	M30x1.5	
Installation	for flush mounting	non-flush	
Connection	Cable, 3.00 m, PVC	Cable, 2.00 m, PVC	
Switching frequency	100 Hz	100 Hz	
Interface	—	—	
Range	1.5...10 mm	0...12.1 mm	
Sensitivity	Switching distance adjustable	Switching distance adjustable	
Housing material	Stainless steel (1.4301)	PBT	
Material sensing surface	LCP	PBT	
Ambient temperature	-25...70 °C	-25...70 °C	
Pressure rating max.	—	—	
Operating voltage Ub	10...30 VDC	20...250 VDC/20...250 VAC	
Approval/Conformity	CE	CE	
Protection degree	IP65	IP65	
Productview	Page 340	Page 340	

	BCS00A2 BCS M30T4G1-XXS20H-SZ02-T08	BCS000Y BCS F01CP01-XXS10C-EP02-GZ01-002	BCW0004 BCW F03EA85-XXSFNC-EP00,3-GZ01	
	Ø 30 x 65 mm	90 x 16 x 4 mm	33 x 2 x 850 mm	
	M30	F01	F03	
	M30x1.5	—	—	
	non-flush	flush with container outer wall	flush with container outer wall	
	Connector, Special connector-Special connector	Cable with connector, Special connector-Special connector, 2.00 m, PUR	Cable with connector, Binder 719, 3-pin, 0.3 m, TPU	
	100 Hz	100 Hz	50 Hz	
	Special interface	Special interface	Special interface	
	1...20 mm	2...10 mm	—	
	adjustable on base unit	adjustable on base unit	adjustable on base unit	
	Stainless steel (1.4301)	PC PUR	PET PA	
	PTFE	PUR	3M VHB 5925	
	-180...250 °C	0...60 °C	0...60 °C	
	—	—	—	
	—	4...8 VDC	3...8 VDC	
	CE	CE, cULus	CE, UL Listed	
	IP66	IP60	IP64	
	Page 340	Page 341	Page 341	

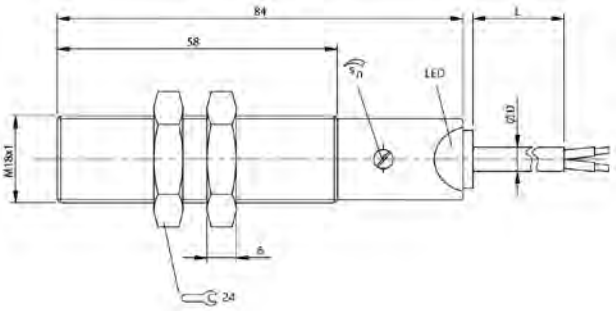
PNP normally open	**BCS006H** BCS S01T401-PSCFNG-KM16-T02	**BCS00A6** BCS S03T401-PSCFNH-KM16-T02	
PNP normally closed	**BCS006J** BCS S01T401-POCFNG-KM16-T02		
NPN normally closed		**BCS00A9** BCS S03T401-NOCFNH-KM16-T02	
Dimension	54.8 x 48.5 x 106 mm	54.8 x 48.5 x 106 mm	
Series	S01	S03	
Thread (A)	M18x1	J 3/8“ NPTF	
Installation	non-flush	non-flush	
Connection	Clamping terminal	Clamping terminal	
Switching frequency	5 Hz	100 Hz	
Interface	—	—	
Range	—	—	
Sensitivity	media-dependent, adjustable	media-dependent, adjustable	
Housing material	Stainless steel (1.4305)	Stainless steel (1.4305)	
Material sensing surface	PTFE	PTFE	
Ambient temperature	-30...125 °C	-30...125 °C	
Pressure rating max.	10 bar	10 bar	
Operating voltage Ub	10...35 VDC	10...35 VDC	
Approval/Conformity	CE	CE	
Protection degree	IP67	IP67	
Productview	Page 341	Page 341	

	BCS006M BCS S02T401-PSCFNG-KM16-T02			
	54.8 x 48.5 x 106 mm			
	S02			
	R 3/8"			
	non-flush			
	Clamping terminal			
	5 Hz			
	—			
	—			
	media-dependent, adjustable			
	Stainless steel (1.4305)			
	PTFE			
	-30...125 °C			
	10 bar			
	10...35 VDC			
	CE			
	IP67			
	Page 341			

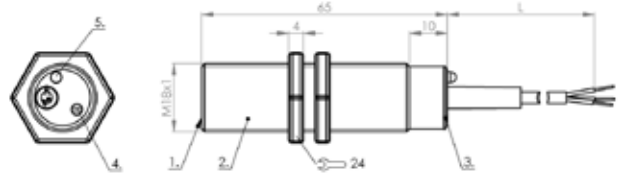


1) Sensing surface, 2) O-Ring with thrust ring, 3) Triaxial connector

BCS013E

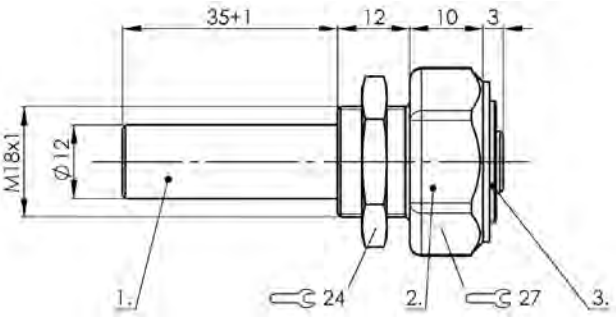


BCS000K, BCS000J



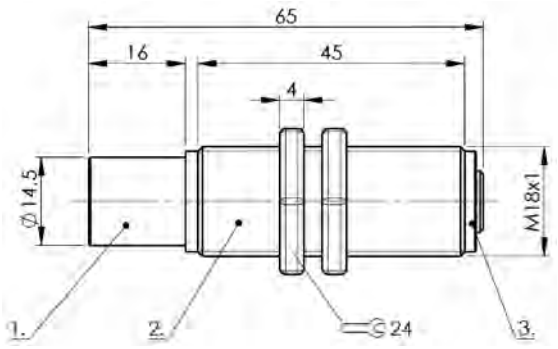
1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) Signal LED

BCW0001



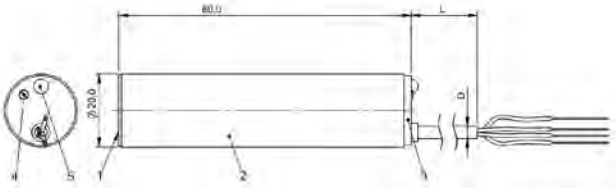
1) Sensing surface, 2) Housing, 3) Cover

BCS00A3



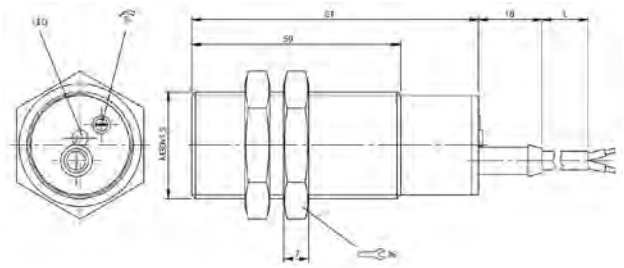
1) Sensing surface, 2) Housing, 3) Cover

BCS00A1

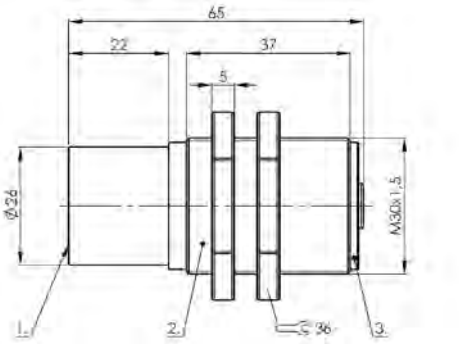


1) Sensing surface, 2) Housing, 3) Cover, 4) Potentiometer, 5) Function indicator yellow

BCS00W7

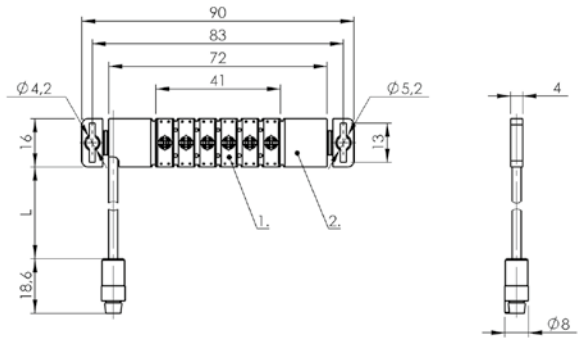


BCS000W, BCS000U



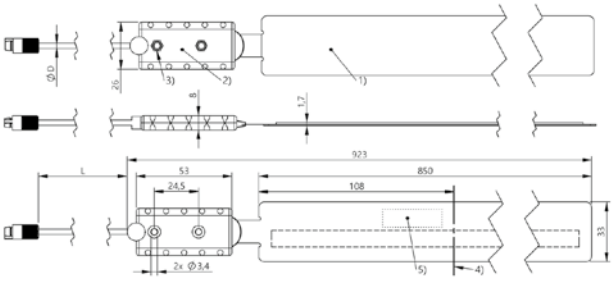
1) Sensing surface, 2) Housing, 3) Cover

BCS00A2



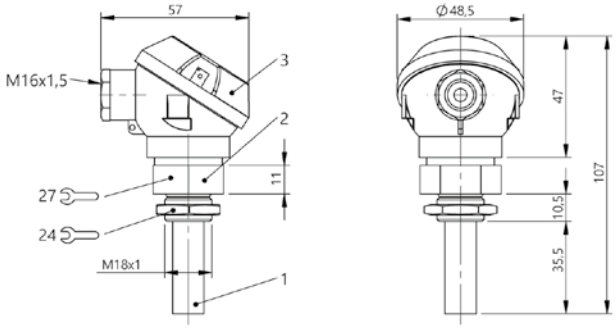
1) Sensing surface, 2) Housing

BCS000Y



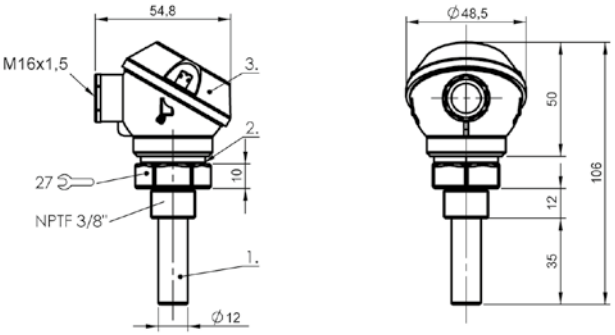
1) Sensing surface, 2) Housing, 03) Fixation, 4) Measuring length min., 05) name plate

BCW0004



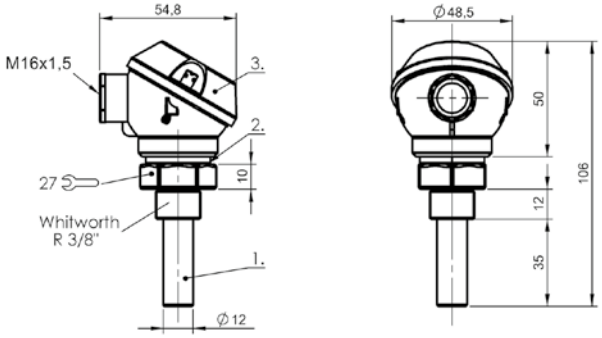
1) Sensing surface, 2) Housing, 3) Cover

BCS006H, BCS006J



1) Sensing surface, 2) Housing, 3) Cover

BCS00A9, BCS00A6



1) Sensing surface, 2) Housing, 3) Cover

BCS006M

Generous detection range for high reliability

PHOTOELECTRIC SENSORS

Photoelectric sensors from Balluff reliably recognize the presence of objects. They check shape, color, distance or thickness equally reliably. This is because they have a significantly greater detection range compared to inductive or capacitive technology.

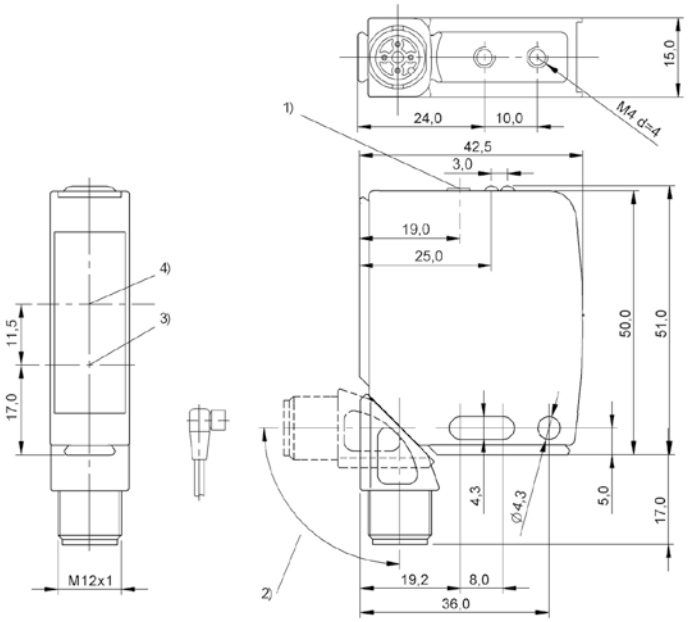
In the area of photoelectric sensors we offer a huge product variety. Sensors using all light types from red light to infrared to laser technology.
Sensors with the most different ranges, with and without background suppression, as well as many different form factors. For specialty applications, mini-sensors, color sensors, light band and contrast sensors round out our portfolio. With Balluff you achieve not only the highest reliability, but also the greatest flexibility.

The most important benefits

- All light types, all principles
- Different ranges from near to far
- Tailored to the requirements of automation, mounting and handling
- Robust and reliable even under adverse environmental conditions
- Flexibility for planning and installation through well-conceived technical data


R
L

	BOS026R BOS 21M-UUI-RP30-S4
Series	21M
Dimension	15 x 51 x 42.5 mm
Interface	IO-Link 1.1 2x PNP/NPN/push-pull NO/NC
Input function	Reset counter
Principle of operation	Photoelectric sensor
Principle of optical operation	Diffuse energetic, diffuse with background suppression, retroreflective, through-beam (emitter), through-beam (receiver), depends on setting
Special optical feature	Multifunction
Beam characteristic	Divergent
Light type	LED, red light
Light spot size	Ø 50 mm at 1 m
Range	adjustable
Connection	Connector, M12x1 connector, 4-pin
Housing material	Zinc, die-cast Aluminum, glass, PC
Material sensing surface	Glass, anti-glare
Operating voltage Ub	10...30 VDC
Approval/Conformity	CE, EAC, cULus



1) Display and control panel, 2) rotatable 270°, 3) Optical axis emitter, 4) Optical axis receiver

BOS026R

PNP normally open	**BOS01R8** BOS 08E-PS-KD20-00,2-S49	**BOS01NN** BOS 08E-PS-KD20-S49	
Series	08E	08E	
Dimension	Ø 8 x 40 mm	Ø 8 x 40 mm	
Input function	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Diffuse sensor, energetic	Diffuse sensor, energetic	
Special optical feature	—	—	
Beam characteristic	Divergent	Divergent	
Light type	LED, red light	LED, red light	
Light spot size	Ø 3.0 mm Light exit	Ø 3.0 mm Light exit	
Range	1...60 mm	1...60 mm	
Connection	Cable with connector, 0.20 m, PUR	Connector, M8x1-Male, 3-pin	
Housing material	Stainless steel	Stainless steel	
Material sensing surface	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Approval/Conformity	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	
Trademark	—	—	
Productview	Page 362	Page 362	




	BOS01Y2 BOS 12M-PS-ID10-S4	**BOS01TP** BOS 12M-PS-RD10-S4	**BOS01TN** BOS 12M-PS-RD11-S4	**BOS01TU** BOS 12M-PS-RD12-S4
	12M	12M	12M	12M
	Ø 12 x 60 mm	Ø 12 x 60 mm	Ø 12 x 60 mm	Ø 12 x 60 mm
	—	—	—	—
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic
	—	—	—	—
	Divergent	Divergent	Divergent	Divergent
	LED infrared	LED, red light	LED, red light	LED, red light
	45 x 45 mm at 400 mm	28 x 28 mm at 250 mm	Ø 8 mm at 100 mm	22 x 22 mm at 200 mm
	1...400 mm	0...250 mm	1...100 mm	1...200 mm
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated
	PMMA	PMMA	PMMA	PMMA
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	—	Global	Global	Global
	Page 362	Page 362	Page 362	Page 362

PNP normally open			
PNP normally open, PNP normally closed	**BOS01EY** BOS 18M-PA-ID20-S4	**BOS01NF** BOS 18M-PA-LD20-S4	
PNP normally open/normally closed, IO-Link 1.1			
Series	18M	18M	
Dimension	Ø 18 x 75 mm	Ø 18 x 75 mm	
Input function	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Diffuse sensor, energetic	Diffuse sensor, energetic	
Special optical feature	—	—	
Beam characteristic	Divergent	Focus, typical at 400 mm	
Light type	LED infrared	Laser red light	
Light spot size	Ø 50 mm at 600 mm	Ø 2 mm at 250 mm	
Range	1...800 mm	1...250 mm	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Housing material	Brass, nickel plated	Brass, nickel plated	
Material sensing surface	Glass, anti-glare	Glass	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Approval/Conformity	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	
Trademark	—	—	
Productview	Page 362	Page 362	




	BOS01C1 BOS 18M-PS-RD20-S4	**BOS01E7** BOS 18M-PS-RD21-S4		**BOS01FA** BOS 18M-PS-RD23-S4
	BOS01CF BOS 18M-PA-RD20-S4	**BOS01CA** BOS 18M-PA-RD21-S4		
			BOS01UA BOS 18M-PI-RD30-S4	
	18M	18M	18M	18M
	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm
	–	–	–	–
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic
	–	–	–	–
	Divergent	Divergent	Divergent	Divergent
	LED, red light	LED, red light	LED, red light	LED, red light
	Ø 50 mm at 600 mm	Ø 25 mm at 300 mm	Ø 50 mm at 600 mm	Ø 25 mm at 300 mm
	0...600 mm	0...300 mm	1...500 mm	0...400 mm
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated
	Glass, anti-glare	Glass, anti-glare	Glass	Glass, anti-glare
	10...30 VDC	10...30 VDC	18...30 VDC	10...30 VDC
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE
	–	–	–	–
	Page 362	Page 362	Page 362	Page 362

PNP normally open			
PNP normally open, PNP normally closed		**BOS01KE** BOS 18E-PA-RD20-S4	
PNP normally open/normally closed	**BOS01J8** BOS 18M-PUV-RD30-S4		
Series	18M	18E	
Dimension	Ø 18 x 75 mm	Ø 18 x 75 mm	
Input function	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Diffuse sensor, energetic	Diffuse sensor, energetic	
Special optical feature	—	—	
Beam characteristic	Divergent	Divergent	
Light type	LED, red light	LED, red light	
Light spot size	Ø 50 mm at 600 mm	Ø 50 mm at 600 mm	
Range	0...500 mm	500 mm	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Housing material	Brass, nickel plated	Stainless steel (1.4404)	
Material sensing surface	Glass	Glass	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, Ecolab, FDA compliant, EAC, WEEE	
Trademark	—	—	
Productview	Page 362	Page 363	




		BOS01NA BOS 18KF-PA-1XA-SA1-C-00,2		
	BOS00LT BOS 18KW-PA-1PD-S4-C		**BOS00K9** BOS 18KF-PA-1XA-S4-C	**BOS00K0** BOS 18KF-PA-1PE-C-02
	18KW	18KF	18KF	18KF
	Ø 18 x 93.5 mm	Ø 18 x 67 mm	Ø 18 x 71.5 mm	Ø 18 x 77 mm
	–	–	–	–
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic
	–	–	–	–
	Divergent	Divergent	Divergent	Divergent
	LED infrared	Infrared	LED infrared	LED infrared
	Ø 100 mm at 300 mm	Ø 80 mm at 100 mm	Ø 80 mm at 100 mm	Ø 200 mm at 600 mm
	0...400 mm	0...100 mm	0...100 mm	0...700 mm
	Connector, M12x1-Male, 4-pin	Cable with connector, Molex Mini-Fit 4.2, 4-pin, 0.19 m, PVC	Connector, M12x1-Male, 4-pin	Cable, 2.00 m, PVC
	PBT	PBT	PBT	PBT
	PMMA	PMMA	PMMA	PMMA
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	CE, cULus, EAC, WEEE	CE, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Global	–	Global	Global
	Page 363	Page 363	Page 363	Page 363

PNP normally open			
PNP normally open, PNP normally closed	**BOS00JZ** BOS 18KF-PA-1PD-S4-C	**BOS00K1** BOS 18KF-PA-1PE-S4-C	
Series	18KF	18KF	
Dimension	Ø 18 x 81.5 mm	Ø 18 x 81.5 mm	
Input function	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Diffuse sensor, energetic	Diffuse sensor, energetic	
Special optical feature	—	—	
Beam characteristic	Divergent	Divergent	
Light type	LED infrared	LED infrared	
Light spot size	Ø 100 mm at 300 mm	Ø 200 mm bei 600 mm	
Range	0...400 mm	0...700 mm	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Housing material	PBT	PBT	
Material sensing surface	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Trademark	Global	Global	
Productview	Page 363	Page 363	




		BOS01WC BOS Q08M-PS-LD20-S49	**BOS01RZ** BOS Q08M-PS-KD20-00,2-S49	**BOS01RJ** BOS Q08M-PS-KD20-S49
	BOS00JP BOS 18KF-PA-1L0C-S4-C			
	18KF	Q08M	Q08M	Q08M
	Ø 18 x 81.5 mm	8 x 59 x 8 mm	8 x 44 x 8 mm	8 x 59 x 8 mm
	–	–	–	–
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic
	–	–	–	–
	Divergent	Collimated	Divergent	Divergent
	Laser red light	Laser red light	LED, red light	LED, red light
	Ø 1 mm at 150 mm	Ø 3.0 mm Light exit	Ø 3.0 mm Light exit	Ø 3.0 mm Light exit
	0...350 mm	60 mm	1...60 mm	1...60 mm
	Connector, M12x1-Male, 4-pin	Connector, M8x1-Male, 3-pin	Cable with connector, 0.20 m, PUR	Connector, M8x1-Male, 3-pin
	PBT	Zinc, Die casting, nickel plated	Zinc, Die casting, nickel plated	Zinc, Die casting, nickel plated
	PMMA	PMMA	PMMA	PMMA
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	CE, cULus, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE
	Global	–	–	–
	Page 363	Page 364	Page 364	Page 364

PNP normally open	**BOS021J** BOS R01E-PS-KD20-00,2-S49	**BOS021K** BOS R01E-PS-KD20-02	
Series	R01E	R01E	
Dimension	20 x 32 x 9 mm	20 x 32 x 9 mm	
Input function	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Diffuse sensor, energetic	Diffuse sensor, energetic	
Special optical feature	—	—	
Beam characteristic	Divergent	Divergent	
Light type	LED, red light	LED, red light	
Light spot size	Ø 3.0 mm Light exit	Ø 3.0 mm Light exit	
Range	1...100 mm	1...100 mm	
Connection	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PUR	Cable, 2.00 m, PUR	
Housing material	Stainless steel (1.4404)	Stainless steel (1.4404)	
Material sensing surface	PA	PA	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Approval/Conformity	cULus, CE, Ecolab, EAC, WEEE	cULus, CE, Ecolab, EAC, WEEE	
Trademark	—	—	
Productview	Page 364	Page 364	

	BOS0123 BOS 5K-PS-ID10-02	BOS015J BOS 5K-PS-ID10-S49	BOS0124 BOS 5K-PS-ID10-S75	BOS0127 BOS 5K-PS-RD11-02
	5K	5K	5K	5K
	10.8 x 32.7 x 19.5 mm	10.8 x 43.5 x 19.5 mm	10.8 x 43.5 x 19.5 mm	10.8 x 32.7 x 19.5 mm
	—	—	—	—
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic
	—	—	—	—
	Divergent	Divergent	Divergent	Divergent
	Infrared	Infrared	Infrared	LED, red light
	Ø 50 mm at 500 mm	Ø 50 mm at 500 mm	Ø 50 mm at 500 mm	Ø 8 mm at 180 mm
	0...900 mm	0...900 mm	0...900 mm	50...200 mm
	Cable, 2.00 m, PVC	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 4-pin	Cable, 2.00 m, PVC
	PC PBT	PC PBT	PC PBT	PC PBT
	PMMA	PMMA	PMMA	PC
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, CE, WEEE, EAC
	Global	Global	Global	Global
	Page 364	Page 364	Page 364	Page 364

PNP normally open	**BOS015N** BOS 5K-PS-RD11-S49	**BOS0128** BOS 5K-PS-RD11-S75	
PNP normally open, PNP normally closed			
Series	5K	5K	
Dimension	10.8 x 43.5 x 19.5 mm	10.8 x 43.5 x 19.5 mm	
Input function	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Diffuse sensor, energetic	Diffuse sensor, energetic	
Special optical feature	—	—	
Beam characteristic	Divergent	Divergent	
Light type	LED, red light	LED, red light	
Light spot size	Ø 8 mm at 180 mm	Ø 8 mm at 180 mm	
Range	50...200 mm	50...200 mm	
Connection	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 4-pin	
Housing material	PC PBT	PC PBT	
Material sensing surface	PC	PC	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Approval/Conformity	cULus, CE, WEEE, EAC	cULus, CE, WEEE, EAC	
Trademark	Global	Global	
Productview	Page 364	Page 364	

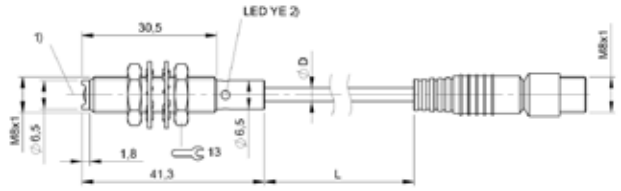
	BOS0031 BOS 21M-PA-ID10-S4	**BOS0032** BOS 21M-PA-LD10-S4	**BOS0033** BOS 21M-PA-RD10-S4	
	21M	21M	21M	
	15 x 50 x 42.5 mm	15 x 50 x 42.5 mm	15 x 50 x 42.5 mm	
	—	—	—	
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic	
	—	—	—	
	Divergent	Collimated	Divergent	
	LED infrared	Laser red light	LED, red light	
	—	—	—	
	50...2000 mm	0...600 mm	10...1000 mm	
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
	Zinc, Die casting, Powder coated Aluminum	Zinc, Die casting, Powder coated Aluminum	Zinc, Die casting, Powder coated Aluminum	
	PMMA	PMMA	PMMA	
	10...30 VDC	10...30 VDC	10...30 VDC	
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
	—	—	—	
	Page 365	Page 365	Page 365	

PNP normally open			
PNP normally open/normally closed, IO-Link 1.1	**BOS027N** BOS 21M-PAI-RD30-S4		
PNP normally open/normally closed		**BOS0175** BOS 23K-PU-LD20-S4	
Series	21M	23K	
Dimension	15.4 x 51.1 x 42.7 mm	23 x 51 x 52.4 mm	
Input function	—	Key disable on/off, Same function as button	
Principle of operation	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Diffuse sensor, energetic	Diffuse sensor, energetic	
Special optical feature	—	—	
Beam characteristic	Divergent	Collimated	
Light type	LED, red light	Laser red light	
Light spot size	—	2.2 x 2.2 mm at 800 mm	
Range	10...1000 mm	5...1200 mm	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Housing material	Zinc, Die casting, Powder coated Die-cast zinc	PC ABS	
Material sensing surface	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, WEEE, EAC, Ecolab	CE, Ecolab, cULus, EAC, WEEE	
Trademark	—	—	
Productview	Page 365	Page 365	

		BOS01FM BOS 23K-PA-RD10-S4		
	BOS016Z BOS 23K-PU-RD10-S4		**BOS016Z** BOS 23K-PU-RD10-S4	
	23K	23K	23K	
	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	
	Key disable on/off, Same function as button	—	Key disable on/off, Same function as button	
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic	
	—	—	—	
	Focus, typical at 500 mm	Focus, typical at 500 mm	Focus, typical at 500 mm	
	LED, red light	LED, red light	LED, red light	
	15 x 15 mm at focal point	15 x 15 mm at focal point	15 x 15 mm at focal point	
	0...2000 mm	0...2000 mm	0...2000 mm	
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
	PC ABS	PC ABS	PC ABS	
	PMMA	PMMA	PMMA	
	10...30 VDC	10...30 VDC	10...30 VDC	
	Ecolab, CE, cULus, EAC, WEEE	Ecolab, CE, cULus, EAC, WEEE	Ecolab, CE, cULus, EAC, WEEE	
	—	—	—	
	Page 365	Page 365	Page 365	

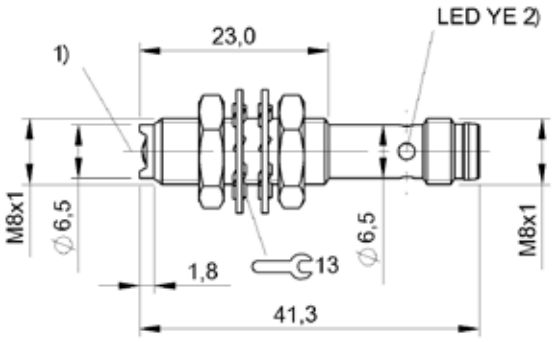
PNP normally open	**BOS01CJ** BOS 50K-PA-RD10-S4		
PNP normally open/normally closed, IO-Link 1.1		**BOS01JJ** BOS 50K-PI-RD11-S4	
PNP normally open/normally closed			
Relay normally open/normally closed			
Series	50K	50K	
Dimension	28.5 x 80.5 x 62 mm	28.5 x 80.5 x 62 mm	
Input function	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Diffuse sensor, energetic	Diffuse sensor, energetic	
Special optical feature	—	—	
Beam characteristic	Divergent	Divergent	
Light type	LED, red light	LED, red light	
Light spot size	50 x 50 mm at 2 m	80 x 80 mm at Sr	
Range	1...2000 mm	1...3500 mm	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Housing material	PC ABS	PC ABS	
Material sensing surface	Glass	Glass	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Trademark	—	—	
Productview	Page 365	Page 365	

	BOS01JA BOS 50K-PU-RD11-S4			
		BOS01K2 BOS 64K-AA-ID10-TG		
	50K	64K		
	28.5 x 80.5 x 62 mm	25 x 69.7 x 100.4 mm		
	—	—		
	Photoelectric sensor	Photoelectric sensor		
	Diffuse sensor, energetic	Diffuse sensor, energetic		
	—	—		
	Divergent	Divergent		
	LED, red light	Infrared		
	80 x 80 mm at Sr	—		
	1...3500 mm	50...2000 mm		
	Connector, M12x1-Male, 4-pin	Screw terminals		
	PC ABS	PBT, GF30		
	Glass	PC		
	10...30 VDC	24...60 VDC/24...240 VAC		
	cULus, CE, EAC, WEEE	CE, cULus, EAC, WEEE		
	—	—		
	Page 365	Page 365		



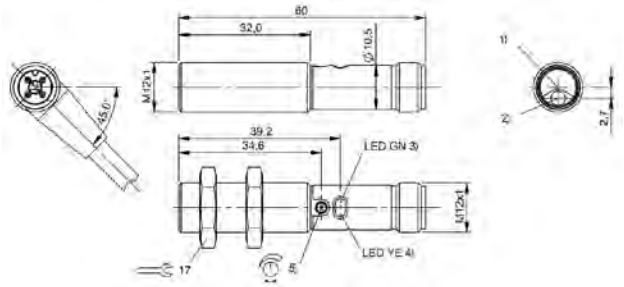
1) Optical axis, 2) Output function

BOS01R8



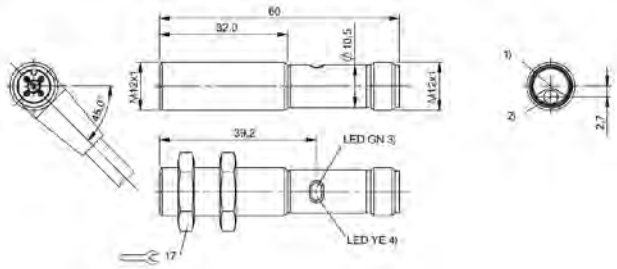
1) Optical axis, 2) Output function

BOS01NN



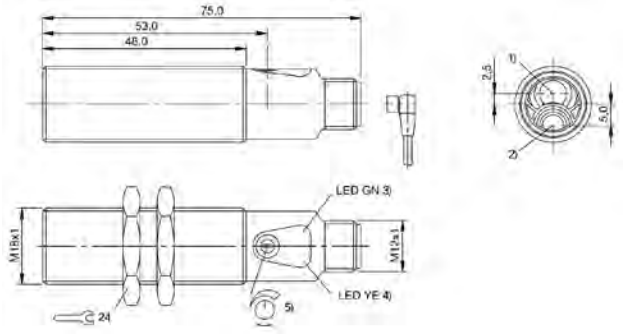
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage,
4) Light reception/limit area, 5) Sn

BOS01Y2, BOS01TP



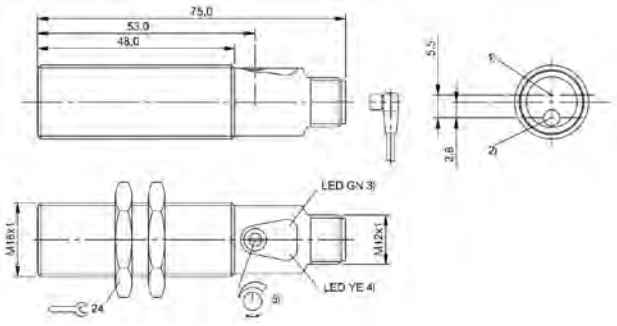
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage,
4) Light reception/limit area

BOS01TN, BOS01TU



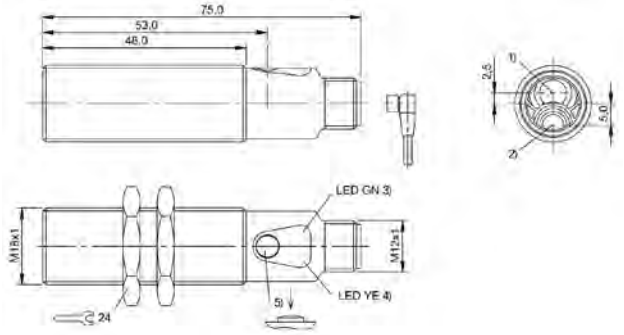
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage,
4) Light reception/limit area, 5) Sn

BOS01EY, BOS01CF, BOS01CA, BOS01C1, BOS01E7



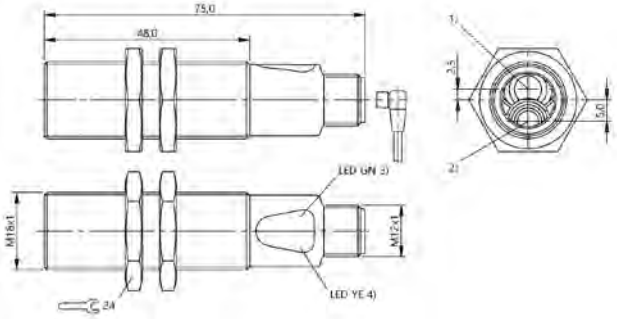
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage/Error,
4) Light reception/limit area, 5) Sn

BOS01NF



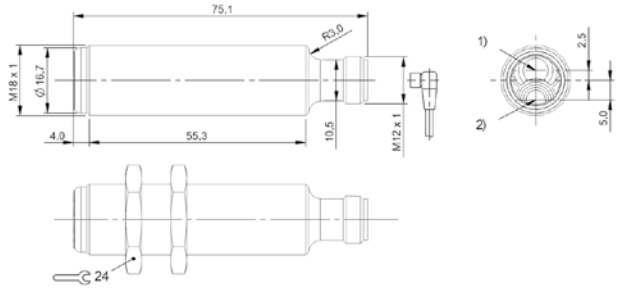
1) Optical axis receiver, 2) Optical axis emitter, 3) Power/short-circuit,
4) Light reception/limit area, 5) Sn

BOS01UA, BOS01J8



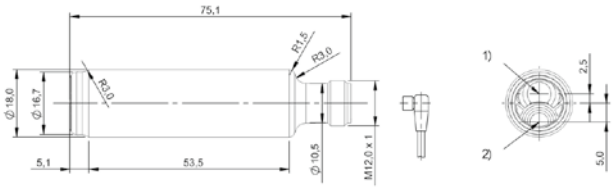
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception/limit area

BOS01FA



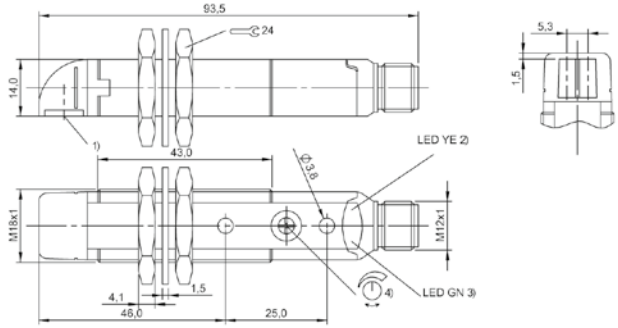
1) Optical axis receiver, 2) Optical axis emitter

BOS01KE, BOS023R, BOS023E



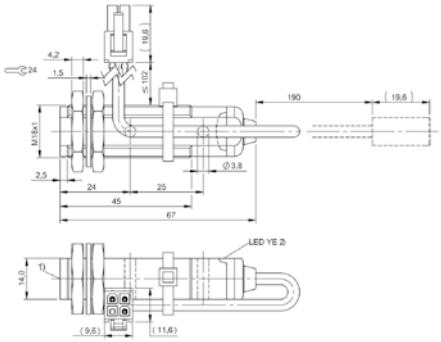
1) Optical axis receiver, 2) Optical axis emitter

BOS01KH, BOS0240



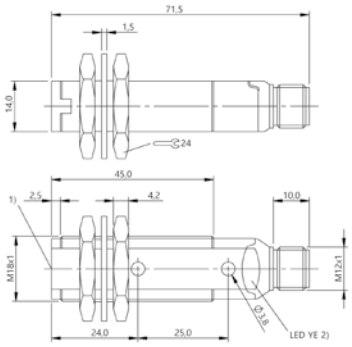
1) Optical axis, 2) Output function, 3) Stability, 4) Sn

BOS00LT



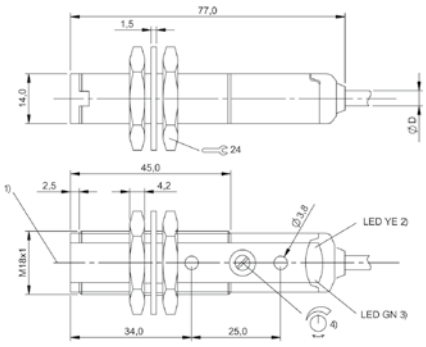
1) Optical axis, 2) Output function

BOS01NA



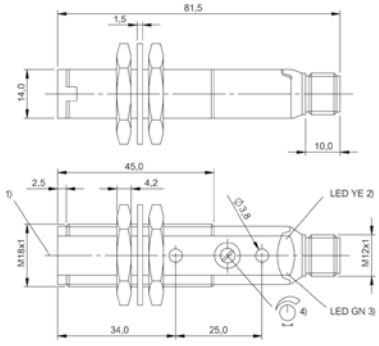
1) Optical axis, 2) Output function

BOS00K9



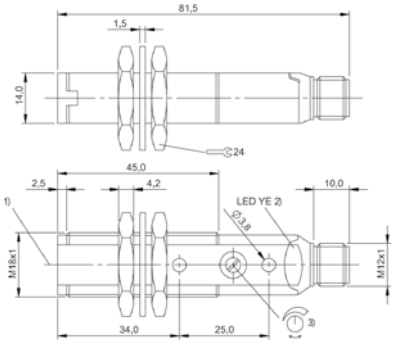
1) Optical axis, 2) Output function, 3) Stability, 4) Sn

BOS00K0



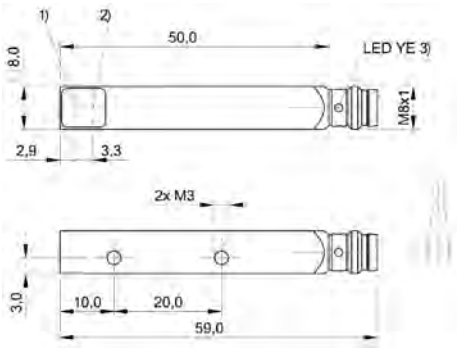
1) Optical axis, 2) Output function, 3) Stability, 4) Sn

BOS00JZ, BOS00K1



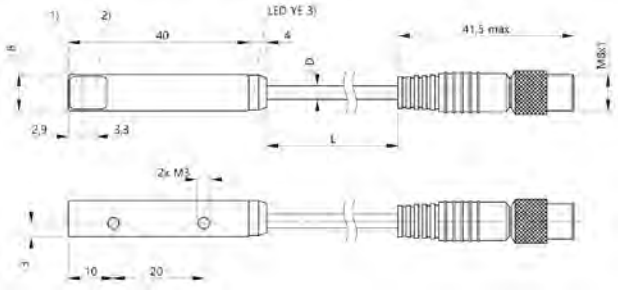
1) Optical axis, 2) Output function, 3) Sn

BOS00JP



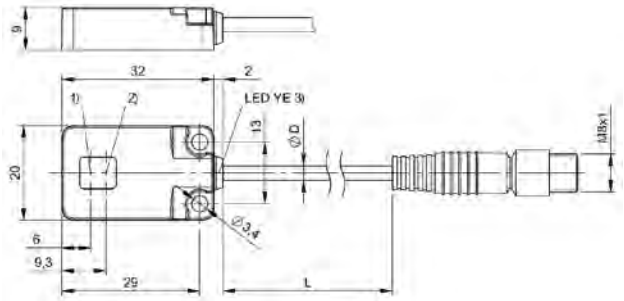
1) Optical axis emitter, 2) Optical axis receiver, 3) Output function

BOS01WC, BOS01RJ



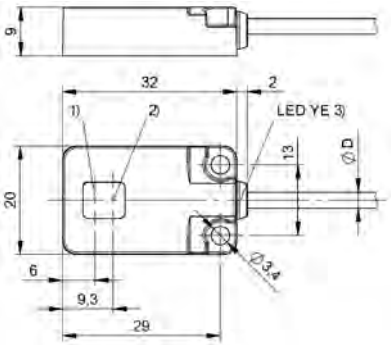
1) Optical axis emitter, 2) Optical axis receiver, 3) Output function

BOS01RZ



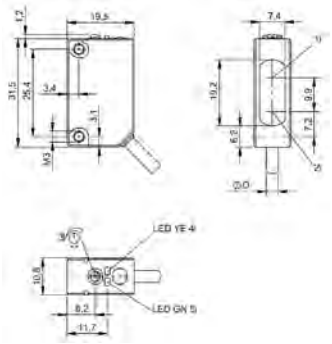
1) Optical axis emitter, 2) Optical axis receiver, 3) Output function

BOS021J



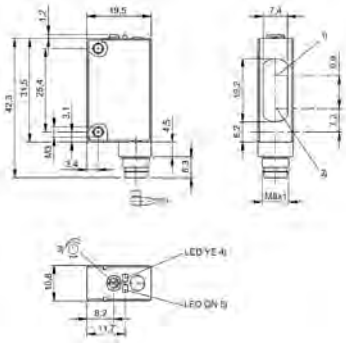
1) Optical axis emitter, 2) Optical axis receiver, 3) Output function

BOS021K



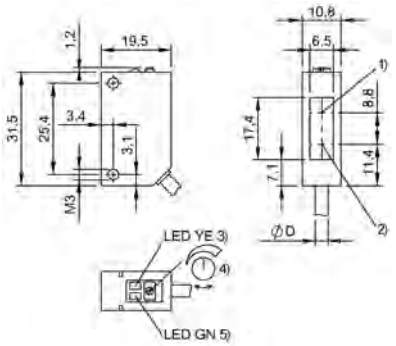
1) Optical axis receiver, 2) Optical axis emitter, 3) Sn, 4) Output function, 5) stability

BOS0123



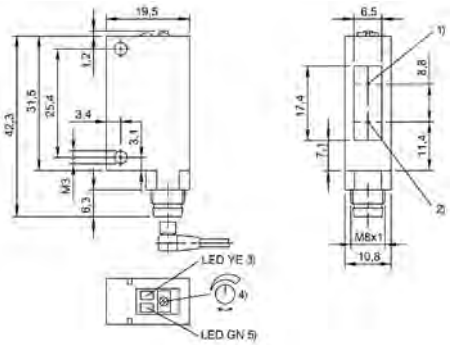
1) Optical axis receiver, 2) Optical axis emitter, 3) Sn, 4) Output function, 5) stability

BOS015J, BOS0124



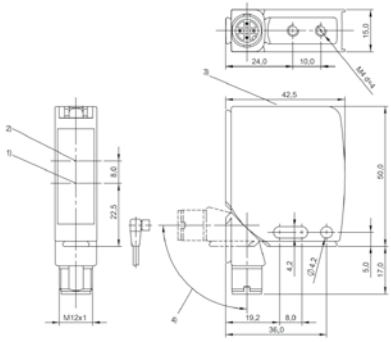
1) Optical axis receiver, 2) Optical axis emitter, 3) Output function, 4) Sn, 5) stability

BOS0127



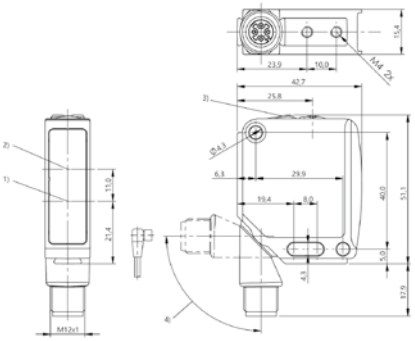
1) Optical axis receiver, 2) Optical axis emitter, 3) Output function, 4) Sn, 5) stability

BOS015N, BOS0128



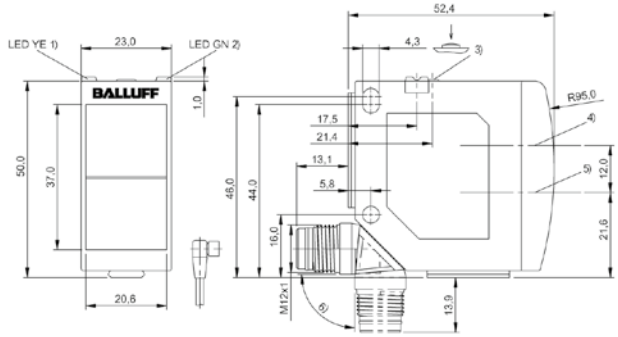
1) Optical axis emitter, 2) Optical axis receiver, 3) Display and control panel, 4) rotatable 270°

BOS0031, BOS0032, BOS0033



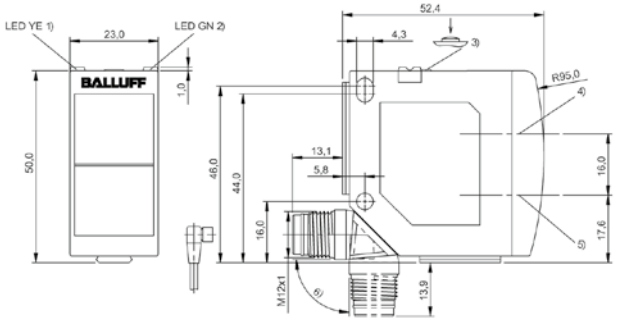
1) Optical axis emitter, 2) Optical axis receiver, 3) Display and control panel, 4) 240° rotatable

BOS027N



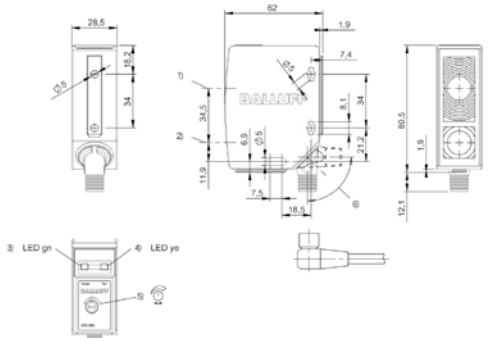
1) Output function/Error, 2) Operating voltage, 3) Sn, light/dark, 4) Optical axis receiver, 5) Optical axis emitter, 6) rotatable 270°

BOS0175



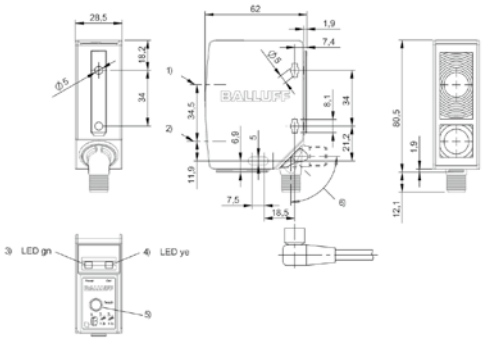
1) Output function/Error, 2) Power/setting mode, 3) Sn, light/dark, 4) Optical axis receiver, 5) Optical axis emitter, 6) rotatable 270°

BOS01FM, BOS016Z



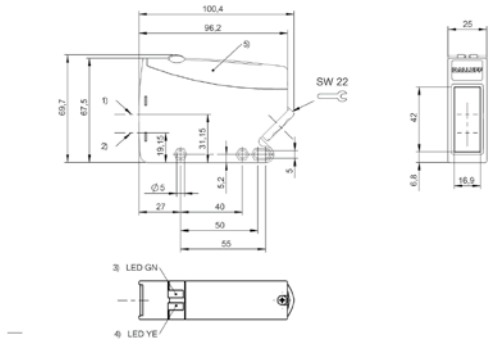
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception/limit area, 5) Sn, 6) rotatable 270°

BOS01CJ



1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception, 5) Teach-In button, 6) rotatable 270°

BOS01JJ, BOS01JA



1) Optical axis receiver, 2) Optical axis emitter, 3) Stability, 4) Output function, 5) Removable cover

BOS01K2



PNP normally open			**BOS01H2** BOS 08E-PS-KF20-00,2-S49	
PNP normally open, IO-Link 1.1	**BOS0246** BOS 08E-PI-KH22-00,2-S49	**BOS0247** BOS 08E-PI-KH22-S49		
PNP normally open, PNP normally closed				
Series	08E	08E	08E	
Dimension	Ø 8 x 40 mm	Ø 8 x 40 mm	Ø 8 x 40 mm	
Supplementary output	—	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	
Special optical feature	Background suppression	Background suppression	Background suppression	
Beam characteristic	Divergent	Divergent	Divergent	
Light type	LED, red light	LED, red light	LED, red light	
Light spot size	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	
Range	30 mm, adjustable	30 mm, adjustable	20 mm	
Connection	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PUR	Connector, M8x1-Male, 3-pin	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PUR	
Housing material	Stainless steel	Stainless steel	Stainless steel	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, EAC, cULus, WEEE, IO-Link	CE, EAC, cULus, WEEE, IO-Link	CE, cULus, EAC, WEEE	
Trademark	—	—	—	
Productview	Page 388	Page 388	Page 388	





	BOS01H6 BOS 08E-PS-KF20-S49	**BOS01H0** BOS 08E-PS-KH22-00,2-S49	**BOS01H4** BOS 08E-PS-KH22-S49		
				BOS01UM BOS 12M-PA-RF10-S4	**BOS01ZT** BOS 12M-PA-RF11-S4
	08E	08E	08E	12M	12M
	Ø 8 x 40 mm	Ø 8 x 40 mm	Ø 8 x 40 mm	Ø 12 x 60 mm	Ø 12 x 60 mm
	–	–	–	–	–
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation
	Background suppression	Background suppression	Background suppression	Fixed focus, Fixed background suppression	Fixed background suppression
	Divergent	Divergent	Divergent	Focus, typical at 25 mm	Divergent
	LED, red light	LED, red light	LED, red light	LED, red light	LED, red light
	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	Ø 2 mm at 25 mm	Ø 4 mm at 50 mm
	20 mm	7...30 mm	7...30 mm	1...25 mm	0...50 mm
	Connector, M8x1-Male, 3-pin	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PUR	Connector, M8x1-Male, 3-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	Stainless steel	Stainless steel	Stainless steel	Brass, nickel plated	Brass, nickel plated
	PMMA	PMMA	PMMA	PMMA	PMMA
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	–	–	–	–	–
	Page 388	Page 388	Page 388	Page 388	Page 388



PNP normally open			**BOS002H** BOS 18M-PS-LH22-S4	
PNP normally open, PNP normally closed	**BOS01ZU** BOS 12M-PA-RH12-S4	**BOS01C5** BOS 18M-PA-LH23-S4		
Series	12M	18M	18M	
Dimension	Ø 12 x 60 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	
Supplementary output	—	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	
Special optical feature	Background suppression	Background suppression	Background suppression	
Beam characteristic	Divergent	Focus, typical at 100 mm	Focus, typical at 100 mm	
Light type	LED, red light	Laser red light	Laser red light	
Light spot size	Ø 6 mm at 100 mm	0.05 x 0.1 mm at focal point	0.05 x 0.1 mm at focal point	
Range	25...100 mm	30...150 mm	30...150 mm	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Housing material	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Trademark	—	—	—	
Productview	Page 389	Page 389	Page 389	





	BOS002K BOS 18M-PSV-LH22-S4	BOS010J BOS 18MR-PS-1HA-E5-C-S4			
			BOS0081 BOS 18MR-PA-1HA-S4-C	BOS014W BOS 18M-PA-RH22-S4	BOS01J4 BOS 18M-PA-RH23-S4
	18M	18MR	18MR	18M	18M
	Ø 18 x 75 mm	Ø 18 x 18 mm	20 x 82 x 28 mm	Ø 18 x 75 mm	Ø 18 x 75 mm
	Error output PNP	—	—	—	—
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation
	Background suppression	Background suppression	Background suppression	Background suppression	Background suppression
	Focus, typical at 100 mm	Divergent	Divergent	Divergent	Divergent
	Laser red light	LED, red light	LED, red light	LED, red light	LED, red light
	0.05 x 0.1 mm at focal point	—	8 x 10 mm at 100 mm	27 x 27 mm at 300 mm	10 x 10 mm at 150 mm
	30...150 mm	10...120 mm	40...120 mm	30...300 mm	30...150 mm
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	Brass, nickel plated	Brass, Chrome-plated	Brass, nickel plated	Brass	Brass
	PMMA	Glass	Glass	Glass	Glass
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	CE, cULus, EAC, WEEE	CE, EAC, WEEE	CE, cULus, EAC, WEEE	cULus, CE, EAC, WEEE	CE, cULus, EAC, WEEE
	—	—	—	—	—
	Page 389	Page 389	Page 389	Page 389	Page 389



2 × PNP normally open/normally closed		**BOS00LH** BOS 18KW-PA-1HA-S4-C	**BOS00JW** BOS 18KF-PA-1N1R-S4-C	
PNP normally open	**BOS0016** BOS 18E-PS-1N2M-S4-D			
Series	18E	18KW	18KF	
Dimension	Ø 18 x 72 mm	Ø 18 x 93.5 mm	Ø 18 x 71.5 mm	
Supplementary output	—	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	
Special optical feature	Fixed background suppression	Background suppression	Fixed background suppression	
Beam characteristic	Focus, typical at 16 mm	—	Focused	
Light type	LED, red light	LED, red light	LED, red light	
Light spot size	Ø 5 mm at 20 mm	Ø 10 mm at 100 mm	Ø 20 mm at 100 mm	
Range	0...40 mm	50...100 mm	5...100 mm	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Housing material	Stainless steel (1.4571)	PBT	PBT	
Material sensing surface	Glass	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, WEEE, EAC	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Trademark	—	Global	Global	
Productview	Page 389	Page 389	Page 389	





	BOS00JM BOS 18KF-PA-1HA-S4-C				
		BOS021C BOS R020K-PS-RF10-00,2-S49	BOS020M BOS R020K-PS-RF11-00,2-S49	BOS020N BOS R020K-PS-RF11-00,2-S75	BOS020K BOS R020K-PS-RF11-02
	18KF	R020K	R020K	R020K	R020K
	Ø 18 x 96 mm	7.7 x 26.8 x 13.5 mm	7.7 x 26.8 x 13.5 mm	7.7 x 26.8 x 13.5 mm	7.7 x 26.8 x 13.5 mm
	–	–	–	–	–
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Diffuse sensor, triangulation	Diffuse sensor, HGA fixed	Diffuse sensor, HGA fixed	Diffuse sensor, HGA fixed	Diffuse sensor, HGA fixed
	Background suppression	Background suppression	Background suppression	Background suppression	Background suppression
	–	Focus, typical at 7.5 mm	Focus, typical at 15 mm	Focus, typical at 15 mm	Focus, typical at 15 mm
	LED, red light	LED, red light	LED, red light	LED, red light	LED, red light
	Ø 8 mm at 100 mm	Ø 2 mm at 8 mm	Ø 3 mm at 15 mm	Ø 3 mm at 15 mm	Ø 3 mm at 15 mm
	50...100 mm	1...15 mm	1...30 mm	1...30 mm	1...30 mm
	Connector, M12x1-Male, 4-pin	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PVC	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PVC	Cable with connector, M8x1-Male, 4-pin, 0.20 m, PVC	Cable, 2.00 m, PVC
	PBT	ABS	ABS	ABS	ABS
	PMMA	PMMA	PMMA	PMMA	PMMA
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Global	–	–	–	–
	Page 390	Page 390	Page 390	Page 390	Page 390



PNP normally open	**BOS0217** BOS R020K-PS-RF12-00,2-S49	**BOS0234** BOS R020K-PS-RH12-00,2-S75	**BOS022C** BOS R020K-PS-RH12-02	
PNP normally open/normally closed				
Series	R020K	R020K	R020K	
Dimension	7.7 x 26.8 x 13.5 mm	7.7 x 32.5 x 13.5 mm	7.7 x 32.5 x 13.5 mm	
Supplementary output	—	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Diffuse sensor, HGA fixed	Diffuse sensor, triangulation	Diffuse sensor, triangulation	
Special optical feature	Background suppression	Background suppression	Background suppression	
Beam characteristic	Focus, typical at 15 mm	Focus, typical at 15 mm	Focus, typical at 15 mm	
Light type	LED, red light	LED, red light	LED, red light	
Light spot size	Ø 4.5 mm at 40 mm	Ø 4.4 mm at 80 mm	Ø 4.4 mm at 80 mm	
Range	1...60 mm	1...150 mm	1...150 mm	
Connection	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PVC	Cable with connector, M8x1-Male, 4-pin, 0.20 m, PVC	Cable, 2.00 m, PVC	
Housing material	ABS	ABS	ABS	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Trademark	—	—	—	
Productview	Page 390	Page 390	Page 390	





	BOS021U BOS R01E-PS-KF20-00,2-S49	**BOS021W** BOS R01E-PS-KF20-02	**BOS022N** BOS R01E-PS-KF21-02	**BOS0265** BOS R01E-UI-KH22-00,2-S49	
					BOS01JK BOS 5K-PU-LH12-S75
	R01E	R01E	R01E	R01E	5K
	20 x 32 x 9 mm	20 x 32 x 9 mm	20 x 32 x 9 mm	20 x 32 x 9 mm	10.8 x 43.5 x 19.5 mm
	—	—	—	—	—
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation
	Fixed background suppression	Fixed background suppression	Fixed background suppression	Background suppression	Background suppression
	Divergent	Divergent	Divergent	Divergent	Focus, typical at 260 mm
	LED, red light	LED, red light	LED, red light	LED, red light	Laser red light
	Ø 3.0 mm Light exit	Ø 3.0 mm Light exit	Ø 3.0 mm Light exit	Ø 3.0 mm Light exit	0.2 x 0.3 mm at focal point
	100 mm	100 mm	50 mm	1...100 mm	20...300 mm
	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PUR	Cable, 2.00 m, PUR	Cable, 2.00 m, PUR	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PUR	Connector, M8x1-Male, 4-pin
	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	PC PBT
	PA	PA	PA	PA	PMMA
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	cULus, CE, Ecolab, EAC, WEEE	cULus, CE, Ecolab, EAC, WEEE	cULus, CE, Ecolab, EAC, WEEE	cULus, CE, Ecolab, EAC, IO-Link, WEEE	CE, cULus, CDRH, EAC, WEEE
	—	—	—	—	Global
	Page 390	Page 390	Page 390	Page 390	Page 391



PNP normally open		**BOS015U** BOS 5K-PS-RH12-S49	**BOS012A** BOS 5K-PS-RH12-S75	
PNP normally open, PNP normally closed				
PNP normally open/normally closed				
NPN normally open	**BOS011E** BOS 5K-NS-RH12-02			
Series	5K	5K	5K	
Dimension	10.8 x 32.7 x 19.5 mm	10.8 x 43.2 x 19.5 mm	10.8 x 43.2 x 19.5 mm	
Supplementary output	—	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	
Special optical feature	Background suppression	Background suppression	Background suppression	
Beam characteristic	Focus, typical at 60 mm	Focus, typical at 60 mm	Focus, typical at 60 mm	
Light type	LED, red light	LED, red light	LED, red light	
Light spot size	Ø 5 mm at 60 mm	Ø 5 mm at 60 mm	Ø 5 mm at 60 mm	
Range	40...200 mm	40...200 mm	40...200 mm	
Connection	Cable, 2.00 m, PVC	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 4-pin	
Housing material	PC PBT	PC PBT	PC PBT	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	cULus, CE, WEEE, EAC	cULus, CE, WEEE, EAC	cULus, CE, WEEE, EAC	
Trademark	Global	Global	Global	
Productview	Page 391	Page 391	Page 391	





					BOS01Z9 BOS 21M-PA-LH23-S4
	BOS01LE BOS 6K-PU-LH10-S75	**BOS01KW** BOS 6K-PU-RH10-S49	**BOS01KY** BOS 6K-PU-RH10-S75	**BOS01L3** BOS 6K-PU-RH11-S75	
	6K	6K	6K	6K	21M
	12 x 41.5 x 21.6 mm	12 x 41.5 x 21.6 mm	12 x 41.5 x 21.6 mm	12 x 41.5 x 21.6 mm	15 x 51 x 42.5 mm
	–	–	–	–	–
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation
	Background suppression	Background suppression	Background suppression	Background suppression	Background suppression
	Focused	Focus, typical at 50 mm	Focus, typical at 50 mm	Focus, typical at 60 mm	Focus, typical at 400 mm
	Laser red light	LED, red light	LED, red light	LED, red light	Laser red light
	Ø 1.2 mm at 120 mm	5 x 5 mm at focal point	5 x 5 mm at focal point	8 x 8 mm at focal point	Ø 3 mm at 200 mm
	4...120 mm	1...200 mm	1...200 mm	3...400 mm	1...250 mm
	Connector, M8x1-Male, 4-pin	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 4-pin	Connector, M8x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	ABS	ABS	ABS	ABS	Zinc, Die casting, Powder coated Aluminum
	PMMA	PMMA	PMMA	PMMA	Glass
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	CE, cULus, CDRH, EAC, WEEE
	–	–	–	–	–
	Page 391	Page 391	Page 391	Page 391	Page 391



2 × PNP/NPN/push-pull, normally open/normally closed, IO-Link 1.1	**BOS026K** BOS 21M-UUI-LH31-S4			
PNP normally open, PNP normally closed		**BOS01Z8** BOS 21M-PA-RH22-S4		
PNP normally open/normally closed			**BOS0036** BOS 21M-PUS-RV13-S4	
normally open/normally closed				
Series	21M	21M	21M	
Dimension	15 x 51 x 42.5 mm	15 x 51 x 42.5 mm	15 x 50 x 42.5 mm	
Supplementary output	—	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	
Special optical feature	Background suppression, CCD technology	Background suppression	Background suppression, Foreground suppression	
Beam characteristic	Focus, typical at 400 mm	Focus, typical at 200 mm	—	
Light type	Laser red light	LED, red light	LED, red light	
Light spot size	0.5 x 1.5 mm at 200 mm	6 x 6 mm at 200 mm	—	
Range	30...200 mm	1...400 mm	70...200 mm	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Housing material	Zinc, Die casting, Painted Aluminum, Glass, PC	Zinc, Die casting, Powder coated Aluminum	Zinc, Die casting, Powder coated Aluminum	
Material sensing surface	Glass, anti-glare	Glass	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, EAC, cULus, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Trademark	—	—	—	
Productview	Page 391	Page 391	Page 392	





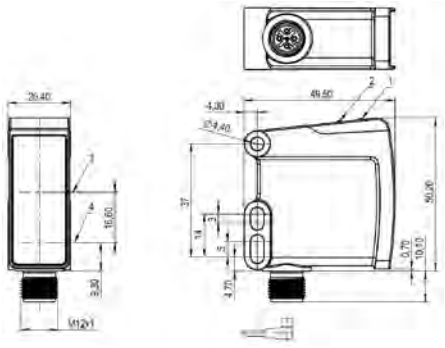
	BOS0285 BOS R254K-UUI-LH10-S4				
		BOS01FR BOS 23K-PA-LH10-S4			**BOS01FL** BOS 23K-PA-RH10-S4
		BOS017C BOS 23K-PU-LH10-S4	**BOS017H** BOS 23K-PU-LH20-S4		**BOS0178** BOS 23K-PU-RH10-S4
				BOS01UW BOS 23K-UU-LH11-S92	
	R254K	23K	23K	23K	23K
	20.4 x 60.3 x 49.5 mm	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm
	—	—	—	—	—
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Light time-of-flight	Diffuse sensor, triangulation
	Background suppression, CCD technology	Background suppression	Background suppression	Background suppression	Background suppression
	Focus, typical at 400 mm	Collimated	Collimated	Divergent	Focus, typical at 500 mm
	Laser red light	Laser red light	Laser red light	Laser red light	LED, red light
	0.4 x 1.3 mm at 250 mm	2.2 x 2.2 mm at 800 mm	2.5 x 3.5 mm at 800 mm	Ø 7 mm at 5 m	15 x 15 mm at focal point
	30...250 mm	5...800 mm	5...800 mm	0...5 m	3...800 mm
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1, 5-pin	Connector, M12x1-Male, 4-pin
	PA 12 PA PACM 12	PC ABS	PC ABS	PC ABS	PC ABS
	PA PACM 12	PMMA	PMMA	PMMA	PMMA
	10...30 VDC	12...30 VDC	12...30 VDC	18...30 VDC	10...30 VDC
	CE, EAC	CE, Ecolab, cULus, EAC, WEEE	Ecolab, CE, cULus, EAC, WEEE	CE, Ecolab, cULus, EAC, WEEE	CE, Ecolab, cULus, EAC, WEEE
	—	—	—	—	—
	Page 388	Page 392	Page 392	Page 392	Page 392



PNP normally open				
PNP normally open, PNP normally closed	**BOS008A** BOS 26K-PA-1IE-S4-C	**BOS008E** BOS 26K-PA-1LHB-S4-C	**BOS008F** BOS 26K-PA-1LHC-S4-C	
Relay normally open/normally closed				
Series	26K	26K	26K	
Dimension	17 x 50 x 50 mm	17 x 50 x 50 mm	17 x 50 x 50 mm	
Supplementary output	—	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	
Special optical feature	Background suppression	Background suppression	Background suppression	
Beam characteristic	—	Focus, typical at 80 mm	Collimated	
Light type	Infrared	Laser red light	Laser red light	
Light spot size	20 x 20 mm at 400 mm	Ø 0.1 mm at focal point	3 x 1 mm at 300 mm	
Range	150...600 mm	30...150 mm	50...300 mm	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Housing material	ABS	ABS	ABS	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	cULus, CE, WEEE, EAC	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	
Trademark	—	—	—	
Productview	Page 392	Page 392	Page 392	

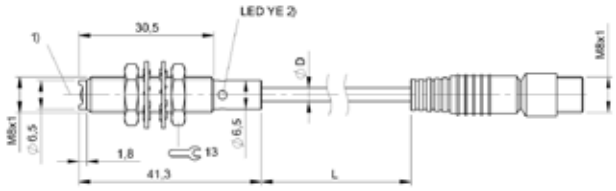



		BOS018N BOS 50K-PS-RH12-S4	**BOS0156** BOS 50K-PSV-RH12-S4		
	BOS0089 BOS 26K-PA-1HC-S4-C	**BOS018P** BOS 50K-PA-RH12-S4			
				BOS01K1 BOS 64K-AA-IH12-TG	
	26K	50K	50K	64K	
	17 x 50 x 50 mm	28.5 x 80.5 x 62 mm	28.5 x 80.5 x 62 mm	25 x 69.7 x 100.4 mm	
	—	—	Error output PNP	—	
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	
	Background suppression	Background suppression	Background suppression	Background suppression	
	—	Divergent	Divergent	Divergent	
	LED, red light	LED, red light	LED, red light	Infrared	
	Ø 8 mm at 200 mm	60 x 60 mm at Sr	60 x 60 mm at Sr	—	
	30...300 mm	200...2000 mm	200...2000 mm	200...2000 mm	
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Screw terminals	
	ABS	PC ABS	PC ABS	PBT, GF30	
	PMMA	Glass	Glass	PC	
	10...30 VDC	10...30 VDC	10...30 VDC	24...60 VDC/24...240 VAC	
	cULus, CE, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	cULus, CE, EAC, WEEE	
	—	—	—	—	
	Page 392	Page 392	Page 392	Page 392	



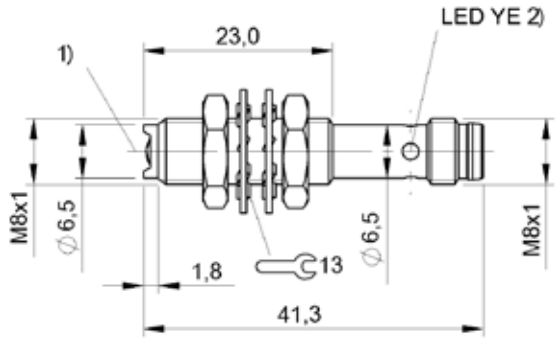
1) LED 1, 2) LED 2, 3) Optical axis receiver, 4) Optical axis emitter

BOS0285



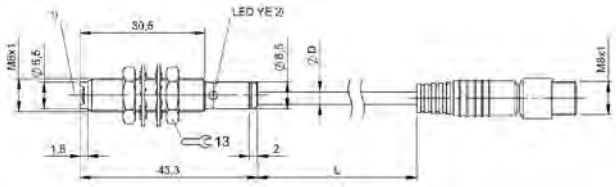
1) Optical axis, 2) Output function

BOS0246



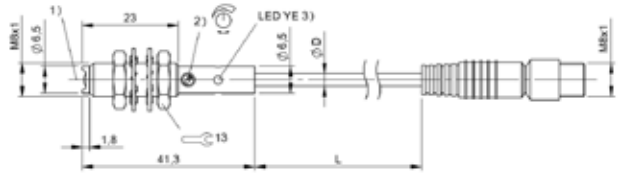
1) Optical axis, 2) Output function

BOS0247, BOS01H6



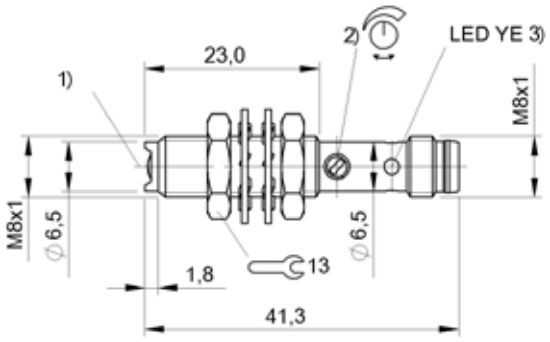
1) Optical axis, 2) Output function

BOS01H2



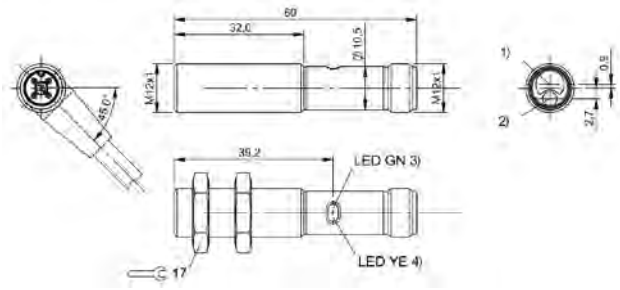
1) Optical axis, 2) Sn, 3) Output function

BOS01H0



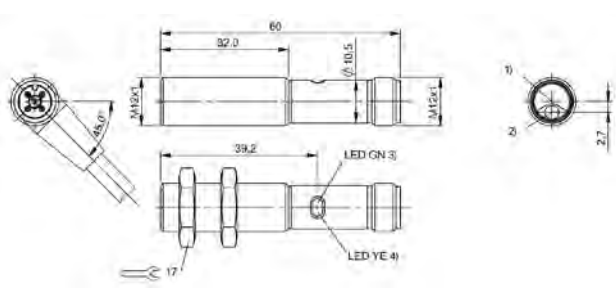
1) Optical axis, 2) Sn, 3) Output function

BOS01H4



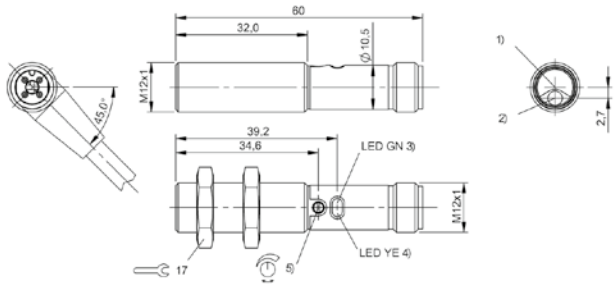
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage/Error, 4) Light reception/limit area

BOS01UM



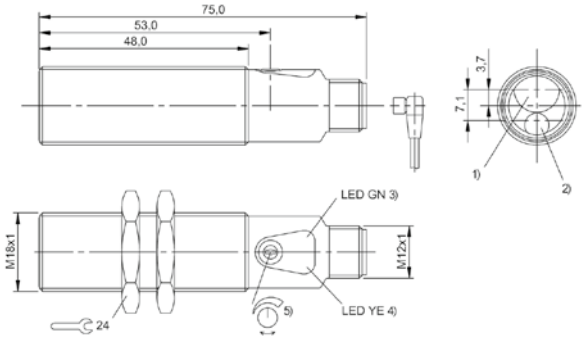
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception/limit area

BOS01ZT



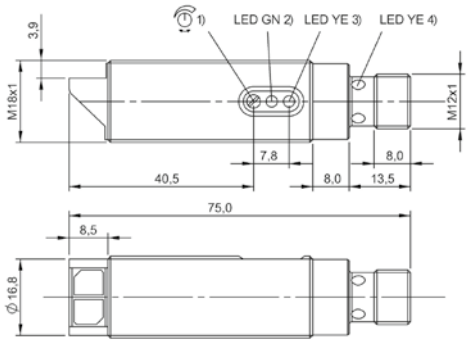
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception/limit area, 5) Sn

BOS01ZU



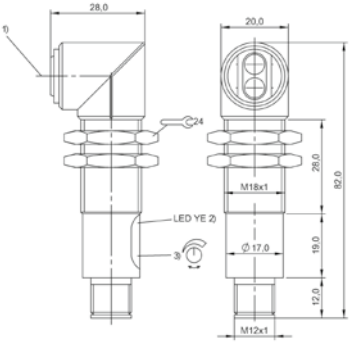
1) Optical axis receiver, 2) Optical axis emitter, 3) Power/short-circuit, 4) Output function/Error, 5) Sn

BOS01C5, BOS002H, BOS002K



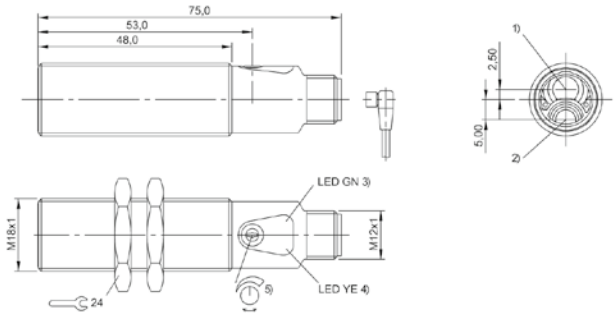
1) Sn, 2) Stability, 3) Output function

BOS010J



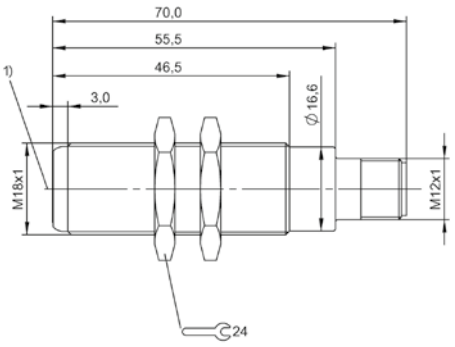
1) Optical axis, 2) Sn, 3) Output function

BOS0081



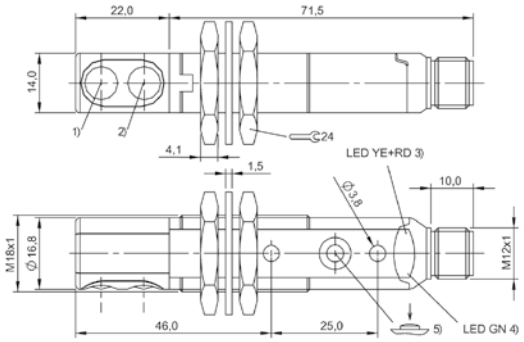
1) Optical axis receiver, 2) Optical axis emitter, 3) Power/short-circuit, 4) Output function/Error, 5) Sn

BOS014W, BOS01J4



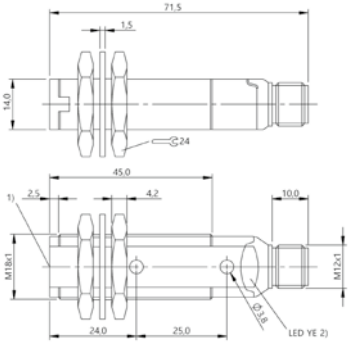
1) Optical axis

BOS0016



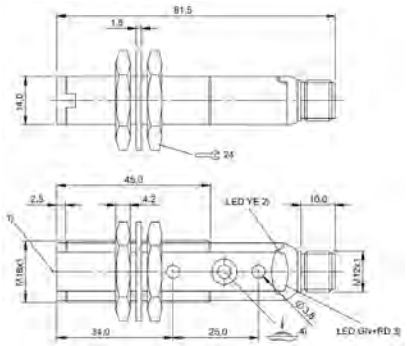
1) Optical axis emitter, 2) Optical axis receiver, 3) Output function, 4) stability/error, 5) Sn

BOS00LH



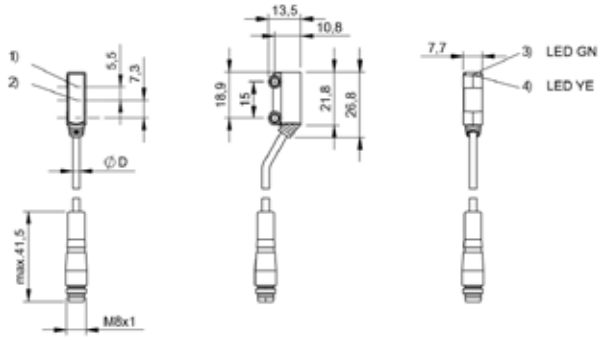
1) Optical axis, 2) Output function

BOS00JW



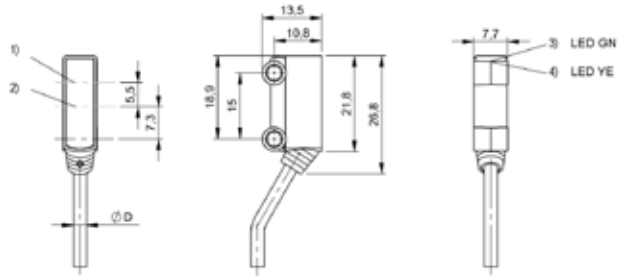
1) Optical axis, 2) Output function, 3) stability/error, 4) Sn

BOS00JM



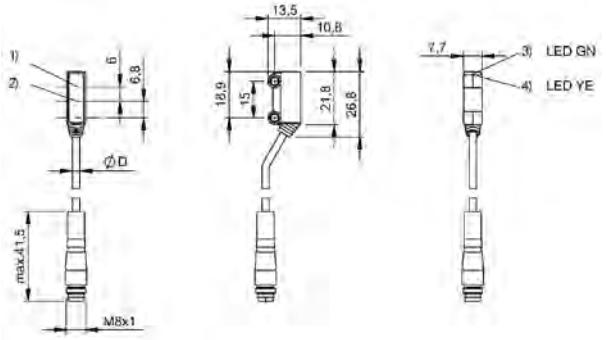
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception

BOS021C, BOS020M, BOS020N



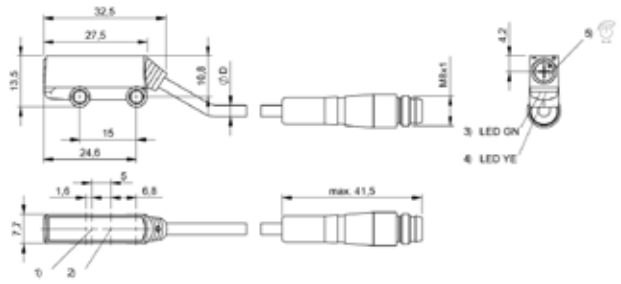
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception

BOS020K



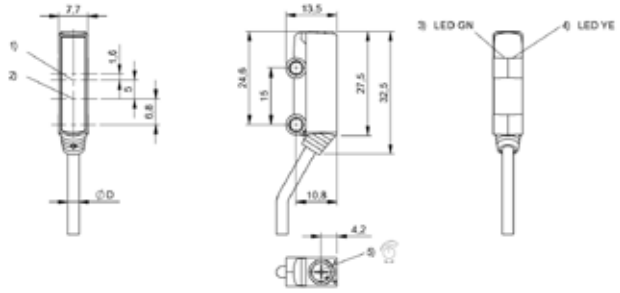
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception

BOS0217



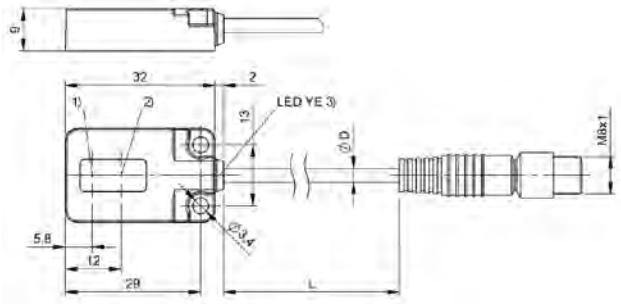
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception, 5) Sn

BOS0234



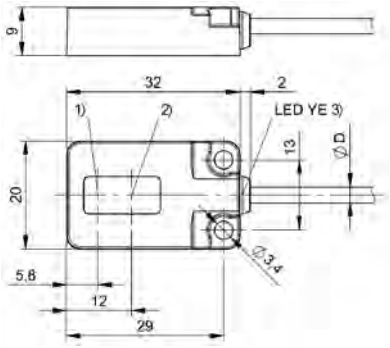
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception, 5) Sn

BOS022C



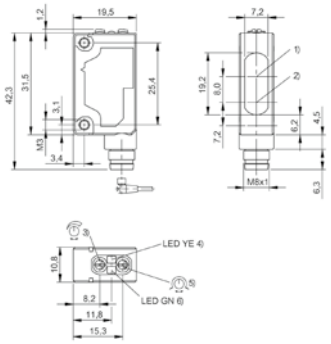
1) Optical axis emitter, 2) Optical axis receiver, 3) Output function

BOS021U, BOS0265



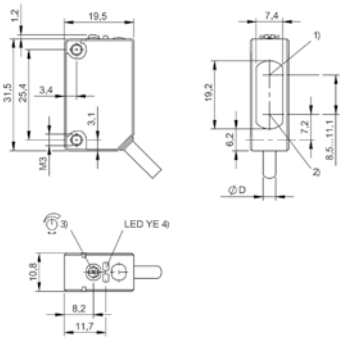
1) Optical axis emitter, 2) Optical axis receiver, 3) Output function

BOS021W, BOS022N



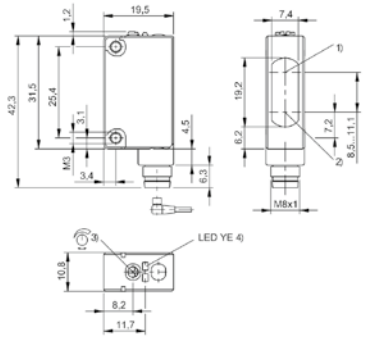
1) Optical axis receiver, 2) Optical axis emitter, 3) Sn, 4) Output function, 5) Light-on/dark-on, 6) stability

BOS01JK



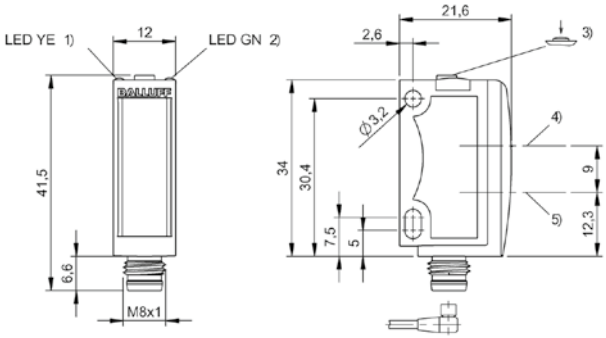
1) Optical axis receiver, 2) Optical axis emitter, 3) Sn, 4) Output function

BOS011E



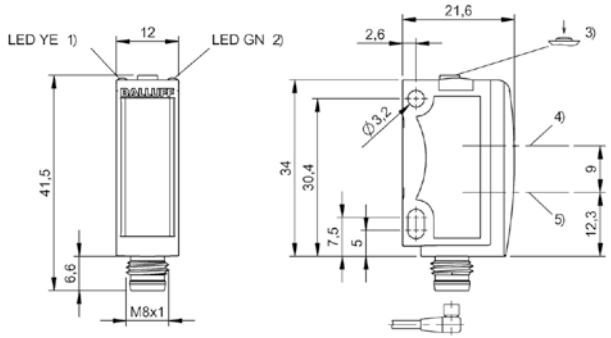
1) Optical axis receiver, 2) Optical axis emitter, 3) Sn, 4) Output function

BOS015U, BOS012A



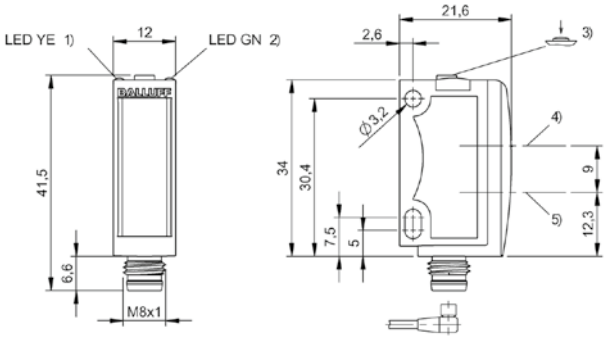
1) Output function, 2) Operating voltage, 3) Sn, light/dark, 4) Optical axis receiver, 5) Optical axis emitter

BOS01LE



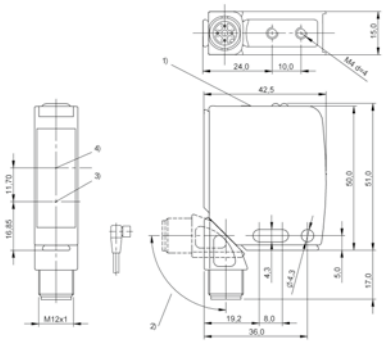
1) Output function, 2) Operating voltage, 3) Sn, light/dark, 4) Optical axis receiver, 5) Optical axis emitter

BOS01KW, BOS01KY



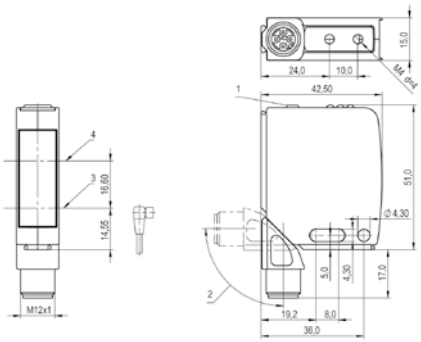
1) Output function, 2) Operating voltage, 3) Sn, light/dark, 4) Optical axis receiver, 5) Optical axis emitter

BOS01L3



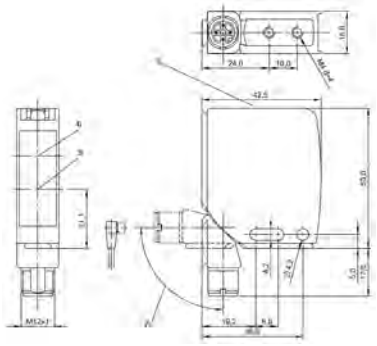
1) Display and control panel, 2) rotatable 270°, 3) Optical axis emitter, 4) Optical axis receiver

BOS01Z8, BOS01Z9



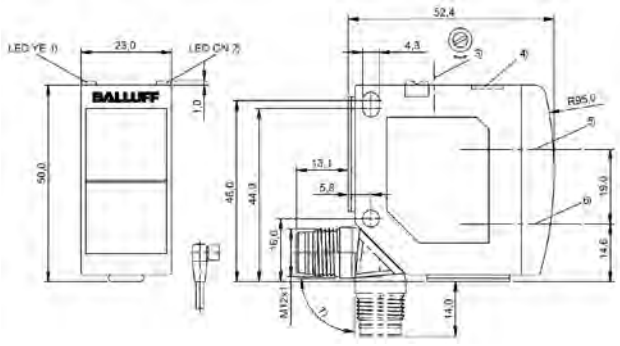
1) Display and control panel, 2) rotatable 270°, 3) Optical axis emitter, 4) Optical axis receiver

BOS026K



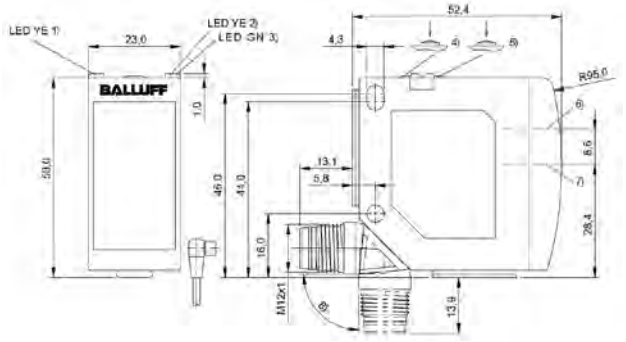
1) Display and control panel, 2) rotatable 270°, 3) Optical axis emitter, 4) Optical axis receiver

BOS0036



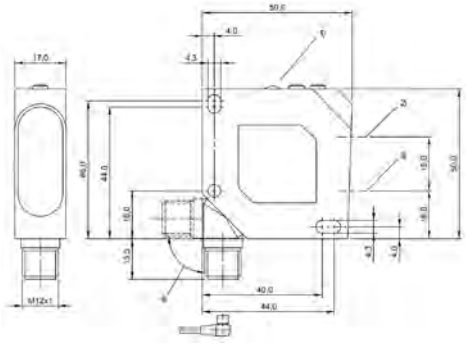
1) Output function/Error, 2) Operating voltage, 3) Sn, 4) Bar display for switching distance, 5) Optical axis receiver, 6) Optical axis emitter, 7) rotatable 270°

BOS01FR, BOS017C, BOS017H, BOS01FL, BOS0178



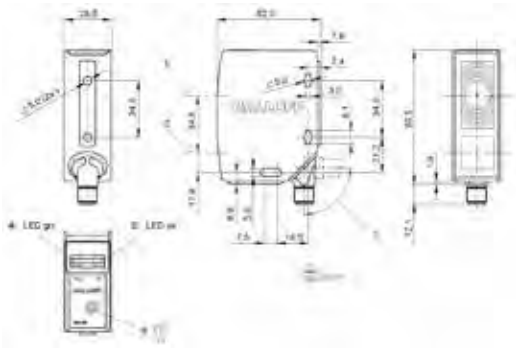
1) Output function Q1, 2) Output function Q2, 3) Operating voltage, 4) Setting Q1, 5) Setting Q2, 6) Optical axis emitter, 7) Optical axis receiver, 8) rotatable 270°

BOS01UW



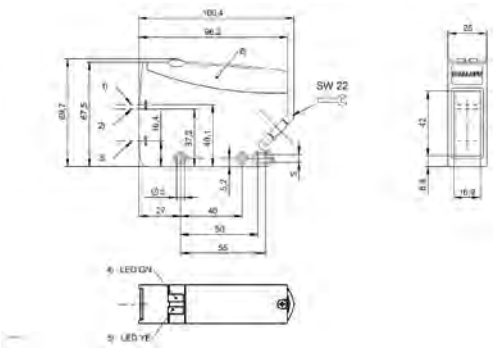
1) Display and control panel, 2) Optical axis receiver, 3) Optical axis emitter, 4) rotatable 270°

BOS008A, BOS008E, BOS008F, BOS0089



1) Optical axis receiver, 2) Optical axis emitter, 3) rotatable 270°, 4) Power/short-circuit, 5) Output function/Error, 6) Sn

BOS018P, BOS018N, BOS0156



1) Opt. axis receiver max., 2) Opt. axis receiver min., 3) Optical axis emitter, 4) stability, 5) Output function, 6) Removable cover

BOS01K1



PNP normally open	**BOS01RK** BOS 08E-PS-PR20-S49	**BOS01RL** BOS 08E-PS-PR20-00,2-S49	**BOS01TT** BOS 12M-PS-PR10-S4	
PNP normally closed	**BOS01RM** BOS 08E-PO-PR20-S49			
PNP normally open, PNP normally closed				
Series	08E	08E	12M	
Dimension	Ø 8 x 40 mm	Ø 8 x 40 mm	Ø 12 x 60 mm	
Input function	—	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	
Special optical feature	—	—	—	
Beam characteristic	Divergent	Divergent	Divergent	
Light type	LED, red light	LED, red light	LED, red light	
Light spot size	Ø 3.0 mm Light exit	Ø 3.0 mm Light exit	Ø 160 mm at 3 m	
Range	0...1 m	0...1 m	0...3 m	
Connection	Connector, M8x1-Male, 3-pin	Cable with connector, 0.20 m, PUR	Connector, M12x1-Male, 4-pin	
Housing material	Stainless steel	Stainless steel	Brass, nickel plated	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Trademark	—	—	Global	
Productview	Page 410	Page 410	Page 410	





			BOS01HK BOS 18M-PS-IR23-S4		
	BOS01F0 BOS 18M-PA-IR20-S4	**BOS01HR** BOS 18M-PA-IR21-S4		**BOS01NE** BOS 18M-PA-LR20-S4	**BOS01CE** BOS 18M-PA-PR20-S4
	18M	18M	18M	18M	18M
	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm
	–	–	–	–	–
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor
	–	–	–	–	–
	Divergent	Divergent	Divergent	Collimated	Divergent
	LED infrared	LED infrared	LED infrared	Laser red light	LED, red light
	Ø 300 mm at 7 m	Ø 300 mm at 7 m	Ø 300 mm at 7 m	Ø 10 mm at 16 m	Ø 300 mm at 7 m
	0...10 m	0...7 m	0...6 m	0...16 m	0...7 m
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated
	Glass, anti-glare	Glass, anti-glare	Glass, anti-glare	Glass	Glass, anti-glare
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	cULus, CE, EAC, WEEE	CE, cULus, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	CE, cULus, EAC, WEEE
	–	–	–	–	–
	Page 410	Page 410	Page 410	Page 410	Page 410



PNP normally open			**BOS01F8** BOS 18M-PS-PR23-S4	
PNP normally open, PNP normally closed	**BOS01FJ** BOS 18M-PA-PR20-S4S			
PNP normally open/normally closed/IO-Link 1.1		**BOS01UE** BOS 18M-PI-PR30-S4		
Series	18M	18M	18M	
Dimension	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	
Input function	—	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	
Special optical feature	—	—	—	
Beam characteristic	Divergent	Divergent	Divergent	
Light type	LED, red light	LED, red light	LED, red light	
Light spot size	Ø 300 mm at 7 m	Ø 300 mm at 7 m	Ø 300 mm at 7 m	
Range	0...7 m	0...5 m	0...4 m	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Housing material	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	
Material sensing surface	Glass, anti-glare	Glass	Glass, anti-glare	
Operating voltage Ub	10...30 VDC	18...30 VDC	10...30 VDC	
Approval/Conformity	cULus, CE, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Trademark	—	—	—	
Productview	Page 410	Page 410	Page 410	

	BOS01KL BOS 18E-PA-PR20-S4	**BOS023Y** BOS 18E-PA-PR30-S4			
	18E	18E			
	Ø 18 x 75 mm	Ø 18 x 75 mm			
	—	—			
	Photoelectric sensor	Photoelectric sensor			
	Retroreflective sensor	Retroreflective sensor			
	—	—			
	Divergent	Divergent			
	LED, red light	LED, red light			
	Ø 300 mm at 7 m	Ø 300 mm at 7 m			
	5 m	5 m			
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin			
	Stainless steel (1.4404)	Stainless steel (1.4404)			
	Glass	PMMA			
	10...30 VDC	10...30 VDC			
	CE, cULus, Ecolab, FDA compliant, EAC, WEEE	Ecolab, cULus, CE, EAC, WEEE, FDA compliant			
	—	—			
	Page 411	Page 411			



PNP normally open, PNP normally closed	**BOS00LM** BOS 18KW-PA-1LQH-S4-C	**BOS00LW** BOS 18KW-PA-1QC-S4-C	**BOS00LZ** BOS 18KW-PA-1TB-S4-C	
Series	18KW	18KW	18KW	
Dimension	Ø 18 x 93.5 mm	Ø 18 x 93.5 mm	Ø 18 x 93.5 mm	
Input function	—	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	
Special optical feature	—	—	Transparency detection	
Beam characteristic	—	—	—	
Light type	Laser red light	LED, red light	LED, red light	
Light spot size	—	—	—	
Range	0...9 m	0...3 m	0...1.7 m	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Housing material	PBT	PBT	PBT	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Trademark	Global	Global	Global	
Productview	Page 411	Page 411	Page 411	




	BOS00K5 BOS 18KF-PA-1RE-S4-C	**BOS00JT** BOS 18KF-PA-1LQP-S4-C	**BOS00K3** BOS 18KF-PA-1QD-S4-C	**BOS00K7** BOS 18KF-PA-1TB-S4-C	
	18KF	18KF	18KF	18KF	
	Ø 18 x 71.5 mm	Ø 18 x 81.5 mm	Ø 18 x 81.5 mm	Ø 18 x 81.5 mm	
	—	—	—	—	
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	
	—	—	—	Transparency detection	
	—	—	—	—	
	LED infrared	Laser red light	LED, red light	LED, red light	
	—	—	—	—	
	0...5 m	0...16 m	0...4.5 m	0...1.7 m	
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector	Connector, M12x1-Male, 4-pin	
	PBT	PBT	PBT	PBT	
	PMMA	PMMA	PMMA	PMMA	
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
	Global	Global	Global	Global	
	Page 411	Page 411	Page 411	Page 411	



PNP normally open	**BOS01MU** BOS Q08M-PS-LR20-00,2-S49	**BOS01MP** BOS Q08M-PS-LR20-S49	**BOS01T9** BOS Q08M-PS-PR20-00,2-S49	
PNP normally closed	**BOS01MW** BOS Q08M-PO-LR20-00,2-S49			
Series	Q08M	Q08M	Q08M	
Dimension	8 x 59 x 8 mm	8 x 59 x 8 mm	8 x 44 x 8 mm	
Input function	—	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	
Special optical feature	—	—	—	
Beam characteristic	Divergent	Divergent	Divergent	
Light type	Laser red light	Laser red light	LED, red light	
Light spot size	Ø 3.0 mm Light exit	Ø 3.0 mm Light exit	Ø 3.0 mm Light exit	
Range	0...1 m	0...1 m	0...1 m	
Connection	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PUR	Connector, M8x1-Male, 3-pin	Cable with connector, 0.20 m, PUR	
Housing material	Zinc, Die casting, nickel plated	Zinc, Die casting, nickel plated	Zinc, Die casting, nickel plated	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	cULus, CE, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Trademark	—	—	—	
Productview	Page 411	Page 411	Page 411	





	BOS01T8 BOS Q08M-PS-PR20-S49	BOS020T BOS R020K-PS-PR11-00,2-S49	BOS020U BOS R020K-PS-PR11-00,2-S75	BOS020R BOS R020K-PS-PR11-02	BOS021L BOS R01E-PS-KR20-00,2-S49
	Q08M	R020K	R020K	R020K	R01E
	8 x 59 x 8 mm	7.7 x 26.8 x 13.5 mm	7.7 x 26.8 x 13.5 mm	7.7 x 26.8 x 13.5 mm	20 x 32 x 9 mm
	–	–	–	–	–
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor
	–	–	–	–	–
	Divergent	Divergent	Divergent	Divergent	Divergent
	LED, red light	LED, red light	LED, red light	LED, red light	LED, red light
	Ø 3.0 mm Light exit	Ø 10 mm at 100 mm	Ø 10 mm at 100 mm	Ø 11 mm at 250 mm	Ø 3.0 mm Light exit
	0...1 m	0...3 m	0...3 m	0...3 m	1 m
	Connector, M8x1-Male, 3-pin	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PVC	Cable with connector, M8x1-Male, 4-pin, 0.20 m, PVC	Cable, 2.00 m, PVC	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PUR
	Zinc, Die casting, nickel plated	ABS	ABS	ABS	Stainless steel (1.4404)
	PMMA	PMMA	PMMA	PMMA	PA
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	cULus, CE, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE
	–	–	–	–	–
	Page 411	Page 412	Page 412	Page 412	Page 412



PNP normally open	**BOS021M** BOS R01E-PS-KR20-02			
PNP normally closed				
PNP normally open/normally closed		**BOS01JT** BOS 5K-PU-LR10-02	**BOS01JW** BOS 5K-PU-LR10-S75	
Series	R01E	5K	5K	
Dimension	20 x 32 x 9 mm	10.8 x 32.7 x 19.5 mm	10.8 x 43.5 x 19.5 mm	
Input function	—	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	
Special optical feature	—	—	—	
Beam characteristic	Divergent	Divergent	Divergent	
Light type	LED, red light	Laser red light	Laser red light	
Light spot size	Ø 3.0 mm Light exit	Ø 5 mm at 3 m	Ø 5 mm at 3 m	
Range	1 m	0...10 m	0...10 m	
Connection	Cable, 2.00 m, PUR	Cable, 2.00 m, PVC	Connector, M8x1-Male, 4-pin	
Housing material	Stainless steel (1.4404)	PC PBT	PC PBT	
Material sensing surface	PA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, Ecolab, EAC, WEEE	CE, cULus, CDRH, EAC, WEEE	cULus, CE, CDRH, EAC, WEEE	
Trademark	—	Global	Global	
Productview	Page 412	Page 412	Page 412	





	BOS012E BOS 5K-PS-RR10-S75	**BOS012C** BOS 5K-PS-RR10-02	**BOS015E** BOS 5K-PS-RR10-S49		
	BOS0121 BOS 5K-PO-RR10-S75				
				BOS01M4 BOS 6K-PU-LK10-S75	**BOS01MH** BOS 6K-PU-PR10-S49
	5K	5K	5K	6K	6K
	10.8 x 43.5 x 19.5 mm	10.8 x 32.7 x 19.5 mm	10.8 x 43.5 x 19.5 mm	12 x 41.5 x 21.6 mm	12 x 41.5 x 21.6 mm
	–	–	–	Same function as button, Key disable on/off	–
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor
	–	–	–	Coaxial optics	–
	Divergent	Divergent	Divergent	Collimated	Divergent
	LED, red light	LED, red light	LED, red light	Laser red light	LED, red light
	Ø 160 mm at 2 m	Ø 160 mm at 2 m	Ø 160 mm at 2 m	Ø 2 mm at 2.5 m	600 x 600 mm at 7 m
	0...4 m	0...4 m	0...4 m	0...4 m	0...6 m
	Connector, M8x1-Male, 4-pin	Cable, 2.00 m, PVC	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 4-pin	Connector, M8x1-Male, 3-pin
	PC PBT	PC PBT	PC PBT	ABS	ABS
	PMMA	PMMA	PMMA	PMMA	PMMA
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Global	Global	Global	–	–
	Page 412	Page 412	Page 412	Page 413	Page 413



PNP normally open, PNP normally closed			**BOS00TL** BOS 21M-PA-LR10-S4	
PNP normally open/normally closed	**BOS01MJ** BOS 6K-PU-PR10-S75	**BOS01L8** BOS 6K-PU-PT10-S75		
PNP normally open/normally closed/IO-Link 1.1				
Series	6K	6K	21M	
Dimension	12 x 41.5 x 21.6 mm	12 x 41.5 x 21.6 mm	15 x 50 x 42.5 mm	
Input function	Key disable on/off, Same function as button	Key disable on/off, Same function as button	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	
Special optical feature	—	Coaxial optics, Transparency detection	—	
Beam characteristic	Divergent	Divergent	Collimated	
Light type	LED, red light	LED, red light	Laser red light	
Light spot size	600 x 600 mm at 7 m	50 x 50 mm at 2 m	—	
Range	0...6 m	0...2 m	0...20 m	
Connection	Connector, M8x1-Male, 4-pin	Connector, M8x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Housing material	ABS	ABS	Zinc, Die casting, Powder coated Aluminum	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	CE, cULus, EAC, WEEE	
Trademark	—	—	—	
Productview	Page 413	Page 413	Page 413	





	BOS00TN BOS 21M-PA-PK10-S4	BOS00TR BOS 21M-PA-PR10-S4	BOS00TU BOS 21M-PA-PT10-S4		
				BOS027M BOS 21M-PAI-PR30-S4	BOS0286 BOS R254K-UUI-PR10-S4
	21M	21M	21M	21M	R254K
	15 x 50 x 42.5 mm	15 x 50 x 42.5 mm	15 x 50 x 42.5 mm	15.4 x 51.1 x 42.7 mm	20.4 x 60.3 x 49.5 mm
	–	–	–	–	–
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor
	Coaxial optics	–	Coaxial optics, Transparency detection	–	–
	Divergent	Divergent	–	Divergent	Divergent
	LED, red light	LED, red light	LED, red light	LED, red light	LED, red light
	–	–	–	–	200 x 200 mm at 8 m
	0...4 m	0...8 m	0...2 m	0...10 m	8 m
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	Zinc, Die casting, Powder coated Aluminum	Zinc, Die casting, Powder coated Aluminum	Zinc, Die casting, Powder coated Aluminum	Zinc, Die casting, Powder coated Die-cast zinc	PA 12 PA PACM 12
	Glass	PMMA	Glass	PMMA	PA PACM 12
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	cULus, CE, EAC, WEEE	CE, cULus, WEEE, EAC, Ecolab	CE, EAC
	–	–	–	–	–
	Page 413	Page 413	Page 413	Page 413	Page 410

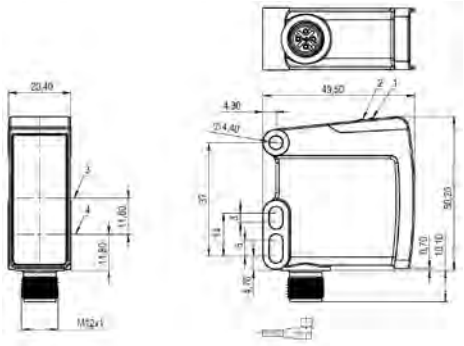


PNP normally open, PNP normally closed	**BOS01NC** BOS 23K-PA-LK10-S4		**BOS01FN** BOS 23K-PA-RR10-S4	
PNP normally open/normally closed		**BOS016U** BOS 23K-PU-LR10-S4		
Relay normally open/normally closed				
Series	23K	23K	23K	
Dimension	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	
Input function	—	Key disable on/off, Same function as button	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	
Special optical feature	—	—	—	
Beam characteristic	Divergent	Divergent	Divergent	
Light type	Laser red light	Laser red light	LED, red light	
Light spot size	Ø 22 mm at 20 m	9 x 9 mm at 12 mm	300 x 300 mm at 12 m	
Range	0...20 m	0...14 m	0...14 m	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Housing material	PC ABS	PC ABS	PC ABS	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	Ecolab, CE, cULus, EAC, WEEE	Ecolab, CE, cULus, EAC, WEEE	Ecolab, CE, cULus, EAC, WEEE	
Trademark	—	—	—	
Productview	Page 413	Page 413	Page 414	



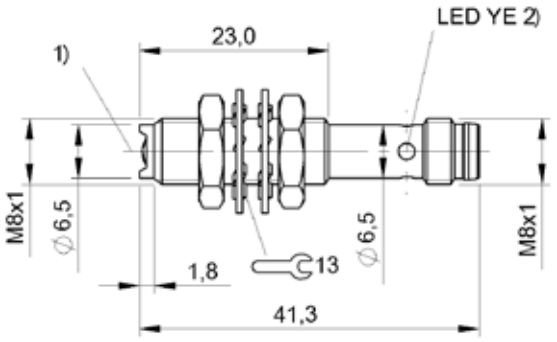


		BOS008L BOS 26K-PA-1LQP-S4-C	**BOS008M** BOS 26K-PA-1QE-S4-C	**BOS01CR** BOS 50K-PA-PR10-S4	
	BOS016P BOS 23K-PU-RR10-S4				
					BOS01K3 BOS 64K-AA-PR10-TG
	23K	26K	26K	50K	64K
	23 x 51 x 52.4 mm	17 x 50 x 50 mm	17 x 50 x 50 mm	28.5 x 80.5 x 62 mm	25 x 69.7 x 100.4 mm
	Key disable on/off, Same function as button	—	—	—	—
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor	Retroreflective sensor
	—	Coaxial optics	Coaxial optics	—	—
	Divergent	Collimated	—	Divergent	Divergent
	LED, red light	Laser red light	LED, red light	LED, red light	LED, red light
	300 x 300 mm at 12 m	Ø 20 mm at 20 m	—	200 x 200 mm at 10 m	—
	0...14 m	0...25 m	0...5.5 m	0...18 m	0...10 m
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Screw terminals
	PC ABS	ABS	ABS	PC ABS	PBT, GF30
	PMMA	PMMA	PMMA	Glass	PC
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	24...60 VDC/24...240 VAC
	Ecolab, CE, cULus, EAC, WEEE	cULus, CE, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	—	—	—	—	—
	Page 414	Page 414	Page 414	Page 414	Page 414



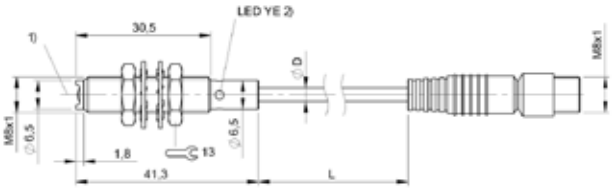
1) LED 1, 2) LED 2, 3) Optical axis receiver, 4) Optical axis emitter

BOS0286



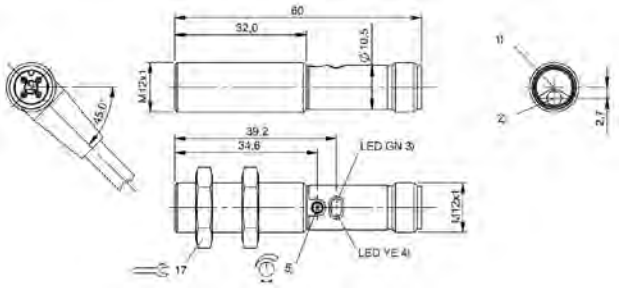
1) Optical axis, 2) Output function

BOS01RM, BOS01RK



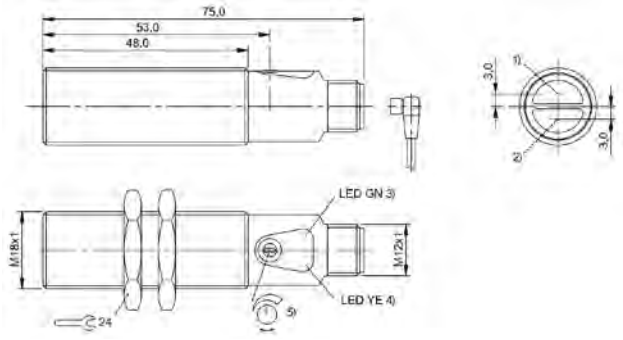
1) Optical axis, 2) Output function

BOS01RL



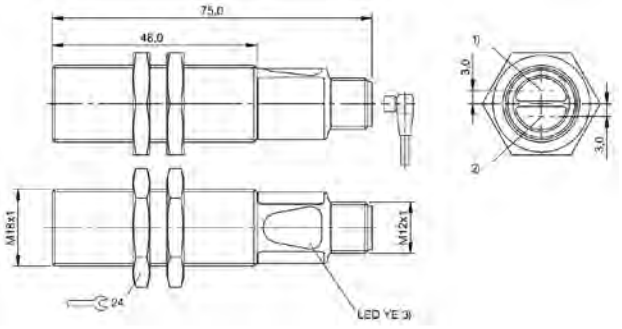
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception/limit area, 5) Sn

BOS01TT



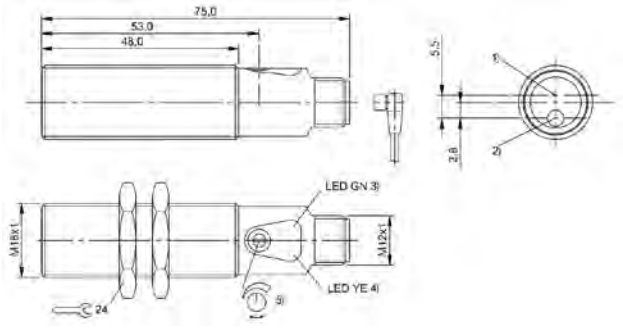
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception/limit area, 5) Sn

BOS01F0, BOS01HR, BOS01CE, BOS01FJ



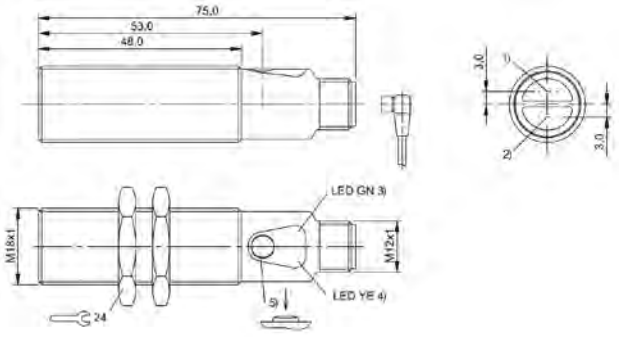
1) Optical axis receiver, 2) Optical axis emitter, 3) Light reception/limit area

BOS01HK, BOS01F8



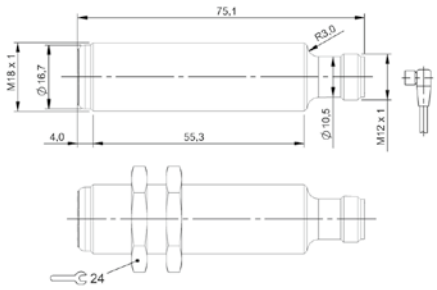
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage/Error, 4) Light reception/limit area, 5) Sn

BOS01NE



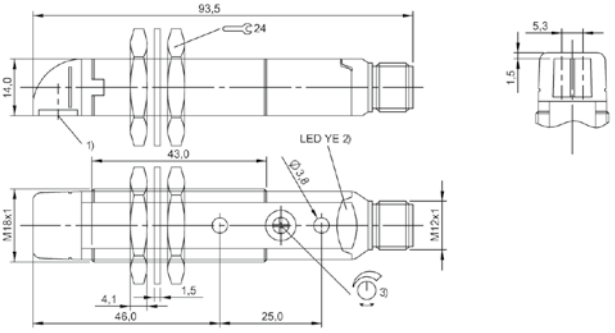
1) Optical axis receiver, 2) Optical axis emitter, 3) Power/short-circuit, 4) Light reception/limit area, 5) Sn

BOS01UE



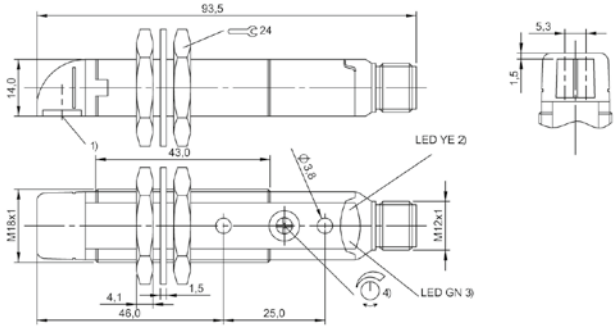
1) Optical axis receiver, 2) Optical axis emitter

BOS01KL, BOS023Y



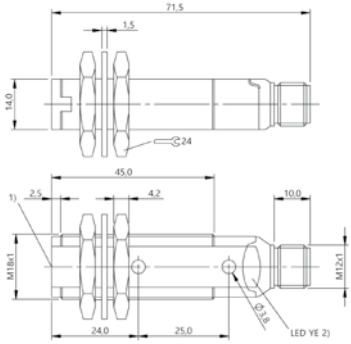
1) Optical axis, 2) Output function, 3) Sn

BOS00LM, BOS00LZ



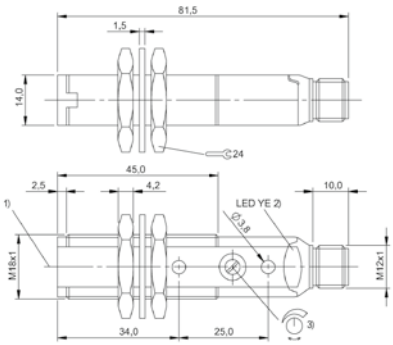
1) Optical axis, 2) Output function, 3) Stability, 4) Sn

BOS00LW



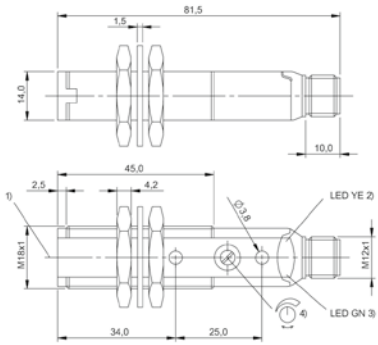
1) Optical axis, 2) Output function

BOS00K5



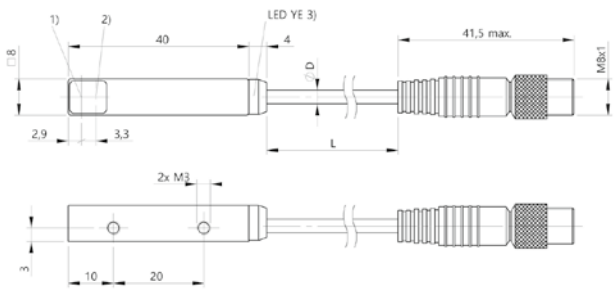
1) Optical axis, 2) Output function, 3) Sn

BOS00JT, BOS00K7



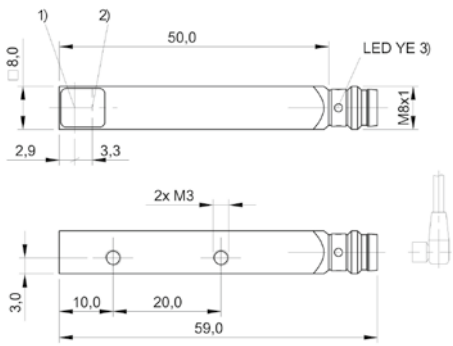
1) Optical axis, 2) Output function, 3) Stability, 4) Sn

BOS00K3



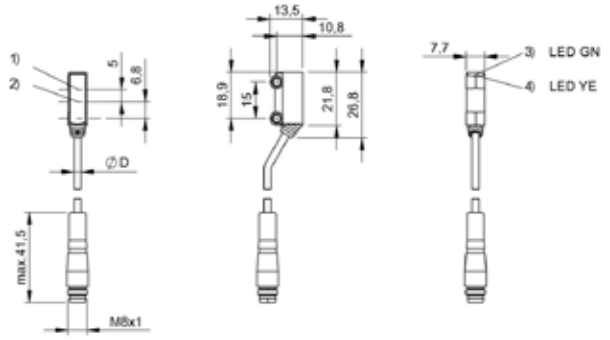
1) Optical axis emitter, 2) Optical axis receiver, 3) Output function

BOS01MW, BOS01MU, BOS01T9



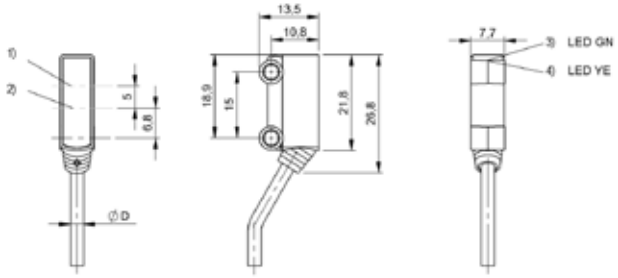
1) Optical axis emitter, 2) Optical axis receiver, 3) Output function

BOS01MP, BOS01T8



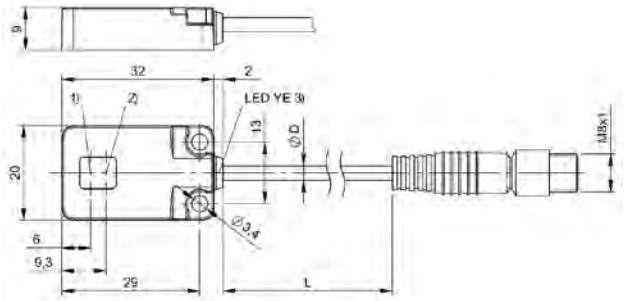
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception

BOS020T, BOS020U



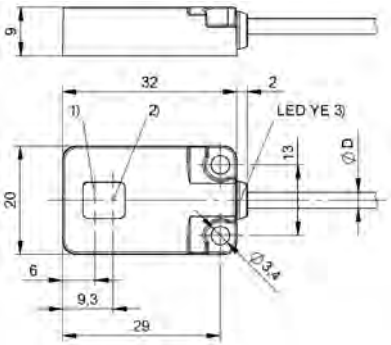
1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception

BOS020R



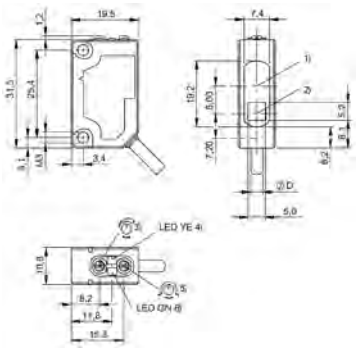
1) Optical axis emitter, 2) Optical axis receiver, 3) Output function

BOS021L



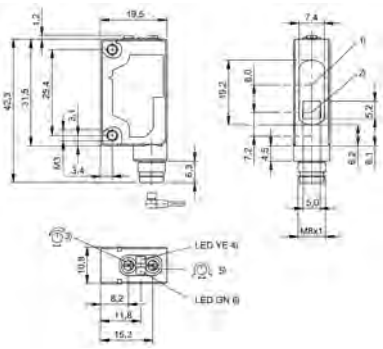
1) Optical axis emitter, 2) Optical axis receiver, 3) Output function

BOS021M



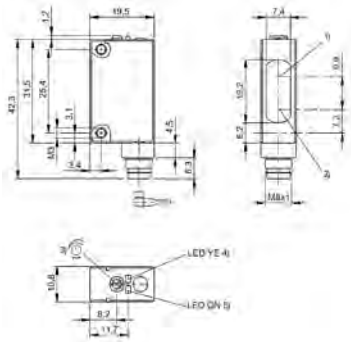
1) Optical axis receiver, 2) Optical axis emitter, 3) Sensitivity, 4) Output function,
5) Light-on/dark-on, 6) stability

BOS01JT



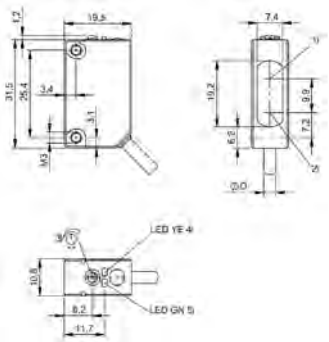
1) Optical axis receiver, 2) Optical axis emitter, 3) Sensitivity, 4) Output function,
5) Light-on/dark-on, 6) stability

BOS01JW



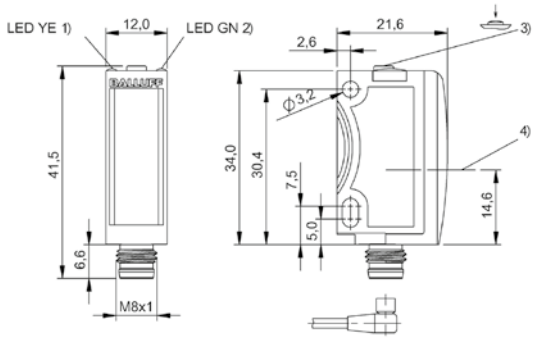
1) Optical axis receiver, 2) Optical axis emitter, 3) Sn, 4) Output function, 5) stability

BOS0121, BOS015E, BOS012E



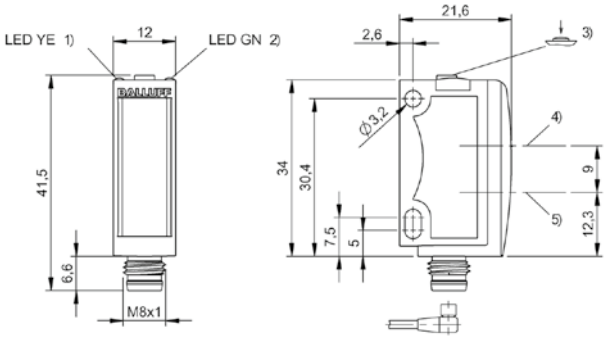
1) Optical axis receiver, 2) Optical axis emitter, 3) Sn, 4) Output function, 5) stability

BOS012C



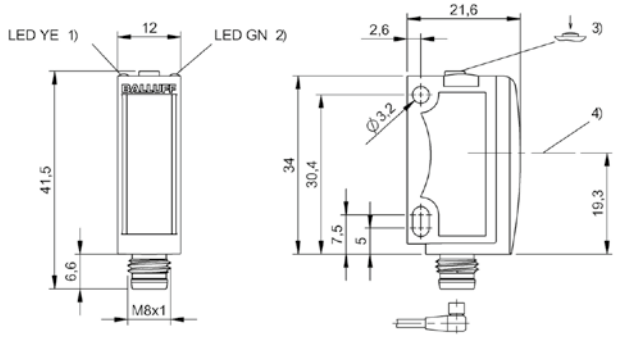
1) Output function, 2) Operating voltage, 3) Sensitivity, light/dark, 4) Optical axis

BOS01M4



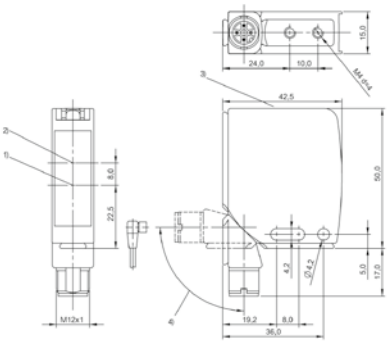
1) Output function, 2) Operating voltage, 3) Sensitivity, light/dark, 4) Optical axis receiver, 5) Optical axis emitter

BOS01MH, BOS01MJ



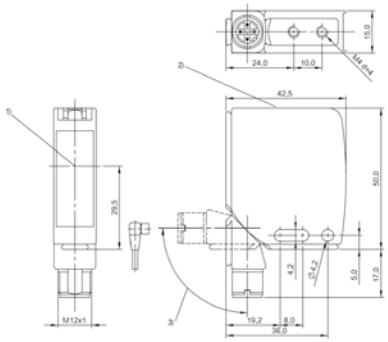
1) Output function, 2) Operating voltage, 3) Sensitivity, light/dark, 4) Optical axis

BOS01L8



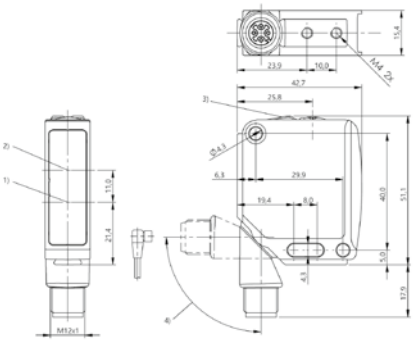
1) Optical axis emitter, 2) Optical axis receiver, 3) Display and control panel, 4) rotatable 270°

BOS00TL, BOS00TR



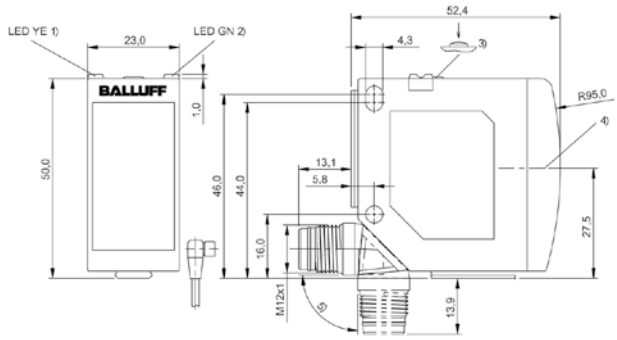
1) Optical axis, 2) Display and control panel, 3) rotatable 270°

BOS00TN, BOS00TU



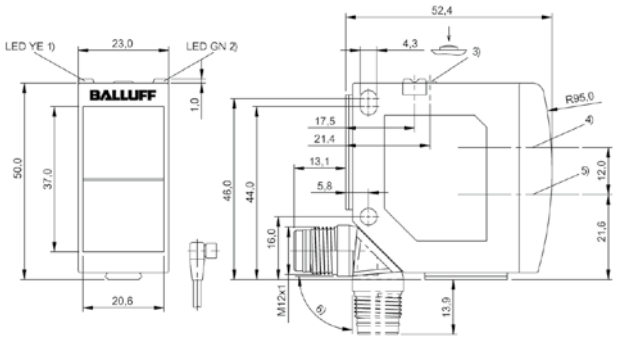
1) Optical axis emitter, 2) Optical axis receiver, 3) Display and control panel, 4) 240° rotatable

BOS027M



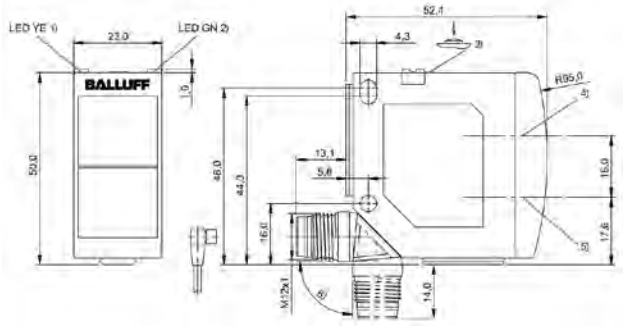
1) Output function/Error, 2) Operating voltage, 3) Sn, light/dark, 4) Optical axis, 5) rotatable 270°

BOS01NC



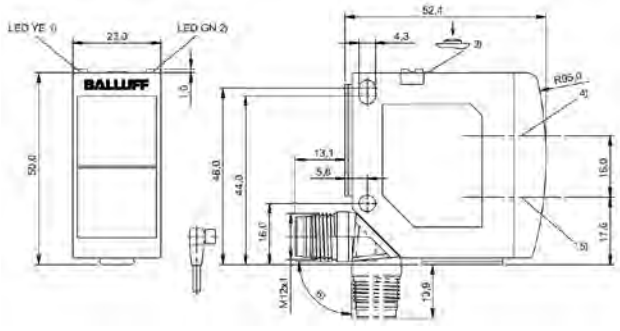
1) Output function/Error, 2) Operating voltage, 3) Sn, light/dark, 4) Optical axis receiver, 5) Optical axis emitter, 6) rotatable 270°

BOS016U



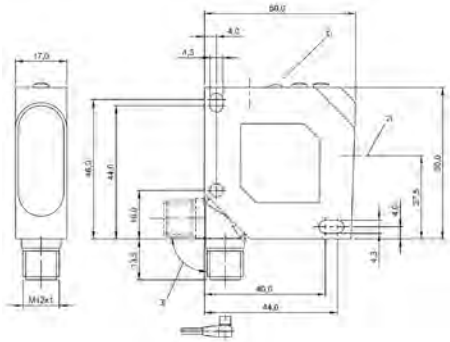
1) Output function/Error, 2) Operating voltage, 3) Sn, light/dark, 4) Optical axis receiver, 5) Optical axis emitter, 6) rotatable 270°

BOS01FN



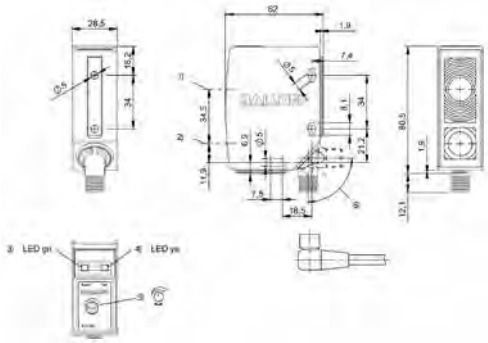
1) Output function/Error, 2) Power/setting mode, 3) Sn, light/dark, 4) Optical axis receiver, 5) Optical axis emitter, 6) rotatable 270°

BOS016P



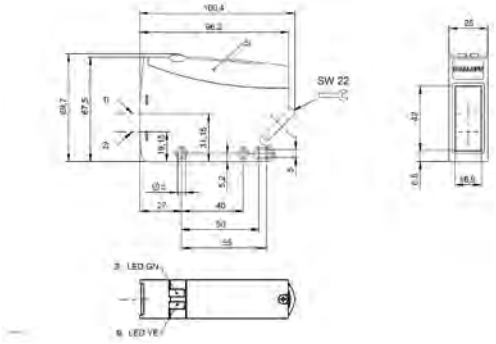
1) Display and control panel, 2) Optical axis, 3) rotatable 270°

BOS008L, BOS008M



1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception/limit area, 5) Sn, 6) rotatable 270°

BOS01CR



1) Optical axis receiver, 2) Optical axis emitter, 3) Stability, 4) Output function, 5) Removable cover

BOS01K3



PNP normally open	**BOS01U3** BOS 08E-PS-LE20-S49	**BOS020F** BOS 08E-PS-KE20-S49		
PNP normally closed		**BOS020A** BOS 08E-PO-KE20-S49		
Emitter			**BOS01U8** BOS 08E-X-LS20-S49	
Series	08E	08E	08E	
Dimension	Ø 8 x 40 mm	Ø 8 x 40 mm	Ø 8 x 40 mm	
Interface	PNP normally open (NO)	PNP normally open (NO)	—	
Input function	—	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Through-beam sensor (receiver)	Through-beam sensor (receiver)	Through-beam sensor (Emitter)	
Special optical feature	—	—	—	
Beam characteristic	—	—	Collimated	
Light type	Laser red light	LED, red light	Laser red light	
Light spot size	—	—	Ø 3.0 mm Light exit	
Range	0...3 m	0...2.2 m	0...3 m	
Connection	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 3-pin	
Housing material	Stainless steel	Stainless steel	Stainless steel	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	cULus, CE, EAC, WEEE	CE, cULus, EAC, WEEE	cULus, CE, EAC, WEEE	
Trademark	—	—	—	
Productview	Page 440	Page 440	Page 440	





			BOS01TY BOS 12M-PS-RE10-S4		
		BOS00WF BOS 12M-PA-LE10-S4			
	BOS01Z5 BOS 08E-X-KS20-S49			**BOS00WH** BOS 12M-X-LS11-S4	**BOS00WJ** BOS 12M-X-LS12-S4
	08E	12M	12M	12M	12M
	Ø 8 x 40 mm	Ø 12 x 70 mm	Ø 12 x 60 mm	Ø 12 x 70 mm	Ø 12 x 70 mm
	—	PNP NO PNP NC	PNP normally open (NO)	—	—
	—	—	—	—	—
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Through-beam sensor (Emitter)	Through-beam sensor (receiver)	Through-beam sensor (receiver)	Through-beam sensor (Emitter)	Through-beam sensor (Emitter)
	—	—	—	—	—
	Divergent	—	—	Focus, typical at 500 mm	Collimated
	LED, red light	Laser red light	LED, red light	Laser red light	Laser red light
	—	—	—	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit
	0...2.2 m	0...30 m	0...8 m	0...3 m	0...30 m
	Connector, M8x1-Male, 3-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	Stainless steel	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated
	PMMA	PMMA	PMMA	Glass	Glass
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	cULus, CE, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	—	—	Global	—	—
	Page 440	Page 440	Page 440	Page 440	Page 440



PNP normally open				
PNP normally open/normally closed				
PNP normally open/normally closed, IO-Link 1.1				
Emitter	**BOS00WL** BOS 12M-XT-LS11-S4	**BOS00WN** BOS 12M-XT-LS12-S4	**BOS01TW** BOS 12M-X-RS10-S4	
Series	12M	12M	12M	
Dimension	Ø 12 x 70 mm	Ø 12 x 70 mm	Ø 12 x 60 mm	
Interface	—	—	—	
Input function	Test (Emitter off)	Test (Emitter off)	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Through-beam sensor (Emitter)	Through-beam sensor (Emitter)	Through-beam sensor (Emitter)	
Special optical feature	—	—	—	
Beam characteristic	Focus, typical at 500 mm	Collimated	—	
Light type	Laser red light	Laser red light	LED, red light	
Light spot size	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	Ø 280 mm at 8 m	
Range	0...3 m	0...30 m	0...8 m	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Housing material	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	
Material sensing surface	Glass	Glass	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Trademark	—	—	Global	
Productview	Page 440	Page 440	Page 440	





	BOS01NJ BOS 18M-PA-LE20-S4				
			BOS01J7 BOS 18M-PUV-RE30-S4		
		BOS01UC BOS 18M-PI-RE30-S4			
				BOS01NH BOS 18M-XT-LS20-S4	**BOS01CY** BOS 18M-X-RS30-S4
	18M	18M	18M	18M	18M
	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm
	PNP NO PNP NC	PNP NO/NC IO-Link 1.1	PNP normally open/normally closed (NO/NC)	–	–
	–	–	–	Test (Emitter off)	–
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Through-beam sensor (receiver)	Through-beam sensor (receiver)	Through-beam sensor (receiver)	Through-beam sensor (Emitter)	Through-beam sensor (Emitter)
	–	–	–	–	–
	–	–	–	Collimated	–
	Red light	LED, red light	LED, red light	Laser red light	LED, red light
	–	–	–	Ø 40 mm at 60 m	–
	0...60 m	0...20 m	0...20 m	0...60 m	0...20 m
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated
	Glass	Glass	Glass	Glass	Glass
	10...30 VDC	18...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	CE, cULus, EAC, WEEE
	–	–	–	–	–
	Page 440	Page 441	Page 441	Page 441	Page 441



PNP normally open		**BOS01KM** BOS 18E-PA-RE20-S4	**BOS023W** BOS 18E-PA-RE30-S4	
PNP normally open/normally closed, IO-Link 1.1				
Emitter	**BOS01UF** BOS 18M-XI-RS30-S4			
Series	18M	18E	18E	
Dimension	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	
Interface	IO-Link 1.1	PNP NO PNP NC	PNP NO PNP NC	
Input function	—	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Through-beam sensor (Emitter)	Through-beam sensor (receiver)	Through-beam sensor (receiver)	
Special optical feature	—	—	—	
Beam characteristic	—	—	—	
Light type	LED, red light	LED, red light	LED, red light	
Light spot size	—	—	—	
Range	0...20 m	0...20 m	0...20 m	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Housing material	Brass, nickel plated	Stainless steel (1.4404)	Stainless steel (1.4404)	
Material sensing surface	Glass	Glass	PMMA	
Operating voltage Ub	18...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	cULus, CE, EAC, WEEE	FDA compliant, Ecolab, CE, cULus, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	
Trademark	—	—	—	
Productview	Page 441	Page 441	Page 441	




	BOS023H BOS 18E-PI-RE30-S4				
		BOS01KT BOS 18E-X-RS20-S4	**BOS023U** BOS 18E-X-RS30-S4	**BOS023J** BOS 18E-XI-RS30-S4	
	18E	18E	18E	18E	
	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	
	PNP NO/NC IO-Link 1.1	–	–	IO-Link 1.1	
	–	–	–	–	
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
	Through-beam sensor (receiver)	Through-beam sensor (Emitter)	Through-beam sensor (Emitter)	Through-beam sensor (Emitter)	
	–	–	–	–	
	–	Divergent	Divergent	–	
	LED, red light	LED, red light	LED, red light	LED, red light	
	–	–	–	–	
	0...20 m	0...20 m	0...20 m	0...20 m	
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
	Stainless steel (1.4571)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4571)	
	Glass	Glass	PMMA	Glass	
	18...30 VDC	10...30 VDC	10...30 VDC	18...30 VDC	
	cULus, CE, EAC, WEEE, FDA compliant	FDA compliant, Ecolab, cULus, CE, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	cULus, CE, EAC, WEEE	
	–	–	–	–	
	Page 441	Page 441	Page 441	Page 441	



PNP normally open, PNP normally closed				
PNP normally open/normally closed	**BOS00CT** BLE 18KW-PA-1LT-S4-C	**BOS00CW** BLE 18KW-PA-1PP-S4-C		
Emitter			**BOS00EW** BLS 18KW-XX-1P-S4-L	
Series	18KW	18KW	18KW	
Dimension	Ø 18 x 93.5 mm	Ø 18 x 93.5 mm	Ø 18 x 14 mm	
Interface	PNP NO PNP NC	PNP NO PNP NC	—	
Input function	—	—	Test (Emitter off)	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Through-beam sensor (receiver)	Through-beam sensor (receiver)	Through-beam sensor (Emitter)	
Special optical feature	—	—	—	
Beam characteristic	—	—	—	
Light type	Red light	Infrared	Infrared	
Light spot size	—	—	—	
Range	0...50 m	0...15 m	0...15 m	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Housing material	PBT	PBT	PBT	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Trademark	Global	Global	Global	
Productview	Page 441	Page 441	Page 441	





		BOS00CH BLE 18KF-PA-1LT-S4-C	**BOS00CK** BLE 18KF-PA-1PP-S4-C		
	BOS00ET BLS 18KW-XX-1LT-S4-L			**BOS00EP** BLS 18KF-XX-1P-S4-L	**BOS00EM** BLS 18KF-XX-1LT-S4-L
	18KW	18KF	18KF	18KF	18KF
	Ø 18 x 83.5 mm	Ø 18 x 81.5 mm	Ø 18 x 81.5 mm	Ø 18 x 71.5 mm	Ø 18 x 71.5 mm
	—	PNP NO PNP NC	PNP NO PNP NC	—	—
	Test (Emitter off)	—	—	Test (Emitter off)	Test (Emitter off)
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Through-beam sensor (Emitter)	Through-beam sensor (receiver)	Through-beam sensor (receiver)	Through-beam sensor (Emitter)	Through-beam sensor (Emitter)
	—	—	—	—	—
	—	—	—	—	—
	Laser red light	Red light	Infrared	Infrared	Laser red light
	—	—	—	—	—
	0...50 m	0...60 m	0...20 m	0...20 m	0...60 m
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	PBT	PBT	PBT	PBT	PBT
	PMMA	PMMA	PMMA	PMMA	PMMA
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Global	Global	Global	Global	Global
	Page 441	Page 441	Page 442	Page 442	Page 442



PNP normally open	**BOS01Y4** BOS Q08M-PS-KE21-S49	**BOS01Y6** BOS Q08M-PS-KE21-00,2-S49		
PNP normally closed	**BOS01Y7** BOS Q08M-PO-KE21-S49			
Emitter			**BOS01YM** BOS Q08M-X-KS21-00,2-S49	
Series	Q08M	Q08M	Q08M	
Dimension	8 x 59 x 8 mm	8 x 44 x 8 mm	8 x 44 x 8 mm	
Interface	PNP normally open (NO)	PNP normally open (NO)	—	
Input function	—	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Through-beam sensor (receiver)	Through-beam sensor (receiver)	Through-beam sensor (Emitter)	
Special optical feature	—	—	—	
Beam characteristic	—	—	Divergent	
Light type	Red light	Red light	LED, red light	
Light spot size	—	—	—	
Range	0...2.2 m	0...2.2 m	0...2.2 m	
Connection	Connector, M8x1-Male, 3-pin	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PUR	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PUR	
Housing material	Zinc, Die casting, nickel plated	Zinc, Die casting, nickel plated	Zinc, Die casting, nickel plated	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	cULus, CE, EAC, WEEE	
Trademark	—	—	—	
	Page 442	Page 442	Page 442	



		BOS0214 BOS R020K-PS-RX11-00,2-S49	**BOS0211** BOS R020K-PS-RX11-02		
	BOS01YK BOS Q08M-X-KS21-S49				
	Q08M	R020K	R020K		
	8 x 59 x 8 mm	7.7 x 26.8 x 13.5 mm	7.7 x 26.8 x 13.5 mm		
	—	PNP normally open (NO)	PNP normally open (NO)		
	—	—	—		
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor		
	Through-beam sensor (Emitter)	Through-beam sensor	Through-beam sensor		
	—	—	—		
	Divergent	Divergent	Divergent		
	LED, red light	LED, red light	LED, red light		
	—	Ø 23 mm at 500 mm	Ø 23 mm at 500 mm		
	0...2.2 m	0...2 m	0...2 m		
	Connector, M8x1-Male, 3-pin	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PVC	Cable, 2.00 m, PVC		
	Zinc, Die casting, nickel plated	PC PBT	PC PBT		
	PMMA	PMMA	PMMA		
	10...30 VDC	10...30 VDC	10...30 VDC		
	CE, cULus, EAC, WEEE	cULus, CE, WEEE, EAC	cULus, CE, WEEE, EAC		
	—	—	—		
	Page 442	Page 442	Page 442		



PNP normally open	**BOS021N** BOS R01E-PS-KE20-00,2-S49	**BOS021P** BOS R01E-PS-KE20-02		
PNP normally closed				
PNP normally open/normally closed				
Emitter			**BOS021R** BOS R01E-X-KS20-00,2-S49	
Series	R01E	R01E	R01E	
Dimension	20 x 32 x 9 mm	20 x 32 x 9 mm	20 x 32 x 9 mm	
Interface	PNP normally open (NO)	PNP normally open (NO)	—	
Input function	—	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Through-beam sensor	Through-beam sensor	Through-beam sensor	
Special optical feature	—	—	—	
Beam characteristic	—	—	Divergent	
Light type	LED, red light	LED, red light	LED, red light	
Light spot size	—	—	Ø 3.0 mm Light exit	
Range	0...2.2 m	0...2.2 m	0...2.2 m	
Connection	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PUR	Cable, 2.00 m, PUR	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PUR	
Housing material	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	
Material sensing surface	PA	PA	PA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, Ecolab, EAC, WEEE	cULus, CE, Ecolab, EAC, WEEE	cULus, CE, Ecolab, EAC, WEEE	
Trademark	—	—	—	
Productview	Page 443	Page 443	Page 443	




		BOS0126 BOS 5K-PS-IX10-S75	**BOS0125** BOS 5K-PS-IX10-02		
		BOS011R BOS 5K-PO-IX10-S75			
				BOS01JP BOS 5K-PU-LX10-S75	
	BOS021T BOS R01E-X-KS20-02				
	R01E	5K	5K	5K	
	20 x 32 x 9 mm	10.8 x 43.5 x 19.5 mm	10.8 x 32.7 x 19.5 mm	10.8 x 43.5 x 19.5 mm	
	—	PNP normally open (NO)	PNP normally open (NO)	PNP normally open/normally closed (NO/NC)	
	—	—	—	—	
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor	
	—	—	—	—	
	Divergent	Divergent	Divergent	Divergent	
	LED, red light	Infrared	Infrared	Laser red light	
	Ø 3.0 mm Light exit	Ø 90 mm at 2 m	Ø 90 mm at 2 m	Ø 5 mm at 3 m	
	0...2.2 m	0...20 m	0...20 m	0...30 m	
	Cable, 2.00 m, PUR	Connector, M8x1-Male, 4-pin	Cable, 2.00 m, PVC	Connector, M8x1-Male, 4-pin	
	Stainless steel (1.4404)	PC PBT	PC PBT	PC PBT	
	PA	PMMA	PMMA	PMMA	
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
	cULus, CE, Ecolab, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	CE, cULus, CDRH, EAC, WEEE	
	—	Global	Global	Global	
	Page 443	Page 443	Page 443	Page 443	



PNP normally open				
PNP normally open, PNP normally closed		**BOS01LW** BOS 6K-PU-LE10-S75		
PNP normally open/normally closed	**BOS01LU** BOS 6K-PU-LE10-S49			
Emitter			**BOS01M1** BOS 6K-XT-LS10-S49	
Series	6K	6K	6K	
Dimension	12 x 41.5 x 21.6 mm	12 x 41.5 x 21.6 mm	12 x 41 x 21.6 mm	
Interface	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	—	
Input function	—	Same function as button, Key disable on/off	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Through-beam sensor (receiver)	Through-beam sensor (receiver)	Through-beam sensor (Emitter)	
Special optical feature	—	—	—	
Beam characteristic	—	—	Divergent	
Light type	Laser red light	Laser red light	Laser red light	
Light spot size	—	—	14 x 14 mm at 20 m	
Range	0...18 m	0...18 m	0...18 m	
Connection	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 4-pin	Connector, M8x1-Male, 3-pin	
Housing material	ABS	ABS	ABS	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	
Trademark	—	—	—	
Productview	Page 443	Page 443	Page 444	





		BOS00WT BOS 21M-PA-IE10-S4	**BOS00WW** BOS 21M-PA-LE10-S4		
	BOS01M2 BOS 6K-XT-LS10-S75			**BOS00WZ** BOS 21M-XT-IS11-S4	**BOS00Y0** BOS 21M-XT-LS11-S4
	6K	21M	21M	21M	21M
	12 x 41 x 21.6 mm	15 x 50 x 42.5 mm	15 x 50 x 42.5 mm	15 x 50 x 42.5 mm	15 x 50 x 42.5 mm
	—	PNP NO PNP NC	PNP NO PNP NC	—	—
	—	—	—	Test (Emitter off)	Test (Emitter off)
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Through-beam sensor (Emitter)	Through-beam sensor (receiver)	Through-beam sensor (receiver)	Through-beam sensor (Emitter)	Through-beam sensor (Emitter)
	—	—	—	—	—
	Divergent	—	—	—	—
	Laser red light	Infrared	Laser red light	Infrared	Laser red light
	14 x 14 mm at 20 m	—	—	—	—
	0...18 m	0...20 m	0...60 m	0...20 m	0...60 m
	Connector, M8x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	ABS	Zinc, Die casting, Powder coated Aluminum	Zinc, Die casting, Powder coated Aluminum	Zinc, Die casting, Powder coated Aluminum	Zinc, Die casting, Powder coated Aluminum
	PMMA	PMMA	PMMA	PMMA	PMMA
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	cULus, CE, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	—	—	—	—	—
	Page 444	Page 444	Page 444	Page 444	Page 444



PNP normally open, PNP normally closed			**BOS01FU** BOS 23K-PA-LE10-S4	
PNP normally open/normally closed			**BOS016L** BOS 23K-PU-LE10-S4	
PNP normally open/normally closed, IO-Link 1.1	**BOS027R** BOS 21M-PAI-RE30-S4	**BOS027P** BOS 21M-XI-RS31-S4		
Emitter				
Series	21M	21M	23K	
Dimension	15.4 x 51.1 x 42.7 mm	15.4 x 51.1 x 42.7 mm	23 x 51 x 52.4 mm	
Interface	IO-Link 1.1 Normally open (NO) Normally closed (NC)	IO-Link 1.1	PNP NO PNP NC	
Input function	—	Test (Emitter off)	Same function as button, Key disable on/off	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Through-beam sensor (receiver)	Through-beam sensor (Emitter)	Through-beam sensor (receiver)	
Special optical feature	—	—	—	
Beam characteristic	—	—	—	
Light type	Red light	LED, red light	Laser red light	
Light spot size	—	—	—	
Range	0...20 m	0...20 m	0...30 m	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Housing material	Zinc, Die casting, Powder coated Die-cast zinc	Zinc, Die casting, Powder coated Die-cast zinc	PC ABS	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, WEEE, EAC, Ecolab	CE, cULus, WEEE, EAC, Ecolab	Ecolab, CE, cULus, EAC, WEEE	
Trademark	—	—	—	
Productview	Page 444	Page 444	Page 444	

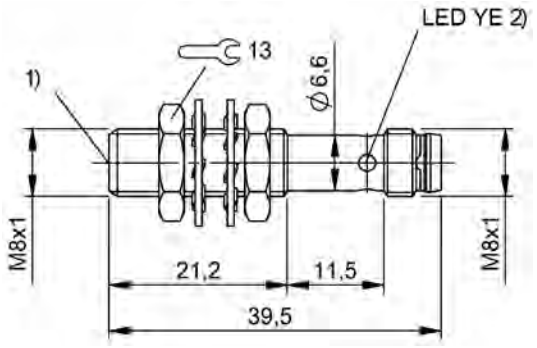




	BOS01FP BOS 23K-PA-RE10-S4				**BOS01CK** BOS 50K-PA-RE10-S4
		BOS016F BOS 23K-PU-RE10-S4			
			BOS016K BOS 23K-XT-LS11-S4	**BOS016E** BOS 23K-XT-RS11-S4	
	23K	23K	23K	23K	50K
	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	28.5 x 80.5 x 62 mm
	PNP NO PNP NC	PNP normally open/normally closed (NO/NC)	—	—	PNP NO PNP NC
	—	Same function as button, Key disable on/off	Test (Emitter off)	Test (Emitter off)	—
	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor
	Through-beam sensor (receiver)	Through-beam sensor (receiver)	Through-beam sensor (Emitter)	Through-beam sensor (Emitter)	Through-beam sensor (receiver)
	—	—	—	—	—
	—	—	Divergent	Divergent	—
	LED, red light	LED, red light	Laser red light	LED, red light	LED, red light
	—	—	30 x 30 mm at 25 m	600 x 600 mm at 20 m	—
	0...25 m	0...25 m	0...30 m	0...25 m	0...60 m
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	PC ABS	PC ABS	PC ABS	PC ABS	PC ABS
	PMMA	PMMA	PMMA	PMMA	Glass
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	Ecolab, CE, cULus, EAC, WEEE	CE, Ecolab, cULus, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	CE, Ecolab, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	—	—	—	—	—
	Page 444	Page 444	Page 444	Page 444	Page 445

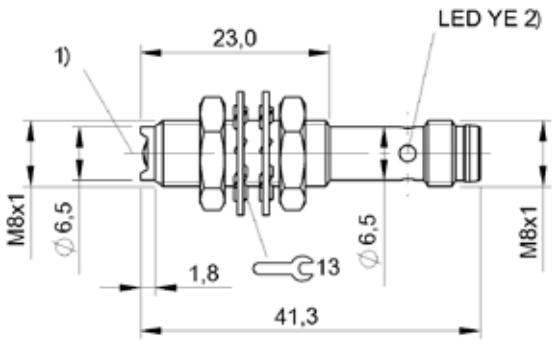


Relay normally open/normally closed		**BOS01K4** BOS 64K-AA-IE10-TG		
Emitter	**BOS01CN** BOS 50K-XT-RS10-S4		**BOS01K5** BOS 64K-AA-IS10-TG	
Series	50K	64K	64K	
Dimension	28.5 x 80.5 x 62 mm	25 x 69.7 x 100.4 mm	25 x 69.7 x 100.4 mm	
Interface	—	Relay normally open/normally closed (NO/NC)	—	
Input function	Test (Emitter off)	—	—	
Principle of operation	Photoelectric sensor	Photoelectric sensor	Photoelectric sensor	
Principle of optical operation	Through-beam sensor (Emitter)	Through-beam sensor (receiver)	Through-beam sensor (Emitter)	
Special optical feature	—	—	—	
Beam characteristic	Divergent	—	Divergent	
Light type	LED, red light	Infrared	Infrared	
Light spot size	200 x 200 mm at 10 m	—	—	
Range	0...60 m	0...50 m	0...50 m	
Connection	Connector, M12x1-Male, 4-pin	Screw terminals	Screw terminals	
Housing material	PC ABS	PBT, GF30	PBT, GF30	
Material sensing surface	Glass	PC	PC	
Operating voltage Ub	10...30 VDC	24...60 VDC/24...240 VAC	24...60 VDC/24...240 VAC	
Approval/Conformity	CE, cULus, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	
Trademark	—	—	—	
Productview	Page 445	Page 445	Page 445	



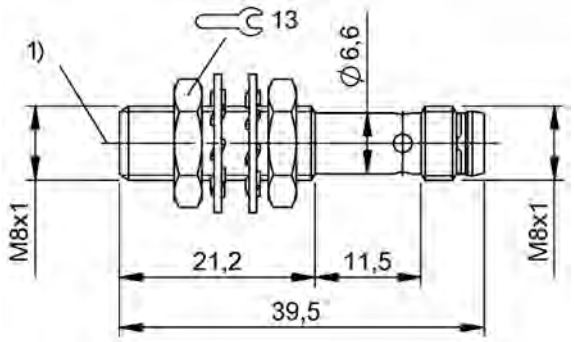
1) Optical axis, 2) Output function

BOS01U3



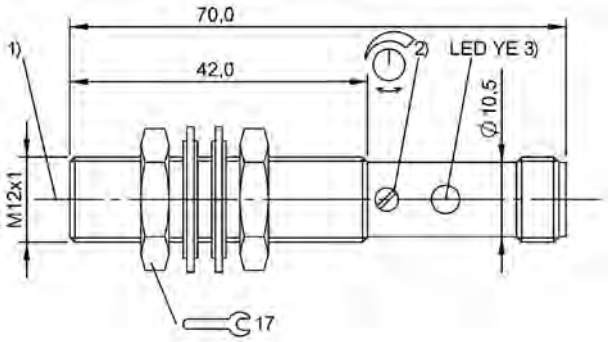
1) Optical axis, 2) Output function

BOS020A, BOS020F, BOS01Z5



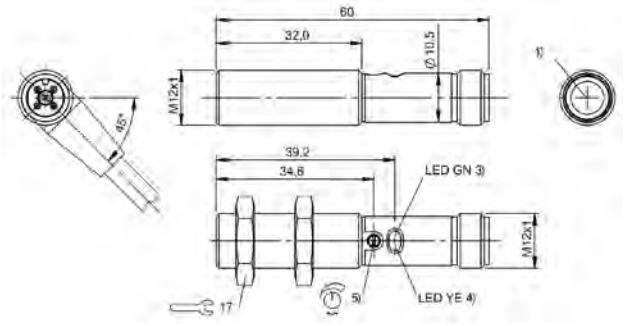
1) Optical axis

BOS01U8



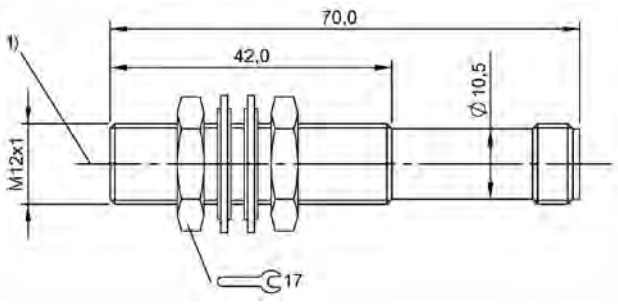
1) Optical axis, 2) Sn, 3) Output function

BOS00WF



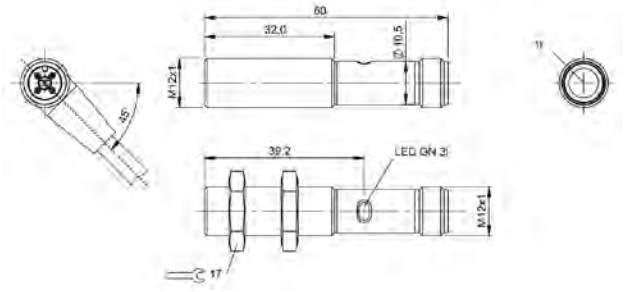
1) Optical axis receiver, 3) Operating voltage, 4) Light reception/limit area, 5) Sn

BOS01TY



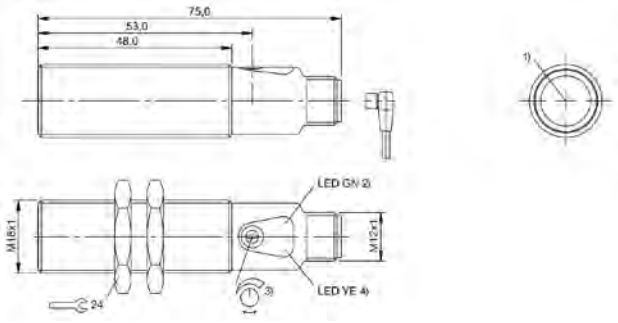
1) Optical axis

BOS00WH, BOS00WJ, BOS00WL, BOS00WN



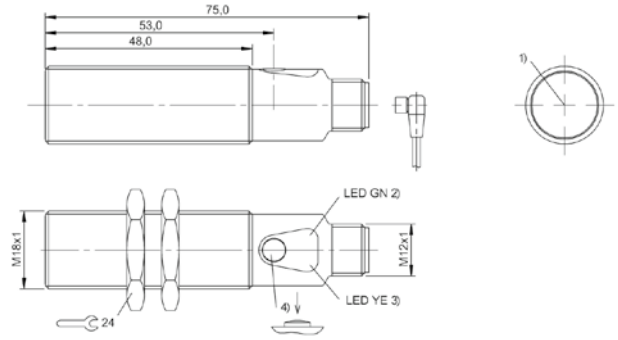
1) Optical axis emitter, 3) Operating voltage

BOS01TW



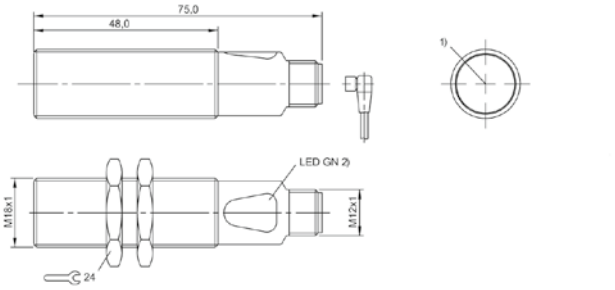
1) Optical axis, 2) Operating voltage/Error, 3) Sn, 4) Light reception/limit area

BOS01NJ



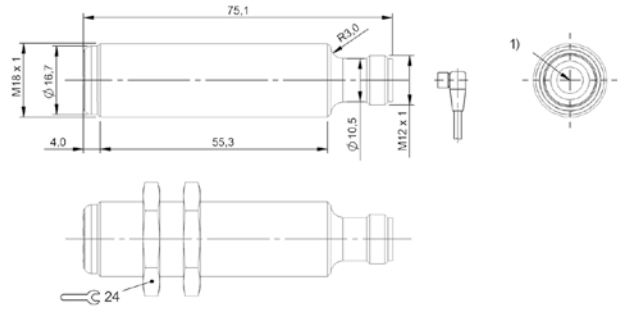
1) Optical axis, 2) Power/short-circuit, 3) Light reception/limit area, 4) Sn

BOS01UC, BOS01J7



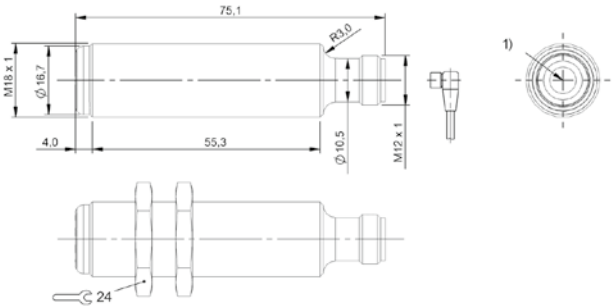
1) Optical axis, 2) Operating voltage

BOS01NH, BOS01CY, BOS01UF



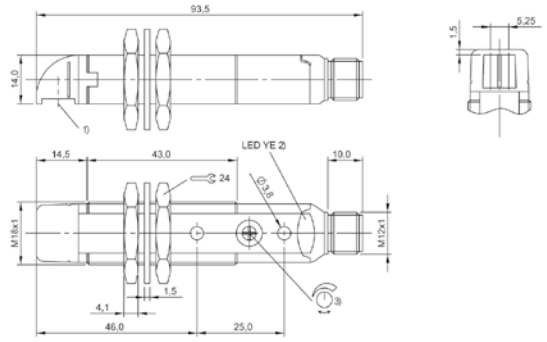
1) Optical axis receiver

BOS01KM, BOS023W, BOS023H



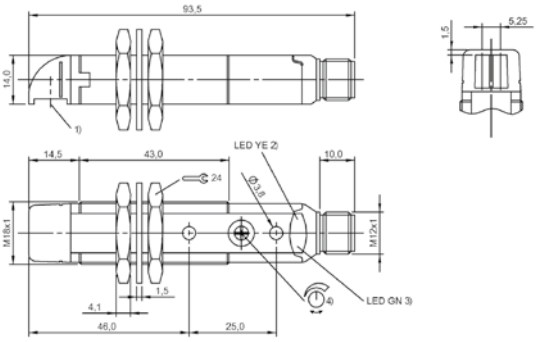
1) Optical axis emitter

BOS01KT, BOS023U, BOS023J



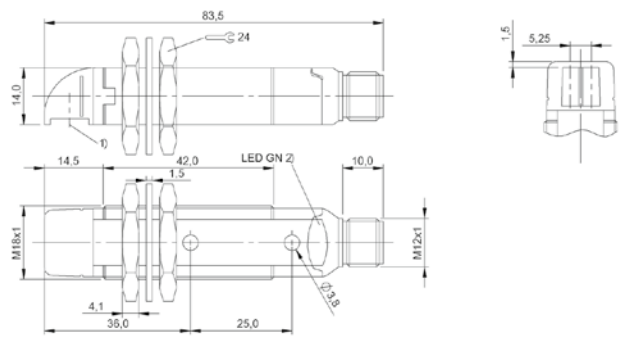
1) Output function, 1) Optical axis, 3) Sn

BOS00CT



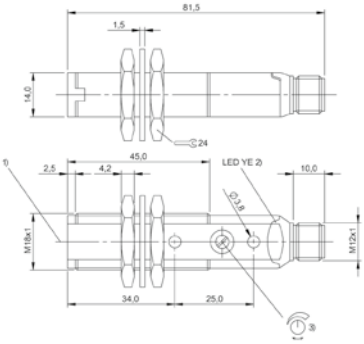
1) Optical axis, 2) Output function, 3) Stability, 4) Sn

BOS00CW



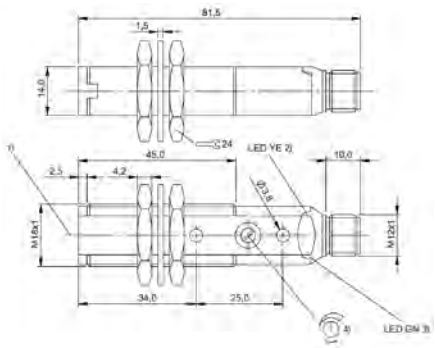
1) Optical axis, 2) Operating voltage

BOS00EW, BOS00ET



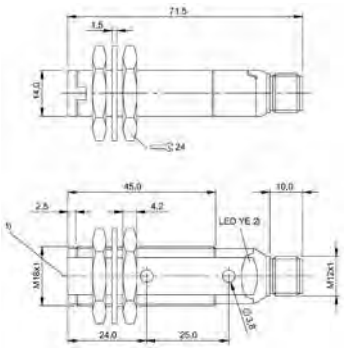
1) Optical axis, 2) Output function, 3) Sn

BOS00CH



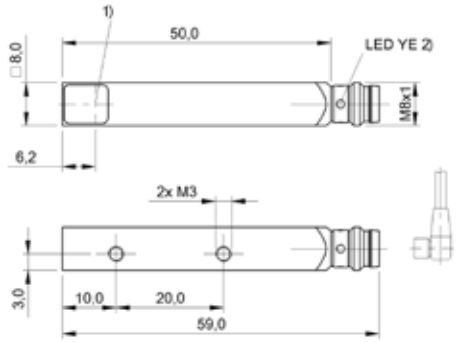
1) Optical axis, 2) Output function, 3) Stability, 4) Sn

BOS00CK



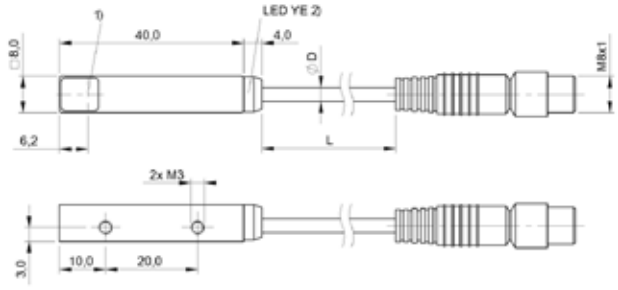
1) Optical axis, 2) Operating voltage

BOS00EP, BOS00EM



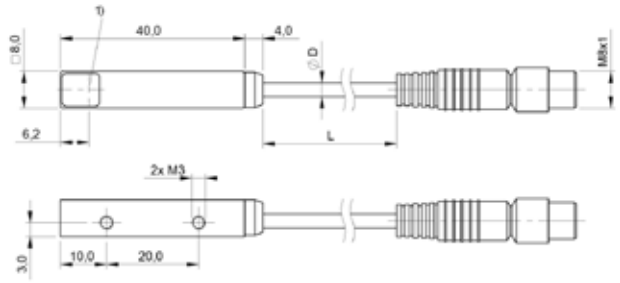
1) Optical axis receiver, 2) Output function

BOS01Y7, BOS01Y4



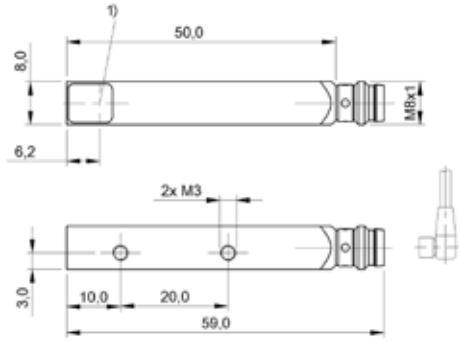
1) Optical axis receiver, 2) Output function

BOS01Y6



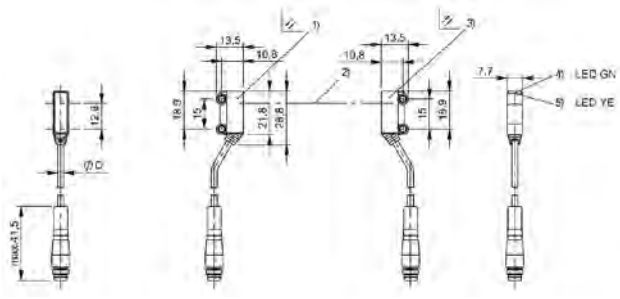
1) Optical axis emitter

BOS01YM



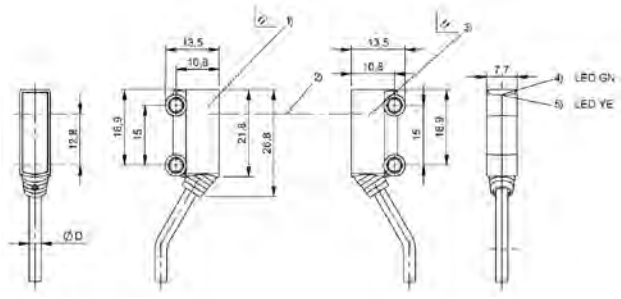
1) Optical axis emitter

BOS01YK



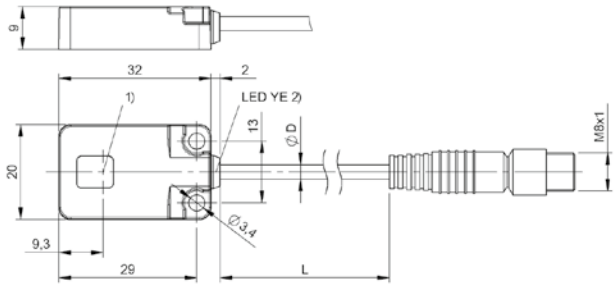
1) Emitter, 2) Optical axis, 3) Receiver, 4) Operating voltage, 5) Output function

BOS0214



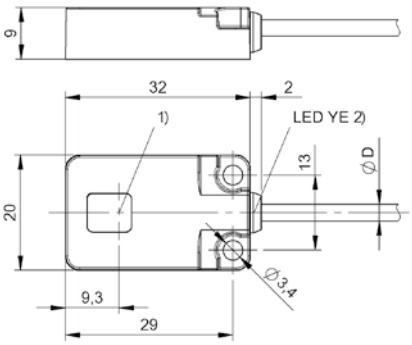
1) Emitter, 2) Optical axis, 3) Receiver, 4) Operating voltage, 5) Output function

BOS0211



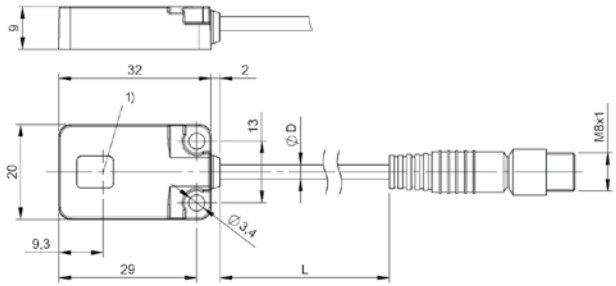
1) Optical axis receiver, 2) Output function

BOS021N



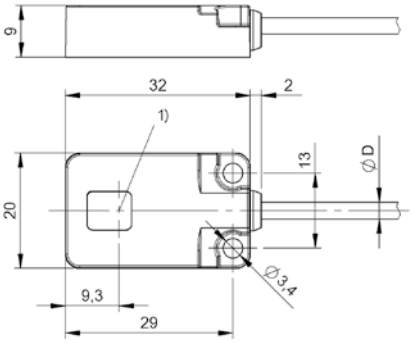
1) Optical axis receiver, 2) Output function

BOS021P



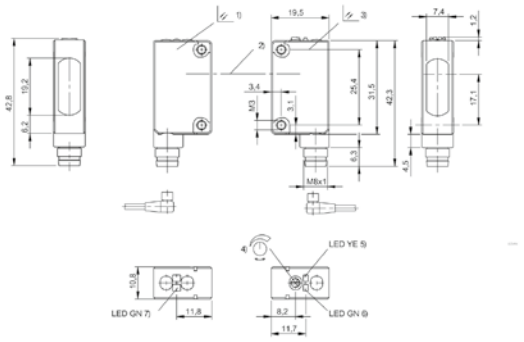
1) Optical axis emitter

BOS021R



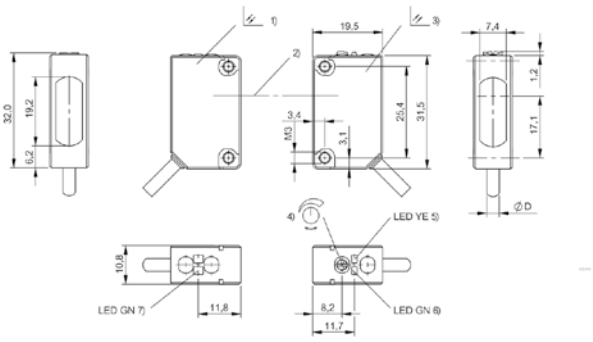
1) Optical axis emitter

BOS021T



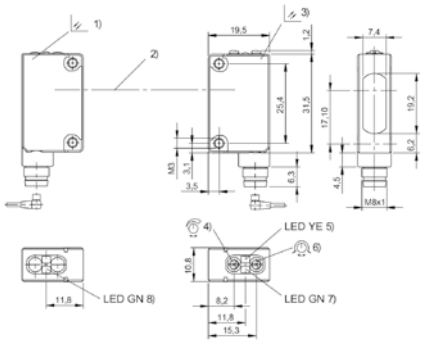
1) Emitter, 2) Optical axis, 3) Receiver, 4) Sensitivity, 5) Output function, 6) stability, 7) Operating voltage

BOS011R, BOS0126



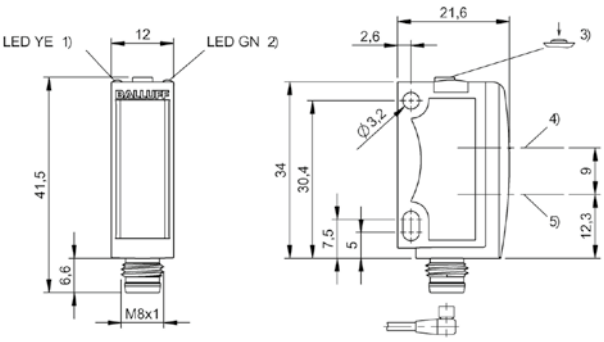
1) Emitter, 2) Optical axis, 3) Receiver, 4) Sensitivity, 5) Output function, 6) stability, 7) Operating voltage

BOS0125



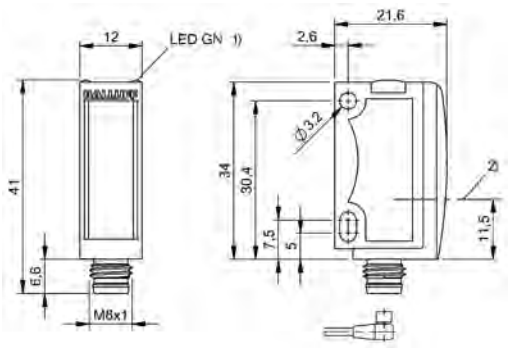
1) Emitter, 2) Optical axis, 3) Receiver, 4) Sensitivity, 5) Output function, 6) Light-on/dark-on, 7) stability, 8) Operating voltage

BOS01JP



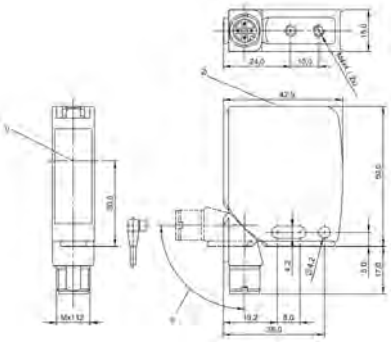
1) Output function, 2) Operating voltage, 3) Sensitivity, light/dark, 4) Optical axis

BOS01LU, BOS01LW



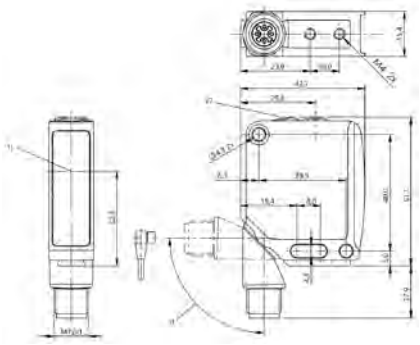
1) Operating voltage, 2) Optical axis

BOS01M1, BOS01M2



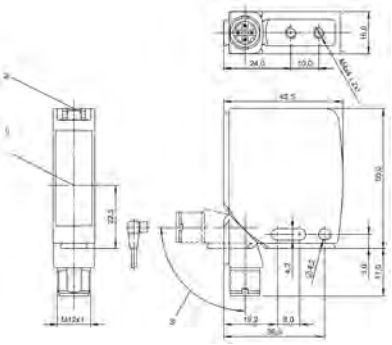
1) Optical axis, 2) Display and control panel, 3) rotatable 270°

BOS00WT, BOS00WW



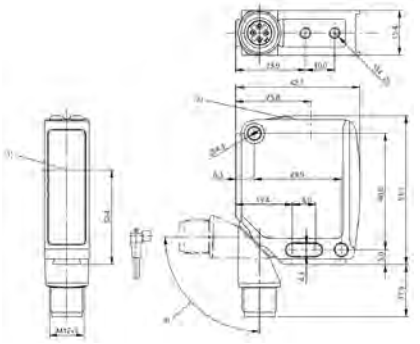
1) Optical axis receiver, 2) Display and control panel, 3) 240° rotatable

BOS027R



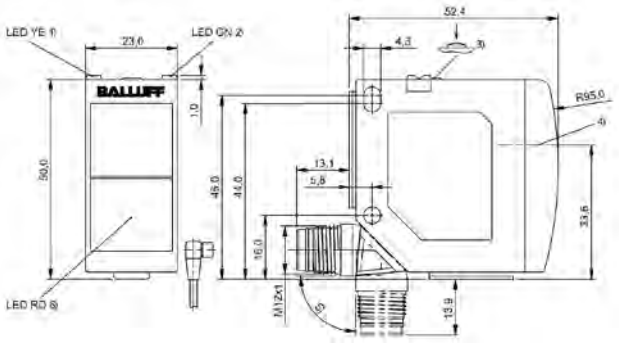
1) Optical axis, 2) Operating voltage, 3) rotatable 270°

BOS00WZ, BOS00Y0



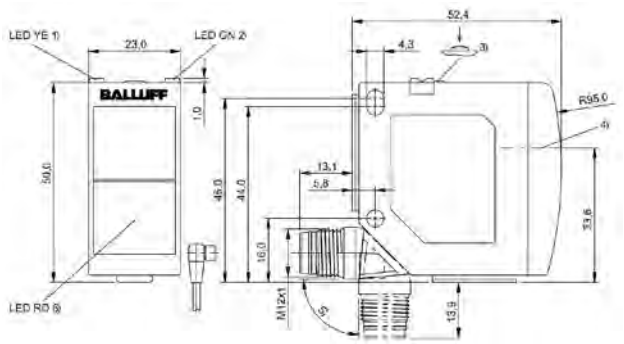
1) Optical axis emitter, 2) Display and control panel, 3) 240° rotatable

BOS027P



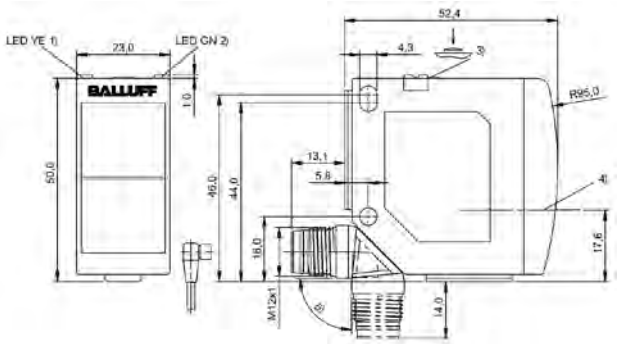
1) Output function/Error, 2) Power/setting mode, 3) Sn, light/dark, 4) Optical axis, 5) rotatable 270°, 6) Alignment good/limit area

BOS01FU, BOS016L, BOS016F



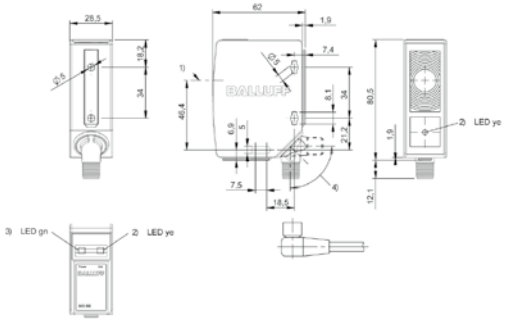
1) Output function/Error, 2) Operating voltage, 3) Sn, light/dark, 4) Optical axis, 5) rotatable 270°, 6) Alignment good/limit area

BOS01FP



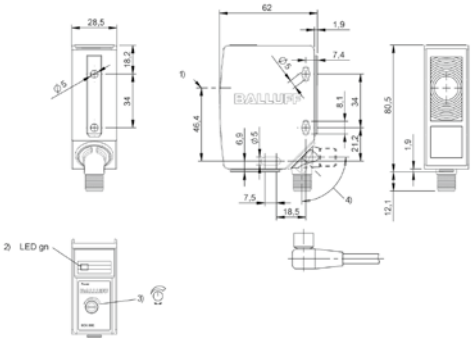
1) Alignment mode active, 2) Power/alignment mode active, 3) Alignment mode on/off, 4) Optical axis, 5) rotatable 270°

BOS016K, BOS016E



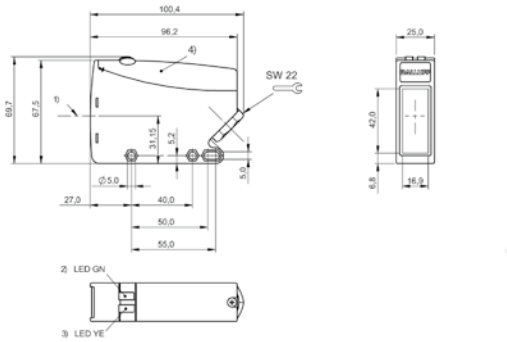
1) Optical axis receiver, 2) Light reception, 3) Operating voltage, 4) rotatable 270°

BOS01CK



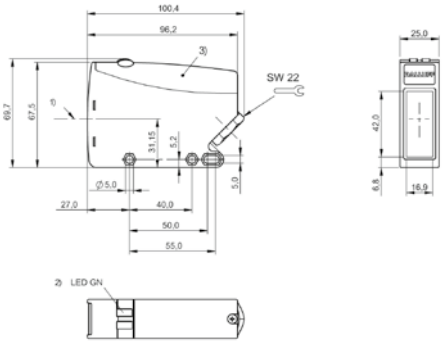
1) Optical axis emitter, 2) Operating voltage, 3) Sn, 4) rotatable 270°

BOS01CN



1) Optical axis, 2) Stability, 3) Output function, 4) Removable cover

BOS01K4



1) Optical axis, 2) Operating voltage, 3) Removable cover

BOS01K5



PNP normally open/normally closed			**BGL0021** BGL 5A-007-S49	
PNP normally open/normally closed, NPN normally open/normally closed	**BGL002L** BGL 21-IR	**BGL002M** BGL 21-RG		
Series	21	21	A	
Dimension	20 x 26 x 90 mm	20 x 26 x 90 mm	10 x 25 x 54 mm	
Fork opening	2 mm	2 mm	5 mm	
Principle of operation	Fork sensor	Fork sensor	Fork sensor	
Principle of optical operation	Through-beam sensor	Through-beam sensor	Through-beam sensor	
Special optical feature	—	—	—	
Beam characteristic	Divergent	Divergent	Divergent	
Light type	Infrared	green light/red light	Infrared	
Light spot size	0.5 x 4 mm Light exit	0.5 x 4 mm Light exit	Ø 2.0 mm Light exit	
Connection	Connector, M8x1 connector, 4-pin	Connector, M8x1 connector, 4-pin	Connector, M8x1 connector, 3-pin	
Housing material	Aluminum	Aluminum	Zinc, die-cast	
Material sensing surface	Glass	Glass	Glass	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE	CE	CE, cULus, EAC	
Trademark	—	—	—	
Productview	Page 462	Page 462	Page 462	





	BGL0005 BGL 10A-007-S49	BGL000Y BGL 20A-007-S49	BGL001F BGL 30A-007-S49	BGL003J BGL 30A-011-S49	BGL001T BGL 50A-007-S49
	A	A	A	A	A
	10 x 30 x 54 mm	10 x 40 x 58 mm	10 x 50 x 68 mm	10 x 50 x 68 mm	10 x 70 x 88 mm
	10 mm	20 mm	30 mm	30 mm	50 mm
	Fork sensor	Fork sensor	Fork sensor	Fork sensor	Fork sensor
	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor
	–	–	–	Water detection	–
	Divergent	Divergent	Divergent	Divergent	Divergent
	Infrared	Infrared	Infrared	Infrared	Infrared
	Ø 2.0 mm Light exit	Ø 2.0 mm Light exit	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit
	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin
	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
	Glass	Glass	Glass	Glass	Glass
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, EAC	CE, cULus, EAC
	–	–	–	–	–
	Page 463	Page 463	Page 464	Page 464	Page 464



PNP normally open/normally closed	**BGL0029** BGL 80A-007-S49	**BGL003L** BGL 80A-011-S49	**BGL000F** BGL 120A-007-S49	
Series	A	A	A	
Dimension	10 x 100 x 88 mm	10 x 100 x 88 mm	10 x 140 x 93 mm	
Fork opening	80 mm	80 mm	120 mm	
Principle of operation	Fork sensor	Fork sensor	Fork sensor	
Principle of optical operation	Through-beam sensor	Through-beam sensor	Through-beam sensor	
Special optical feature	—	Water detection	—	
Beam characteristic	Divergent	Divergent	Divergent	
Light type	Infrared	Infrared	Infrared	
Light spot size	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	
Connection	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	
Housing material	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	
Material sensing surface	Glass	Glass	Glass	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC	CE, EAC	CE, cULus, EAC	
Trademark	—	—	—	
Productview	Page 465	Page 465	Page 465	





	BGL000N BGL 180A-007-S49	BGL0014 BGL 220A-007-S49	BGL0019 BGL 30A-003-S49	BGL001M BGL 50A-003-S49	BGL0025 BGL 80A-003-S49
	A	A	A	A	A
	10 x 200 x 153 mm	10 x 240 x 153 mm	10 x 50 x 68 mm	10 x 70 x 88 mm	10 x 100 x 88 mm
	180 mm	220 mm	30 mm	50 mm	80 mm
	Fork sensor	Fork sensor	Fork sensor	Fork sensor	Fork sensor
	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor
	–	–	–	–	–
	Divergent	Divergent	Collimated	Collimated	Collimated
	Infrared	Infrared	Laser red light	Laser red light	Laser red light
	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	Ø 0.3 mm Light exit	Ø 0.3 mm Light exit	Ø 0.3 mm Light exit
	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin
	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
	Glass	Glass	Glass	Glass	Glass
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	–	–	–	–	–
	Page 466	Page 466	Page 467	Page 467	Page 468



PNP normally open/normally closed	**BGL0009** BGL 120A-003-S49	**BGL001Z** BGL 5A-005-S49	**BGL0003** BGL 10A-005-S49	
Series	A	A	A	
Dimension	10 x 140 x 93 mm	10 x 25 x 54 mm	10 x 30 x 54 mm	
Fork opening	120 mm	5 mm	10 mm	
Principle of operation	Fork sensor	Fork sensor	Fork sensor	
Principle of optical operation	Through-beam sensor	Through-beam sensor	Through-beam sensor	
Special optical feature	—	—	—	
Beam characteristic	Collimated	Divergent	Divergent	
Light type	Laser red light	Red light	Red light	
Light spot size	Ø 0.3 mm Light exit	Ø 1.0 mm Light exit	Ø 1.0 mm Light exit	
Connection	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	
Housing material	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	
Material sensing surface	Glass	Glass	Glass	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC	cULus, CE, EAC	cULus, CE, EAC	
Trademark	—	—	—	
Productview	Page 468	Page 469	Page 469	





	BGL000U BGL 20A-005-S49	BGL001C BGL 30A-005-S49	BGL001P BGL 50A-005-S49	BGL0027 BGL 80A-005-S49	BGL000C BGL 120A-005-S49
	A	A	A	A	A
	10 x 40 x 58 mm	10 x 50 x 68 mm	10 x 70 x 88 mm	10 x 100 x 88 mm	10 x 140 x 93 mm
	20 mm	30 mm	50 mm	80 mm	120 mm
	Fork sensor	Fork sensor	Fork sensor	Fork sensor	Fork sensor
	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor
	–	–	–	–	–
	Divergent	Divergent	Divergent	Divergent	Divergent
	Red light	Red light	Red light	Red light	Red light
	Ø 1.0 mm Light exit	Ø 1.0 mm Light exit	Ø 1.5 mm Light exit	Ø 2.0 mm Light exit	Ø 2.5 mm Light exit
	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin
	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
	Glass	Glass	Glass	Glass	Glass
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	cULus, CE, EAC	cULus, CE, EAC	cULus, CE, EAC	cULus, CE, EAC	cULus, CE, EAC
	–	–	–	–	–
	Page 470	Page 467	Page 467	Page 468	Page 468



PNP normally open/normally closed	**BGL000L** BGL 180A-005-S49	**BGL0012** BGL 220A-005-S49	**BGL001W** BGL 5A-001-S49	
Series	A	A	A	
Dimension	10 x 200 x 153 mm	10 x 240 x 153 mm	10 x 25 x 54 mm	
Fork opening	180 mm	220 mm	5 mm	
Principle of operation	Fork sensor	Fork sensor	Fork sensor	
Principle of optical operation	Through-beam sensor	Through-beam sensor	Through-beam sensor	
Special optical feature	—	—	—	
Beam characteristic	Divergent	Divergent	Divergent	
Light type	Red light	Red light	LED, red light	
Light spot size	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	Ø 1.0 mm Light exit	
Connection	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	
Housing material	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	
Material sensing surface	Glass	Glass	Glass	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	cULus, CE, EAC	cULus, CE, EAC	CE, cULus, EAC	
Trademark	—	—	Global	
Productview	Page 470	Page 471	Page 469	





	BGL0001 BGL 10A-001-S49	BGL000R BGL 20A-001-S49	BGL0016 BGL 30A-001-S49	BGL001J BGL 50A-001-S49	BGL0023 BGL 80A-001-S49
	A	A	A	A	A
	10 x 30 x 54 mm	10 x 40 x 58 mm	10 x 50 x 68 mm	10 x 70 x 88 mm	10 x 100 x 88 mm
	10 mm	20 mm	30 mm	50 mm	80 mm
	Fork sensor	Fork sensor	Fork sensor	Fork sensor	Fork sensor
	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor
	–	–	–	–	–
	Divergent	Divergent	Divergent	Divergent	Divergent
	LED, red light	LED, red light	LED, red light	LED, red light	LED, red light
	Ø 1.2 mm Light exit	Ø 1.0 mm Light exit	Ø 1.2 mm Light exit	Ø 1.5 mm Light exit	Ø 2.0 mm Light exit
	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin
	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
	Glass	Glass	Glass	Glass	Glass
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	Global	Global	Global	Global	Global
	Page 469	Page 470	Page 467	Page 467	Page 468



IO-Link, normally open/normally closed				
PNP normally open/normally closed	**BGL0007** BGL 120A-001-S49	**BGL000J** BGL 180A-001-S49	**BGL0010** BGL 220A-001-S49	
PNP normally open/normally closed, analog, voltage 0...10 V				
PNP normally open/normally closed, analog, current 4...20 mA				
Series	A	A	A	
Dimension	10 x 140 x 93 mm	10 x 200 x 153 mm	10 x 25 x 54 mm	
Fork opening	120 mm	180 mm	220 mm	
Principle of operation	Fork sensor	Fork sensor	Fork sensor	
Principle of optical operation	Through-beam sensor	Through-beam sensor	Through-beam sensor	
Special optical feature	–	–	–	
Beam characteristic	Divergent	Divergent	Divergent	
Light type	LED, red light	LED, red light	LED, red light	
Light spot size	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	
Connection	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	
Housing material	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	
Material sensing surface	Glass	Glass	Glass	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	
Trademark	Global	Global	Global	
Productview	Page 468	Page 470	Page 471	





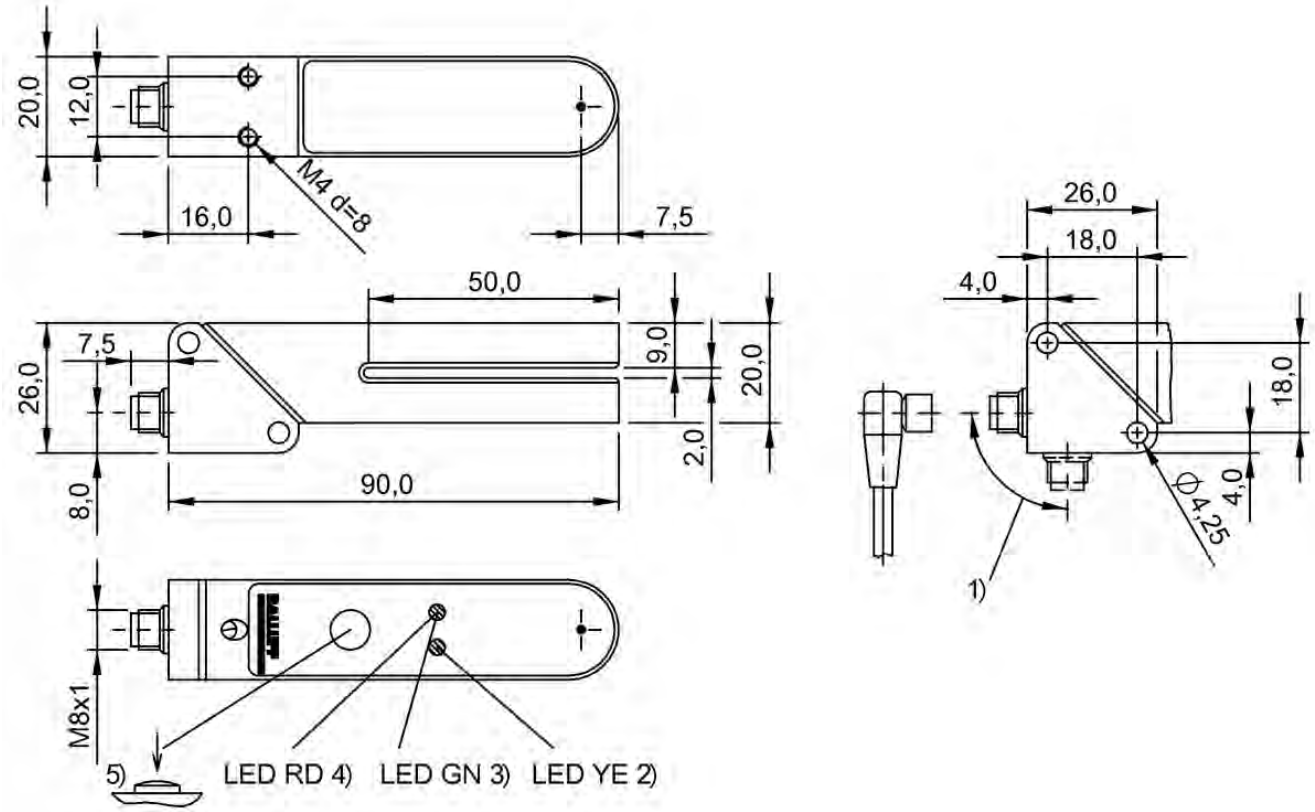
	BGL0035 BGL 30C-007-S4	BGL003F BGL 50C-007-S4			
				BGL0033 BGL 30C-005-S4	
			BGL0031 BGL 30C-003-S4		BGL0039 BGL 50C-003-S4
	C	C	C	C	C
	18 x 80 x 93.5 mm	18 x 100 x 93.5 mm	18 x 80 x 93.5 mm	18 x 80 x 93.5 mm	18 x 100 x 93.5 mm
	30 mm	50 mm	30 mm	30 mm	50 mm
	Fork sensor	Fork sensor	Fork sensor	Fork sensor	Fork sensor
	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor
	Light array	Light array	Light array	Light array	Light array
	Divergent	Divergent	Divergent	Divergent	Divergent
	LED, red light	LED, red light	LED, red light	LED, red light	LED, red light
	3 x 28 mm Light exit	3 x 28 mm Light exit	3 x 28 mm Light exit	3 x 28 mm Light exit	3 x 28 mm Light exit
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
	PMMA	PMMA	PMMA	PMMA	PMMA
	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC
	CE	CE	CE	CE	CE
	—	—	—	—	—
	Page 471	Page 472	Page 472	Page 472	Page 473



2 × PNP normally open/normally closed		**BGL002Z** BGL 30C-001-S4	**BGL0037** BGL 50C-001-S4	
PNP normally open/normally closed, analog, voltage 0...10 V	**BGL003C** BGL 50C-005-S4			
Series	C	C	C	
Dimension	18 x 100 x 93.5 mm	18 x 80 x 93.5 mm	18 x 100 x 93.5 mm	
Fork opening	50 mm	30 mm	50 mm	
Principle of operation	Fork sensor	Fork sensor	Fork sensor	
Principle of optical operation	Through-beam sensor	Through-beam sensor	Through-beam sensor	
Special optical feature	Light array	Light array	Light array	
Beam characteristic	Divergent	Divergent	Divergent	
Light type	LED, red light	LED, red light	LED, red light	
Light spot size	3 x 28 mm Light exit	3 x 28 mm Light exit	3 x 28 mm Light exit	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Housing material	Aluminum	Aluminum	Aluminum	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	18...30 VDC	18...30 VDC	18...30 VDC	
Approval/Conformity	CE	CE	CE	
Trademark	—	—	—	
Productview	Page 473	Page 473	Page 474	

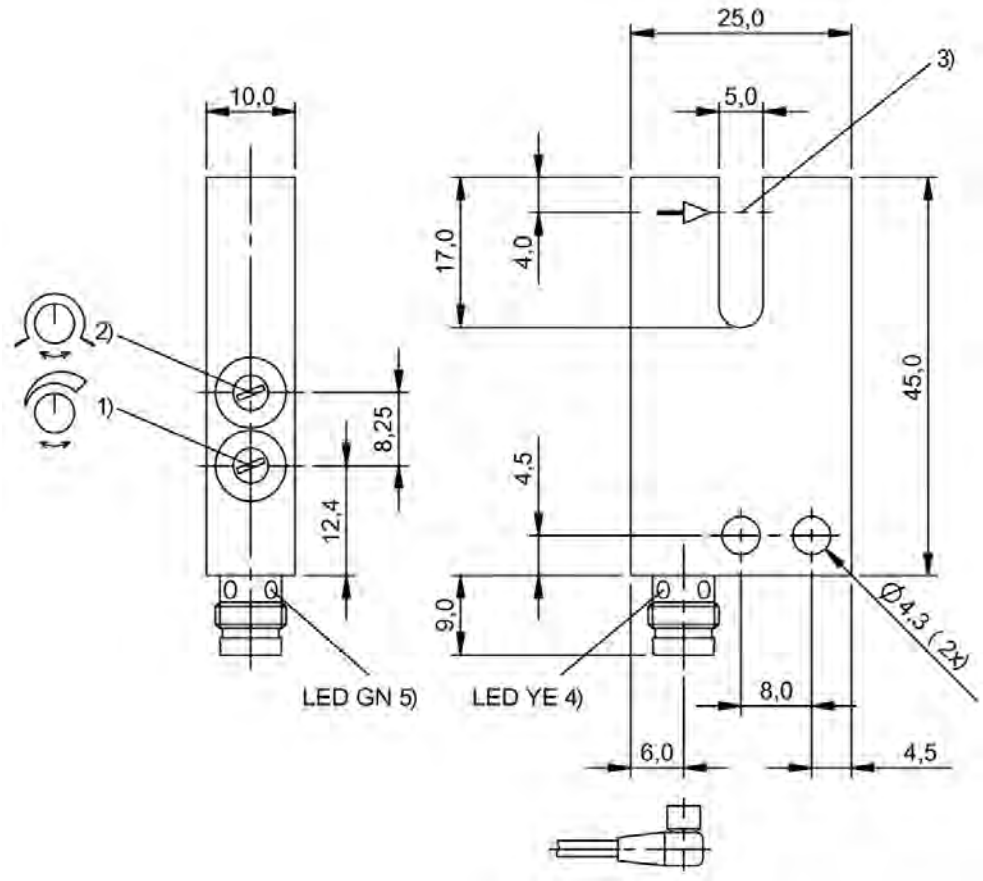



	BGL004M BGL 50F-007-00,2-S4	**BGL004P** BGL 80F-007-00,2-S4	**BGL004L** BGL 50F-001-00,2-S4	**BGL004N** BGL 80F-001-00,2-S4	
	F	F	F	F	
	12 x 85 x 86 mm	12 x 115 x 86 mm	12 x 85 x 86 mm	12 x 115 x 86 mm	
	50 mm	80 mm	50 mm	80 mm	
	Fork sensor	Fork sensor	Fork sensor	Fork sensor	
	Fork sensor	Fork sensor	Fork sensor	Fork sensor	
	–	–	–	–	
	Divergent	Divergent	Divergent	Divergent	
	Infrared	Infrared	LED, red light	LED, red light	
	Ø 2.0 mm Light exit	Ø 2.5 mm Light exit	Ø 1.25 mm Light exit	Ø 1.75 mm Light exit	
	Cable with connector, M12x1 connector, 4-pin, 0.25 m, PUR	Cable with connector, M12x1 connector, 4-pin, 0.25 m, PUR	Cable with connector, M12x1 connector, 4-pin, 0.25 m, PUR	Cable with connector, M12x1 connector, 4-pin, 0.25 m, PUR	
	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	
	PMMA	PMMA	PMMA	PMMA	
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
	CE, Ecolab	CE, Ecolab	Ecolab, CE	Ecolab, CE	
	–	–	–	–	
	Page 474	Page 475	Page 474	Page 475	



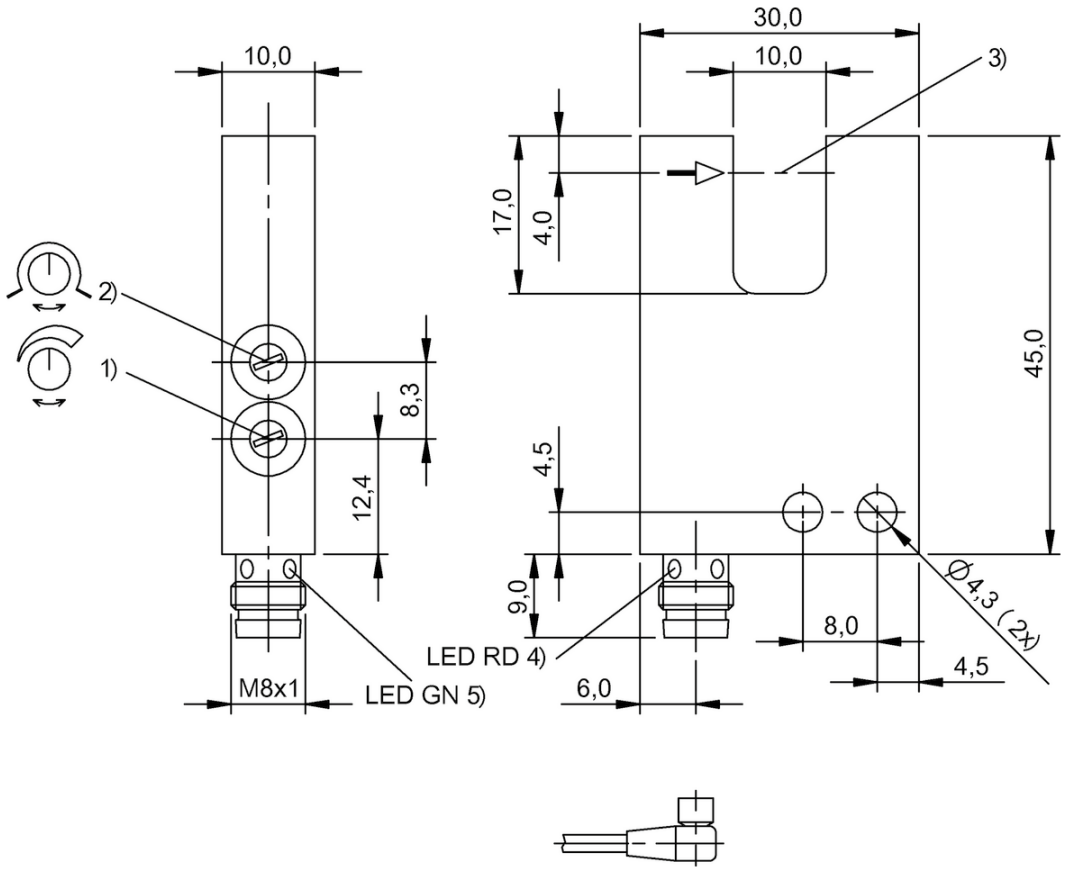
1) rotatable 180°, 2) Output function, 3) stability/error, 4) Fail/short circuit/error, 5) Sensitivity, light/dark

BGL002L, BGL002M



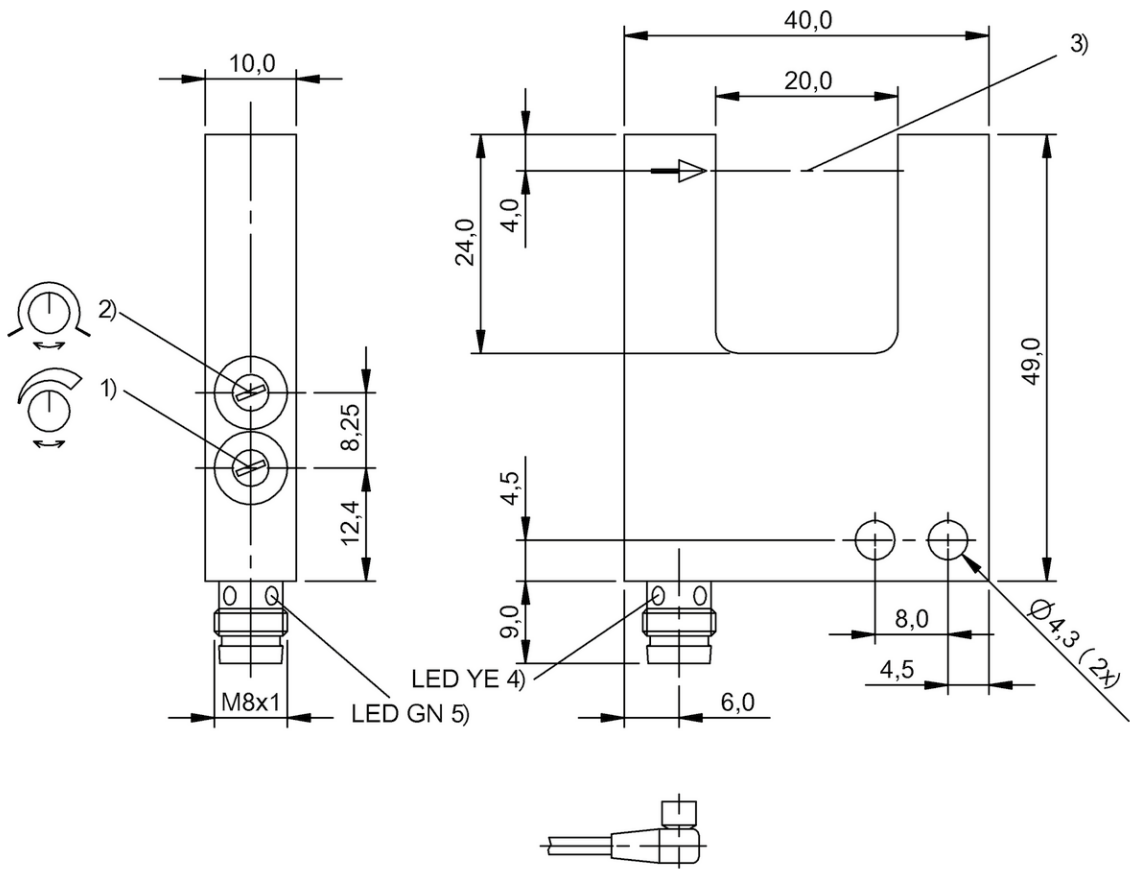
1) Sensitivity, 2) Light-on/dark-on, 3) Optical axis, 4) Output function, 5) Operating voltage

BGL0021



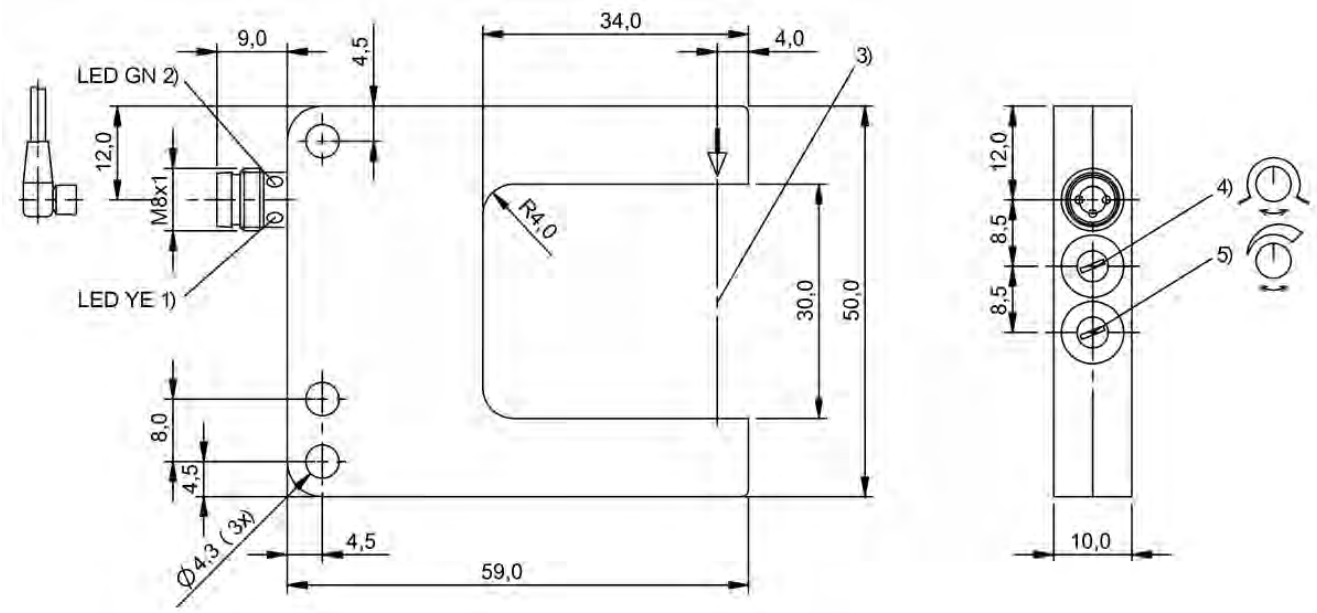
1) Sensitivity, 2) Light-on/dark-on, 3) Optical axis, 4) Output function, 5) Operating voltage

BGL0005



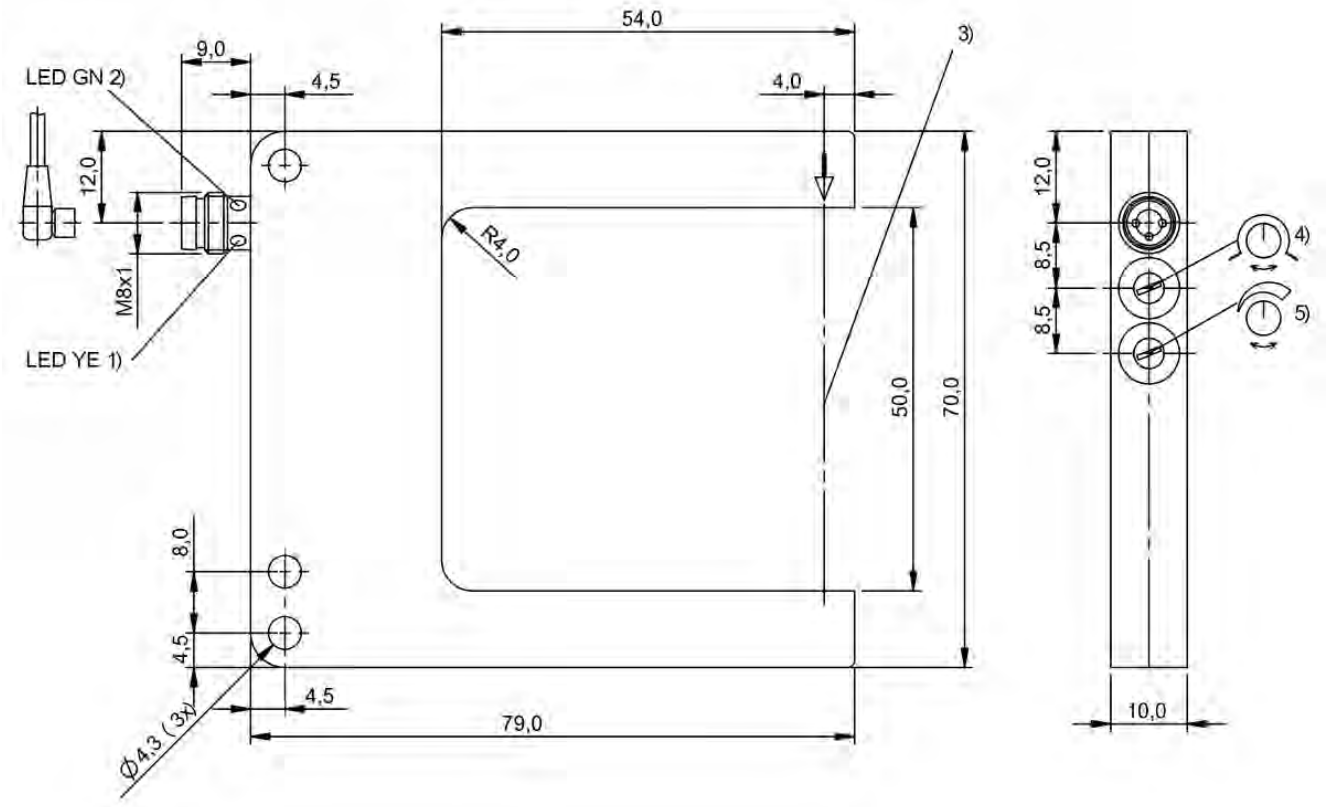
1) Sensitivity, 2) Light-on/dark-on, 3) Optical axis, 4) Output function, 5) Operating voltage

BGL000Y



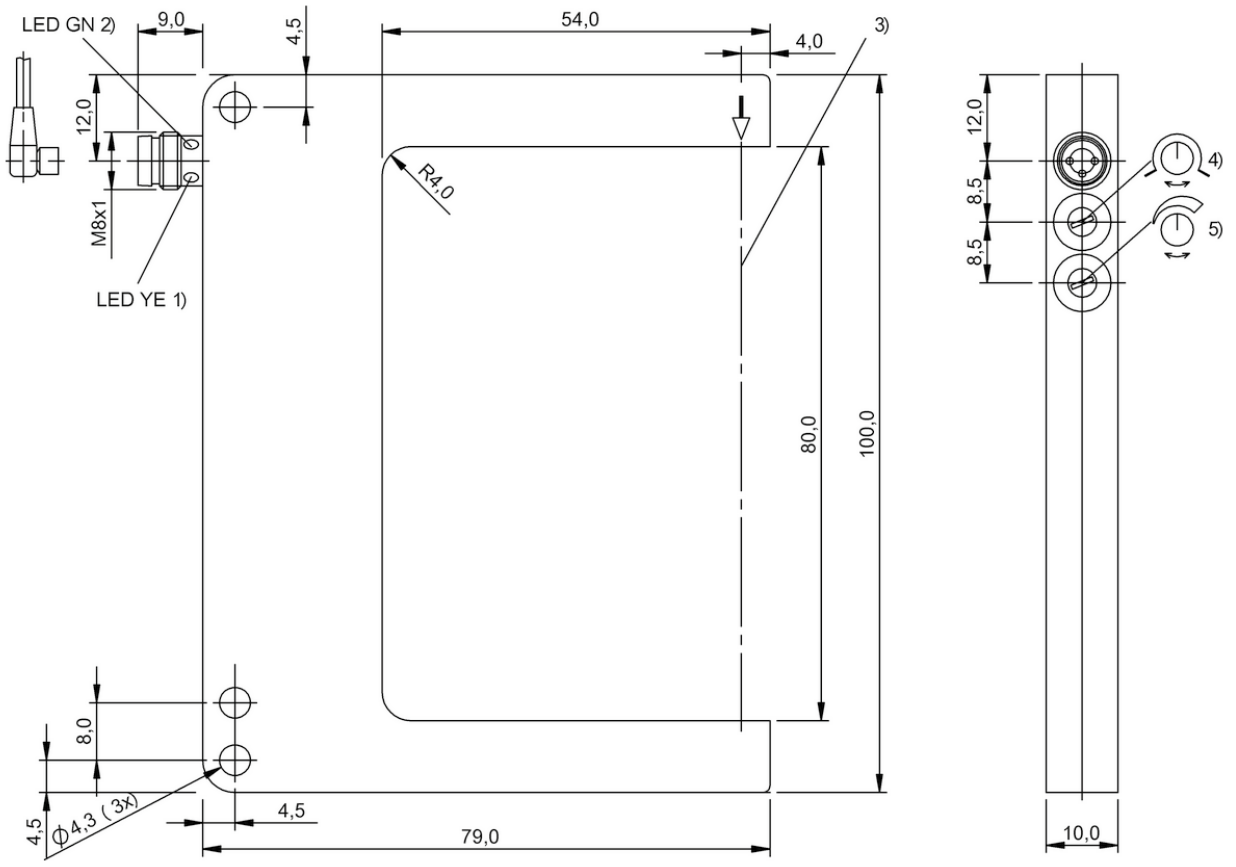
1) Output function, 2) Operating voltage, 3) Optical axis, 4) Light-on/dark-on, 5) Sensitivity

BGL001F, BGL003J



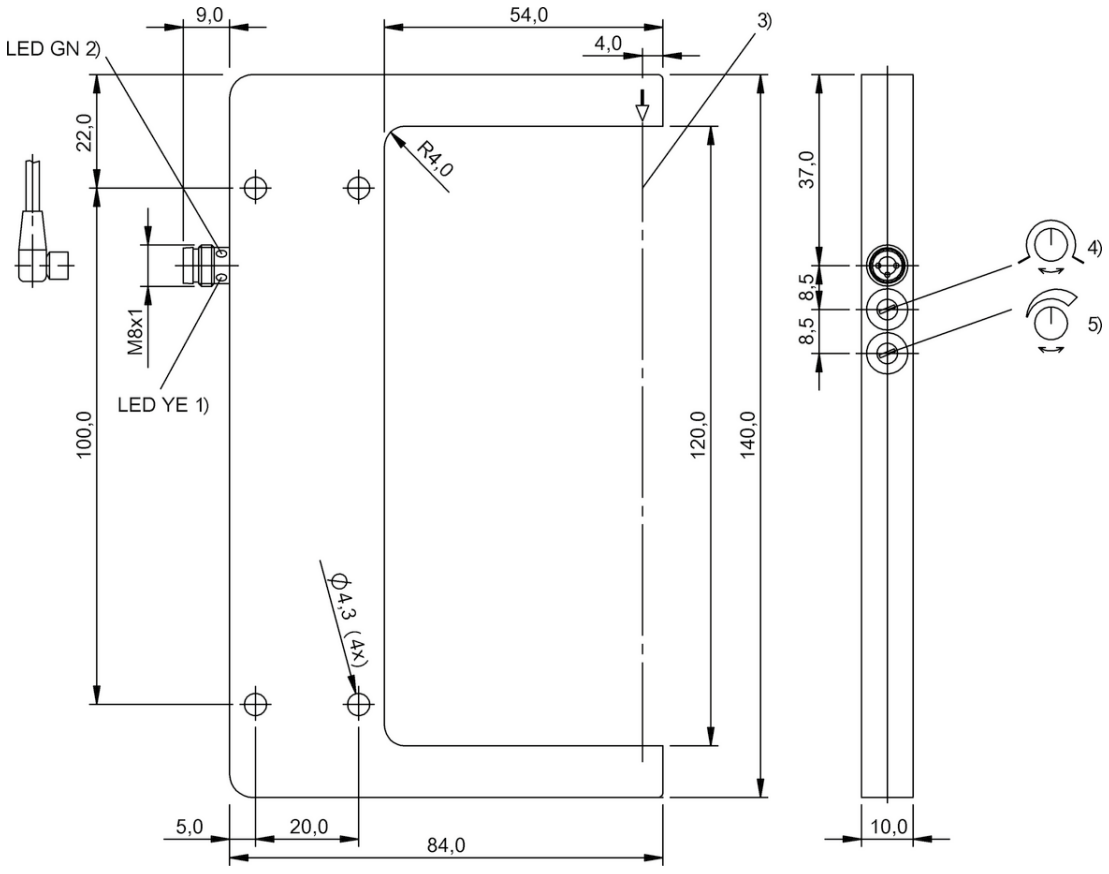
1) Output function, 2) Operating voltage, 3) Optical axis, 4) Light-on/dark-on, 5) Sensitivity

BGL001T



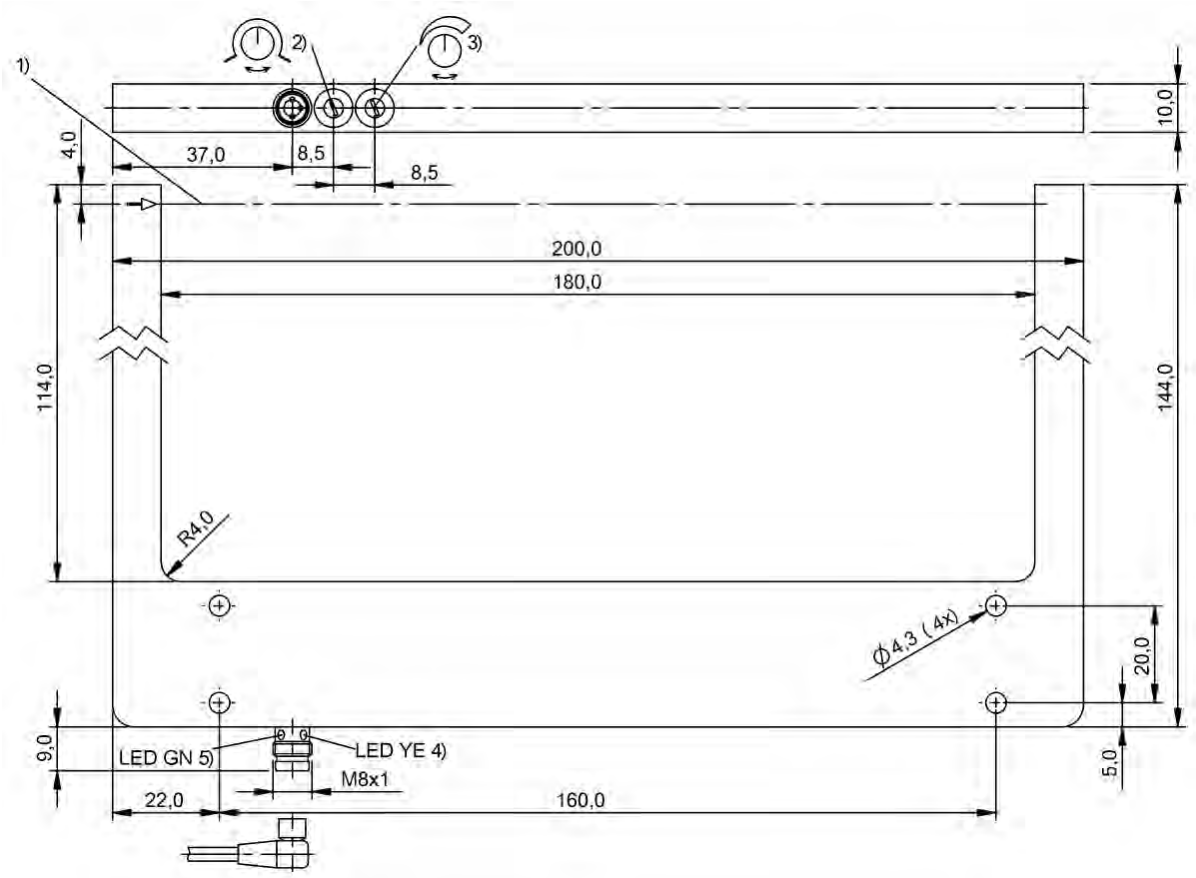
1) Output function, 2) Operating voltage, 3) Optical axis, 4) Light-on/dark-on, 5) Sensitivity

BGL0029, BGL003L



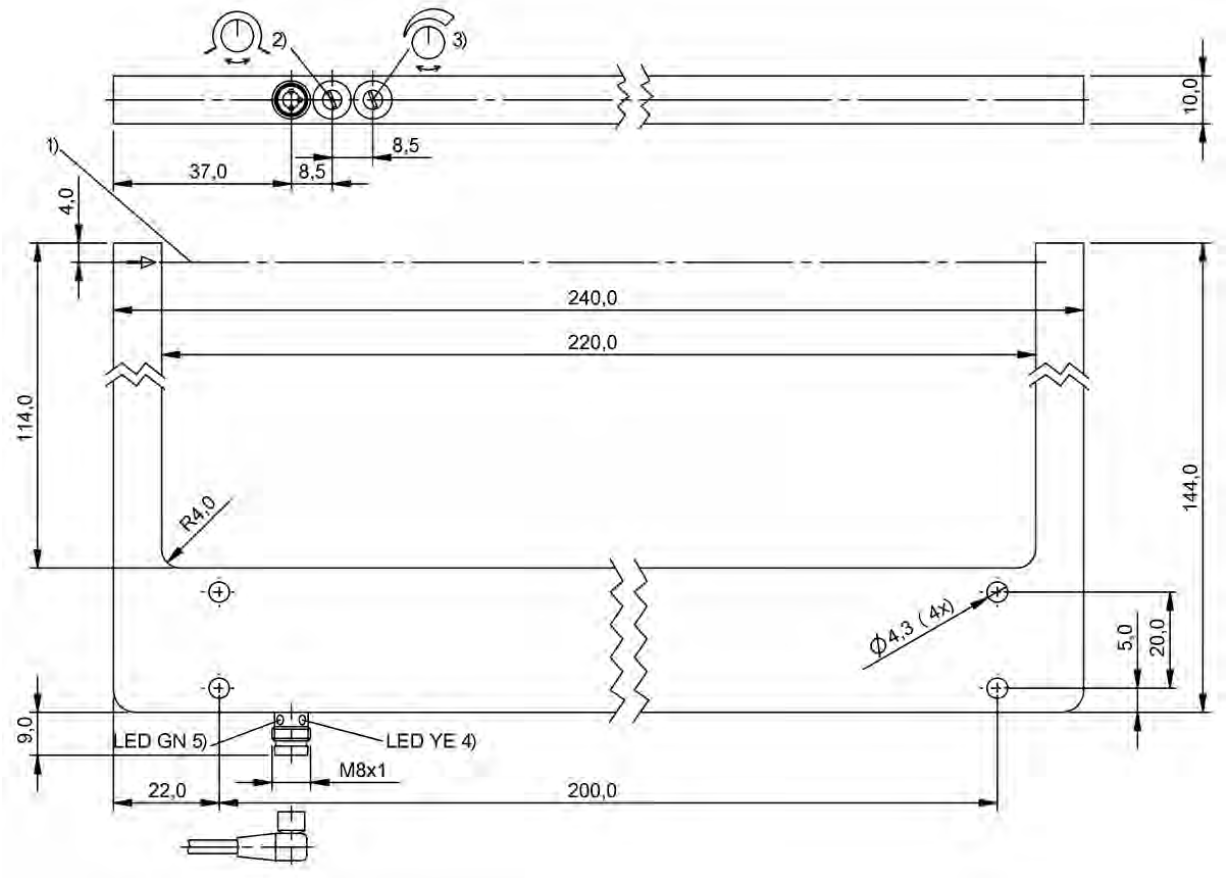
1) Output function, 2) Operating voltage, 3) Optical axis, 4) Light-on/dark-on, 5) Sensitivity

BGL000F



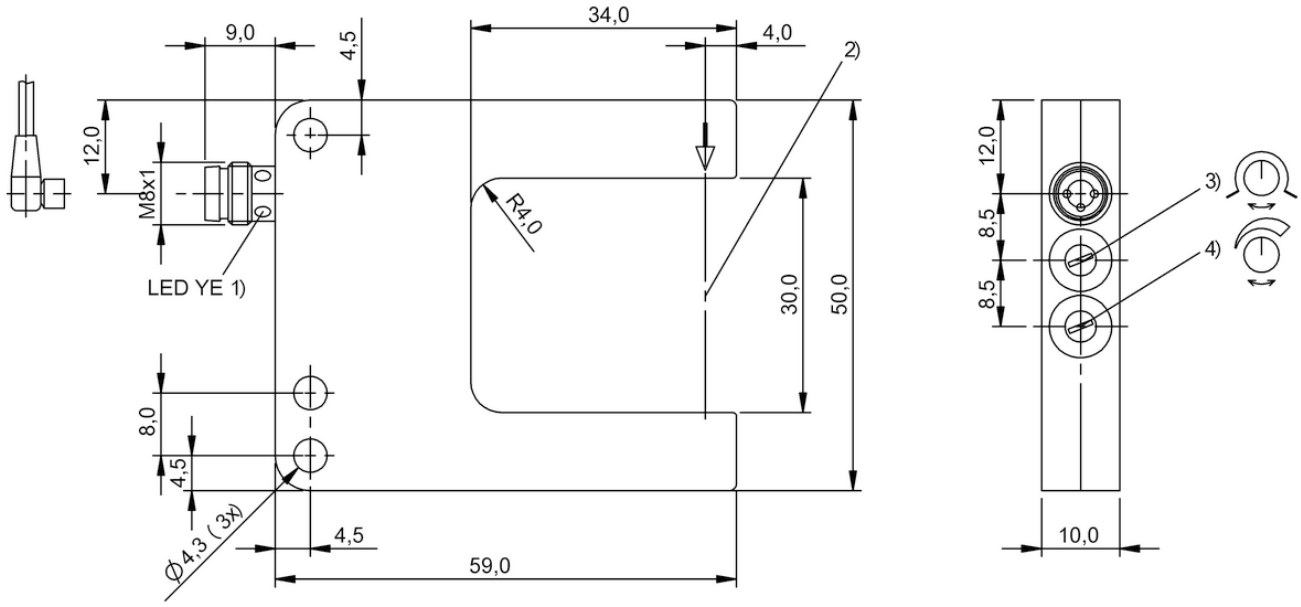
1) Optical axis, 2) Sensitivity, 3) Light-on/dark-on, 4) Output function, 5) Operating voltage

BGL000N



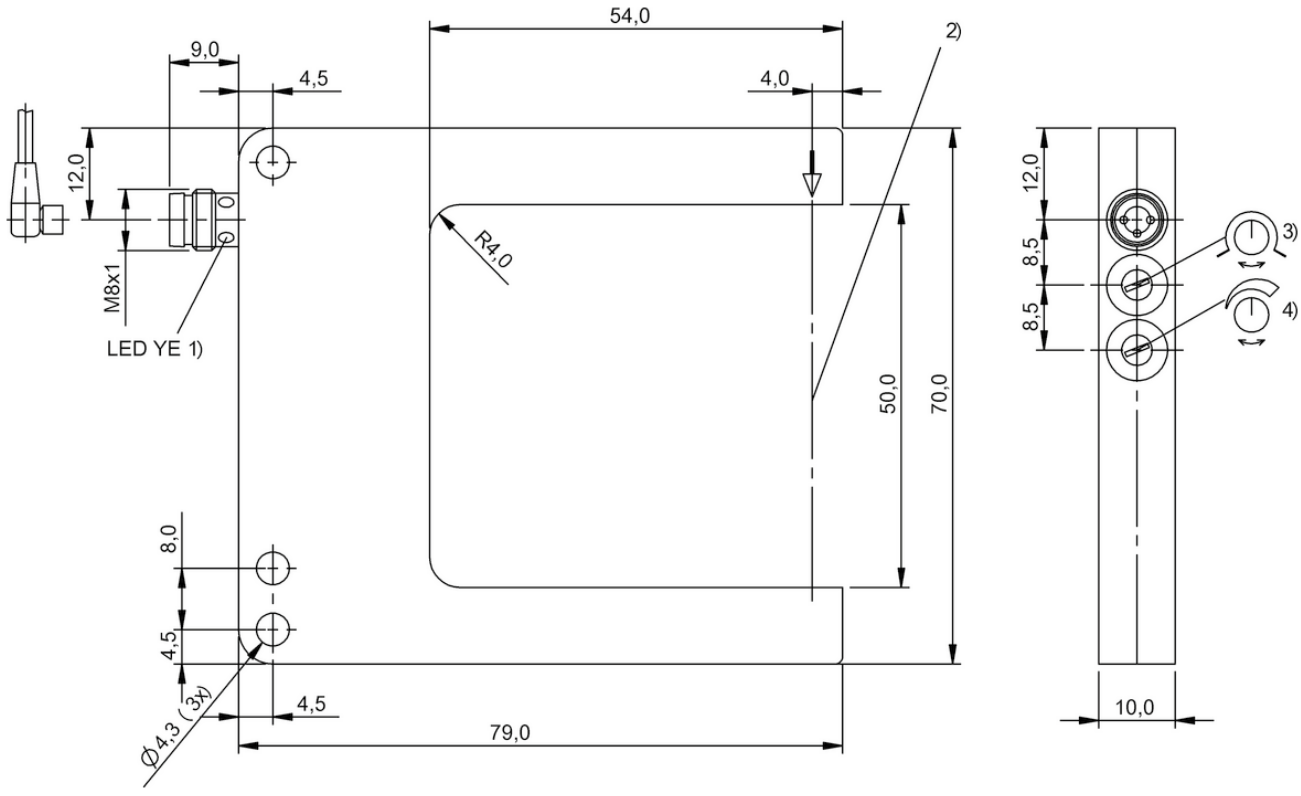
1) Optical axis, 2) Sensitivity, 3) Light-on/dark-on, 4) Output function, 5) Operating voltage

BGL0014



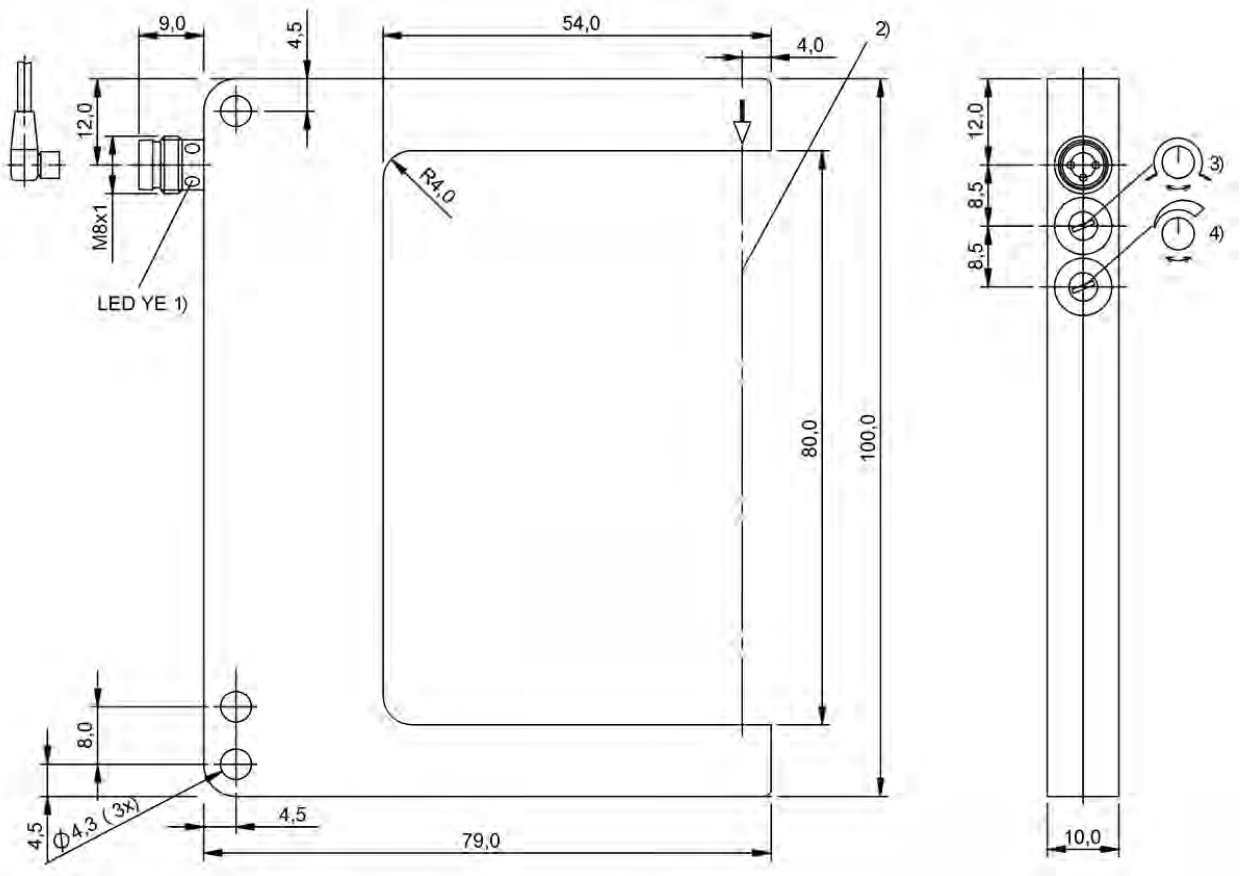
1) Output function, 2) Optical axis, 3) Light-on/dark-on, 4) Sensitivity

BGL0019, BGL001C, BGL0016



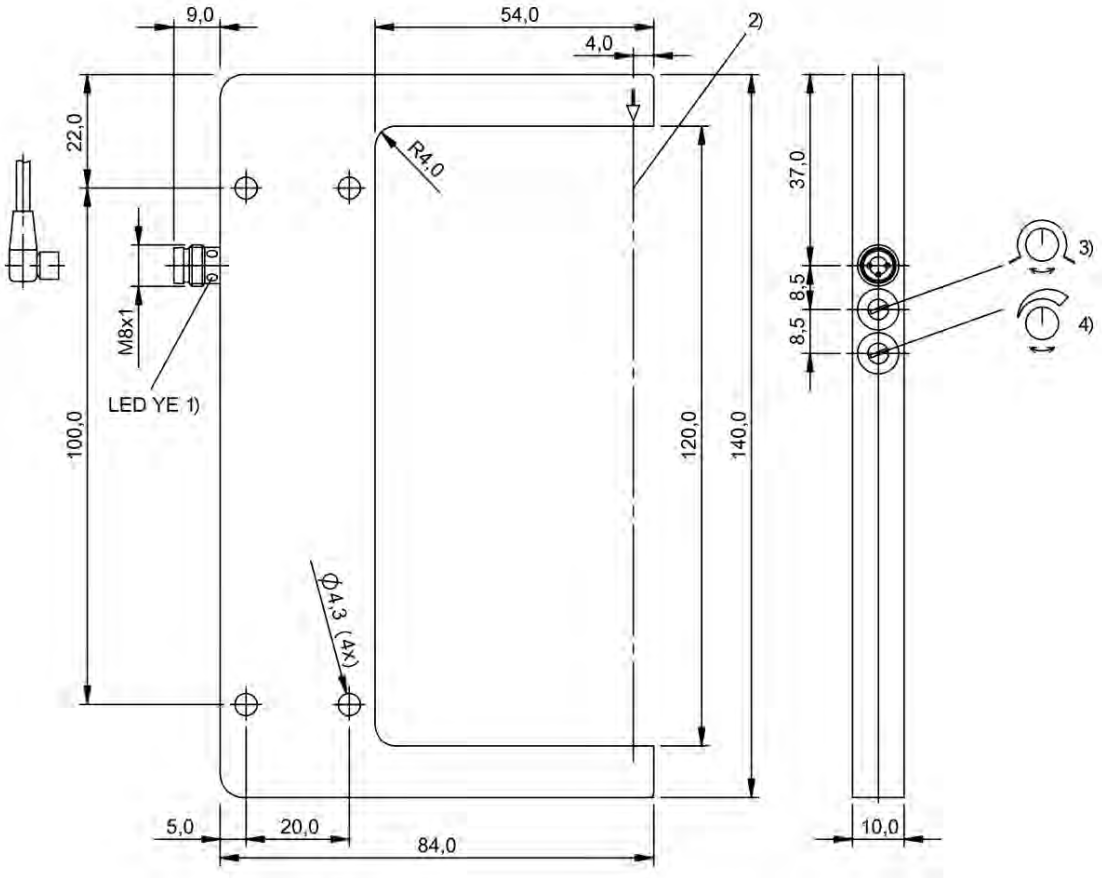
1) Output function, 2) Optical axis, 3) Light-on/dark-on, 4) Sensitivity

BGL001M, BGL001P, BGL001J



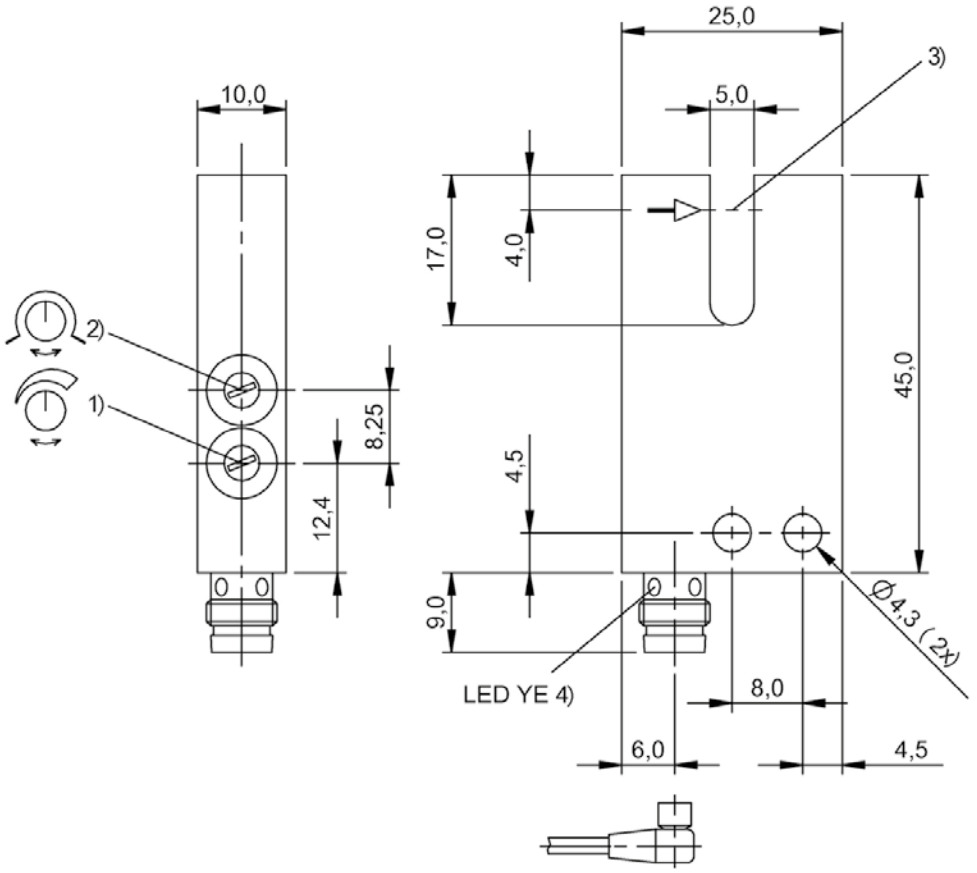
1) Output function, 2) Optical axis, 3) Light-on/dark-on, 4) Sensitivity

BGL0025, BGL0027, BGL0023



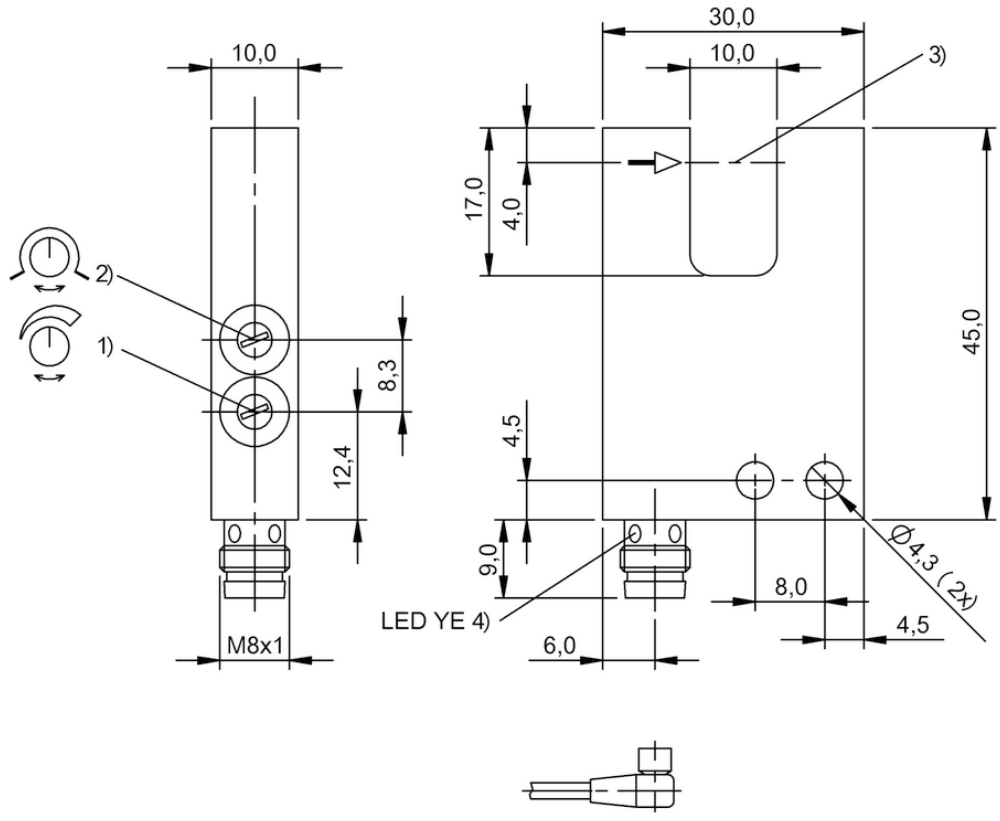
1) Output function, 2) Optical axis, 3) Light-on/dark-on, 4) Sensitivity

BGL0009, BGL000C, BGL0007



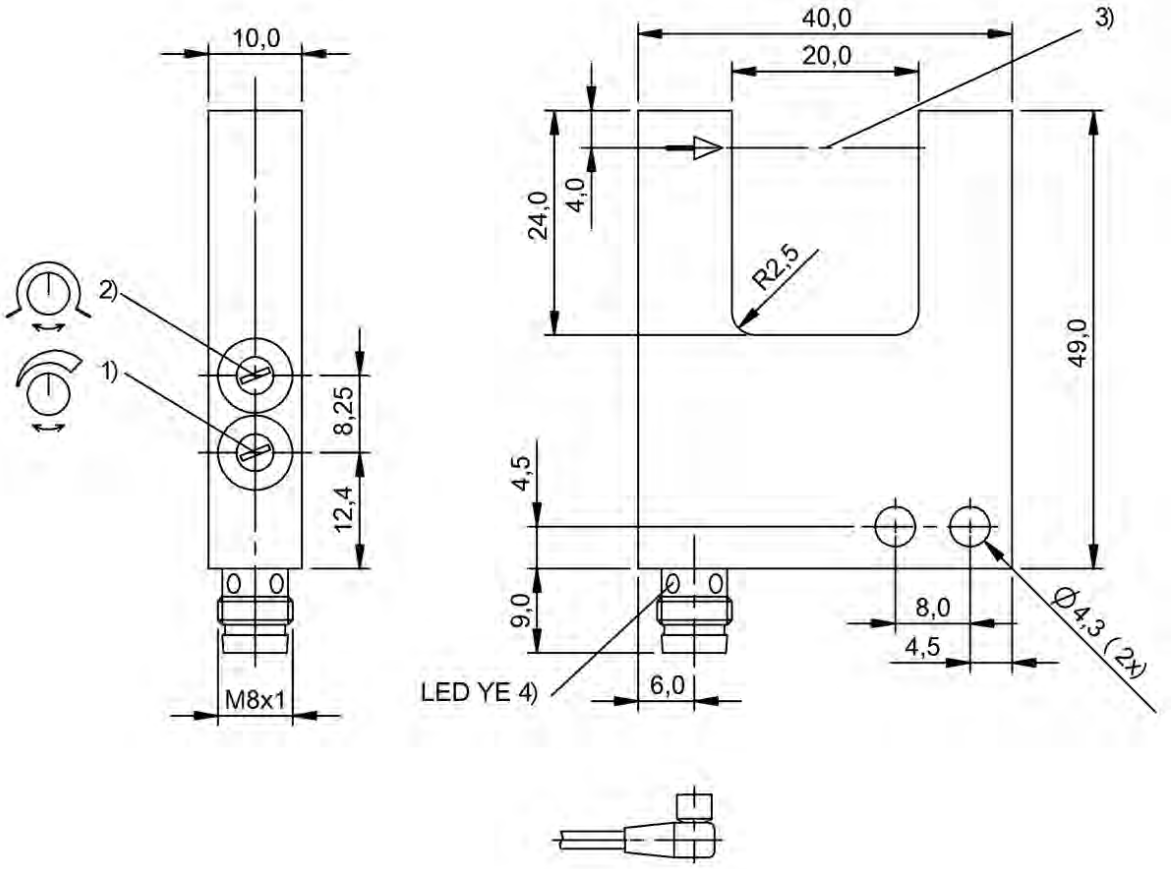
1) Sensitivity, 2) Light-on/dark-on, 3) Optical axis, 4) Output function

BGL001Z, BGL001W



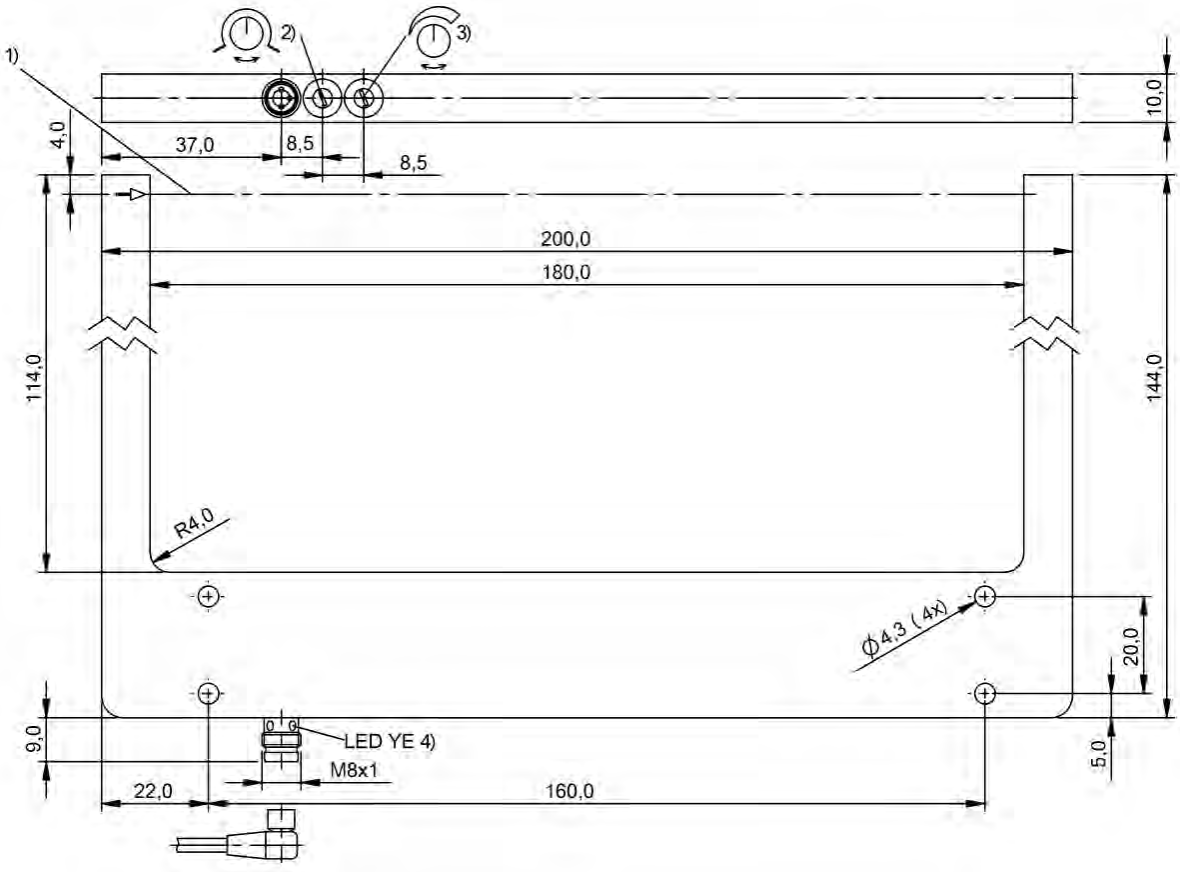
1) Sensitivity, 2) Light-on/dark-on, 3) Optical axis, 4) Output function

BGL0003, BGL0001



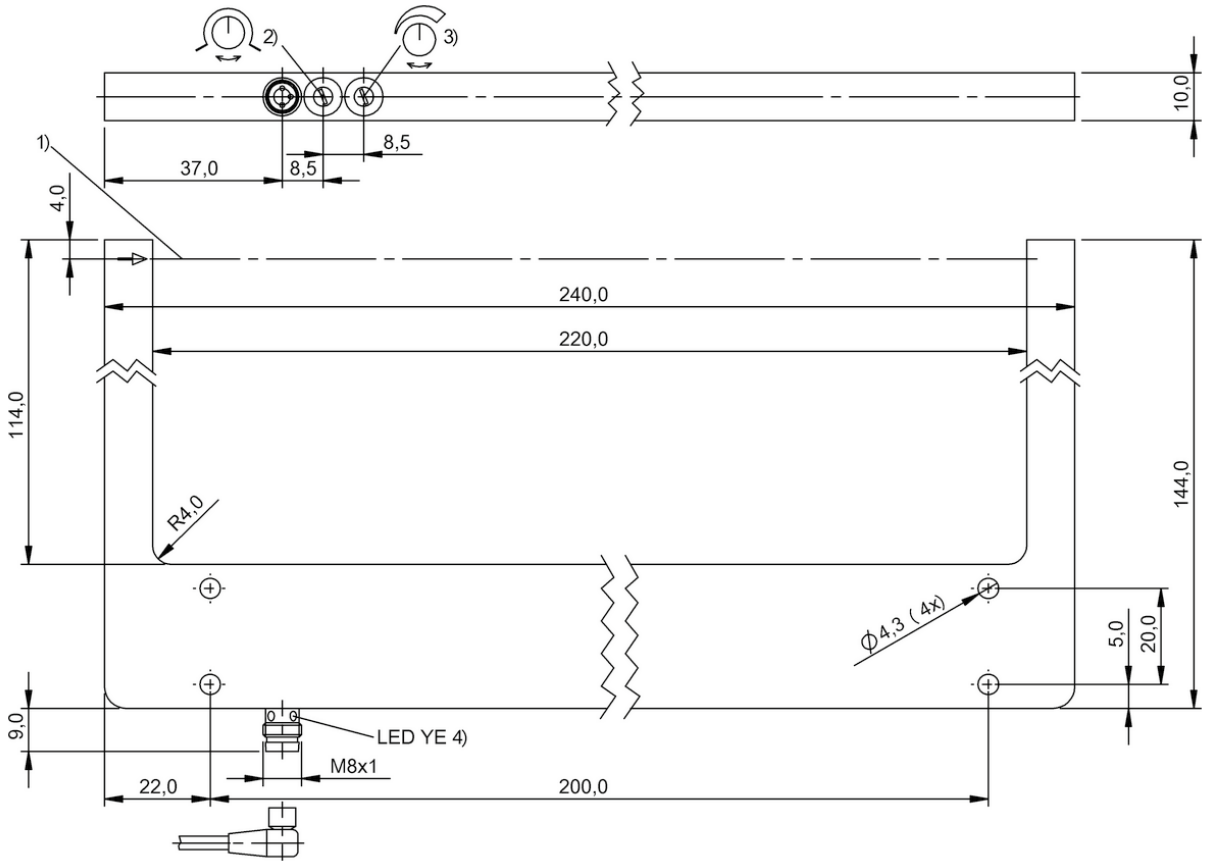
1) Sensitivity, 2) Light-on/dark-on, 3) Optical axis, 4) Output function

BGL000U, BGL000R



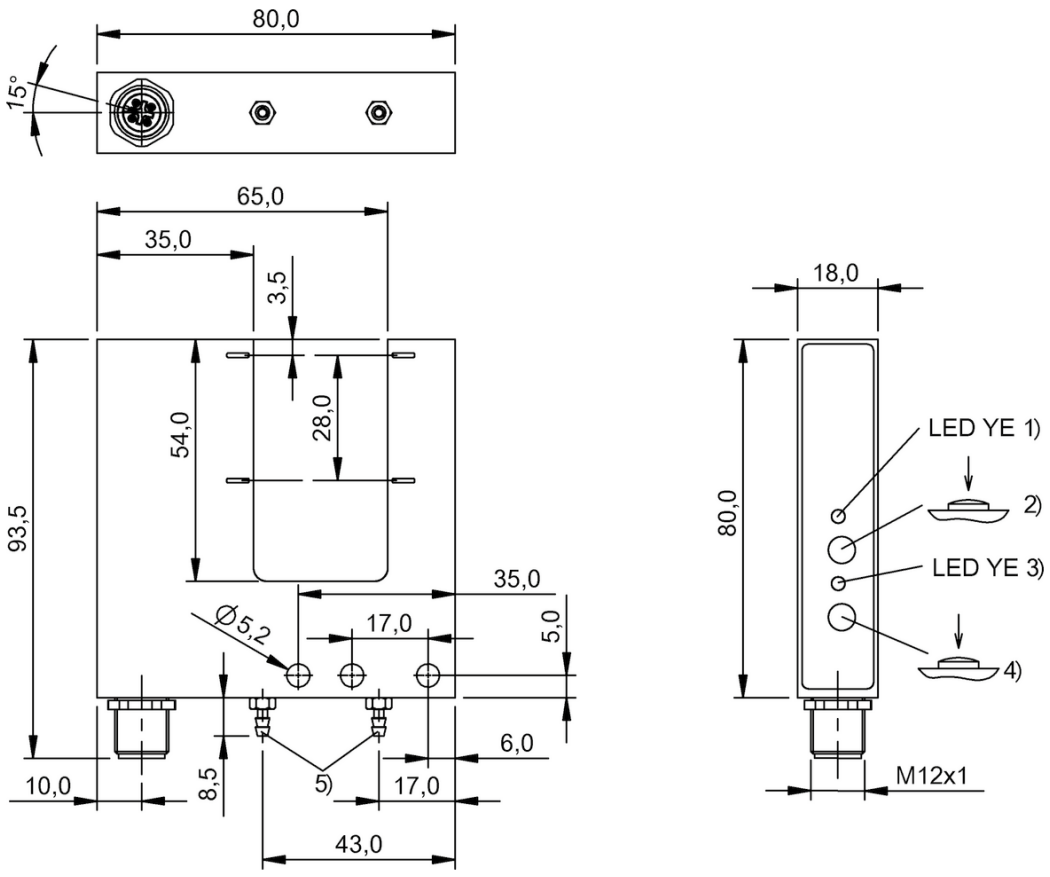
1) Optical axis, 2) Sensitivity, 3) Light-on/dark-on, 4) Output function

BGL000L, BGL000J



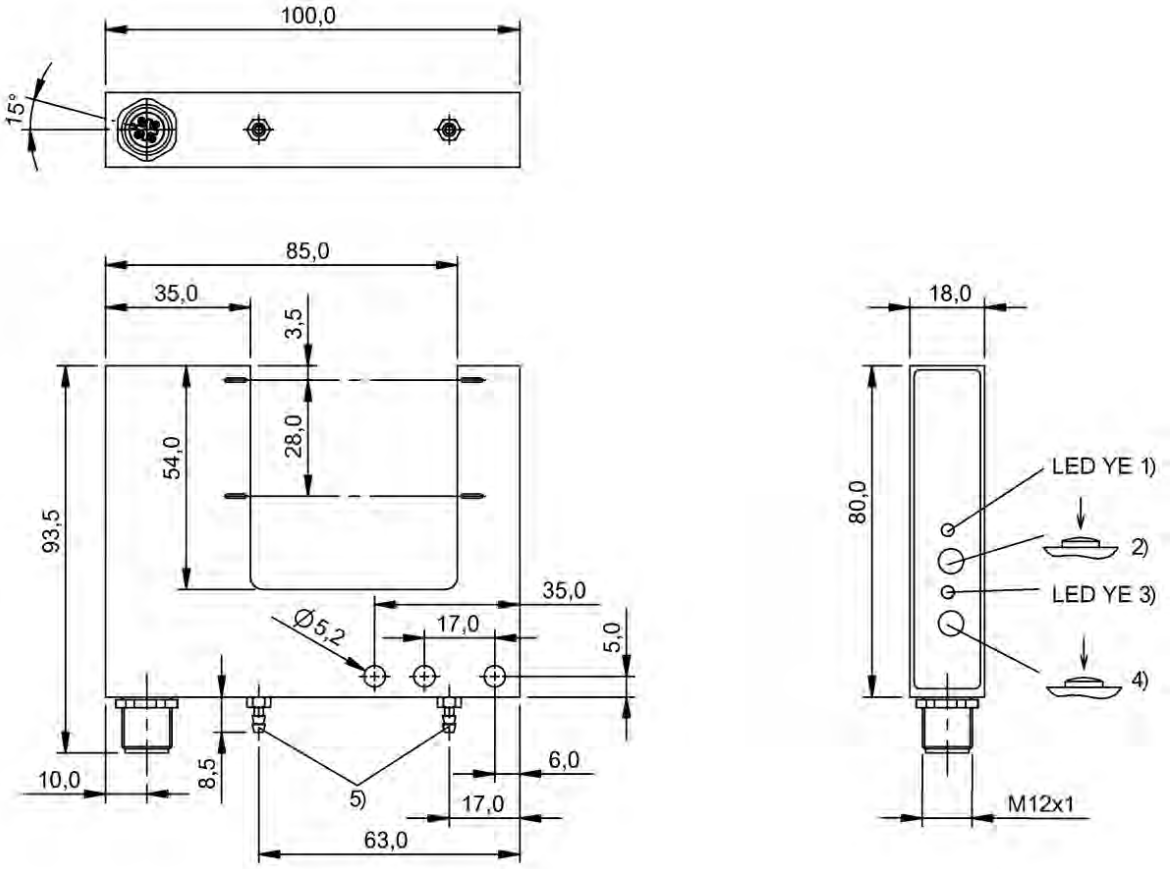
1) Optical axis, 2) Sensitivity, 3) Light-on/dark-on, 4) Output function

BGL0012, BGL0010



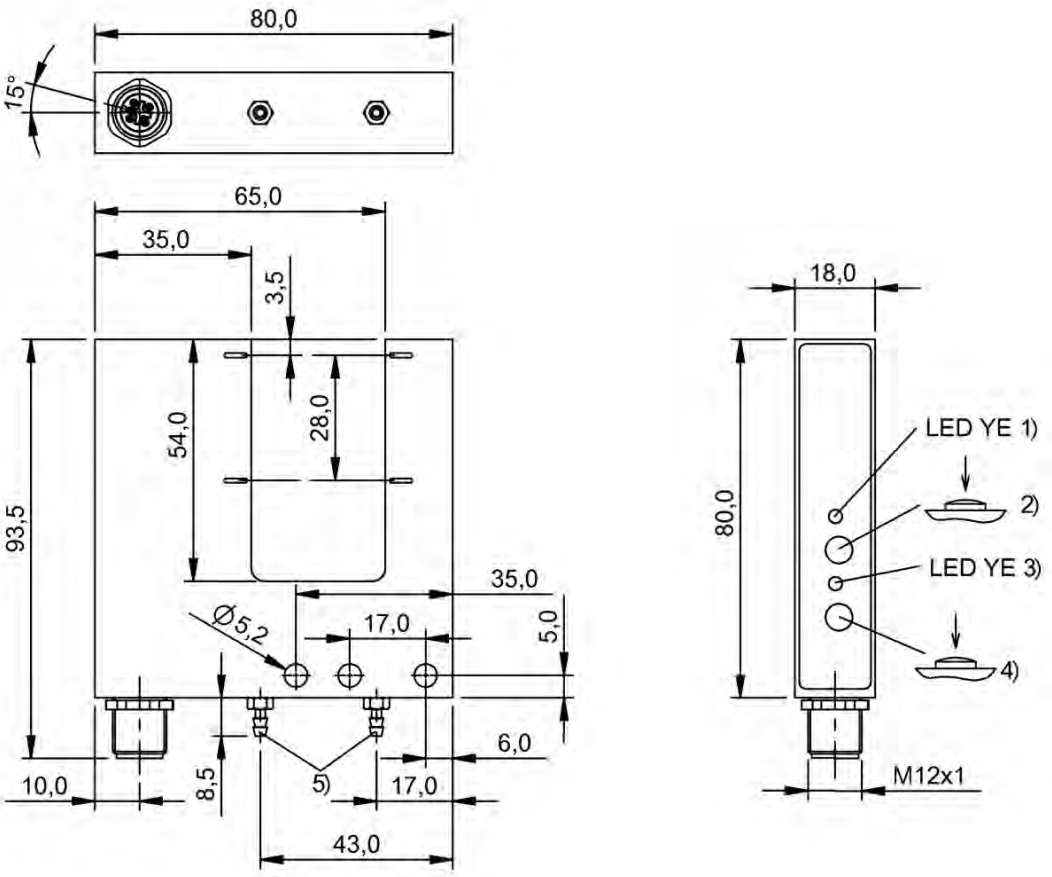
1) SP1 active / error, 2) SP1: recvr., light/dark, 3) SP2 active / error, 4) SP2: recvr., light/dark, 5) Pneumatics connection PK-3

BGL0035



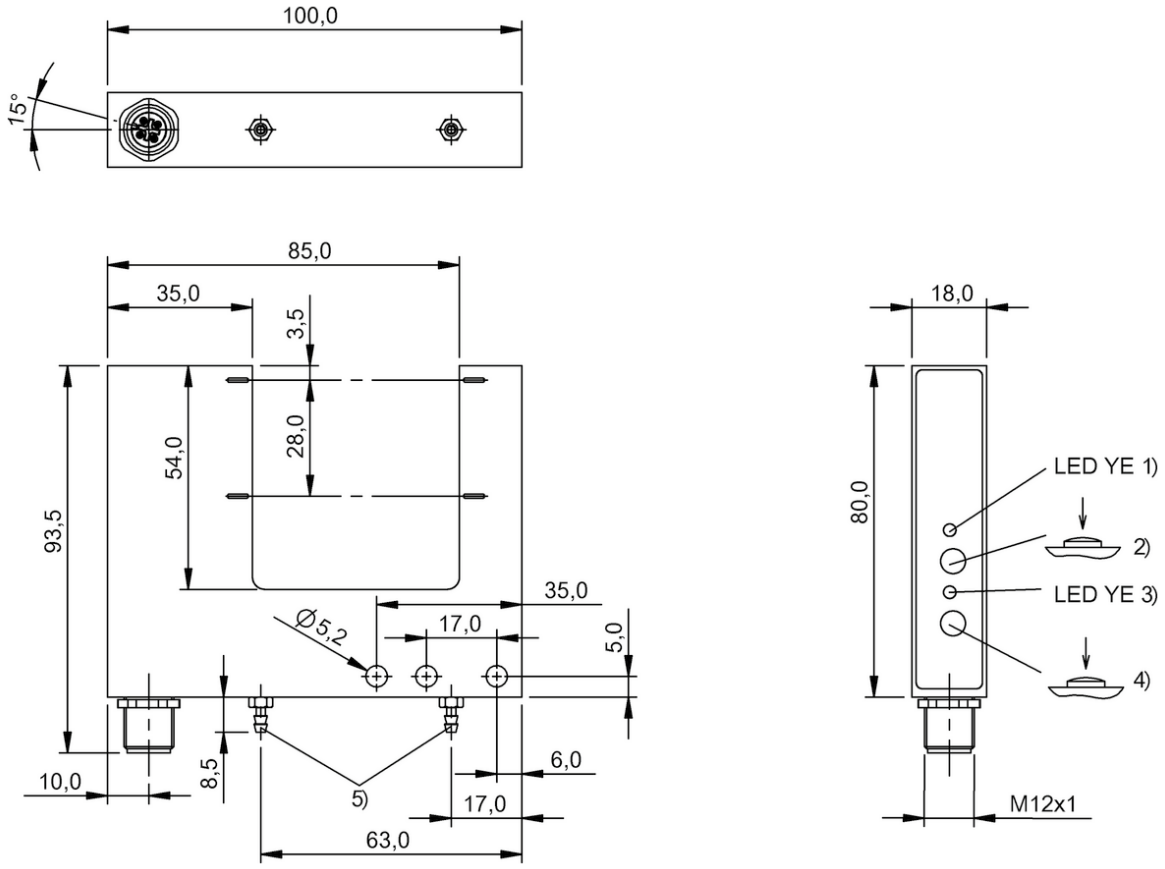
1) SP1 active / error, 2) SP1: recvr., light/dark, 3) SP2 active / error, 4) SP2: recvr., light/dark, 5) Pneumatics connection PK-3

BGL003F



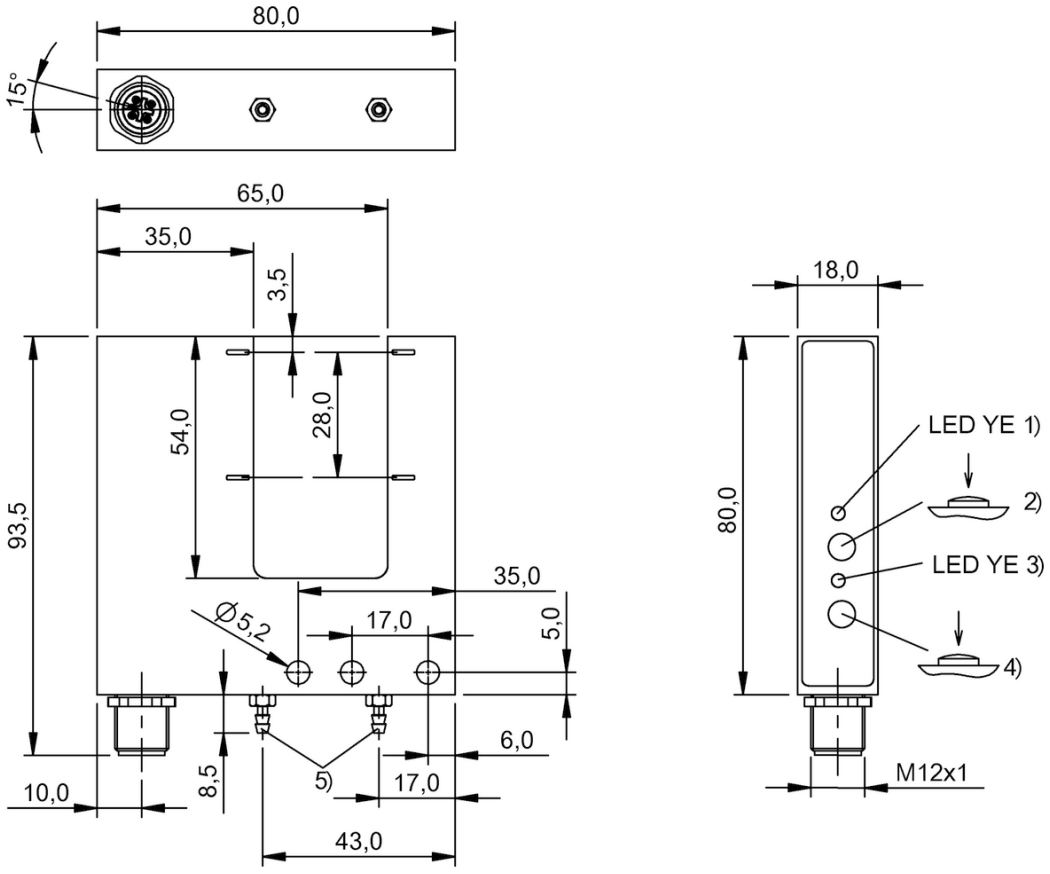
1) Output function/Error, 2) Output mode, recvr., L/D, 3) Error, 4) Output curve rising/falling, 5) Pneumatics connection PK-3

BGL0031, BGL0033



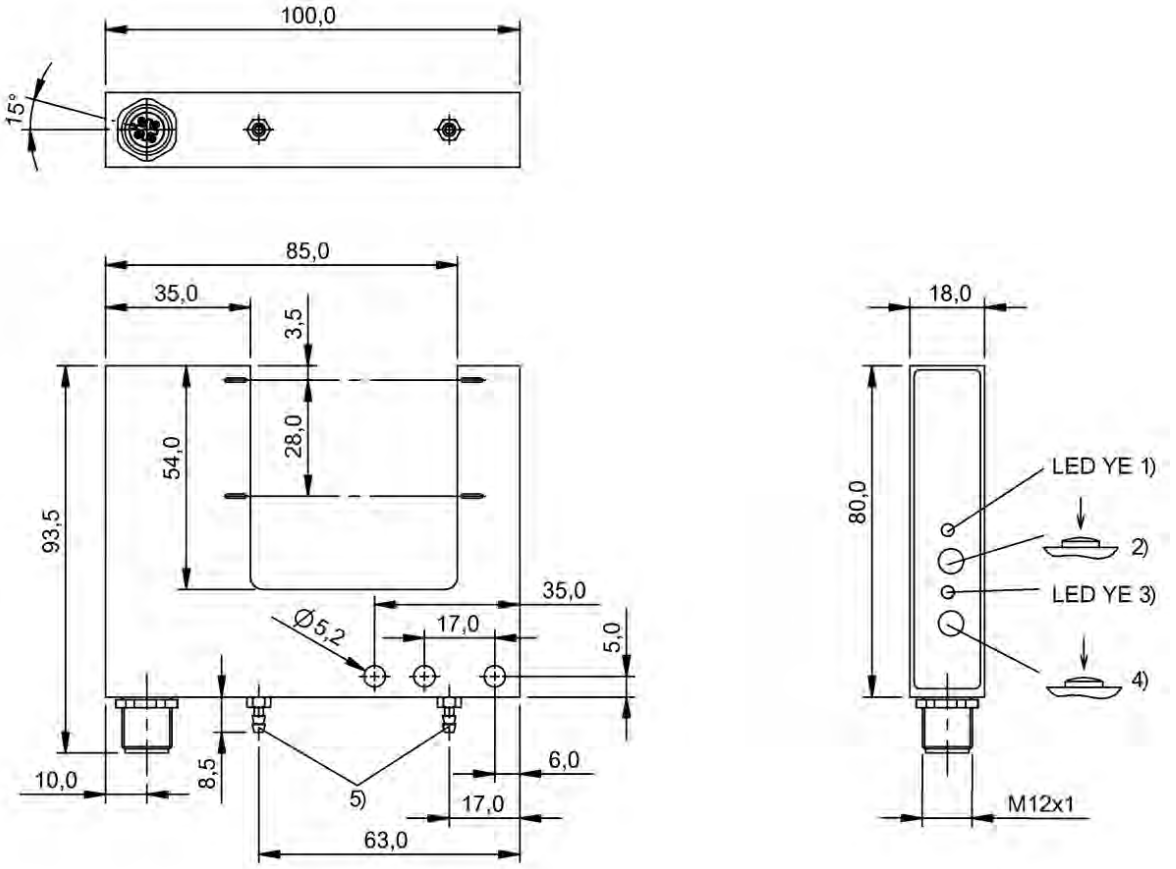
1) Output function/Error, 2) Output mode, recvr., L/D, 3) Error, 4) Output curve rising/falling, 5) Pneumatics connection PK-3

BGL0039, BGL003C



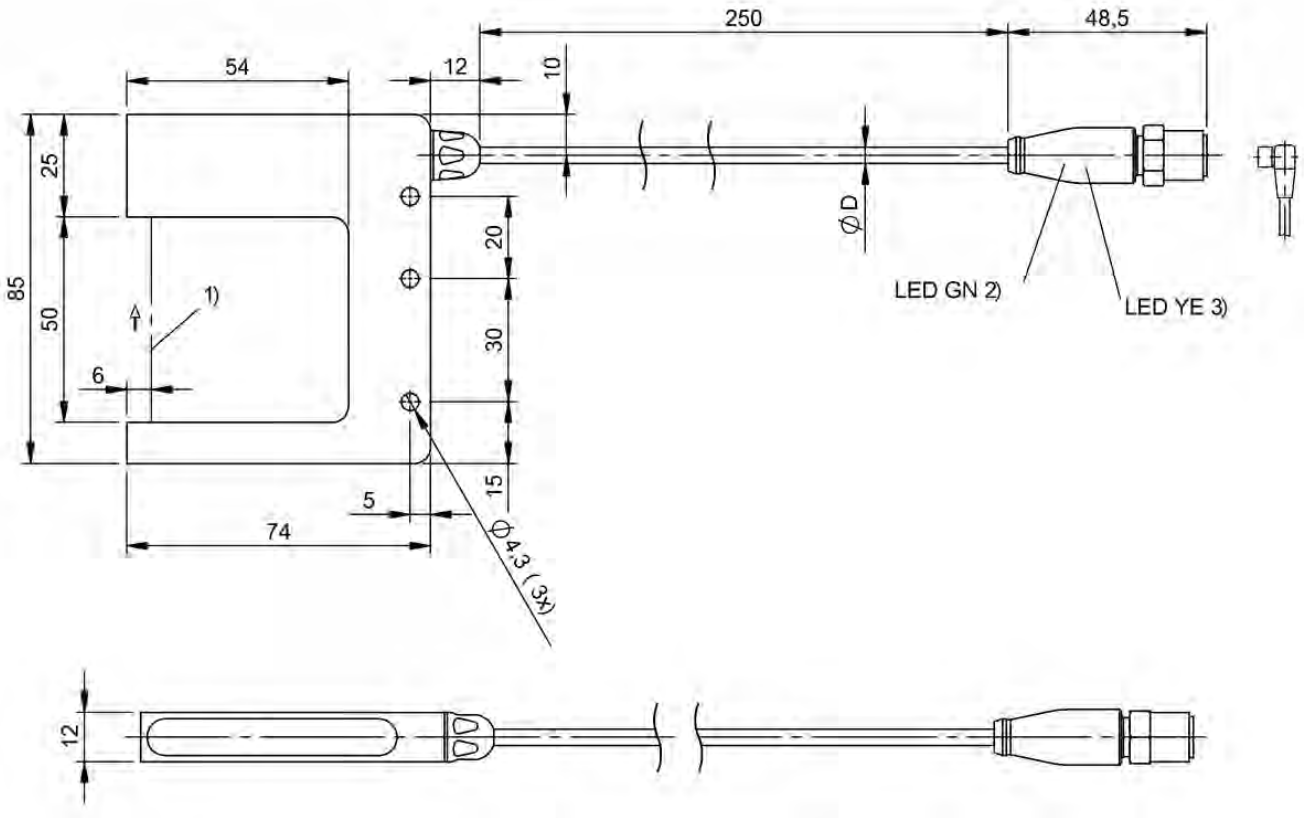
1) Q1 active / error, 2) Q1: recvr., light/dark, 3) Q2 active / error, 4) Q2: recvr., light/dark, 5) Pneumatics connection PK-3

BGL002Z



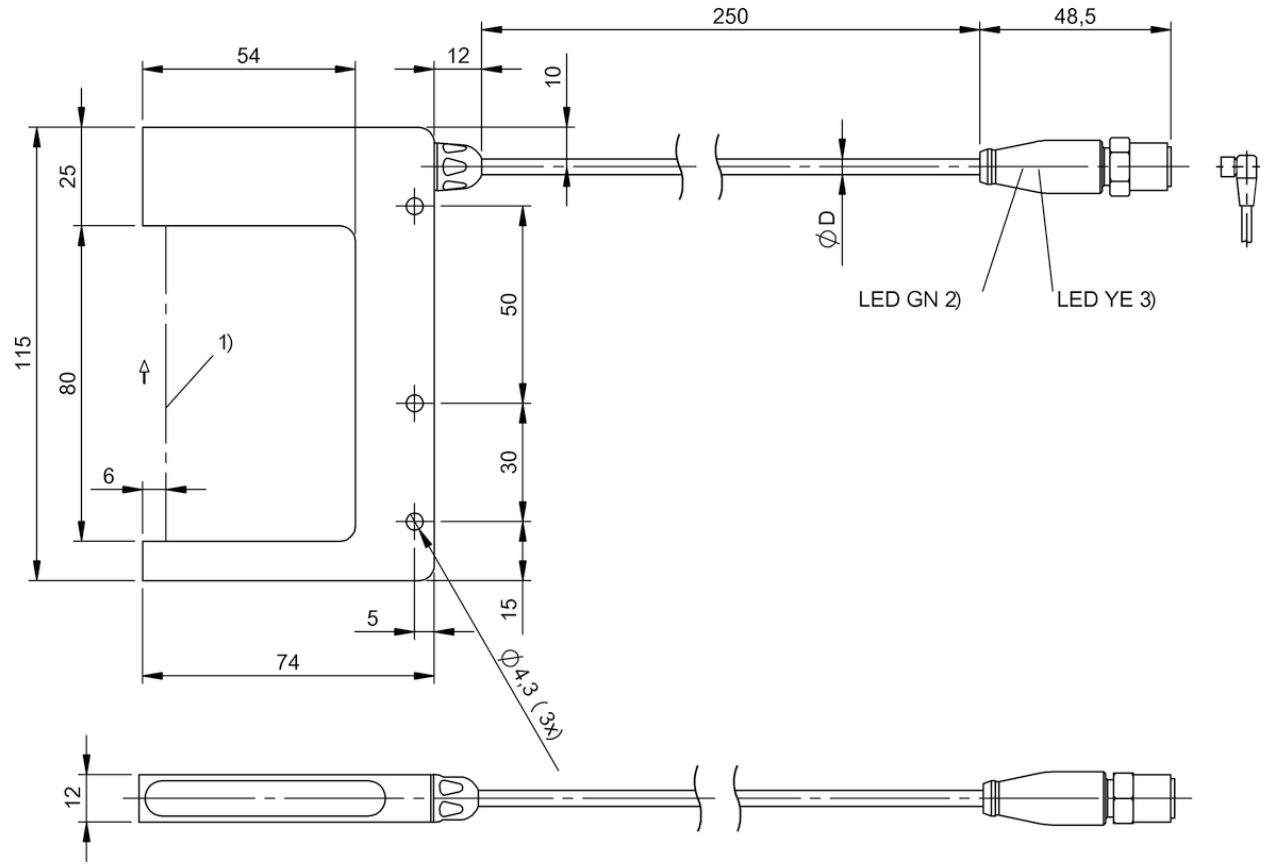
1) Q1 active / error, 2) Q1: recvr., light/dark, 3) Q2 active / error, 4) Q2: recvr., light/dark, 5) Pneumatics connection PK-3

BGL0037



1) Optical axis, 2) Operating voltage, 3) Output function normally open

BGL004M, BGL004L



1) Optical axis, 2) Operating voltage, 3) Output function normally open

BGL004P, BGL004N



PNP normally open/normally closed	**BWL0009** BWL 4040D-I011-S49	**BWL000L** BWL 5454D-I011-S49	**BWL000Y** BWL 6868D-I011-S49	
Series	D	D	D	
Dimension	10 x 75 x 84 mm	10 x 90 x 99 mm	10 x 105 x 114 mm	
Principle of operation	Angle sensor	Angle sensor	Angle sensor	
Principle of optical operation	Through-beam sensor	Through-beam sensor	Through-beam sensor	
Beam characteristic	Divergent	Divergent	Divergent	
Light type	Infrared	Infrared	Infrared	
Light spot size	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	
Connection	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	
Housing material	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	
Material sensing surface	Glass	Glass	Glass	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus	CE, cULus	CE, cULus	
Trademark	—	—	—	
Productview	Page 482	Page 482	Page 483	





	BWL0015 BWL 9090D-I011-S49	**BWL0001** BWL 110110D-I011-S49	**BWL000C** BWL 4040D-L011-S49	**BWL000N** BWL 5454D-L011-S49	**BWL0010** BWL 6868D-L011-S49
	D	D	D	D	D
	12 x 125 x 134 mm	12 x 150 x 159 mm	10 x 75 x 84 mm	10 x 90 x 99 mm	10 x 105 x 114 mm
	Angle sensor	Angle sensor	Angle sensor	Angle sensor	Angle sensor
	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor
	Divergent	Divergent	Collimated	Collimated	Collimated
	Infrared	Infrared	Laser red light	Laser red light	Laser red light
	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	Ø 0.2 mm Light exit	Ø 0.2 mm Light exit	Ø 0.2 mm Light exit
	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin
	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
	Glass	Glass	Glass	Glass	Glass
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	CE, cULus	CE, cULus	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
	–	–	–	–	–
	Page 483	Page 484	Page 484	Page 485	Page 485



PNP normally open/normally closed	**BWL0017** BWL 9090D-L011-S49	**BWL0003** BWL 110110D-L011-S49	**BWL000J** BWL 4040D-R013-S49	
Series	D	D	D	
Dimension	12 x 125 x 134 mm	12 x 150 x 159 mm	10 x 75 x 84 mm	
Principle of operation	Angle sensor	Angle sensor	Angle sensor	
Principle of optical operation	Through-beam sensor	Through-beam sensor	Through-beam sensor	
Beam characteristic	Collimated	Collimated	Divergent	
Light type	Laser red light	Laser red light	Red light	
Light spot size	Ø 0.2 mm Light exit	Ø 0.2 mm Light exit	Ø 1.7 mm Light exit	
Connection	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	
Housing material	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	
Material sensing surface	Glass	Glass	Glass	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	CE, cULus	
Trademark	—	—	—	
Productview	Page 486	Page 486	Page 484	



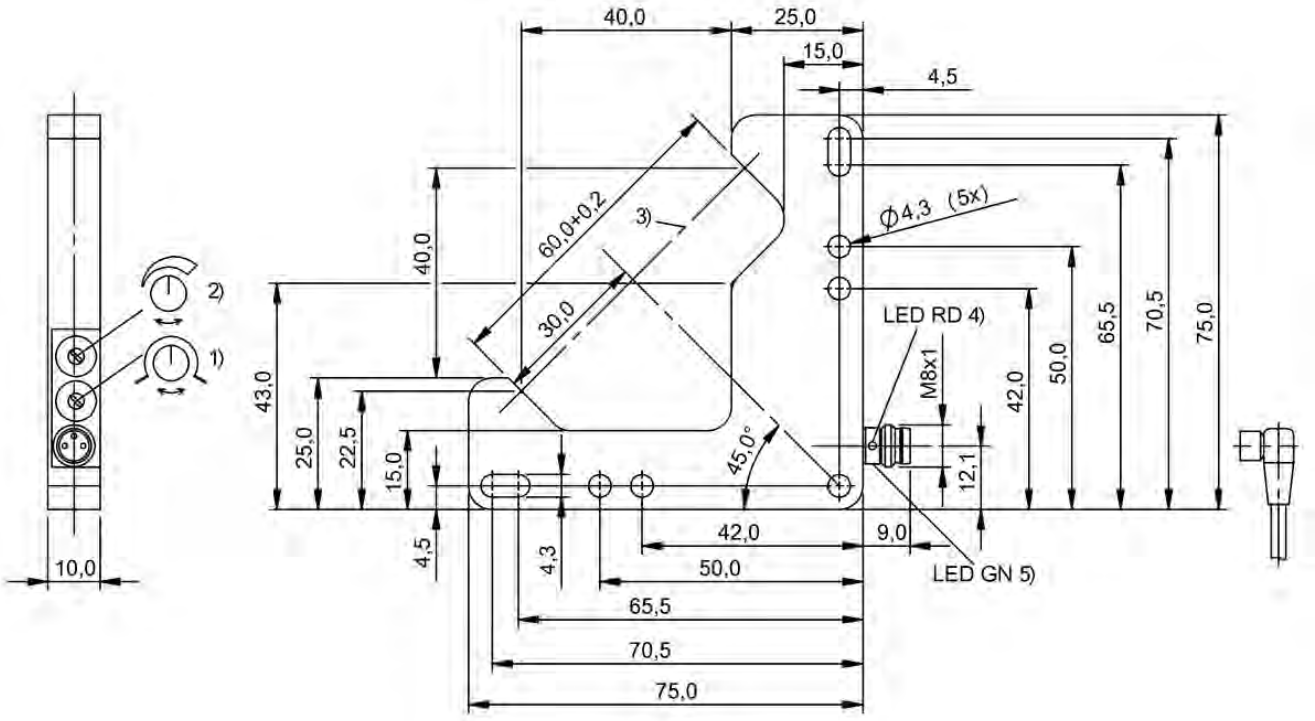


	BWL000U BWL 5454D-R013-S49	BWL001N BWL 6868D-R013-S49	BWL001C BWL 9090D-R013-S49	BWL0007 BWL 110110D-R013-S49	BWL000F BWL 4040D-R011-S49
	D	D	D	D	D
	10 x 90 x 99 mm	10 x 105 x 114 mm	12 x 125 x 134 mm	12 x 150 x 159 mm	10 x 75 x 84 mm
	Angle sensor	Angle sensor	Angle sensor	Angle sensor	Angle sensor
	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor
	Divergent	Divergent	Divergent	Divergent	Divergent
	Red light	Red light	Red light	Red light	LED, red light
	Ø 2.0 mm Light exit	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	Ø 1.7 mm Light exit
	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin
	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
	Glass	Glass	Glass	Glass	Glass
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	CE, cULus	CE, cULus	CE, cULus	CE, cULus	CE, cULus, EAC
	–	–	–	–	Global
	Page 485	Page 485	Page 486	Page 486	Page 484



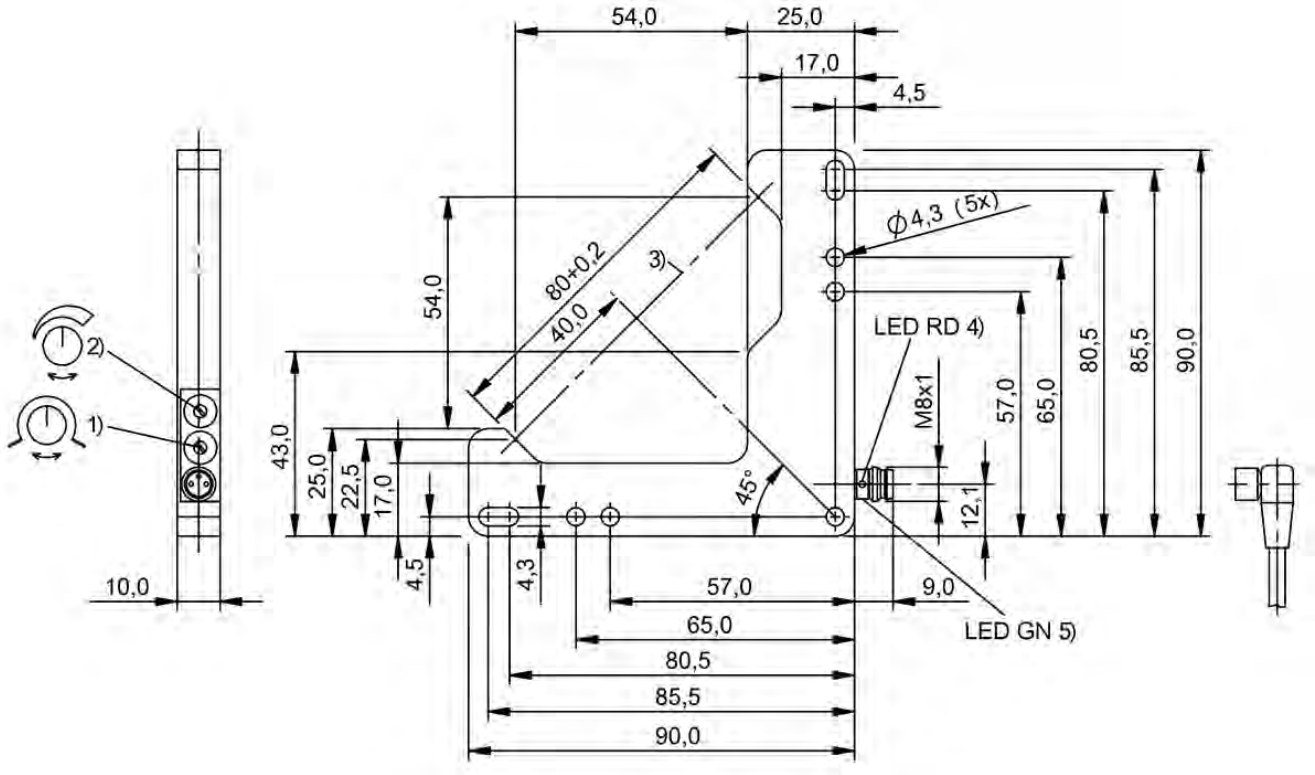
PNP normally open/normally closed	**BWL000R** BWL 5454D-R011-S49	**BWL0012** BWL 6868D-R011-S49	**BWL0019** BWL 9090D-R011-S49	
Series	D	D	D	
Dimension	10 x 90 x 99 mm	10 x 105 x 114 mm	12 x 125 x 134 mm	
Principle of operation	Angle sensor	Angle sensor	Angle sensor	
Principle of optical operation	Through-beam sensor	Through-beam sensor	Through-beam sensor	
Beam characteristic	Divergent	Divergent	Divergent	
Light type	LED, red light	LED, red light	LED, red light	
Light spot size	Ø 2.0 mm Light exit	Ø 2.5 mm Light exit	Ø 2.5 mm Light exit	
Connection	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	
Housing material	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	
Material sensing surface	Glass	Glass	Glass	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	
Trademark	Global	Global	Global	
Productview	Page 485	Page 485	Page 486	

	BWL0005 BWL 110110D-R011-S49				
	D				
	12 x 150 x 159 mm				
	Angle sensor				
	Through-beam sensor				
	Divergent				
	LED, red light				
	Ø 2.5 mm Light exit				
	Connector, M8x1 connector, 3-pin				
	Zinc, die-cast				
	Glass				
	10...30 VDC				
	CE, cULus, EAC				
	Global				
	Page 486				



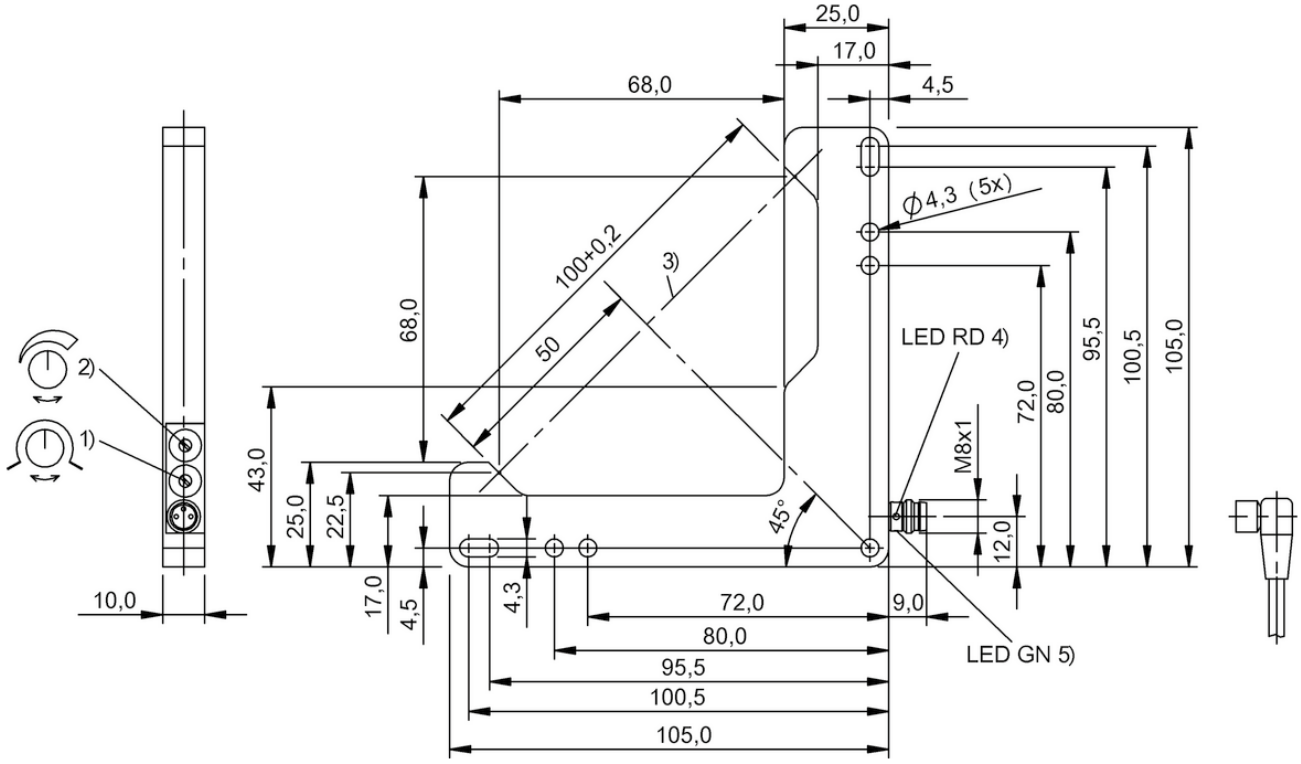
1) Light-on/dark-on, 2) Sensitivity, 3) Optical axis, 4) Output function, 5) Operating voltage

BWL0009



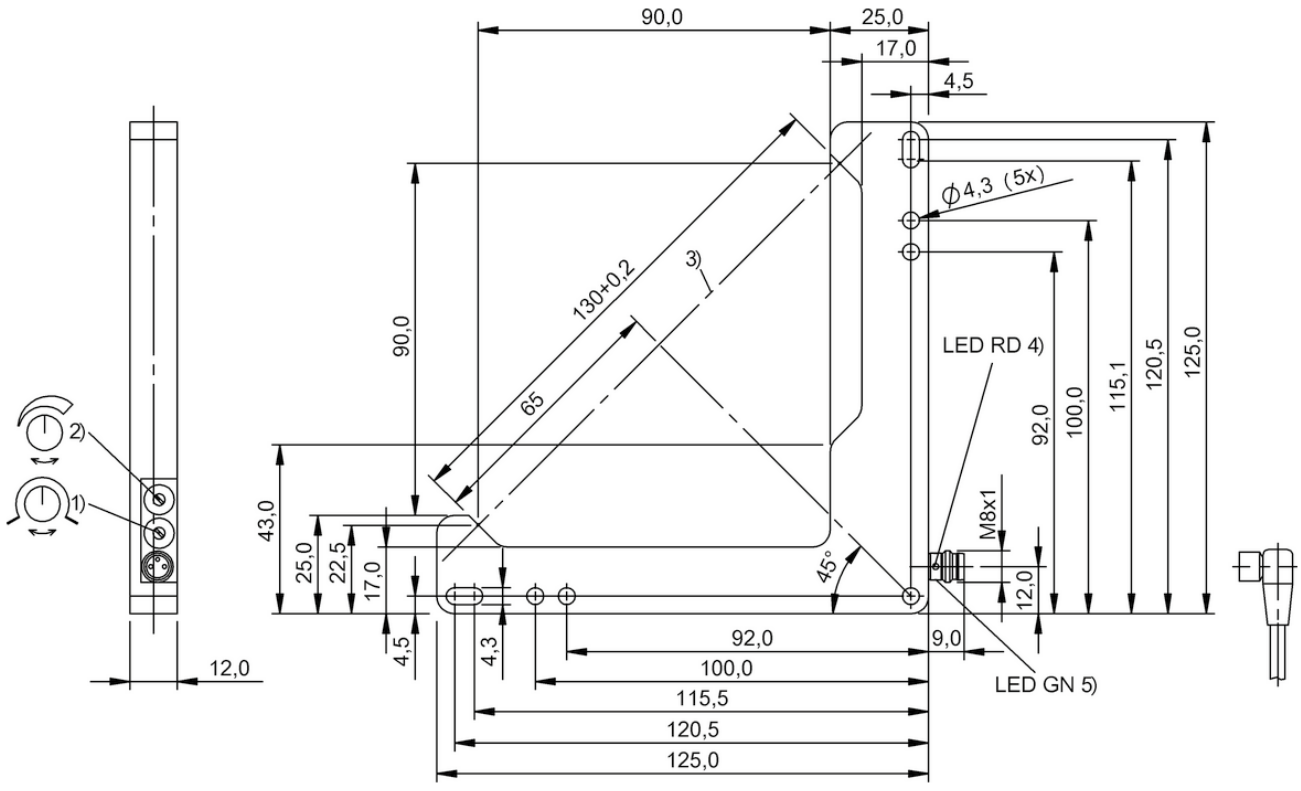
1) Light-on/dark-on, 2) Sensitivity, 3) Optical axis, 4) Output function, 5) Operating voltage

BWL000L



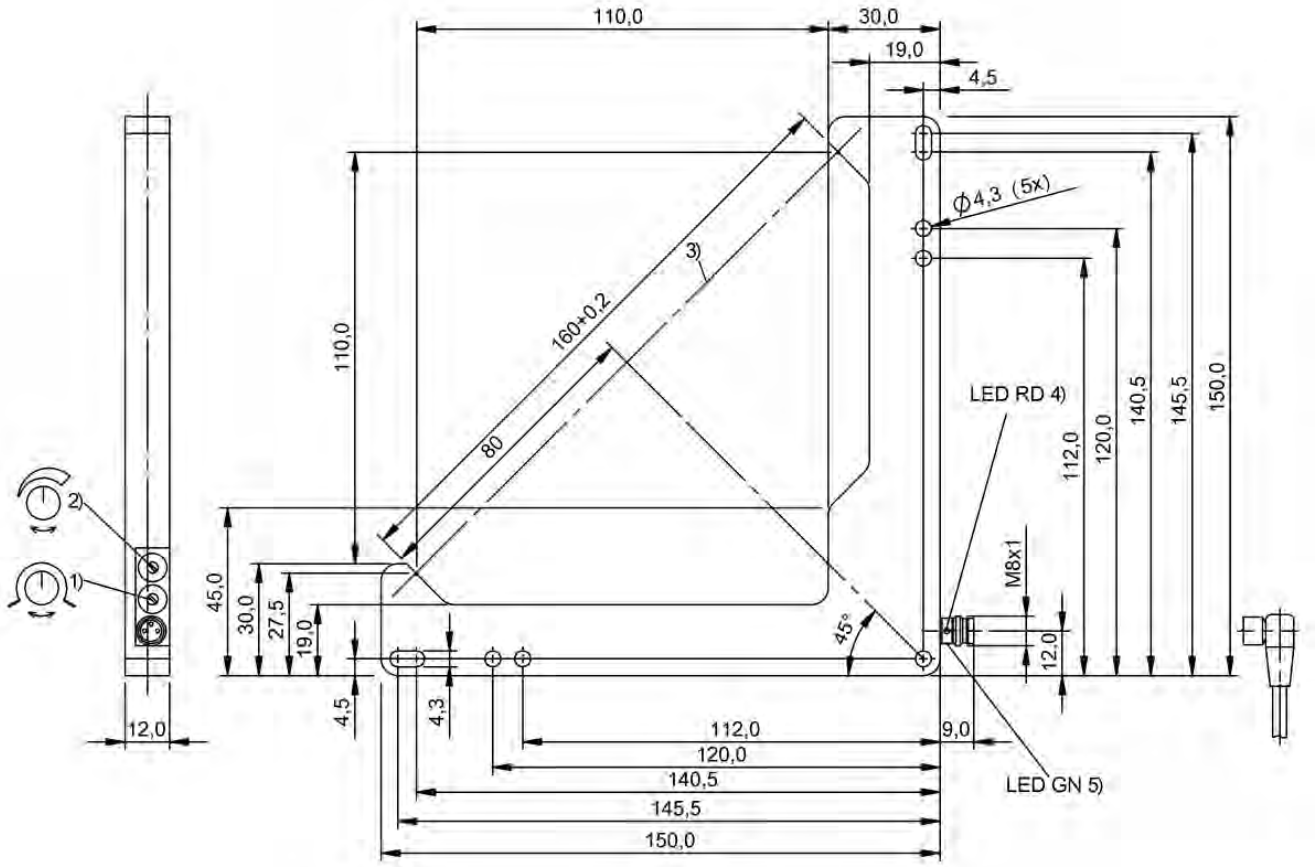
1) Light-on/dark-on, 2) Sensitivity, 3) Optical axis, 4) Output function, 5) Operating voltage

BWL000Y



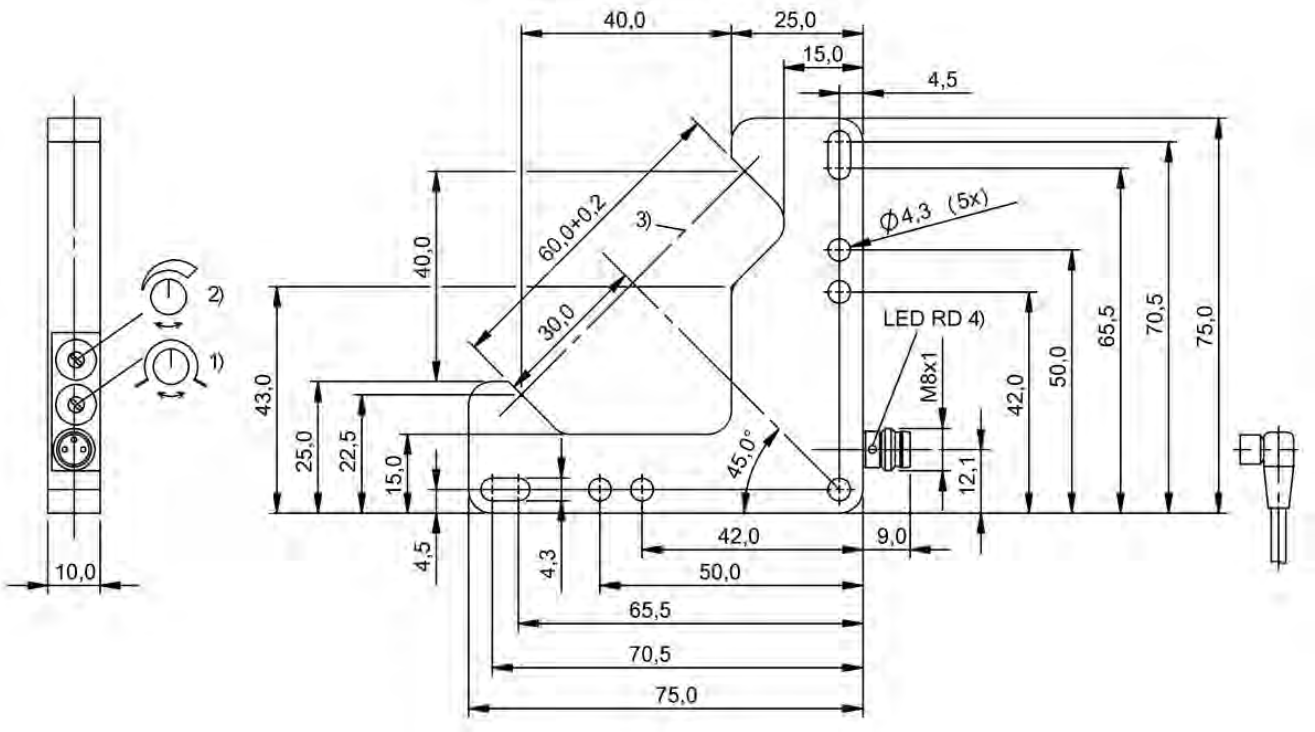
1) Light-on/dark-on, 2) Sensitivity, 3) Optical axis, 4) Output function, 5) Operating voltage

BWL0015



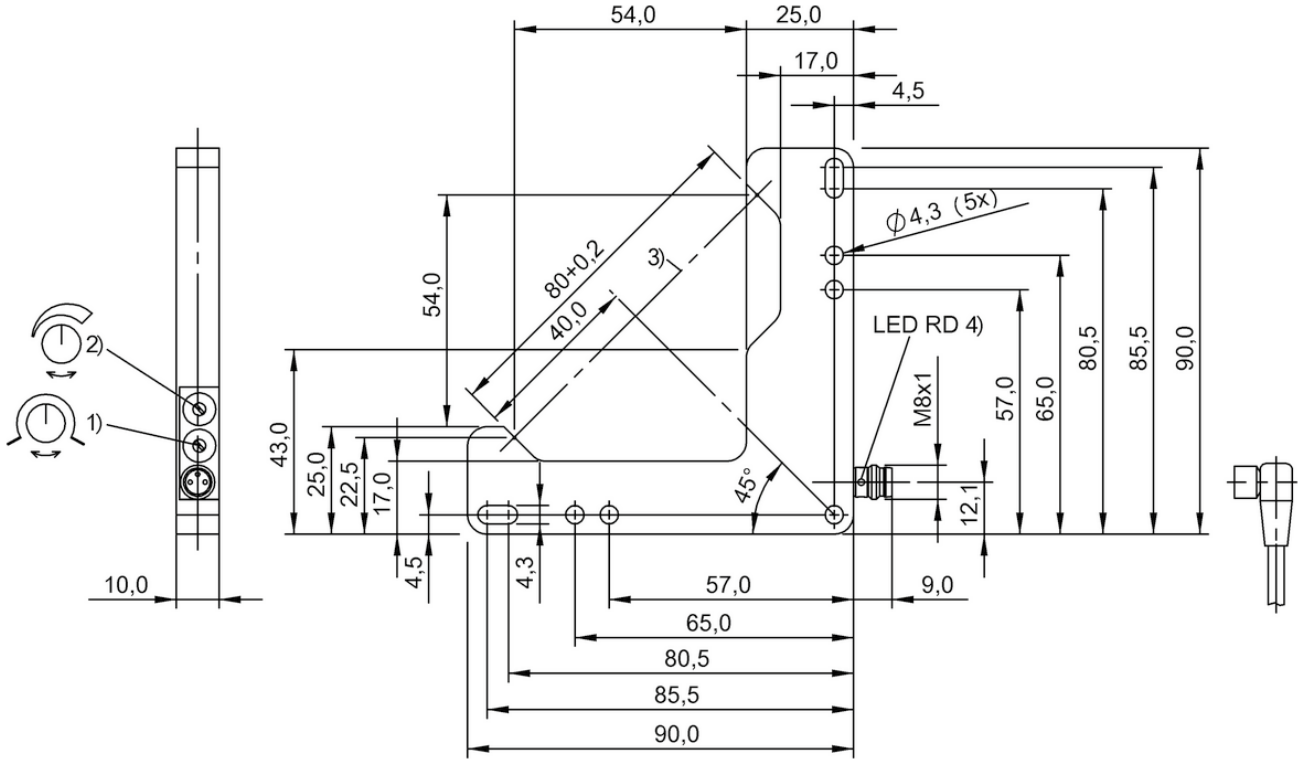
1) Light-on/dark-on, 2) Sensitivity, 3) Optical axis, 4) Output function, 5) Operating voltage

BWL0001



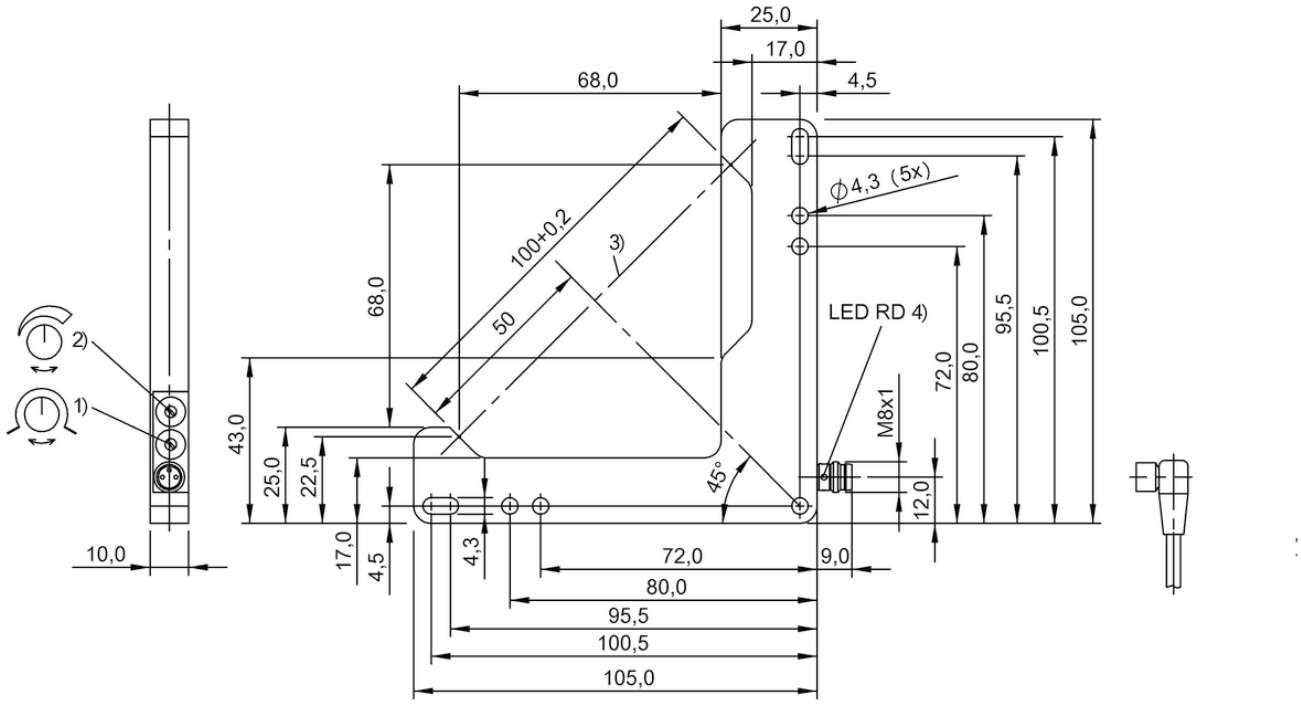
1) Light-on/dark-on, 2) Sensitivity, 3) Optical axis, 4) Output function

BWL000C, BWL000J, BWL000F



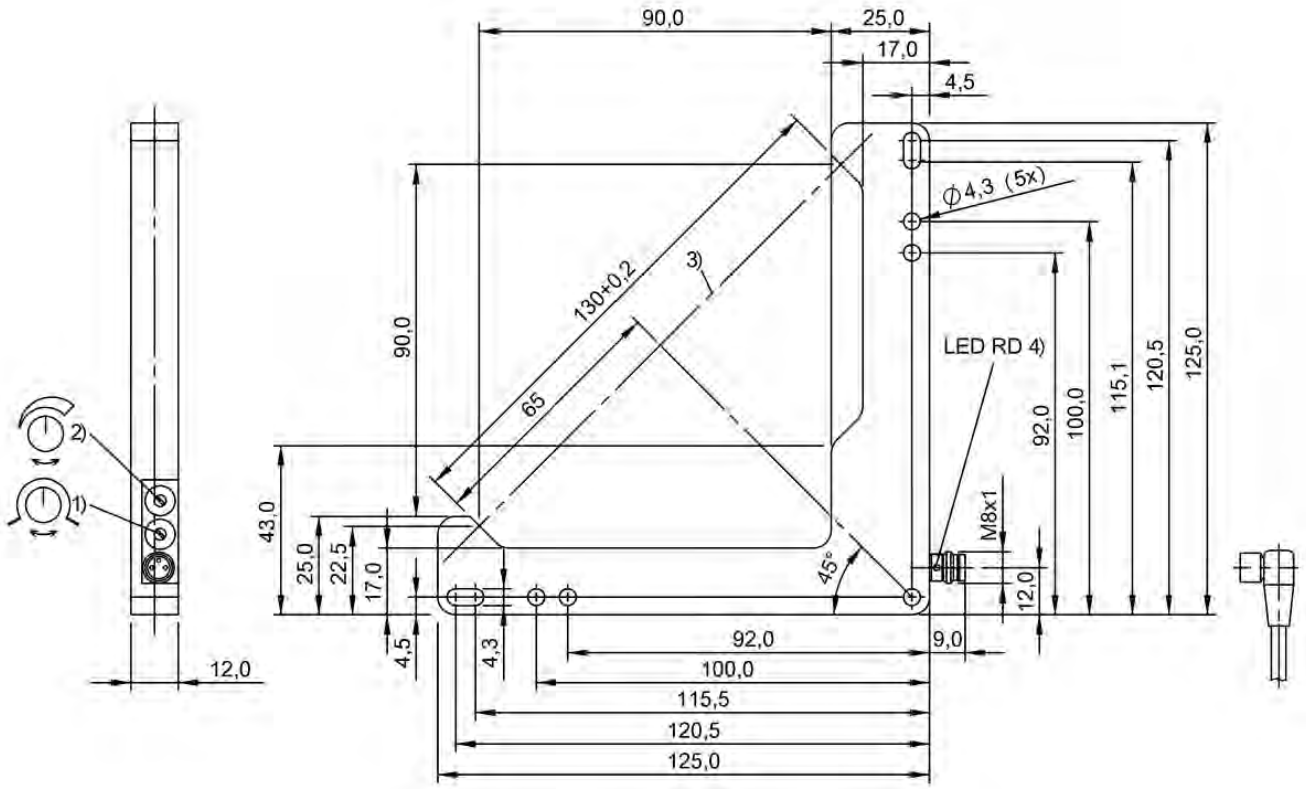
1) Light-on/dark-on, 2) Sensitivity, 3) Optical axis, 4) Output function

BWL000N, BWL000U, BWL000R



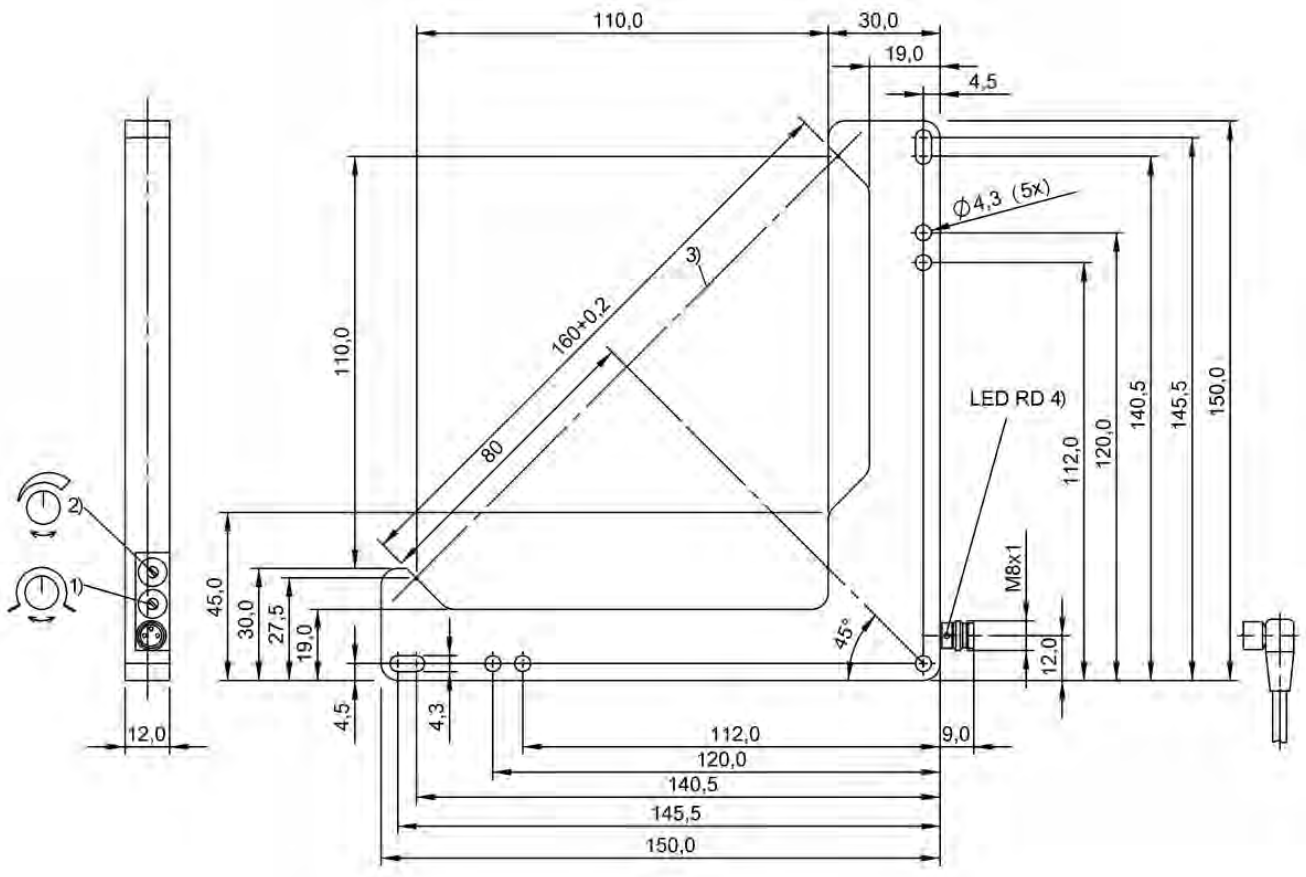
1) Light-on/dark-on, 2) Sensitivity, 3) Optical axis, 4) Output function

BWL0010, BWL001N, BWL0012



1) Light-on/dark-on, 2) Sensitivity, 3) Optical axis, 4) Output function

BWL0017, BWL001C, BWL0019



1) Light-on/dark-on, 2) Sensitivity, 3) Optical axis, 4) Output function

BWL0003, BWL0007, BWL0005



PNP dynamic normally open	**BOW001A** BOW A-0408-PS-C-S49	**BOW001J** BOW A-0808-PS-C-S49	**BOW0012** BOW A-1208-PS-C-S49	
NPN dynamic normally open				
PNP statisch normally open/normally closed, NPN statisch normally open/normally closed				
Series	A	A	A	
Dimension	18 x 90 x 140 mm	18 x 130 x 140 mm	18 x 170 x 140 mm	
Active window (PL x AL)	40 × 80 mm	80 × 80 mm	120 × 80 mm	
Principle of operation	Optical window sensor	Optical window sensor	Optical window sensor	
Principle of optical operation	Through-beam sensor	Through-beam sensor	Through-beam sensor	
Beam characteristic	Divergent	Divergent	Divergent	
Light type	Infrared	Infrared	Infrared	
Connection	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	
Housing material	Aluminum	Aluminum	Aluminum	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE	CE	CE	
Productview	Page 492	Page 492	Page 493	



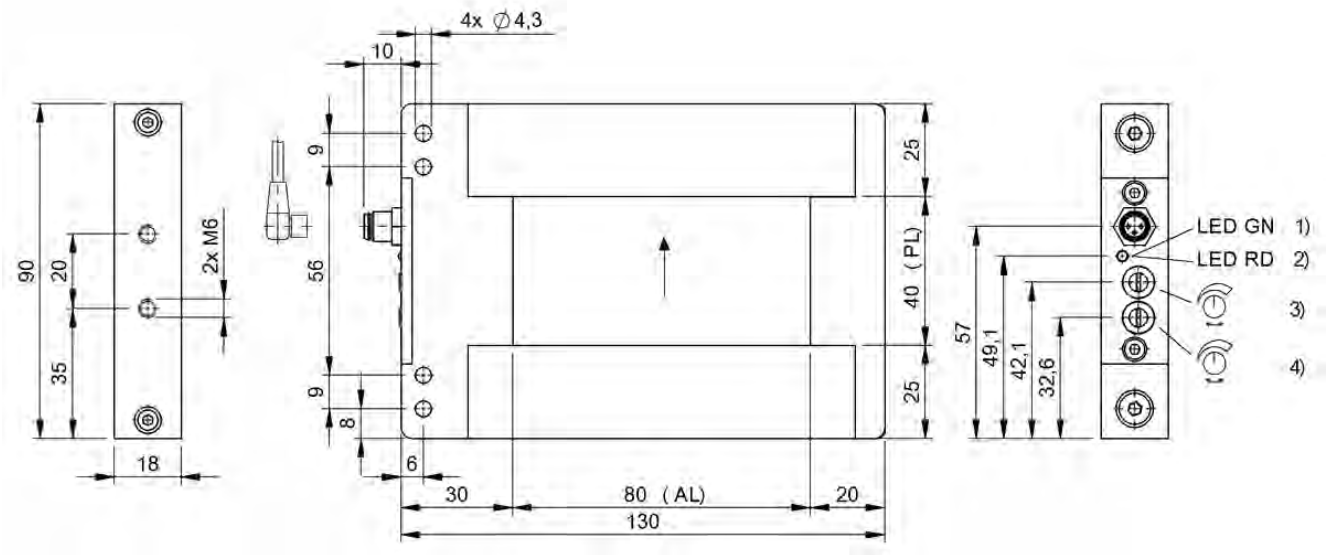


		BOW002H BOW A-1216-PS-C-S49		**BOW002J** BOW A-1616-PS-C-S49	
	BOW0029 BOW A-1216-NS-C-S49		**BOW002A** BOW A-1616-NS-C-S49		
					BOW002U BOW B-0404-DU-C-S75
	A	A	A	A	B
	18 x 170 x 220 mm	18 x 170 x 220 mm	18 x 210 x 220 mm	18 x 210 x 220 mm	15 x 90 x 104 mm
	120 × 160 mm	120 × 160 mm	160 × 160 mm	160 × 160 mm	40 × 40 mm
	Optical window sensor	Optical window sensor	Optical window sensor	Optical window sensor	Optical window sensor
	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor
	Divergent	Divergent	Divergent	Divergent	Divergent
	Infrared	Infrared	Infrared	Infrared	Infrared
	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 4-pin
	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
	PMMA	PMMA	PMMA	PMMA	PMMA
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	15...30 VDC
	CE	CE	CE	CE	CE, EAC
	Page 493	Page 493	Page 494	Page 494	Page 494



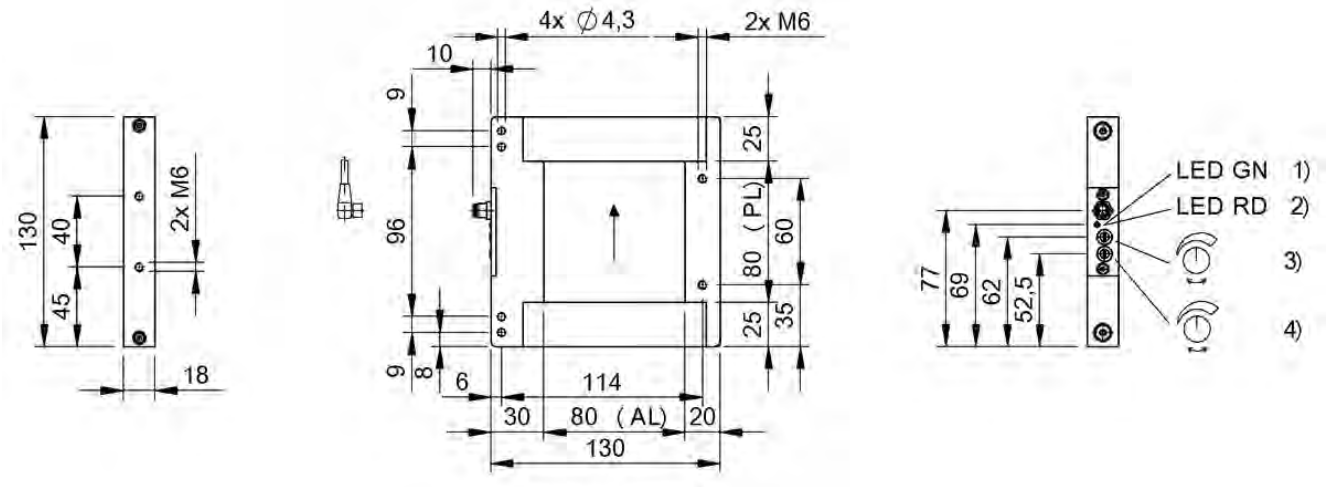
PNP statisch normally open/normally closed, NPN statisch normally open/normally closed	**BOW002Y** BOW B-0808-DU-C-S75	**BOW0031** BOW B-1212-DU-C-S75	**BOW0034** BOW B-1616-DU-C-S75	
Series	B	B	B	
Dimension	15 x 130 x 134 mm	15 x 170 x 174 mm	15 x 210 x 214 mm	
Active window (PL x AL)	80 × 80 mm	120 × 120 mm	160 × 160 mm	
Principle of operation	Optical window sensor	Optical window sensor	Optical window sensor	
Principle of optical operation	Through-beam sensor	Through-beam sensor	Through-beam sensor	
Beam characteristic	Divergent	Divergent	Divergent	
Light type	Infrared	Infrared	Infrared	
Connection	Connector, M8x1 connector, 4-pin	Connector, M8x1 connector, 4-pin	Connector, M8x1 connector, 4-pin	
Housing material	Aluminum	Aluminum	Aluminum	
Material sensing surface	PMMA	PMMA	PMMA	
Operating voltage Ub	15...30 VDC	15...30 VDC	15...30 VDC	
Approval/Conformity	CE, EAC	CE, EAC	CE, EAC	
Productview	Page 495	Page 495	Page 496	

	BOW0037 BOW B-2020-DU-C-S75				
	B				
	15 x 250 x 244 mm				
	200 × 200 mm				
	Optical window sensor				
	Through-beam sensor				
	Divergent				
	Infrared				
	Connector, M8x1 connector, 4-pin				
	Aluminum				
	PMMA				
	15...30 VDC				
	CE, EAC				
	Page 496				



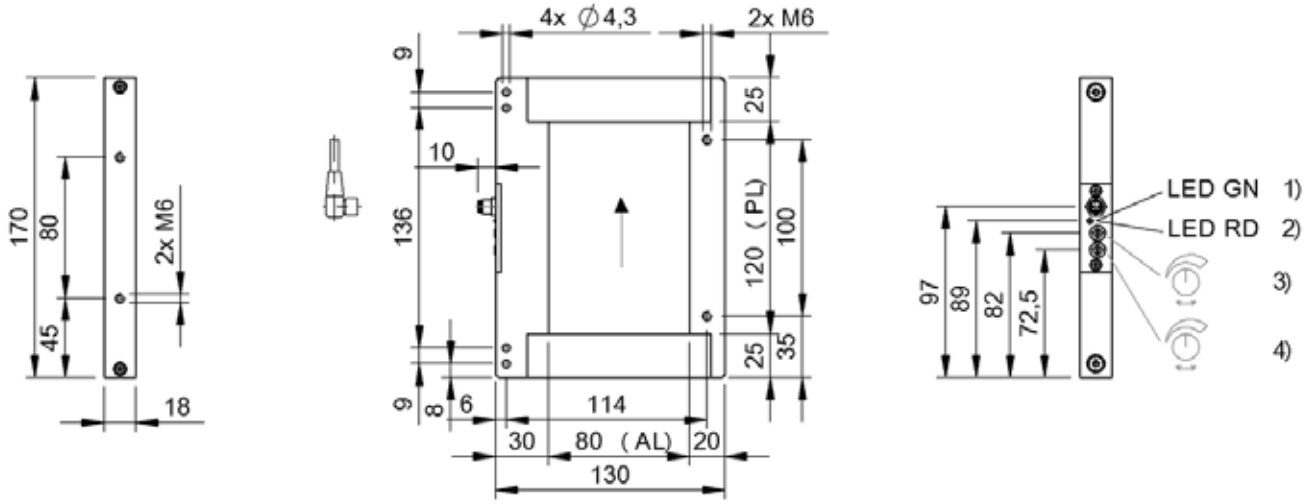
1) Power, 2) Output function, 3) Delay time, 4) Sensitivity

BOW001A



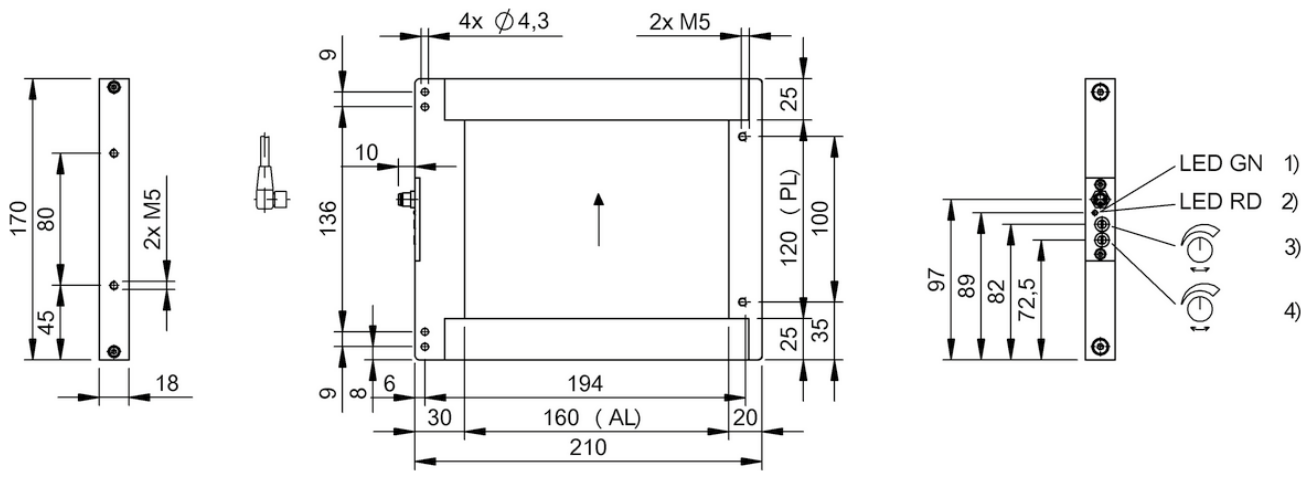
1) Power, 2) Output function, 3) Delay time, 4) Sensitivity

BOW001J



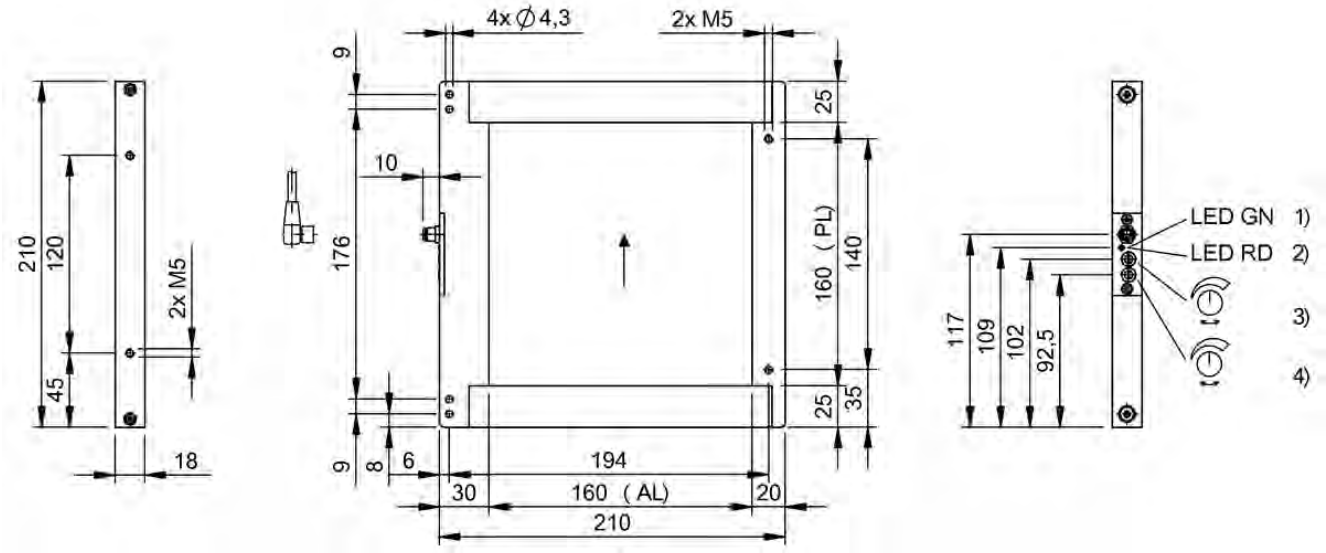
1) Power, 2) Output function, 3) Delay time, 4) Sensitivity

BOW0012



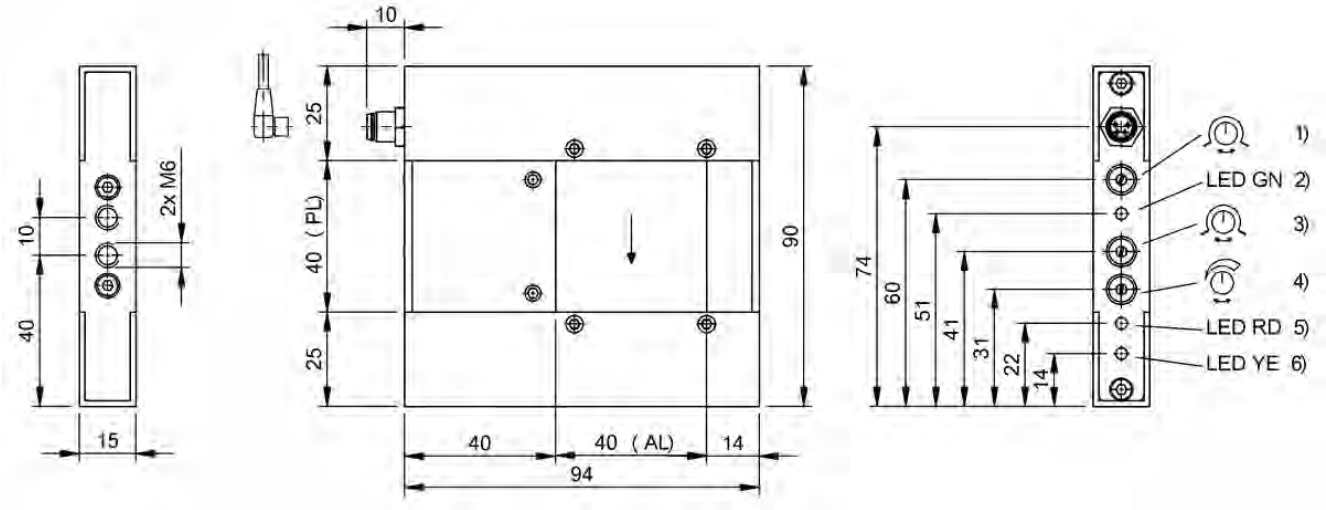
1) Power, 2) Output function, 3) Delay time, 4) Sensitivity

BOW0029, BOW002H



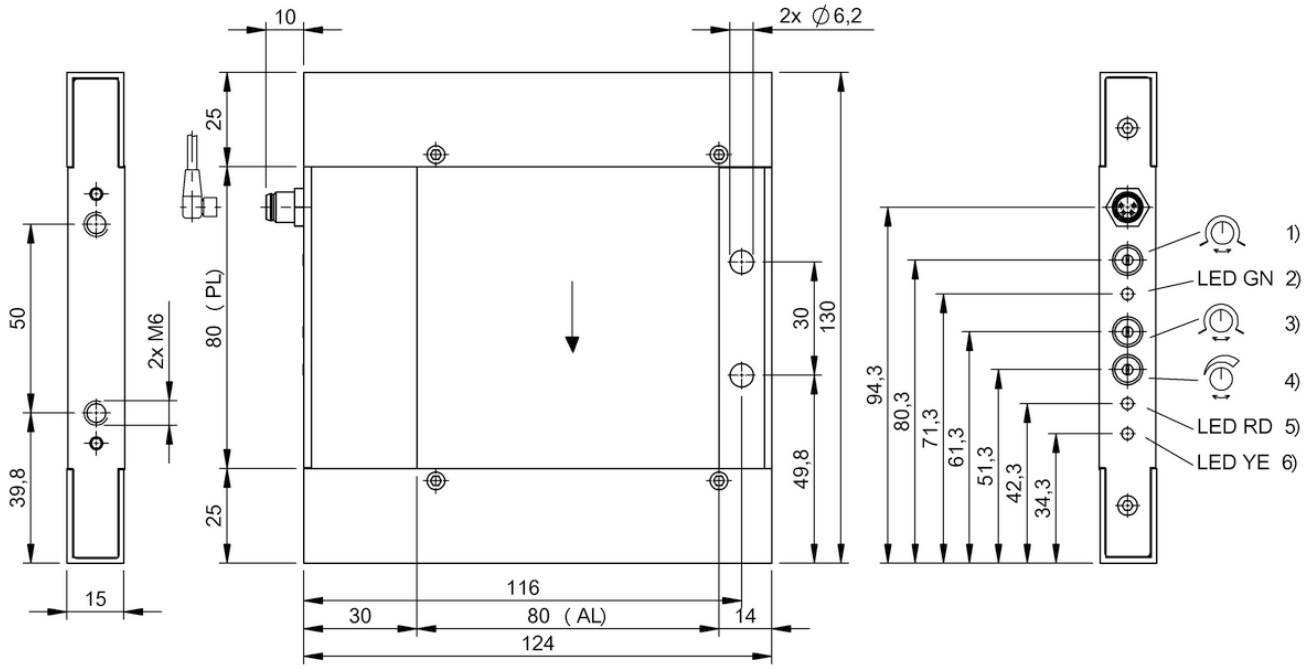
1) Power, 2) Output function, 3) Delay time, 4) Sensitivity

BOW002A, BOW002J



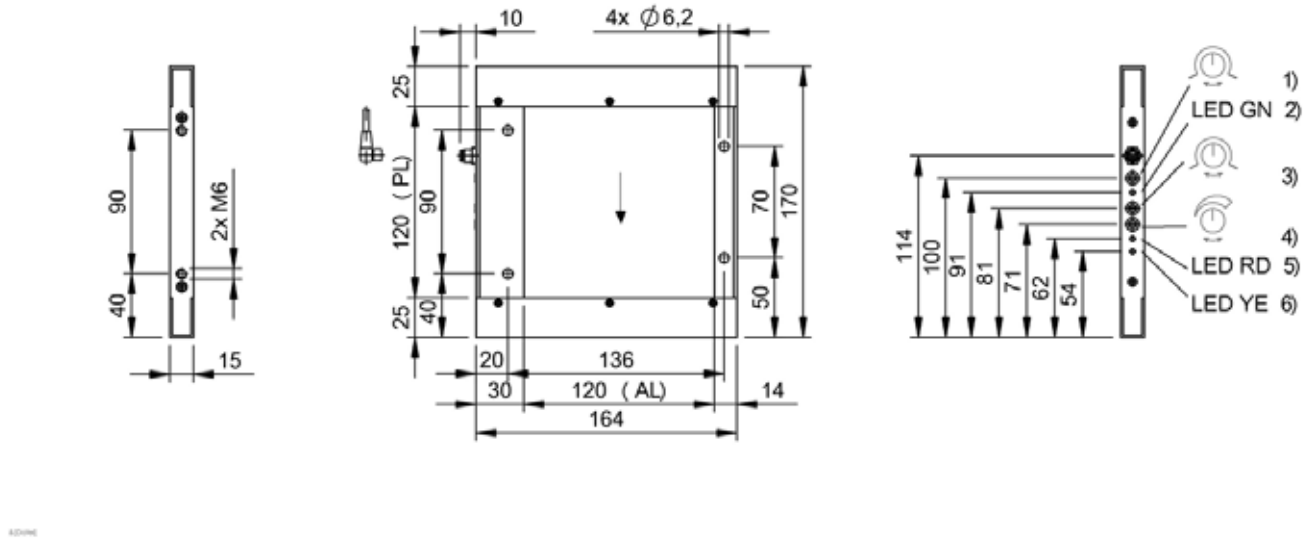
1) Pulse extender, 2) LED Power indicator, 3) Switching function, 4) Object resolution, 5) LED warning indicator, 6) LED function indicator, 7) Optical axis

BOW002U



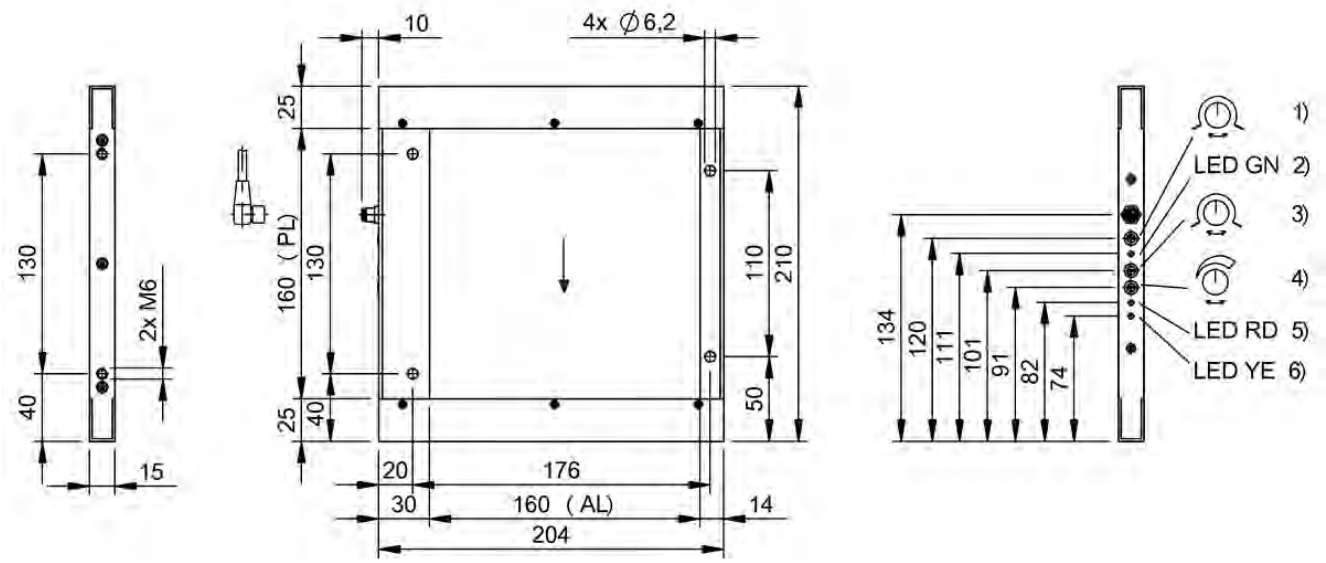
1) Pulse extender, 2) LED Power indicator, 3) Switching function, 4) Object resolution, 5) LED warning indicator, 6) LED function indicator, 7) Optical axis

BOW002Y



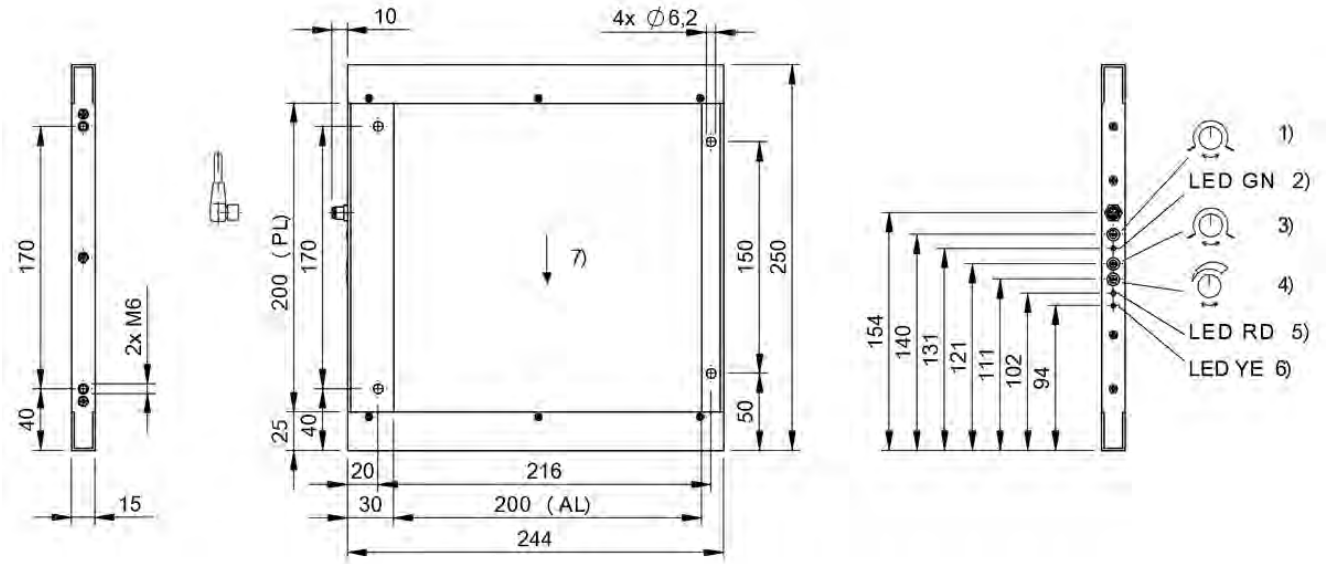
1) Pulse extender, 2) LED Power indicator, 3) Switching function, 4) Object resolution, 5) LED warning indicator, 6) LED function indicator, 7) Optical axis

BOW0031



1) Pulse extender, 2) LED Power indicator, 3) Switching function, 4) Object resolution, 5) LED warning indicator, 6) LED function indicator, 7) Optical axis

BOW0034

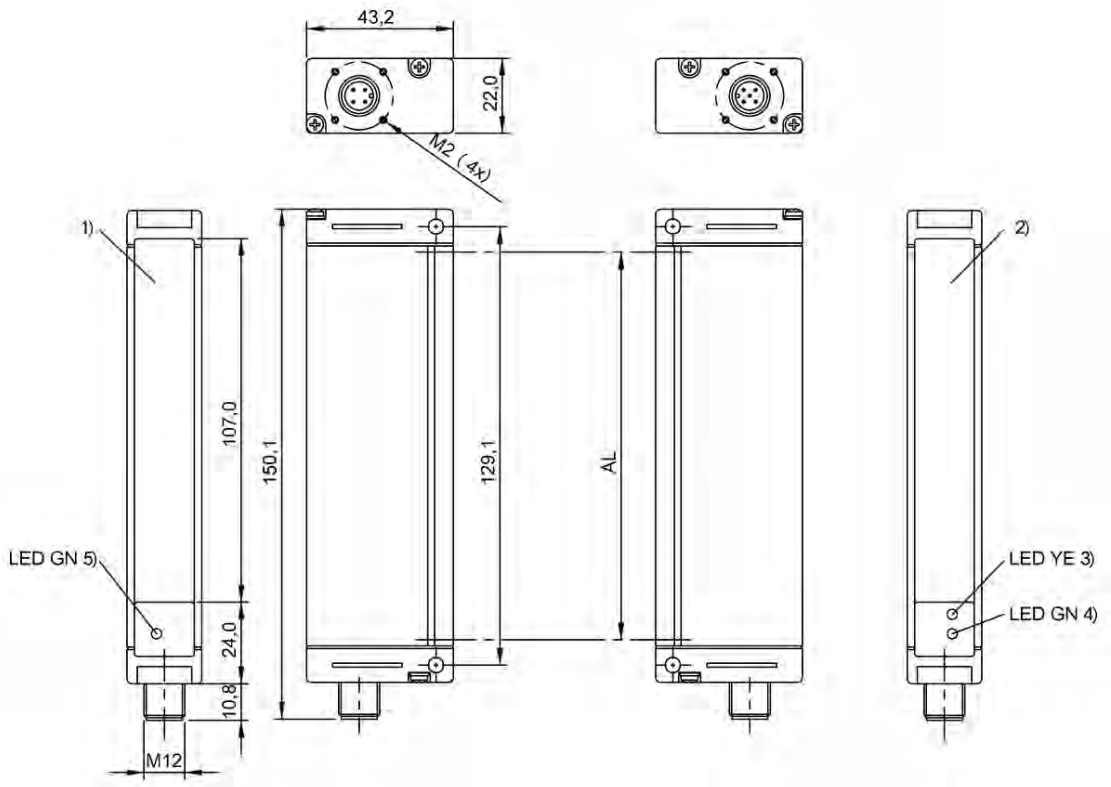


1) Pulse extender, 2) LED Power indicator, 3) Switching function, 4) Object resolution, 5) LED warning indicator, 6) LED function indicator, 7) Optical axis

BOW0037

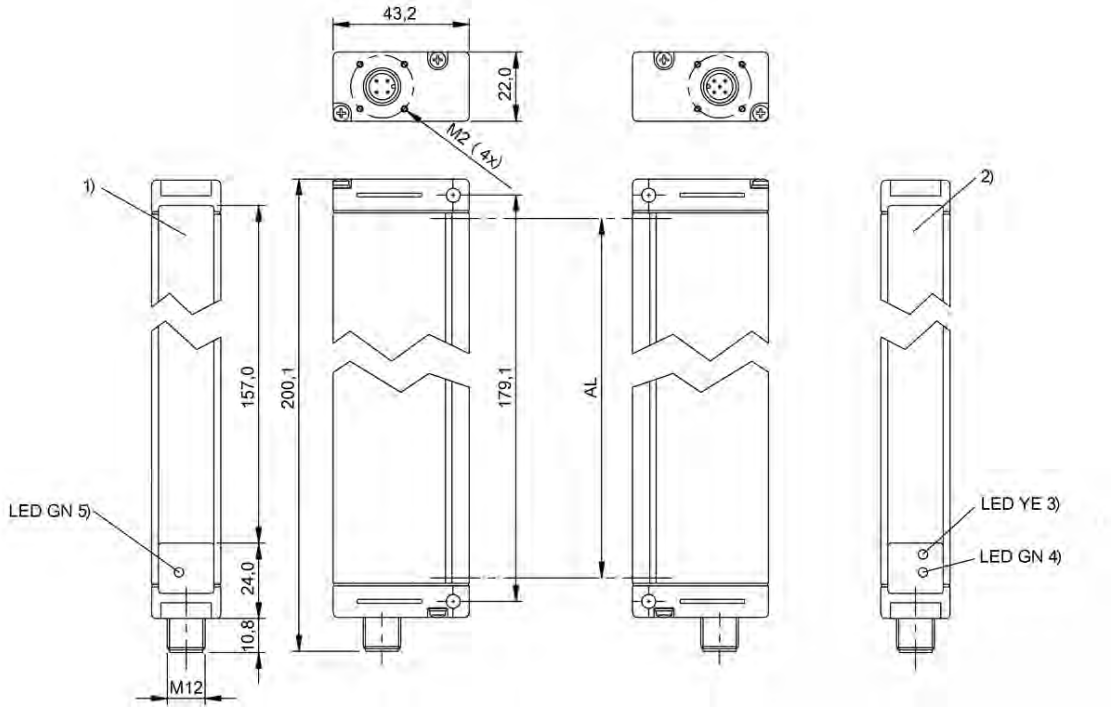
	BLG0001 BLG 1-010-210-050-PV01-SX	
Series	1-010	
Dimension	22 x 150.1 x 43.2 mm	
Active length AL 1	100 mm	
Interface	Analog, voltage 0…10 V PNP Normally open (NO)	
Principle of operation	Light grid	
Principle of optical operation	Through-beam sensor	
Special optical feature	—	
Beam characteristic	Divergent	
Light type	Infrared	
Range	0...2.1 m	
Smallest part typ.	5.0 at t 0.5 x Sn, R 0 = 2.1 m	
Connection	Connector, M12x1 connector	
Housing material	Aluminum	
Material sensing surface	PMMA	
Operating voltage Ub	20...28 VDC	
Approval/Conformity	CE	
Productview	Page 500	

BLG0002 BLG 1-010-210-070-PV01-SX	BLG0003 BLG 1-015-210-050-PV01-SX	BLG0005 BLG 1-030-210-070-PV01-SX
1-010	1-015	1-030
22 x 150.1 x 43.2 mm	22 x 200.1 x 43.2 mm	22 x 350.1 x 43.2 mm
100 mm	150 mm	300 mm
Analog, voltage 0…10 V PNP Normally open (NO)	Analog, voltage 0…10 V PNP Normally open (NO)	Analog, voltage 0…10 V PNP Normally open (NO)
Light grid	Light grid	Light grid
Through-beam sensor	Through-beam sensor	Through-beam sensor
—	—	—
Divergent	Divergent	Divergent
Infrared	Infrared	Infrared
0...2.1 m	0...2.1 m	0...2.1 m
7.0 at t 0.5 x Sn, R0 = 2.1 m	5.0 at t 0.5 x Sn, R 0 = 2.1 m	7.0 at t 0.5 x Sn, R0 = 2.1 m
Connector, M12x1 connector	Connector, M12x1 connector	Connector, M12x1 connector
Aluminum	Aluminum	Aluminum
PMMA	PMMA	PMMA
20...28 VDC	20...28 VDC	20...28 VDC
CE	CE	CE
Page 500	Page 500	Page 501



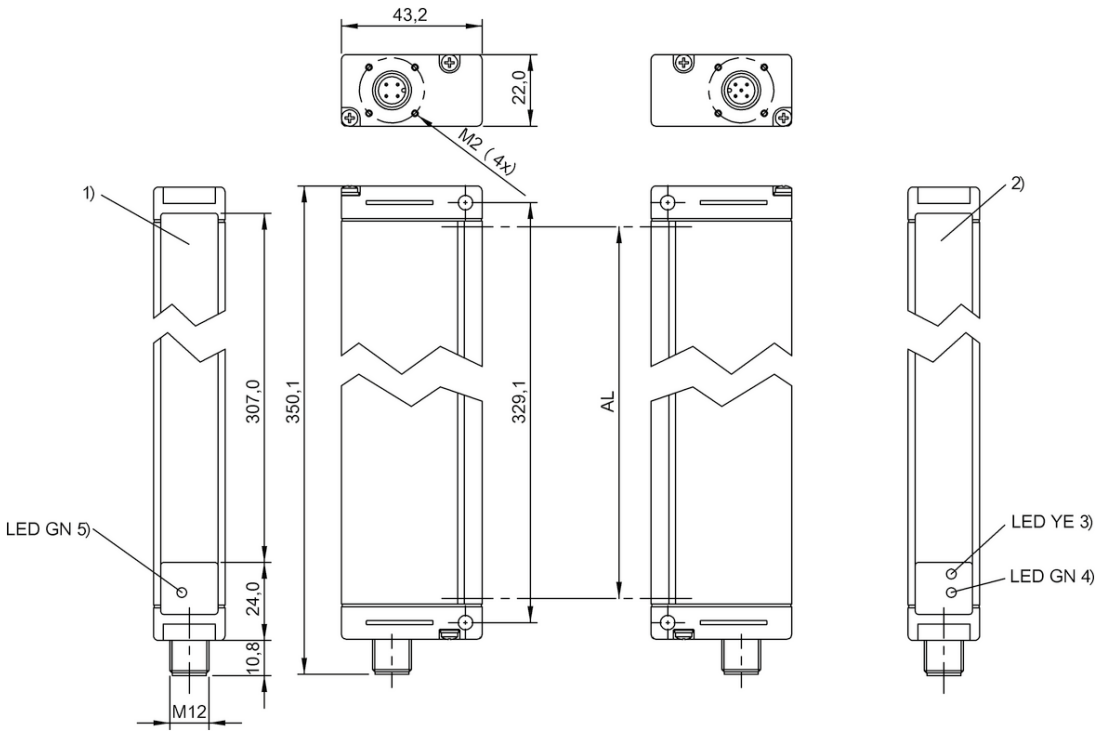
1) Sensing surface, 2) Sensing surface, 3) Output function, 4) stability/error, 5) Operating voltage

BLG0001, BLG0002



1) Sensing surface, 2) Sensing surface, 3) Output function, 4) stability/error, 5) Operating voltage

BLG0003

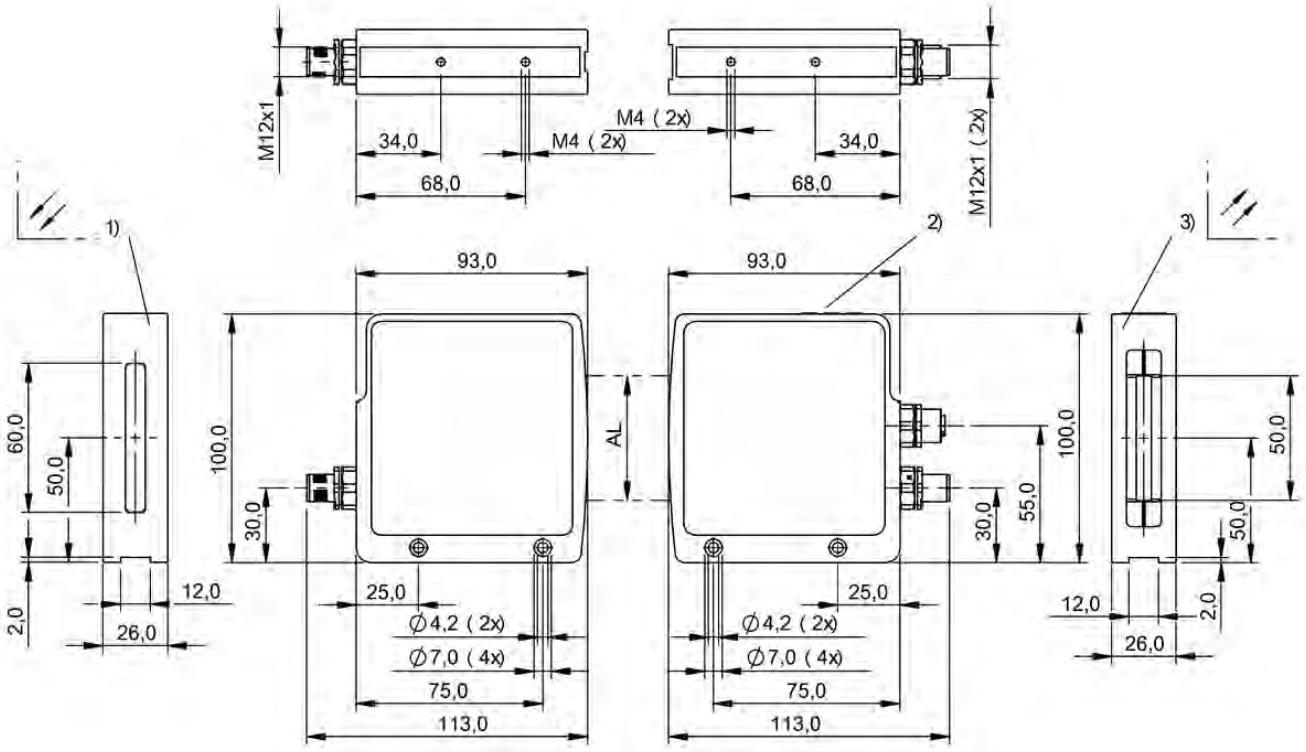


1) Sensing surface, 2) Sensing surface, 3) Output function, 4) stability/error, 5) Operating voltage

BLG0005

	BLA0001 BLA 50A-001-S115	
Series	A	
Dimension	100 x 26 x 93 mm	
Interface	2x Analog, voltage/analog, current 0…10 V/4…20 mA 3x PNP Normally open (NO)	
Principle of operation	Light array	
Special optical feature	CCD technology	
Beam characteristic	Collimated light strip, width 54 mm	
Light type	Laser red light	
Range	0...2 m	
Connection 1	M12x1-Male, 4-pole, A-coded	
Connection 2	M12x1-Female, 4-pole, A-coded	
Connection 3	M12x1-Male, 8-pole, A-coded	
Housing material	Aluminum	
Operating voltage Ub	15...30 VDC	
Approval/Conformity	CE	
Productview	Page 504	

BLA0003 BLA 50A-002-S4	
A	
100 x 27 x 93 mm	
IO-Link 1.1	
Light array	
CCD technology	
Collimated light strip, width 54 mm	
Laser red light	
0...2 m	
M12x1-Male, 4-pole	
M12x1-Female, 4-pole	
M12x1-Male, 4-pole	
Aluminum	
18...30 VDC	
CE	
Page 504	

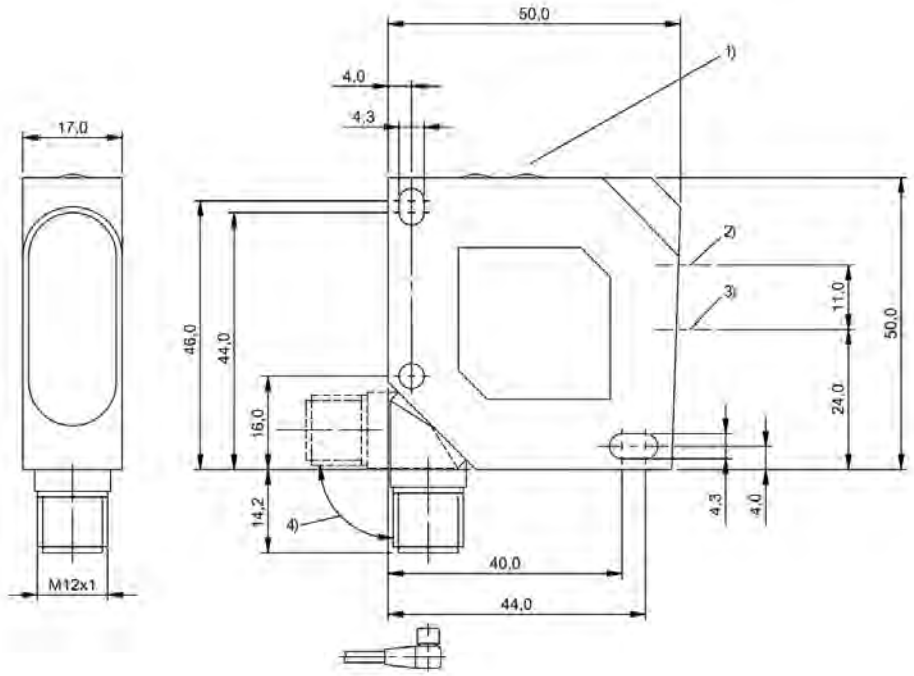


1) Emitter, 2) Display and control panel, 3) Receiver

BLA0001, BLA0003

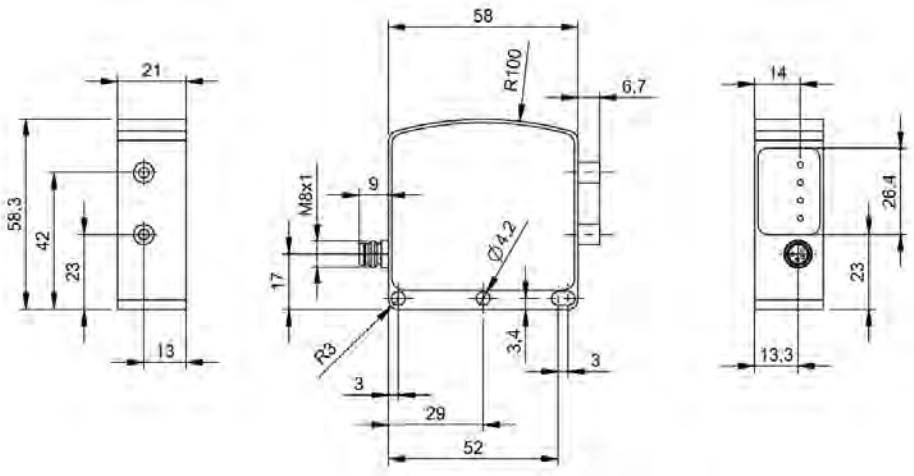
	BFS0001 BFS 26K-PS-L01-S115	
Series	26K	
Dimension	17 x 50 x 50 mm	
Interface	3x PNP normally open (NO)	
Input function	Emitter on/off, Key disable on/off, Teach color (switchpoint)	
Principle of operation	Color sensor	
Principle of optical operation	Diffuse sensor, fixed focus	
Beam characteristic	Focused	
Light type	White light	
Light spot size	Ø 4 mm at 22 mm	
Range	12...32 mm	
Connection	Connector, M12x1 connector, 8-pin	
Housing material	ABS	
Material sensing surface	PMMA	
Operating voltage Ub	12...28 VDC	
Approval/Conformity	CE, cULus, EAC	
Productview	Page 508	

	BFS000M BFS 33M-GSI-F01-S75	BFS000L BFS 33M-GSS-F01-PU-02	
	33M	33M	
	21 x 58.3 x 58 mm	21 x 58.3 x 74 mm	
	IO-Link 1.1 2x NO/NC	3x PNP/NPN normally open/normally closed (NO/NC)	
	—	—	
	Color sensor	Color sensor	
	Diffuse sensor	—	
	—	—	
	White light	White light	
	—	—	
	—	—	
	Connector, M8x1 connector, 4-pin	Cable, 2.00 m, PUR	
	Aluminum	Aluminum	
	—	—	
	21.6...26.4 VDC	21.6...26.4 VDC	
	CE	CE	
	Page 508	Page 509	

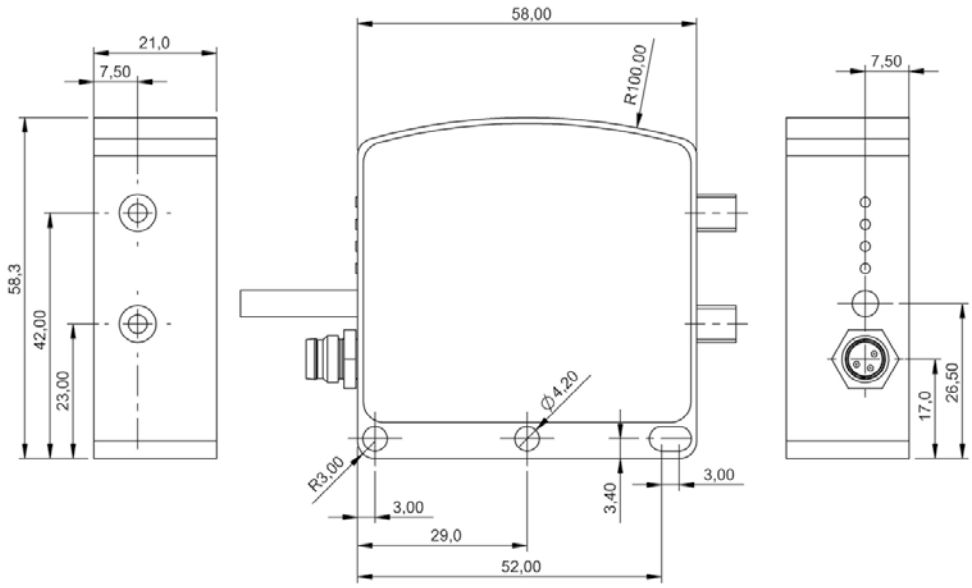


1) Display and control panel, 2) Optical axis emitter, 3) Optical axis receiver, 4) rotatable 270°

BFS0001



BFS000M

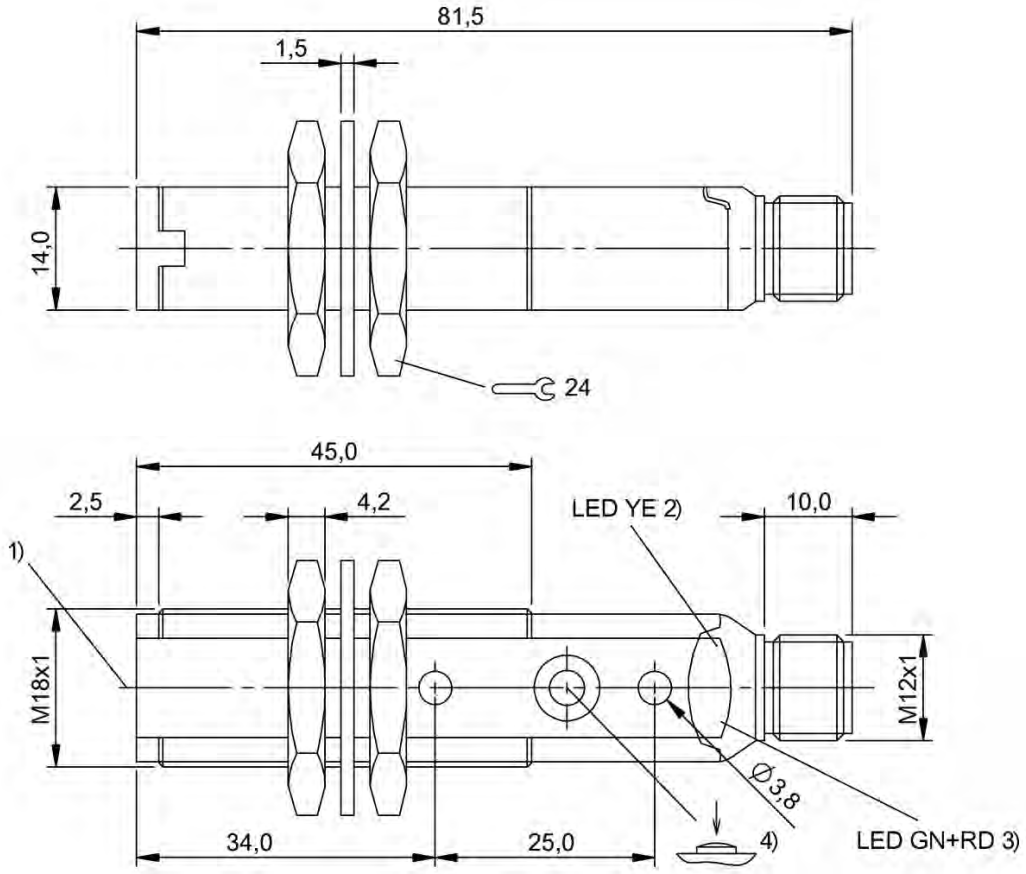

21,0
7,50
58,00
R100,00
7,50
58,3
42,00
23,00
Ø4.20
R3,00
3,00
3,40
3,00
29,0
52,00
17,0
26,50

BFS000L

PNP normally open, PNP normally closed	**BKT000H** BKT 18KF-001-P-S4			
PNP normally open/normally closed		**BKT0010** BKT 6K-002-P-S75	**BKT000Y** BKT 21M-002-P-S4	
PNP/NPN normally open/normally closed, analog, voltage 1...5.5 V				
PNP/NPN normally open/normally closed				
Series	18KF	6K	21M	
Dimension	Ø 18 x 81.5 mm	12 x 41.5 x 21.6 mm	12 x 50 x 42.5 mm	
Input function	—	Key disable on/off, Same function as button	Key disable on/off, Teach Contrast (switching point)	
Principle of operation	Contrast sensor	Contrast sensor	Contrast sensor	
Principle of optical operation	Diffuse sensor, Focused	Diffuse sensor, Focused	Diffuse sensor, Focused	
Special optical feature	—	—	Coaxial Optics	
Beam characteristic	Focused	Focused	Focused	
Light type	White light	Laser red light	White light	
Light spot size	Ø 4.5 mm at 10 mm	0.7 x 0.7 mm at 250 mm	Ø 3.5 mm at 19 mm	
Range	8...12 mm	1...250 mm	17...21 mm	
Connection	Connector, M12x1 connector, 4-pin	Connector, M8x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Housing material	PBT	ABS	Zinc, die-cast Aluminum	
Material sensing surface	PMMA	PMMA	Glass	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus	cULus, CE, EAC	cULus, CE, EAC	
Productview	Page 512	Page 512	Page 513	

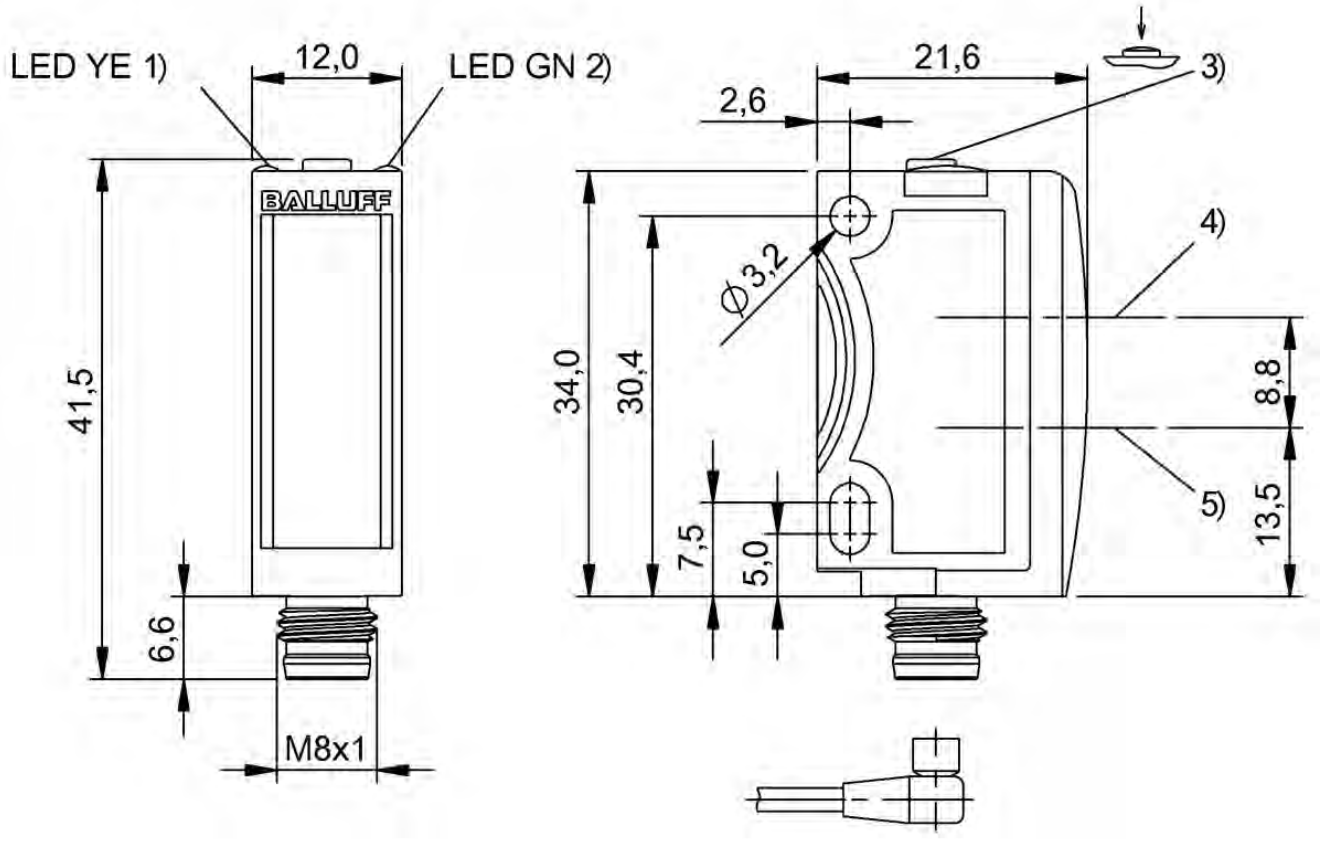



	BKT0003 BKT 67M-003-U-S92			**BKT0001** BKT 67M-001-U-S92	
		BKT0005 BKT 67M-005-U-S92	**BKT0006** BKT 67M-006-U-S92		
	67M	67M	67M	67M	
	32 x 64 x 82 mm	32 x 64 x 82 mm	32 x 64 x 82 mm	32 x 64 x 82 mm	
	Same function as SET button	Same function as SET button	Same function as SET button	Time function on/off	
	Contrast sensor	Contrast sensor	Contrast sensor	Contrast sensor	
	Diffuse sensor, Focused	Diffuse sensor, Focused	Diffuse sensor, Focused	Diffuse sensor, Focused	
	–	–	–	–	
	Focused	Focused	Focused	Focused	
	blue light/green light/ red light	blue light/green light/ red light	blue light/green light/ red light	blue light/green light/ red light	
	1.5 x 5 mm at 9 mm	1.5 x 5 mm at 9 mm	5 x 1.5 mm at 9 mm	1.5 x 5 mm at 9 mm	
	6...12 mm	6...12 mm	6...12 mm	6...12 mm	
	Connector, M12x1 connector	Connector, M12x1 connector	Connector, M12x1 connector	Connector, M12x1 connector	
	Aluminum, die-cast	Aluminum, die-cast	Aluminum, die-cast	Aluminum, die-cast	
	Glass	Glass	Glass	PMMA	
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
	CE, cULus	CE, cULus	CE, cULus	CE, cULus	
	Page 513	Page 514	Page 514	Page 514	



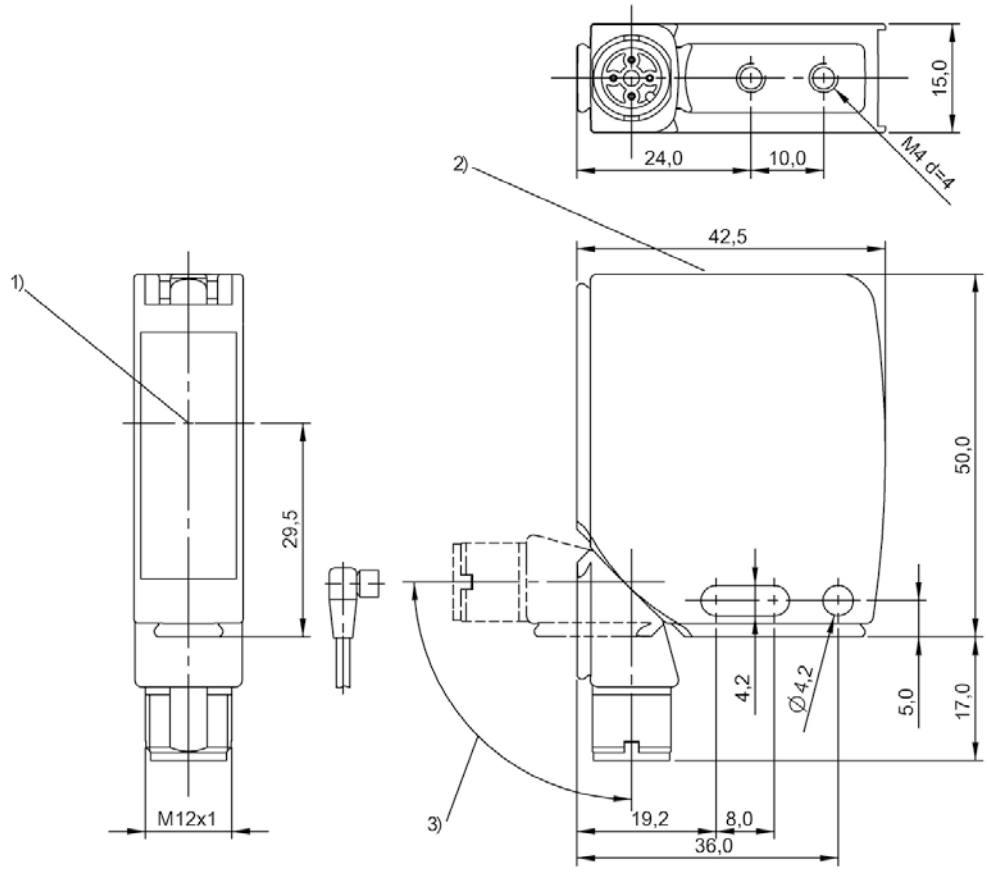
1) Optical axis, 2) Output function, 3) stability/error, 4) Sn

BKT000H



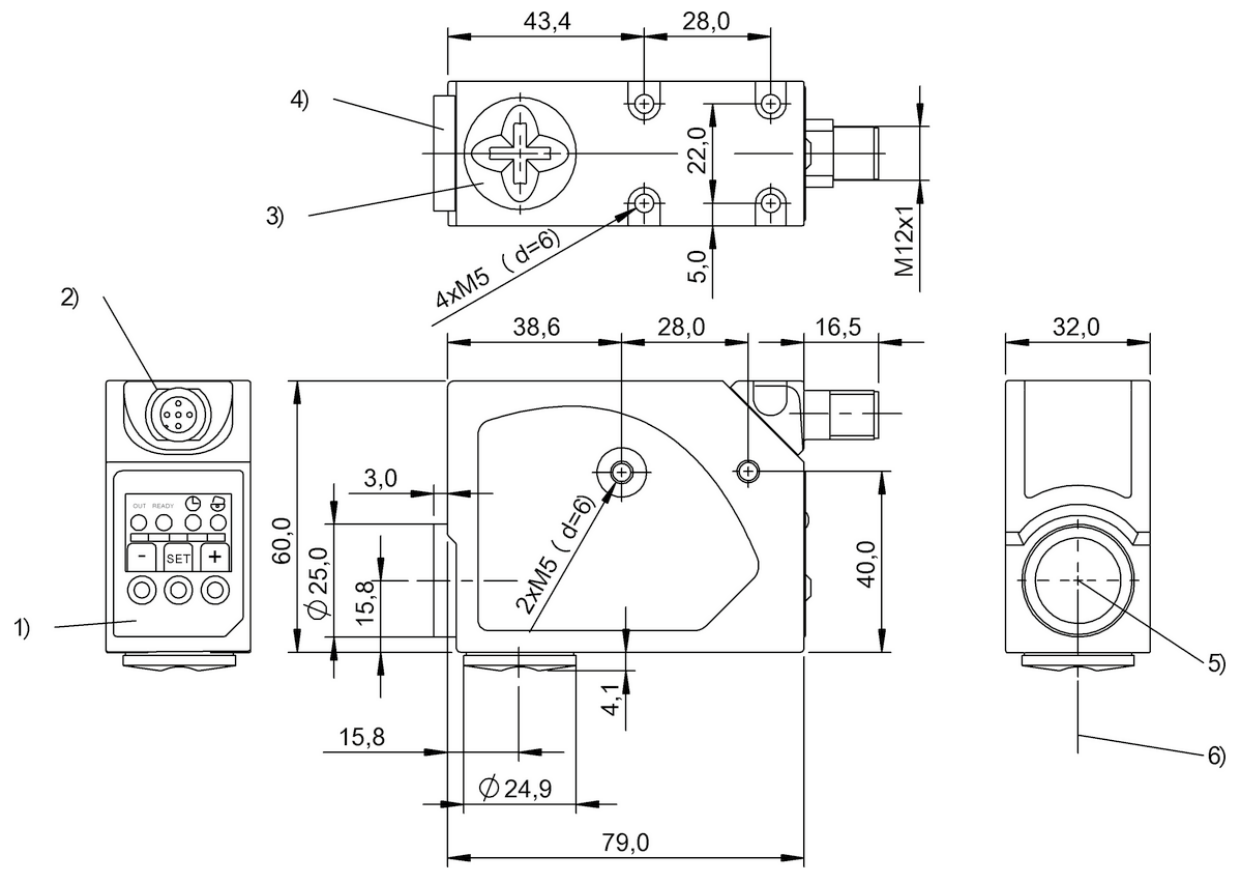
1) Output function, 2) Operating voltage, 3) Sensitivity, light/dark, 4) Optical axis receiver, 5) Optical axis emitter

BKT0010



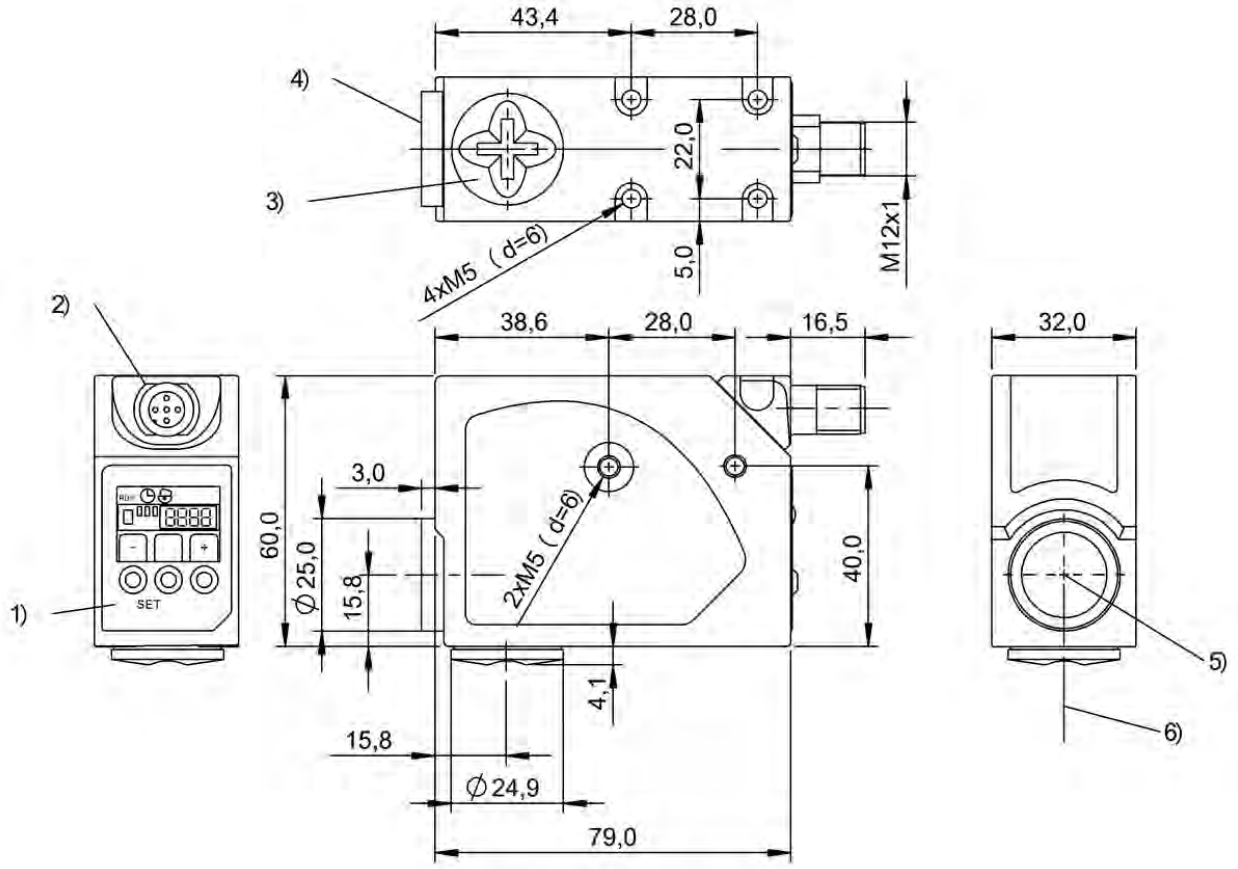
1) Optical axis, 2) Display and control panel, 3) rotatable 270°

BKT000Y



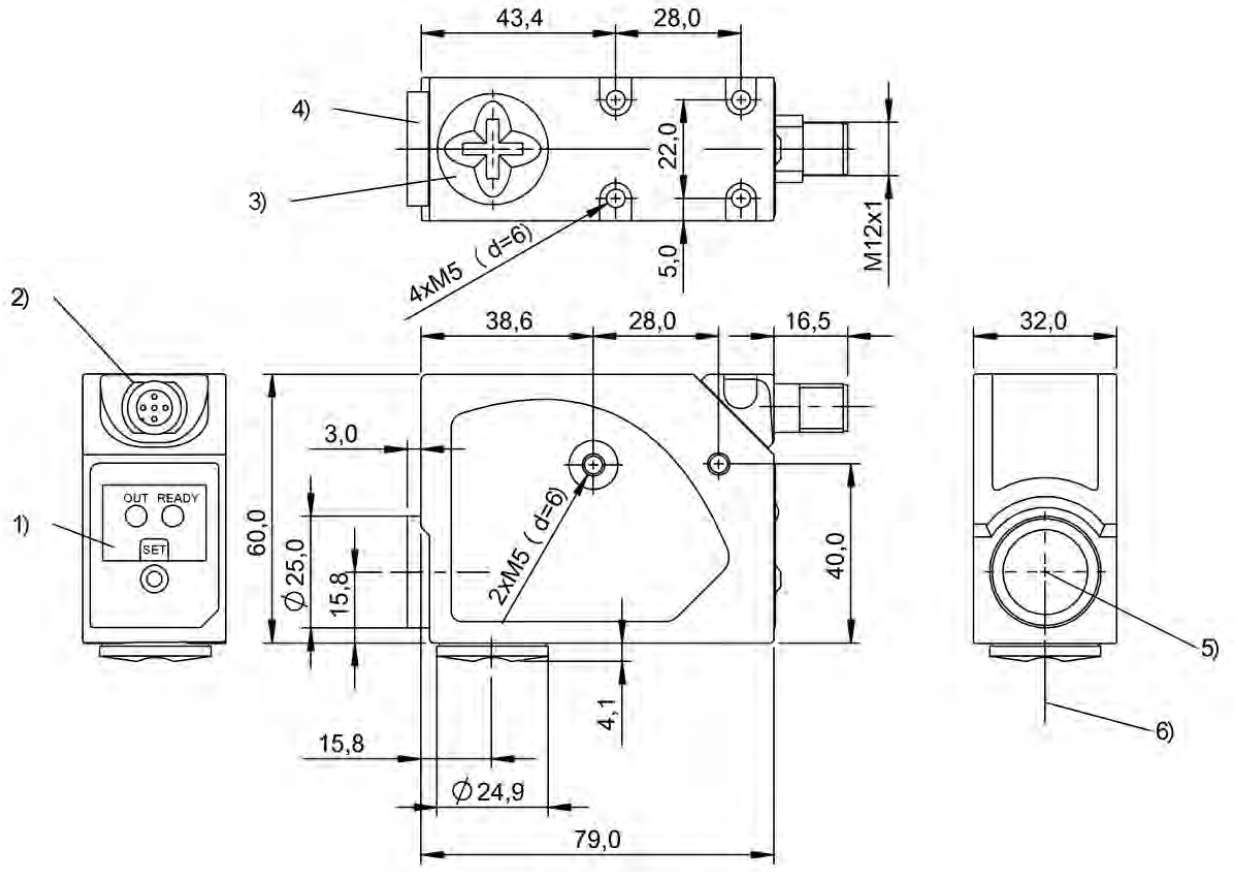
1) Display and control panel, 2) rotatable 270°, 3) Cover cap, removable, 4) standard lens, removable, 5) Light exit standard, 6) Light exit optional

BKT0003



1) Display and control panel, 2) rotatable 270°, 3) Cover cap, removable, 4) standard lens, removable, 5) Light exit standard, 6) Light exit optional

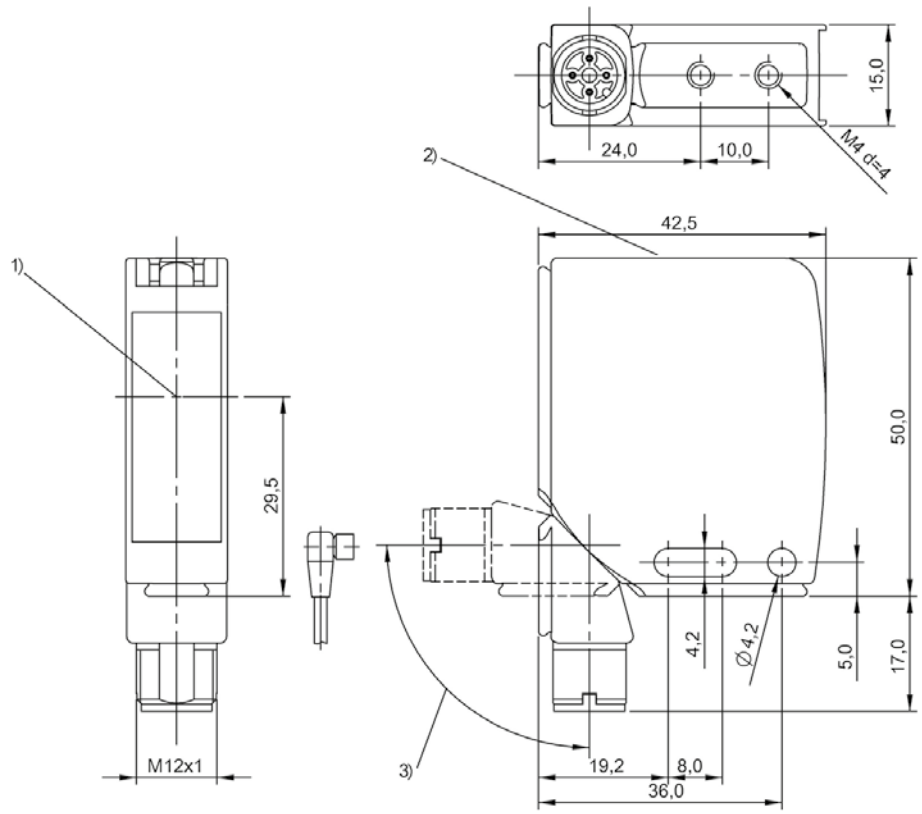
BKT0005, BKT0006



1) Display and control panel, 2) rotatable 270°, 3) Cover cap, removable, 4) standard lens, removable, 5) Light exit standard, 6) Light exit optional

BKT0001

PNP normally open/normally closed	**BLT0009** BLT 21M-001-P-S4
Series	21M
Dimension	12 x 50 x 42.5 mm
Input function	Key disable on/off, Teach Contrast (switching point)
Principle of operation	Luminescence sensor
Principle of optical operation	Diffuse sensor, Focused
Special optical feature	Coaxial Optics
Beam characteristic	Focused
Light type	Ultraviolet light
Light spot size	Ø 1.5 mm at 10 mm
Range	0...40 mm
Connection	Connector, M12x1 connector, 4-pin
Housing material	Zinc, die-cast Aluminum
Material sensing surface	Glass
Operating voltage Ub	10...30 VDC
Approval/Conformity	cULus, CE



1) Optical axis, 2) Display and control panel, 3) rotatable 270°

BLT0009

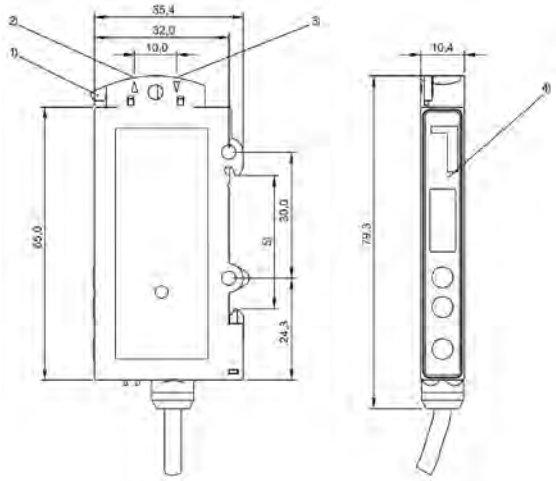
2 × PNP normally open/normally closed			
PNP normally open/normally closed		**BFB0006** BFB 75K-002-P-S75	
PNP normally open/normally closed, analog, voltage 0...10 V	**BFB0008** BFB 75K-003-P-02		
Series	75K	75K	
Dimension	10.4 x 35.4 x 79.3 mm	10.4 x 35.4 x 84 mm	
Principle of operation	Fiber optic device	Fiber optic device	
Input function	Teach Sn, Key disable on/off	Teach Sn, Key disable on/off	
Setting	Rated switching distance (Sn), 2 values, Duration of single pulse, Mode normal/fine/fast/far, LCD read direction, Time function, Factory setting (Reset), display on/off, Delay time, Key disable on/off, Light-on/dark-on, Sensitivity (Sn)	LCD read direction, Time function, Factory setting (Reset), Mode normal/fine/fast/far, Duration of single pulse, Rated switching distance (Sn), 2 values, display on/off, Delay time, Key disable on/off, Light-on/dark-on, Sensitivity (Sn)	
Operating voltage Ub	—	10...30 VDC	
Light type	LED, red light	LED, red light	
Connection	Cable, 2.00 m, PVC	Connector, M8x1 connector, 4-pin	
Housing material	ABS	ABS	
Switching frequency	8000 Hz /1000 Hz/125 Hz	8000 Hz /1000 Hz/125 Hz	
Approval/Conformity	cULus, CE	cULus, CE	
Productview	Page 522	Page 522	




			BFB000C BFB M18M-011-P-S4	**BFB000E** BFB M18M-012-P-S4
	BFB0003 BFB 75K-001-P-02	**BFB0004** BFB 75K-001-P-S75		
	75K	75K	18M	18M
	10.4 x 35.4 x 79.3 mm	10.4 x 35.4 x 84 mm	Ø 18 x 75 mm	Ø 18 x 75 mm
	Fiber optic device	Fiber optic device	Photoelectric sensor	Photoelectric sensor
	Key disable on/off, Same function as button	Same function as button, Key disable on/off	—	—
	Factory setting (Reset), Light-on/ dark-on, Sensitivity (Sn)	Light-on/dark-on, Factory setting (Reset), Sensitivity (Sn)	Sensitivity (Sn)	Sensitivity (Sn)
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	LED, red light	LED, red light	LED infrared	LED infrared
	Cable, 2.00 m, PVC	Connector, M8x1 connector, 4-pin	Connector-plug, 4-pin	Connector-plug, 4-pin
	ABS	ABS	Brass	Brass
	1500 Hz	1500 Hz	1000 Hz	3000 Hz
	cULus, CE, EAC	CE, cULus, EAC	CE, EAC, cULus, DC, Code 81U2	CE, EAC, cULus, DC, Code 81U2
	Page 522	Page 522	Page 522	Page 522

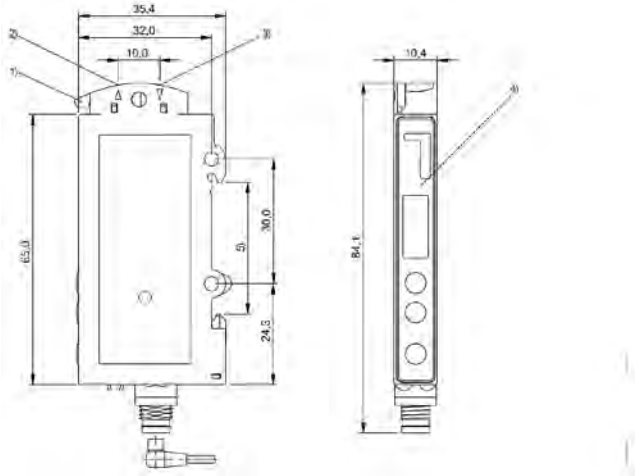
2 × PNP normally open/normally closed	**BFB0009** BFB M18M-001-P-S4	**BFB000A** BFB M18M-002-P-S4	
PNP normally open, PNP normally closed			
Series	18M	18M	
Dimension	Ø 18 x 75 mm	Ø 18 x 75 mm	
Principle of operation	Photoelectric sensor	Photoelectric sensor	
Input function	—	—	
Setting	Sensitivity (Sn)	Sensitivity (Sn)	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Light type	LED, red light	LED, red light	
Connection	Connector-plug, 4-pin	Connector-plug, 4-pin	
Housing material	Brass	Brass	
Switching frequency	1000 Hz	3000 Hz	
Approval/Conformity	CE, EAC, cULus, DC, Code 81U2	CE, EAC, cULus, DC, Code 81U2	
Productview	Page 526	Page 526	

	BOS00JJ BOS 18KF-PA-1FR-S4-C			
	18KF			
	Ø 18 x 87 mm			
	Fiber optic device			
	—			
	Sensitivity (Sn)			
	10...30 VDC			
	LED, red light			
	Connector, M12x1 connector, 4-pin			
	PBT			
	1000 Hz			
	CE, cULus			
	Page 526			



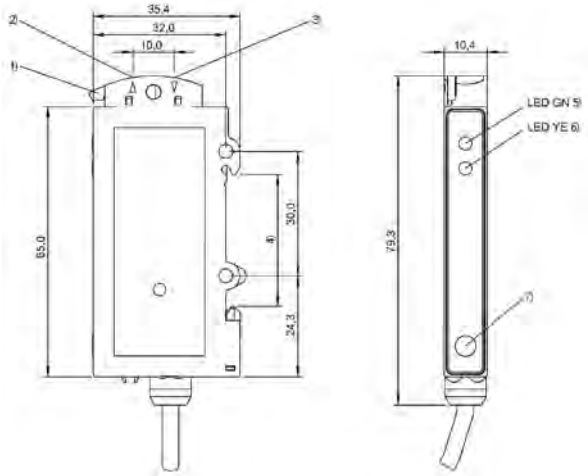
1) Fiber clamp, 2) Receiver, 3) Emitter, 4) Display and control panel, 5) For DIN rail 35mm

BFB0008



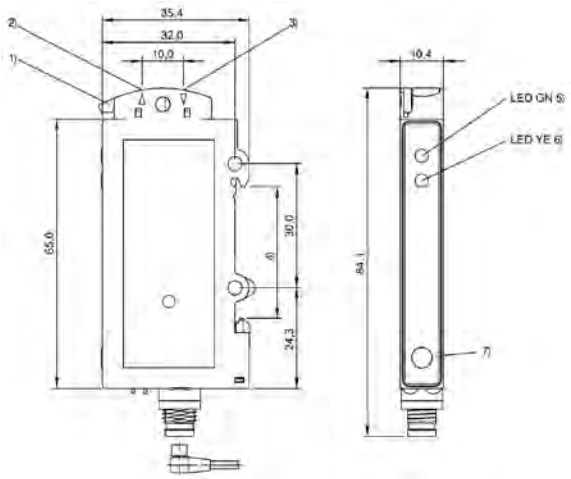
1) Fiber clamp, 2) Receiver, 3) Emitter, 4) Display and control panel, 5) For DIN rail 35mm

BFB0006



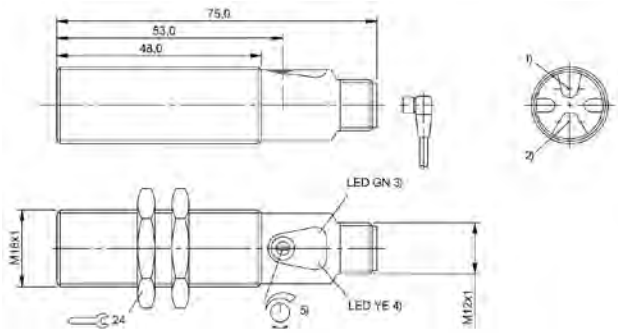
1) Fiber clamp, 2) Emitter, 3) Receiver, 4) For DIN rail 35mm, 5) stability, 6) Output function, 7) Sn

BFB0003



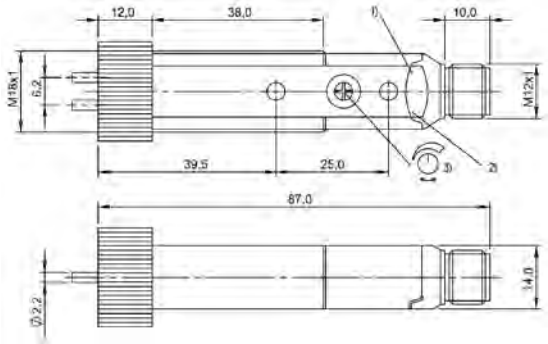
1) Fiber clamp, 2) Emitter, 3) Receiver, 4) For DIN rail 35mm, 5) stability, 6) Output function, 7) Sn

BFB0004



1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception/limit area,

BFB000C, BFB000E, BFB0009, BFB000A



1) Output function, 2) Stability, 3) Sn

BOS00JJ



	BFO000F BFO 18A-LAA-MZG-20-0,5	BFO000H BFO 18A-LAA-MZG-20-1	BFO000J BFO 18A-LAA-MZG-20-1,5	
Version	M5, standard	M5, standard	M5, standard	
Photoelectric sensing principle	—	—	—	
Use	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	
Reference base unit	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	
Fiber type material	Glass	Glass	Glass	
Cable length L	0.5 m	1 m	1.5 m	
Material jacket	Stainless steel	Stainless steel	Stainless steel	
Range	200 mm	200 mm	200 mm	
Ambient temperature	-20...250 °C	-20...250 °C	-20...250 °C	
Material	—	—	—	
Active surface, fibers	Bundle Ø 1.0 mm	Bundle Ø 1.0 mm	Bundle Ø 1.0 mm	
Active surface, fiber arrangement	Homogeneous bundle	Homogeneous bundle	Homogeneous bundle	
IP rating	IP50	IP50	IP50	
Productview	Page 552	Page 552	Page 552	





	BFO0000M BFO 18A-LAA-UZG-20-0,5	BFO0000N BFO 18A-LAA-UZG-20-1	BFO0001Z BFO 18A-LGG-MZG-10-0,5	BFO00020 BFO 18A-LGG-MZG-10-1	BFO00023 BFO 18A-LGG-SMG-10-0,5
	M5, standard	M5, standard	Ø 2, standard	Ø 2, standard	Ø 2, standard
	–	–	–	–	–
	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB
	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4
	Glass	Glass	Glass	Glass	Glass
	0.5 m	1 m	0.5 m	1 m	0.5 m
	PUR	PUR	Stainless steel	Stainless steel	Silicone, on stainless steel
	200 mm	200 mm	100 mm	100 mm	100 mm
	-20...85 °C	-20...85 °C	-20...250 °C	-20...250 °C	-40...150 °C
	–	–	–	–	–
	Bundle Ø 1.0 mm	Bundle Ø 1.0 mm	Bundle Ø 1.4 mm	Bundle Ø 1.4 mm	Bundle Ø 1.4 mm
	Homogeneous bundle	Homogeneous bundle	Homogeneous bundle	Homogeneous bundle	Homogeneous bundle
	IP67	IP67	IP50	IP50	IP67
	Page 552	Page 552	Page 553	Page 553	Page 553



	BF00024 BFO 18A-LGG-SMG-10-1	BF0000U BFO 18A-LCC-SMG-20-0,5	BF0000W BFO 18A-LCC-SMG-20-1	
Version	Ø 2, standard	Ø 6, standard	Ø 6, standard	
Photoelectric sensing principle	—	—	—	
Use	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	
Reference base unit	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	
Fiber type material	Glass	Glass	Glass	
Cable length L	1 m	0.5 m	1 m	
Material jacket	Silicone, on stainless steel	Silicone, on stainless steel	Silicone, on stainless steel	
Range	100 mm	200 mm	200 mm	
Ambient temperature	-40...150 °C	-40...150 °C	-40...150 °C	
Material	—	—	—	
Active surface, fibers	Bundle Ø 1.4 mm	Bundle Ø 1.0 mm	Bundle Ø 1.0 mm	
Active surface, fiber arrangement	Homogeneous bundle	Homogeneous bundle	Homogeneous bundle	
IP rating	IP67	IP67	IP67	
Productview	Page 553	Page 554	Page 554	





BFO0000Z BFO 18A-LCC-UZG-20-1	BFO0003Y BFO 18V-LCC-MZG-23-0,5	BFO0003Z BFO 18V-LCC-MZG-23-0,75	BFO00042 BFO 18V-LCC-SMG-23-0,5	BFO001P BFO 18A-LFF-MZG-10-0,5
Ø 6, standard	Ø 6, standard	Ø 6, standard	Ø 6, standard	Ø 2, 90° optics
–	–	–	–	–
for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB
BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4
Glass	Glass	Glass	Glass	Glass
1 m	0.5 m	0.75 m	0.5 m	0.5 m
PUR	Stainless steel	Stainless steel	Silicone, on stainless steel	Stainless steel
200 mm	200 mm	200 mm	200 mm	100 mm
-20...85 °C	-20...250 °C	-20...250 °C	-40...150 °C	-20...250 °C
–	–	–	–	–
Bundle Ø 1.0 mm	Bundle Ø 2.1 mm	Bundle Ø 2.1 mm	Bundle Ø 2.1 mm	Bundle Ø 1.4 mm
Homogeneous bundle	Homogeneous bundle	Homogeneous bundle	Homogeneous bundle	Homogeneous bundle
IP67	IP50	IP50	IP67	IP50
Page 554	Page 555	Page 555	Page 555	Page 556



	BF0001R BFO 18A-LFF-MZG-10-1	BF0001U BFO 18A-LFF-SMG-10-0,5	BF0001W BFO 18A-LFF-SMG-10-1	
Version	Ø 2, 90° optics	Ø 2, 90° optics	Ø 2, 90° optics	
Photoelectric sensing principle	—	—	—	
Use	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	
Reference base unit	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	
Fiber type material	Glass	Glass	Glass	
Cable length L	1 m	0.5 m	1 m	
Material jacket	Stainless steel	Silicone, on stainless steel	Silicone, on stainless steel	
Range	100 mm	100 mm	100 mm	
Ambient temperature	-20...250 °C	-40...150 °C	-40...150 °C	
Material	—	—	—	
Active surface, fibers	Bundle Ø 1.4 mm	Bundle Ø 1.4 mm	Bundle Ø 1.4 mm	
Active surface, fiber arrangement	Homogeneous bundle	Homogeneous bundle	Homogeneous bundle	
IP rating	IP50	IP67	IP67	
Productview	Page 556	Page 556	Page 556	





BFO0013 BFO 18A-LEE-MZG-20-0,5	BFO0014 BFO 18A-LEE-MZG-20-1	BFO0019 BFO 18A-LEE-SMG-20-0,5	BFO001A BFO 18A-LEE-SMG-20-1	BFO001F BFO 18A-LEE-UZG-20-0,5
Ø 6, 90° optics	Ø 6, 90° optics	Ø 6, 90° optics	Ø 6, 90° optics	Ø 6, 90° optics
–	–	–	–	–
for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB
BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4
Glass	Glass	Glass	Glass	Glass
0.5 m	1 m	0.5 m	1 m	0.5 m
Stainless steel	Stainless steel	Silicone, on stainless steel	Silicone, on stainless steel	PUR
200 mm	200 mm	200 mm	200 mm	200 mm
-20...250 °C	-20...250 °C	-40...150 °C	-40...150 °C	-20...85 °C
–	–	–	–	–
Bundle Ø 1.0 mm	Bundle Ø 1.0 mm	Bundle Ø 1.0 mm	Bundle Ø 1.0 mm	Bundle Ø 1.0 mm
Homogeneous bundle	Homogeneous bundle	Homogeneous bundle	Homogeneous bundle	Homogeneous bundle
IP50	IP50	IP67	IP67	IP67
Page 557	Page 557	Page 557	Page 557	Page 558



	BF0001H BFO 18A-LEE-UZG-20-1	BF00047 BFO 18V-LDD-MZG-23-0,75	BF00049 BFO 18V-LDD-MZG-23-2,0	
Version	Ø 6, 90° optics	Ø 6, 90° optics	Ø 6, 90° optics	
Photoelectric sensing principle	—	—	—	
Use	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	
Reference base unit	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	
Fiber type material	Glass	Glass	Glass	
Cable length L	1 m	0.75 m	2 m	
Material jacket	PUR	Stainless steel	Stainless steel	
Range	200 mm	200 mm	200 mm	
Ambient temperature	-20...85 °C	-20...250 °C	-20...250 °C	
Material	—	—	—	
Active surface, fibers	Bundle Ø 1.0 mm	Bundle Ø 2.1 mm	Bundle Ø 2.1 mm	
Active surface, fiber arrangement	Homogeneous bundle	Homogeneous bundle	Homogeneous bundle	
IP rating	IP67	IP50	IP50	
Productview	Page 558	Page 558	Page 558	





	BF0004A BFO 18V-LDD-MZG-23-3	BF0004C BFO 18V-LDD-SMG-23-0,5	BF0004F BFO 18V-LDD-SMG-23-1	BF00026 BFO 18A-XAA-MZG-30-0,5	BF00027 BFO 18A-XAA-MZG-30-1
	Ø 6, 90° optics	Ø 6, 90° optics	Ø 6, 90° optics	M5, standard	M5, standard
	–	–	–	–	–
	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB
	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4
	Glass	Glass	Glass	Glass	Glass
	3 m	0.5 m	1 m	0.5 m	1 m
	Stainless steel	Silicone, on stainless steel	Silicone, on stainless steel	Stainless steel	Stainless steel
	200 mm	200 mm	200 mm	20 mm	20 mm
	-20...250 °C	-40...150 °C	-40...150 °C	-20...250 °C	-20...250 °C
	–	–	–	–	–
	Bundle Ø 2.1 mm	Bundle Ø 2.1 mm	Bundle Ø 2.1 mm	Bundle Ø 3.0 mm	Bundle Ø 3.0 mm
	Homogeneous bundle	Homogeneous bundle	Homogeneous bundle	Segmented bundle	Segmented bundle
	IP50	IP67	IP67	IP50	IP50
	Page 558	Page 559	Page 559	Page 559	Page 559



	BF000H3 BFO 18A-XAA-MZG-30-5	BF0002F BFO 18A-XAA-SMG-30-0,5	BF0002H BFO 18A-XAA-SMG-30-1	
Version	M5, standard	M5, standard	M5, standard	
Photoelectric sensing principle	—	—	—	
Use	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	
Reference base unit	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	
Fiber type material	Glass	Glass	Glass	
Cable length L	5 m	0.5 m	1 m	
Material jacket	Stainless steel	Silicone, on stainless steel	Silicone, on stainless steel	
Range	20 mm	20 mm	20 mm	
Ambient temperature	-20...250 °C	-40...150 °C	-40...150 °C	
Material	—	—	—	
Active surface, fibers	Bundle Ø 3.0 mm	Bundle Ø 3.0 mm	Bundle Ø 3.0 mm	
Active surface, fiber arrangement	Segmented bundle	Segmented bundle	Segmented bundle	
IP rating	IP50	IP67	IP67	
Productview	Page 559	Page 560	Page 560	





	BFO0002M BFO 18A-XAA-UZG-30-0,5	BFO0002N BFO 18A-XAA-UZG-30-1	BFO00H8 BFO NU1-XB-05K-MZG-11-01	BFO0003R BFO 18A-XAG-MZG-15-0,5	BFO0003T BFO 18A-XAG-MZG-15-1
	M5, standard	M5, standard	M4, standard	Ø 2, standard	Ø 2, standard
	—	—	—	—	—
	for fiber optic base units BFB	for fiber optic base units BFB	for photoelectric color sensors BFS	for fiber optic base units BFB	for fiber optic base units BFB
	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFS 33M-GSS-..	BFB M18M-011-P-S4	BFB M18M-011-P-S4
	Glass	Glass	Glass	Glass	Glass
	0.5 m	1 m	1 m	0.5 m	1 m
	PUR	PUR	PE	Stainless steel	Stainless steel
	20 mm	20 mm	60 mm	10 mm	10 mm
	-20...85 °C	-20...85 °C	-20...170 °C	-20...250 °C	-20...250 °C
	—	—	Stainless steel (1.4305)	—	—
	Bundle Ø 3.0 mm	Bundle Ø 3.0 mm	Ø 1.0 mm	Bundle Ø 1.7 mm	Bundle Ø 1.7 mm
	Segmented bundle	Segmented bundle	Ring around individual fiber	Segmented bundle	Segmented bundle
	IP67	IP67	IP50	IP50	IP50
	Page 560	Page 560	Page 561	Page 561	Page 561



	BF0002U BFO 18A-XAC-SMG-30-0,5	**BF0002W** BFO 18A-XAC-SMG-30-1	**BF0004M** BFO 18V-XAC-MZG-30-0,5	
Version	Ø 6, standard	Ø 6, standard	Ø 6, standard	
Photoelectric sensing principle	—	—	—	
Use	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	
Reference base unit	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	
Fiber type material	Glass	Glass	Glass	
Cable length L	0.5 m	1 m	0.5 m	
Material jacket	Silicone, on stainless steel	Silicone, on stainless steel	Stainless steel	
Range	20 mm	20 mm	20 mm	
Ambient temperature	-40...150 °C	-40...150 °C	-20...250 °C	
Material	—	—	—	
Active surface, fibers	Bundle Ø 3.0 mm	Bundle Ø 3.0 mm	Bundle Ø 3.0 mm	
Active surface, fiber arrangement	Segmented bundle	Segmented bundle	Segmented bundle	
IP rating	IP67	IP67	IP50	
Productview	Page 562	Page 562	Page 562	





	BFO0004P BFO 18V-XAC-SMG-30-0,5	BFO0004R BFO 18V-XAC-SMG-30-1	BFO0003H BFO 18A-XAF-MZG-15-0,5	BFO0003J BFO 18A-XAF-MZG-15-1	BFO0003M BFO 18A-XAF-SMG-15-0,5
	Ø 6, standard	Ø 6, standard	Ø 2, 90° optics	Ø 2, 90° optics	Ø 2, 90° optics
	–	–	–	–	–
	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB
	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4
	Glass	Glass	Glass	Glass	Glass
	0.5 m	1 m	0.5 m	1 m	0.5 m
	Silicone, on stainless steel	Silicone, on stainless steel	Stainless steel	Stainless steel	Silicone, on stainless steel
	20 mm	20 mm	10 mm	10 mm	10 mm
	-40...150 °C	-40...150 °C	-20...250 °C	-20...250 °C	-40...150 °C
	–	–	–	–	–
	Bundle Ø 3.0 mm	Bundle Ø 3.0 mm	Bundle Ø 1.4 mm	Bundle Ø 1.4 mm	Bundle Ø 1.4 mm
	Segmented bundle	Segmented bundle	Segmented bundle	Segmented bundle	Segmented bundle
	IP67	IP67	IP50	IP50	IP67
	Page 563	Page 563	Page 563	Page 563	Page 564



	BF0003N BFO 18A-XAF-SMG-15-1	BF00031 BFO 18A-XAE-MZG-30-0,5	BF00032 BFO 18A-XAE-MZG-30-1	
Version	Ø 2, 90° optics	Ø 6, 90° optics	Ø 6, 90° optics	
Photoelectric sensing principle	—	—	—	
Use	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	
Reference base unit	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	
Fiber type material	Glass	Glass	Glass	
Cable length L	1 m	0.5 m	1 m	
Material jacket	Silicone, on stainless steel	Stainless steel	Stainless steel	
Range	10 mm	20 mm	20 mm	
Ambient temperature	-40...150 °C	-20...250 °C	-20...250 °C	
Material	—	—	—	
Active surface, fibers	Bundle Ø 1.4 mm	Bundle Ø 3.0 mm	Bundle Ø 3.0 mm	
Active surface, fiber arrangement	Segmented bundle	Segmented bundle	Segmented bundle	
IP rating	IP67	IP50	IP50	
Productview	Page 564	Page 564	Page 564	





	BF00037 BFO 18A-XAE-SMG-30-0,5	BF00038 BFO 18A-XAE-SMG-30-1	BF0003C BFO 18A-XAE-UZG-30-0,5	BF0003E BFO 18A-XAE-UZG-30-1	BF0004U BFO 18V-XAD-MZG-30-0,5
	Ø 6, 90° optics	Ø 6, 90° optics	Ø 6, 90° optics	Ø 6, 90° optics	Ø 6, 90° optics
	–	–	–	–	–
	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB
	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB M18M-011-P-S4
	Glass	Glass	Glass	Glass	Glass
	0.5 m	1 m	0.5 m	1 m	0.5 m
	Silicone, on stainless steel	Silicone, on stainless steel	PUR	PUR	Stainless steel
	20 mm	20 mm	20 mm	20 mm	20 mm
	-40...150 °C	-40...150 °C	-20...85 °C	-20...85 °C	-20...70 °C
	–	–	–	–	–
	Bundle Ø 3.0 mm	Bundle Ø 3.0 mm	Bundle Ø 3.0 mm	Bundle Ø 3.0 mm	Bundle Ø 3.0 mm
	Segmented bundle	Segmented bundle	Segmented bundle	Segmented bundle	Segmented bundle
	IP67	IP67	IP67	IP67	IP50
	Page 565	Page 565	Page 565	Page 565	Page 566



	BF0004Y BFO 18V-XAD-SMG-30-0,5	BF0004Z BFO 18V-XAD-SMG-30-1	BF0005Y BFO D22-LD-EAK-10-20	
Version	Ø 6, 90° optics	Ø 6, 90° optics	4.4x2.2 Duplex cable	
Photoelectric sensing principle	—	—	—	
Use	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	
Reference base unit	BFB M18M-011-P-S4	BFB M18M-011-P-S4	BFB 75K-001-..	
Fiber type material	Glass	Glass	PMMA	
Cable length L	0.5 m	1 m	20 m	
Material jacket	Silicone, on stainless steel	Silicone, on stainless steel	PE	
Range	20 mm	20 mm	120 mm for L = 2 m	
Ambient temperature	-40...150 °C	-40...150 °C	-40...85 °C	
Material	—	—	—	
Active surface, fibers	Bundle Ø 3.0 mm	Bundle Ø 3.0 mm	Ø 1.0 mm (2x)	
Active surface, fiber arrangement	Segmented bundle	Segmented bundle	Adjacent to one another	
IP rating	IP67	IP67	IP65	
Productview	Page 566	Page 566	Page 567	





	BFO0000C BFO N22-LA-FB-EAK-05-01	BFO0005R BFO D22-LA-RB-EAK-10-02	BFO0005M BFO D22-LA-KB-EAK-10-02	BFO0005U BFO D22-LAP-KB-EAK-15-02	BFO0005T BFO D22-LAH-KB-EAK-10-02
	M2, standard	M3, standard	M4, standard	M4, standard	M4, standard, flexible cable
	–	–	–	–	–
	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB
	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..
	PMMA	PMMA	PMMA	PMMA	PMMA
	1 m	2 m	2 m	2 m	2 m
	PE	PE	PE	PE	PE
	140 mm	500 mm	500 mm	800 mm	400 mm
	-40...60 °C	-55...70 °C	-40...70 °C	-55...70 °C	-40...70 °C
	–	–	–	–	–
	Ø 0.5 mm	Ø 1.0 mm	Ø 1.0 mm	Ø 1.5 mm	Ø 1.0 mm
	Single fiber	Single fiber	Single fiber	Single fiber	Single fiber
	IP65	IP65	IP65	IP65	IP65
	Page 567	Page 568	Page 568	Page 569	Page 569



	BF0005W BFO D22-LAT-KB-EAK-10-02	BF0005N BFO D22-LA-NB-EAK-10-02	BF00051 BFO D10-LA-CB-EAK-05-02	
Version	M4, standard, high temp.	M4, bendable tip	Ø 2, standard	
Photoelectric sensing principle	—	—	—	
Use	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	
Reference base unit	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..	
Fiber type material	PC	PMMA	PMMA	
Cable length L	2 m	2 m	2 m	
Material jacket	PE, cross-linked	PE	PE	
Range	600 mm	500 mm	130 mm	
Ambient temperature	-55...115 °C	-55...70 °C	-55...70 °C	
Material	—	—	—	
Active surface, fibers	Ø 1.0 mm	Ø 1.0 mm	Ø 0.5 mm	
Active surface, fiber arrangement	Single fiber	Single fiber	Single fiber	
IP rating	IP65	IP65	IP65	
Productview	Page 570	Page 570	Page 571	





	BF000AY BFO D22-LAT-YB-EAK-10-0,5	BF0005P BFO D22-LA-QB-PAK-05-02	BF000H6 BFO D22-LAH-JD-EAK-10-02	BF00056 BFO D13-LA-QB-EAK-05-02	BF000AW BFO D22-LAH-BK-EAK-10-02
	Ø 3, 90° optics, high temperature	Ø 3, thin point, 90° optics	Ø 3, thin point, 90° optics	Ø 3, thin point, 90° optics	M4, 90° conn., flex. cable
	—	—	—	—	—
	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB
	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..
	PC	PMMA	PMMA	PMMA	PMMA
	0.5 m	2 m	2 m	2 m	2 m
	PE, cross-linked	PVC	PE	PE	PE
	600 mm	120 mm	300 mm	110 mm	250 mm
	-55...115 °C	-40...70 °C	-40...70 °C	-30...70 °C	-40...70 °C
	—	—	Brass nickel plated	—	—
	Ø 1.0 mm	Ø 1.0 mm	Ø 1.0 mm	Ø 0.5 mm	Ø 1.0 mm
	Single fiber	Single fiber	Single fiber	Single fiber	Single fiber
	IP65	IP65	IP65	IP65	IP65
	Page 571	Page 572	Page 572	Page 573	Page 573



	BF000C8 BFO D25 LA-HD-EAK-465-02	BF000C6 BFO D10-LAH-CK-EAK-05-02	BF000C7 BFO D10-LAH-DK-EAK-05-02	
Version	0.25x46.5, 90°-light grid	0.5 mm, 90°	0.5 mm, 90°	
Photoelectric sensing principle	—	—	—	
Use	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	
Reference base unit	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..	
Fiber type material	PMMA	PMMA	PMMA	
Cable length L	2 m	2 m	2 m	
Material jacket	PE	PE	PE	
Range	550 mm	55 mm	50 mm	
Ambient temperature	-55...70 °C	-40...70 °C	-40...70 °C	
Material	—	—	—	
Active surface, fibers	Ø 0.25 mm (32x)	Ø 0.5 mm	Ø 0.5 mm	
Active surface, fiber arrangement	Row	Single fiber	Single fiber	
IP rating	IP65	IP65	IP65	
Productview	Page 574	Page 574	Page 575	





	BF000AP BFO D22-LA-GD-EAK-52-02	BF00067 BFO D25-LA-CD-EAK-110-02	BF000C5 BFO D25-LA-ED-EAK-250-0,5	BF00068 BFO D25-LA-ED-EAK-250-02	BF0005K BFO D22-LA-BD-EAK-52-02
	5x10, light grid	6x19, light grid	0.25x24.8, 90°-light grid	5.5x38, 90°-light grid	5x15, 90° light grid
	–	–	–	–	–
	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB
	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..
	PMMA	PMMA	PMMA	PMMA	PMMA
	2 m	2 m	0.5 m	2 m	2 m
	PE	PE	PE	PE	PE
	500 mm	600 mm	550 mm	550 mm	400 mm
	-55...70 °C	-55...70 °C	-55...70 °C	-55...70 °C	-55...70 °C
	–	–	–	–	–
	Ø 0.25 mm (16x)	Ø 0.25 mm (32x)	Ø 0.25 mm (32x)	Ø 0.25 mm (32x)	Ø 0.25 mm (16x)
	Row	Row	Row	Row	Row
	IP65	IP65	IP65	IP65	IP65
	Page 575	Page 576	Page 576	Page 577	Page 577

	BF00059 BFO D13-LG-10-EAK-30-02	BF00058 BFO D13-LG-05-EAK-30-02	BF0005E BFO D13-XB-RB-EAK-10-02	
Version	Fork, coaxial optics	Fork, coaxial optics	M3, coaxial optics	
Photoelectric sensing principle	—	—	—	
Use	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	
Reference base unit	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..	
Fiber type material	PMMA	PMMA	PMMA	
Cable length L	2 m	2 m	2 m	
Material jacket	PE	PE	PE	
Range	10 mm	5 mm	60 mm	
Ambient temperature	-55...70 °C	-55...70 °C	-55...70 °C	
Material	—	—	—	
Active surface, fibers	Ø 0.25 mm (2x)	Ø 0.25 mm (2x)	Ø 0.5 mm, Ø 0.25 mm (10x)	
Active surface, fiber arrangement	opposing	opposing	Ring around individual fiber	
IP rating	IP65	IP65	IP65	
Productview	Page 578	Page 578	Page 579	





	BF00054 BF0 D10-XA-RB-EAK-10-02	BF000C3 BF0 D10-XA-VB-EAK-10-02	BF00052 BF0 D10-XA-GB-EAK-10-02	BF0005C BF0 D13-XB-KB-EAK-10-02	BF00006 BF0 D22-XB-UB-EAK-15-02
	M3, standard	M3, standard	M3, bendable tip	M4, coaxial optics	M4, coaxial optics
	–	–	–	–	–
	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB
	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..
	PMMA	PMMA	PMMA	PMMA	PMMA
	2 m	2 m	2 m	2 m	2 m
	PE	PE	PE	PE	PE
	50 mm	50 mm	50 mm	60 mm	130 mm
	-55...70 °C	-55...70 °C	-55...70 °C	-55...70 °C	-40...60 °C
	–	–	–	–	–
	Ø 0.5 mm (2x)	Ø 0.5 mm (2x)	Ø 0.5 mm (2x)	Ø 0.5 mm, Ø 0.25 mm (10x)	Ø 0.25 mm (16x), Ø 1.0 mm
	Adjacent to one another	Adjacent to one another	Adjacent to one another	Ring around individual fiber	Ring around individual fiber
	IP65	IP65	IP65	IP65	IP65
	Page 579	Page 580	Page 580	Page 581	Page 581



	BF000C9 BFO D22-XB-UB-EAK-15-SA1-02	BF00055 BFO D10-XAH-KB-EAK-10-02	BF00005 BFO D22-XA-UB-EAK-20-02	
Version	M4, coaxial optics	M4, standard	M4, standard	
Photoelectric sensing principle	—	—	—	
Use	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	
Reference base unit	BFS 33M-GSS-..	BFB 75K-001-..	BFB 75K-001-..	
Fiber type material	PMMA	PMMA	PMMA	
Cable length L	2 m	2 m	2 m	
Material jacket	PE	PE	PE	
Range	130 mm	50 mm	150 mm	
Ambient temperature	-40...60 °C	-40...70 °C	-55...70 °C	
Material	—	—	—	
Active surface, fibers	Ø 0.25 mm (16x), Ø 1.0 mm	Ø 0.5 mm (2x)	Ø 1.0 mm (2x)	
Active surface, fiber arrangement	Ring around individual fiber	Adjacent to one another	Adjacent to one another	
IP rating	IP65	IP65	IP65	
Productview	Page 582	Page 582	Page 583	





	BF00053 BF0 D10-XA-HB-EAK-10-02	BF00066 BF0 D22-XB-LB-EAK-15-02	BF000H4 BF0 D22-XB-LB-EAK-15-SA1-0,5	BF000FP BF0 D22-XB-LB-EAK-15-SA1-01	BF000C4 BF0 D22-XB-LB-EAK-15-SA1-02
	M4, bendable tip	M6, coaxial optics	M6, coaxial optics	M6, coaxial optics	M6, coaxial optics
	—	—	—	—	—
	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB
	BFB 75K-001-..	BFB 75K-001-..	BFS 33M-GSS-..	BFS 33M-GSS-..	BFS 33M-GSS-..
	PMMA	PMMA	PMMA	PMMA	PMMA
	2 m	2 m	0.5 m	1 m	2 m
	PE	PE	PE	PE	PE
	50 mm	120 mm	80 mm	80 mm	80 mm
	-55...70 °C	-55...70 °C	-55...70 °C	-55...70 °C	-55...70 °C
	—	—	Stainless steel (1.4305)	—	—
	Ø 0.5 mm (2x)	Ø 1.0 mm, Ø 0.25 mm (16x)	Ø 1.0 mm, Ø 0.25 mm (16x)	Ø 0.25 mm (16x), Ø 1.0 mm	Ø 1.0 mm, Ø 0.25 mm (16x)
	Adjacent to one another	Ring around individual fiber	Ring around individual fiber	Ring around individual fiber	Ring around individual fiber
	IP65	IP65	IP65	IP65	IP65
	Page 583	Page 584	Page 584	Page 584	Page 584

	BF000FN BFO D22-XB-LB-EAK-15-SA1-05	BF00007 BFO D22-XBF-LB-EAK-15-02	BF000H5 BFO D22-XA-08B-EAK-26-02	
Version	M6, coaxial optics	M6, coax. optics, flex. cable	M6, standard	
Photoelectric sensing principle	—	—	—	
Use	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	
Reference base unit	BFS 33M-GSS-..	BFB 75K-001-..	BFB 75K-001-..	
Fiber type material	PMMA	PMMA	PMMA	
Cable length L	5 m	2 m	2 m	
Material jacket	PE	PE	PE	
Range	80 mm	110 mm	180 mm	
Ambient temperature	-55...70 °C	-40...60 °C	-55...70 °C	
Material	—	—	Brass nickel plated	
Active surface, fibers	Ø 0.25 mm (16x), Ø 1.0 mm	Ø 1.0 mm, Ø 0.25 mm (16x)	Ø 1.0 mm (2x)	
Active surface, fiber arrangement	Ring around individual fiber	Ring around individual fiber	Adjacent to one another	
IP rating	IP65	IP65	IP65	
Productview	Page 584	Page 585	Page 585	



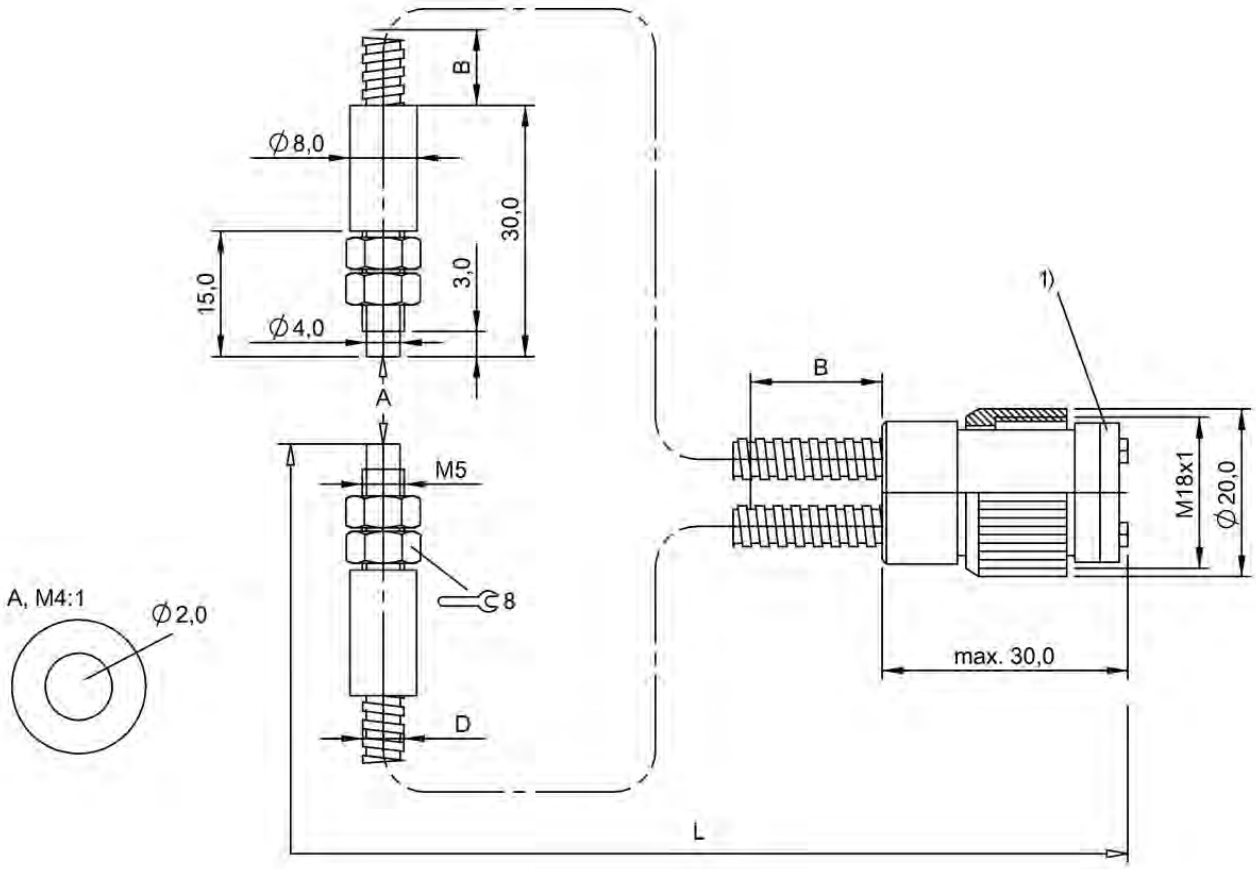


	BF00064 BF0 D22-XAP-LB-EAK-30-02	BF00003 BF0 D22-XA-DB-EAK-20-01	BF00063 BF0 D22-XAH-LB-EAK-20-02	BF00065 BF0 D22-XAT-LB-EAK-20-02	BF00004 BF0 D22-XA-SB-EAK-20-02
	M6, standard	M6, standard	M6, standard, flexible cable	M6, standard, high temp.	M6, thin tip, standard
	–	–	–	–	–
	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB
	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..
	PMMA	PMMA	PMMA	PC	PMMA
	2 m	1 m	2 m	2 m	2 m
	PE	PE	PE	PE, cross-linked	PE
	180 mm	140 mm	120 mm	130 mm	150 mm
	-55...70 °C	-40...60 °C	-40...70 °C	-55...115 °C	-55...70 °C
	–	–	–	–	–
	Ø 1.5 mm (2x)	Ø 1.0 mm (2x)	Ø 1.0 mm (2x)	Ø 1.0 mm (2x)	Ø 1.0 mm (2x)
	Adjacent to one another	Adjacent to one another	Adjacent to one another	Adjacent to one another	Adjacent to one another
	IP65	IP65	IP65	IP65	IP65
	Page 586	Page 586	Page 587	Page 587	Page 588



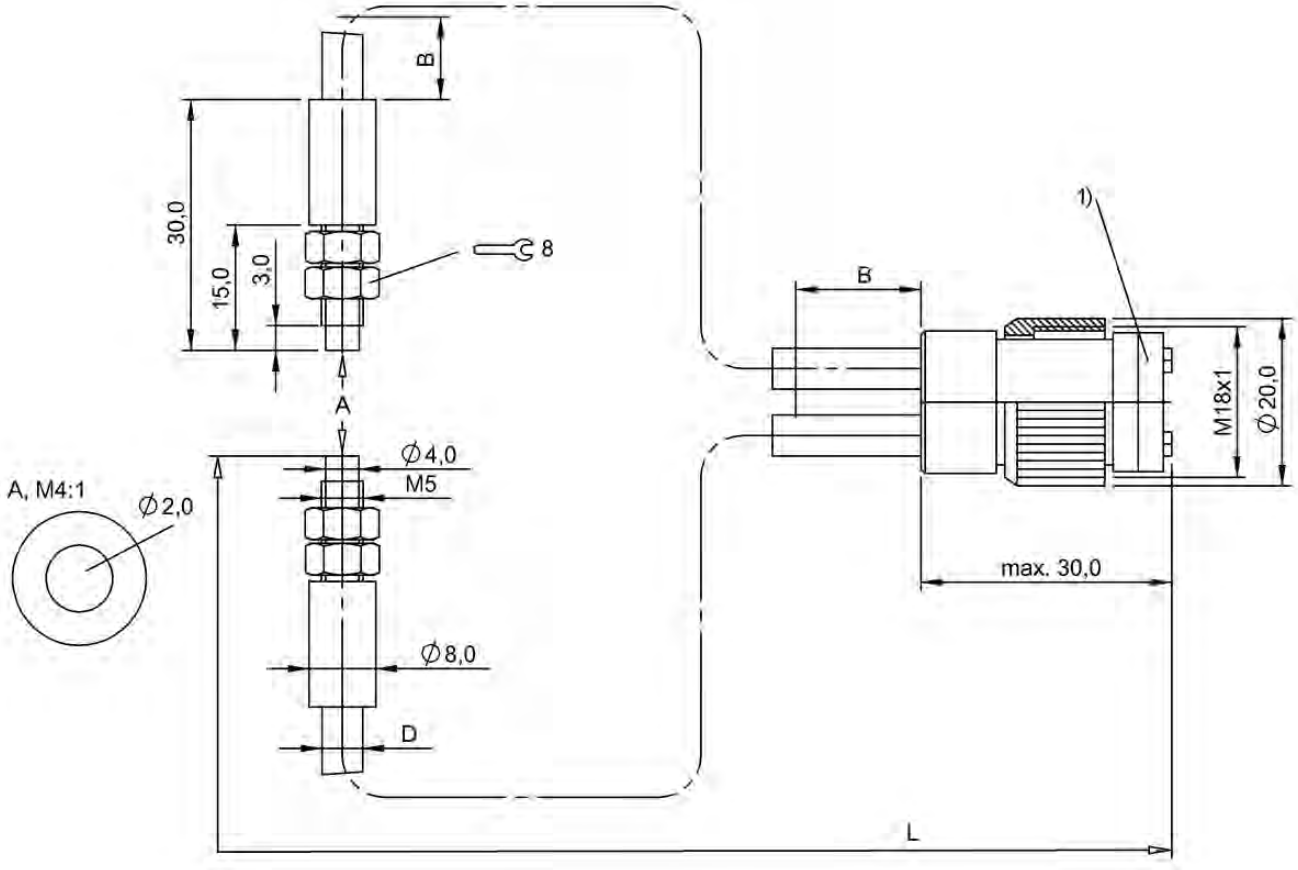
	BF000AT BFO D13-XB-AB-EAK-10-01	BF0005A BFO D13-XA-JB-EAK-20-02	BF00062 BFO D22-XA-MB-PAK-10-02	
Version	Ø 2.5, coax optics	Ø 3, Standard	Ø 3, thin point, 90° optics	
Photoelectric sensing principle	—	—	—	
Use	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB	
Reference base unit	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..	
Fiber type material	PMMA	PMMA	PMMA	
Cable length L	1 m	2 m	2 m	
Material jacket	PE	PE	PVC	
Range	60 mm	130 mm	35 mm	
Ambient temperature	-55...70 °C	-55...70 °C	-40...70 °C	
Material	—	—	—	
Active surface, fibers	Ø 0.5 mm, Ø 0.25 mm (9x)	Ø 0.5 mm (2x)	Ø 0.5 mm (2x)	
Active surface, fiber arrangement	Ring around individual fiber	Adjacent to one another	Adjacent to one another	
IP rating	IP65	IP65	IP65	
Productview	Page 588	Page 589	Page 589	

	BF0005Z BF0 D22-XA-CD-EAK-110-02	BF000AR BF0 D13-XV-AK-EAK-50-02	BF00060 BF0 D22-XA-ED-EAK-250-02		
	6x19, light grid	13x19.7, 90° optics	5.5x38, 90°-light grid		
	–	–	–		
	for fiber optic base units BFB	for fiber optic base units BFB	for fiber optic base units BFB		
	BFB 75K-001-..	BFB 75K-001-..	BFB 75K-001-..		
	PMMA	PMMA	PMMA		
	2 m	2 m	2 m		
	PE	PE	PE		
	100 mm	6 mm	90 mm		
	-55...70 °C	-55...70 °C	-55...70 °C		
	–	–	–		
	Ø 0.25 mm (32x)	Ø 0.5 mm (2x)	Ø 0.25 mm (32x)		
	Row	Distance	Row		
	IP65	IP65	IP65		
	Page 590	Page 590	Page 591		



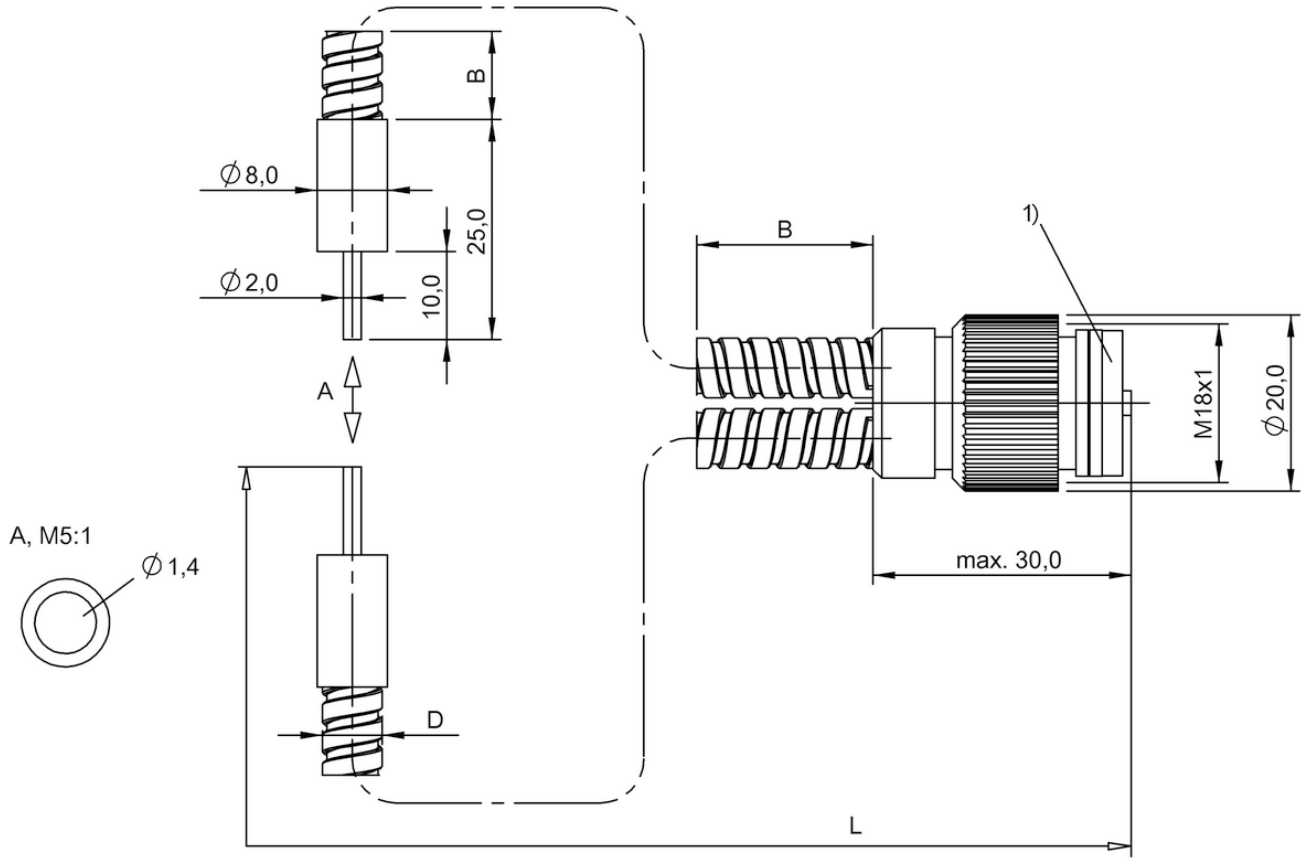
1) Disc removable

BFO000F, BFO000H, BFO000J



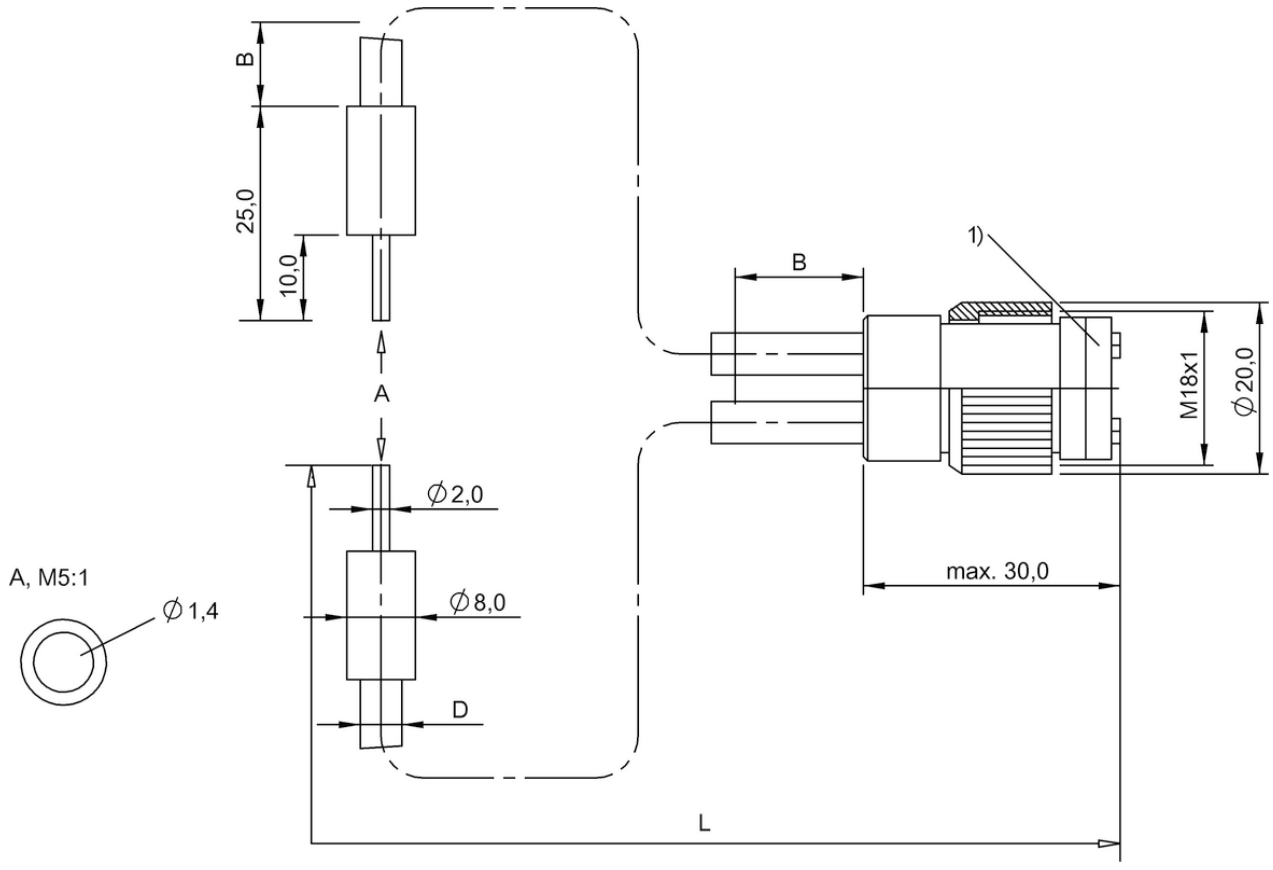
1) Disc removable

BFO000M, BFO000N



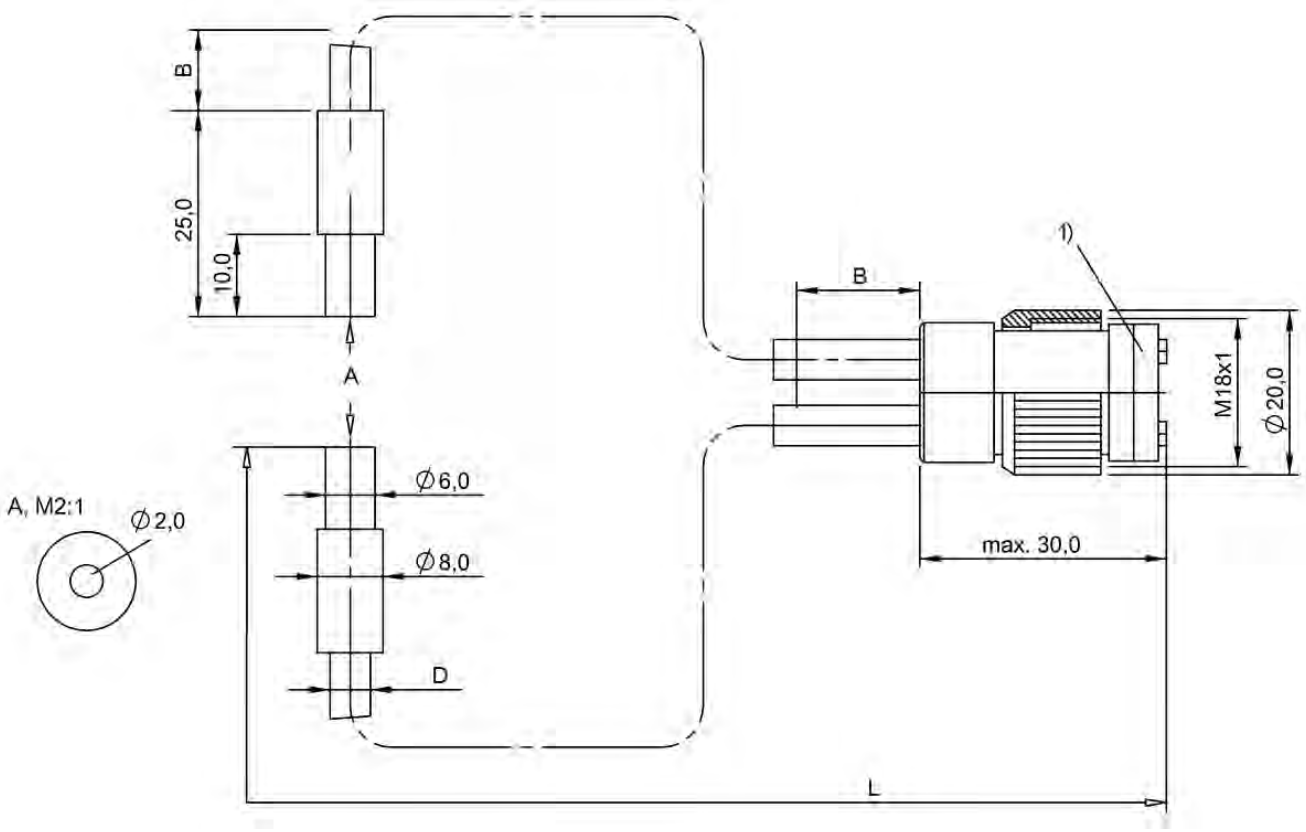
1) Disc removable

BF0001Z, BF00020



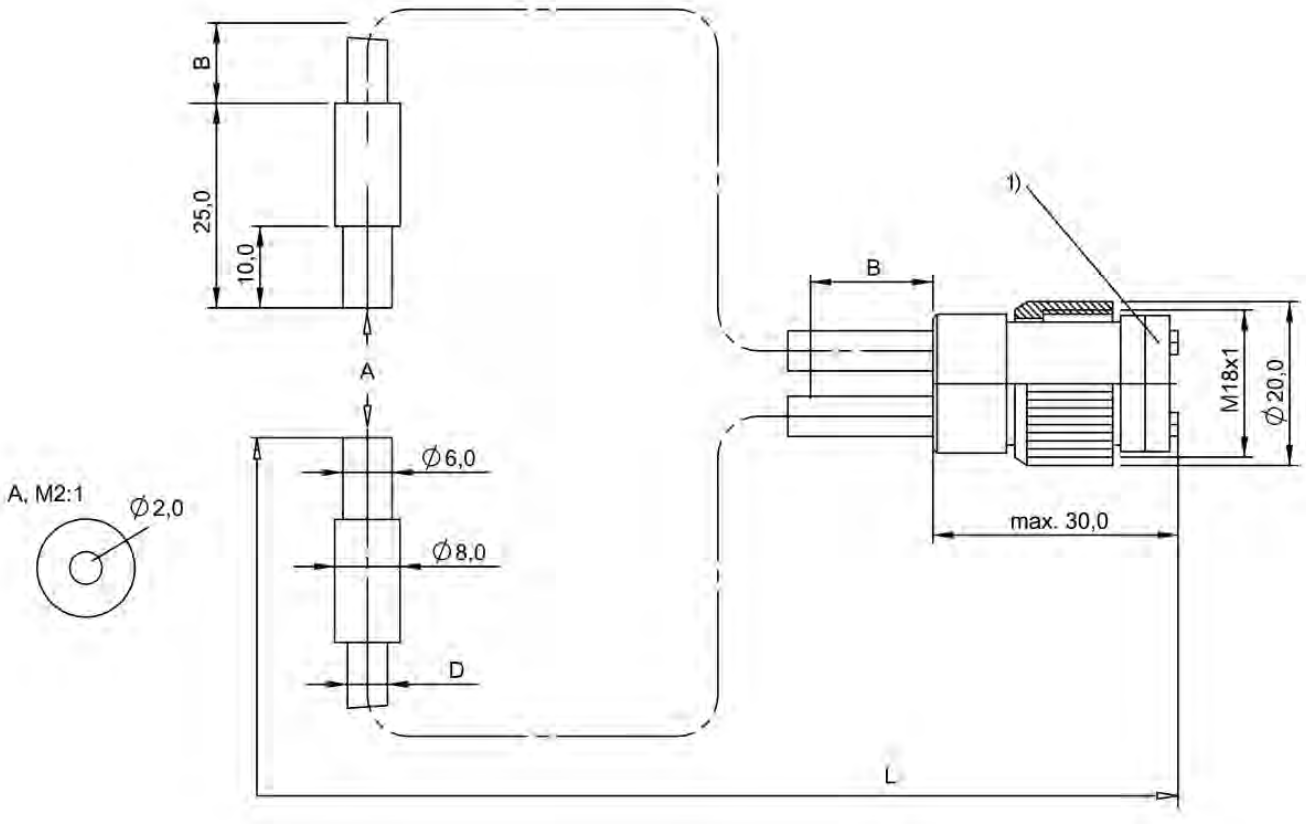
1) Disc removable

BF00023, BF00024



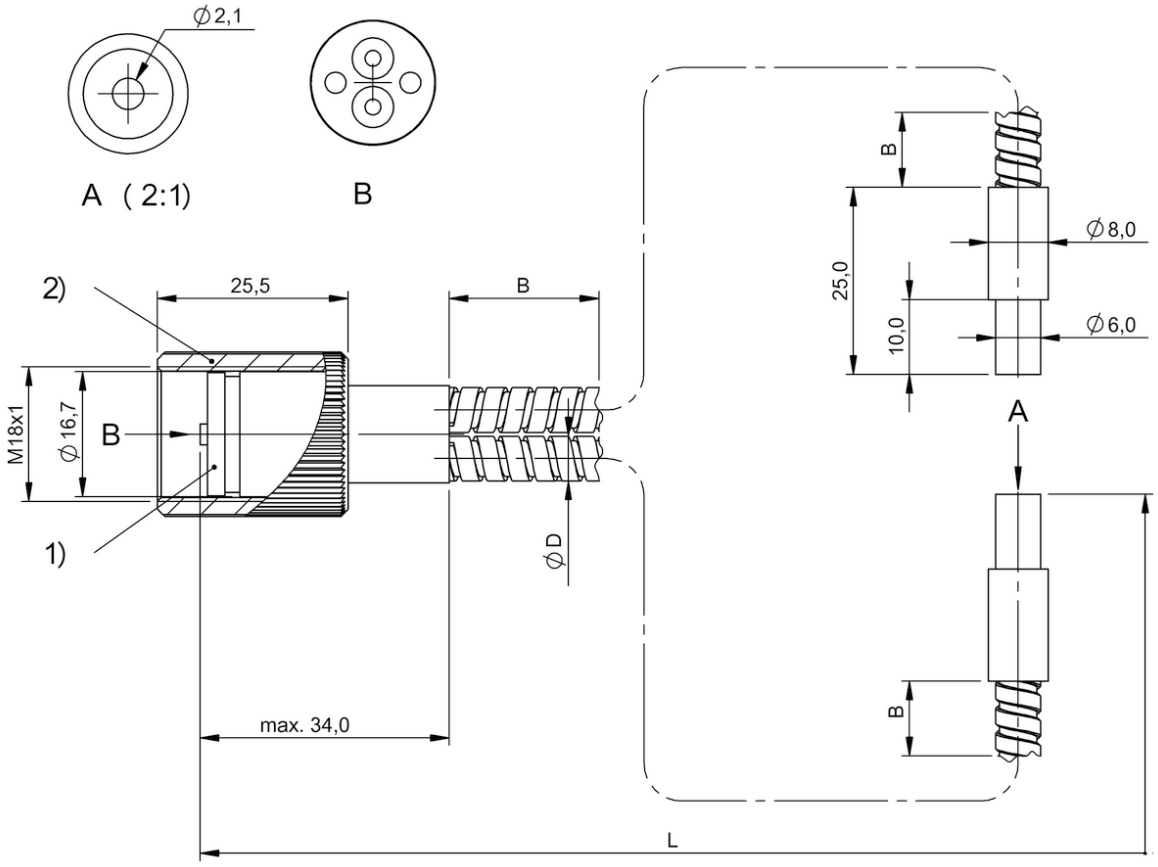
1) Disc removable

BF0000U, BF0000W



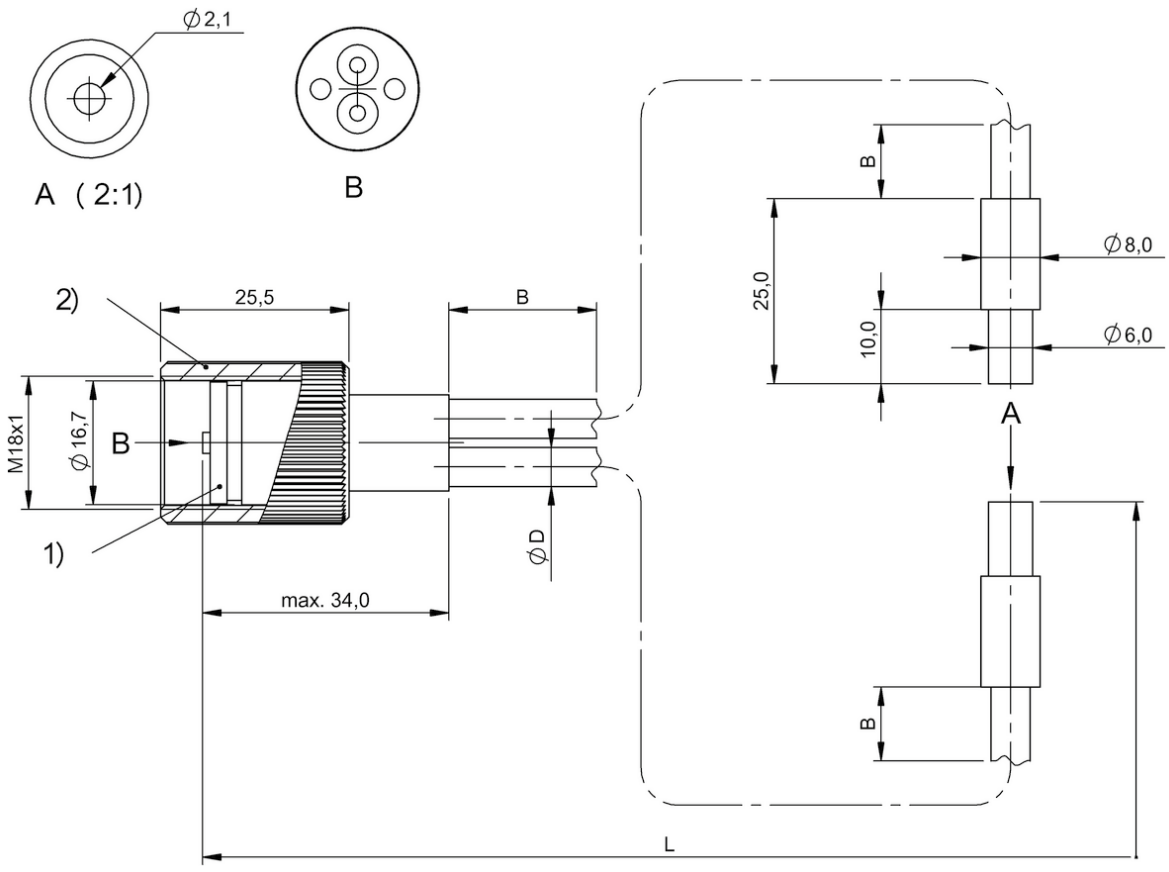
1) Disc removable

BF0000Z



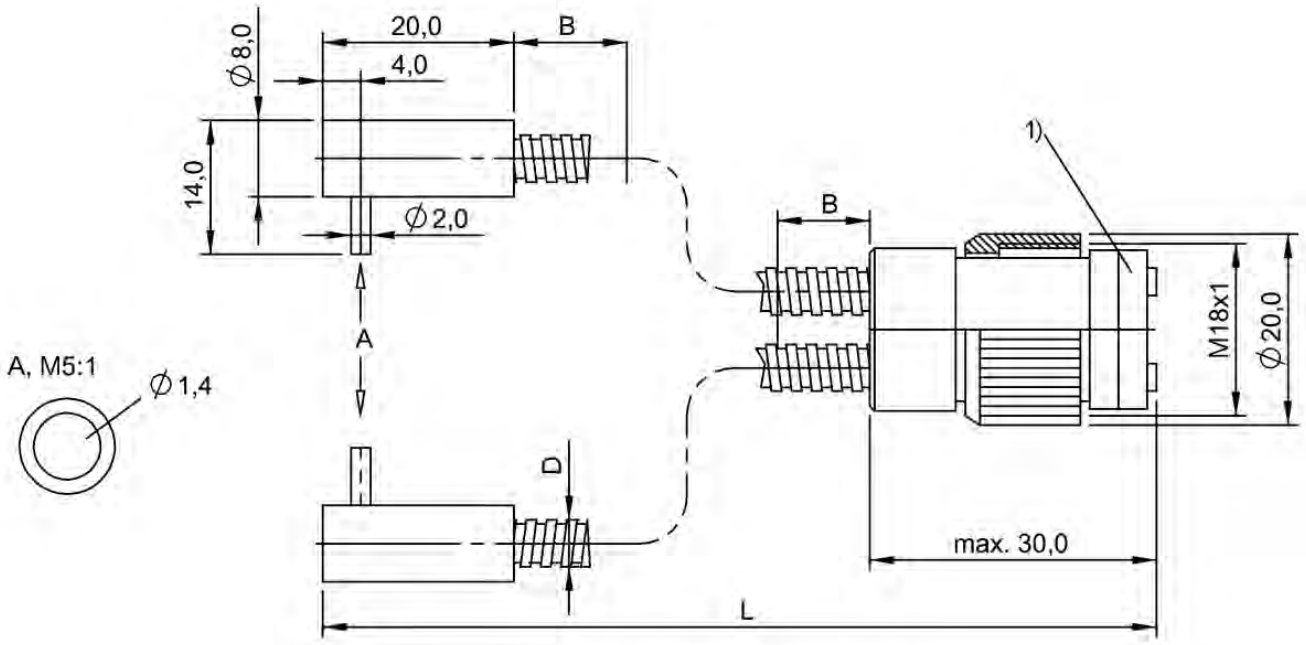
1) Disc removable, 2) cap nut

BF0003Y, BF0003Z



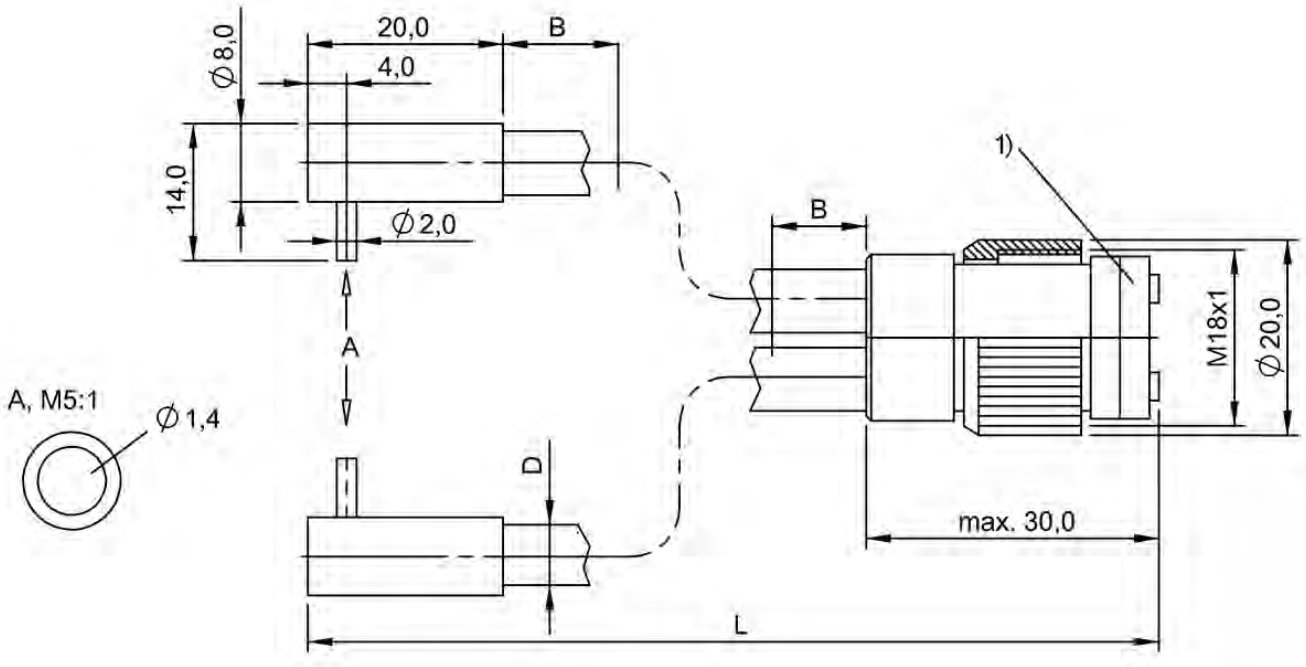
1) Disc removable, 2) cap nut

BF00042



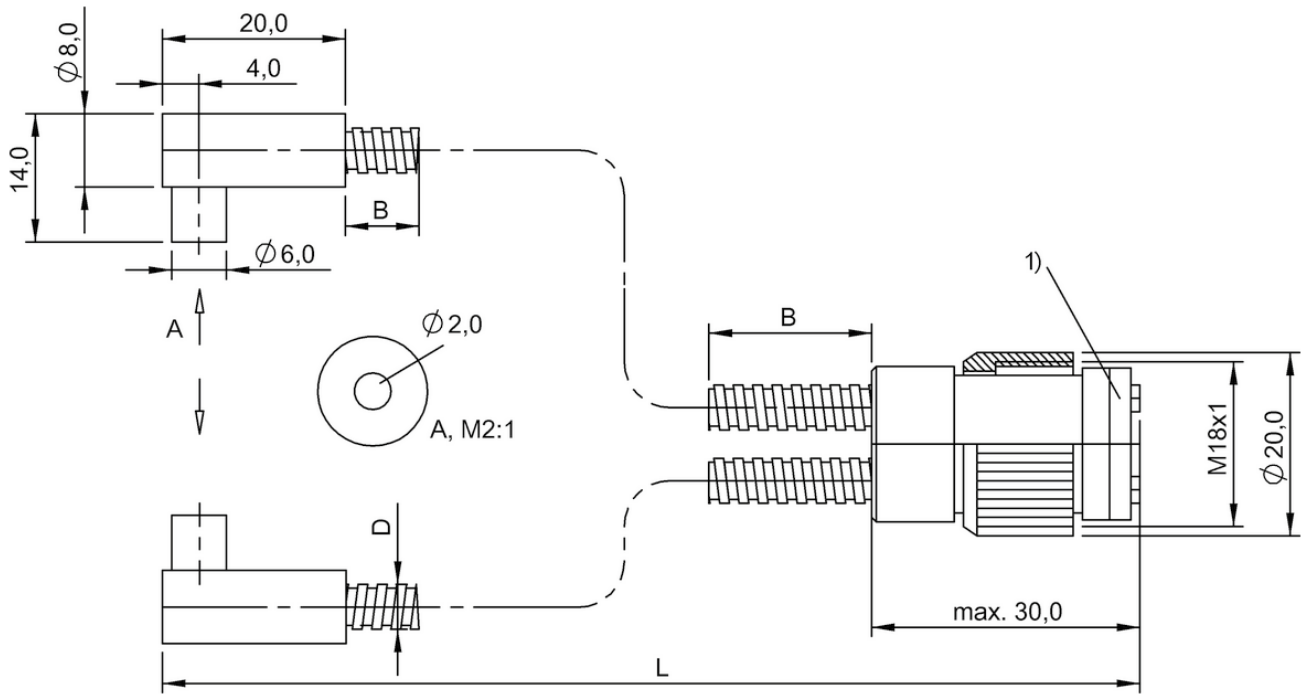
1) Disc removable

BF0001P, BF0001R



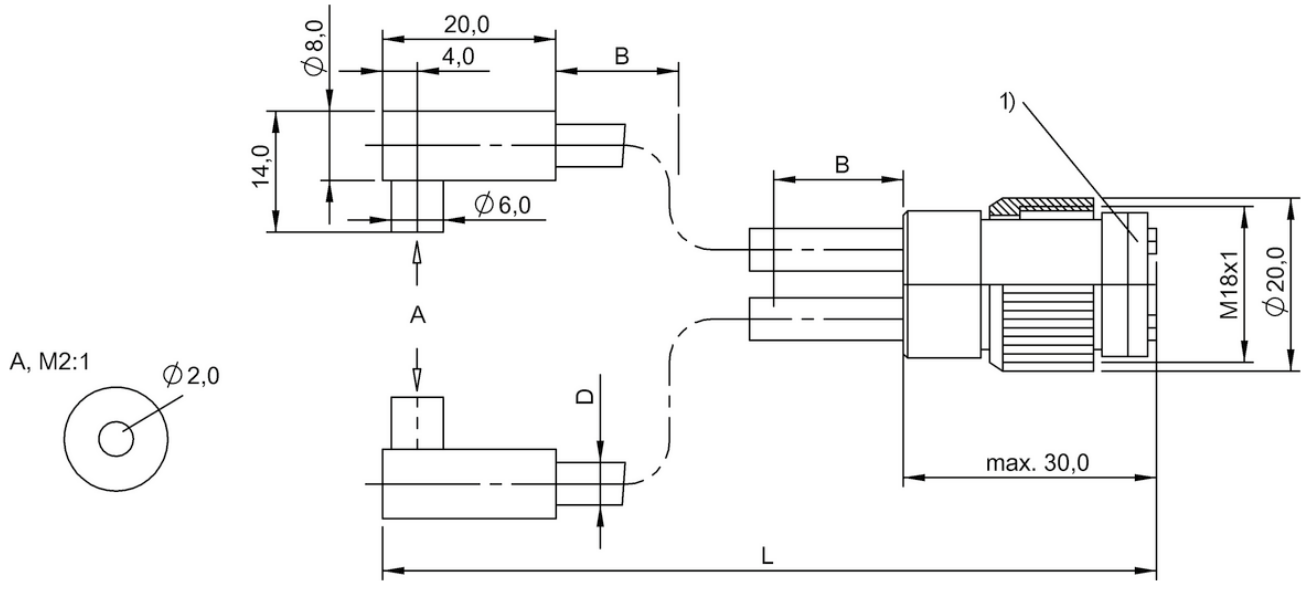
1) Disc removable

BF0001U, BF0001W



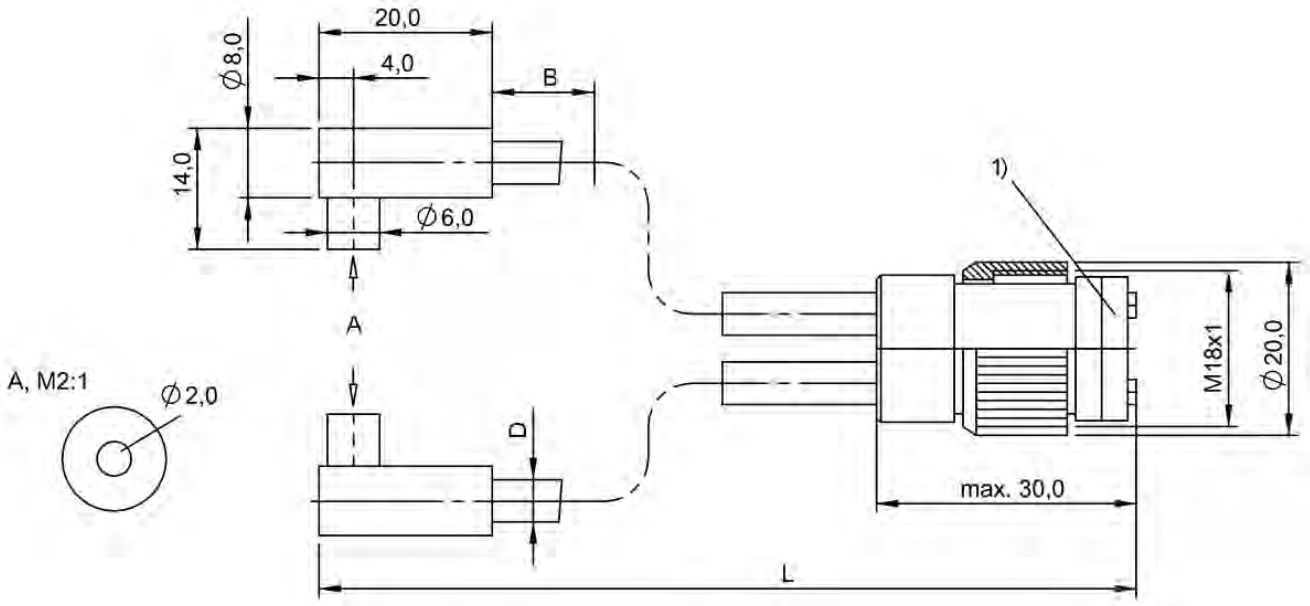
1) Disc removable

BF00013, BF00014



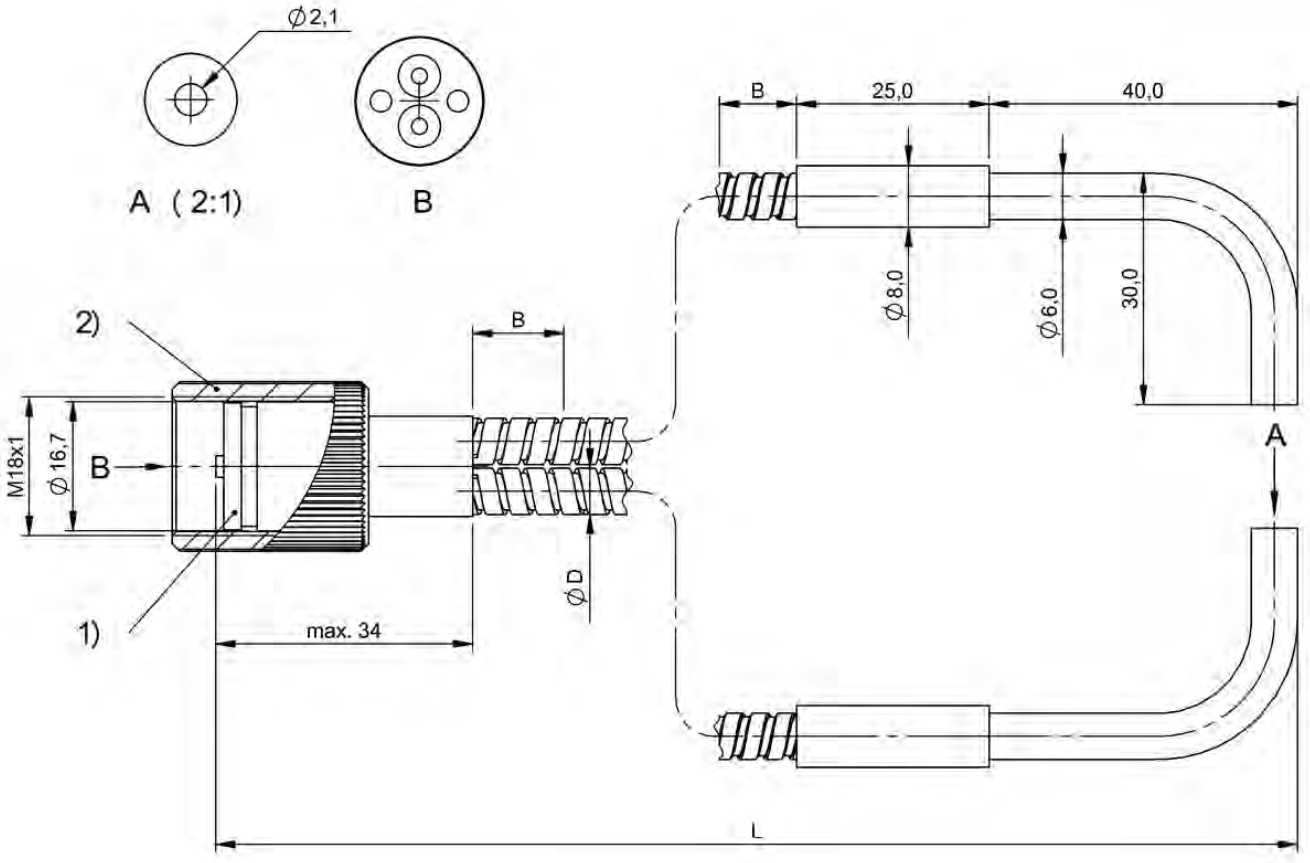
1) Disc removable

BF00019, BF0001A



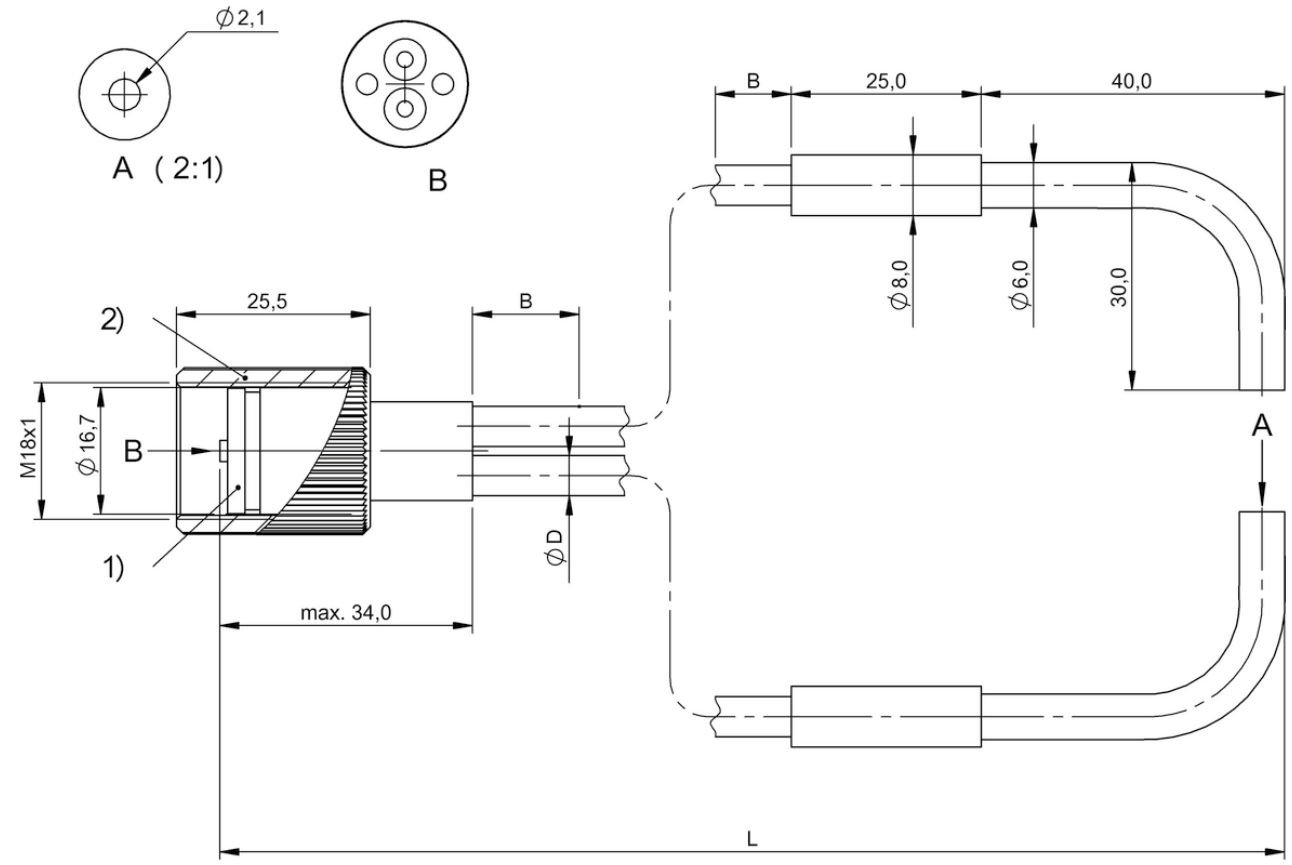
1) Disc removable

BF0001F, BF0001H



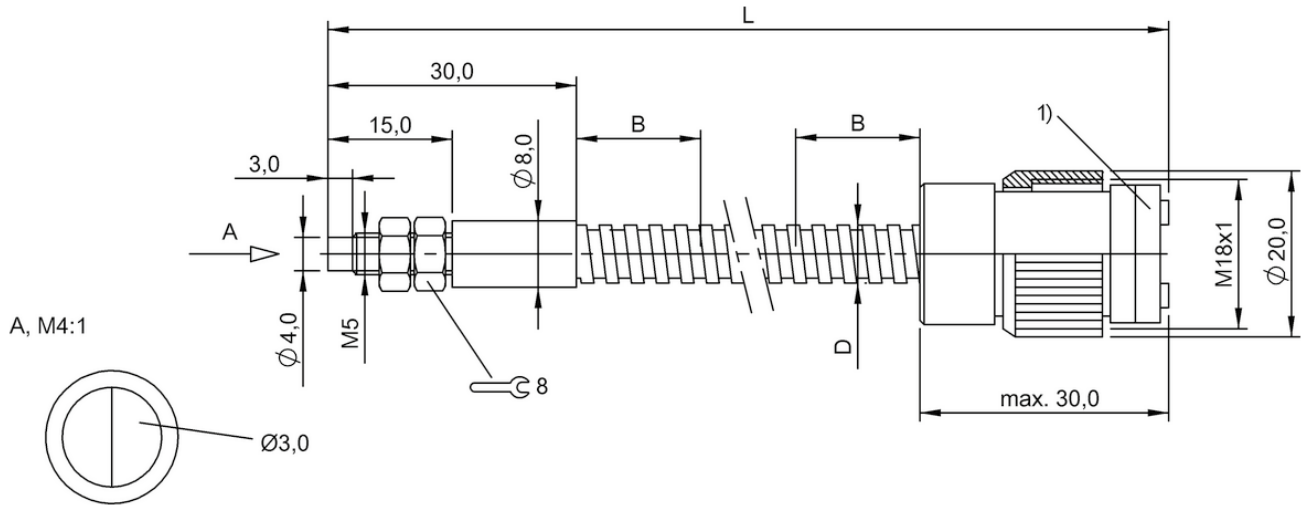
1) Disc removable, 2) cap nut

BF00047, BF00049, BF0004A



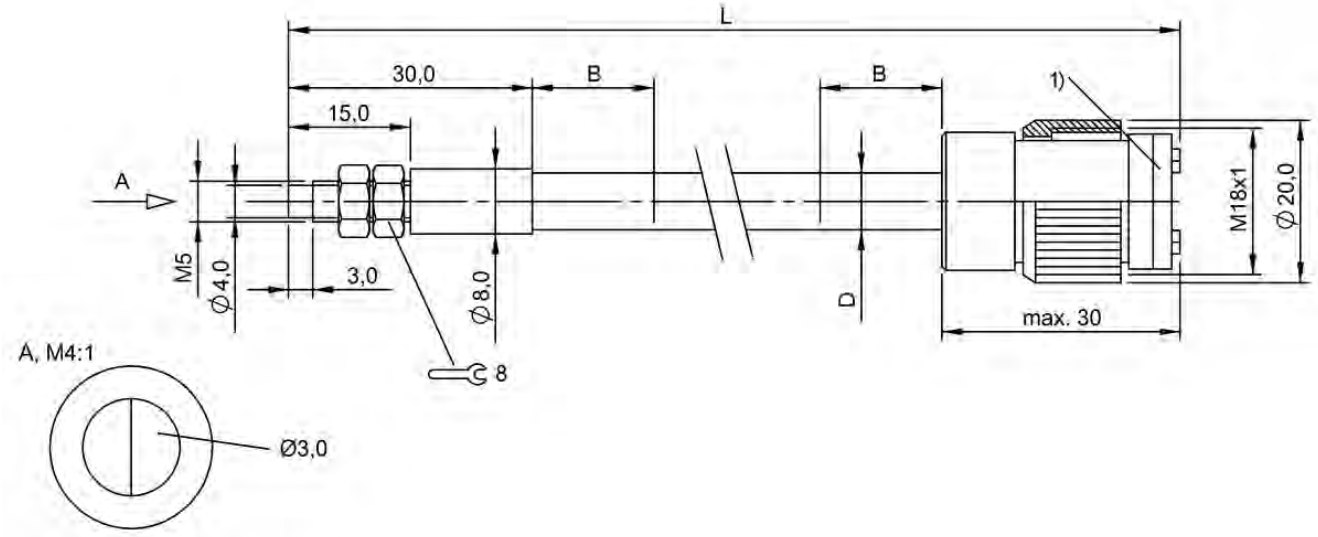
1) Disc removable, 2) cap nut

BFO004C, BFO004F



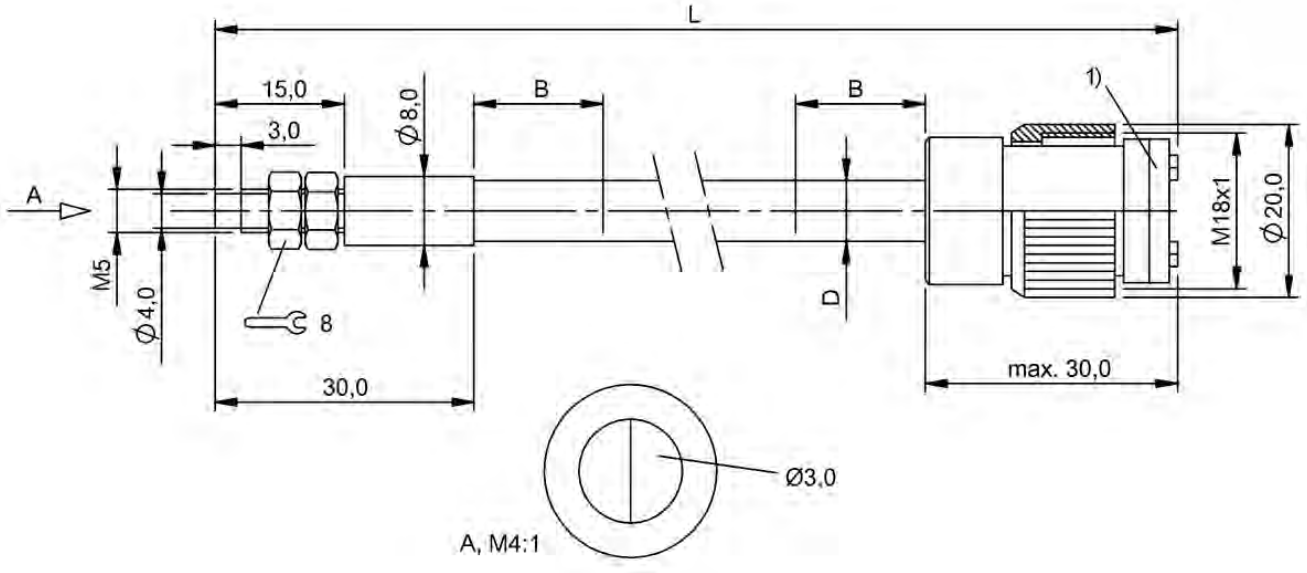
1) Disc removable

BFO0026, BFO0027, BFO00H3



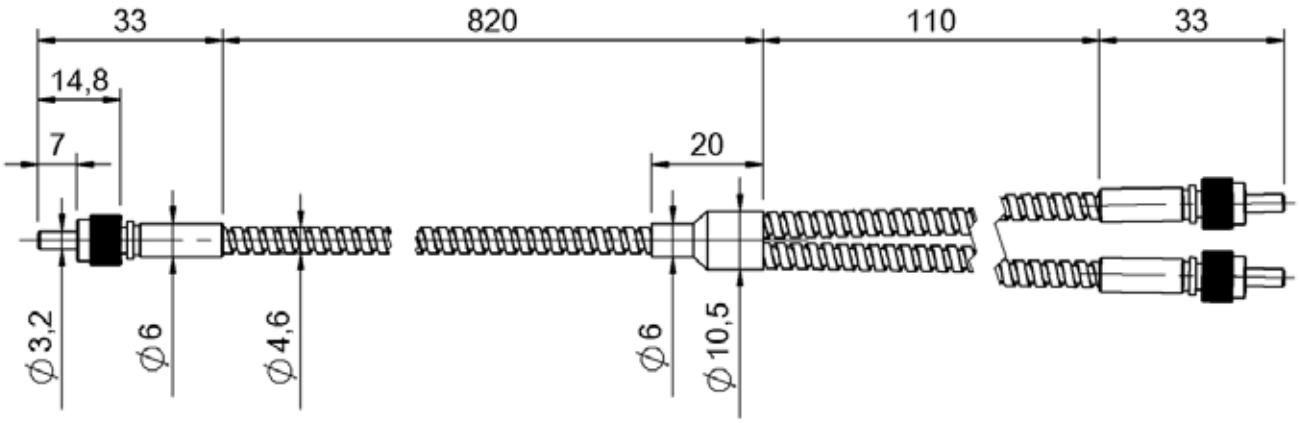
1) Disc removable

BFO002F, BFO002H

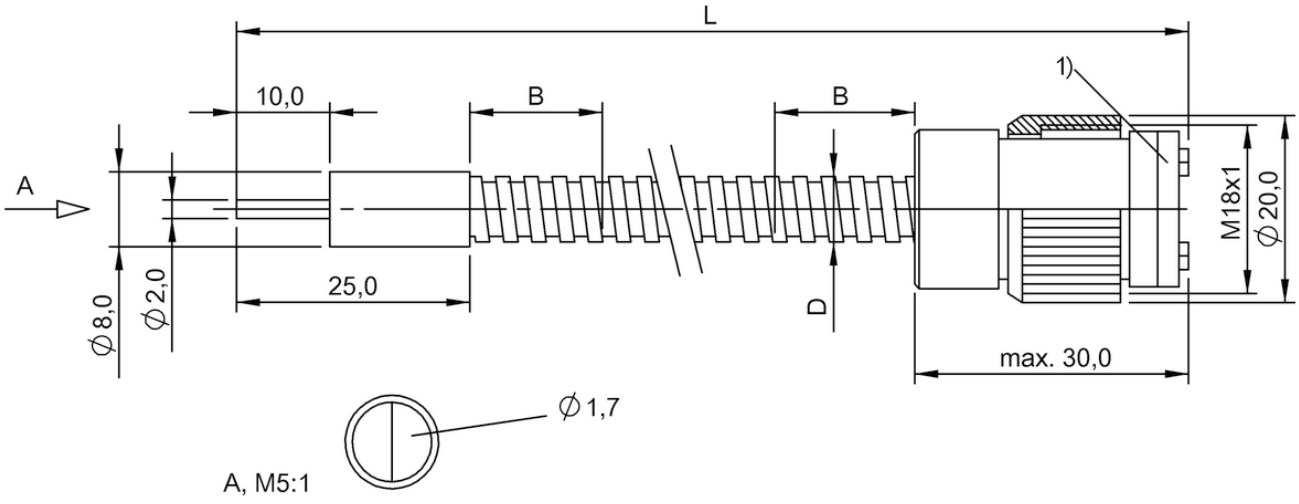


1) Disc removable

BFO002M, BFO002N

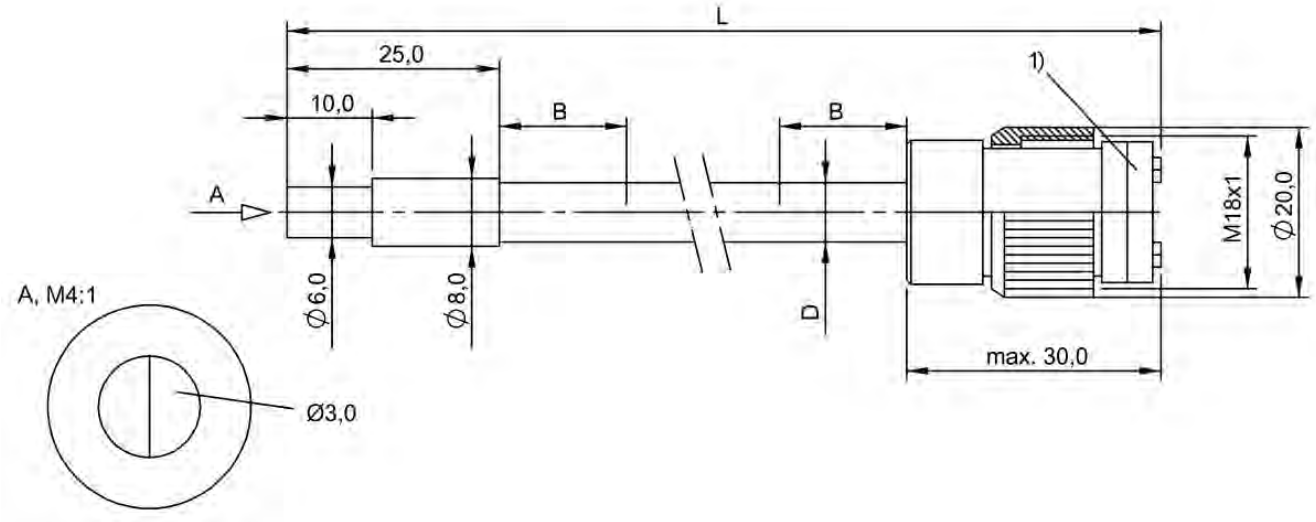


BFO00H8



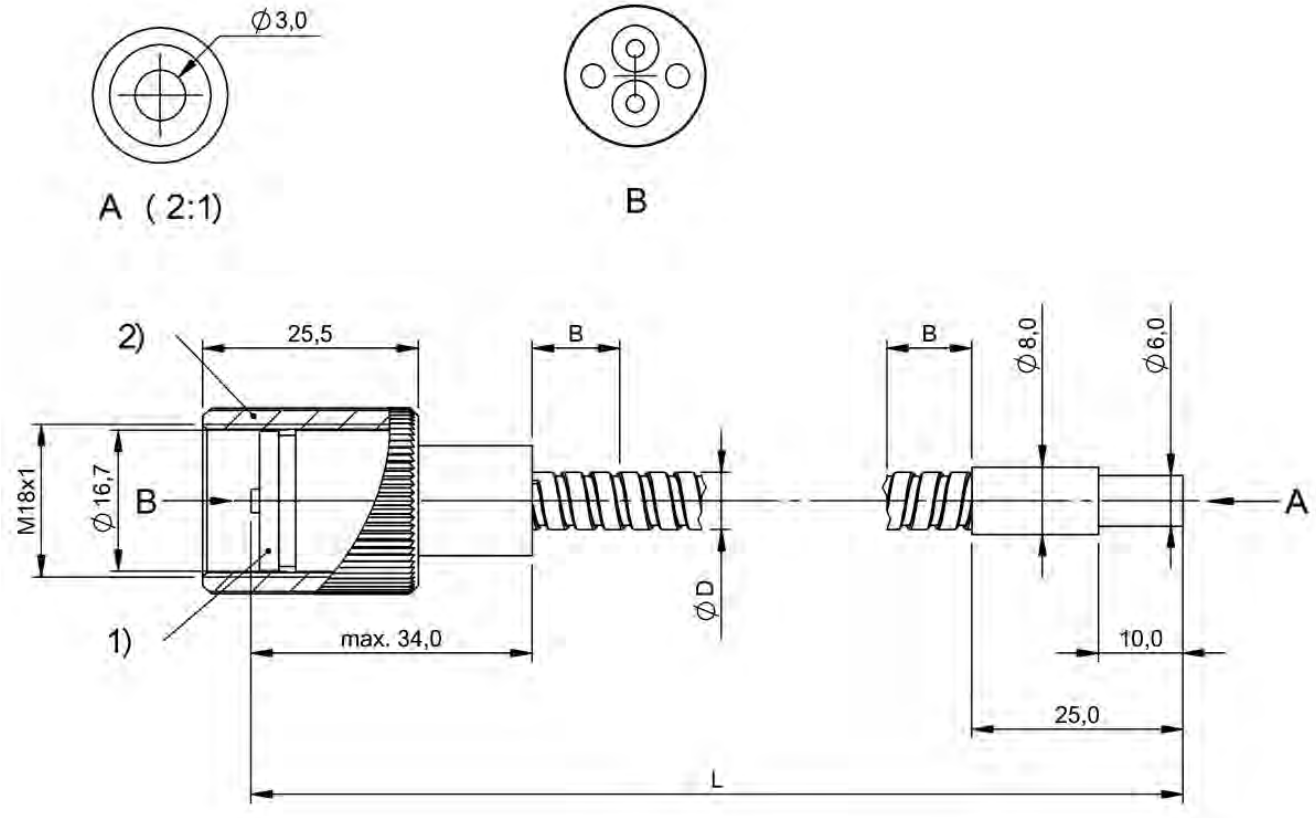
1) Disc removable

BFO003R, BFO003T



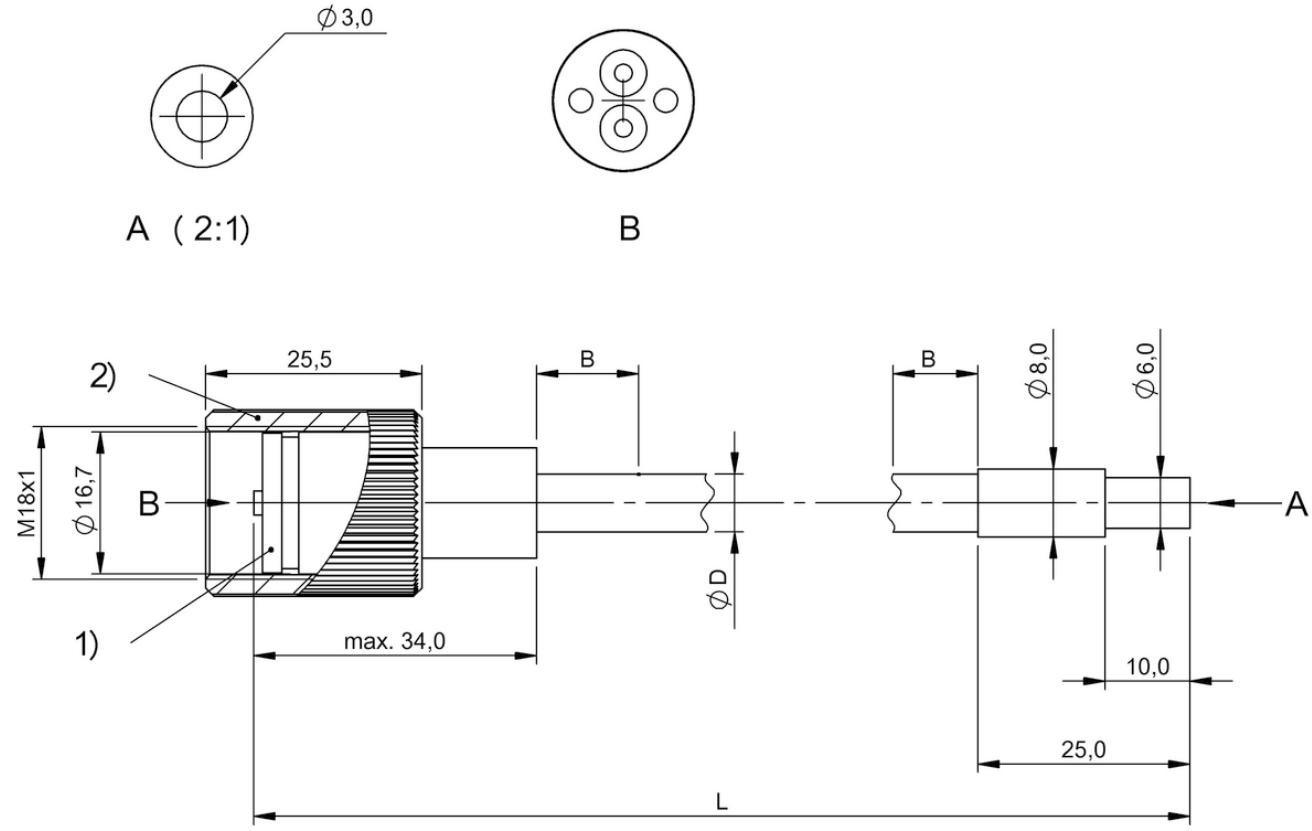
1) Disc removable

BFO0002U, BFO0002W



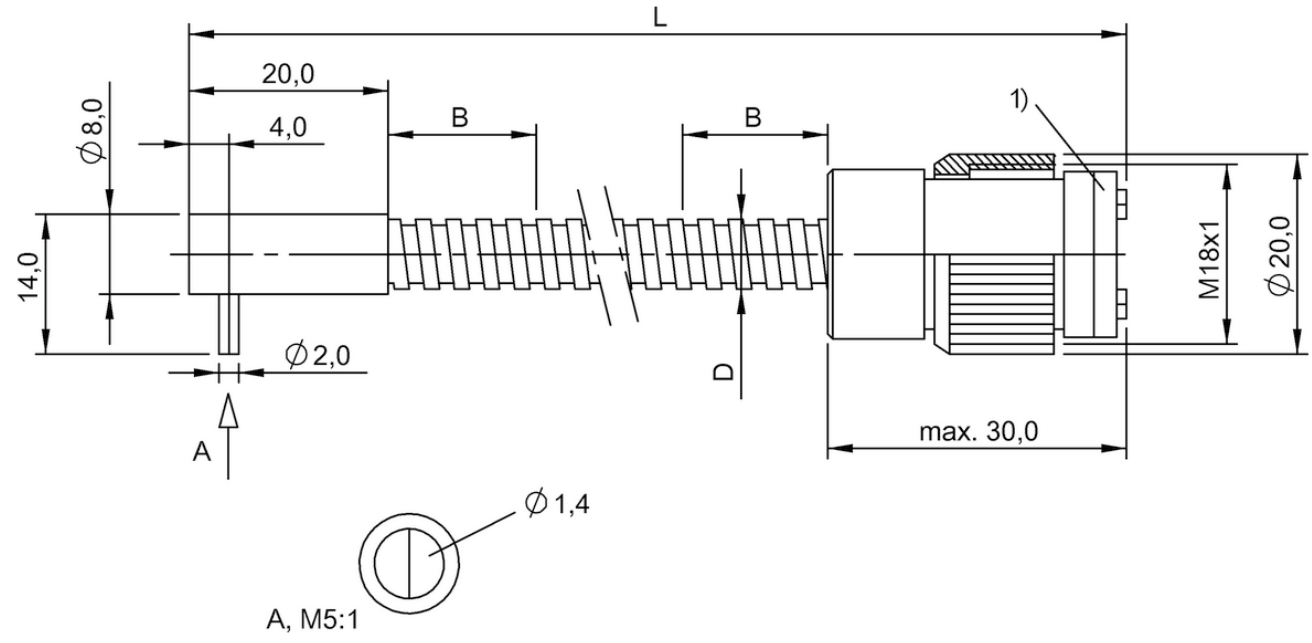
1) Disc removable, 2) cap nut

BFO0004M



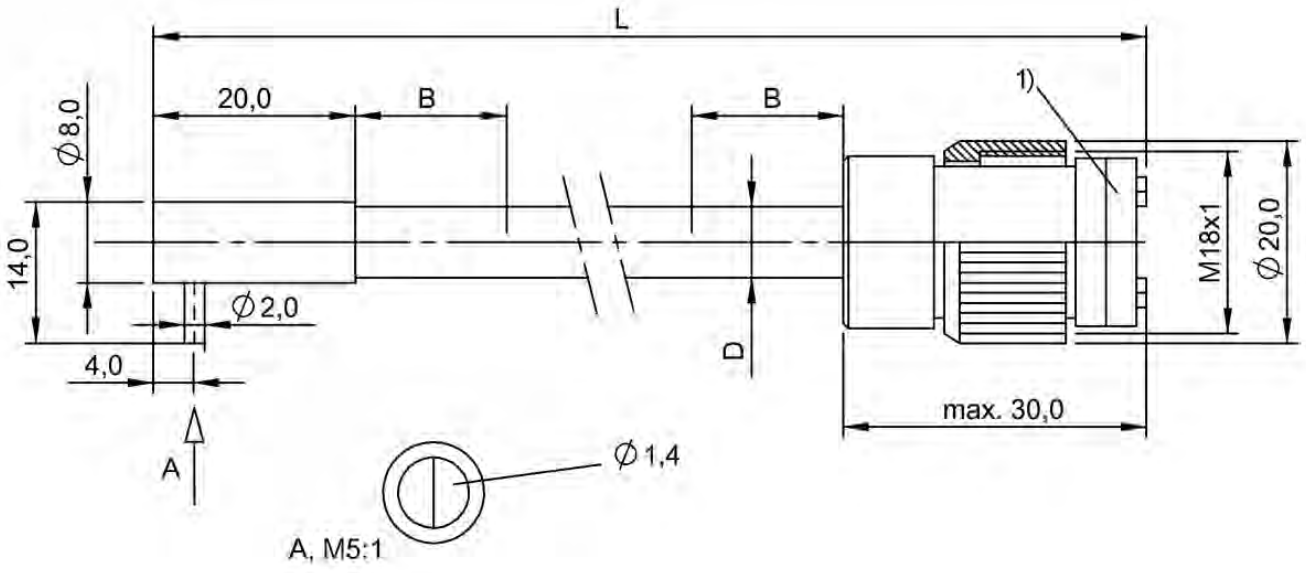
1) Disc removable, 2) cap nut

BFO004P, BFO004R



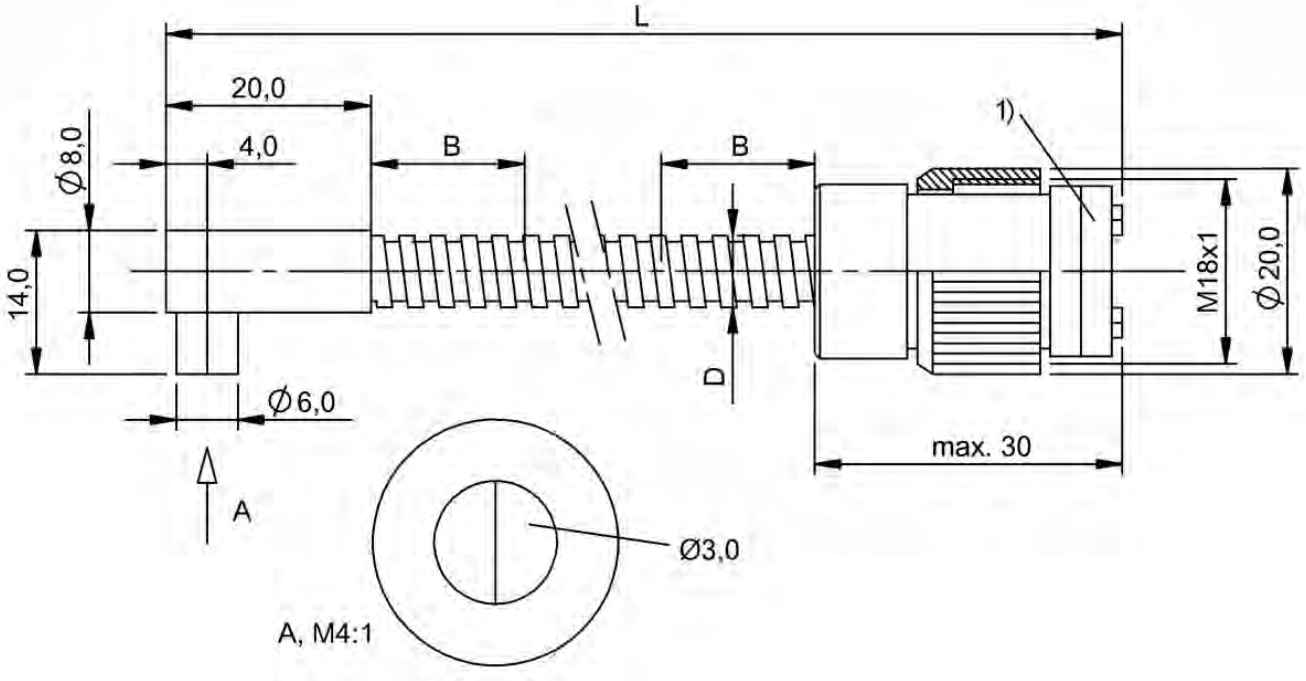
1) Disc removable

BFO003H, BFO003J



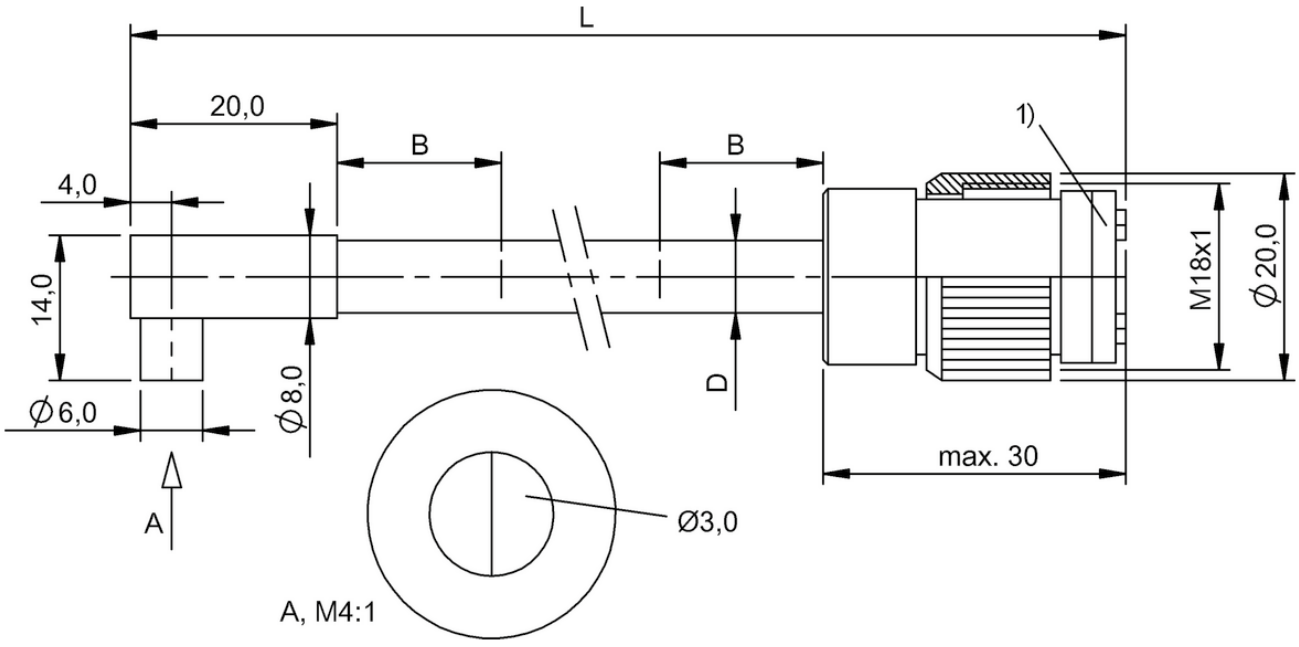
1) Disc removable

BF0003M, BF0003N



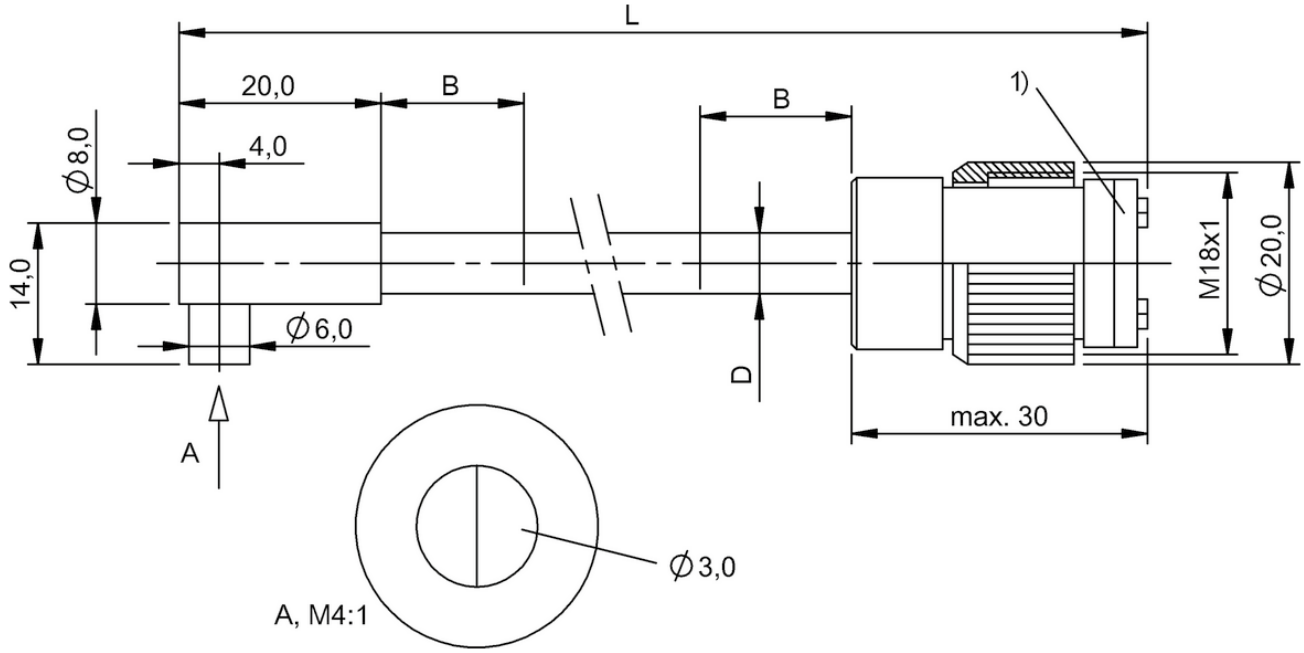
1) Disc removable

BF00031, BF00032



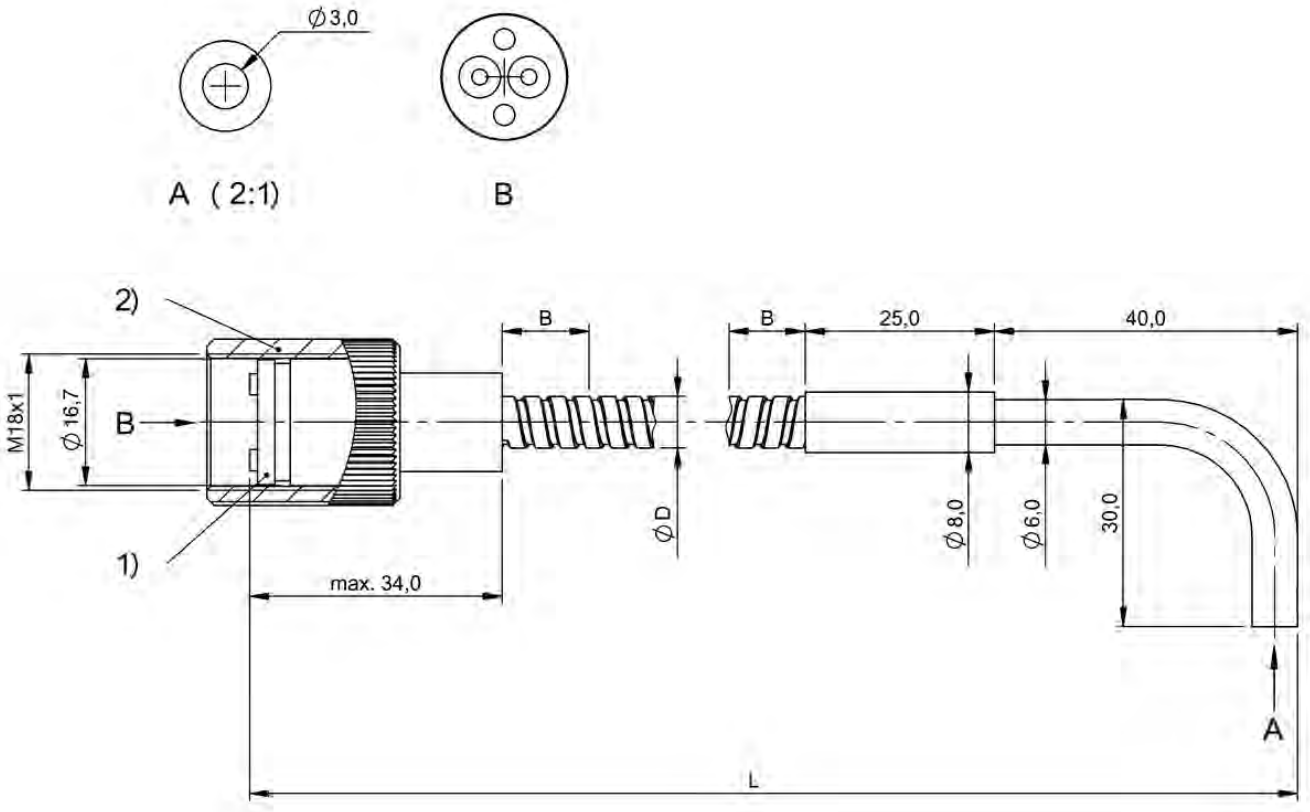
1) Disc removable

BFO0037, BFO0038



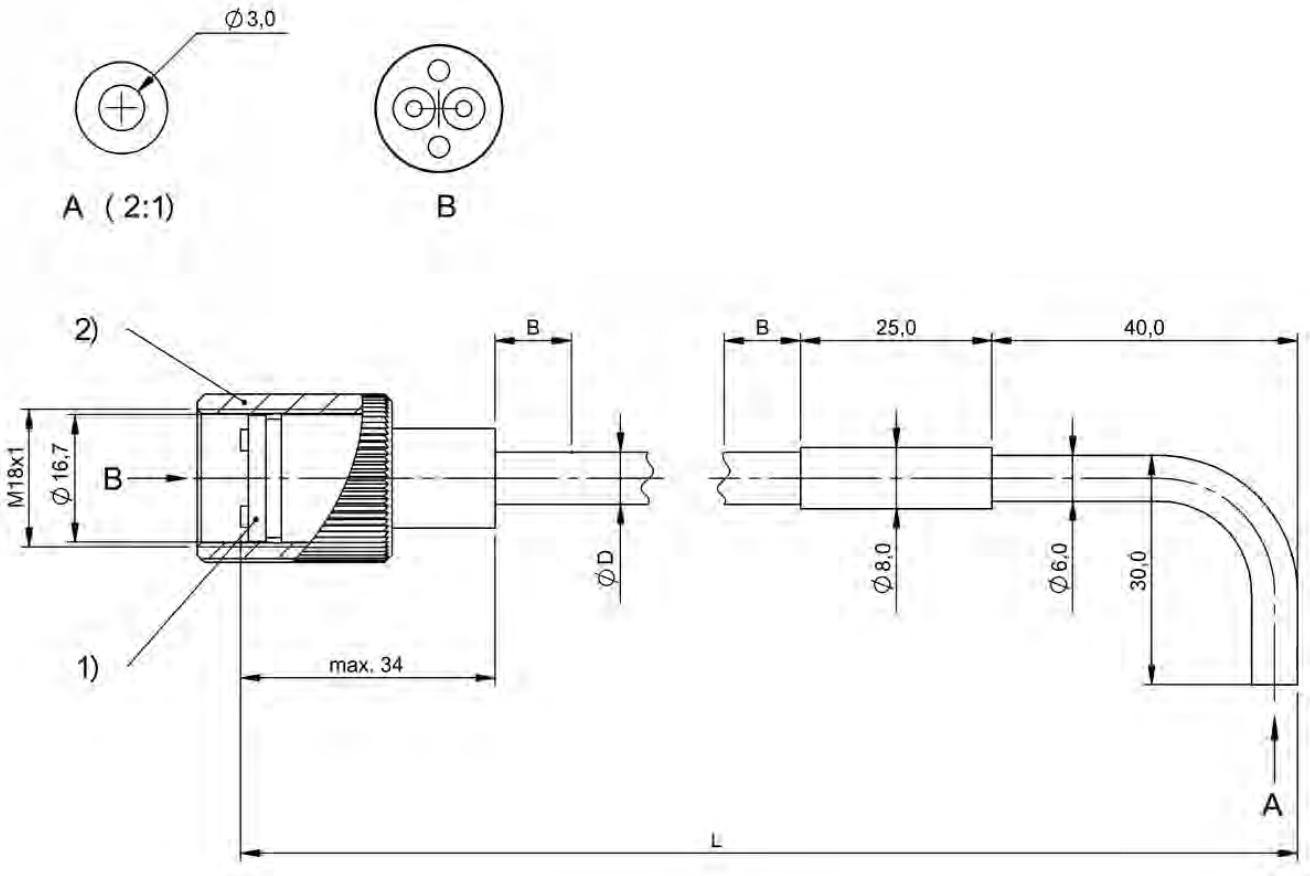
1) Disc removable

BFO003C, BFO003E



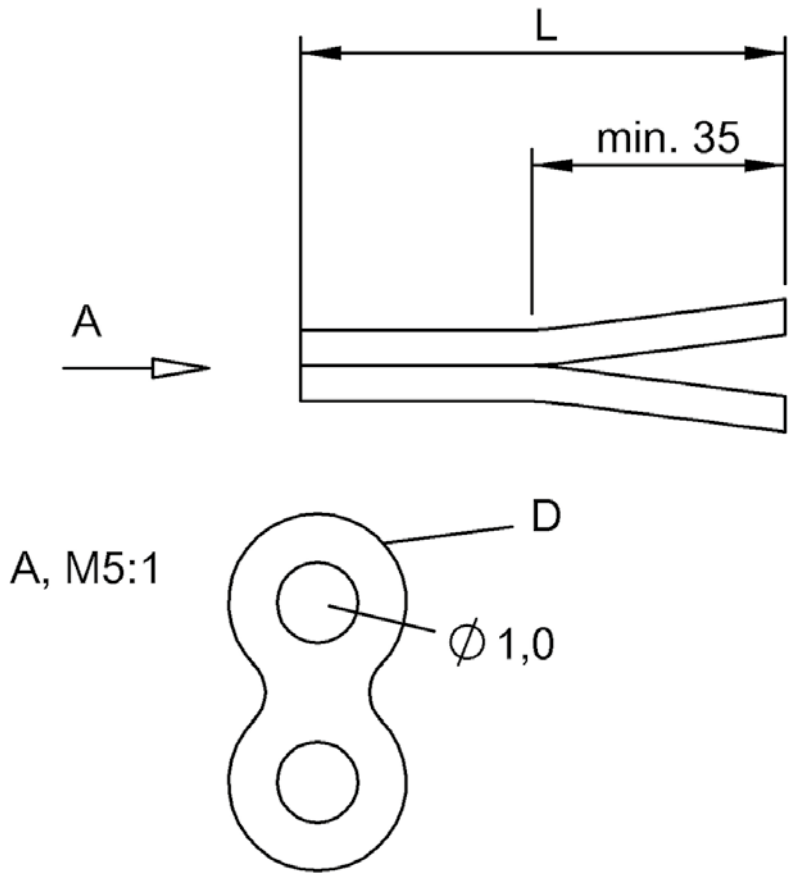
1) Disc removable, 2) cap nut

BFO004U

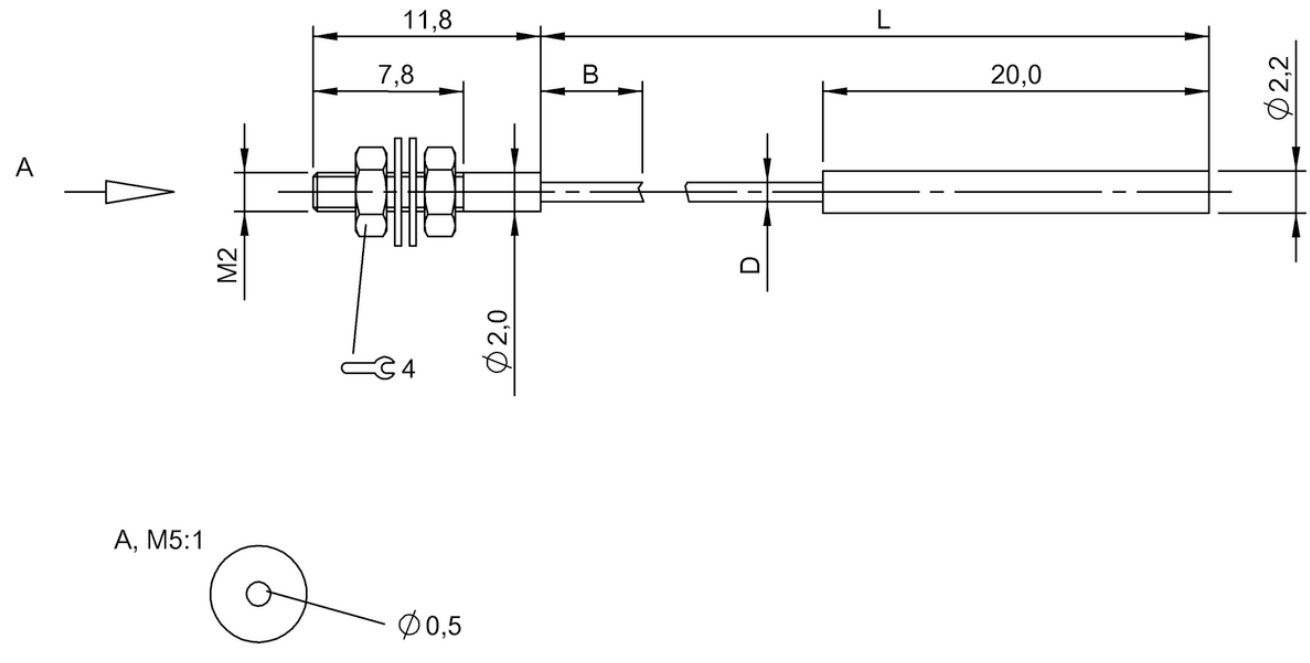


1) Disc removable, 2) cap nut

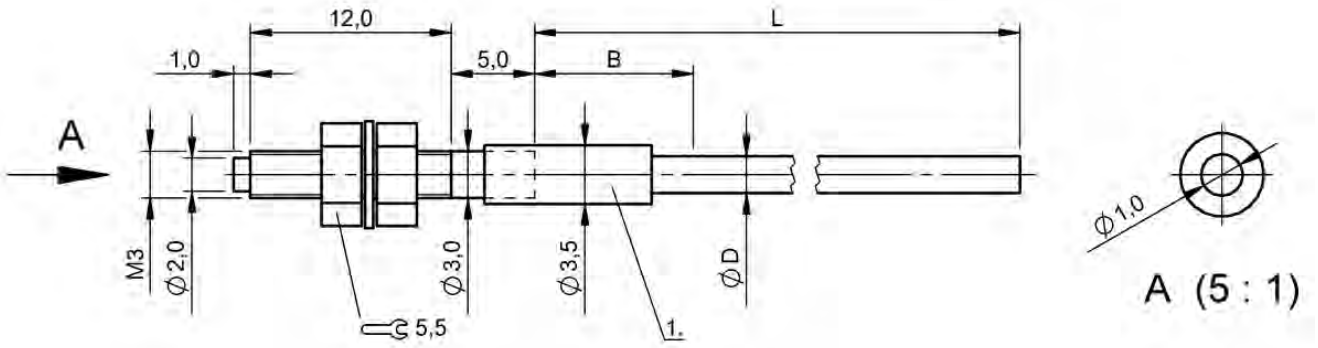
BFO004Y, BFO004Z



BFO005Y

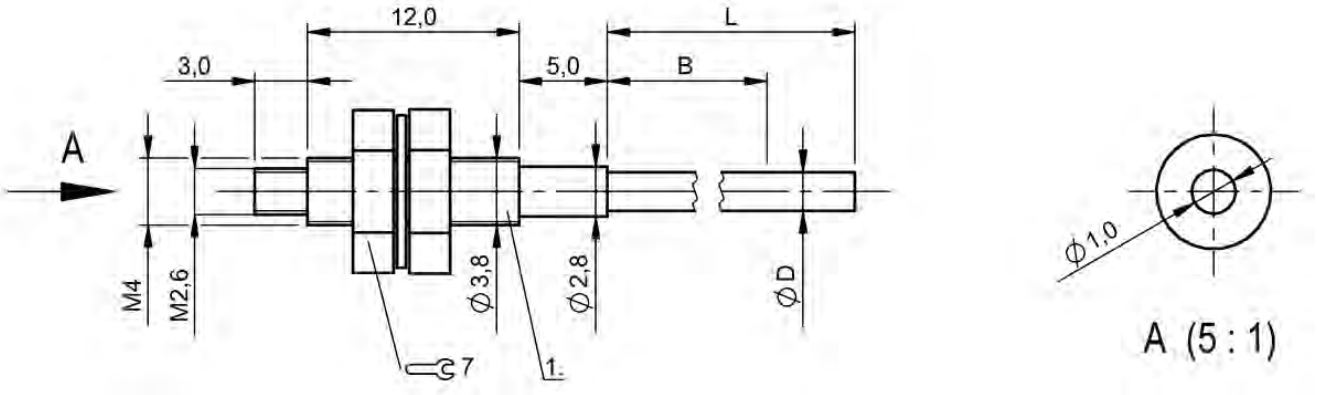


BFO000C



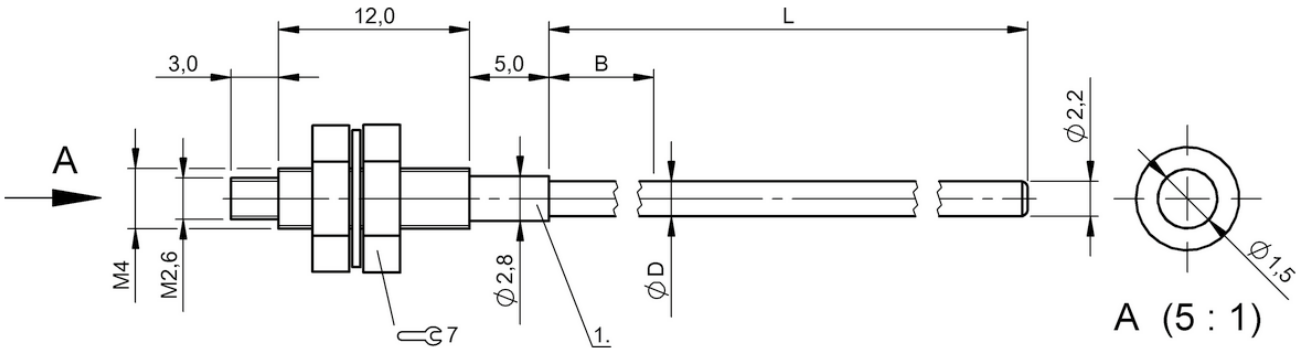
1) Protective tube

BF0005R



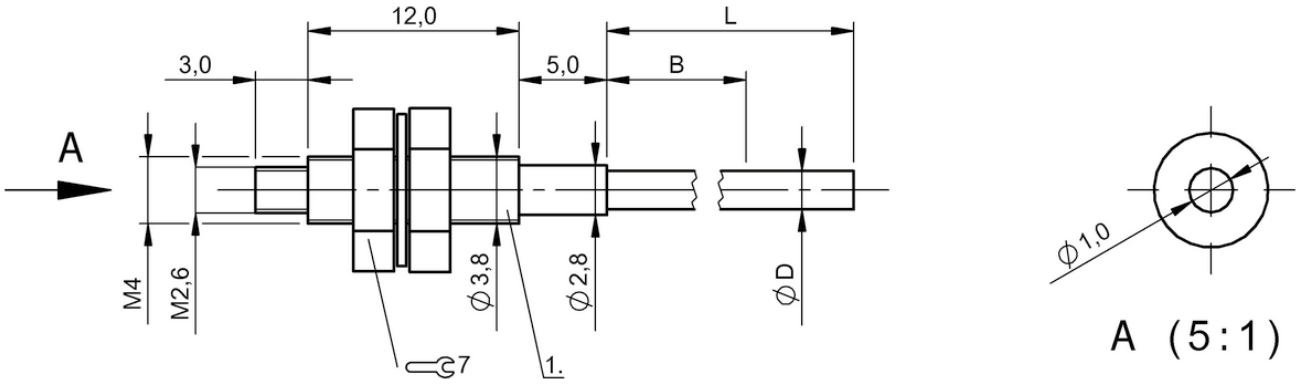
1) Protective tube

BF0005M



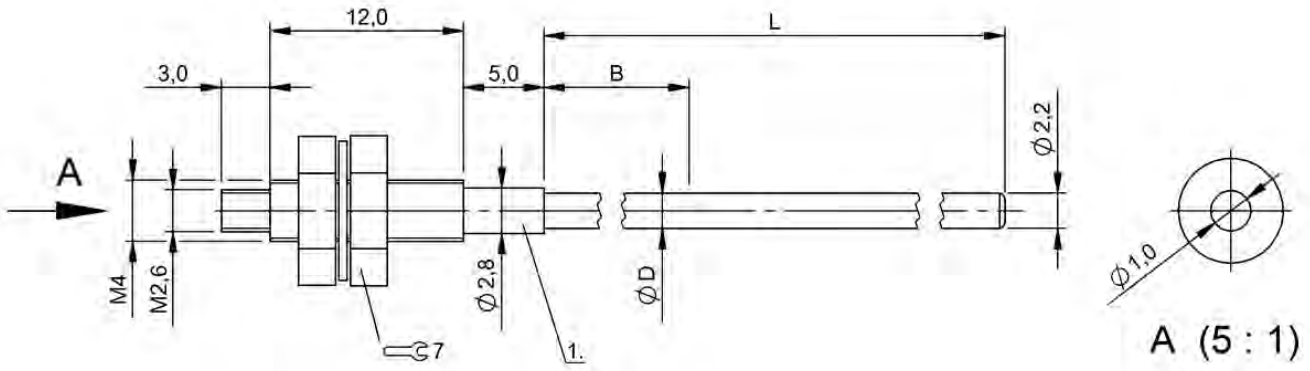
1) Protective tube

BFO005U



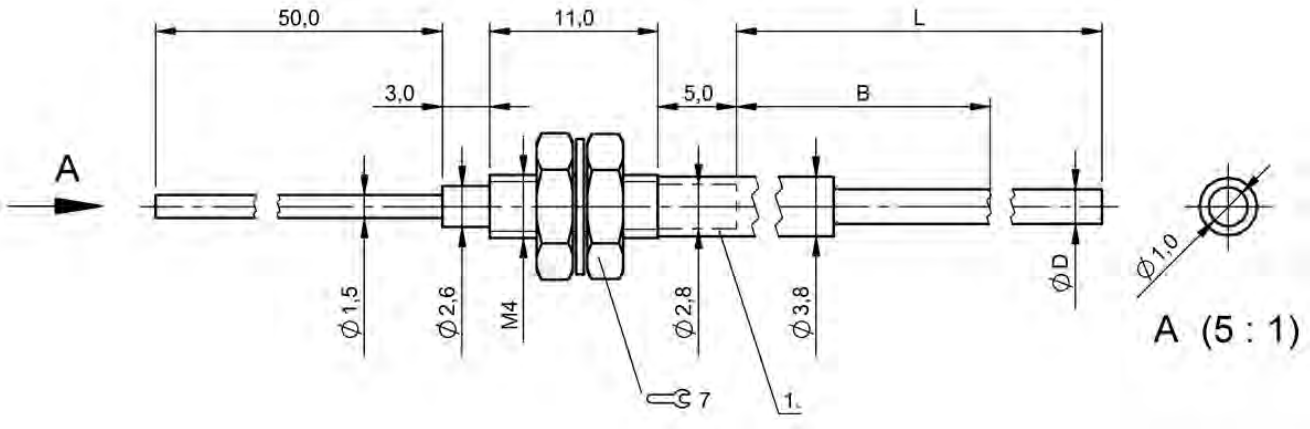
1) Protective tube

BFO005T



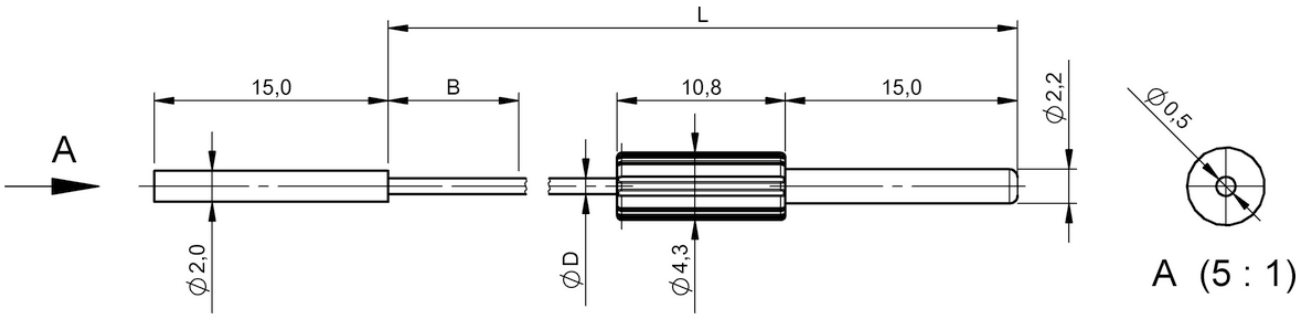
1) Protective tube

BFO005W

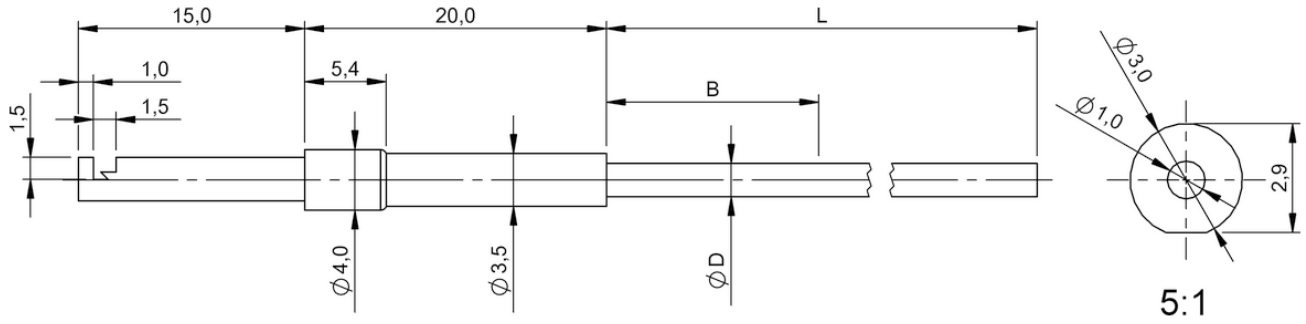


1) Protective tube

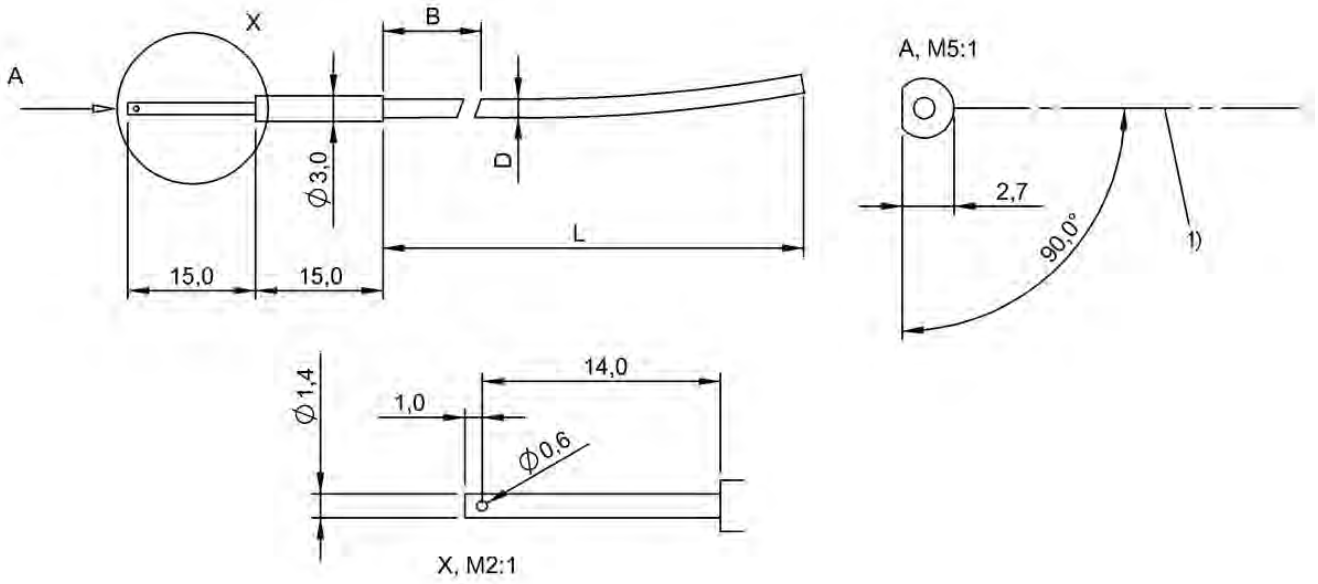
BFO005N



BFO0051

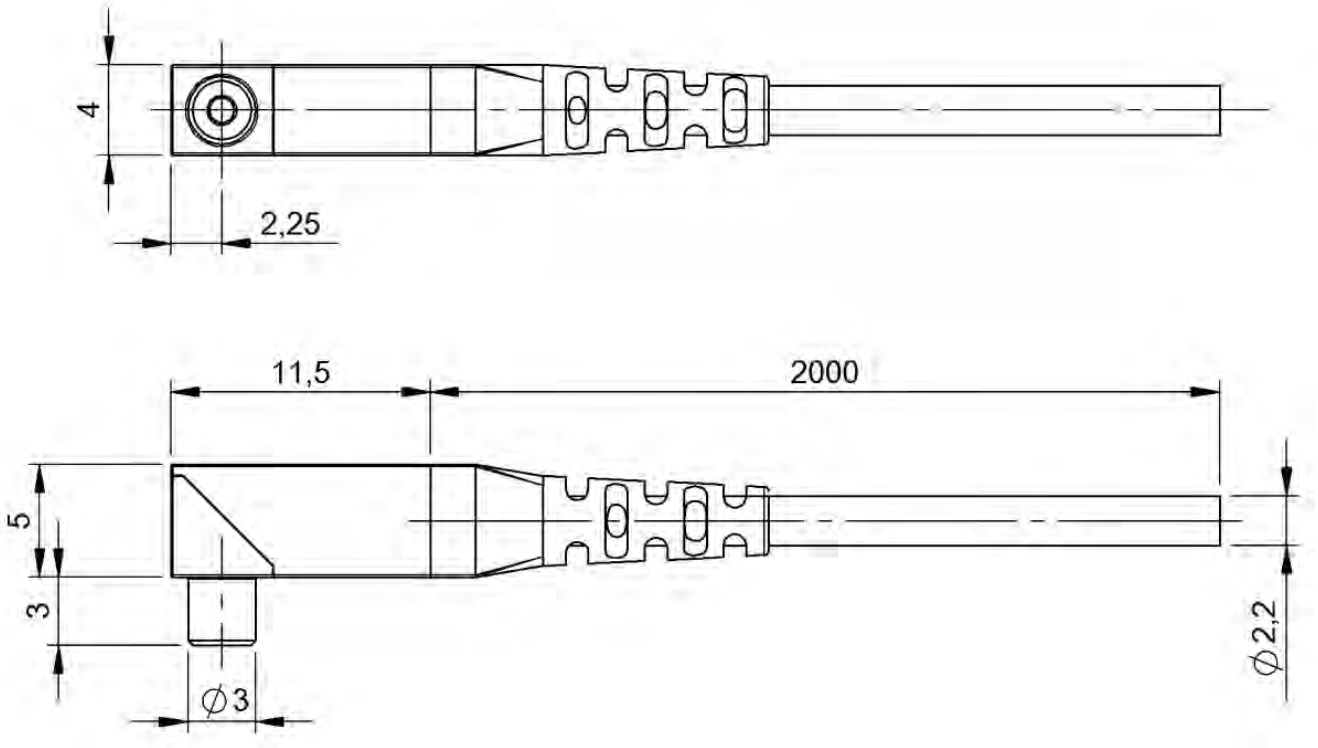


BFO00AY

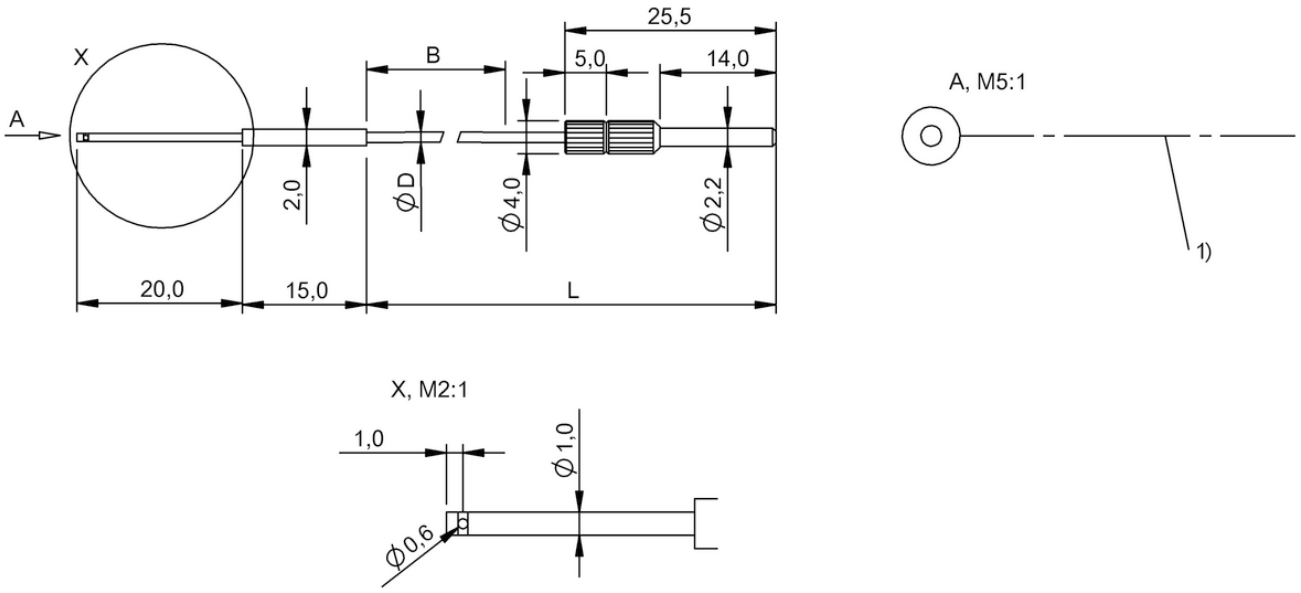


1) Optical axis

BF0005P

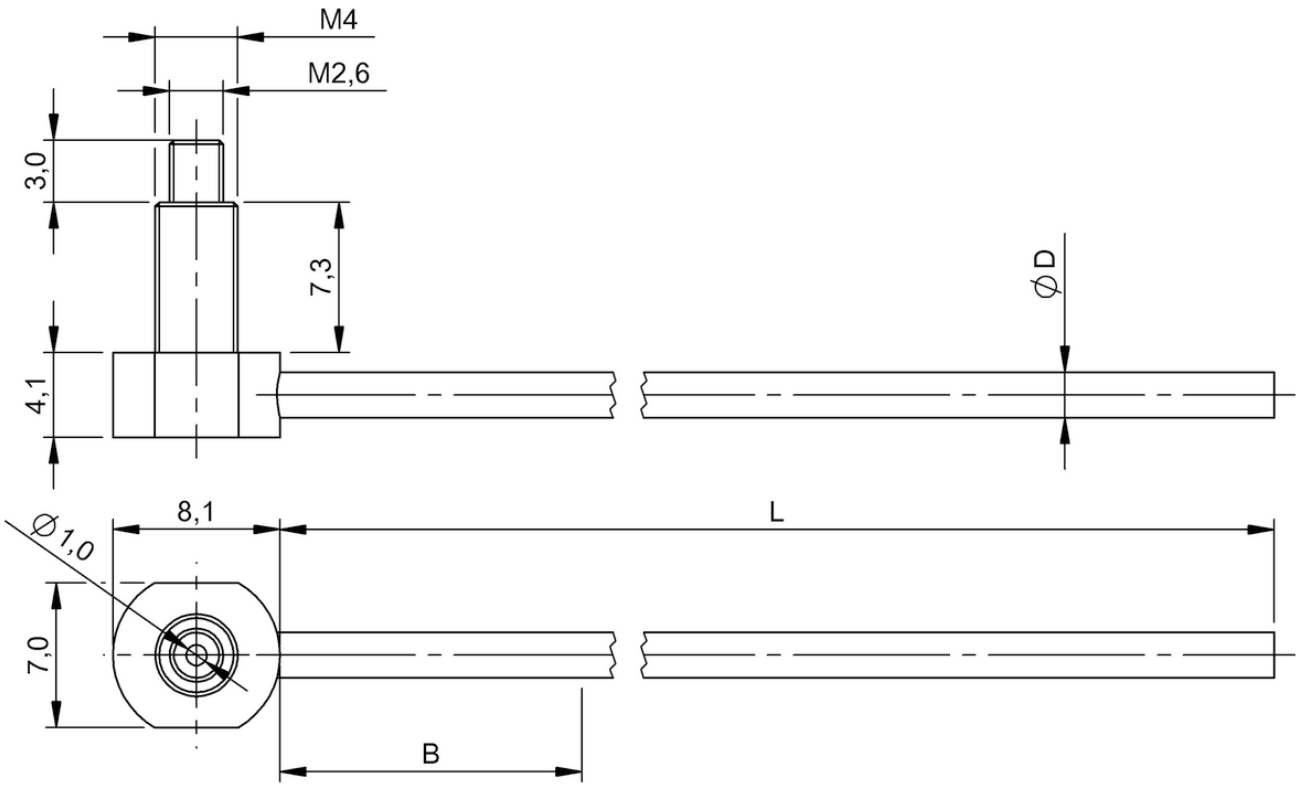


BF000H6

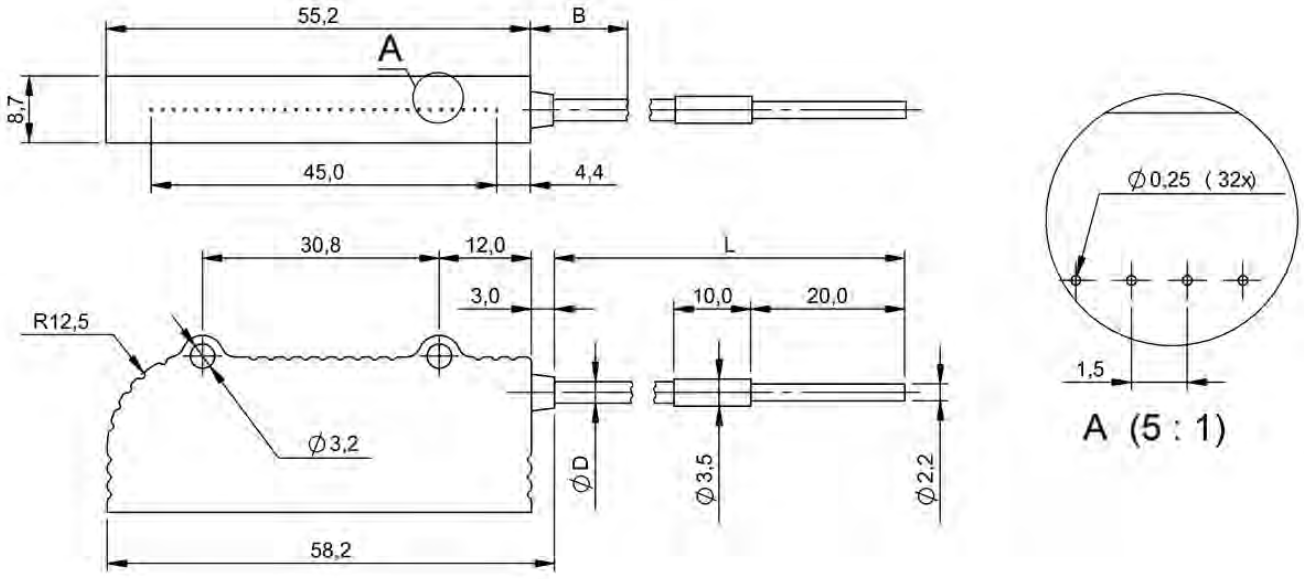


1) Optical axis

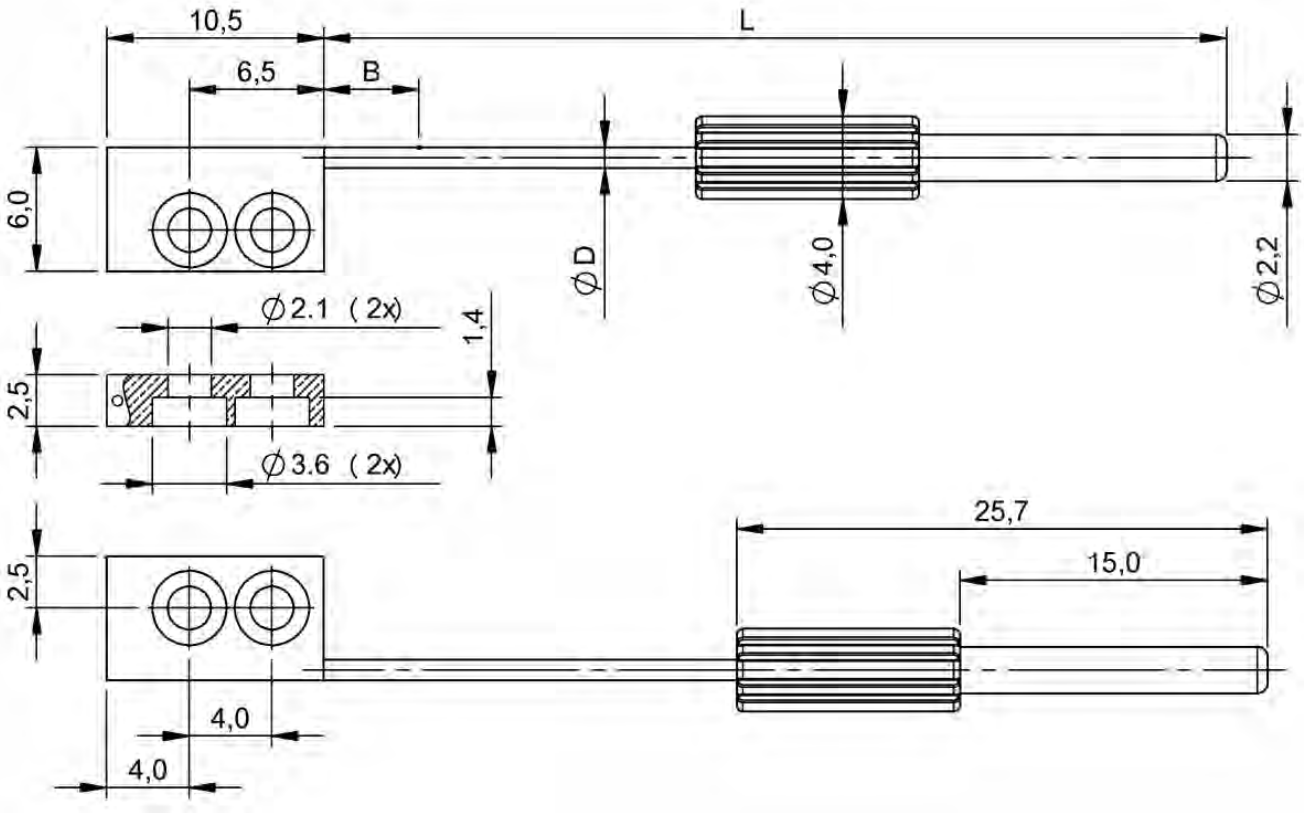
BF00056



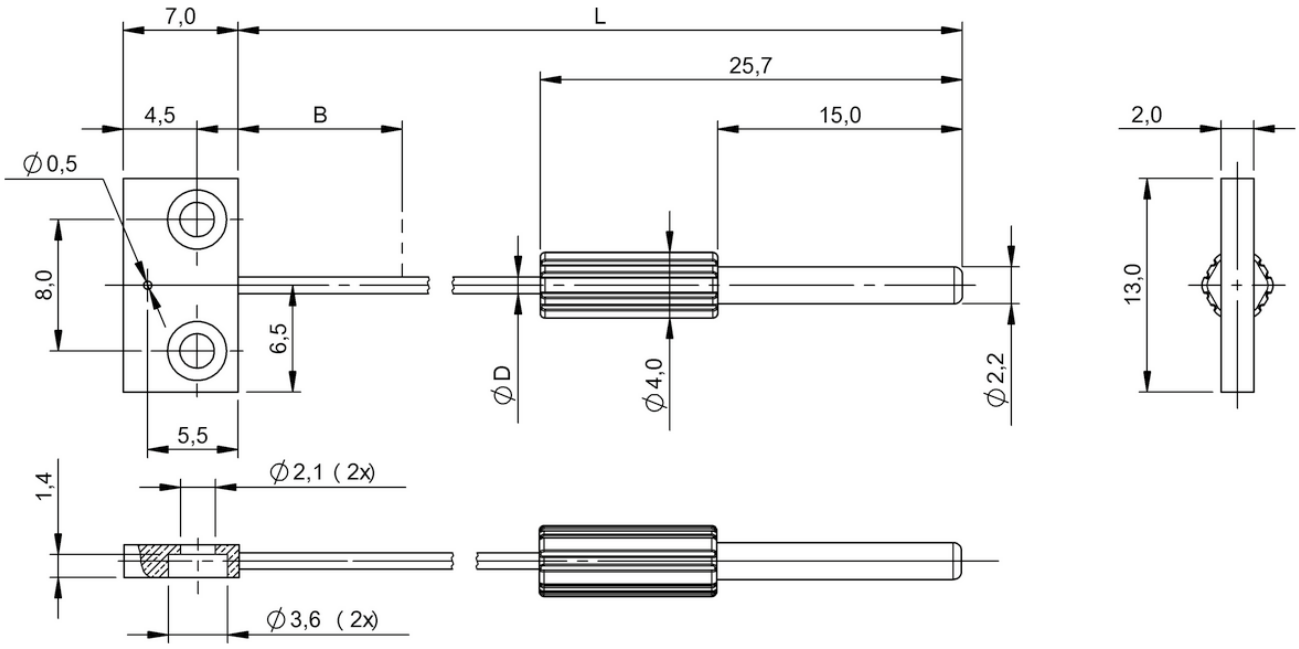
BF000AW



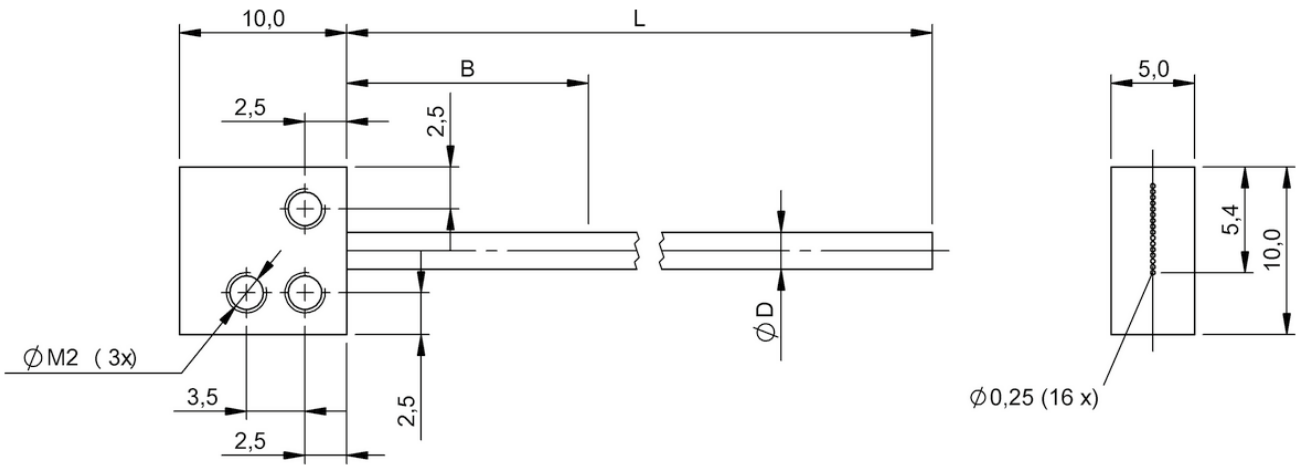
BF000C8



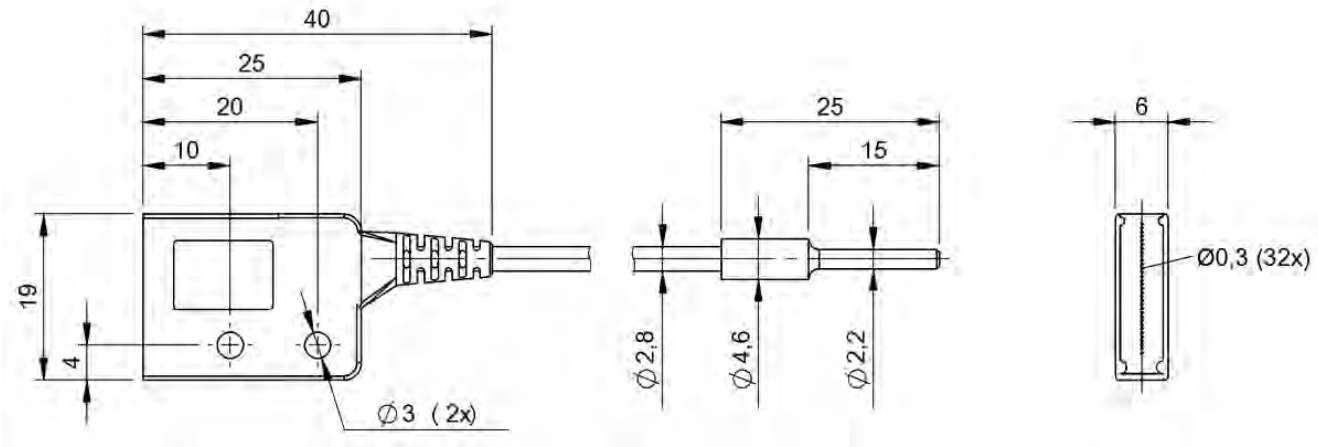
BF000C6



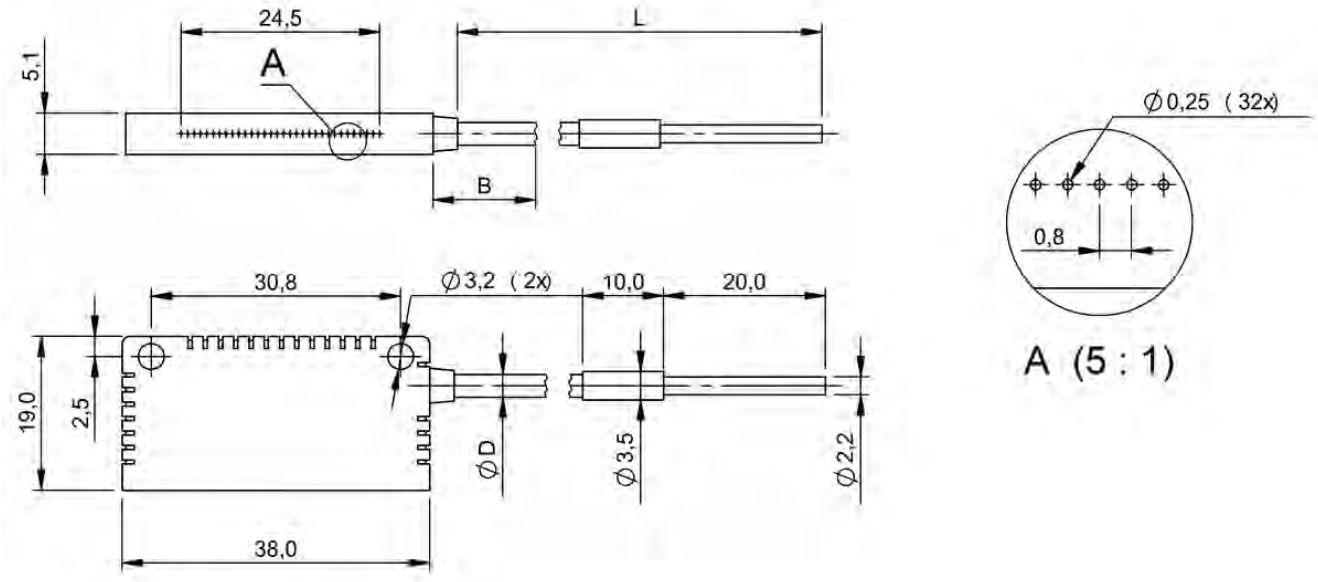
BF000C7



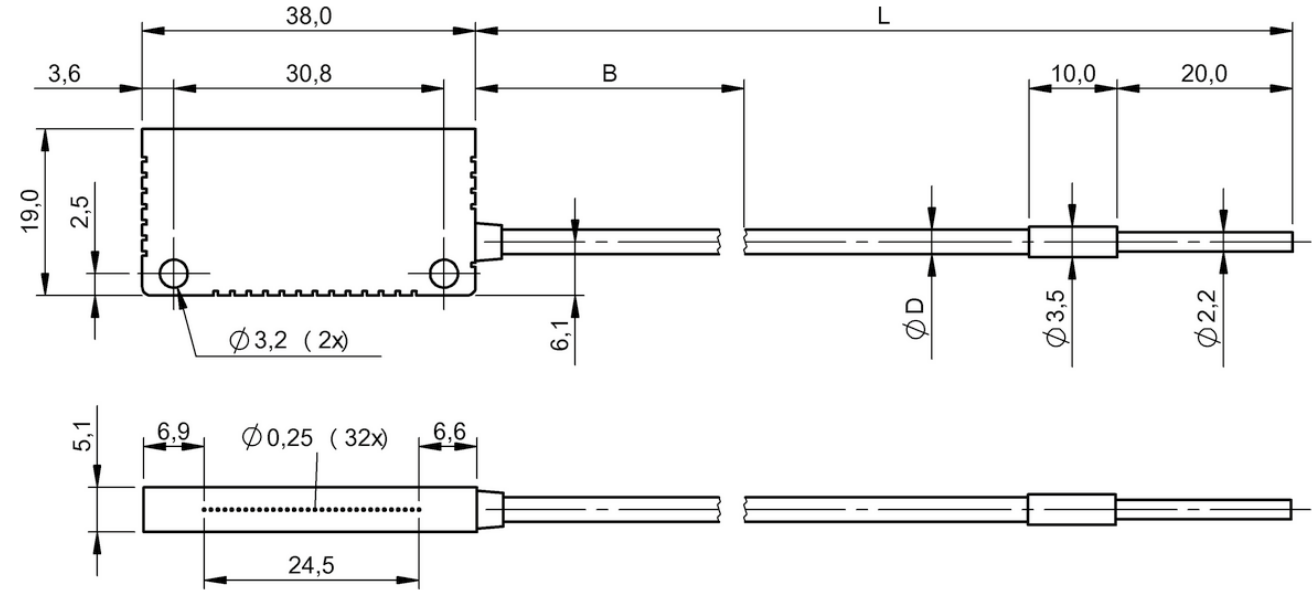
BF000AP



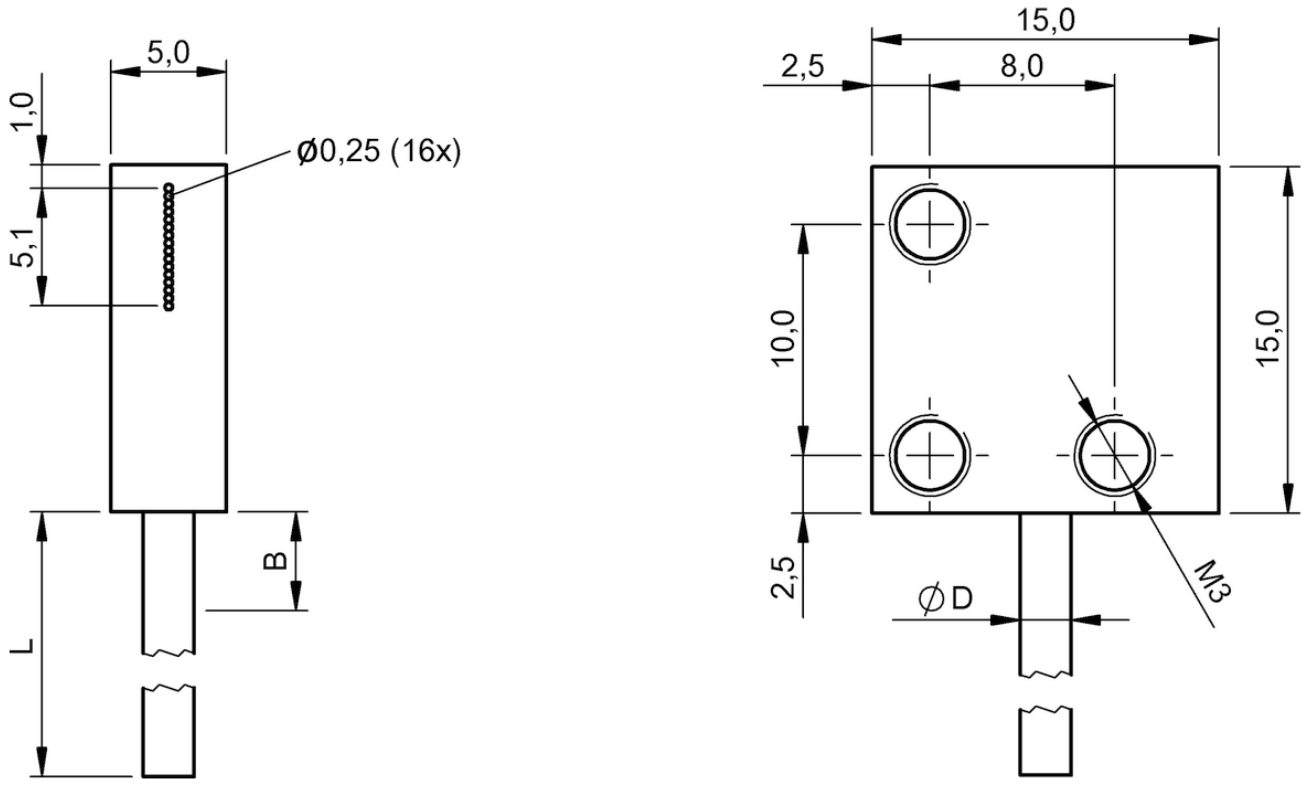
BF00067



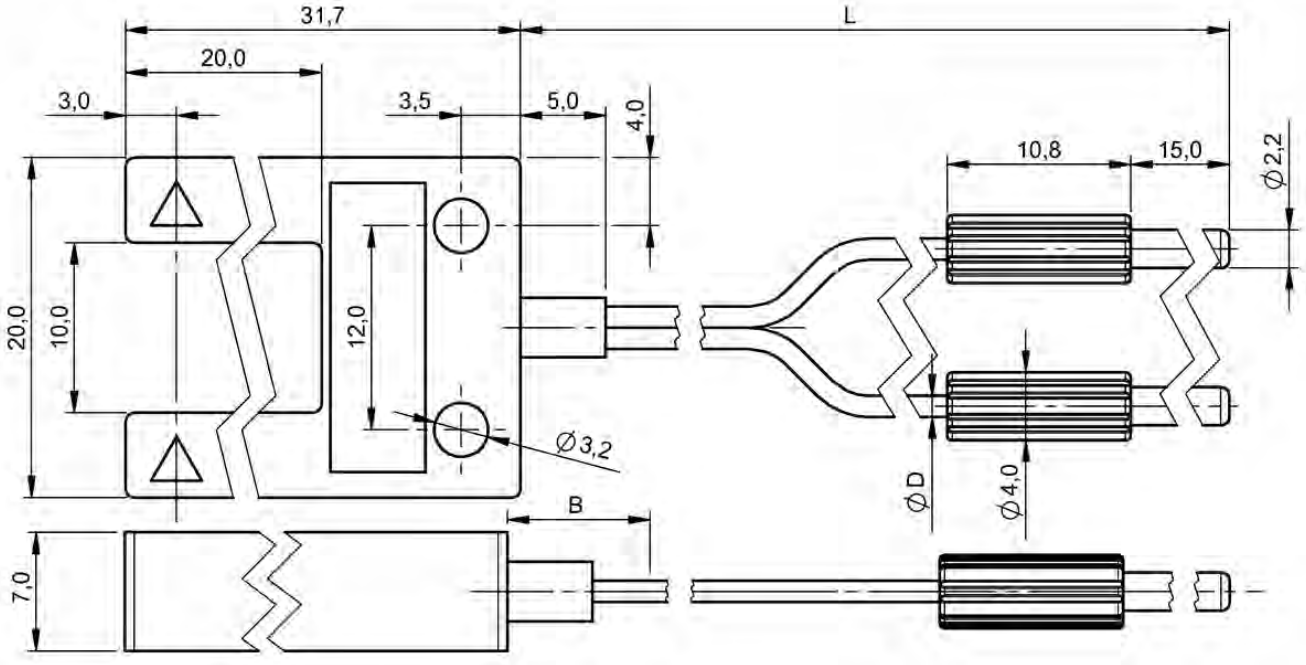
BF000C5



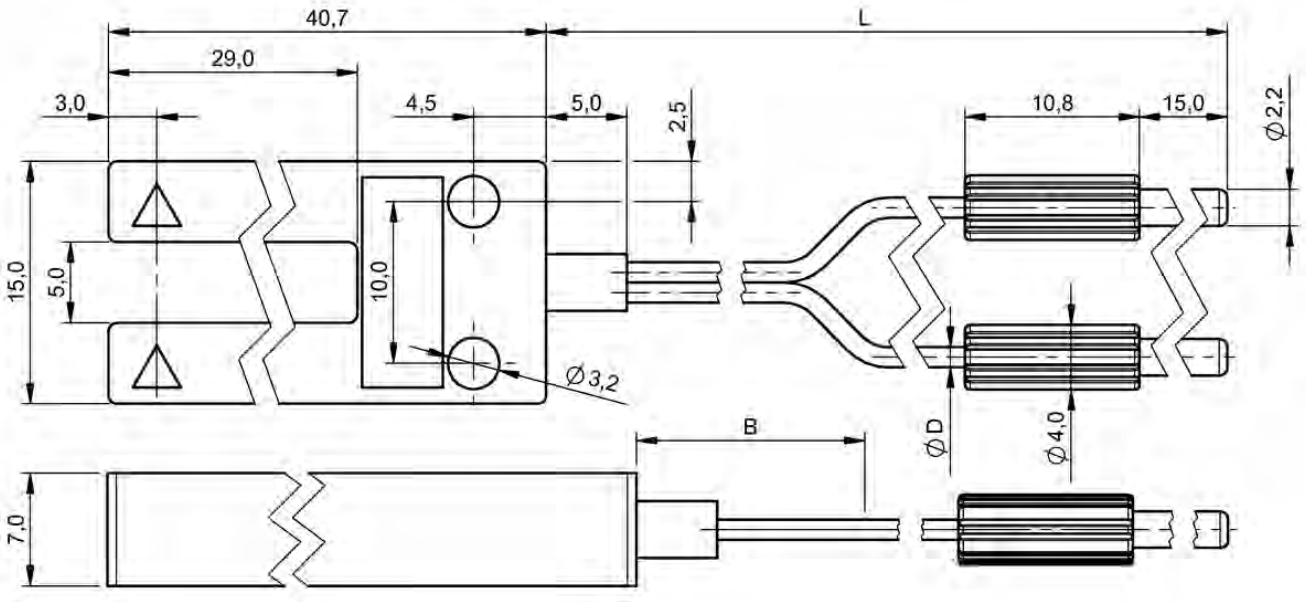
BF00068



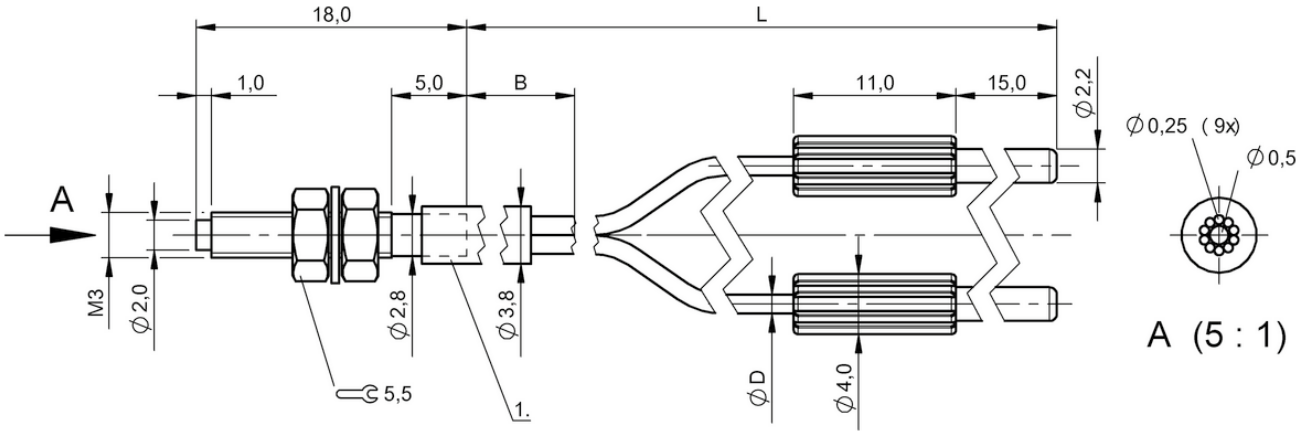
BF0005K



BF00059

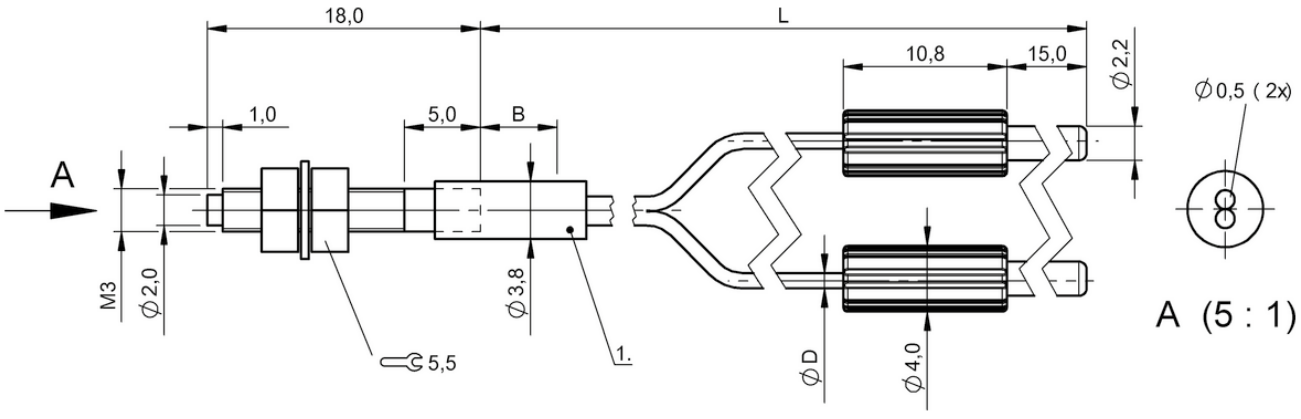


BF00058



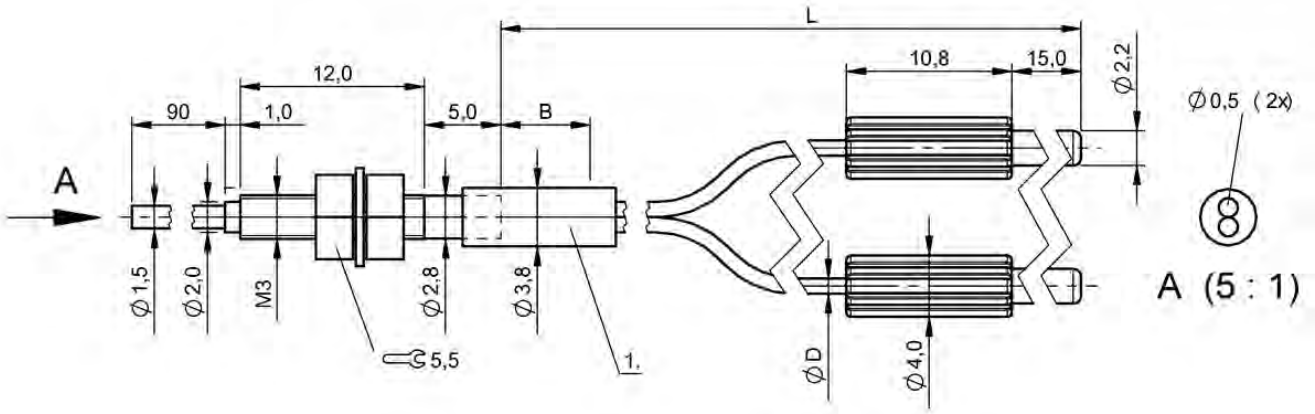
1) Protective tube

BFO005E



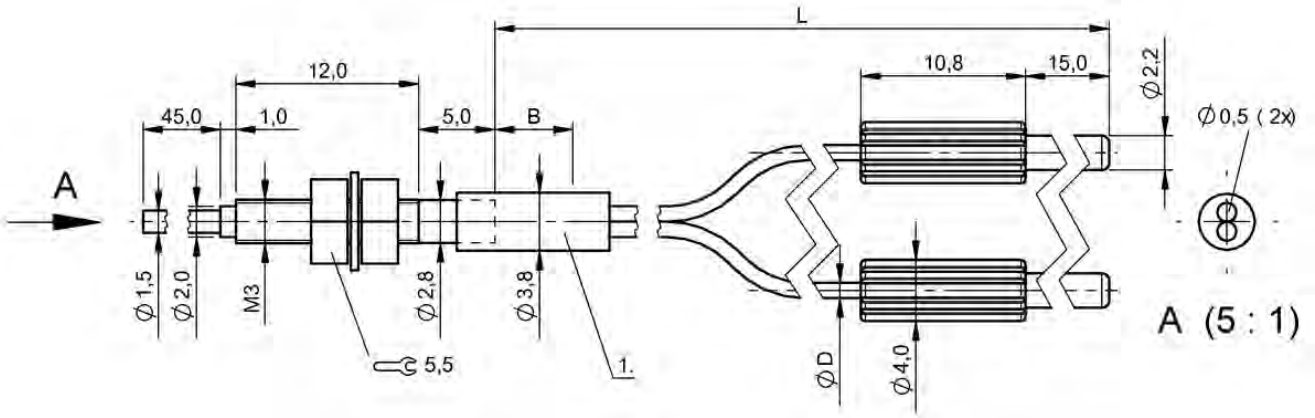
1) Protective tube

BFO0054



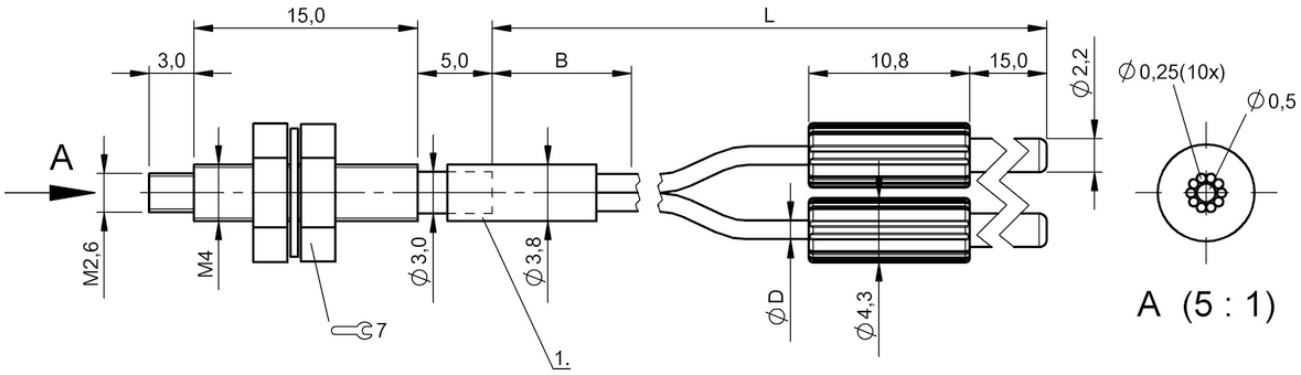
1) Protective tube

BF000C3



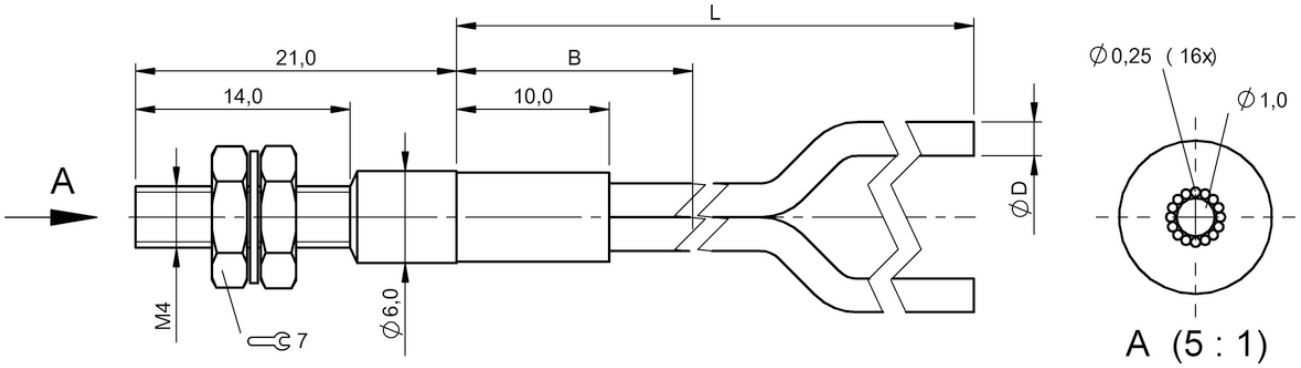
1) Protective tube

BF00052

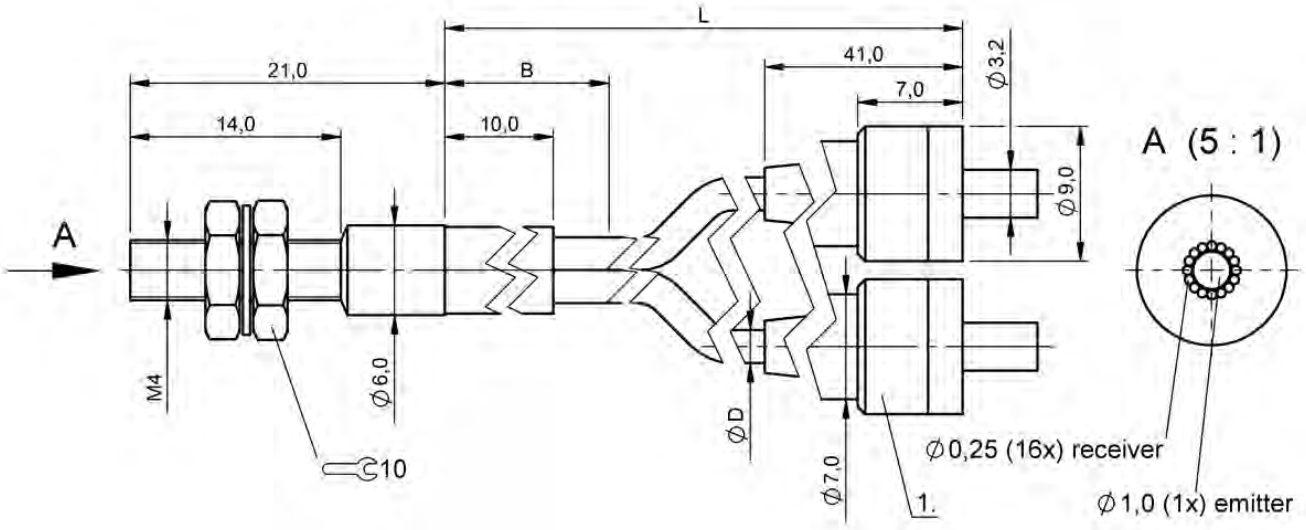


1) Protective tube

BFO005C

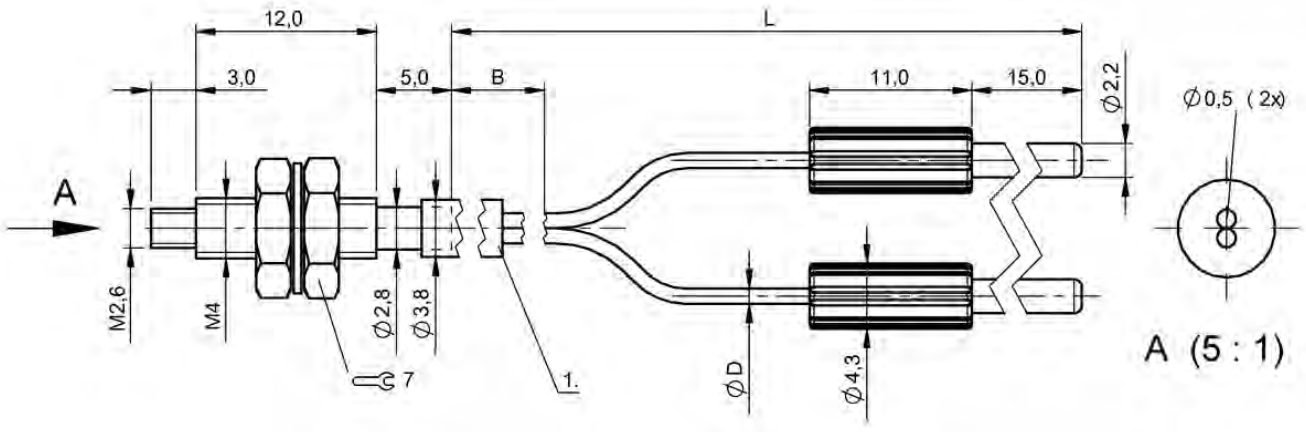


BFO0006



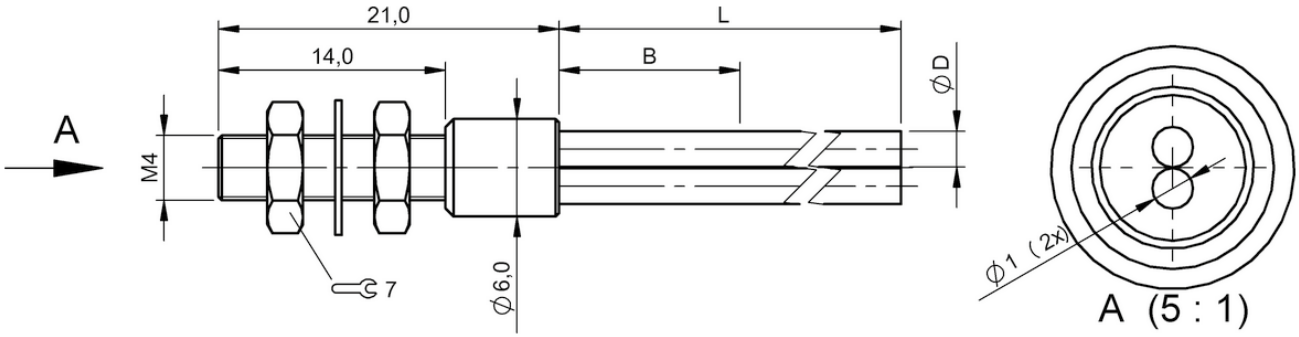
1) SMA 905

BF000C9

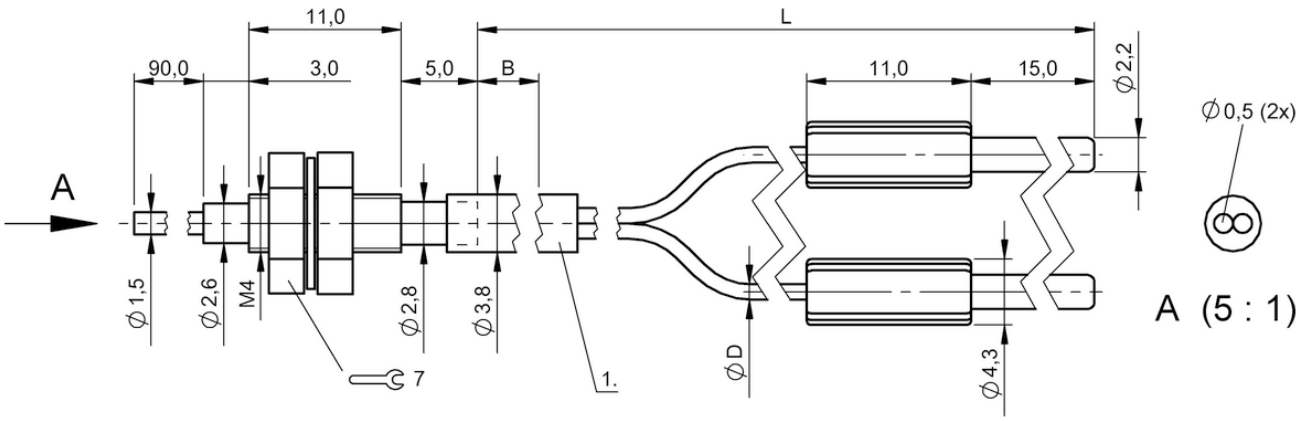


1) Protective tube

BF00055

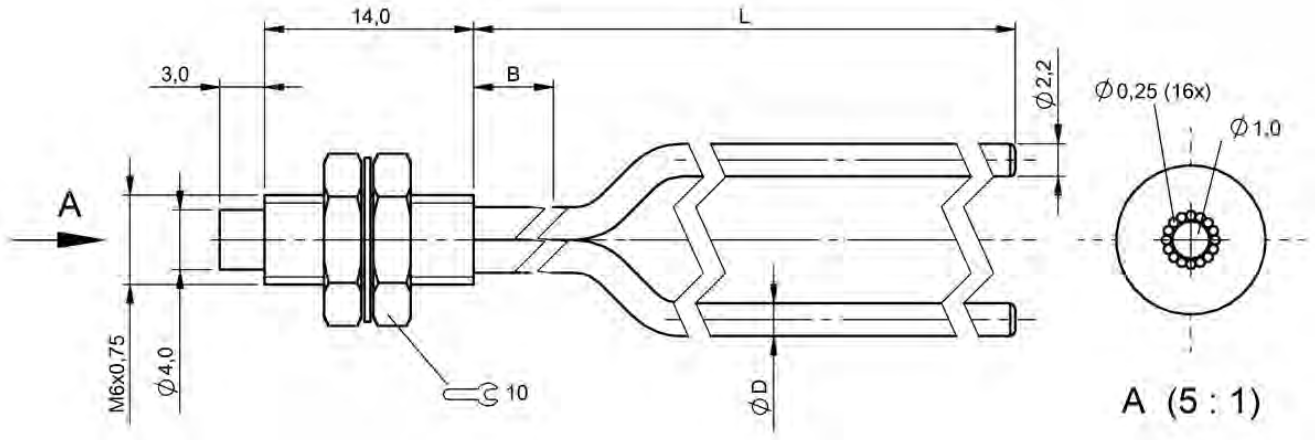


BF00005

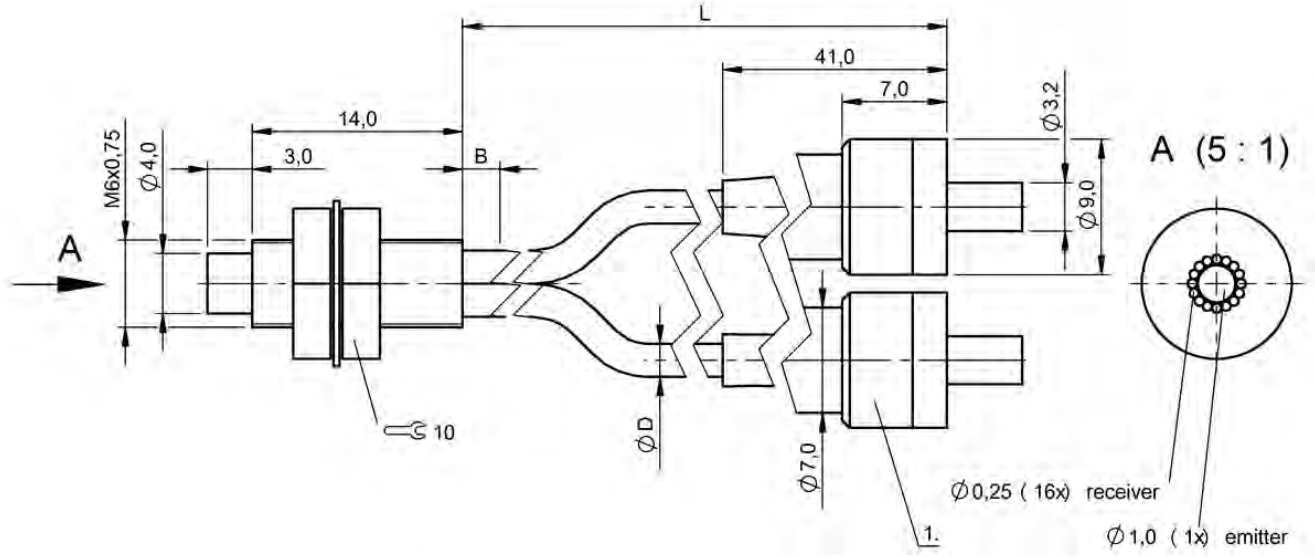


1) Protective tube

BF00053

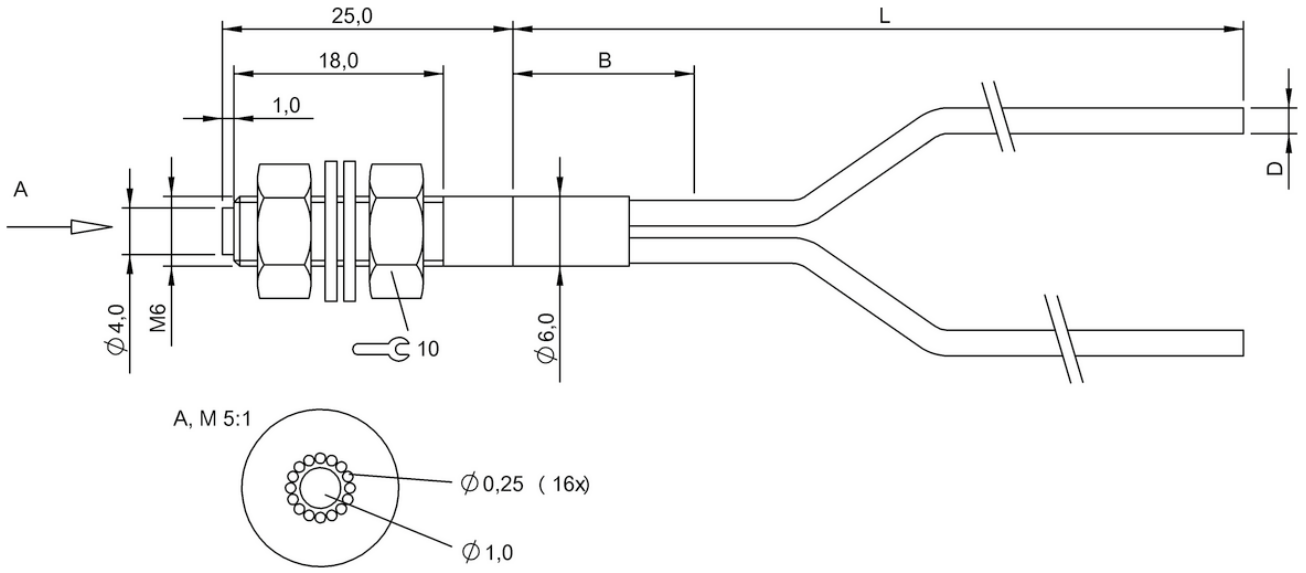


BF00066

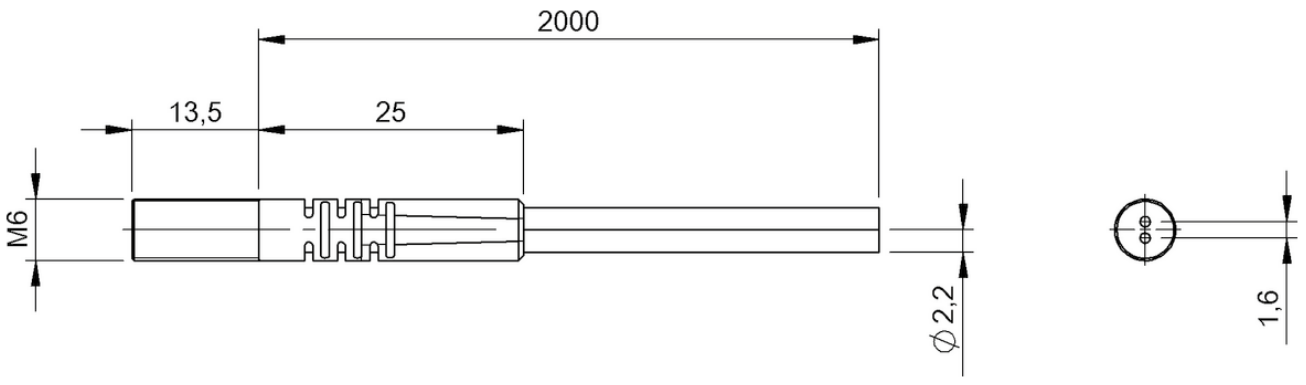


1) SMA 905

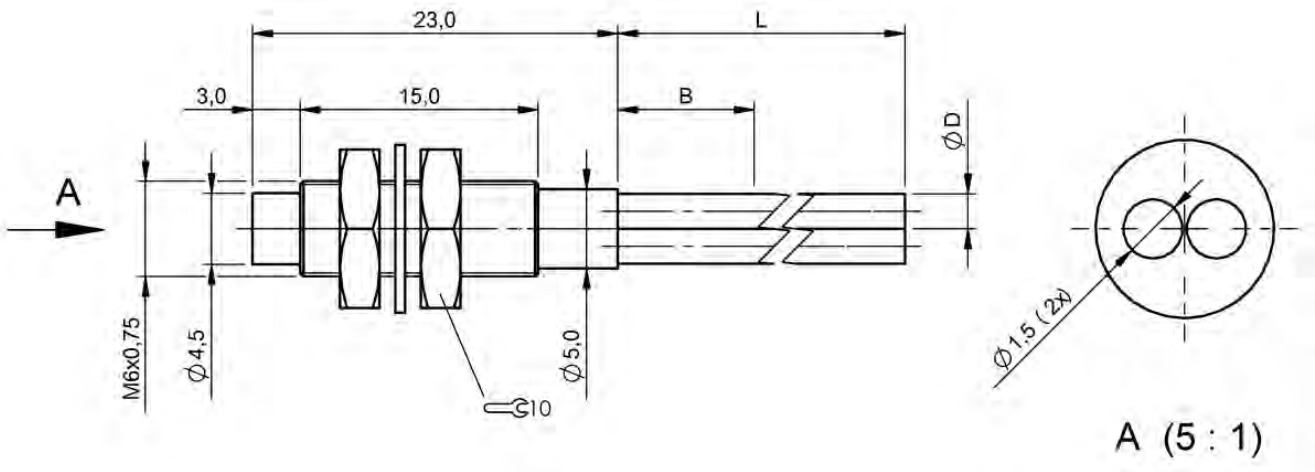
BF000H4, BF000FP, BF000C4, BF000FN



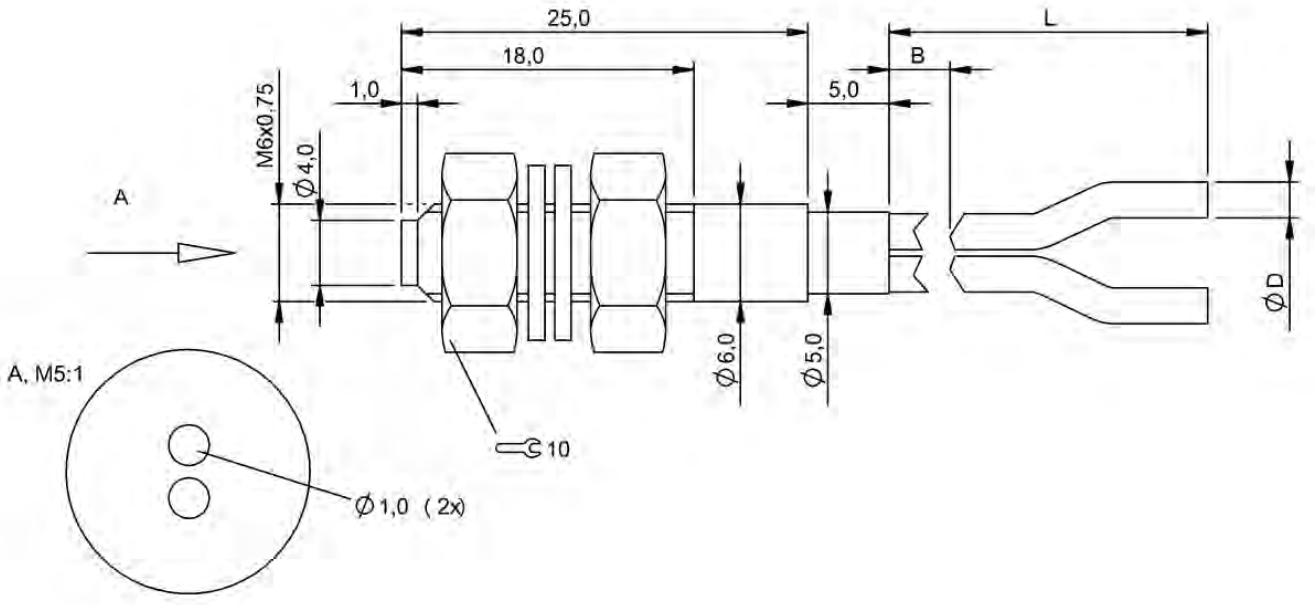
BF00007



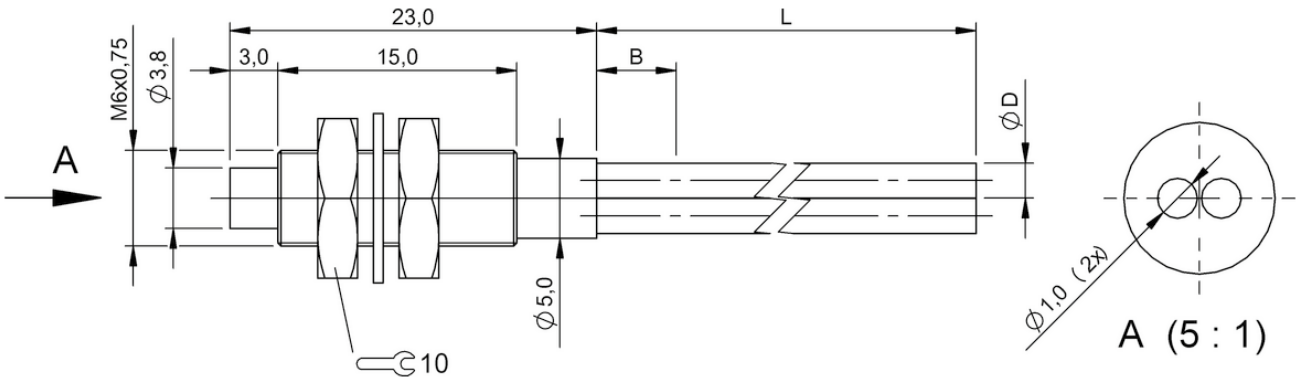
BF000H5



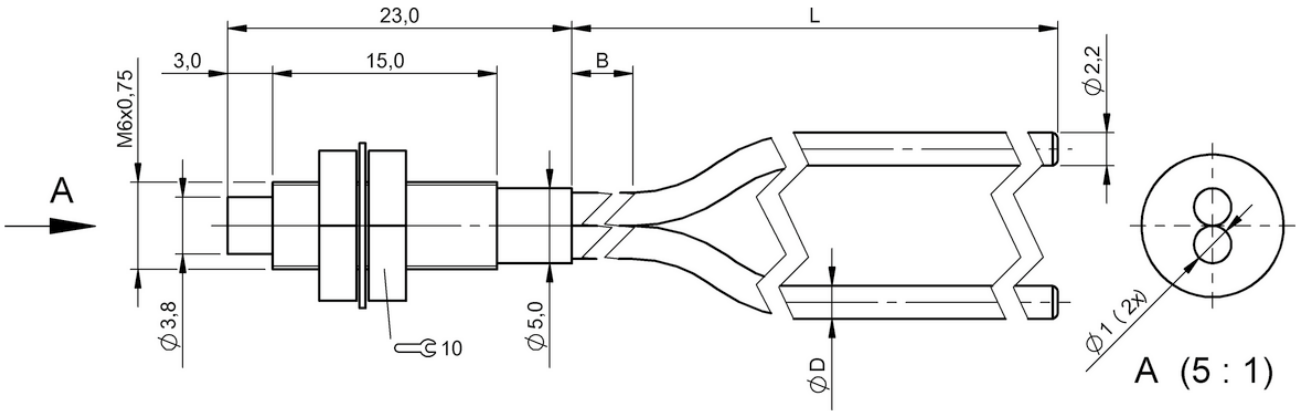
BF00064



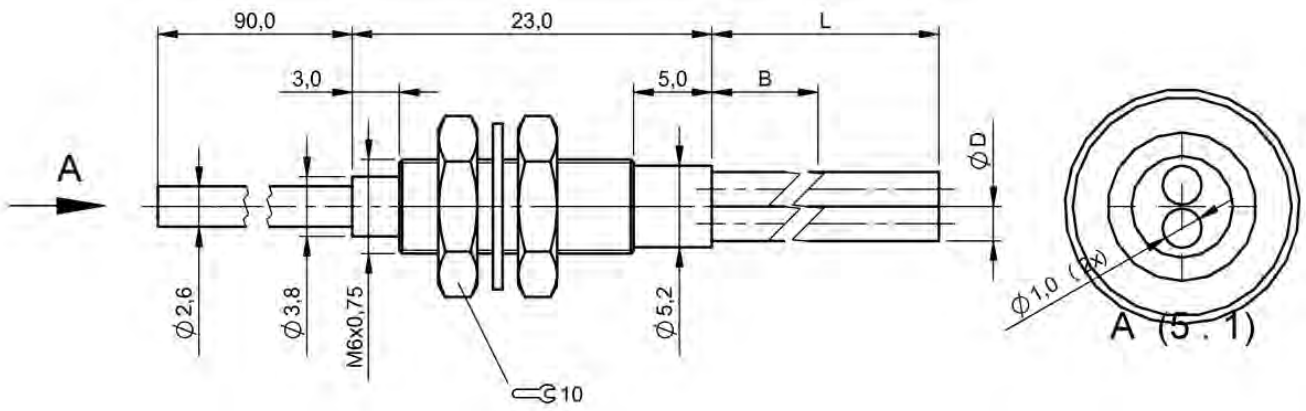
BF00003



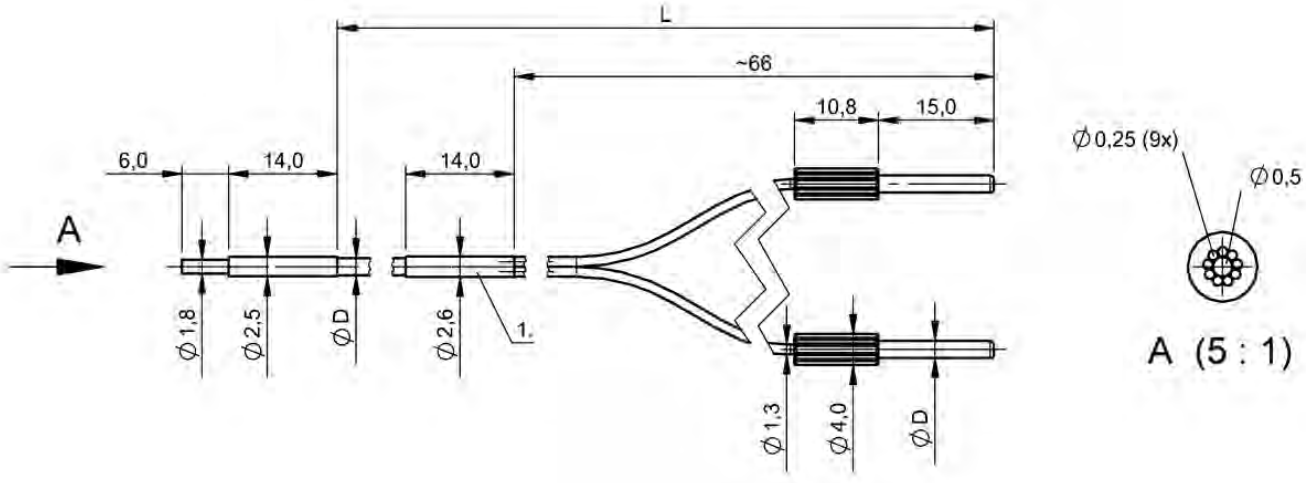
BFO00063



BFO00065

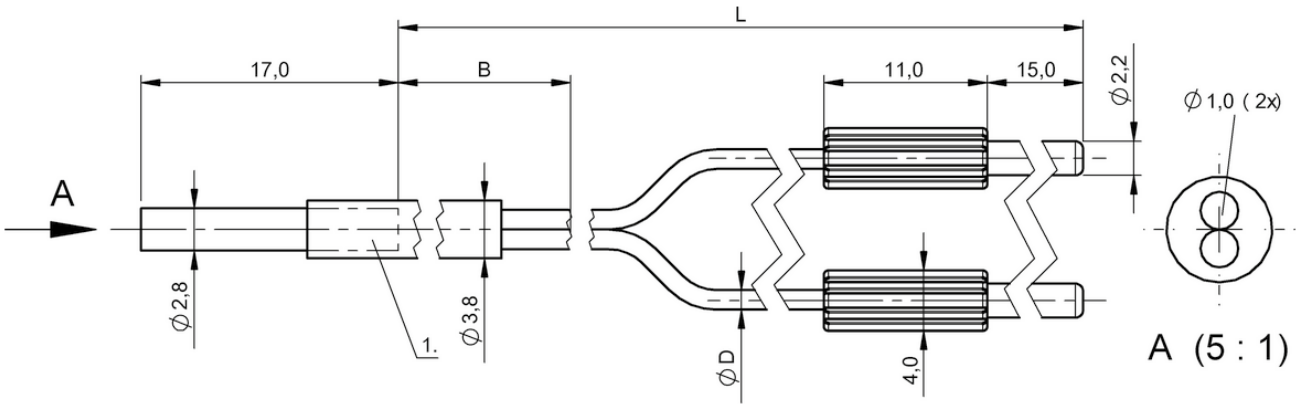


BF00004



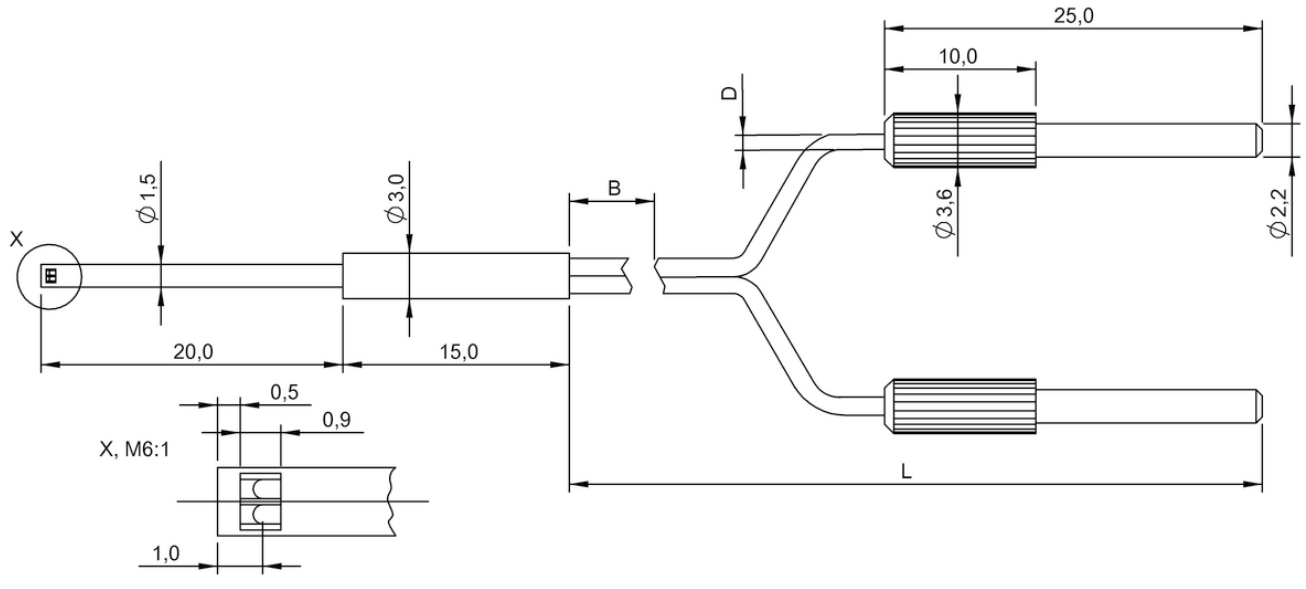
1) Protective tube

BF000AT

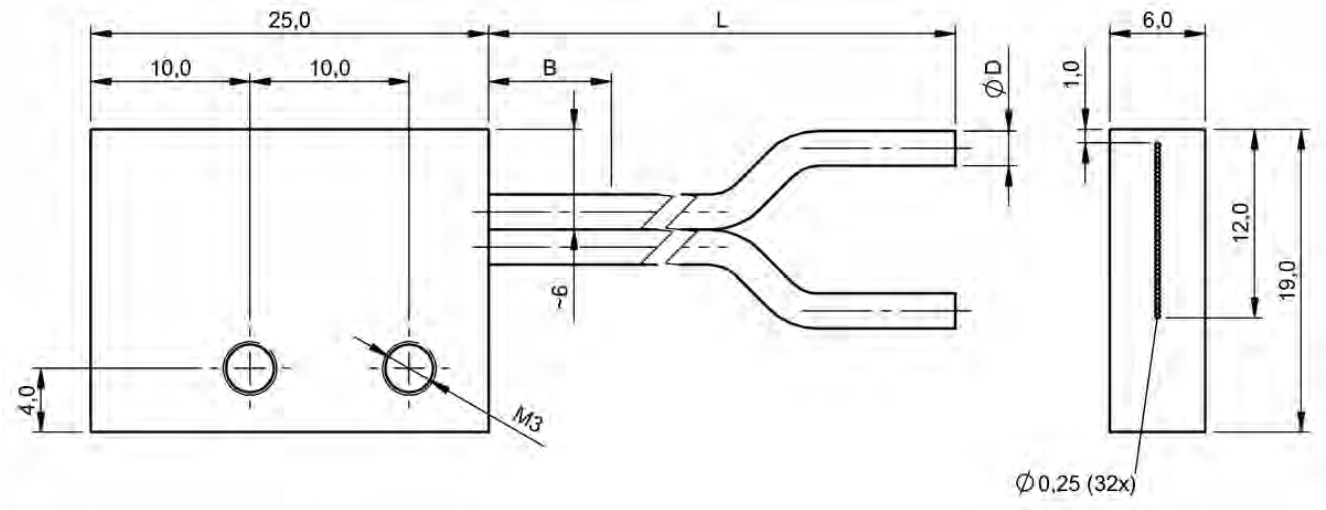


1) Protective tube

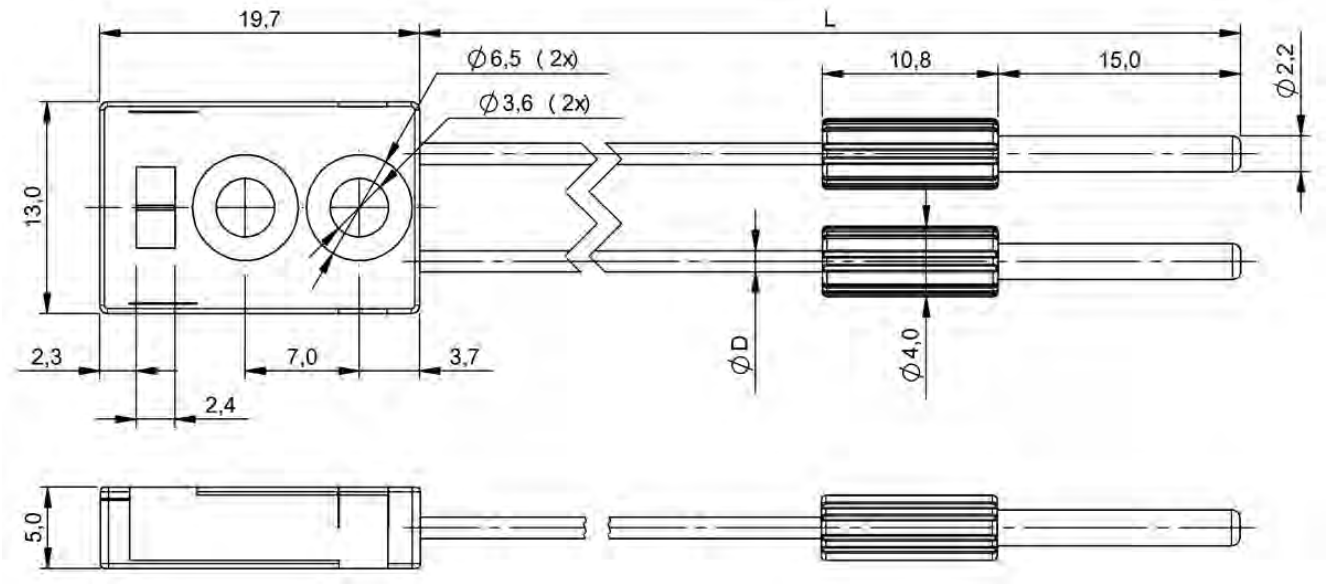
BFO005A



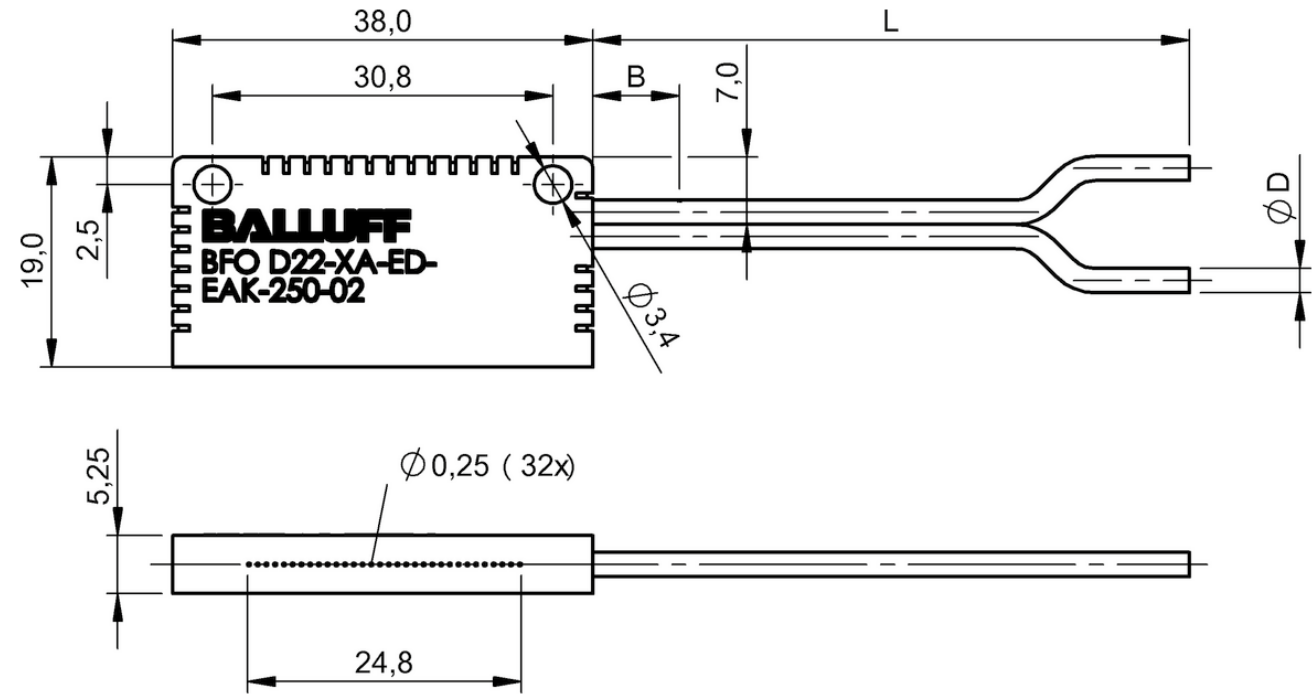
BFO0062



BF0005Z



BF000AR


38,0
L
30,8
B
7,0
19,0
2,5
BALLUFF
BFO D22-XA-ED-
EAK-250-02
⌀3,4
⌀D
5,25
⌀0,25 (32x)
24,8

BFO0060



	BOH00F5 BOH AI-R028-034-01-S49F	BOH00F6 BOH AI-R051-035-01-S49F	BOH00F7 BOH AI-R073-036-01-S49F	
Series	—	—	—	
Dimension	11 x 9 x 25 mm	11 x 9 x 46 mm	11 x 9 x 66 mm	
Application	—	—	—	
Interface	—	—	—	
Principle of operation	Optical sensor head	Optical sensor head	Optical sensor head	
Principle of optical operation	Through-beam sensor	Through-beam sensor	Through-beam sensor	
Special optical feature	Light array	Light array	Light array	
Beam characteristic	—	—	—	
Light type	LED infrared	LED infrared	LED infrared	
Light spot size	—	—	—	
Active length AL 1	10 mm	30 mm	50 mm	
Range	10...300 mm	10...500 mm	10...500 mm	
Connection	Cable with connector, M8x1-Female, 3-pin, 1 m, PUR	Cable with connector, M8x1-Female, 3-pin, 1 m, PUR	Cable with connector, M8x1-Female, 3-pin, 1 m, PUR	
Housing material	PA 6	PA 6	PA 6	
Material sensing surface	PMMA	PMMA	PMMA	
Approval/Conformity	—	—	—	
Productview	Page 610	Page 610	Page 610	





	BOH00FF BOH AI-R180-037-02-S49F	BOH00FH BOH AI-R264-038-02-S49F	BOH00FJ BOH AI-R396-039-02-S49F	BOH00FK BOH AI-R484-040-02-S49F	BOH00FL BOH AI-R704-041-02-S49F
	–	–	–	–	–
	18 x 10 x 100 mm	22 x 10 x 120 mm	22 x 11 x 180 mm	22 x 14 x 220 mm	22 x 14 x 320 mm
	–	–	–	–	–
	–	–	–	–	–
	Optical sensor head	Optical sensor head	Optical sensor head	Optical sensor head	Optical sensor head
	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor
	Light array	Light array	Light array	Light array	Light array
	–	–	–	–	–
	LED infrared	LED infrared	LED infrared	LED infrared	LED infrared
	–	–	–	–	–
	80 mm	100 mm	160 mm	200 mm	300 mm
	10...500 mm	10...500 mm	10...500 mm	10...500 mm	10...500 mm
	Cable with connector, M8x1-Female, 3-pin, 2 m, PUR	Cable with connector, M8x1-Female, 3-pin, 2 m, PUR	Cable with connector, M8x1-Female, 3-pin, 2 m, PUR	Cable with connector, M8x1-Female, 3-pin, 2 m, PUR	Cable with connector, M8x1-Female, 3-pin, 2 m, PUR
	Aluminum, anodized, black	Aluminum, anodized, black	Aluminum, anodized, black	Aluminum, anodized, black	Aluminum, anodized, black
	PMMA	PMMA	PMMA	PMMA	PMMA
	–	–	–	–	–
	Page 610	Page 610	Page 610	Page 610	Page 610



	BOH005J BOH TI-G02-001-01-S49F	BOH000C BOH TK-G02-001-01-S49F	BOH000A BOH TR-G02-001-01-S49F	
Series	G02	G02	G02	
Dimension	Ø 2 x 8 mm	Ø 2 x 8.6 mm	Ø 2 x 8.6 mm	
Application	—	—	—	
Interface	for switching amplifier	for switching amplifier	for switching amplifier	
Principle of operation	Optical sensor head	Optical sensor head	Optical sensor head	
Principle of optical operation	Through-beam sensor	Through-beam sensor	Through-beam sensor	
Special optical feature	—	—	—	
Beam characteristic	Divergent	divergent, max. 3.5°	Divergent	
Light type	Infrared	microSPOT-LED red light	LED, red light	
Light spot size	—	Ø 10 mm at 100 mm	—	
Active length AL 1	—	—	—	
Range	0...300 mm	0...500 mm	0...300 mm	
Connection	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	
Housing material	Stainless steel	Stainless steel	Stainless steel	
Material sensing surface	Epoxy	Epoxy	Epoxy	
Approval/Conformity	CE, WEEE	CE, WEEE	CE, WEEE	
Productview	Page 611	Page 611	Page 611	





	BOH000J BOH TJ-G02-001-01-S49F	BOH000E BOH TK-M03-005-01-S49F	BOH0061 BOH TI-M03-001-01-S49F	BOH000U BOH TK-M03-001-01-S49F	BOH000T BOH TR-M03-001-01-S49F
	G02	M03	M03	M03	M03
	Ø 2 x 8.6 mm	6 x 5.5 x 7.6 mm	Ø 3 x 8 mm	Ø 3 x 8.7 mm	Ø 3 x 8.7 mm
	Water detection	–	–	–	–
	for switching amplifier	for switching amplifier	for switching amplifier	for switching amplifier	for switching amplifier
	Optical sensor head	Optical sensor head	Optical sensor head	Optical sensor head	Optical sensor head
	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor
	Light absorption with water	–	–	–	–
	Divergent	divergent, max. 3.5°	Divergent	divergent, max. 3.5°	Divergent
	Infrared for water detection	microSPOT-LED red light	Infrared	microSPOT-LED red light	LED, red light
	–	Ø 10 mm at 100 mm	–	Ø 10 mm at 100 mm	–
	–	–	–	–	–
	0...250 mm	0...500 mm	0...300 mm	0...500 mm	0...300 mm
	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR
	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	PMMA	Epoxy	Epoxy	Epoxy	Epoxy
	CE, WEEE	CE, WEEE	CE, WEEE	CE, WEEE	CE, WEEE
	Page 611	Page 611	Page 611	Page 611	Page 611



	BOH00E6 BOH TK-M04-020-01-S49F	BOH00E5 BOH TR-M04-020-01-S49F	BOH0010 BOH TR-G05-005-02-S49F	
Series	M04	M04	G05	
Dimension	Ø 4 x 12 mm	Ø 4 x 12 mm	Ø 5 x 13 mm	
Application	—	—	—	
Interface	for switching amplifier	for switching amplifier	for switching amplifier	
Principle of operation	Optical sensor head	Optical sensor head	Optical sensor head	
Principle of optical operation	Through-beam sensor	Through-beam sensor	Through-beam sensor	
Special optical feature	—	—	—	
Beam characteristic	divergent, max. 2.5°	Divergent	Divergent	
Light type	microSPOT-LED red light	LED, red light	LED, red light	
Light spot size	Ø 8.00 mm at 100 mm	27 x 27 mm at 100 mm	—	
Active length AL 1	—	—	—	
Range	0...2000 mm	0...2000 mm	0...4 m	
Connection	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 2.00 m, PUR	
Housing material	Nickel-plated brass, nickel plated	Nickel-plated brass, nickel plated	Stainless steel	
Material sensing surface	PMMA	PMMA	PMMA	
Approval/Conformity	CE, WEEE	—	CE, WEEE	
Productview	Page 611	Page 611	Page 611	





	BOH000F BOH TK-M05-006-01-S49F	BOH0065 BOH TI-M05-003-01-S49F	BOH0013 BOH TK-M05-003-01-S49F	BOH000Y BOH TR-M05-003-01-S49F	BOH006H BOH TI-M06-002-01-S49F
	M5	M5	M5	M5	M6
	8.8 x 8 x 8 mm	Ø 5 x 10 mm	Ø 5 x 12.5 mm	Ø 5 x 12.5 mm	Ø 6 x 12 mm
	—	—	—	—	—
	for switching amplifier	for switching amplifier	for switching amplifier	for switching amplifier	for switching amplifier
	Optical sensor head	Optical sensor head	Optical sensor head	Optical sensor head	Optical sensor head
	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor
	—	—	—	—	—
	divergent, max. 2.5°	Divergent	divergent, max. 2.5°	Divergent	Divergent
	microSPOT-LED red light	Infrared	microSPOT-LED red light	LED, red light	Infrared
	Ø 8 mm at 100 mm	—	Ø 8 mm at 100 mm	—	—
	—	—	—	—	—
	0...2 m	0...1 m	0...2 m	0...1 m	0...4 m
	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR
	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated
	Glass	PMMA	PMMA	PMMA	PMMA
	CE, WEEE	CE, WEEE	CE, WEEE	CE, WEEE	CE, WEEE
	Page 611	Page 611	Page 611	Page 611	Page 611



	BOH000K BOH TR-M06-002-02-S49F	**BOH000H** BOH TL-M06-007-02-S49F	**BOH0012** BOH TK-M08-004-02-S49F	
Series	M6	M6	M8	
Dimension	Ø 6 x 13 mm	Ø 6 x 17 mm	Ø 8 x 20 mm	
Application	—	—	—	
Interface	for switching amplifier	for switching amplifier	for switching amplifier	
Principle of operation	Optical sensor head	Optical sensor head	Optical sensor head	
Principle of optical operation	Through-beam sensor	Through-beam sensor	Through-beam sensor	
Special optical feature	—	—	—	
Beam characteristic	Divergent	Collimated	divergent, max. 1°	
Light type	LED, red light	Laser red light	microSPOT-LED red light	
Light spot size	—	Ø 4.5 mm at 2 m	Ø 18 mm at 1 m	
Active length AL 1	—	—	—	
Range	0...4 m	0...4 m	0...4 m	
Connection	Cable with connector, M8x1-Male, 2.00 m, PUR	Cable with connector, M8x1-Male, 2.00 m, PUR	Cable with connector, M8x1-Male, 2.00 m, PUR	
Housing material	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	
Material sensing surface	PMMA	Glass	Glass	
Approval/Conformity	CE, WEEE	CE, WEEE	CE, WEEE	
Productview	Page 611	Page 612	Page 612	





	BOH006P BOH TI-Q06-001-01-S49F	BOH000P BOH TK-Q06-001-01-S49F	BOH000N BOH TR-Q06-001-01-S49F	BOH000R BOH TJ-Q06-001-01-S49F	BOH00EL BOH AI-R034-025-01-S49F
	Q06	Q06	Q06	Q06	–
	12 x 6 x 6 mm	12 x 6 x 6 mm	12 x 6 x 6 mm	12 x 6 x 6 mm	8 x 28 x 12 mm
	–	–	–	Water detection	–
	for switching amplifier	for switching amplifier	for switching amplifier	for switching amplifier	for switching amplifier
	Optical sensor head	Optical sensor head	Optical sensor head	Optical sensor head	Optical sensor head
	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor
	–	–	–	Light absorption with water	Light array
	Divergent	divergent, max. 2.5°	Divergent	Divergent	Divergent
	Infrared	microSPOT-LED red light	LED, red light	Infrared for water detection	Infrared
	–	Ø 8 mm at 100 mm	–	–	–
	–	–	–	–	18 mm
	0...1 m	0...2 m	0...1 m	0 m...500 mm	100 mm
	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1 m, PUR
	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	Brass	PA 6
	PMMA	PMMA	PMMA	PMMA	PMMA
	CE, WEEE	CE, WEEE	CE, WEEE	CE, WEEE	CE, WEEE
	Page 612	Page 612	Page 612	Page 612	Page 612

	BOH001Z BOH TK-R003-007-01-S49F	BOH0020 BOH TR-R010-008-02-S49F	BOH007A BOH TJ-R010-008-01-S49F	
Series	R003	R010	R010	
Dimension	5.5 x 3 x 5.2 mm	12 x 6 x 8 mm	12 x 6 x 8 mm	
Application	—	—	Water detection	
Interface	for switching amplifier	for switching amplifier	for switching amplifier	
Principle of operation	Optical sensor head	Optical sensor head	Optical sensor head	
Principle of optical operation	Through-beam sensor	Through-beam sensor	Through-beam sensor	
Special optical feature	—	—	Light absorption with water	
Beam characteristic	divergent, max. 3.5°	Divergent	Divergent	
Light type	microSPOT-LED red light	LED, red light	Infrared	
Light spot size	Ø 10 mm at 100 mm	—	—	
Active length AL 1	—	—	—	
Range	0 m...500 mm	0...4 m	0 m...900 mm	
Connection	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 2.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	
Housing material	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	
Material sensing surface	Epoxy	PMMA	PMMA	
Approval/Conformity	CE, WEEE	CE, WEEE	CE, WEEE	
Productview	Page 612	Page 612	Page 612	





	BOH002E BOH TK-R018-002-01-S49F	**BOH002C** BOH TK-R018-001-01-S49F	**BOH002H** BOH TK-R027-004-01-S49F	**BOH002F** BOH TK-R027-003-01-S49F	**BOH0024** BOH AR-R113-010-01-S49F
	R018	R018	R027	R027	R113
	13.5 x 3 x 13 mm	13 x 3 x 13.5 mm	18 x 4.8 x 15 mm	15 x 4.8 x 18 mm	75 x 10 x 15 mm
	—	—	—	—	—
	for switching amplifier	for switching amplifier	for switching amplifier	for switching amplifier	for analog amplifier
	Optical sensor head	Optical sensor head	Optical sensor head	Optical sensor head	Optical sensor head
	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor	Through-beam sensor
	—	—	—	—	Light array
	divergent, max. 3.5°	divergent, max. 3.5°	divergent, max. 2.5°	divergent, max. 2.5°	—
	microSPOT-LED red light	microSPOT-LED red light	microSPOT-LED red light	microSPOT-LED red light	LED, red light
	Ø 10 mm at 100 mm	Ø 10 mm at 100 mm	Ø 8 mm at 100 mm	Ø 8 mm at 100 mm	—
	—	—	—	—	30 mm
	0 m...500 mm	0 m...500 mm	0...2 m	0...2 m	0...200 mm
	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR
	Aluminum, anodized, natural	Aluminum, anodized, natural	Aluminum, anodized, natural	Aluminum, anodized, natural	Aluminum, anodized, black
	Glass	Glass	Glass	Glass	PMMA
	CE, WEEE	CE, WEEE	CE, WEEE	CE, WEEE	CE, WEEE
	Page 612	Page 612	Page 613	Page 613	Page 613



	BOH002M BOH AI-R165-011-01-S49F	BOH0002 BOH DI-G02-001-01-S49F	BOH0003 BOH DR-G02-001-01-S49F	
Series	R165	G02	G02	
Dimension	110 x 10 x 15 mm	Ø 2 x 8 mm	Ø 2 x 8 mm	
Application	—	—	—	
Interface	for analog amplifier	for switching amplifier	for switching amplifier	
Principle of operation	Optical sensor head	Optical sensor head	Optical sensor head	
Principle of optical operation	Through-beam sensor	Diffuse sensor, energetic	Diffuse sensor, energetic	
Special optical feature	Light array	—	—	
Beam characteristic	—	Divergent	Divergent	
Light type	Infrared	Infrared	LED, red light	
Light spot size	—	—	—	
Active length AL 1	80 mm	—	—	
Range	0...500 mm	0...12 mm	0...12 mm	
Connection	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	
Housing material	Aluminum, anodized, black	Stainless steel	Stainless steel	
Material sensing surface	PMMA	Epoxy	Epoxy	
Approval/Conformity	CE, WEEE	CE, WEEE	CE, WEEE	
Productview	Page 613	Page 613	Page 613	





	BOH0004 BOH DI-M03-001-01-S49F	BOH0009 BOH DR-M03-001-01-S49F	BOH003C BOH DI-G05-002-01-S49F	BOH0006 BOH DK-G05-002-01-S49F	BOH0005 BOH DR-G05-002-01-S49F
	M03	M03	G05	G05	G05
	Ø 3 x 8 mm	Ø 3 x 8 mm	Ø 5 x 12 mm	Ø 5 x 12 mm	Ø 5 x 12 mm
	–	–	–	–	–
	for switching amplifier	for switching amplifier	for switching amplifier	for switching amplifier	for switching amplifier
	Optical sensor head	Optical sensor head	Optical sensor head	Optical sensor head	Optical sensor head
	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic
	–	–	–	–	–
	Divergent	Divergent	Divergent	divergent, max. 3.5°	Divergent
	Infrared	LED, red light	Infrared	microSPOT-LED red light	LED, red light
	–	–	–	Ø 5 mm at 50 mm	Ø 14 mm at 50 mm
	–	–	–	–	–
	0...12 mm	0...12 mm	0...60 mm	0...60 mm	0...60 mm
	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR
	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	Epoxy	Epoxy	PMMA	PMMA	PMMA
	CE, WEEE	CE, WEEE	CE, WEEE	CE, WEEE	CE, WEEE
	Page 613	Page 613	Page 613	Page 613	Page 613



	BOH003M BOH DI-M06-002-01-S49F	BOH0008 BOH DK-M06-002-01-S49F	BOH0007 BOH DR-M06-002-01-S49F	
Series	M6	M6	M6	
Dimension	Ø 6 x 12 mm	Ø 6 x 12 mm	Ø 6 x 12 mm	
Application	—	—	—	
Interface	for switching amplifier	for switching amplifier	for switching amplifier	
Principle of operation	Optical sensor head	Optical sensor head	Optical sensor head	
Principle of optical operation	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic	
Special optical feature	—	—	—	
Beam characteristic	Divergent	divergent, max. 3.5°	Divergent	
Light type	Infrared	microSPOT-LED red light	LED, red light	
Light spot size	—	Ø 5 mm at 50 mm	Ø 14 mm at 50 mm	
Active length AL 1	—	—	—	
Range	0...60 mm	0...60 mm	0...60 mm	
Connection	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	
Housing material	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	
Material sensing surface	PMMA	PMMA	PMMA	
Approval/Conformity	CE, WEEE	CE, WEEE	CE, WEEE	
Productview	Page 613	Page 613	Page 613	





	BOH003W BOH DI-Q06-001-01-S49F	BOH000M BOH DK-Q06-001-01-S49F	BOH000L BOH DR-Q06-001-01-S49F	BOH002K BOH DK-R002-006-01-S49F	BOH0028 BOH DK-R018-002-01-S49F
	Q06	Q06	Q06	R002	R018
	12 x 6 x 6 mm	12 x 6 x 6 mm	12 x 6 x 6 mm	8 x 3 x 5.9 mm	13.5 x 3 x 13 mm
	—	—	—	—	—
	for switching amplifier	for switching amplifier	for switching amplifier	for switching amplifier	for switching amplifier
	Optical sensor head	Optical sensor head	Optical sensor head	Optical sensor head	Optical sensor head
	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic
	—	—	—	—	—
	Divergent	divergent, max. 3.5°	Divergent	divergent, max. 3.5°	divergent, max. 3.5°
	Infrared	microSPOT-LED red light	LED, red light	microSPOT-LED red light	microSPOT-LED red light
	—	Ø 4 mm at 50 mm	Ø 11 mm at 50 mm	Ø 5 mm at 50 mm	Ø 5 mm at 50 mm
	—	—	—	—	—
	0...60 mm	0...60 mm	0...60 mm	0...70 mm	3.5...60 mm
	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR
	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated	Brass	Aluminum, anodized, natural
	PMMA	PMMA	PMMA	Epoxy	Glass
	CE, WEEE	CE, WEEE	CE, WEEE	CE, WEEE	CE, WEEE
	Page 614	Page 614	Page 614	Page 614	Page 614



	BOH0027 BOH DK-R018-001-01-S49F	BOH002A BOH DK-R027-004-01-S49F	BOH0029 BOH DK-R027-003-01-S49F	
Series	R018	R027	R027	
Dimension	13 x 3 x 13.5 mm	18 x 4.8 x 15 mm	15 x 4.8 x 18 mm	
Application	—	—	—	
Interface	for switching amplifier	for switching amplifier	for switching amplifier	
Principle of operation	Optical sensor head	Optical sensor head	Optical sensor head	
Principle of optical operation	Diffuse sensor, energetic	Diffuse sensor, energetic	Diffuse sensor, energetic	
Special optical feature	—	—	—	
Beam characteristic	divergent, max. 3.5°	divergent, max. 2.5°	divergent, max. 2.5°	
Light type	microSPOT-LED red light	microSPOT-LED red light	microSPOT-LED red light	
Light spot size	Ø 5 mm at 50 mm	Ø 8 mm at 100 mm	Ø 8 mm at 100 mm	
Active length AL 1	—	—	—	
Range	3.5...60 mm	3.5...100 mm	3.5...100 mm	
Connection	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	
Housing material	Aluminum, anodized, natural	Aluminum, anodized, natural	Aluminum, anodized, natural	
Material sensing surface	Glass	Glass	Glass	
Approval/Conformity	CE, WEEE	CE, WEEE	CE, WEEE	
Productview	Page 614	Page 614	Page 614	





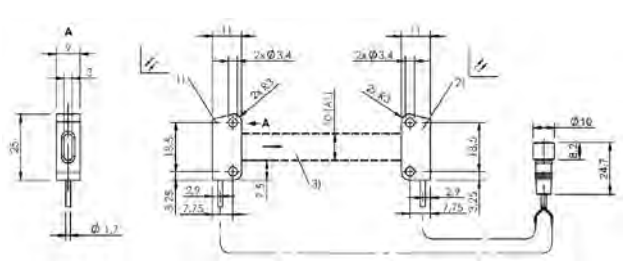
	BOH002L BOH FK-Z001-001-01-S49F	BOH001M BOH AR-F40-001-01-S49F	BOH001N BOH AR-F40-002-01-S49F	BOH001P BOH AR-F80-003-01-S49F	BOH001R BOH TR-T16-001-01-S49F
	Z001	F40	F40	F80	T16
	16 x 4 x 8.5 mm	60 x 10 x 60 mm	67 x 10 x 75 mm	107 x 10 x 75 mm	34 x 10 x 10 mm
	—	—	—	—	Tube sensor, Liquid sensing
	for switching amplifier	for analog amplifier	for analog amplifier	for analog amplifier	for switching amplifier
	Optical sensor head	Optical sensor head	Optical sensor head	Optical sensor head	Optical sensor head
	Diffuse sensor, energetic	Fork sensor	Fork sensor	Fork sensor	Fork sensor
	Fixed background suppression	Light array	Light array	Light array	Diffraction caused by liquid
	divergent, max. 3.5°	—	—	—	—
	microSPOT-LED red light	LED, red light	LED, red light	LED, red light	LED, red light
	Ø 1.8 mm at 7.5 mm	—	—	—	—
	—	8 mm	30 mm	30 mm	—
	3...15 mm	—	—	—	—
	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR
	Brass, nickel plated	Aluminum, anodized, black	Aluminum, anodized, black	Aluminum, anodized, black	Aluminum, anodized, black
	Epoxy	Epoxy	PMMA	PMMA	Epoxy
	CE, WEEE	CE, WEEE	CE, WEEE	CE, WEEE	CE, WEEE
	Page 614	Page 614	Page 615	Page 615	Page 615



	BOH001Y BOH TR-T32-001-01-S49F	BOH001U BOH TJ-T32-001-01-S49F	BOH0019 BOH TR-T48-001-01-S49F	
Series	T32	T32	T48	
Dimension	34 x 10 x 10 mm	34 x 10 x 10 mm	34 x 10 x 10 mm	
Application	Tube sensor, Liquid sensing	Tube sensor, Water detection	Tube sensor, Liquid sensing	
Interface	for switching amplifier	for switching amplifier	for switching amplifier	
Principle of operation	Optical sensor head	Optical sensor head	Optical sensor head	
Principle of optical operation	Fork sensor	Fork sensor	Fork sensor	
Special optical feature	Diffraction caused by liquid	Light absorption with water	Diffraction caused by liquid	
Beam characteristic	—	—	—	
Light type	LED, red light	Infrared for water detection	LED, red light	
Light spot size	—	—	—	
Active length AL 1	—	—	—	
Range	—	—	—	
Connection	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 1.0 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	
Housing material	Aluminum, anodized, black	Aluminum, anodized, black	Aluminum, anodized, black	
Material sensing surface	Epoxy	Epoxy	Epoxy	
Approval/Conformity	CE, WEEE	CE, WEEE	CE, WEEE	
Productview	Page 615	Page 615	Page 615	

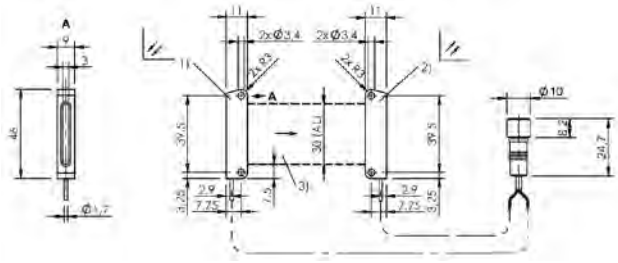


	BOH0015 BOH TJ-T48-001-01-S49F	BOH001A BOH TR-T64-001-01-S49F	BOH0016 BOH TJ-T64-001-01-S49F		
	T48	T64	T64		
	34 x 10 x 10 mm	34 x 10 x 10 mm	34 x 10 x 10 mm		
	Tube sensor, Water detection	Tube sensor, Liquid sensing	Tube sensor, Water detection		
	for switching amplifier	for switching amplifier	for switching amplifier		
	Optical sensor head	Optical sensor head	Optical sensor head		
	Fork sensor	Fork sensor	Fork sensor		
	Light absorption with water	Diffraction caused by liquid	Light absorption with water		
	–	–	–		
	Infrared for water detection	LED, red light	Infrared for water detection		
	–	–	–		
	–	–	–		
	–	–	–		
	Cable with connector, M8x1-Male, 0.20 m, PUR	Cable with connector, M8x1-Male, 1.00 m, PUR	Cable with connector, M8x1-Male, 0.20 m, PUR		
	Aluminum, anodized, black	Aluminum, anodized, black	Aluminum, anodized, black		
	Epoxy	Epoxy	Epoxy		
	CE, WEEE	CE, WEEE	CE, WEEE		
	Page 615	Page 615	Page 615		



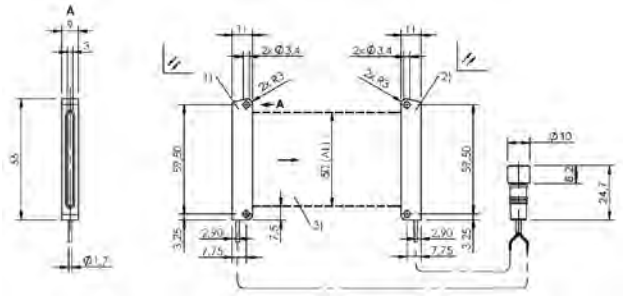
1) Emitter, 2) Receiver, 3) Light array

BOH00F5



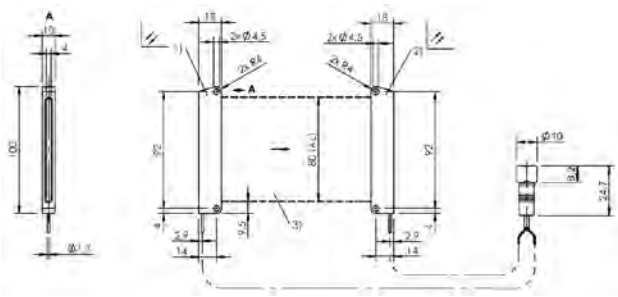
1) Emitter, 2) Receiver, 3) Light array

BOH00F6



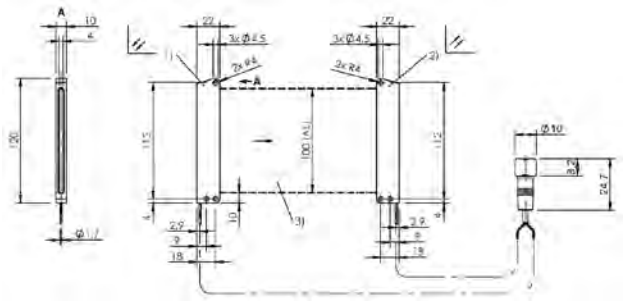
1) Emitter, 2) Receiver, 3) Light array

BOH00F7



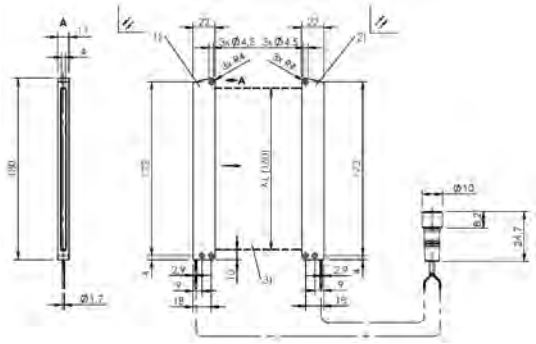
1) Emitter, 2) Receiver, 3) Light array

BOH00FF



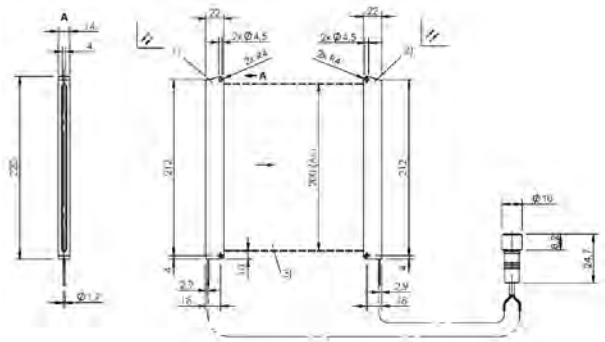
1) Emitter, 2) Receiver, 3) Light array

BOH00FH



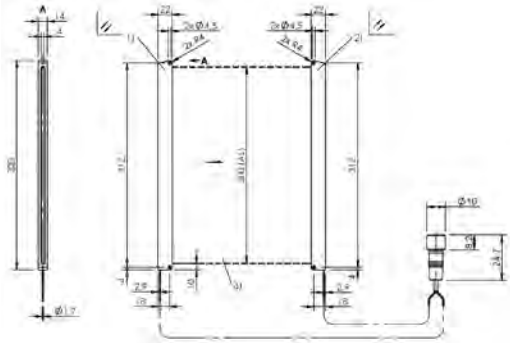
1) Emitter, 2) Receiver, 3) Light array

BOH00FJ



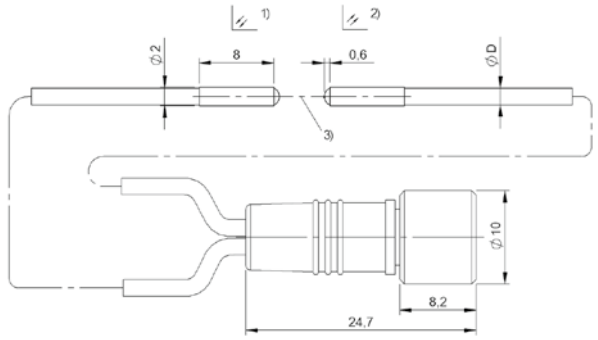
1) Emitter, 2) Receiver, 3) Light array

BOH00FK



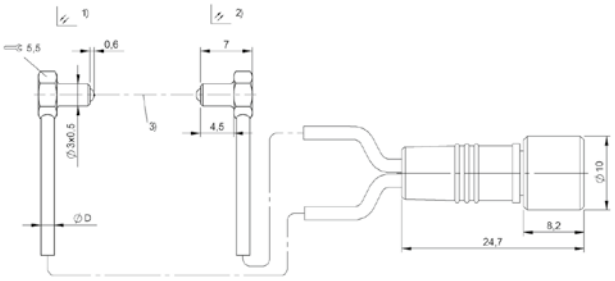
1) Emitter, 2) Receiver, 3) Light array

BOH00FL



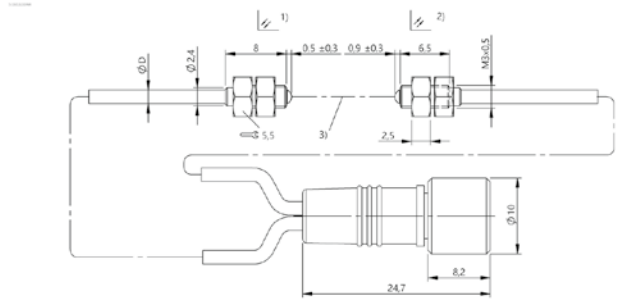
1) Emitter, 2) Receiver, 3) Optical axis

BOH005J, BOH000C, BOH000A, BOH000J



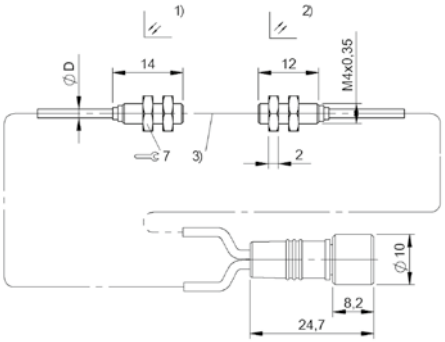
1) Emitter, 2) Receiver, 3) Optical axis

BOH000E



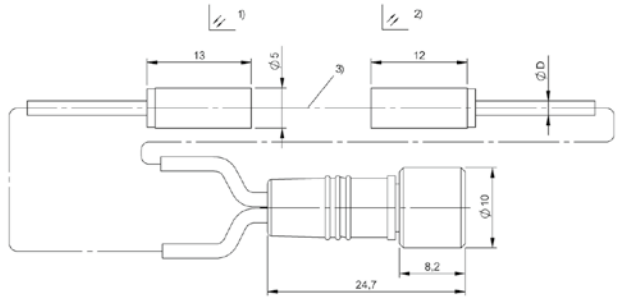
1) Emitter, 2) Receiver, 3) Optical axis

BOH0061, BOH000U, BOH000T



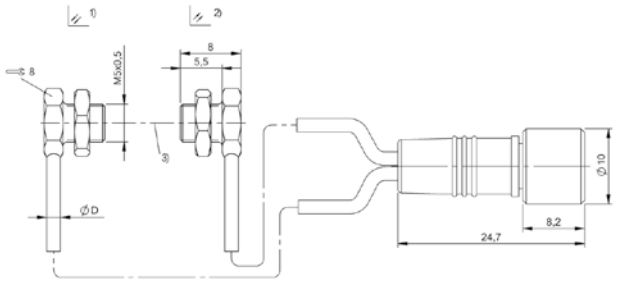
1) Emitter, 2) Receiver, 3) Optical axis

BOH00E6, BOH00E5



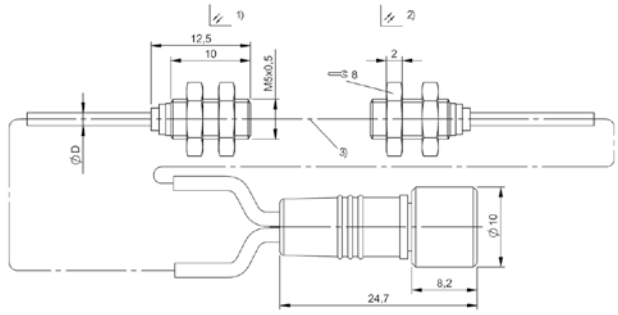
1) Emitter, 2) Receiver, 3) Optical axis

BOH0010



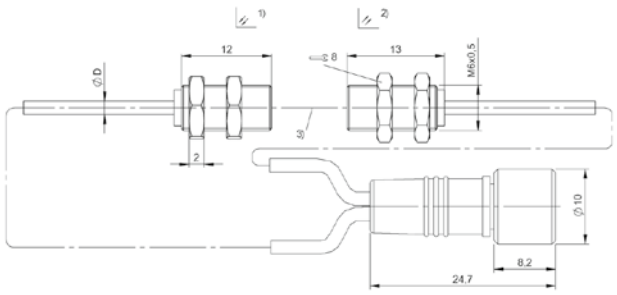
1) Emitter, 2) Receiver, 3) Optical axis

BOH000F



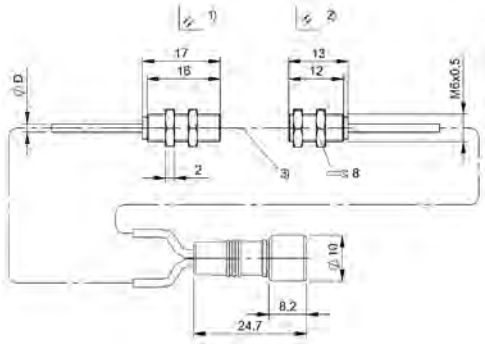
1) Emitter, 2) Receiver, 3) Optical axis

BOH0065, BOH0013, BOH000Y



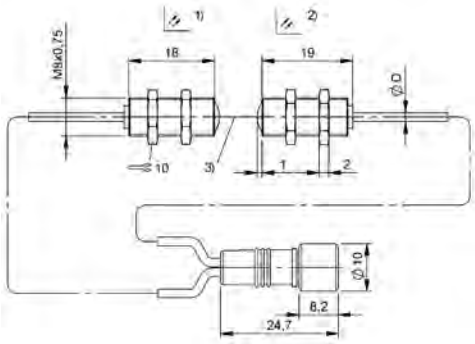
1) Emitter, 2) Receiver, 3) Optical axis

BOH006H, BOH000K



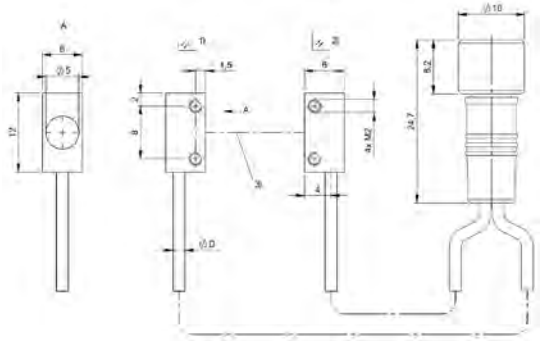
1) Emitter, 2) Receiver, 3) Optical axis

BOH000H



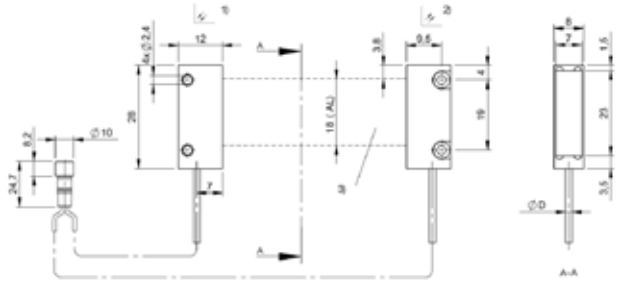
1) Emitter, 2) Receiver, 3) Optical axis

BOH0012



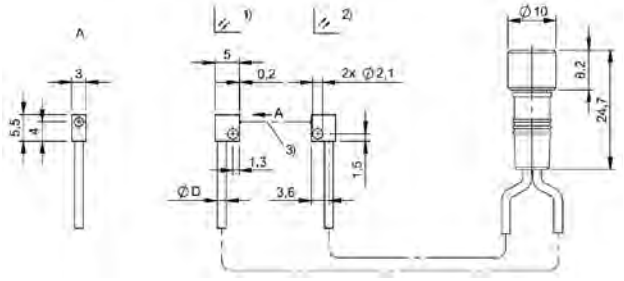
1) Emitter, 2) Receiver, 3) Optical axis

BOH006P, BOH000P, BOH000N, BOH000R



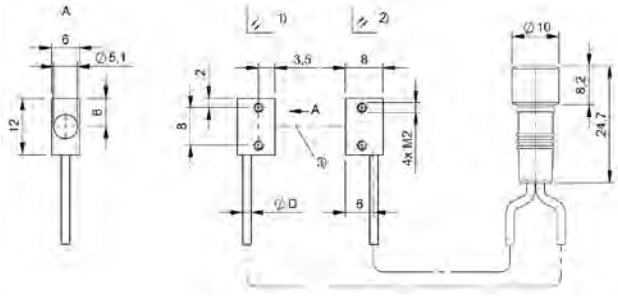
1) Emitter, 2) Receiver, 3) Light array

BOH00EL



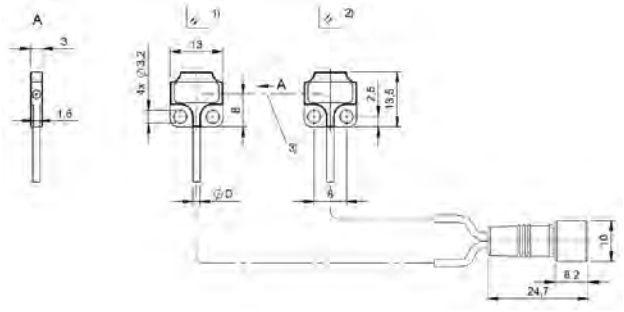
1) Emitter, 2) Receiver, 3) Optical axis

BOH001Z



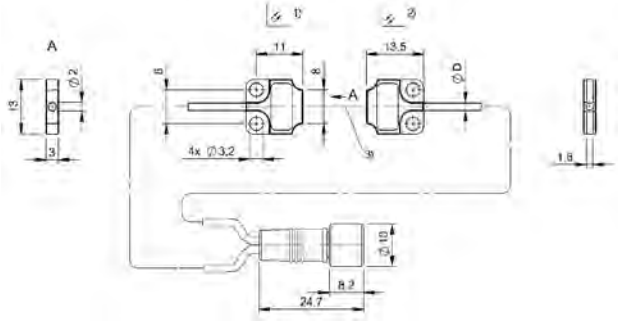
1) Emitter, 2) Receiver, 3) Optical axis

BOH0020, BOH007A



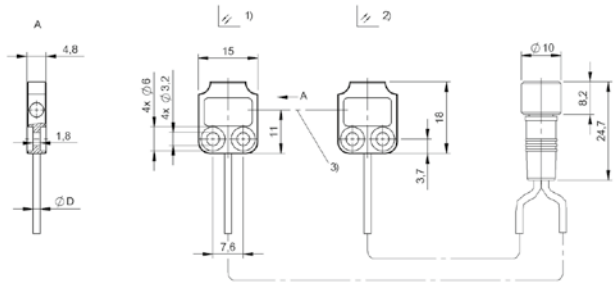
1) Emitter, 2) Receiver, 3) Optical axis

BOH002E



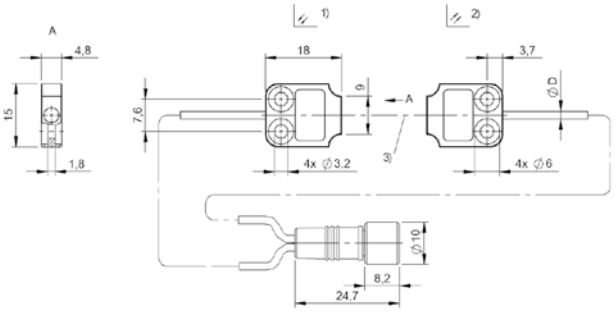
1) Emitter, 2) Receiver, 3) Optical axis

BOH002C



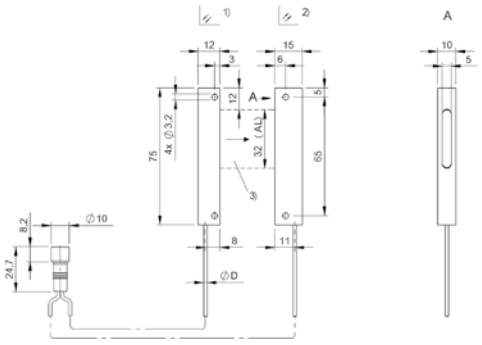
1) Emitter, 2) Receiver, 3) Optical axis

BOH002H



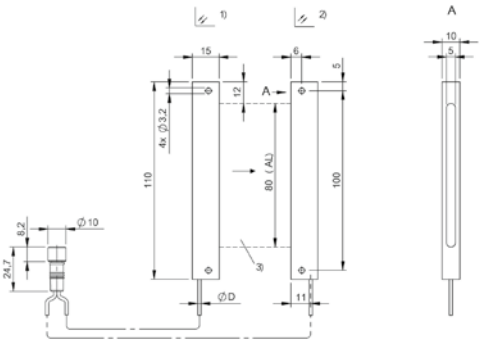
1) Emitter, 2) Receiver, 3) Optical axis

BOH002F



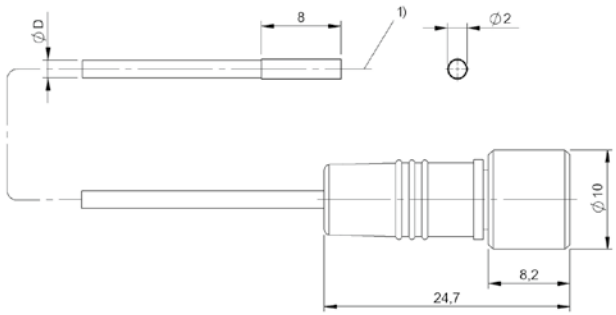
1) Emitter, 2) Receiver, 3) Light array

BOH0024



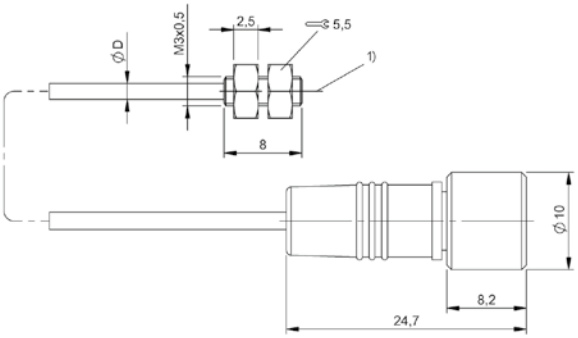
1) Emitter, 2) Receiver, 3) Light array

BOH002M



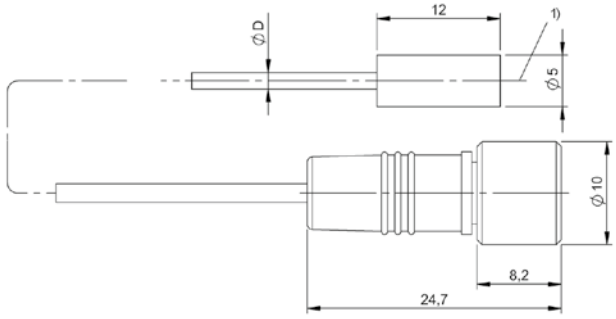
1) Optical axis

BOH0002, BOH0003



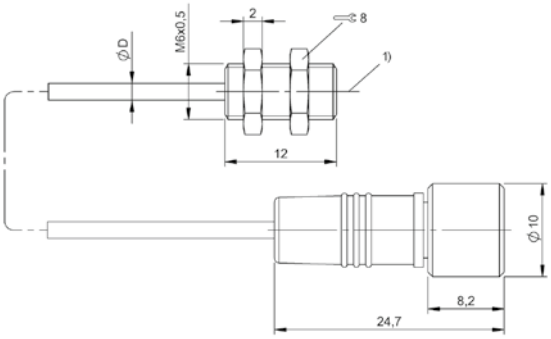
1) Optical axis

BOH0004, BOH0009



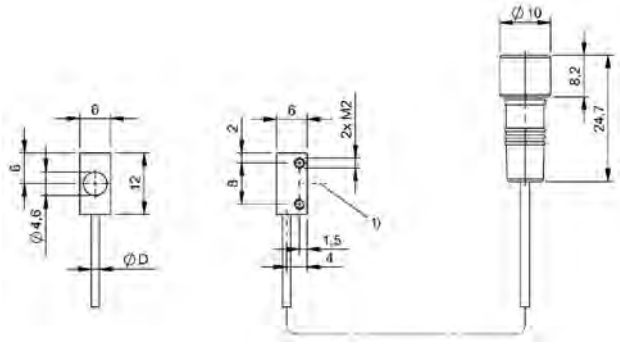
1) Optical axis

BOH003C, BOH0006, BOH0005



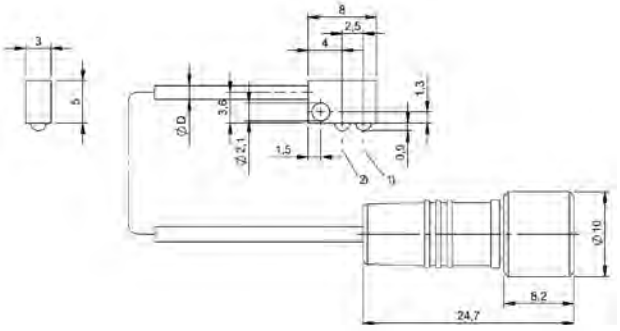
1) Optical axis

BOH003M, BOH0008, BOH0007



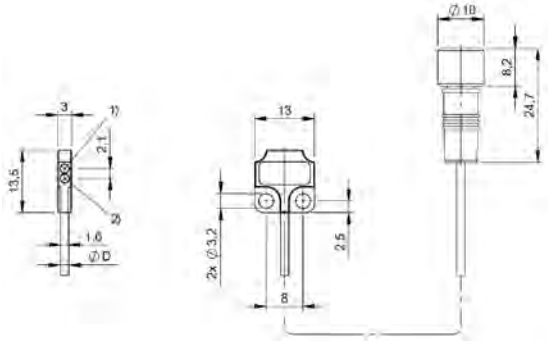
1) Optical axis

BOH003W, BOH000M, BOH000L



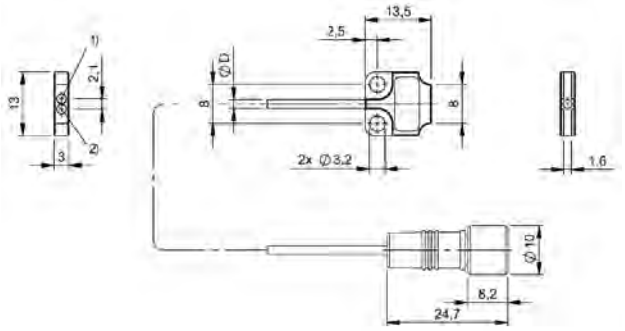
1) Optical axis emitter, 2) Optical axis receiver

BOH002K



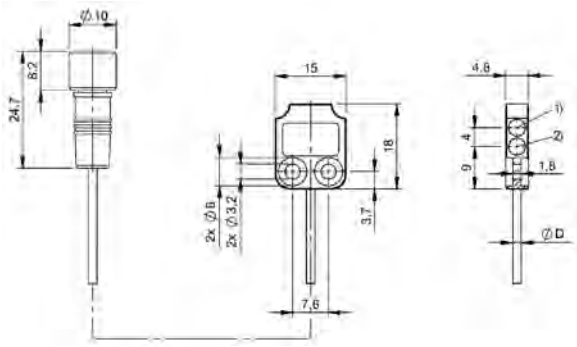
1) Optical axis emitter, 2) Optical axis receiver

BOH0028



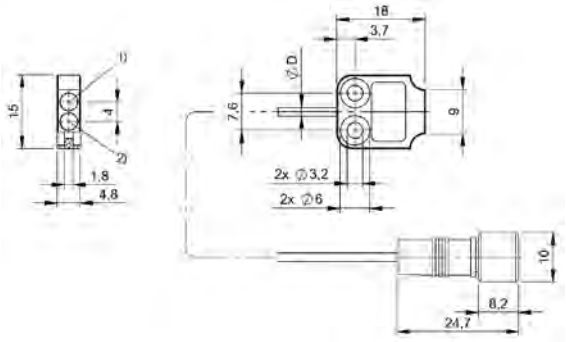
1) Optical axis emitter, 2) Optical axis receiver

BOH0027



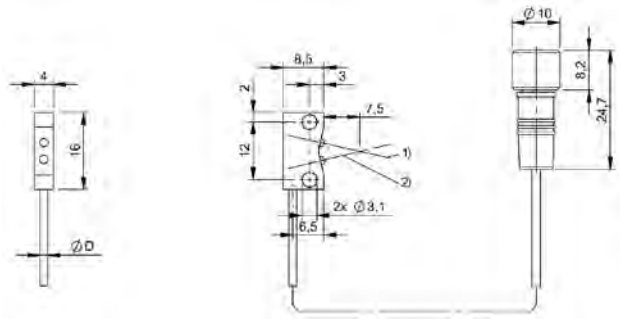
1) Optical axis emitter, 2) Optical axis receiver

BOH002A



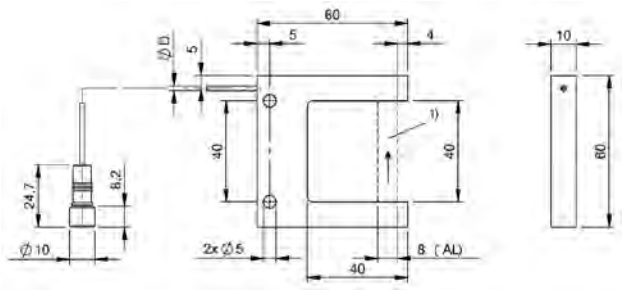
1) Optical axis emitter, 2) Optical axis receiver

BOH0029



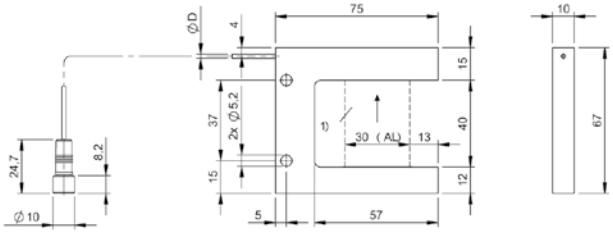
1) Optical axis emitter, 2) Optical axis receiver

BOH002L



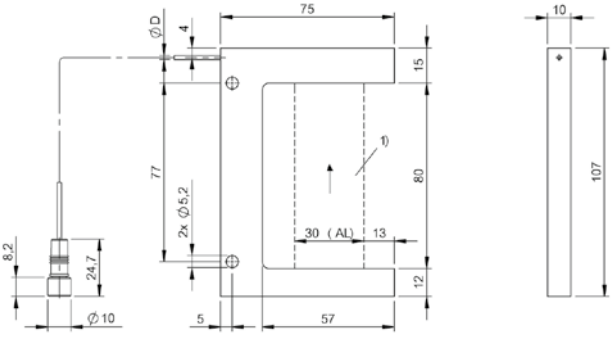
1) Light array

BOH001M



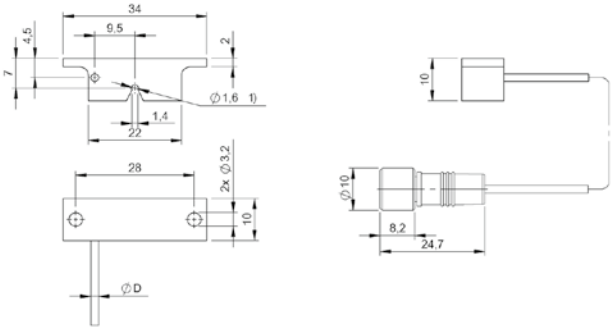
1) Light array

BOH001N



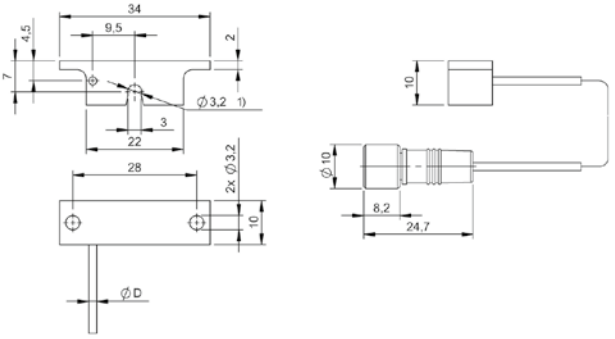
1) Light array

BOH001P



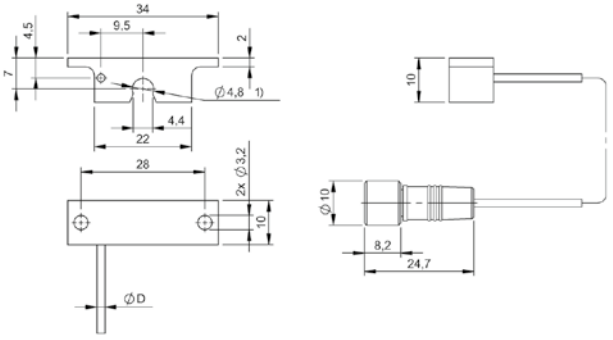
1) Hose fitting

BOH001R



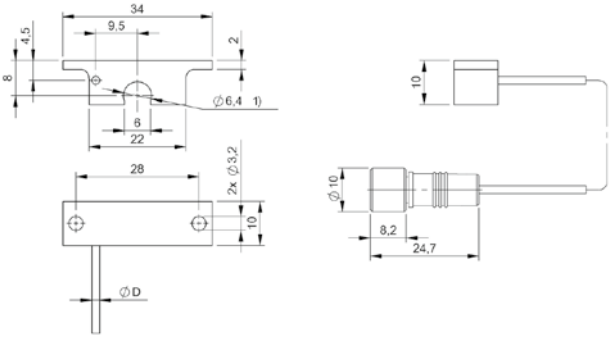
1) Hose fitting

BOH001Y, BOH001U



1) Hose fitting

BOH0019, BOH0015



1) Hose fitting

BOH001A, BOH0016



PNP normally open/normally closed			**BAE00NE** BAE SA-OH-035-PP-DV02	
NPN normally open/normally closed	**BAE00PR** BAE SA-OH-035-NP-DV02	**BAE00PT** BAE SA-OH-035-NP-S75G		
Analog, voltage 0...10 V				
Analog, current 4...20 mA				
Series	SA-OH	SA-OH	SA-OH	
Dimension	15 x 36 x 61 mm	15 x 36 x 61 mm	15 x 36 x 61 mm	
Display	LED green: Power, Digital display, Switching state - LED yellow	LED green: Power, Digital display, Switching state - LED yellow	Output function- LED yellow, LED green: Power, Error - LED green, flashing, Signal strength - segment display	
Setting	Light-on/dark-on, Time function on/off, Delay time, Teach mode Aut/ Hys/Int/Pot	Light-on/dark-on, Time function on/off, Delay time, Teach mode Aut/ Hys/Int/Pot	Sensitivity (Sn), Light-on/ dark-on, Teach Sn, Read direction for segment display, Segment display on/off, Key disable on/off, Factory setting (Reset), Alarm threshold, Teach mode Aut/Fine/1-Pt/2-Pt, Hysteresis (4 levels), Integration time 4…128 ms, Upper and lower threshold, Delay time	
Adjuster	Slide switch 4 positions	Slide switch 4 positions	Slide switch 4 positions	
Connection	Cable, 2.00 m, PVC	M8x1 connector, 4-pin	Cable, 2.00 m, PVC	
Housing material	ABS PC	ABS PC	ABS PC	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, EAC	CE, EAC	CE, EAC	
Productview	Page 620	Page 620	Page 620	



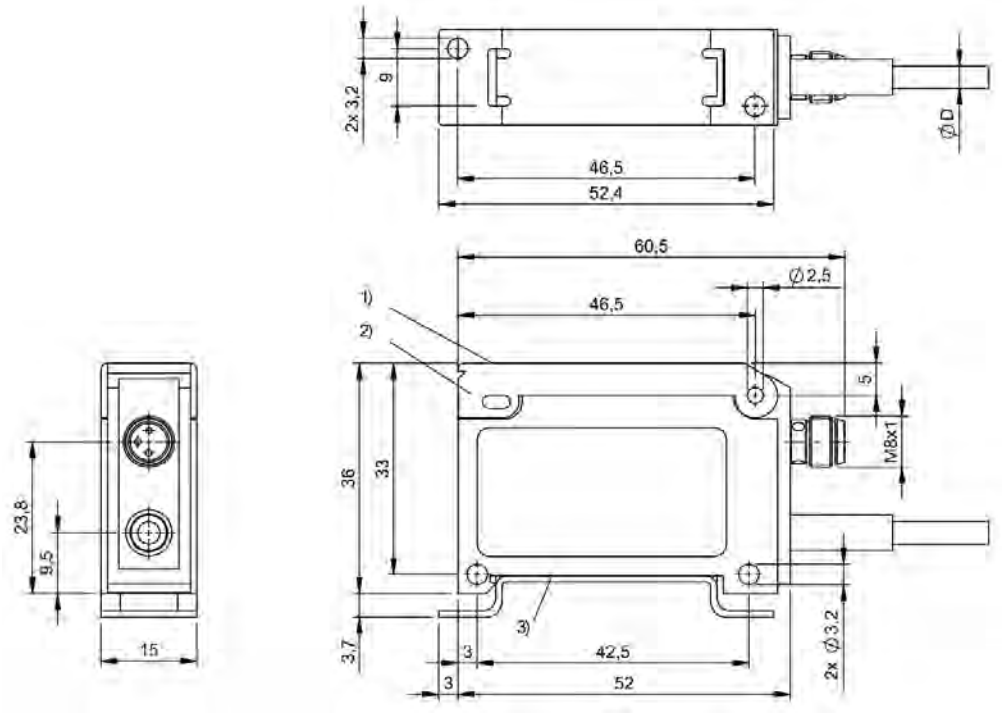


	BAE00NF BAE SA-OH-035-PP-S75G				
				BAE00NH BAE SA-OH-038-UA-DV02	**BAE00N6** BAE SA-OH-038-UA-S75G
		BAE00N4 BAE SA-OH-038-IC-DV02	**BAE00N5** BAE SA-OH-038-IC-S75G		
	SA-OH	SA-OH	SA-OH	SA-OH	SA-OH
	15 x 36 x 61 mm	15 x 36 x 61 mm	15 x 36 x 61 mm	15 x 36 x 61 mm	15 x 36 x 61 mm
	Output function- LED yellow, LED green: Power, Error - LED green, flashing, Signal strength - segment display	LED green: Power, Signal strength - segment display	LED green: Power, Signal strength - segment display	LED green: Power, Signal strength - segment display	LED green: Power, Signal strength - segment display
	Sensitivity (Sn), Light-on/ dark-on, Teach Sn, Read direction for segment display, Segment display on/off, Key disable on/off, Factory setting (Reset), Alarm threshold, Teach mode Aut/Fine/1-Pt/2-Pt, Hysteresis (4 levels), Integration time 4…128 ms, Upper and lower threshold, Delay time	Sensitivity (Sn), Teach Sn, Teach mode Aut/ Pot, Read direction for segment display, Segment display on/off, Key disable on/off, Factory setting (Reset)	Sensitivity (Sn), Teach Sn, Teach mode Aut/ Pot, Read direction for segment display, Segment display on/off, Key disable on/off, Factory setting (Reset)	Sensitivity (Sn), Teach Sn, Teach mode Aut/ Pot, Read direction for segment display, Segment display on/off, Key disable on/off, Factory setting (Reset)	Sensitivity (Sn), Teach Sn, Teach mode Aut/ Pot, Read direction for segment display, Segment display on/off, Key disable on/off, Factory setting (Reset)
	Slide switch 4 positions	Slide switch 4 positions	Slide switch 4 positions	Slide switch 4 positions	Slide switch 4 positions
	Connector, M8x1 connector, 4-pin	Cable, 2.00 m, PVC	Connector, M8x1 connector, 4-pin	Cable, 2.00 m, PVC	Connector, M8x1 connector, 4-pin
	ABS PC	ABS PC	ABS PC	ABS PC	ABS PC
	10...30 VDC	15...30 VDC	15...30 VDC	15...30 VDC	15...30 VDC
	CE, EAC	CE, EAC	CE, EAC	CE, EAC	CE, EAC
	Page 620	Page 620	Page 620	Page 620	Page 620



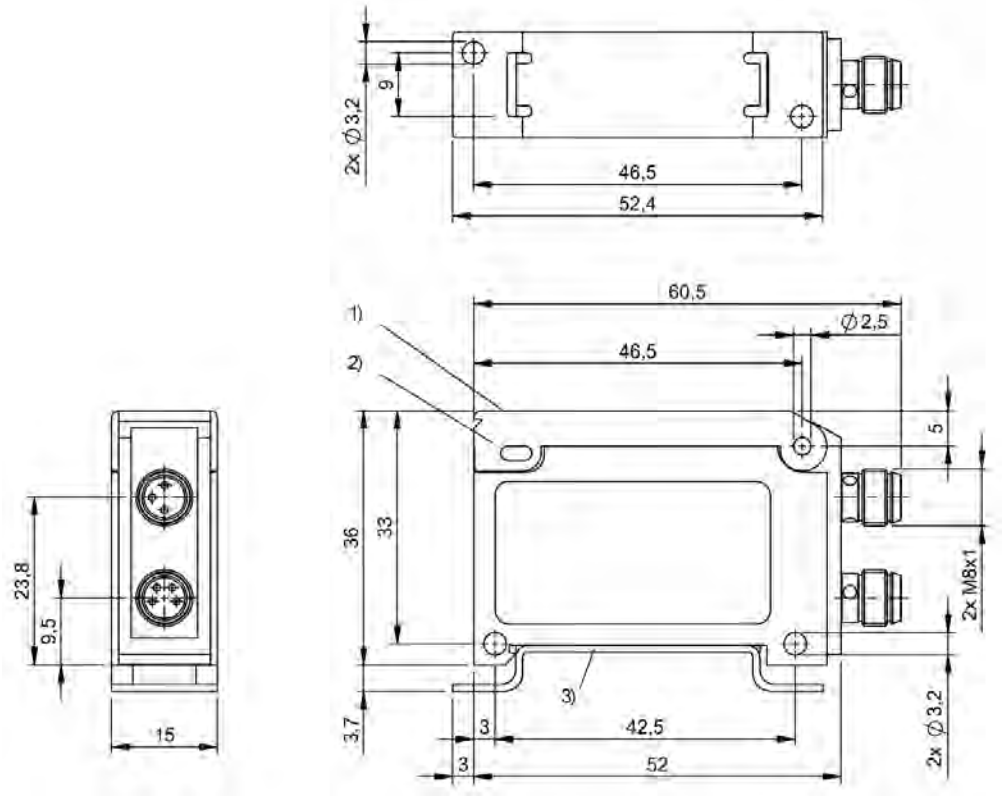
PNP normally open/normally closed			**BAE00YC** BAE SA-OH-050-PP-DV02	
PNP dynamic normally open/normally closed	**BAE00NJ** BAE SA-OH-040-PP-DV02	**BAE00N7** BAE SA-OH-040-PP-S75G		
Series	SA-OH	SA-OH	SA-OH	
Dimension	15 x 36 x 61 mm	15 x 36 x 61 mm	15 x 36 x 61 mm	
Display	Output function- LED yellow, LED green: Power, Error - LED green, flashing, Signal strength - segment display	Output function- LED yellow, LED green: Power, Error - LED green, flashing, Signal strength - segment display	Output function- LED yellow, LED green: Power, Error - LED green, flashing, Signal strength - segment display	
Setting	Sensitivity (Sn), Light-on/dark-on, Teach Sn, Read direction for segment display, Segment display on/off, Key disable on/off, Factory setting (Reset), Hysteresis (4 levels), Integration time 4…128 ms, Delay time, Teach mode Aut/Hys/Int/Pot	Sensitivity (Sn), Light-on/dark-on, Teach Sn, Read direction for segment display, Segment display on/off, Key disable on/off, Factory setting (Reset), Hysteresis (4 levels), Integration time 4…128 ms, Delay time, Teach mode Aut/Hys/Int/Pot	Sensitivity (Sn), Light-on/dark-on, Read direction for segment display, Segment display on/off, Key disable on/off, Factory setting (Reset), Alarm threshold, Teach mode Aut/Fine/1-Pt/2-Pt, Hysteresis (4 levels), Upper and lower threshold, Delay time, Window function/standard switching function	
Adjuster	Slide switch 4 positions	Slide switch 4 positions	Slide switch 4 positions	
Connection	Cable, 2.00 m, PVC	Connector, M8x1 connector, 4-pin	Cable, 2.00 m, PVC	
Housing material	ABS PC	ABS PC	ABS PC	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, EAC	CE, EAC	CE, EAC	
Productview	Page 620	Page 620	Page 620	

	BAE00Y7 BAE SA-OH-050-PP-S75G				
	SA-OH				
	15 x 36 x 61 mm				
	Output function- LED yellow, LED green: Power, Error - LED green, flashing, Signal strength - segment display				
	Sensitivity (Sn), Light-on/dark-on, Read direction for segment display, Segment display on/off, Key disable on/off, Factory setting (Reset), Alarm threshold, Teach mode Aut/Fine/1-Pt/2-Pt, Hysteresis (4 levels), Upper and lower threshold, Delay time, Window function/standard switching function				
	Slide switch 4 positions				
	Connector, M8x1 connector, 4-pin				
	ABS PC				
	10...30 VDC				
	CE, EAC				
	Page 620				



1) Display and control panel

BAE00PR, BAE00NE, BAE00N4, BAE00NH, BAE00NJ, BAE00YC



1) Display and control panel, 2) Cover, 3) DIN rail

BAE00PT, BAE00NF, BAE00N5, BAE00N6, BAE00N7, BAE00Y7



	BOD001L BOD 6K-RA02-S75	**BOD001R** BOD 6K-RA03-S75	**BOD001Z** BOD 6K-RA04-S75	
Series	6K	6K	6K	
Dimension	12 x 41.5 x 21.6 mm	12 x 41.5 x 21.6 mm	12 x 41.5 x 21.6 mm	
Interface	Analog, voltage 1…10 V linear rising/falling PNP NO/NC	Analog, voltage 1…10 V linear rising/falling PNP NO/NC	Analog, voltage 1…10 V linear rising/falling PNP NO/NC	
Principle of operation	Photoelectric distance sensor	Photoelectric distance sensor	Photoelectric distance sensor	
Principle of optical operation	Triangulation	Triangulation	Triangulation	
Beam characteristic	Divergent	Divergent	Divergent	
Light type	LED, red light	LED, red light	LED, red light	
Light spot size	Ø 5 mm at 50 mm	Ø 9.5 mm at 100 mm	Ø 5 mm at 50 mm	
Range	20...80 mm	30...200 mm	10...85 mm	
Accuracy	±0.5 % FS	±1 % FS	±0.8 % FS	
Repeat accuracy	0.5 %FS	0.5 %FS	0.59 %FS	
Resolution	≤ 120 µm	≤ 0.68 mm	≤ 0.15 mm	
Connection	Connector, M8x1-Male, 4-pin	Connector, M8x1-Male, 4-pin	Connector, M8x1-Male, 4-pin	
Housing material	ABS	ABS	ABS	
Operating voltage Ub	13...30 VDC	13...30 VDC	13...30 VDC	
Approval/Conformity	CE, cULus, EAC, Ecolab, WEEE	CE, cULus, EAC, Ecolab, WEEE	CE, cULus, EAC, Ecolab, WEEE	
Trademark	—	—	—	
Productview	Page 630	Page 630	Page 630	





	BOD002L BOD 21M-LBI05-S4	**BOD000L** BOD 21M-LA01-S92	**BOD000M** BOD 21M-LA02-S92	**BOD000N** BOD 21M-LA04-S92	**BOD000P** BOD 21M-LB01-S92
	21M	21M	21M	21M	21M
	15 x 51 x 42.5 mm	15 x 42.5 x 50 mm	15 x 42.5 x 50 mm	15 x 42.5 x 50 mm	15 x 42.5 x 50 mm
	IO-Link 1.1 Analog, current 4…20 mA linear rising/falling 2x PNP/NPN NO/NC	Analog, voltage 1…10 V linear rising 2x PNP/NPN NO/NC	Analog, voltage 1…10 V linear rising 2x PNP/NPN NO/NC	Analog, voltage 1…10 V linear rising 2x PNP/NPN NO/NC	Analog, current 4…20 mA linear rising 2x PNP/NPN NO/NC
	Photoelectric distance sensor	Photoelectric distance sensor	Photoelectric distance sensor	Photoelectric distance sensor	Photoelectric distance sensor
	Triangulation	Triangulation	Triangulation	Triangulation	Triangulation
	Focus, typical at 400 mm	Collimated	Collimated	Collimated	Collimated
	Laser red light	Laser red light	Laser red light	Laser red light	Laser red light
	1.5 x 0.5 mm at 200 mm	Ø 1 mm at 45 mm	Ø 1 mm at 200 mm	1 x 6 mm at 500 mm	Ø 1 mm at 45 mm
	30...200 mm, adjustable	25...45 mm, adjustable	20...200 mm, adjustable	20...500 mm, adjustable	25...45 mm, adjustable
	±1 mm max. (30...170 mm) ±3 mm max. (170...200 mm)s	±0.5 % FS	±1 % FS	±3 % FS	±0.5 % FS
	≤ ± 0.25 mm	0.1 %FS	1 %FS	1 %FS	0.1 %FS
	≤ 10 µm typ. (30...170 mm) 100 µm typ. (170...200 mm)	≤ 30 µm	100...200 µm	100...500 µm	≤ 30 µm
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 5-pin	Connector, M12x1-Male, 5-pin	Connector, M12x1-Male, 5-pin	Connector, M12x1-Male, 5-pin
	Zinc, Die casting, Painted Aluminum, Glass, PMMA, black	Zinc, Die casting Aluminum	Zinc, Die casting Aluminum	Zinc, Die casting Aluminum	Zinc, Die casting Aluminum
	15...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC
	CE, cULus, EAC, IO-Link, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	–	–	–	–	–
	Page 631	Page 631	Page 631	Page 631	Page 631



	BOD000R BOD 21M-LB02-S92	BOD000T BOD 21M-LB04-S92	BOD0020 BOD 23K-LI01-S4	
Series	21M	21M	23K	
Dimension	15 x 42.5 x 50 mm	15 x 42.5 x 50 mm	51 x 23 x 52.4 mm	
Interface	Analog, current 4…20 mA linear rising 2x PNP/NPN NO/NC	Analog, current 4…20 mA linear rising 2x PNP/NPN NO/NC	IO-Link 1.1 PNP/NPN/ Auto-Detect NO/NC	
Principle of operation	Photoelectric distance sensor	Photoelectric distance sensor	Photoelectric distance sensor	
Principle of optical operation	Triangulation	Triangulation	Light time-of-flight	
Beam characteristic	Collimated	Collimated	Collimated	
Light type	Laser red light	Laser red light	Laser red light	
Light spot size	Ø 1 mm at 200 mm	1 x 6 mm at 500 mm	5.5 x 7 mm at 5 m	
Range	20...200 mm, adjustable	20...500 mm, adjustable	100...5000 mm	
Accuracy	±1 % FS	±3 % FS	±0.6 % FS	
Repeat accuracy	1 %FS	1 %FS	0.024 %FS	
Resolution	100...200 µm	100...500 µm	≤ 5 mm	
Connection	Connector, M12x1-Male, 5-pin	Connector, M12x1-Male, 5-pin	Connector, M12x1-Male, 4-pin	
Housing material	Zinc, Die casting Aluminum	Zinc, Die casting Aluminum	ABS	
Operating voltage Ub	18...30 VDC	18...30 VDC	18...30 VDC	
Approval/Conformity	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, cULus, EAC, Ecolab, WEEE	
Trademark	—	—	—	
Productview	Page 631	Page 631	Page 632	





	BOD001N BOD 23K-LA01-S92	BOD001P BOD 23K-LB01-S92	BOD002M BOD 24K-LPI07-S4	BOD002N BOD 24K-LPI08-S4	BOD0002 BOD 26K-LA01-S4-C
	23K	23K	24K	24K	26K
	51 x 23 x 52.4 mm	51 x 23 x 52.4 mm	50 x 21 x 50 mm	50 x 21 x 50 mm	17 x 50 x 50 mm
	Analog, voltage 0…10 V linear rising/falling PNP/ NPN/Auto-Detect NO/NC	Analog, current 4…20 mA linear rising/falling PNP/ NPN/Auto-Detect NO/NC	IO-Link 1.1 Analog, voltage/analog, current selectable 4…20 mA 0…10 V 2x PNP/NPN NO/NC	IO-Link 1.1 Analog, voltage/analog, current selectable 4…20 mA 0…10 V 2x PNP/NPN NO/NC	Analog, voltage 0…10 V linear rising
	Photoelectric distance sensor	Photoelectric distance sensor	Photoelectric sensor	Photoelectric sensor	Photoelectric distance sensor
	Light time-of-flight	Light time-of-flight	Triangulation	Triangulation	Triangulation
	Collimated	Collimated	Divergent	Divergent	Divergent
	Laser red light	Laser red light	Laser red light	Laser red light	Laser red light
	5.5 x 7 mm at 5 m	5.5 x 7 mm at 5 m	1 x 1 mm at 100 mm	1.2 x 1.2 mm at 650 mm	Ø 0.8 mm at 65 mm
	100...5000 mm	100...5000 mm	50...100 mm	50...650 mm	45...85 mm
	±0.6 % FS	±0.6 % FS	±0.5 %	±1 %	±1 % FS
	0.024 %FS	0.024 %FS	± 50 µm	± 50 µm	–
	≤ 5.0 mm	≤ 5.0 mm	≤ 10 µm	≤ 100 µm	≤ 80 µm
	Connector, M12x1-Male, 5-pin	Connector, M12x1-Male, 5-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	ABS	ABS	Plastic	Plastic	ABS
	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC	18...28 VDC
	CE, cULus, EAC, Ecolab, WEEE	CE, cULus, EAC, Ecolab, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	–	–	–	–	–
	Page 632	Page 632	Page 633	Page 633	Page 633



	BOD0004 BOD 26K-LA02-S4-C	**BOD0005** BOD 26K-LB04-S115-C	**BOD0006** BOD 26K-LB05-S115-C	
Series	26K	26K	26K	
Dimension	17 x 50 x 50 mm	17 x 50 x 50 mm	17 x 50 x 50 mm	
Interface	Analog, voltage 0…10 V linear rising	Analog, current 4…20 mA linear rising/falling 2x PNP NO/NC	Analog, current 4…20 mA linear rising/falling 2x PNP NO/NC	
Principle of operation	Photoelectric distance sensor	Photoelectric distance sensor	Photoelectric distance sensor	
Principle of optical operation	Triangulation	Triangulation	Triangulation	
Beam characteristic	Divergent	Divergent	Divergent	
Light type	Laser red light	Laser red light	Laser red light	
Light spot size	Ø 0.8 mm at 65 mm	1.5 x 3.25 mm at 100 mm	2 x 4.5 mm at 300 mm	
Range	45...85 mm	30...100 mm, adjustable	80...300 mm, adjustable	
Accuracy	±1 % FS	±0.25 %FS	±0.25 %FS	
Repeat accuracy	—	0.25 %FS	0.25 %FS	
Resolution	≤ 20 µm	0.1 %FS	0.1 %FS	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 8-pin	Connector, M12x1-Male, 8-pin	
Housing material	ABS	ABS	ABS	
Operating voltage Ub	18...28 VDC	18...30 VDC	18...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Trademark	—	—	—	
Productview	Page 633	Page 634	Page 634	





	BOD0007 BOD 26K-LB06-S92-C	BOD0008 BOD 26K-LB07-S92-C	BOD000C BOD 26K-LBR04-S115-C	BOD000E BOD 26K-LBR05-S115-C	BOD001Y BOD 37M-LPR02-S115
	26K	26K	26K	26K	37M
	17 x 50 x 50 mm	17 x 50 x 50 mm	17 x 50 x 50 mm	17 x 50 x 50 mm	60 x 37 x 72.3 mm
	Analog, current 4…20 mA linear rising/falling PNP NO/NC	Analog, current 4…20 mA linear rising/falling PNP NO/NC	RS485 Analog, current 4…20 mA linear rising/ falling 3x PNP NO/NC	RS485 Analog, current 4…20 mA linear rising/ falling 3x PNP NO/NC	RS485 Analog, voltage/ Analog, current 0.2…10 V/4…20 mA linear rising/ falling 2x PNP/NPN/ push-pull NO/NC
	Photoelectric distance sensor	Photoelectric distance sensor	Photoelectric distance sensor	Photoelectric distance sensor	Photoelectric distance sensor
	Triangulation	Triangulation	Triangulation	Triangulation	Light time-of-flight
	Divergent	Divergent	Divergent	Divergent	Collimated
	Laser red light	Laser red light	Laser red light	Laser red light	Laser red light
	1.5 x 3.25 mm at 100 mm	2 x 4.5 mm at 300 mm	1.5 x 3.25 mm at 100 mm	2 x 4.5 mm at 300 mm	Ø 15 mm at 10 m
	30...100 mm, adjustable	80...300 mm, adjustable	30...100 mm, adjustable	80...300 mm, adjustable	200...20000 mm
	±0.25 %FS	±0.25 %FS	±0.25 %FS	±0.25 %FS	±0.035 % FS
	—	—	0.25 %FS	0.25 %FS	0.01 %FS
	0.1 %FS	0.1 %FS	0.1 %FS	0.1 %FS	≤ 1.0 mm
	Connector, M12x1-Male, 5-pin	Connector, M12x1-Male, 5-pin	Connector, M12x1-Male, 8-pin	Connector, M12x1-Male, 8-pin	Connector, M12x1-Male, 8-pin
	ABS	ABS	ABS	ABS	Zinc, Die casting
	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC	19.2...28.8 VDC
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	—	—	—	—	—
	Page 634	Page 634	Page 634	Page 634	Page 635

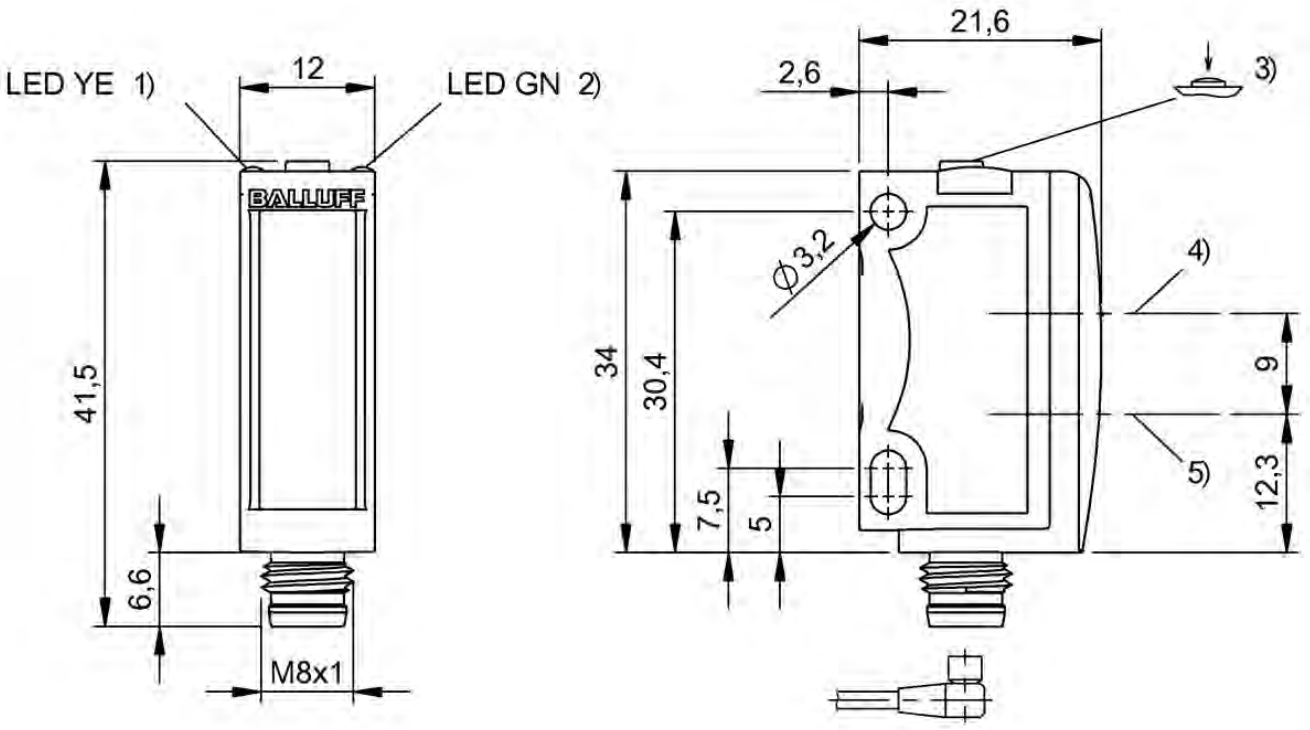


	BOD001U BOD 37M-LA01-S92	BOD001W BOD 37M-LB01-S92	BOD001J BOD 66M-LA12-S92	
Series	37M	37M	66M	
Dimension	60 x 37 x 72.3 mm	60 x 37 x 72.3 mm	30 x 100.5 x 73.2 mm	
Interface	Analog, voltage 0.2…10 V linear rising/falling 2x PNP/NPN/push-pull NO/NC	Analog, current 4…20 mA linear rising/falling 2x PNP/NPN/push-pull NO/NC	Analog, voltage 1…10 V linear rising/falling PNP/NPN NO/NC	
Principle of operation	Photoelectric distance sensor	Photoelectric distance sensor	Photoelectric distance sensor	
Principle of optical operation	Light time-of-flight	Light time-of-flight	Triangulation	
Beam characteristic	Collimated	Collimated	Divergent	
Light type	Laser red light	Laser red light	Laser red light	
Light spot size	Ø 15 mm at 8 m	Ø 15 mm at 8 m	Ø 1 mm at 800 mm	
Range	200...10000 mm	200...10000 mm	150...800 mm	
Accuracy	±0.1 % FS	±0.1 % FS	±1.5 %FS	
Repeat accuracy	0.01 %FS	0.01 %FS	0.5 %FS	
Resolution	≤ 1.0 mm	≤ 1.0 mm	100...800 µm	
Connection	Connector, M12x1-Male, 5-pin	Connector, M12x1-Male, 5-pin	Connector, M12x1-Male, 5-pin	
Housing material	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting, Painted	
Operating voltage Ub	19.2...28.8 VDC	19.2...28.8 VDC	18...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, EAC, WEEE	
Trademark	—	—	—	
Productview	Page 635	Page 635	Page 636	



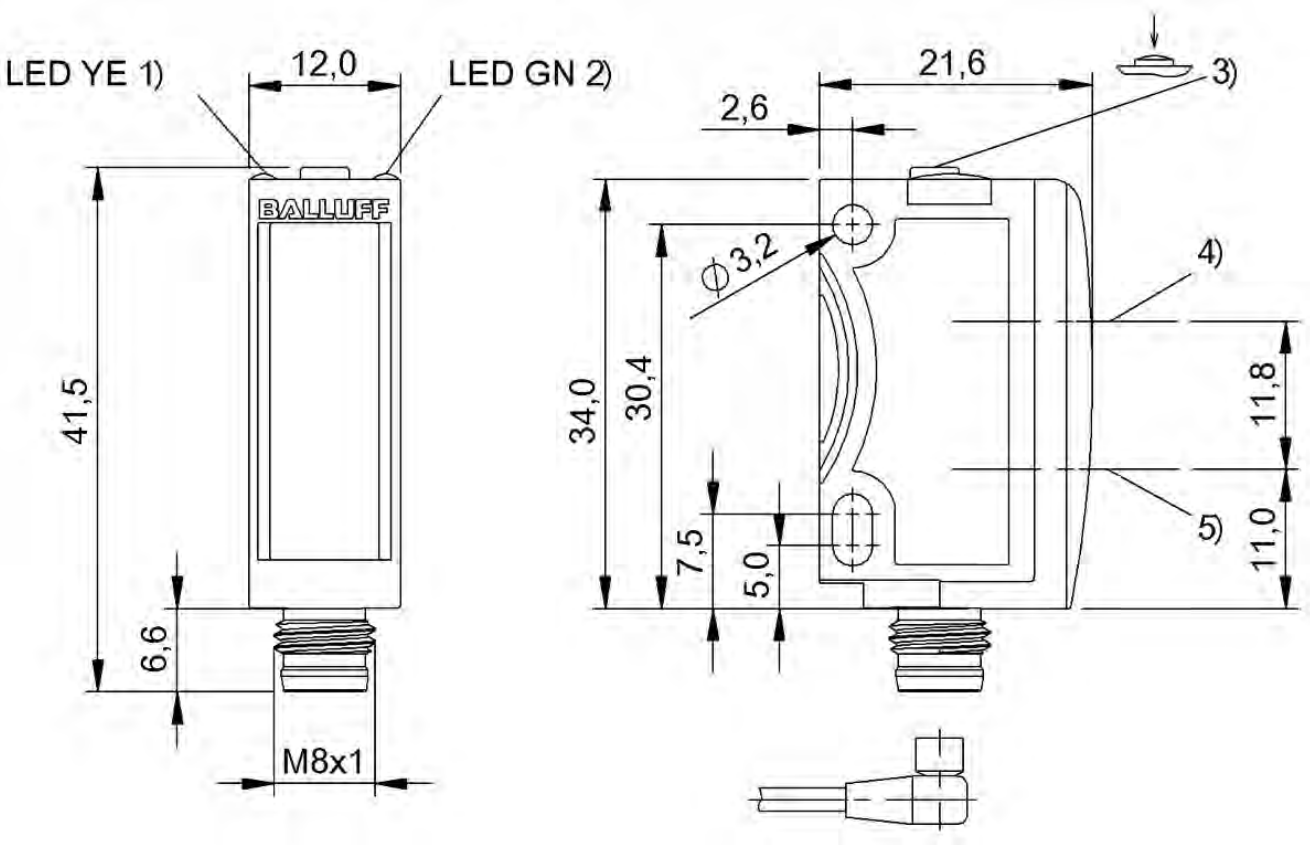


	BOD001E BOD 66M-LA14-S92	BOD001H BOD 66M-RA11-S92	BOD001K BOD 66M-LB12-S92	BOD001F BOD 66M-LB14-S92	BOD001C BOD 66M-RB11-S92
	66M	66M	66M	66M	66M
	30 x 100.5 x 73.2 mm	30 x 100.5 x 73.2 mm	30 x 100.5 x 73.2 mm	30 x 100.5 x 73.2 mm	30 x 100.5 x 73.2 mm
	Analog, voltage 1…10 V linear rising/falling PNP/ NPN NO/NC	Analog, voltage 1…10 V linear rising/falling PNP/ NPN NO/NC	Analog, current 4…20 mA linear rising/falling PNP/ NPN NO/NC	Analog, current 4…20 mA linear rising/falling PNP/ NPN NO/NC	Analog, current 4…20 mA linear rising/falling PNP/ NPN NO/NC
	Photoelectric distance sensor	Photoelectric distance sensor	Photoelectric distance sensor	Photoelectric distance sensor	Photoelectric distance sensor
	Triangulation	Triangulation	Triangulation	Triangulation	Triangulation
	Divergent	Divergent	Divergent	Divergent	Divergent
	Laser red light	LED, red light	Laser red light	Laser red light	LED, red light
	2 x 6 mm at 2 m	Ø 15 mm at 600 mm	Ø 1 mm at 800 mm	2 x 6 mm at 2 m	Ø 15 mm at 600 mm
	150...2000 mm	100...600 mm	150...800 mm	150...2000 mm	100...600 mm
	±1.5 %FS	±1.5 %FS	±1.5 %FS	±1.5 %FS	±1.5 %FS
	0.5 %FS	0.5 %FS	0.5 %FS	0.5 %FS	0.5 %FS
	1...3 mm	100...500 µm	100...800 µm	1...3 mm	100...500 µm
	Connector, M12x1-Male, 5-pin	Connector, M12x1-Male, 5-pin	Connector, M12x1-Male, 5-pin	Connector, M12x1-Male, 5-pin	Connector, M12x1-Male, 5-pin
	Zinc, Die casting, Painted	Zinc, Die casting, Painted	Zinc, Die casting, Painted	Zinc, Die casting, Painted	Zinc, Die casting, Painted
	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC
	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE
	–	–	–	–	–
	Page 636	Page 636	Page 636	Page 636	Page 636



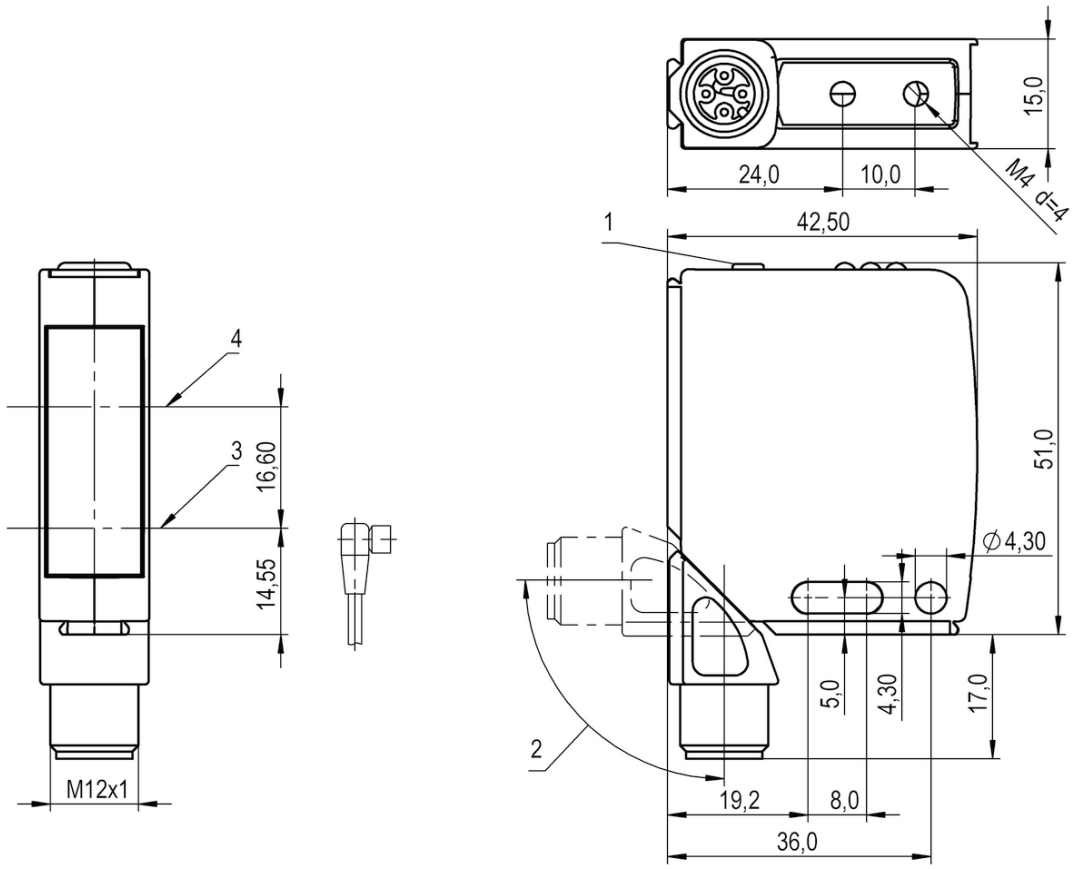
1) Output function, 2) Operating voltage, 3) Sn, light/dark, 4) Optical axis receiver, 5) Optical axis emitter

BOD001L, BOD001Z



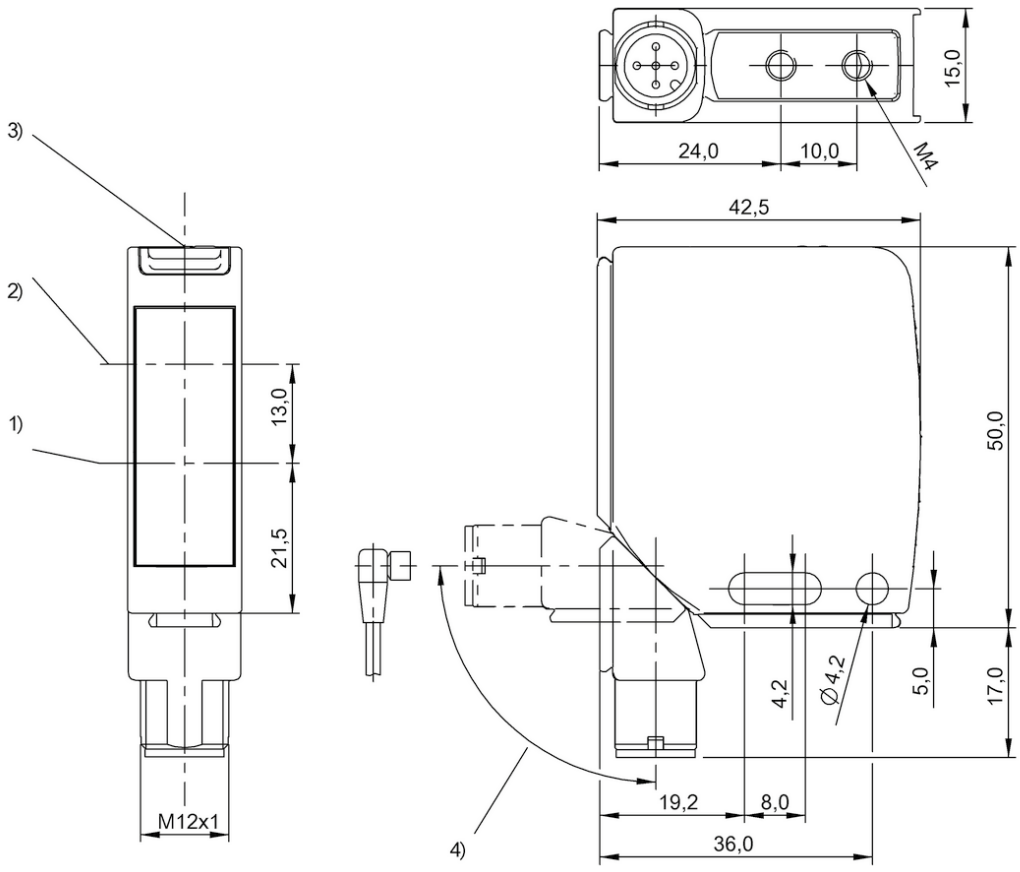
1) Output function, 2) Operating voltage, 3) Sn, light/dark, 4) Optical axis receiver, 5) Optical axis emitter

BOD001R



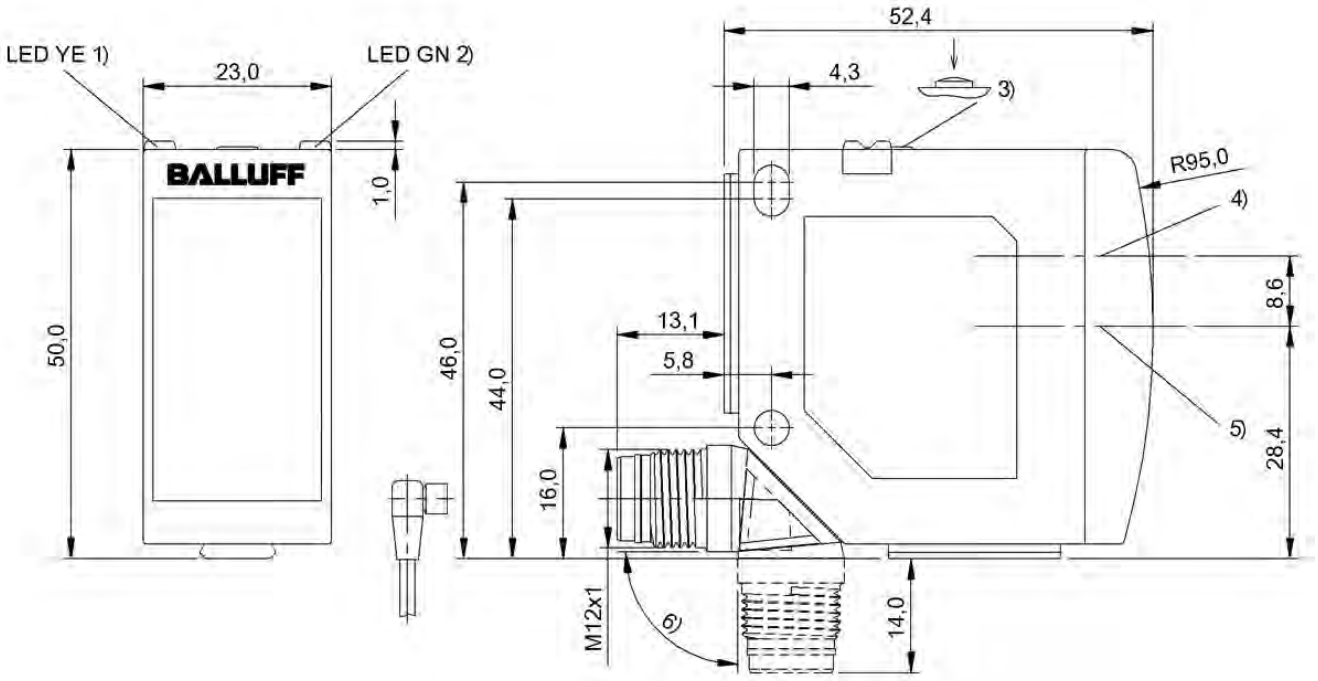
1) Display and control panel, 2) rotatable 270°, 3) Optical axis emitter, 4) Optical axis receiver

BOD002L



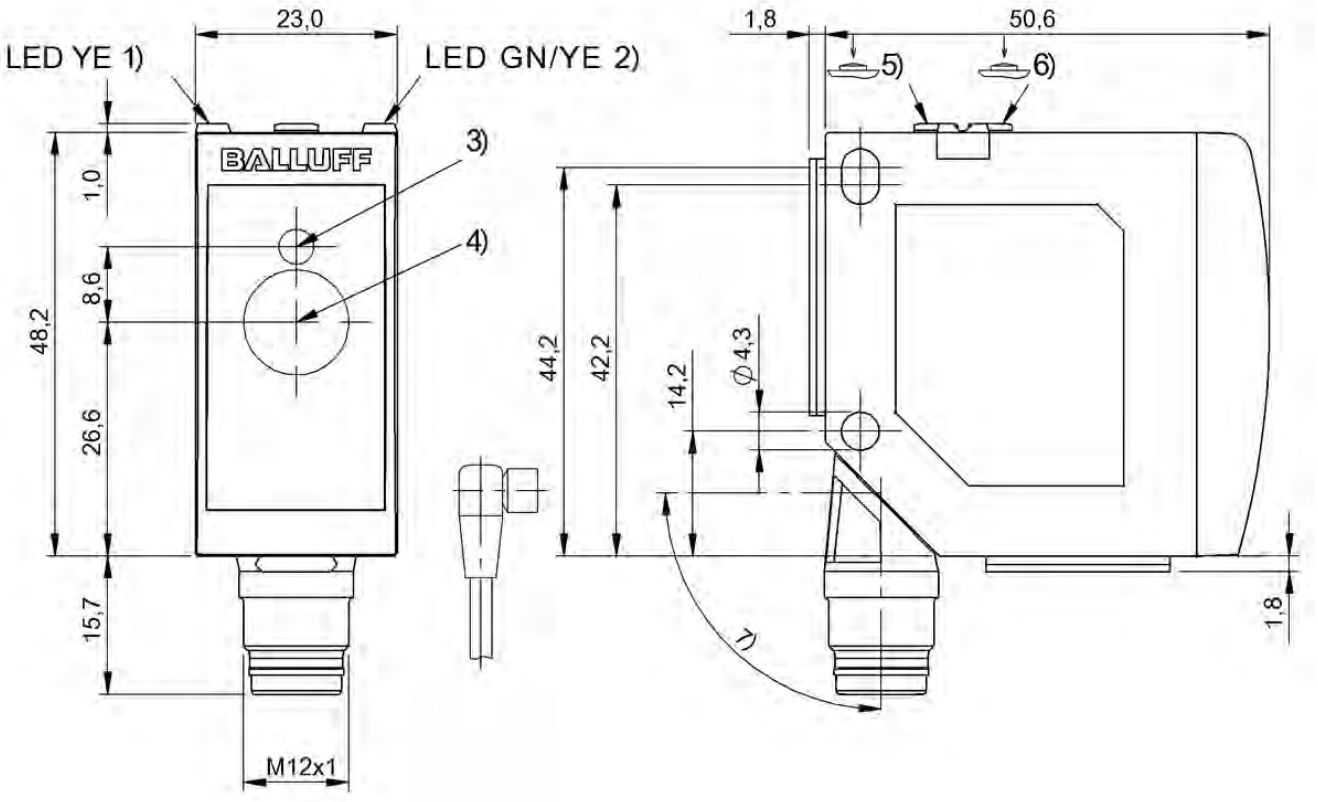
1) Optical axis receiver, 2) Optical axis emitter, 3) Display and control panel, 4) rotatable 270°

BOD000L, BOD000M, BOD000N, BOD000P, BOD000R, BOD000T



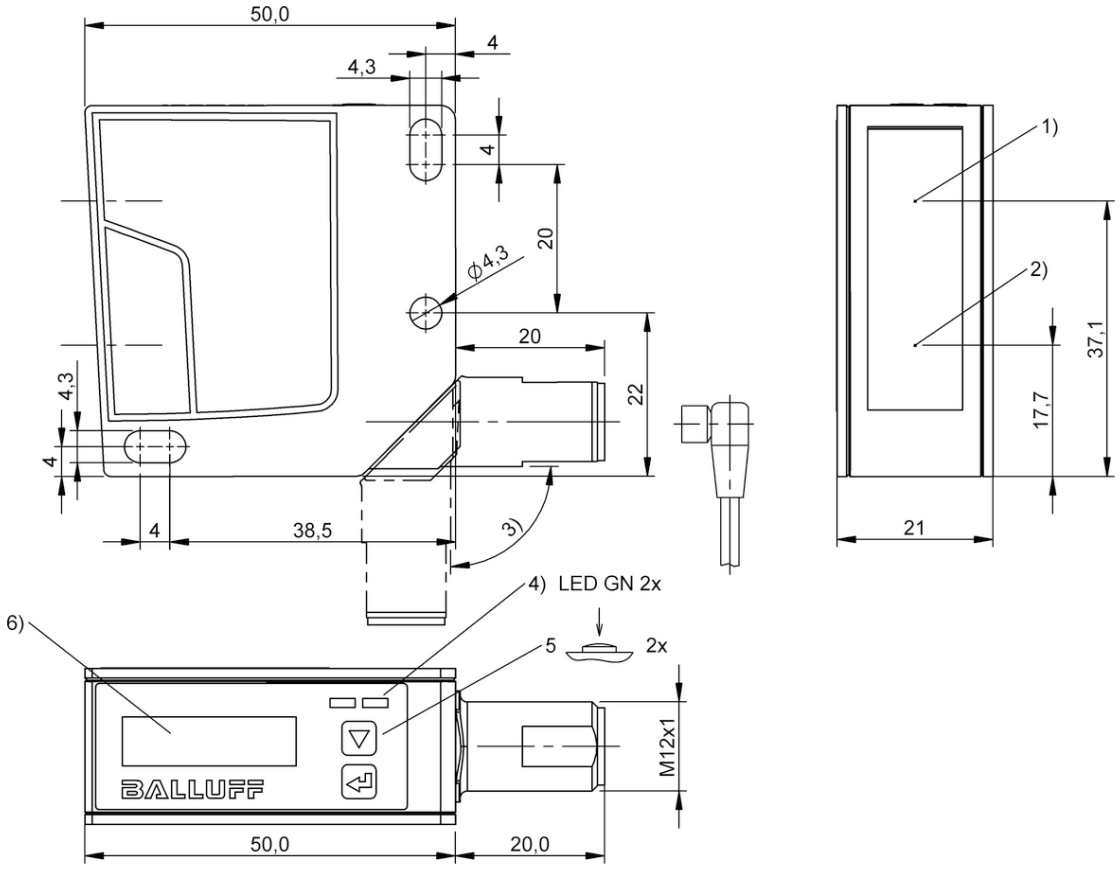
1) Output function, 2) Operating voltage, 3) Teach-In button, 4) Optical axis emitter, 5) Optical axis receiver, 6) rotatable 270°

BOD0020



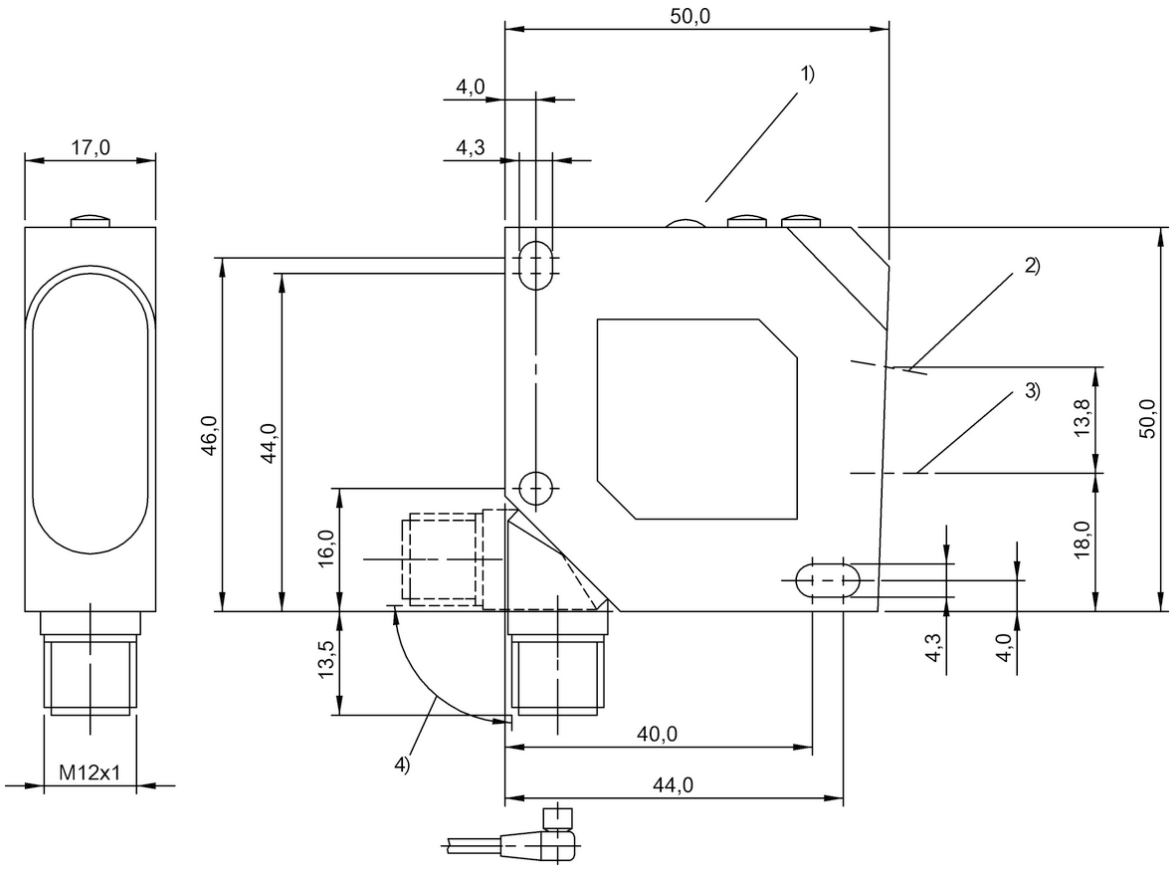
1) Output function, 2) Power/Analog output, 3) Optical axis emitter, 4) Optical axis receiver, 5) Teach-In switching output, 6) Teach-in Analog output, 7) rotatable 270°

BOD001N, BOD001P



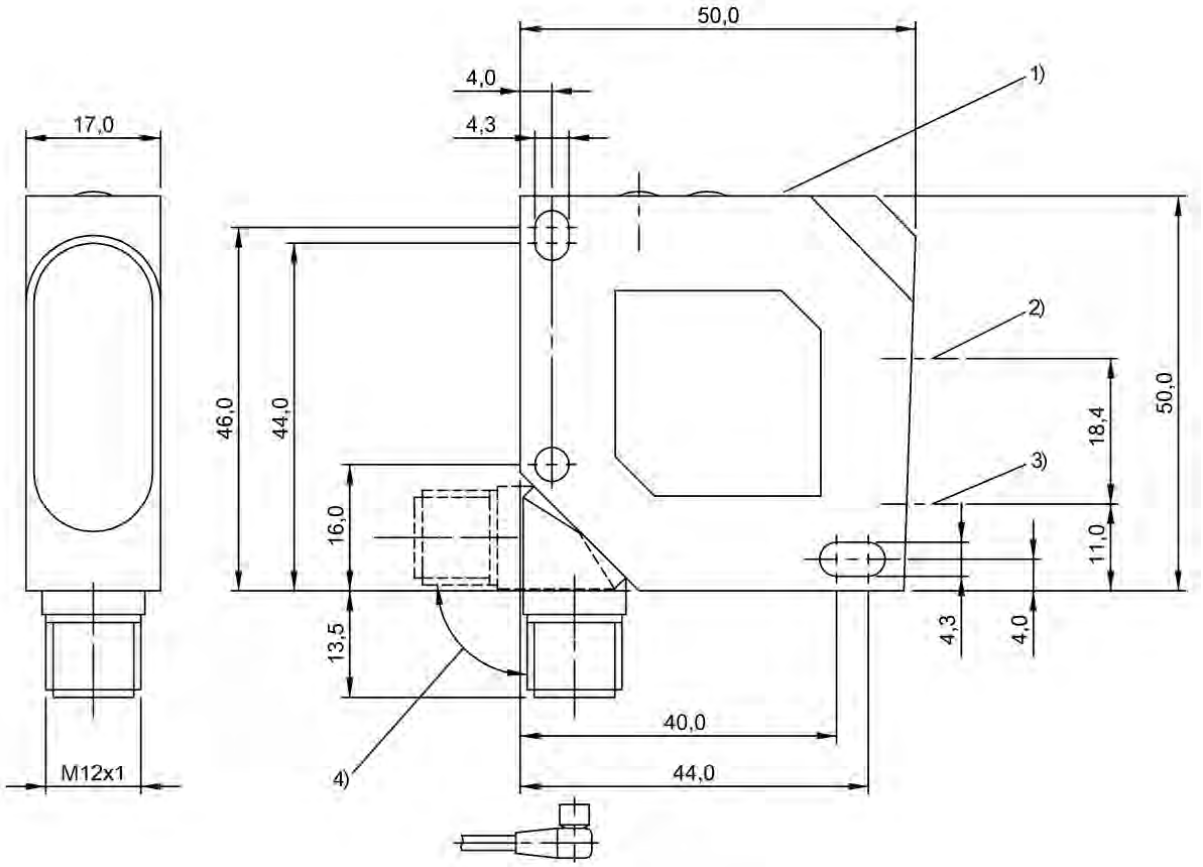
1) Optical axis emitter, 2) Optical axis receiver, 3) rotatable 180°, 4) LED green, 5) Operating button, 6) OLED Display

BOD002M, BOD002N



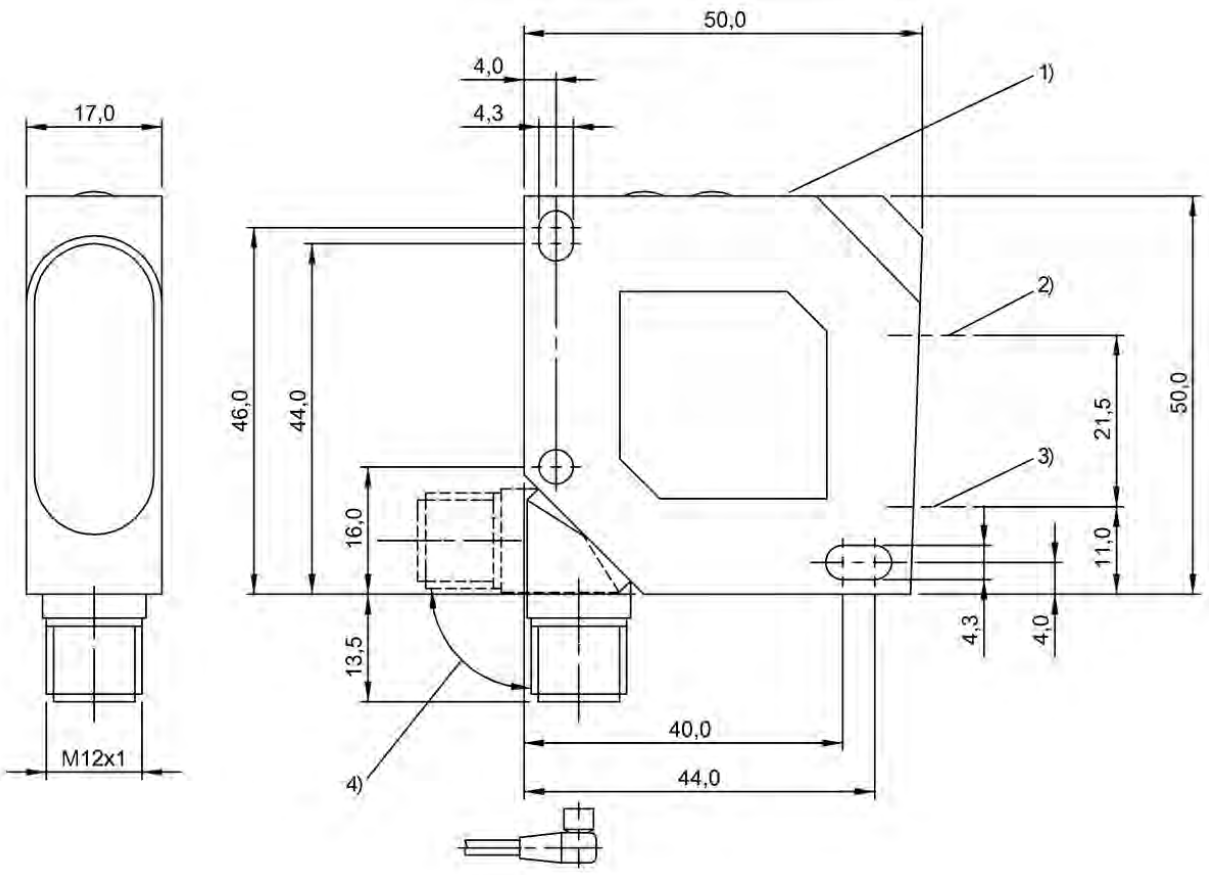
1) Display and control panel, 2) Optical axis receiver, 3) Optical axis emitter, 4) rotatable 270°

BOD0002, BOD0004



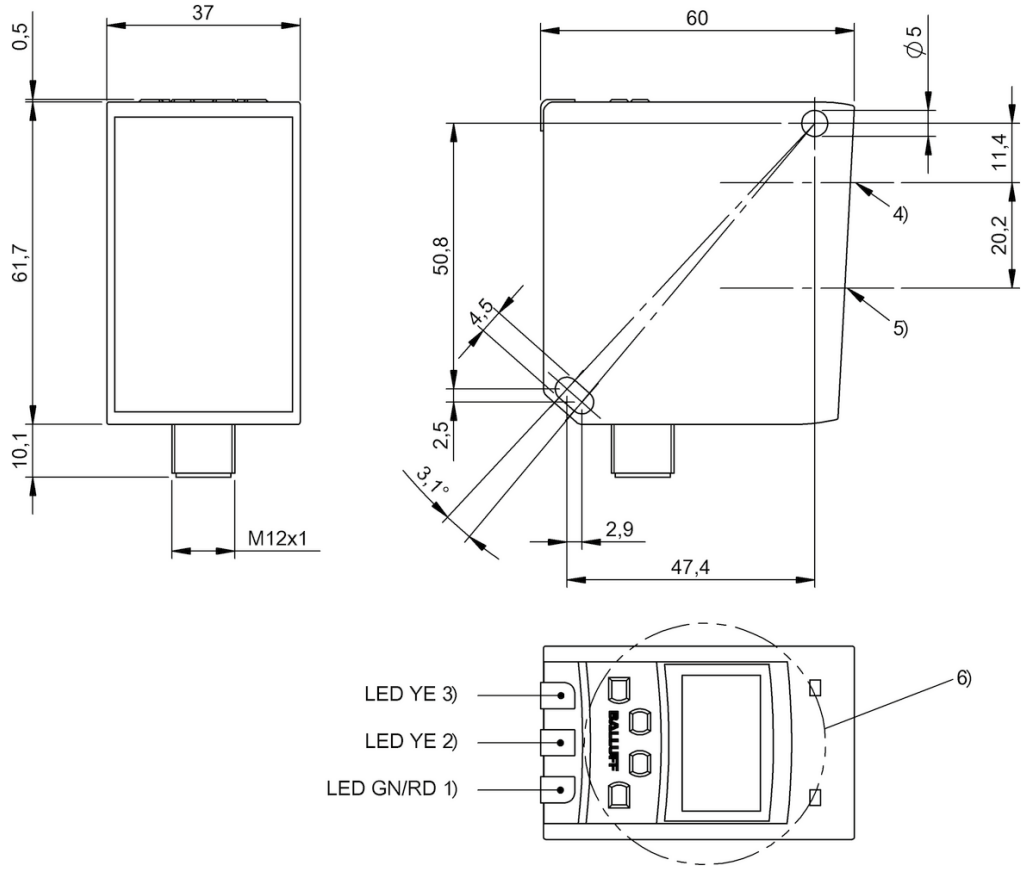
1) Display and control panel, 2) Optical axis emitter, 3) Optical axis receiver, 4) rotatable 270°

BOD0005, BOD0007, BOD000C



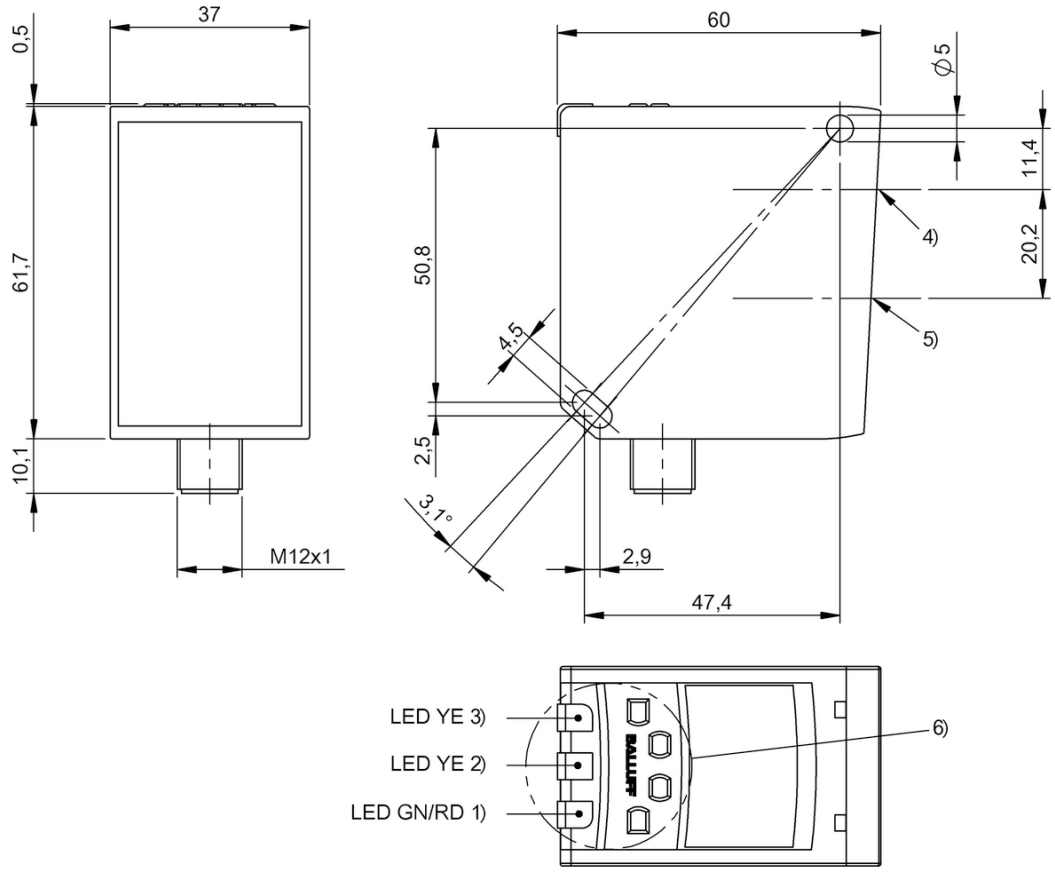
1) Display and control panel, 2) Optical axis emitter, 3) Optical axis receiver, 4) rotatable 270°

BOD0006, BOD0008, BOD000E



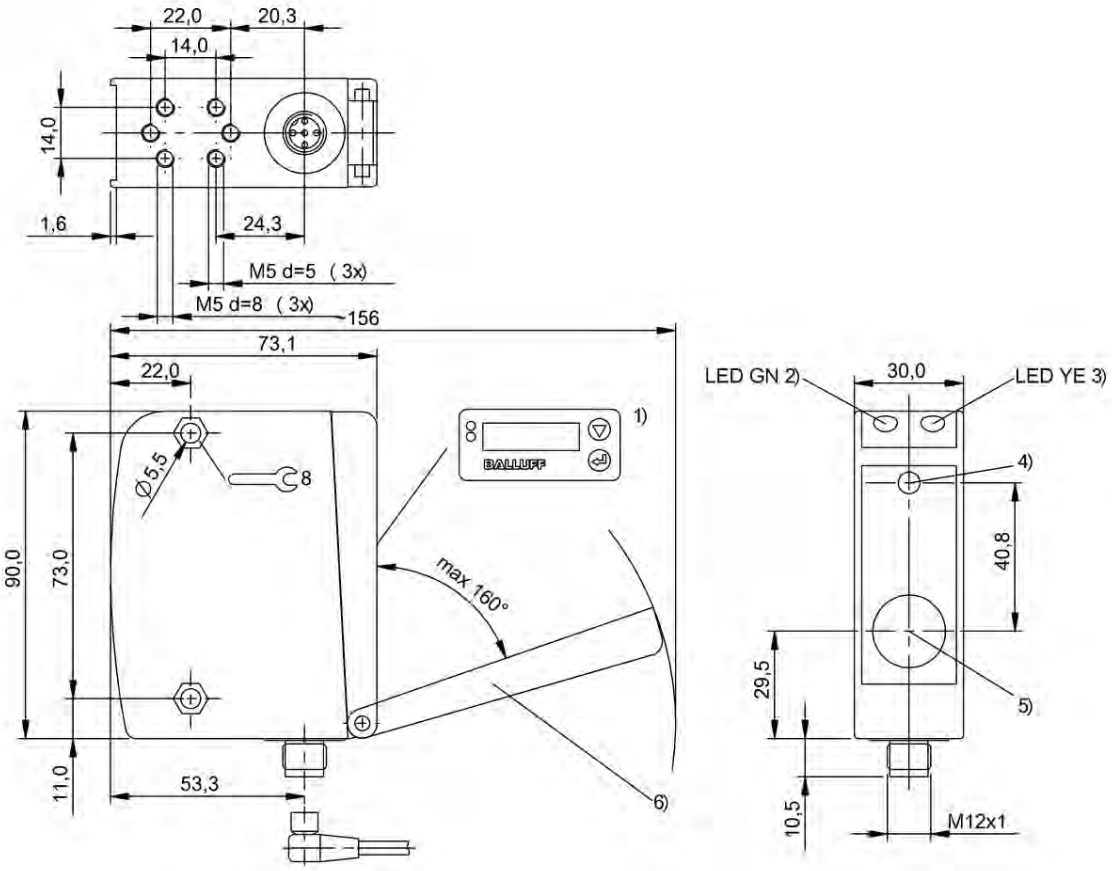
1) Operating voltage/Error, 2) Switchpoint Q2, 3) Switchpoint Q1, 4) Optical axis emitter, 5) Optical axis receiver, 6) Display and keypad

BOD001Y



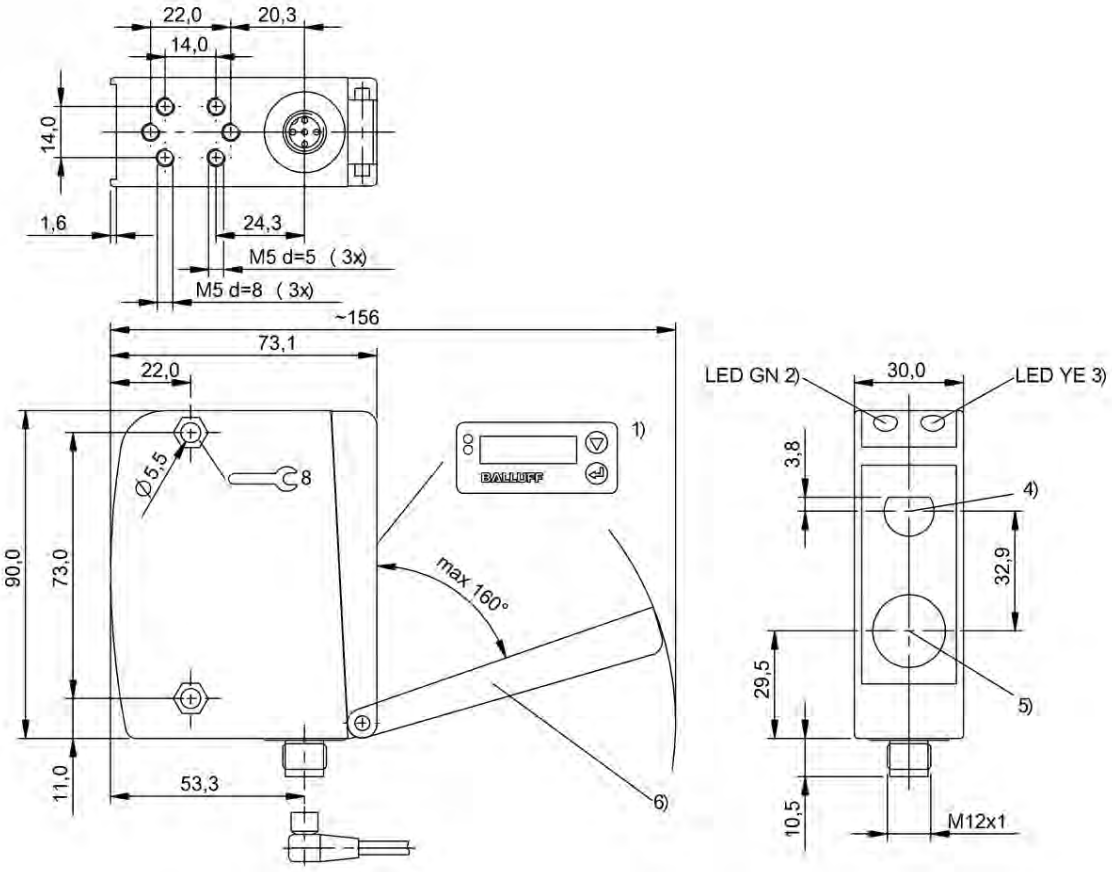
1) Operating voltage/Error, 2) Switchpoint Q2, 3) Switchpoint Q1, 4) Optical axis emitter, 5) Optical axis receiver, 6) Display and control panel

BOD001U, BOD001W



1) Display and keypad, 2) Operating voltage, 3) Output function, 4) Optical axis emitter, 5) Optical axis receiver, 6) Removable cover

BOD001J, BOD001E, BOD001K, BOD001F

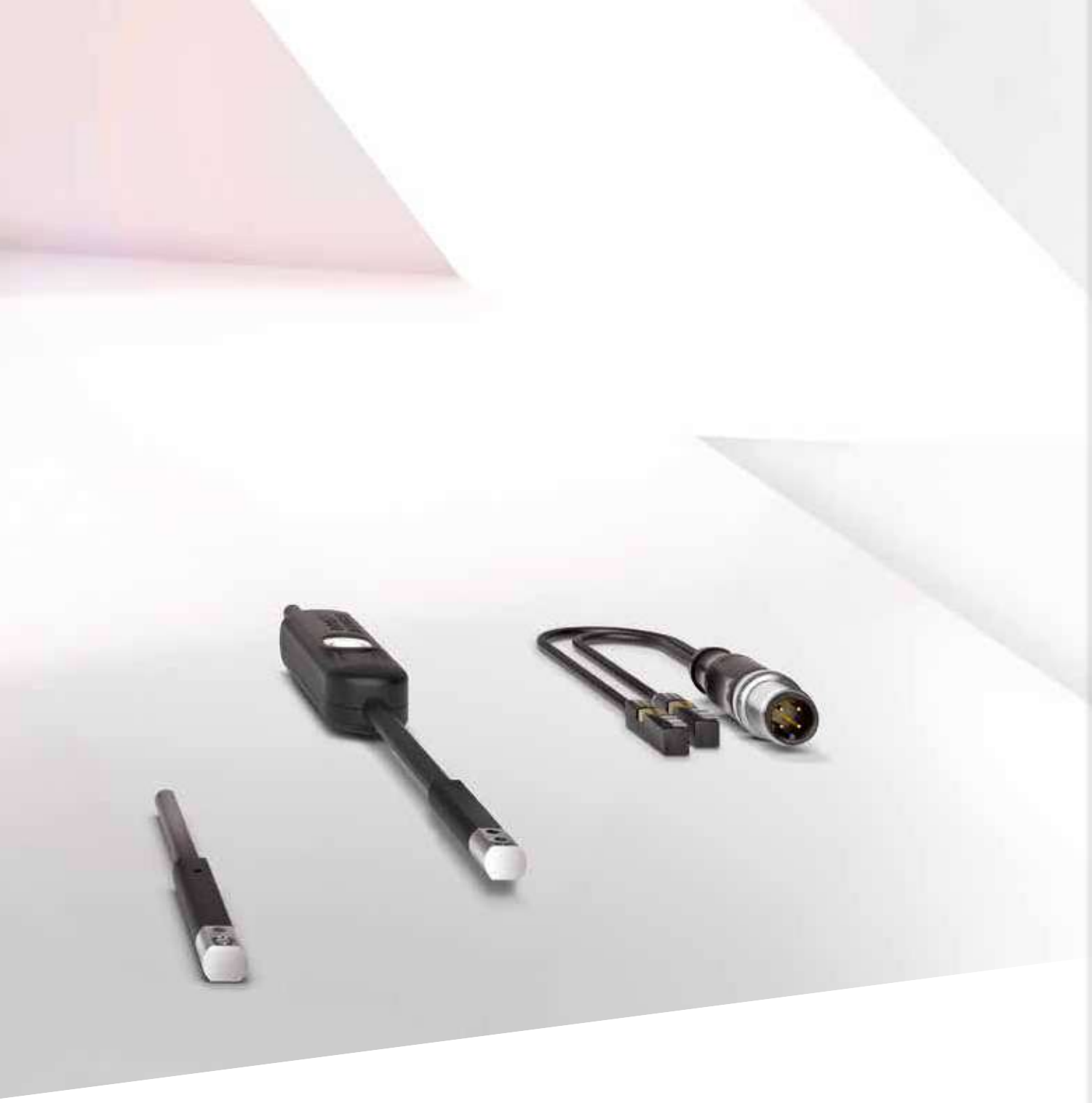


1) Display and keypad, 2) Operating voltage, 3) Output function, 4) Optical axis emitter, 5) Optical axis receiver, 6) Removable cover

BOD001H, BOD001C

Sure position detection even at high speeds

MAGNETIC FIELD SENSORS



Our magnetic field sensors are used chiefly on cylinders and grippers for monitoring the piston position. The sensor thus recognizes the field of the magnet integrated into the piston through the actuator wall even at high travel speeds.

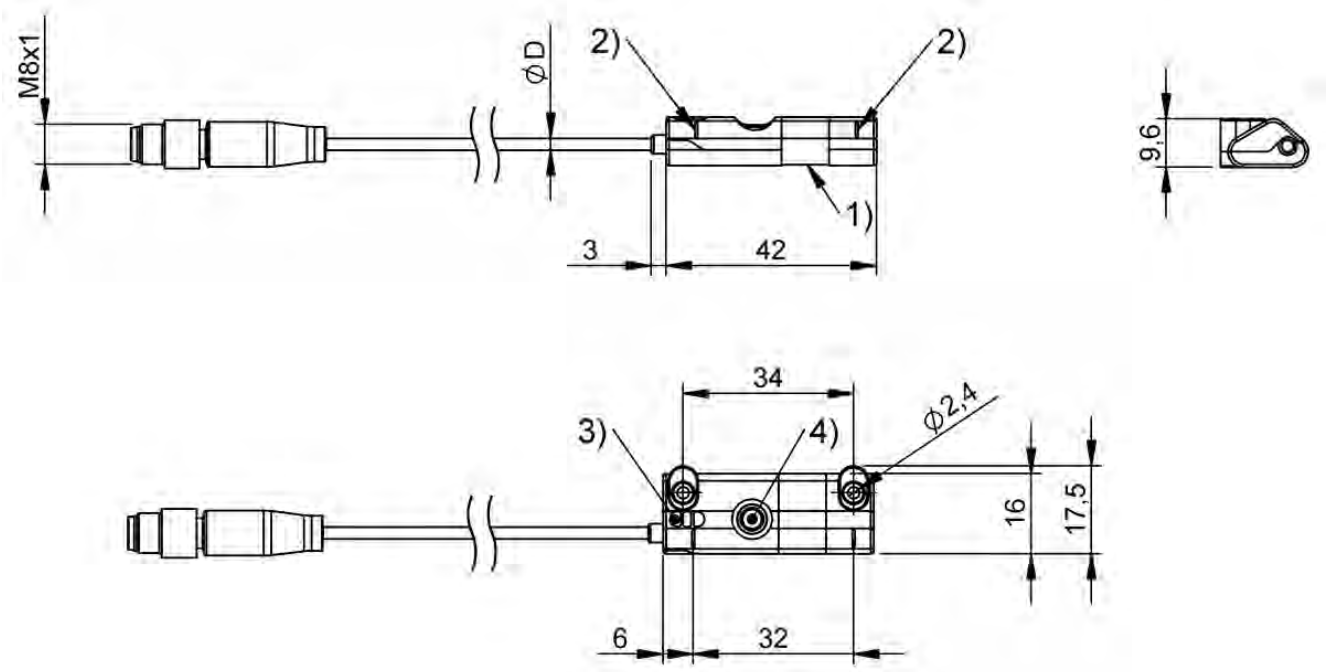
With their non-contact position detection the magnetic field sensors from Balluff work absolutely reliably and wear-free: no contact burn, no bouncing, just clean switching points.

The most important benefits

- Contact-free and therefore wear-free
- No double switching points
- Reliable even at high travel speeds

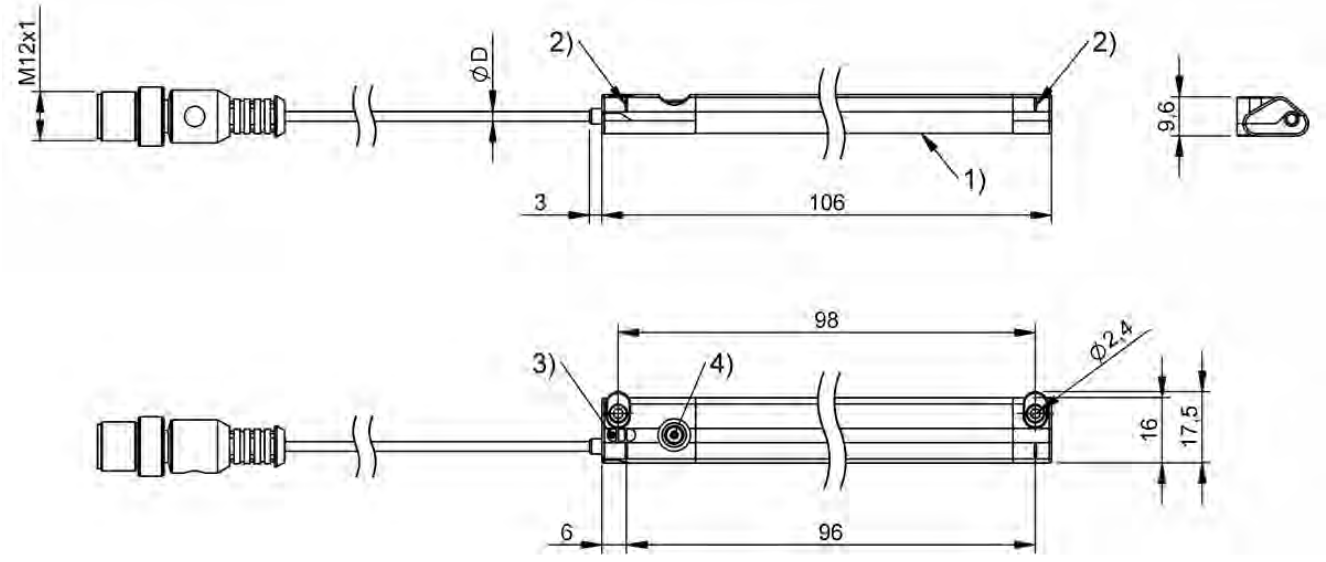
	BMP0007 BMP 01-EL1PP21A-0032-00-P00,5-S75	
Measuring range	32 mm	
Dimension	17.5 x 9.6 x 42 mm	
Analog output	Analog, voltage/Analog, current selectable 0…10 V/4…20 mA	
Interface	IO-Link 1.1	
Resolution	≤ 1 µm (IO-Link), 12 bits (analog)	
Repeat accuracy	± 100 µm	
Non-linearity typ.	±250 µm	
Operating voltage Ub	15...30 VDC	
Connection	Cable with connector, M8x1-Male, 4-pin, 0.5 m, PUR	
Housing material	PA 12 Aluminum	
Ambient temperature	-25...85 °C	
IP rating	IP67	
Approval/Conformity	CE, cULus LISTED, IO-Link, WEEE, EAC	
Productview	Page 642	

	BMP000N BMP 01-EL1PP21A-0096-00-P00,5-S4	BMP0009 BMP 01-EL1PP21A-0160-00-P02	BMP000K BMP 01-EL1PP21A-0256-00-P00,5-S75
	96 mm	160 mm	256 mm
	17.5 x 9.6 x 106 mm	17.5 x 9.6 x 170 mm	17.5 x 9.6 x 266 mm
	Analog, voltage/Analog, current selectable 0…10 V/4…20 mA	Analog, voltage/Analog, current selectable 0…10 V/4…20 mA	Analog, voltage/Analog, current selectable 0…10 V/4…20 mA
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	≤ 1 µm (IO-Link), 12 bits (analog)	≤ 1 µm (IO-Link), 12 bits (analog)	≤ 1 µm (IO-Link), 12 bits (analog)
	± 100 µm	± 100 µm	± 100 µm
	±250 µm	±250 µm	±250 µm
	15...30 VDC	15...30 VDC	15...30 VDC
	Cable with connector, M12x1-Male, 4-pin, 0.5 m, PUR	Cable, 2 m, PUR	Cable with connector, M8x1-Male, 4-pin, 0.5 m, PUR
	PA 12 Aluminum	PA 12 Aluminum	PA 12 Aluminum
	-25...85 °C	-25...85 °C	-25...85 °C
	IP67	IP67	IP67
	CE, cULus LISTED, IO-Link, WEEE, EAC	CE, cULus LISTED, IO-Link, WEEE, EAC	CE, cULus LISTED, IO-Link, WEEE, EAC
	Page 642	Page 643	Page 643



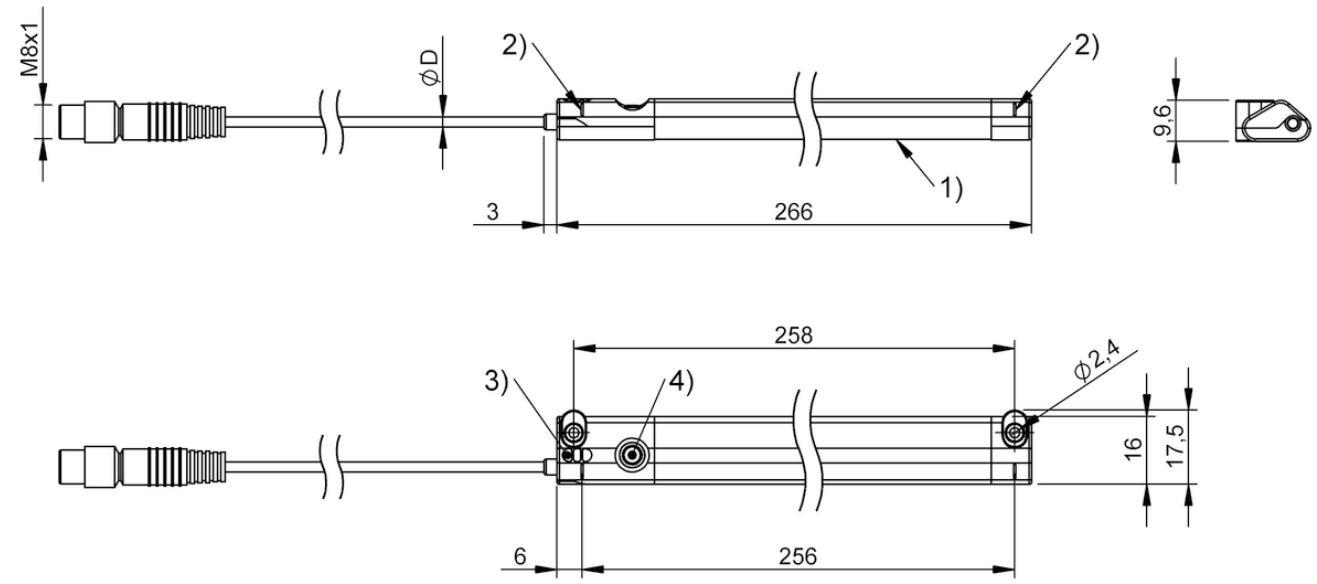
1) Sensing surface, 2) Notch, 3) LED function indicator, 4) Button

BMP0007



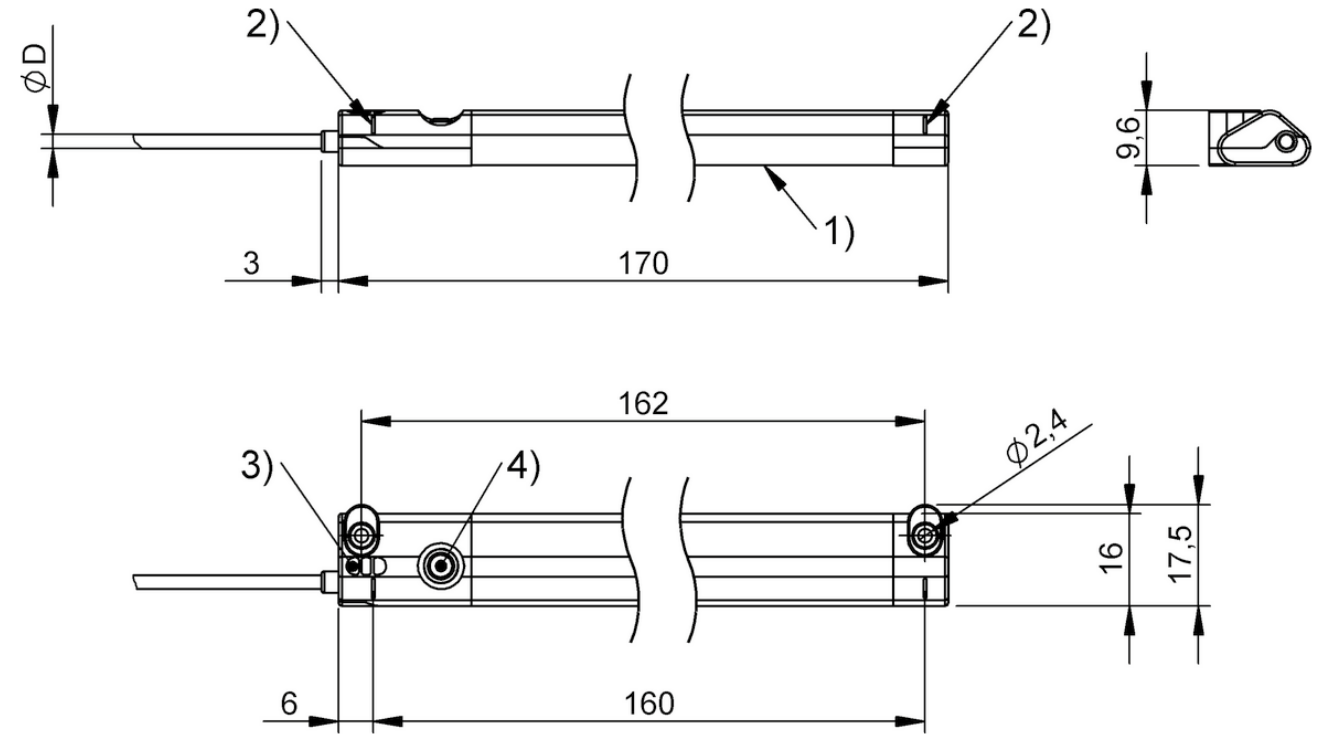
1) Sensing surface, 2) Notch, 3) LED function indicator, 4) Button

BMP000N



1) Sensing surface, 2) Notch, 3) LED function indicator, 4) Button

BMP000K



1) Sensing surface, 2) Notch, 3) LED function indicator, 4) Button

BMP0009

	BMF00N2 BMF 415KW-HAKKI-W-5-S0-02	BMF00N3 BMF 415KW-HAPS-W-5-S0-02	BMF00NL BMF 415KW-HAKKI-W-5-P0-S4-00,3	
Dimension	5 x 6.4 x 34 mm	5 x 6.4 x 34 mm	5 x 6.4 x 34 mm	
Connection	—	—	M12x1-Male, 4-pin, A-coded	
Cable	Silicone welding spark resistant black, 2 m	Silicone welding spark resistant black, 2 m	TPU welding spark resistant black, 300 mm	
Application	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view., Welding area	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view., Welding area	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view., Welding area	
Mounting	can be installed in T-slot from above	can be installed in T-slot from above	can be installed in T-slot from above	
Teach function	—	—	—	
Housing material	PA 12	PA 12	PA 12	
Interface	IO-Link 1.1	—	IO-Link 1.1	
Switching output	IO configurable NO/NC	PNP normally open (NO)	IO configurable NO/NC	
Switching frequency	—	—	—	
Operating voltage Ub	18...30 VDC	10...30 VDC	18...30 VDC	
Ambient temperature	0...80 °C	0...80 °C	0...80 °C	
Magnetic field immune	—	—	—	
IP rating	IP67	IP67	IP67	
Approval/Conformity	UL Listed, CE, RoHS, WEEE, IO-Link, EAC	CE, cULus, RoHS, WEEE, EAC	CE, cULus, RoHS, WEEE, IO-Link, EAC	
Ex category	—	—	—	
Productview	Page 648	Page 648	Page 648	





	BMF00MU BMF 415KW-HAKKI-W-5-P3-S75-00,3	BMF00NM BMF 415KW-HAPS-W-5-P0-S4-00,3	BMF00MW BMF 415KW-HAPS-W-5-P3-S49-00,3	BMF00L6 BMF 235K-H-PS-C-A2-S75-00,3	BMF00C6 BMF 235K-P0-C-2A-SA2-S49-00,3
	5 x 6.4 x 34 mm	5 x 6.4 x 34 mm	5 x 6.4 x 34 mm	23.5 x 6.2 x 5 mm	23.5 x 5 x 5.5 mm
	M8x1-Male, 4-pin, A-coded	M12x1-Male, 3-pin, A-coded	M8x1-Male, 3-pin, A-coded	M8x1-Male, 4-pin	M8x1-Male, 3-pin
	TPU welding spark resistant orange, 300 mm	TPU welding spark resistant black, 300 mm	TPU welding spark resistant orange, 300 mm	PUR, 0.30 m	PUR, 0.3 m
	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view., Welding area	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view., Welding area	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view., Welding area	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view.	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view.
	can be installed in T-slot from above	can be installed in T-slot from above	can be installed in T-slot from above	can be installed in T-slot from above	can be installed in T-slot from above
	–	–	–	2 switching points	–
	PA 12	PA 12	PA 12	PA 12	PA 12
	IO-Link 1.1	–	–	–	–
	IO configurable NO/NC	PNP normally open (NO)	PNP normally open (NO)	PNP normally open (NO)	PNP normally closed (NC)
	–	–	–	–	3000 Hz
	18...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	0...80 °C	0...80 °C	0...80 °C	-25...80 °C	-25...85 °C
	–	–	–	–	–
	IP67	IP67	IP67	IP67	IP67
	CE, cULus, RoHS, WEEE, IO-Link, EAC	CE, cULus, RoHS, WEEE, EAC	CE, cULus, RoHS, WEEE, EAC	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	–	–	–	–	–
	Page 648	Page 648	Page 648	Page 648	Page 648

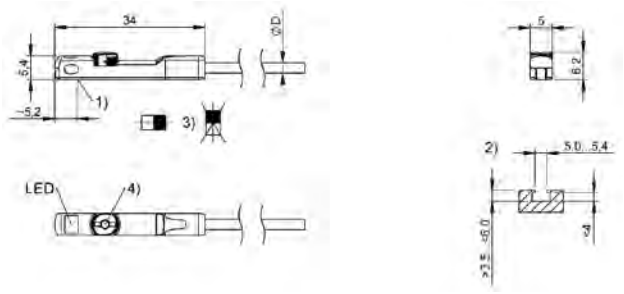


	BMF00C5 BMF 235K-PS-C-2A-SA2-S4-00,3	BMF00C4 BMF 235K-PS-C-2A-SA2-S49-00,3	BMF00C9 BMF 235K-PS-C-2A-SA95-S4-00,3	
Dimension	23.5 x 5 x 5.5 mm	23.5 x 5 x 5.5 mm	23.5 x 5 x 5.5 mm	
Connection	M12x1-Male, 4-pin, A-coded	M8x1-Male, 3-pin	M12x1-Male, 4-pin, A-coded	
Cable	PUR, 0.3 m	PUR, 0.3 m	PUR, 0.3 m	
Application	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view.	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view.	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view.	
Mounting	can be installed in T-slot from above	can be installed in T-slot from above	can be installed in T-slot from above	
Teach function	—	—	—	
Housing material	PA 12	PA 12	PA 12	
Interface	—	—	—	
Switching output	PNP normally open (NO)	PNP normally open (NO)	PNP normally open (NO)	
Switching frequency	3000 Hz	3000 Hz	3000 Hz	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Ambient temperature	-25...85 °C	-25...85 °C	-25...85 °C	
Magnetic field immune	—	—	—	
IP rating	IP67	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	cULus, CE, WEEE, EAC	CE, cULus, EAC, WEEE	
Ex category	—	—	—	
Productview	Page 648	Page 648	Page 648	



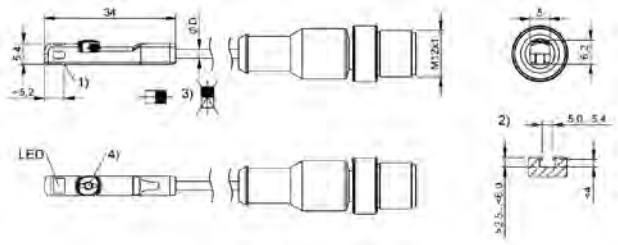


	BMF00CA BMF 235K-PS-C-2A-SA95-S75-00,3	BMF00AR BMF 235K-PS-C-2A-PU-02	BMF00M5 BMF 405KF-PS-C-2A-S4-00,3	BMF00LW BMF 405KF-PO-C-2A-EY-02	BMF00E4 BMF 255K-N-06-EEX
	23.5 x 5 x 5.5 mm	23.5 x 5 x 5.5 mm	5 x 5.4 x 27 mm	5 x 5.4 x 27 mm	25 x 5 x 5.1 mm
	M8x1-Male, 4-pin	—	M12x1-Male, 3-pin, A-coded	—	—
	PUR, 0.3 m	PUR, 2 m	TPE-V, 0.3 m	TPE-V, 2 m	PVC, 6 m
	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view.	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view.	—	—	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view.
	can be installed in T-slot from above	can be installed in T-slot from above	—	—	can be installed in T-slot from above
	—	—	—	—	—
	PA 12	PA 12	PP	PP	PA
	—	—	—	—	NAMUR
	PNP normally open (NO)	PNP normally open (NO)	PNP normally open (NO)	PNP normally closed (NC)	—
	3000 Hz	3000 Hz	10000 Hz	10000 Hz	2000 Hz
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	—
	-25...85 °C	-25...85 °C	-40...100 °C	-40...100 °C	-25...70 °C
	—	—	—	—	—
	IP67	IP67	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67
	CE, cULus, EAC, WEEE	cULus, CE, WEEE, EAC	cULus, CE, Ecolab, RoHS, EAC, WEEE	cULus, CE, Ecolab, RoHS, EAC, WEEE	CE, EAC, ATEX, IECEx, WEEE
	—	—	—	—	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)
	Page 649	Page 649	Page 649	Page 649	Page 649



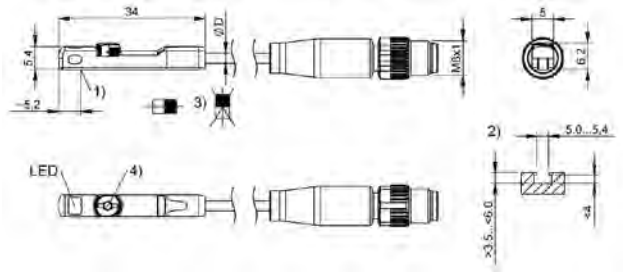
1) Position sensor element, 2) see remarks, 3) see remarks, 4) see remarks

BMF00N2, BMF00N3



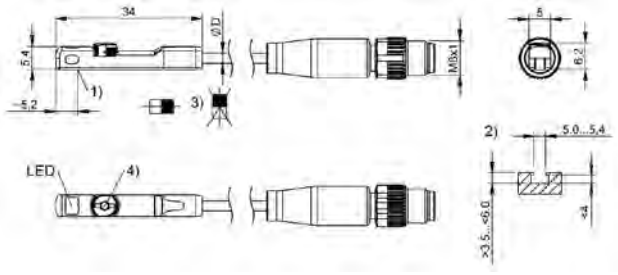
1) Position sensor element, 2) see remarks, 3) see remarks, 4) see remarks

BMF00NL, BMF00NM



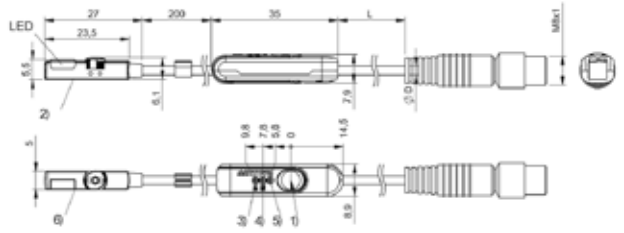
1) Position sensor element, 2) see remarks, 3) see remarks, 4) see remarks

BMF00MU



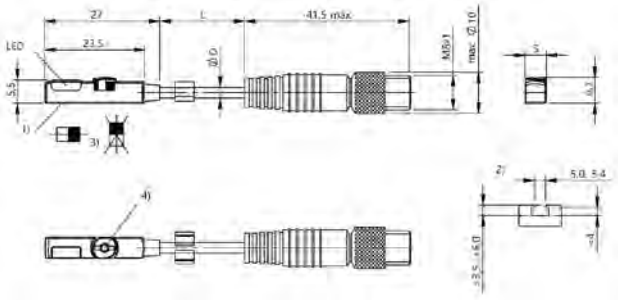
1) Position sensor element, 2) see remarks, 3) see remarks, 4) see remarks

BMF00MW



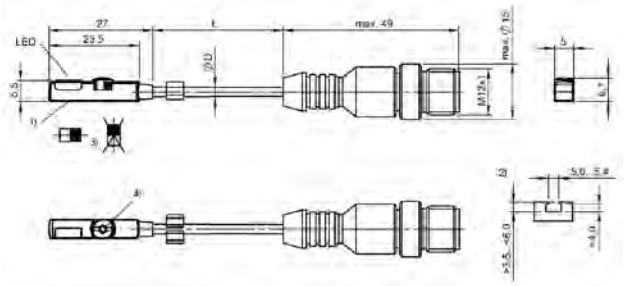
1) Teach-In button, 2) Sensing surface, 3) Output 1 active, 4) Output 2 active, 5) LED Power, 6) Null point

BMF00L6



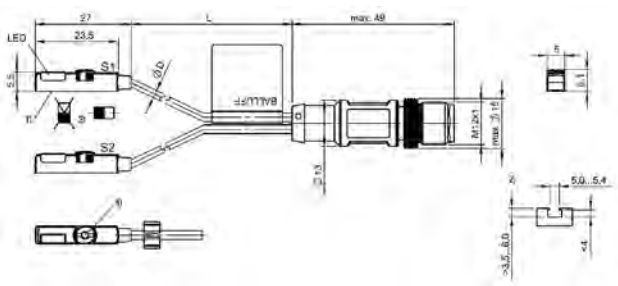
1) Sensing surface, 2) see remarks, 3) see remarks, 4) see remarks

BMF00C6, BMF00C4



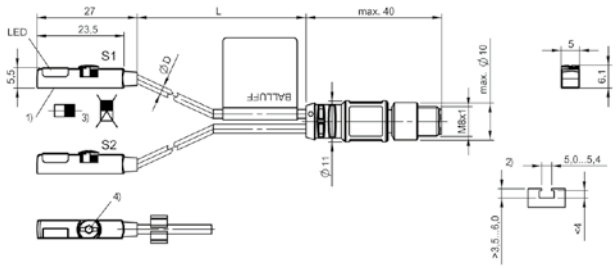
1) Sensing surface, 2) see remarks, 3) see remarks, 4) see remarks

BMF00C5



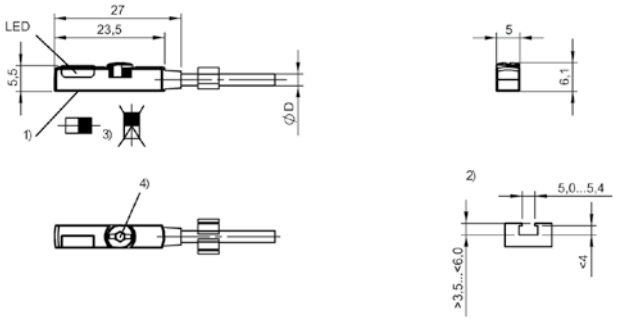
1) Sensing surface, 2) see remarks, 3) see remarks, 4) see remarks

BMF00C9



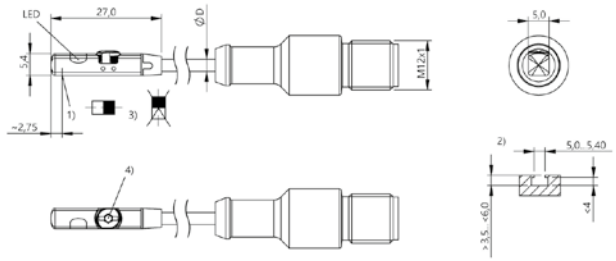
1) Sensing surface, 2) see remarks, 3) see remarks, 4) see remarks

BMF00CA



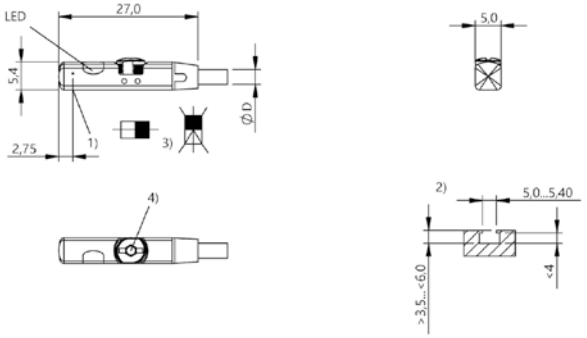
1) Sensing surface, 2) see remarks, 3) see remarks, 4) see remarks

BMF00AR



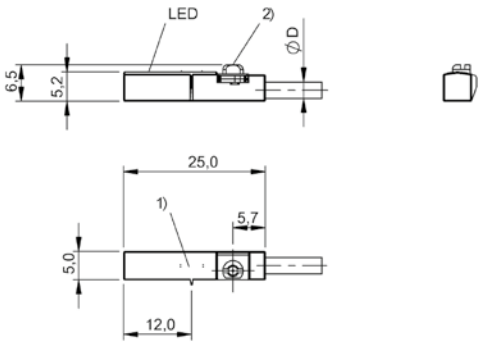
1) Position sensor element, 2) see remarks, 3) see remarks, 4) see remarks

BMF00M5



1) Position sensor element, 2) see remarks, 3) see remarks, 4) see remarks

BMF00LW



1) Sensing surface, 2) Mounting clamp

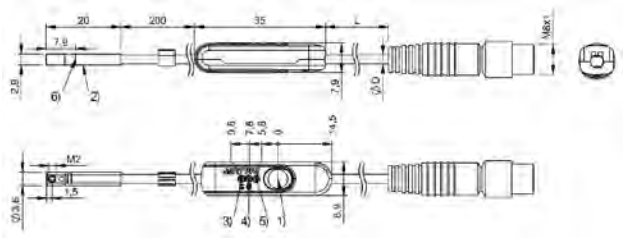
BMF00E4

	BMF00JH BMF 203K-H-PS-C-A2-S75-00,3	BMF00JF BMF 203K-H-PS-C-A2-PU-02	
Dimension	20 x 2.9 x 3.6 mm	20 x 2.9 x 3.6 mm	
Connection	M8x1-Male, 4-pin	—	
Cable	PUR, 0.3 m	PUR, 2 m	
Application	Pneumatic cylinder with C-slot. For dimensions, see sketch in product view.	Pneumatic cylinder with C-slot. For dimensions, see sketch in product view.	
Mounting	can be installed in C-slot from above	can be installed in C-slot from above	
Teach function	2 switching points	2 switching points	
Housing material	PA 12	PA 12	
Interface	—	—	
Switching output	PNP normally open (NO)	PNP normally open (NO)	
Switching frequency	15 Hz	15 Hz	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...80 °C	-25...80 °C	
Magnetic field immune	—	—	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Ex category	—	—	
Productview	Page 654	Page 654	

	BMF00HF BMF 233K-PS-C-2A-SA2-S49-00,3	BMF00J2 BMF 233K-PS-C-2A-SA95-S4-00,3	BMF00J1 BMF 233K-PS-C-2A-SA95-S75-00,3	BMF00HA BMF 233K-PS-C-2A-PU-02
	24 x 2.9 x 3.6 mm	24 x 2.9 x 3.6 mm	24 x 2.9 x 3.6 mm	24 x 2.9 x 3.6 mm
	M8x1-Male, 3-pin	M12x1-Male, 4-pin, A-coded	M8x1-Male, 4-pin	—
	PUR, 0.3 m	PUR, 0.3 m	PUR, 0.3 m	PUR, 2 m
	Pneumatic cylinder with C-slot, e.g. Festo, Sommer, etc.	Pneumatic cylinder with C-slot, e.g. Festo, Sommer, etc.	Pneumatic cylinder with C-slot, e.g. Festo, Sommer, etc.	Pneumatic cylinder with C-slot, e.g. Festo, Sommer, etc.
	can be installed in C-slot from above	can be installed in C-slot from above	can be installed in C-slot from above	can be installed in C-slot from above
	—	—	—	—
	PA 12	PA 12	PA 12	PA 12
	—	—	—	—
	PNP normally open (NO)	PNP normally open (NO)	PNP normally open (NO)	PNP normally open (NO)
	3000 Hz	3000 Hz	3000 Hz	3000 Hz
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...85 °C	-25...85 °C	-25...85 °C	-25...85 °C
	—	—	—	—
	IP67	IP67	IP67	IP67
	cULus, CE, WEEE, EAC	cULus, CE, WEEE, EAC	cULus, CE, WEEE, EAC	cULus, CE, WEEE, EAC
	—	—	—	—
	Page 654	Page 654	Page 654	Page 654

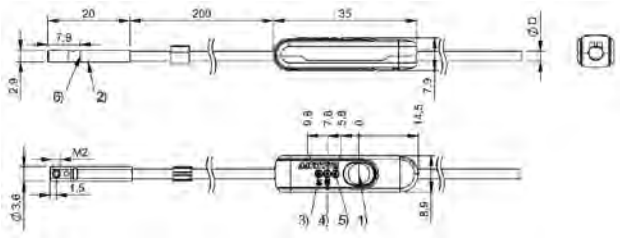
	BMF00ER BMF 243K-PS-C-2A-SA2-S4-00,3	BMF00EL BMF 243K-PS-C-2A-SA2-S49-00,3	
Dimension	24 x 3 x 3.75 mm	24 x 3 x 3.75 mm	
Connection	M12x1-Male, 4-pin, A-coded	M8x1-Male, 3-pin	
Cable	PUR, 0.3 m	PUR, 0.3 m	
Application	Pneumatic cylinder with C-slot, e.g. SMC, Festo*, Schunk, Sommer, Gimatic (*not suitable for Festo Series ADVC and AEVC)	Pneumatic cylinder with C-slot, e.g. SMC, Festo*, Schunk, Sommer, Gimatic (*not suitable for Festo Series ADVC and AEVC)	
Mounting	can be installed in C-slot from above	can be installed in C-slot from above	
Teach function	—	—	
Housing material	PA 12	PA 12	
Interface	—	—	
Switching output	PNP normally open (NO)	PNP normally open (NO)	
Switching frequency	3000 Hz	3000 Hz	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...85 °C	-25...85 °C	
Magnetic field immune	—	—	
IP rating	IP67	IP67	
Approval/Conformity	cULus, CE, WEEE, EAC	cULus, CE, WEEE, EAC	
Ex category	—	—	
Productview	Page 654	Page 654	

	BMF00F9 BMF 243K-PS-C-2A-SA95-S4-00,3	BMF00ET BMF 243K-PS-C-2A-SA95-S75-00,3	BMF00EF BMF 243K-PS-C-2A-PU-02	
	24 x 3 x 3.75 mm	24 x 3 x 3.75 mm	24 x 3 x 3.75 mm	
	M12x1-Male, 4-pin, A-coded	M8x1-Male, 4-pin	—	
	PUR, 0.3 m	PUR, 0.3 m	PUR, 2 m	
	Pneumatic cylinder with C-slot, e.g. SMC, Festo*, Schunk, Sommer, Gimatic (*not suitable for Festo Series ADVC and AEVC)	Pneumatic cylinder with C-slot, e.g. SMC, Festo*, Schunk, Sommer, Gimatic (*not suitable for Festo Series ADVC and AEVC)	Pneumatic cylinder with C-slot, e.g. SMC, Festo*, Schunk, Sommer, Gimatic (*not suitable for Festo Series ADVC and AEVC)	
	can be installed in C-slot from above	can be installed in C-slot from above	can be installed in C-slot from above	
	—	—	—	
	PA 12	PA 12	PA 12	
	—	—	—	
	PNP normally open (NO)	PNP normally open (NO)	PNP normally open (NO)	
	3000 Hz	3000 Hz	3000 Hz	
	10...30 VDC	10...30 VDC	10...30 VDC	
	-25...85 °C	-25...85 °C	-25...85 °C	
	—	—	—	
	IP67	IP67	IP67	
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	cULus, CE, WEEE, EAC	
	—	—	—	
	Page 655	Page 655	Page 655	



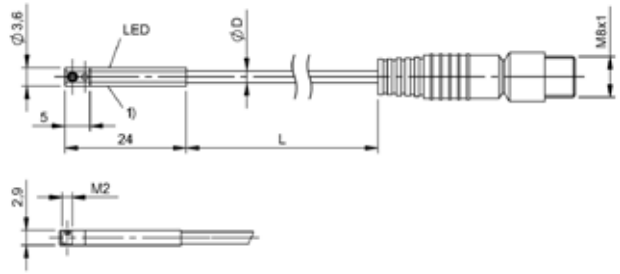
1) Teach-In button, 2) Sensing surface, 3) Output 1 active, 4) Output 2 active, 5) LED Power, 6) Null point

BMF00JH



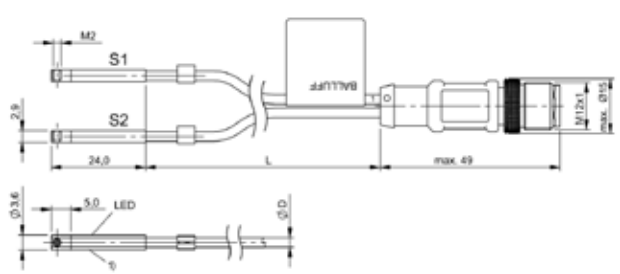
1) Teach-In button, 2) Sensing surface, 3) Output 1 active, 4) Output 2 active, 5) LED Power, 6) Null point

BMF00JF



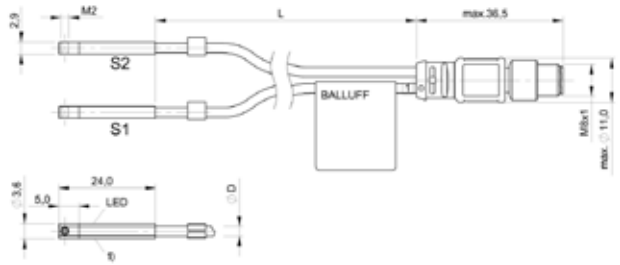
1) Sensing surface

BMF00HF



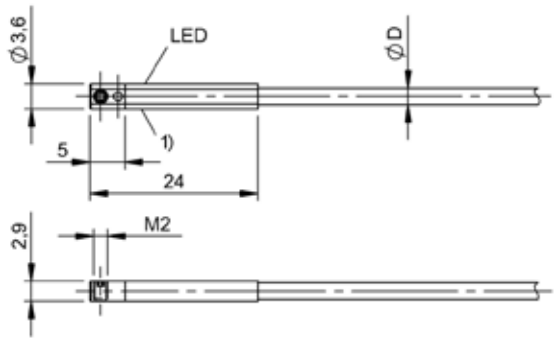
1) Sensing surface

BMF00J2



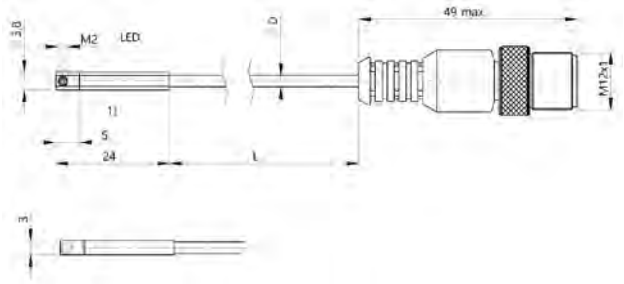
1) Sensing surface

BMF00J1



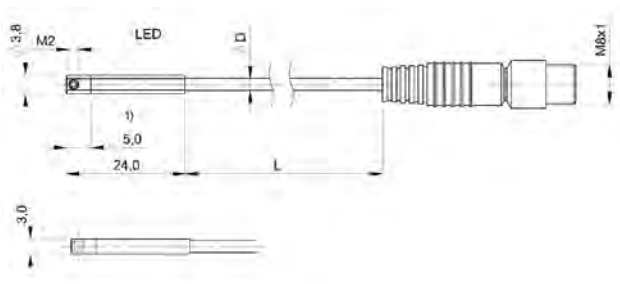
1) Sensing surface

BMF00HA



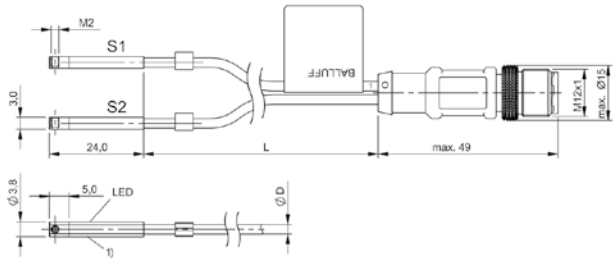
1) Sensing surface

BMF00ER



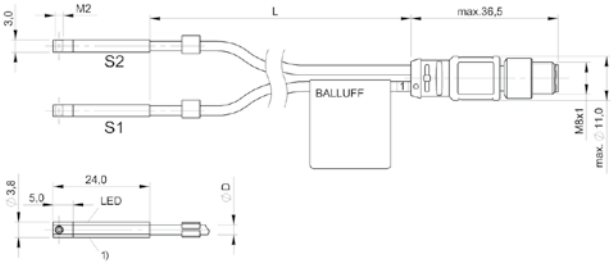
1) Sensing surface

BMF00EL



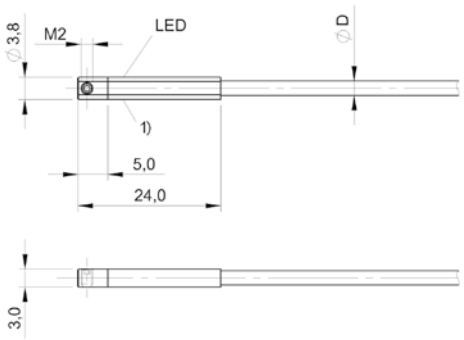
1) Sensing surface

BMF00F9



1) Sensing surface

BMF00ET



1) Sensing surface

BMF00EF

	BMF001L BMF 103K-PS-C-2A-SA2-S49-00,3	BMF001P BMF 103K-PS-C-2A-SA7-S49-00,3	BMF001R BMF 103K-PS-C-2A-SA95-S75-00,3	
Dimension	9 x 4.8 x 16 mm	9 x 4.8 x 16 mm	9 x 4.8 x 16 mm	
Connection	M8x1-Male, 3-pin	M8x1-Male, 3-pin	M8x1-Male, 4-pin	
Cable	PUR, 0.3 m	PUR, 0.3 m	PUR, 0.3 m	
Application	Optimized response path especially suited for short-stroke cylinders.	radially magnetized magnets (Schunk)	Optimized response path especially suited for short-stroke cylinders.	
Mounting	Mounting bracket BMF 103-HW*	Mounting bracket BMF 103-HW*	Mounting bracket BMF 103-HW*	
Housing material	PBT	LCP	PBT	
Interface	—	—	—	
Switching output	PNP normally open (NO)	PNP normally open (NO)	PNP normally open (NO)	
Switching frequency	30000 Hz	7000 Hz	30000 Hz	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Ambient temperature	-25...85 °C	-25...85 °C	-25...85 °C	
Magnetic field immune	—	—	—	
IP rating	IP67	IP67	IP67	
Approval/Conformity	cULus, CE, WEEE, EAC	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 660	Page 660	Page 660	



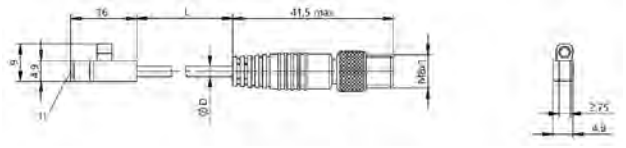


	BMF001E BMF 103K-PS-C-2A-PU-02	BMF0043 BMF 303K-PS-C-2A-SA2-S49-00,3	BMF004C BMF 303K-PS-C-2A-SA7-S49-00,3	BMF004E BMF 303K-PS-C-2A-SA95-S4-00,3	BMF004F BMF 303K-PS-C-2A-SA95-S75-00,3
	9 x 4.8 x 16 mm	25.5 x 3 x 4.5 mm	25.5 x 3 x 4.5 mm	25.5 x 3 x 4.5 mm	25.5 x 3 x 4.5 mm
	—	M8x1-Male, 3-pin	M8x1-Male, 3-pin	M12x1-Male, 4-pin, A-coded	M8x1-Male, 4-pin
	PUR, 2 m	PUR, 0.3 m	PUR, 0.3 m	PUR, 0.3 m	PUR, 0.3 m
	Optimized response path especially suited for short-stroke cylinders.	miniaturized actuators	radially magnetized magnets (Schunk)	miniaturized actuators	miniaturized actuators
	Mounting bracket BMF 103-HW*	Mounting bracket BMF 303-HW*	Mounting bracket BMF 303-HW*	Mounting bracket BMF 303-HW*	Mounting bracket BMF 303-HW*
	PBT	LCP	LCP	LCP	LCP
	—	—	—	—	—
	PNP normally open (NO)	PNP normally open (NO)	PNP normally open (NO)	PNP normally open (NO)	PNP normally open (NO)
	30000 Hz	30000 Hz	7000 Hz	30000 Hz	30000 Hz
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...85 °C	-25...85 °C	-25...85 °C	-25...85 °C	-25...85 °C
	—	—	—	—	—
	IP67	IP67	IP67	IP67	IP67
	cULus, CE, WEEE, EAC	cULus, CE, WEEE, EAC	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Page 660	Page 660	Page 660	Page 660	Page 660

	BMF003U BMF 303K-PS-C-2A-PU-02	**BMF008F** BMF 305M-PS-C-2-S49	**BMF005L** BMF 305K-PS-C-2-SA2-S49-00,3	
Dimension	25.5 x 3 x 4.5 mm	33.5 x 9 x 26.2 mm	33.5 x 5 x 10.5 mm	
Connection	—	M8x1-Male, 3-pin	M8x1-Male, 3-pin	
Cable	PUR, 2 m	—	PUR, 0.3 m	
Application	miniaturized actuators	larger actuators	larger actuators	
Mounting	Mounting bracket BMF 303-HW*	Mounting bracket BMF 305-HW*	Mounting bracket BMF 305-HW*	
Housing material	LCP	Aluminum	LCP	
Interface	—	—	—	
Switching output	PNP normally open (NO)	PNP normally open (NO)	PNP normally open (NO)	
Switching frequency	30000 Hz	10000 Hz	10000 Hz	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Ambient temperature	-25...85 °C	-25...85 °C	-25...85 °C	
Magnetic field immune	—	—	—	
IP rating	IP67	IP67	IP67	
Approval/Conformity	cULus, CE, WEEE, EAC	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 660	Page 660	Page 660	

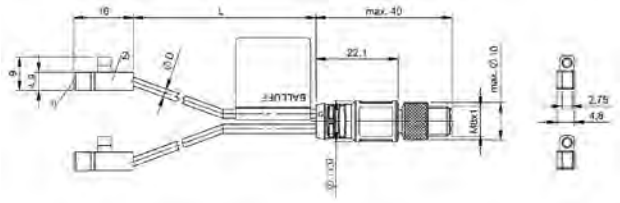



	BMF0056 BMF 305K-PS-C-2-PU-02	BMF0087 BMF 32M-PS-C-2-S4	BMF0088 BMF 32M-PS-C-2-S49	BMF008A BMF 32M-PS-W-2-S4	
	33.5 x 5 x 10.5 mm	25 x 11.9 x 26 mm	25 x 11.9 x 26 mm	25 x 11.9 x 26 mm	
	—	M12x1-Male, 4-pin, A-coded	M8x1-Male, 3-pin	M12x1-Male, 4-pin, A-coded	
	PUR, 2 m	—	—	—	
	larger actuators	Round cylinder, Pneumatic cylinder with trapezoidal slot	Round cylinder, Pneumatic cylinder with trapezoidal slot	Round cylinder, Pneumatic cylinder with trapezoidal slot	
	Mounting bracket BMF 305-HW*	with tube cuff	with tube cuff	with tube cuff	
	LCP	Aluminum	Aluminum	Aluminum	
	—	—	—	—	
	PNP normally open (NO)	PNP normally open (NO)	PNP normally open (NO)	PNP normally open (NO)	
	10000 Hz	10000 Hz	10000 Hz	10 Hz	
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
	-25...85 °C	-25...85 °C	-25...85 °C	-25...70 °C	
	—	—	—	weld-immune (AC)	
	IP67	IP67	IP67	IP67	
	cULus, CE, WEEE, EAC	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	cULus, CE, WEEE, EAC	
	Page 661	Page 661	Page 661	Page 661	



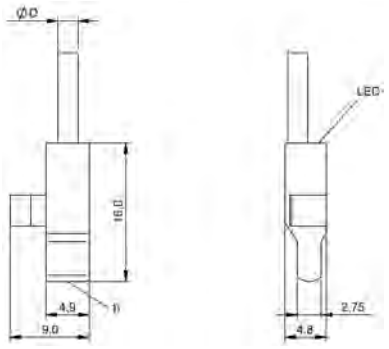
1) Sensing surface

BMF001L, BMF001P



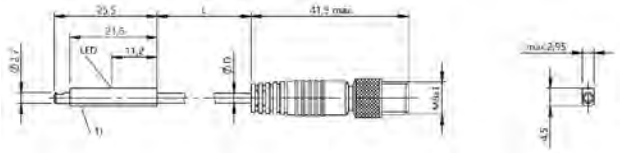
1) Sensing surface, 2) Sensor 1

BMF001R



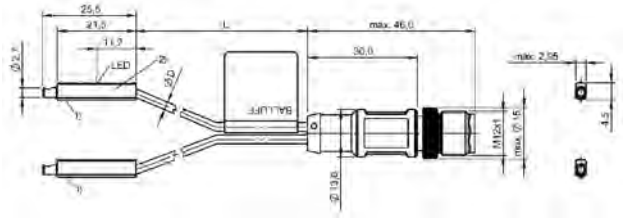
1) Sensing surface

BMF001E



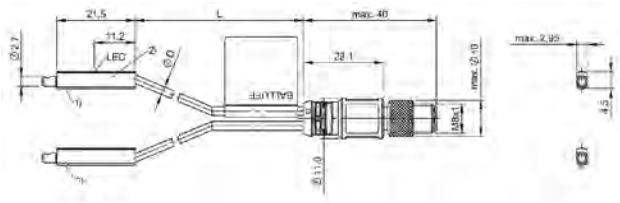
1) Sensing surface

BMF0043, BMF004C



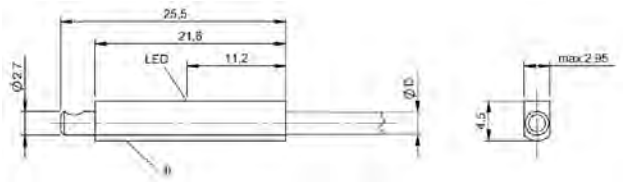
1) Sensing surface, 2) Sensor 1

BMF004E



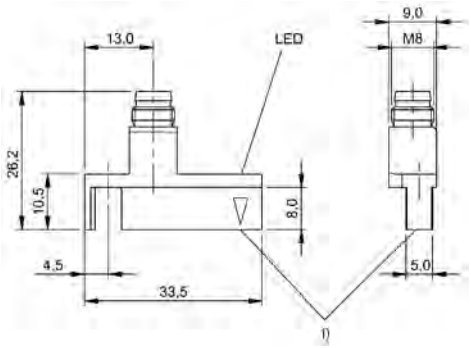
1) Sensing surface, 2) Sensor 1

BMF004F



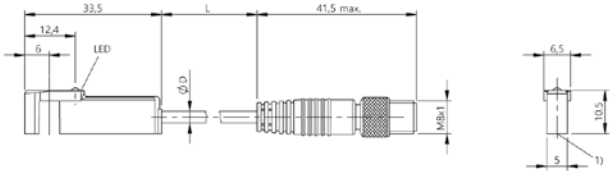
1) Sensing surface

BMF003U



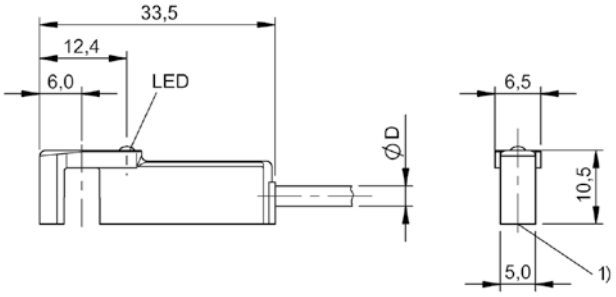
1) Sensing surface

BMF008F



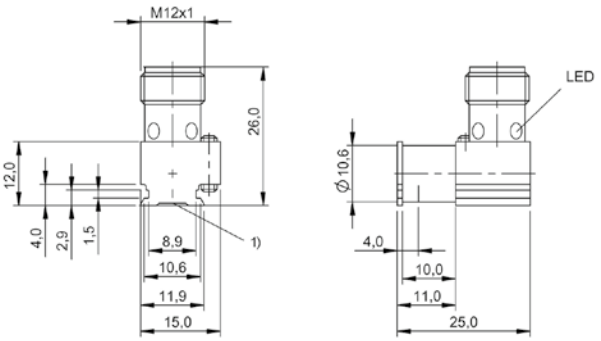
1) Sensing surface

BMF005L



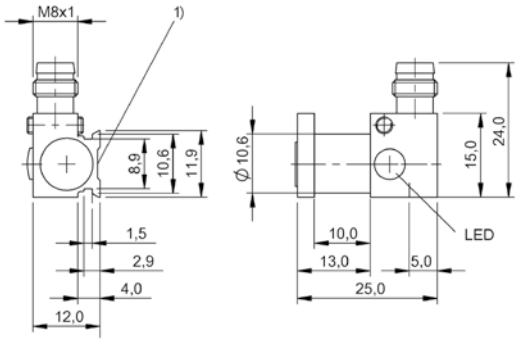
1) Sensing surface

BMF0056



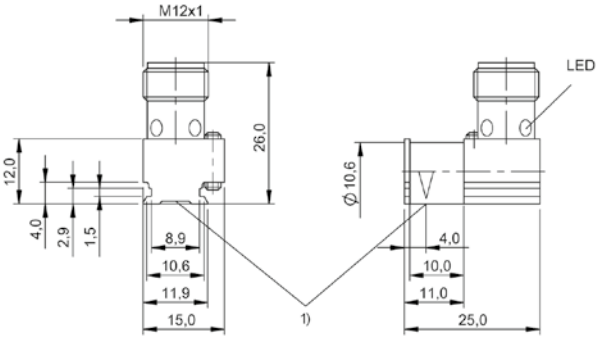
1) Sensing surface

BMF0087



1) Sensing surface

BMF0088

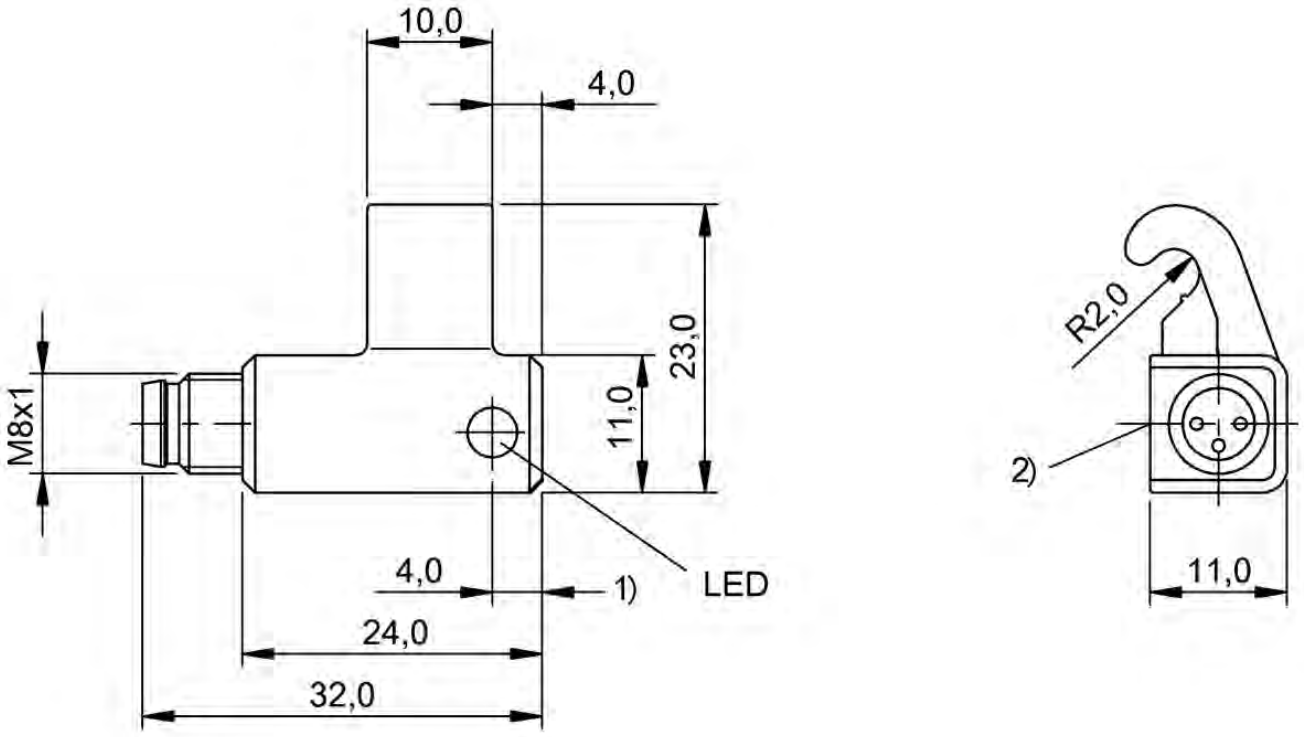


1) Sensing surface

BMF008A

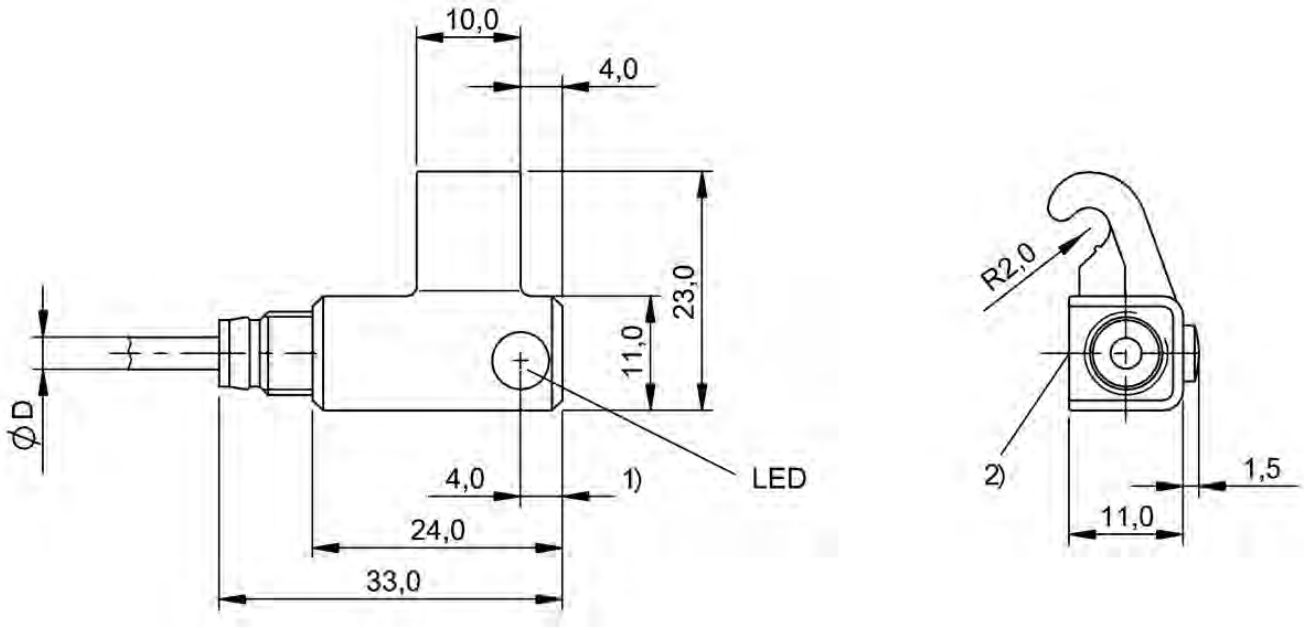
Dimension	
Connection	
Cable	
Application	
Housing material	
Switching output	
Switching frequency	
Operating voltage Ub	
Ambient temperature	
Magnetic field immune	
IP rating	
Approval/Conformity	
Ex category	
Productview	

	BMF0029 BMF 21K-PS-C-2-S49	BMF0027 BMF 21K-PS-C-2-PU-03
	11 x 11 x 32 mm	33 x 23 x 11 mm
	M8x1-Male, 3-pin	—
	—	PUR, 3 m
	Pneumatic cylinder with tie rods, Pneumatic cylinder with DUO rail, Round cylinder, Profile cylinder	Pneumatic cylinder with tie rods, Pneumatic cylinder with DUO rail, Round cylinder, Profile cylinder
	PBT	PBT
	PNP normally open (NO)	PNP normally open (NO)
	10000 Hz	10000 Hz
	10...30 VDC	10...30 VDC
	-25...85 °C	-25...85 °C
	—	—
	IP67	IP67
	cULus, CE, WEEE, EAC	CE, cULus, EAC, WEEE
	—	—
	Page 664	Page 664



1) Measuring point, Sensing surface

BMF0029



1) Measuring point, Sensing surface

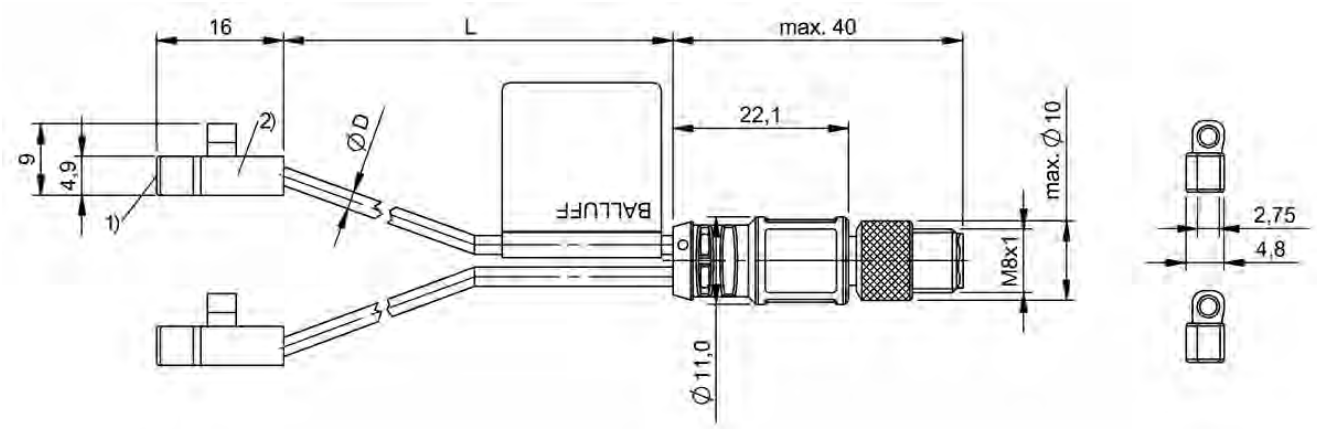
BMF0027

	BMF001R BMF 103K-PS-C-2A-SA95-S75-00,3	BMF004E BMF 303K-PS-C-2A-SA95-S4-00,3	
Dimension	9 x 4.8 x 16 mm	25.5 x 3 x 4.5 mm	
Connection	M8x1-Male, 4-pin	M12x1-Male, 4-pin, A-coded	
Cable	PUR, 0.3 m	PUR, 0.3 m	
Application	Optimized response path especially suited for short-stroke cylinders.	miniaturized actuators	
Mounting	Mounting bracket BMF 103-HW*	Mounting bracket BMF 303-HW*	
Housing material	PBT	LCP	
Switching output	PNP normally open (NO)	PNP normally open (NO)	
Switching frequency	30000 Hz	30000 Hz	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...85 °C	-25...85 °C	
Magnetic field immune	—	—	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 670	Page 670	

	BMF004F BMF 303K-PS-C-2A-SA95-S75-00,3	BMF00J2 BMF 233K-PS-C-2A-SA95-S4-00,3	BMF00J1 BMF 233K-PS-C-2A-SA95-S75-00,3	BMF00F9 BMF 243K-PS-C-2A-SA95-S4-00,3
	25.5 x 3 x 4.5 mm	24 x 2.9 x 3.6 mm	24 x 2.9 x 3.6 mm	24 x 3 x 3.75 mm
	M8x1-Male, 4-pin	M12x1-Male, 4-pin, A-coded	M8x1-Male, 4-pin	M12x1-Male, 4-pin, A-coded
	PUR, 0.3 m	PUR, 0.3 m	PUR, 0.3 m	PUR, 0.3 m
	miniaturized actuators	Pneumatic cylinder with C-slot, e.g. Festo, Sommer, etc.	Pneumatic cylinder with C-slot, e.g. Festo, Sommer, etc.	Pneumatic cylinder with C-slot, e.g. SMC, Festo*, Schunk, Sommer, Gimatic (*not suitable for Festo Series ADVC and AEVC)
	Mounting bracket BMF 303-HW*	can be installed in C-slot from above	can be installed in C-slot from above	can be installed in C-slot from above
	LCP	PA 12	PA 12	PA 12
	PNP normally open (NO)	PNP normally open (NO)	PNP normally open (NO)	PNP normally open (NO)
	30000 Hz	3000 Hz	3000 Hz	3000 Hz
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	-25...85 °C	-25...85 °C	-25...85 °C	-25...85 °C
	–	–	–	–
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	cULus, CE, WEEE, EAC	cULus, CE, WEEE, EAC	CE, cULus, EAC, WEEE
	Page 671	Page 671	Page 672	Page 672

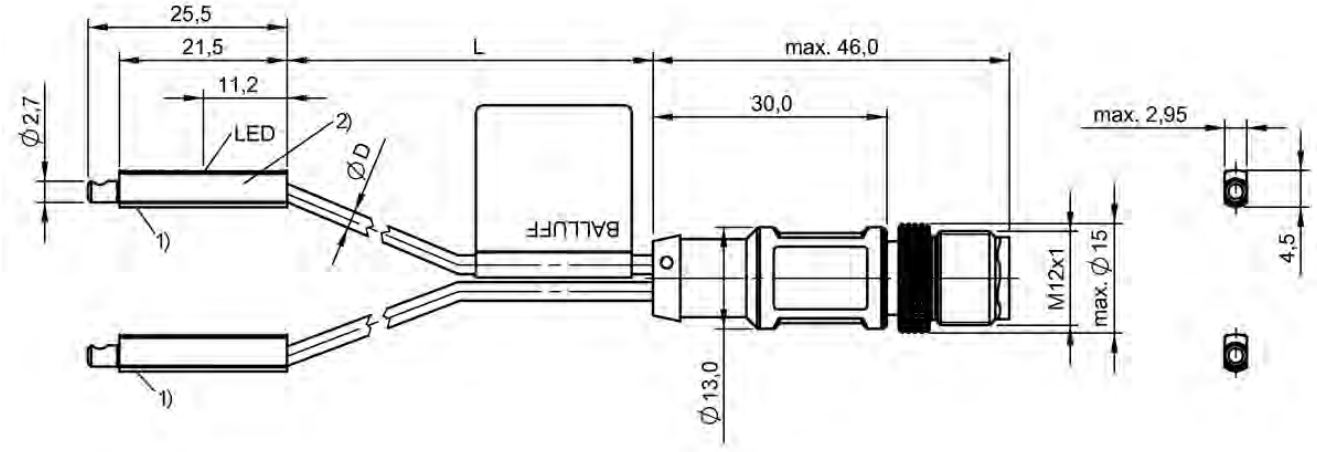
	BMF00ET BMF 243K-PS-C-2A-SA95-S75-00,3	BMF00C9 BMF 235K-PS-C-2A-SA95-S4-00,3	
Dimension	24 x 3 x 3.75 mm	23.5 x 5 x 5.5 mm	
Connection	M8x1-Male, 4-pin	M12x1-Male, 4-pin, A-coded	
Cable	PUR, 0.3 m	PUR, 0.3 m	
Application	Pneumatic cylinder with C-slot, e.g. SMC, Festo*, Schunk, Sommer, Gimatic (*not suitable for Festo Series ADVC and AEVC)	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view.	
Mounting	can be installed in C-slot from above	can be installed in T-slot from above	
Housing material	PA 12	PA 12	
Switching output	PNP normally open (NO)	PNP normally open (NO)	
Switching frequency	3000 Hz	3000 Hz	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	-25...85 °C	-25...85 °C	
Magnetic field immune	—	—	
IP rating	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Productview	Page 673	Page 673	

	BMF00CA BMF 235K-PS-C-2A-SA95-S75-00,3			
	23.5 x 5 x 5.5 mm			
	M8x1-Male, 4-pin			
	PUR, 0.3 m			
	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view.			
	can be installed in T-slot from above			
	PA 12			
	PNP normally open (NO)			
	3000 Hz			
	10...30 VDC			
	-25...85 °C			
	—			
	IP67			
	CE, cULus, EAC, WEEE			
	Page 674			



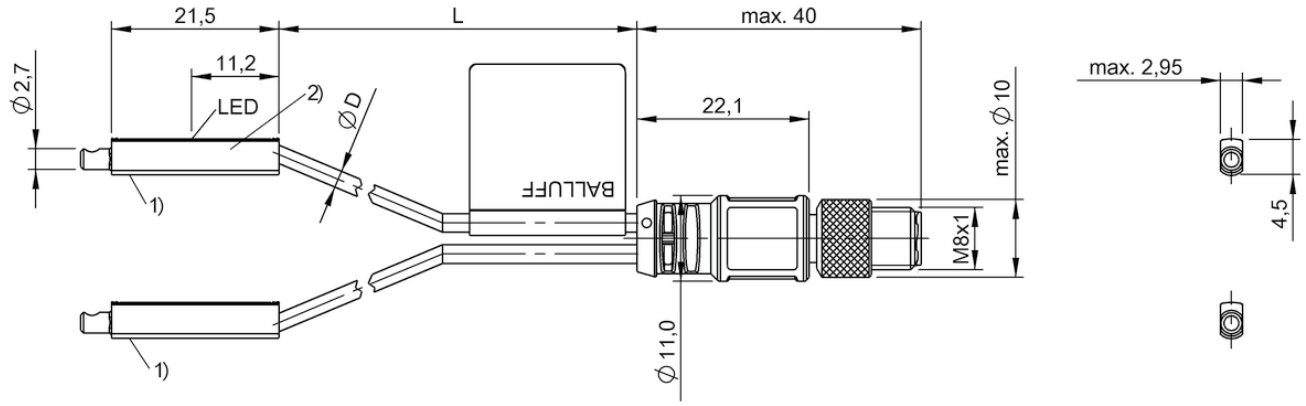
1) Sensing surface, 2) Sensor 1

BMF001R



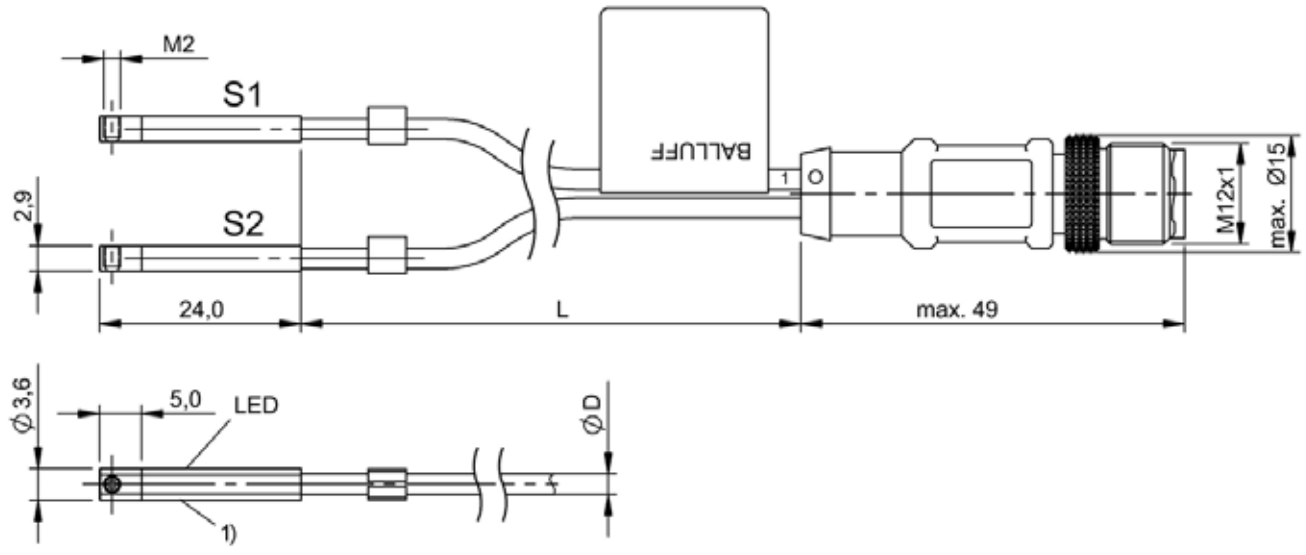
1) Sensing surface, 2) Sensor 1

BMF004E



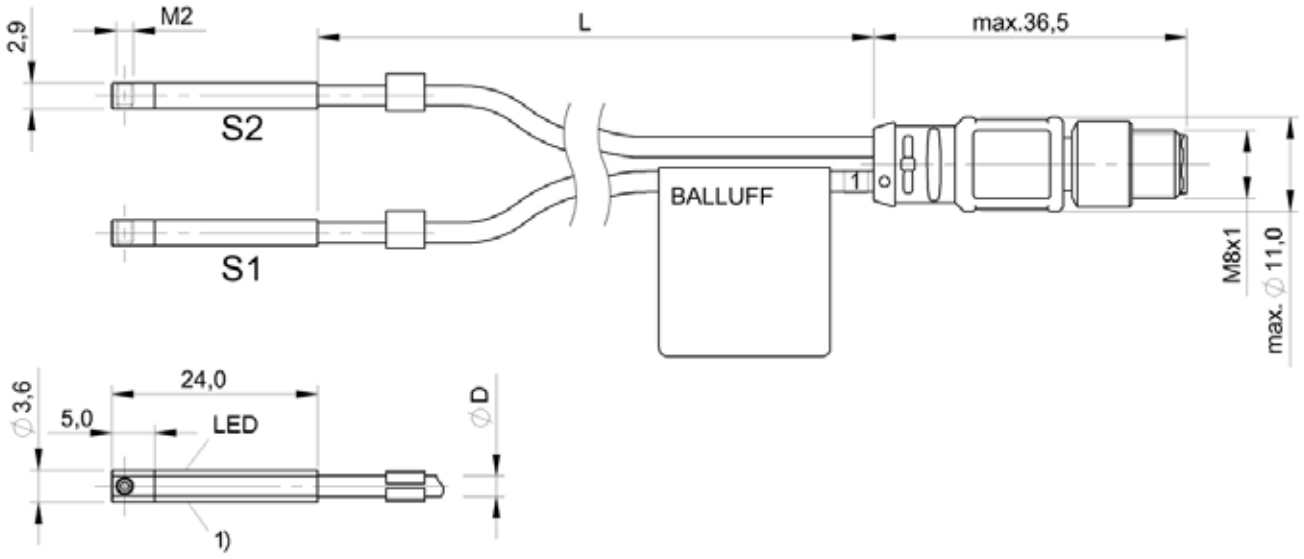
1) Sensing surface, 2) Sensor 1

BMF004F



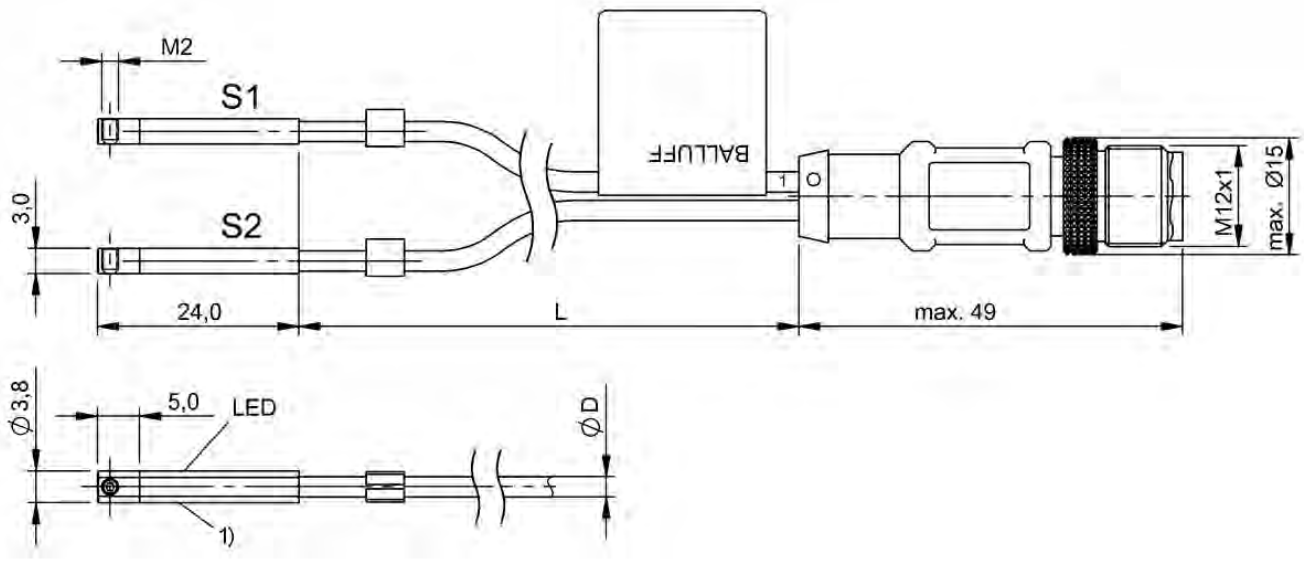
1) Sensing surface

BMF00J2



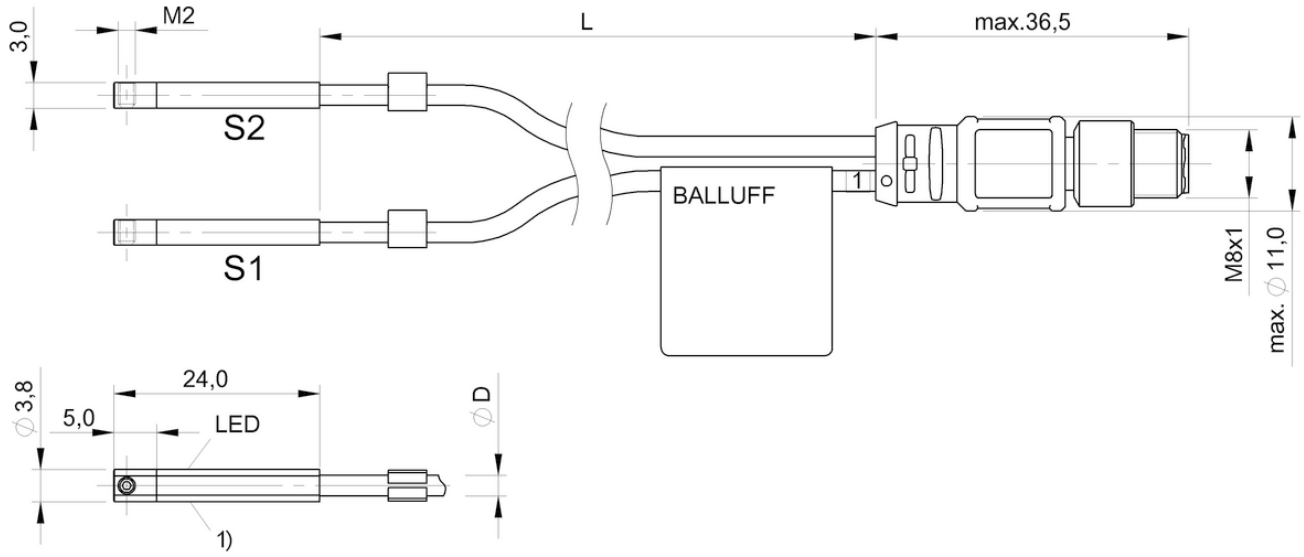
1) Sensing surface

BMF00J1



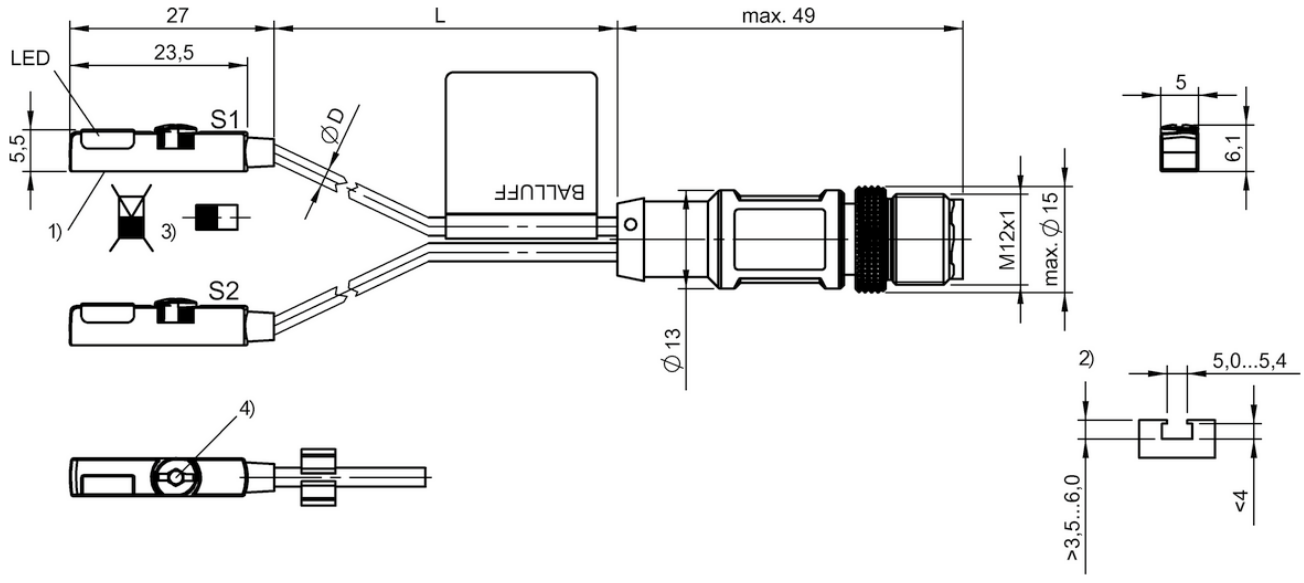
1) Sensing surface

BMF00F9



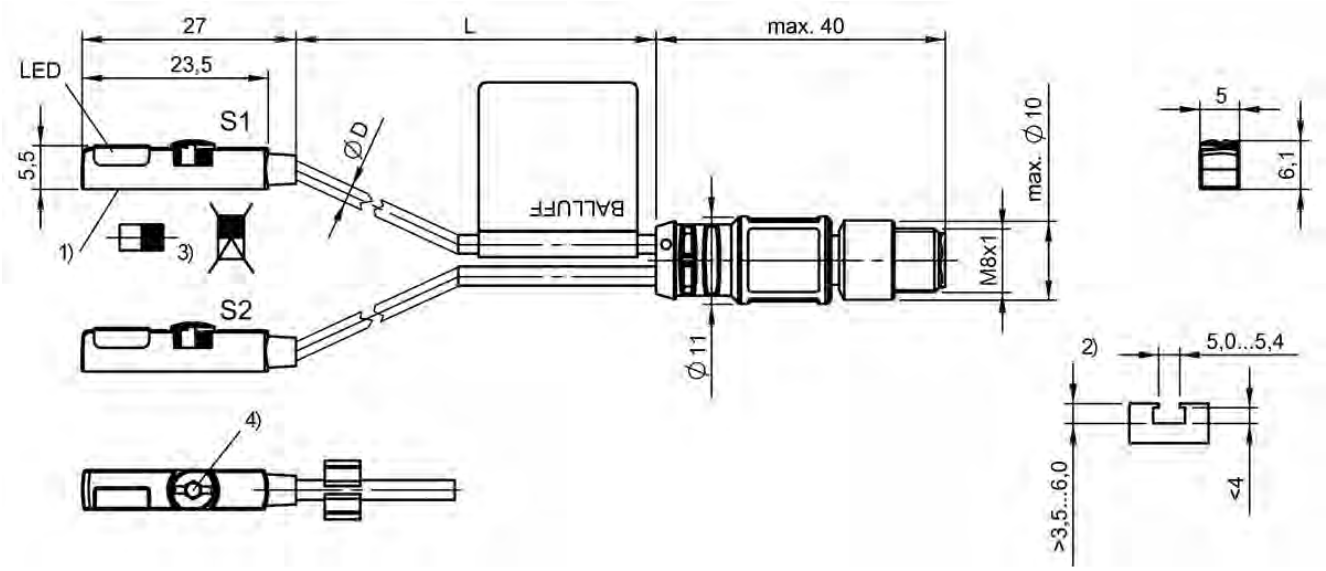
1) Sensing surface

BMF00ET



1) Sensing surface, 2) see remarks, 3) see remarks, 4) see remarks

BMF00C9

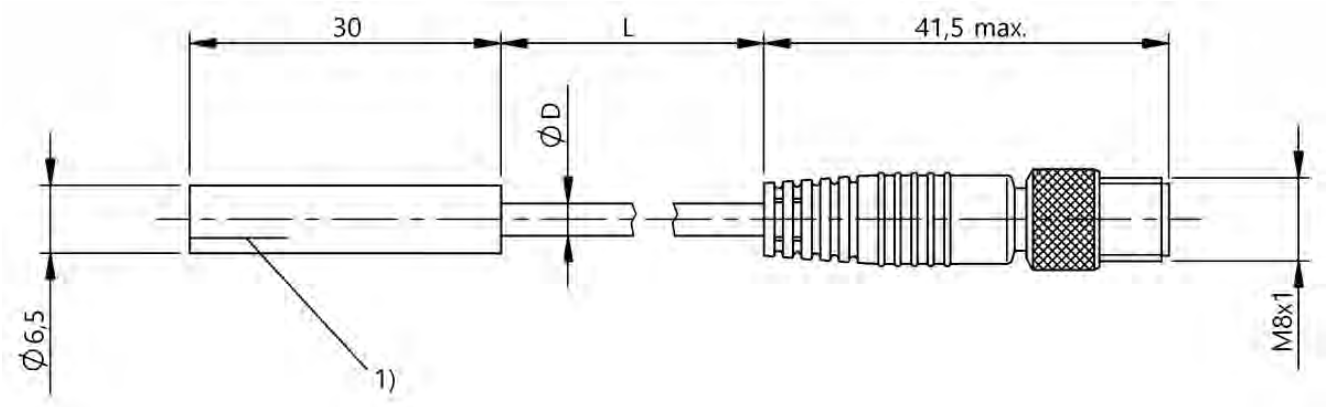


1) Sensing surface, 2) see remarks, 3) see remarks, 4) see remarks

BMF00CA

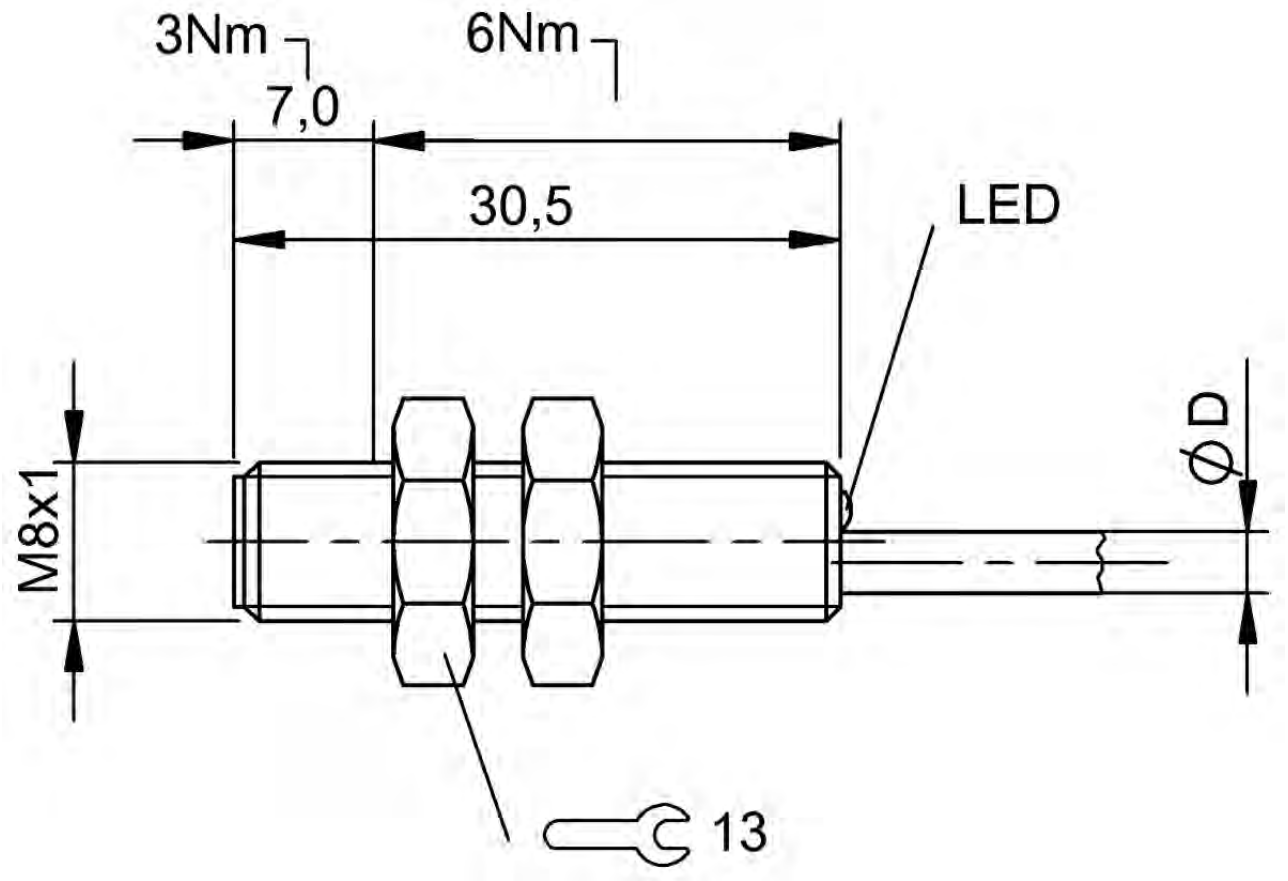
Dimension	
Connection	
Cable	
Application	
Mounting	
Housing material	
Switching output	
Switching frequency	
Operating voltage Ub	
Ambient temperature	
IP rating	
Approval/Conformity	
Productview	

	BMF000L BMF 07M-PS-D-2-SA2-S49-00,3	BMF000P BMF 08M-PS-C-2-KPU-02
	Ø 6.5 x 30 mm	Ø 8 x 30.5 mm
	M8x1-Male, 3-pin	—
	PUR, 0.3 m	PUR, 2 m
	Flexible mounting, Switching distances > 20 mm possible	Flexible mounting, Switching distances > 20 mm possible
	Clamps	Clamps
	Brass, nickel plated	Brass, nickel plated
	PNP normally open (NO)	PNP normally open (NO)
	10000 Hz	10000 Hz
	10...30 VDC	10...30 VDC
	-25...85 °C	-25...85 °C
	IP67	IP67
	cULus, CE, WEEE, EAC	cULus, CE, WEEE, EAC
	Page 678	Page 678



1) see remarks

BMF000L



BMF000P

Many series and form factors for the greatest flexibility.
The classics for metalworking and automotive

MECHANICAL CAM SWITCHES

The cam switches from Balluff are used on machine tools, presses, in flexible manufacturing centers, robots, assembly and conveying devices, and in machine and equipment construction. They serve as command transmitters for automatic controls, for positioning and for end-of-travel switching.

The design principle of the devices, their variety of possible switching actions, as well as consistent quality inspection, guarantee consistently high quality and reliability.

At Balluff you can choose from nine different series and five plunger types each: Chisel, ball, roller, roller bearing and chisel with wiper plate. A large number of connection varieties is also available.

The most important benefits

- Reliable and rugged, even in harsh environments
- Flawless functionality in the event of vibrations, shock loads, temperature swings, aggressive cooling lubricants and heavy chip accumulation
- Maintenance-free, self-lubricating ram guide with plain bearing bush
- High-quality Viton seals
- Protection class IP67
- Also available with inductive switching points

Single position switch	SERIES F 60 COMPLIANT WITH DIN 43693
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M16 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 714

Ordering example:

BNS 819-F_-60-101-__-_ _ _ _

Plunger style
- D Chisel
- K Ball
- R Roller
- L Roller bearing
- E Chisel with wiper plate

Optional Function indicator
- FD 6...60 V AC/DC
- FE 90...250 V AC/DC

Optional Male
- S80R 5-pin, right
- S80L 5-pin, left

Single position switch	SERIES 99 AND 100
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	Cable gland (M12 x 1.5 Series 99, M16 x 1.5 Series 100) or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP 67
Approval/Conformity	CE
Productview and installation	Page 714

Ordering example:

BNS 819-_ _ _-_-1_-_ _-_ _ _

Serie
- 99 Series 99
- 100 Series 100

Plunger style
- D Chisel
- K Ball
- R Roller
- E Chisel with wiper plate

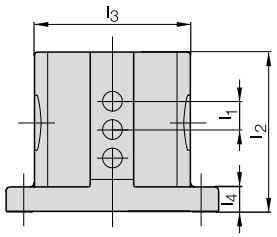
Switch elements
- 0 BSE 69.1
- 1 BSE 70.1
- 2 BSE 73.1
- 3 BSE 74.1

Optional Function indicator
- FC 6...24 V DC

Optional Male
- S80 5-pin
- S4 4-pin no PE conductor

Only with BSE 69.1 or BSE 73.1.

Multiple position switches	**SERIES 100 COMPLIANT WITH DIN 43697**
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M25 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 715



Available sizes

Number of plungers		2	3	4	5	6	8	10	12
Dimension l_2 with	Dimension l_1 = 12 mm	70	80	90	105	120	140	170	200
	Dimension l_3	88	88	88	88	88	80	80	80
	Dimension l_4	14	14	14	14	14	20	20	20
	Dimension l_1 = 16 mm	70	90	105	120	140	170	200	240
	Dimension l_3	88	88	88	88	80	80	80	80
	Dimension l_4	14	14	14	14	20	20	20	20
Number of connectors required for standard wiring	S80 or S4 without FD/FE	1	1	2	2	2			
	S80 or S4 with FD/FE	1	2	2	3	3			
	S90 without FD/FE	1	1	1	1	1	1	1	2
	S90 with FD/FE	1	1	1	1	1	1	2	2

Dimensions in mm

Ordering example:

BNS 819-D__-___-100-10-__-____-_

Number of plungers
- 02 2-way
- 03 3-way
- 04 4-way
- ...

Plunger style
- D Chisel
- K Ball
- R Roller
- L Roller bearing
- E Chisel with wiper plate

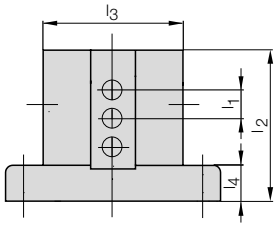
Switch position spacing
- 12 12 mm
- 16 16 mm

Optional Function indicator
- FD 6...60 V AC/DC
- FE 90...250 V AC/DC

Optional Male
- S80R 5-pin, right
- S80L 5-pin, left
- S80S 5-pin, right and left
- S90R 12-pin, right
- S90L 12-pin, left
- S90S 12-pin, right and left
- S4R 4-pin, right (no PE conductor)
- S4L 4-pin, left (no PE conductor)
- S4S 4-pin, right and left (no PE conductor)

Optional Interface
- I IO-Link (only with S4R, S4L)

Multiple position switches	**SERIES 62**
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M20 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 715



Available sizes

Number of plungers		2	3	4	5	6	8	10
Dimension l_2 with	Dimension l_1 = 12 mm	64	72	84	96	112	130	160
	Dimension l_3	88	88	88	88	88	80	80
	Dimension l_4	14	14	14	14	14	20	20
	Dimension l_1 = 16 mm	64	84	96	112	130	160	192
	Dimension l_3	88	88	88	88	80	80	80
	Dimension l_4	14	14	14	14	20	20	20
Number of connectors	S80 or S4 without FD/FE	1	1	2	2	2		
	S80 or S4 with FD/FE	1	2	2	3	3		
	S90 without FD/FE	1	1	1	1	1	1	1
	S90 with FD/FE	1	1	1	1	1	1	2

Dimensions in mm

Ordering example:

BNS 819-D__-___-62-10-__-____-_

Number of plungers
02 2-way
03 3-way
04 4-way
...

Plunger style
D Chisel
K Ball
R Roller
L Roller bearing
E Chisel with wiper plate

Switch position spacing
12 12 mm
16 16 mm

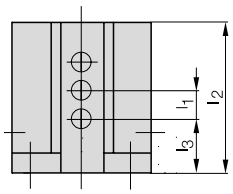
Optional Function indicator
FD 6...60 V AC/DC
FE 90...250 V AC/DC

Optional Male
S80R 5-pin, right
S80L 5-pin, left
S80S 5-pin, right and left
S90R 12-pin, right
S90L 12-pin, left
S90S 12-pin, right and left
S4R 4-pin, right (no PE conductor)
S4L 4-pin, left (no PE conductor)
S4S 4-pin, right and left (no PE conductor)

Optional Interface
I IO-Link (only with S4R, S4L)

Multiple position switches	**SERIES 61**
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M20 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 716

Available sizes



Number of plungers	Plunger-spacing Dimension	Housing B Standard Dimension		Housing B Dimension		Housing C Dimension		Number of connectors S80 or S4 without FD/FE	No. of connectors S80 or S4 with FD/FE	No. of connectors S90 without FD/FE	Number of connectors S90 with FD/FE
	l_1	l_2	l_3	l_2	l_3	l_2	l_3				
2	12	36	12	60	30	48 60	24 30	1	1	1	1
3	12	48	12	60	24	60	24	1	2	1	1
4	12	60	12					2	2	1	1
5	12	72	12					2	3	1	1
6	12	84	12					2	3	1	1
2	16	48	16	60	30	60	30	1	1	1	1
3	16	72	16					1	2	1	1
4	16	84	16					2	2	1	1

Dimensions in mm

Ordering example:

BNS 819-___-____-61-__-10-__-____-__ Optional

Housing style
- B Standard 2 × M20 x 1.5 side
- B 3 × M20 x 1.5 side and in flange
- C 2 × M20 x 1.5 side and cable gland in flange

Number of plungers
- 02 2-way
- 03 3-way
- 04 4-way
- ...

Plunger style
- D Chisel
- K Ball
- R Roller
- L Roller bearing
- E Chisel with wiper plate

Switch position spacing
- 12 12 mm
- 16 16 mm

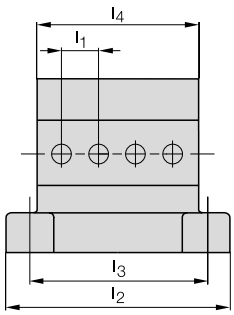
Spacing l_3
- 12 12 mm
- 16 16 mm
- 24 24 mm
- 30 30 mm

Optional Function indicator
- FD 6...60 V AC/DC
- FE 90...250 V AC/DC

Optional Male
- S80R 5-pin, right
- S80L 5-pin, left
- S80S 5-pin, right and left
- S90R 12-pin, right
- S90L 12-pin, left
- S90S 12-pin, right and left
- S4R 4-pin, right (no PE conductor)
- S4L 4-pin, left (no PE conductor)
- S4S 4-pin, right and left (no PE conductor)

Optional Interface
- I IO-Link (only with S4R, S4L)

Multiple position switches	SERIES 72
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M25 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 716



Available sizes

Number of plungers		2	3	4	5	6	8	10
Dimension l_2 with	Dimension l_1 = 12 mm	84	84	100	116	132	164	180
Dimension l_3 with	Dimension l_1 = 12 mm	66	66	82	98	114	146	162
Dimension l_4 with	Dimension l_1 = 12 mm	54	54	68	84	100	132	148
Dimension l_2 with	Dimension l_1 = 16 mm	84	100	116	132	148	180	212
Dimension l_3 with	Dimension l_1 = 16 mm	66	82	98	114	130	162	194
Dimension l_4 with	Dimension l_1 = 16 mm	54	68	84	100	116	148	180
Number of connectors	S80 without FD/FE	1	1	2	2	2		
	S80 with FD/FE	1	2	2	3	3		
	S90 without FD/FE	1	1	1	1	1	1	2
	S90 with FD/FE	1	1	1	1	1	2	2

Dimensions in mm

Ordering example:

BNS 819-B__-___-72-10-__-____

Number of plungers
02 2-way
03 3-way
04 4-way
...

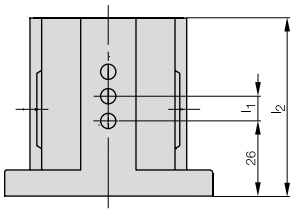
Plunger style
D Chisel
K Ball
R Roller
L Roller bearing
E Chisel with wiper plate

Switch position spacing
12 12 mm
16 16 mm

Optional Function indicator
FD 6...60 V AC/D C
FE 90...250 V AC/DC

Optional Male
S80R 5-pin, right
S80L 5-pin, left
S80S 5-pin, right and left
S90R 12-pin, right
S90L 12-pin, left
S90S 12-pin, right and left

Multiple position switches	SERIES 46
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M16 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 717



Available sizes

Number of plungers		2	3	4	5	6	8	10
Dimension l_2 with	Dimension l_1 = 8 mm	49	59	64	72	80	96	112
	Dimension l_3	54	54	54	54	54	50	50
	Dimension l_1 = 10 mm	49	59	72	80	89	112	129
	Dimension l_3	54	54	54	54	50	50	50
Number of connectors	S80 without FC or S4	1	1	2	2	2		
	S80 with FC or S4	1	2	2	3	3		
	S4 without FC (IO-Link)	1	1	1	1	1	1	1
	S4 with FC (IO-Link)	1	1	1	1	1	1	1

Dimensions in mm

Ordering example:

BNS 819-B__-____-46-1__-__-____-__

Number of plungers
02 2-way
03 3-way
04 4-way
...

Plunger style
D Chisel
K Ball
R Roller
E Chisel with wiper plate

Switch position spacing
08 8 mm
10 10 mm

Switch element
0 BSE 69.1
1 BSE 70.1
2 BSE 73.1
3 BSE 74.1

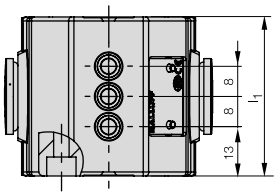
Optional Function indicator
FC 6...24 V DC

Optional Male
S80R 5-pin, right
S80L 5-pin, left
S80S 5-pin, right and left
S4R 4-pin, right (no PE conductor)
S4L 4-pin, left (no PE conductor)
S4S 4-pin, right and left (no PE conductor)

Only with BSE 69.1 or BSE 73.1

Optional Interface
I IO-Link (only with S4R, S4L)

Multiple position switches	SERIES 40
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M16 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 717



Available sizes

Number of plungers		2	3	4	5	6
Dimension l_1		34	42	50	58	66
Number of connectors	S80 without FC or S4	1	1	2	2	2
	S80 with FC or S4	1	2	2		
	S4 without FC (IO-Link)	1	1	1	1	1
	S4 with FC (IO-Link)	1	1	1	1	1

Dimensions in mm

Ordering example:

BNS 819-B_ _-_ _ _-40-1_-_ _-_ _ _ _-_

Number of plungers
02 2-way
03 3-way
04 4-way
...

Plunger style
D Chisel
K Ball
R Roller
E Chisel with wiper plate

Switch position spacing
08 8 mm

Switching element
0 BSE 69.1
1 BSE 70.1
2 BSE 73.1
3 BSE 74.1

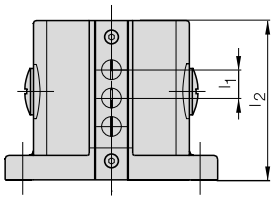
Optional Function indicator
FC 6...24 V DC

Optional Male
S80R 5-pin, right
S80L 5-pin, left
S80S 5-pin, right and left
S4R 4-pin, right (no PE conductor)
S4L 4-pin, left (no PE conductor)
S4S 4-pin, right and left (no PE conductor)

Only with BSE 69.1 or BSE 73.1

Optional Interface
I IO-Link (only with S4R, S4L)

Multiple position switches with quick-change plunger block	**SERIES 100 COMPLIANT WITH DIN 43697**
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M25 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 718



Available sizes

Number of plungers		2	3	4	5	6
Dimension l_2 with	l_1 = 12 mm	70	80	90	105	120
	l_1 = 16 mm	70	90	105	120	
Number of connectors	S80 without FD/FE	1	1	2	2	2
	S80 with FD/FE	1	2	2	3	3
	S90 without FD/FE	1	1	1	1	1
	S90 with FD/FE	1	1	1	1	1
	S4 without FD (IO-Link)	1	1	1	1	1
	S4 with FD (IO-Link)	1	1	1	1	1

Dimensions in mm

Ordering example:

BNS 829-D_ _-_ _ _-100-10-_ _-_ _ _ _

Number of plungers
02 2-way
03 3-way
04 4-way
...

Plunger style
D Chisel
K Ball
R Roller
L Roller bearing

Switch position spacing
12 12 mm
16 16 mm

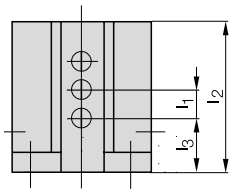
Optional Function indicator
FD 6...60 V AC/DC
FE 90...250 V AC/DC

Optional Male
S80R 5-pin, right
S80L 5-pin, left
S80S 5-pin, right and left
S90R 12-pin, right
S90L 12-pin, left
S90S 12-pin, right and left
S4R-I 4-pin, right only for IO-Link
S4L-I 4-pin, left only for IO-Link

Multiple position switches with quick-change plunger block	**SERIES 61**
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M20 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 718

Available sizes

Number of Plunger	Plunger-spacing Dimension	Housing B Standard Dimension		Housing B Dimension		Housing C Dimension		Number of connectors S80 without FD/FE	No. of connectors S80 with FD/FE	No. of connectors S90 with or without FD/FE	No. of connectors S4 with or without FD (IO-Link)
	l_1	l_2	l_3	l_2	l_3	l_2	l_3				
2	12	36	12	60	30	48 60	24 30	1	1	1	1
3	12	48	12	60	24	60	24	1	2	1	1
4	12	60	12					2	2	1	1
5	12	72	12					2	3	1	1
6	12	84	12					2	3	1	1
2	16	48	16	60	30	60	30	1	1	1	1
3	16	72	16					1	2	1	1
4	16	84	16					2	2	1	1



Dimensions in mm

Ordering example:

BNS 829-____-____-61-__-10-__-____

Housing style
- B Standard 2 × M20 x 1.5 side
- B 3 × M20 x 1.5 side and in flange
- C 2 × M20 x 1.5 side and cable gland in flange

Number of plungers
- 02 2-way
- 03 3-way
- 04 4-way
- ...

Plunger style
- D Chisel
- K Ball
- R Roller
- L Roller bearing

Switch position spacing
- 12 12 mm
- 16 16 mm

Spacing l_3
- 12 12 mm
- 16 16 mm
- 24 24 mm
- 30 30 mm

Optional Function indicator
- FD 6...60 V AC/DC
- FE 90...250 V AC/DC

Optional Male
- S80R 5-pin, right
- S80L 5-pin, left
- S80S 5-pin, right and left
- S90R 12-pin, right
- S90L 12-pin, left
- S90S 12-pin, right and left
- S4R-I 4-pin, right only for IO-Link
- S4L-I 4-pin, left only for IO-Link

Position switches with safety switch positions	SERIES F 60 COMPLIANT WITH DIN 43693
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M16 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 722

Ordering example:

BNS 813-F_-60-18_-__-____

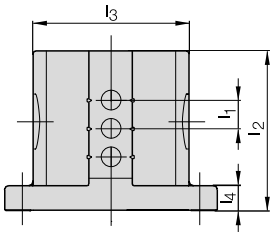
Plunger style
- D Chisel
- K Ball
- R Roller
- L Roller bearing
- E Chisel with wiper plate

Switch elements
- 3 BSE 61 Approach direction parallel to mounting surface
- 5 BSE 61 Approach direction 90° to mounting surface
- 6 BSE 85 Approach direction parallel to mounting surface
- 7 BSE 85 Approach direction 90° to mounting surface

Optional Function indicator
- FD 6...60 V AC/DC (for BSE 61)
- FE 90...250 V AC/DC (for BSE 61)
- FC 6...24 V DC (for BSE 85)

Optional Male
- S80R 5-pin, right
- S80L 5-pin, left

Multiple position limit switches with safety switch positions	**SERIES 100 COMPLIANT WITH DIN 43697**
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M25 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 719



Available sizes

Number of plungers		2	3	4	5	6	8	10	12
Dimension l_2 with	Dimension l_1 = 12 mm	70	80	90	105	120	140	170	200
	Dimension l_3	88	88	88	88	88	80	80	80
	Dimension l_4	14	14	14	14	14	20	20	20
	Dimension l_1 = 16 mm	70	90	105	120	140	170	200	240
	Dimension l_3	88	88	88	88	80	80	80	80
	Dimension l_4	14	14	14	14	20	20	20	20
No. of connectors *	S80 without FD/FE	1	1	2	2	2			
	S80 with FD/FE	1	2	2	3	3			
	S90 without FD/FE	1	1	1	1	1	1	1	2
	S90 with FD/FE	1	1	1	1	1	1	2	2

Dimensions in mm
* No. of connectors with BSE 85 on request.

Ordering example:

BNS 813-D__-____-100-__-__-__-__-____

Number of plungers
02 2-way
03 3-way
04 4x ...

Plunger style
D Chisel
K Ball
R Roller
L Roller bearing
E Chisel with wiper plate

Switch position spacing
12 12 mm
16 16 mm

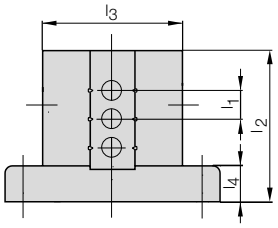
Switch elements
10 remaining switch positions BSE 30.0
12 only BSE 61
20 BSE 85 remaining switch positions BSE 30.0
22 only BSE 85

Safety switching element
Number starting from flange

Optional Function indicator
FD 6...60 V AC/DC (for BSE 30.0 and BSE 61)
FE 90...250 V AC/DC (for BSE 30.0 and BSE 61)
FC 6...24 V DC (only for BSE 85)

Optional Male
S80R 5-pin, right
S80L 5-pin, left
S80S 5-pin, right and left
S90R 12-pin, right
S90L 12-pin, left
S90S 12-pin, right and left

Multiple position limit switches with safety switch positions	SERIES 62
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M20 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 720



Available sizes

Number of plungers		2	3	4	5	6	8	10
Dimension l_2 with	Dimension l_1 = 12 mm	64	72	84	96	112	130	160
	Dimension l_3	88	88	88	88	88	80	80
	Dimension l_4	14	14	14	14	14	20	20
	Dimension l_1 = 16 mm	64	84	96	112	130	160	192
	Dimension l_3	88	88	88	88	80	80	80
	Dimension l_4	14	14	14	14	20	20	20
No. of connectors *	S80 without FD/FE	1	1	2	2	2		
	S80 with FD/FE	1	2	2	3	3		
	S90 without FD/FE	1	1	1	1	1	1	2
	S90 with FD/FE	1	1	1	1	1	2	2

Dimensions in mm
* No. of connectors with BSE 85 on request.

Ordering example:

BNS 813-D__-____-62-__-__-__-__-____

Number of plungers
02 2-way
03 3-way
04 4x ...

Plunger style
D Chisel
K Ball
R Roller
L Roller bearing
E Chisel with wiper plate

Switch position spacing
12 12 mm
16 16 mm

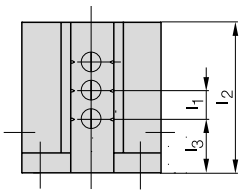
Switch elements
10 BSE 61 remaining switch positions BSE 30.0
12 only BSE 61
20 BSE 85 remaining switch positions BSE 30.0
22 only BSE 85

Safety switch element
Number starting from flange

Optional Function indicator
FD 6...60 V AC/DC (for BSE 30.0 and BSE 61)
FE 90...250 V AC/DC (for BSE 30.0 and BSE 61)
FC 6...24 V DC (only for BSE 85)

Optional Male
S80R 5-pin, right
S80L 5-pin, left
S80S 5-pin, right and left
S90R 12-pin, right
S90L 12-pin, left
S90S 12-pin, right and left

Multiple position limit switches with safety switch positions	**SERIES 61**
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M20 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 720



Available sizes

Number of Plunger	Plunger-spacing Dimension	Housing B Standard Dimension		Housing B Dimension		Housing C Dimension		No. of connectors * S80 without FD/FE	No. of connectors * S80 with FD/FE	No. of connectors * S90 without FD/FE	No. of connectors * S90 with FD/FE
	l_1	l_2	l_3	l_2	l_3	l_2	l_3				
2	12	36	12	60	30	48 60	24 30	1	1	1	1
3	12	48	12	60	24	60	24	1	2	1	1
4	12	60	12					2	2	1	1
5	12	72	12					2	3	1	1
6	12	84	12					2	3	1	1
2	16	48	16	60	30	60	30	1	1	1	1
3	16	72	16					1	2	1	1
4	16	84	16					2	2	1	1

Dimensions in mm
* No. of connectors with BSE 85 on request.

Ordering example:

BNS 813-___-___-61-__-__-__-__-____

Housing style
- B Standard 2× M20 x 1.5 side
- B 3× M20 x 1.5 side and in flange
- C 2× M20 x 1.5 side and cable gland in flange

Number of plungers
- 02 2-way
- 03 3-way
- 04 4x ...

Plunger style
- D Chisel
- K Ball
- R Roller
- L Roller bearing
- E Chisel with wiper plate

Switch position spacing
- 12 12 mm
- 16 16 mm

Spacing l_3
- A 12 mm
- B 16 mm
- C 24 mm
- D 30 mm

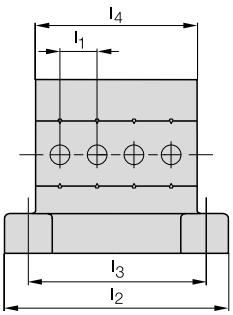
Switch elements
- 10 BSE 61 remaining switch positions BSE 30.0
- 12 only BSE 61
- 20 BSE 85 remaining switch positions BSE 30.0
- 22 only BSE 85

Safety switch element
Number starting from flange

Optional Function indicator
- FD 6...60 V AC/DC (for BSE 30.0 and BSE 61)
- FE 90...250 V AC/DC (for BSE 30.0 and BSE 61)
- FC 6...24 V DC (only for BSE 85)

Optional Male
- S80R 5-pin, right
- S80L 5-pin, left
- S80S 5-pin, right and left
- S90R 12-pin, right
- S90L 12-pin, left
- S90S 12-pin, right and left

Multiple position limit switches with safety switch positions	SERIES 72
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M25 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 721



Available sizes

Number of plungers		2	3	4	5	6	8	10
Dimension l_2 with	l_1 = 12 mm	84	84	100	116	132	164	180
Dimension l_3 with	l_1 = 12 mm	66	66	82	98	114	146	162
Dimension l_4 with	l_1 = 12 mm	54	54	68	84	100	132	148
Dimension l_2 with	l_1 = 16 mm	84	100	116	132	148	180	212
Dimension l_3 with	l_1 = 16 mm	66	82	98	114	130	162	194
Dimension l_4 with	l_1 = 16 mm	54	68	84	100	116	148	180
No. of connectors *	S80 without FD/FE	1	1	2	2	2		
	S80 with FD/FE	1	2	2	3	3		
	S90 without FD/FE	1	1	1	1	1	1	1
	S90 with FD/FE	1	1	1	1	1	1	2

Dimensions in mm
* No. of connectors with BSE 85 on request.

Ordering example:

BNS 813-B__-____-72-__-__-__-__-____

Number of plungers
02 2-way
03 3-way
04 4x ...

Plunger style
D Chisel
K Ball
R Roller
L Roller bearing
E Chisel with wiper plate

Switch position spacing
12 12 mm
16 16 mm

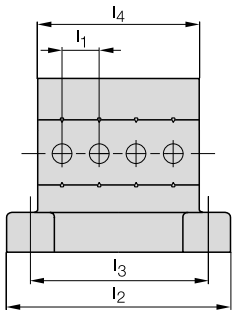
Switch elements
10 BSE 61 remaining switch positions BSE 30.0
12 only BSE 61
20 BSE 85 remaining switch positions BSE 30.0
22 only BSE 85

Safety switch element
Number starting from flange

Optional Function indicator
FD 6...60 V AC/DC (for BSE 30.0 and BSE 61)
FE 90...250 V AC/DC (for BSE 30.0 and BSE 61)
FC 6...24 V DC (only for BSE 85)

Optional Male
S80R 5-pin, right
S80L 5-pin, left
S80S 5-pin, right and left
S90R 12-pin, right
S90L 12-pin, left
S90S 12-pin, right and left

Multiple position limit switches with safety switch positions and quick-change plunger block	**SERIES 100 COMPLIANT WITH DIN 43697**
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M25 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 721



Available sizes

Number of plungers		2	3	4	5	6
Dimension l_2 with	l_1 = 12 mm	70	80	90	105	120
	l_1 = 16 mm	70	90	105	120	
No. of connectors *	S80 without FD/FE	1	1	2	2	2
	S80 with FD/FE	1	2	2	3	3
	S90 without FD/FE	1	1	1	1	1
	S90 with FD/FE	1	1	1	1	1

Dimensions in mm
* No. of connectors with BSE 85 on request.

Ordering example:

BNS 823-D__-____-100-__-__-__-__-____

Number of plungers
02 2-way
...
06 6x ...

Plunger style
D Chisel
K Ball
R Roller
L Roller bearing

Switch position spacing
12 12 mm
16 16 mm

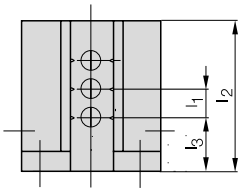
Switch elements
10 BSE 61 remaining switch positions BSE 30.0
12 only BSE 61
20 BSE 85 remaining switch positions BSE 30.0
22 only BSE 85

Safety switch element
Number starting from flange

Optional Function indicator
FD 6...60 V AC/DC (for BSE 30.0 and BSE 61)
FE 90...250 V AC/DC (for BSE 30.0 and BSE 61)
FC 6...24 V DC (only for BSE 85)

Optional Male
S80R 5-pin, right
S80L 5-pin, left
S80S 5-pin, right and left
S90R 12-pin, right
S90L 12-pin, left
S90S 12-pin, right and left

Multiple position limit switches with safety switch positions	**SERIES 61**
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M20 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 722



Available sizes

Number of Plunger	Plunger-spacing Dimension	Housing B Standard Dimension		Housing B Dimension		Housing C Dimension		No. of connectors * S80 without FD/FE	No. of connectors * S80 with FD/FE	No. of connectors * S90 without FD/FE	No. of connectors * S90 with FD/FE
	l_1	l_2	l_3	l_2	l_3	l_2	l_3				
2	12	36	12	60	30	48 60	24 30	1	1	1	1
3	12	48	12	60	24	60	24	1	2	1	1
4	12	60	12					2	2	1	1
5	12	72	12					2	3	1	1
6	12	84	12					2	3	1	1
2	16	48	16	60	30	60	30	1	1	1	1
3	16	72	16					1	2	1	1
4	16	84	16					2	2	1	1

Dimensions in mm
* No. of connectors with BSE 85 on request.

Ordering example:

BNS 823-____-____-61-__-___-___-_____

Housing style
B Standard 2× M20 x 1.5 side
B 3× M20 x 1.5 side and in flange
C 2× M20 x 1.5 side and cable gland in flange

Number of plungers
02 2-way
03 3-way
04 4x ...

Plunger style
D Chisel
K Ball
R Roller
L Roller bearing

Switch position spacing
12 12 mm
16 16 mm

Spacing l_3
A 12 mm
B 16 mm
C 24 mm
D 30 mm

Switch elements
10 BSE 61 remaining switch positions BSE 30.0
12 only BSE 61
20 BSE 85 remaining switch positions BSE 30.0
22 only BSE 85

Safety switch element
Number starting from flange

Optional Function indicator
FD 6...60 V AC/DC (for BSE 30.0 and BSE 61)
FE 90...250 V AC/DC (for BSE 30.0 and BSE 61)
FC 6...24 V DC (only for BSE 85)

Optional Male
S80R 5-pin, right
S80L 5-pin, left
S80S 5-pin, right and left
S90R 12-pin, right
S90L 12-pin, left
S90S 12-pin, right and left

Position switches with positive opening	**SERIES 99 AND 100**
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	Cable gland (M12 x 1.5 Series 99, M16 × 1.5 Series 100) or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 722

Ordering example:

BNS 813-_ _ _-_-_ _-_ _-_ _ _

Model
99 Series 99
100 Series 100

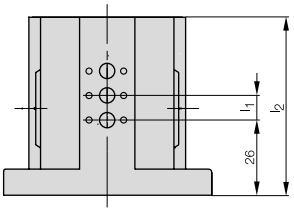
Plunger style
D Chisel
K Ball
R Roller
E Chisel with wiper plate

Switch elements
68 BSE 86
Approach direction 90° to mounting surface
69 BSE 86
Approach direction parallel to mounting surface

Optional Function indicator
FC 6...24 V DC

Optional Male
S80 5-pin

Multiple position limit switches with positive opening	**SERIES 46**
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M16 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 723



Available sizes

Number of plungers		2	3	4	5	6	8	10
Dimension l_2 with	Dimension l_1 = 8 mm	49	59	64	72	80	96	112
	Dimension l_3	54	54	54	54	54	50	50
	Dimension l_1 = 10 mm	49	59	72	80	89	112	129
	Dimension l_3	54	54	54	54	50	50	50
Number of connectors	S80 without FC	1	1	2	2	2	3	3
	S80 with FC	1	2	2	3	3		

Dimensions in mm
Size 12-x with 8 mm spacing on request.

Ordering example:

BNS 813-B__-____-46-__-__-__-__-____

Number of plungers
02 2-way
03 3-way
04 4x ...

Plunger style
D Chisel
K Ball
R Roller
E Chisel with wiper plate

Switch position spacing
08 8 mm
10 10 mm

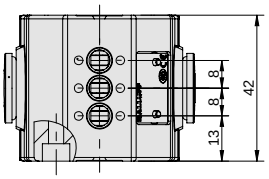
Switch elements
60 BSE 86, remaining switch positions BSE 69.1
62 BSE 86, remaining switch positions BSE 73.1
69 all BSE 86

Safety switch element
Number starting from flange

Optional Function indicator
FC 6...24 V DC

Optional Male
S80R 5-pin, right
S80L 5-pin, left
S80S 5-pin, right and left

Position switch with positive opening	SERIES 40
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M16 x 1.5 for cable gland or connector
Ambient temperature	–5...+85 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 723



Available sizes

Number of plungers	2	3	4	5	6
Dimension l_1	34	42	50	58	66
S80 without FC	1	1	2	2	2
S80 with FC	1	2	2		

Dimensions in mm

Ordering example:

BNS 813-B__-___-40-__-__-__-___-____

Number of plungers
02 2-way
03 3-way
04 4x ...

Plunger style
D Chisel
K Ball
R Roller
E Chisel with wiper plate

Switch position spacing
08 8 mm

Switch elements
60 BSE 86, remaining switch positions BSE 69.1
62 BSE 86, remaining switch positions BSE 73.1
69 all BSE 86

Safety switch element
Number starting from flange

Optional Function indicator
FC 6...24 V DC

Optional Male
S80R 5-pin, right
S80L 5-pin, left
S80S 5-pin, right and left

High-temperature position switches	SERIES 99 AND 100
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M12 x 1.5 or M16 x 1.5 for cable gland
Ambient temperature	–5...+150 °C (–5...+180 °C 10 h/day)
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 724

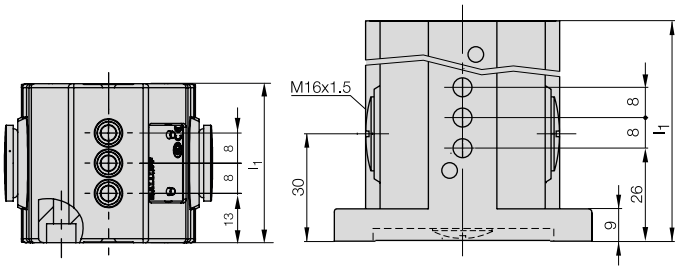
Ordering example:

BNS 819-___-_-15

Model
99 Series 99
100 Series 100

Plunger style
D Chisel
K Ball
R Roller

High-temperature position switches	SERIES 46 AND 40
Plunger material	Stainless steel, contact surfaces induction-hardened
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M12 x 1.5 or M16 x 1.5 for cable gland
Ambient temperature	–5...+150 °C (–5...+180 °C 10 h/day)
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 724



Available sizes

Number of plungers	2	3
Dimension l_1	49	59

Dimensions in mm

Ordering example:

BNS 819-B__-_ 08- __-15

Number of plungers
02 2-way
03 3-way

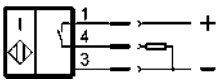
Plunger style
D Chisel
K Ball
R Roller

Model
40
46

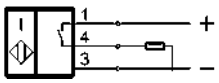
PNP NO	**BES01FE** BES 516-346-H2-Y-S4	**BES01FF** BES 516-346-H2-Y-S49	
PNP NC	**BES01EW** BES 516-341-H2-Y-S4		
PNP changeover			
NPN NO			
NPN NC			
Dimension	54 x 22 x 48 mm	54 x 22 x 48 mm	
Design	block style	block style	
Installation	Flush	Flush	
Range	5 mm	5 mm	
Switching frequency	500 Hz	500 Hz	
Housing material	Aluminum	Aluminum	
Sensing surface, material	PA 12	PA 12	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Ambient temperature	–25...+70 °C	–25...+70 °C	
Degree of protection	IP67	IP67	
Approval/Conformity	CE, EAC	CE, EAC	
Productview and installation	Page 725	Page 725	

Wiring diagrams

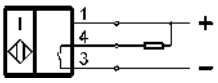
PNP
NO



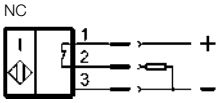
NO



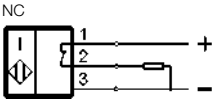
NPN
NO



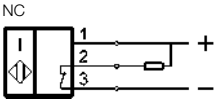
NC



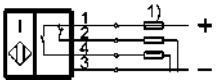
NC



NC

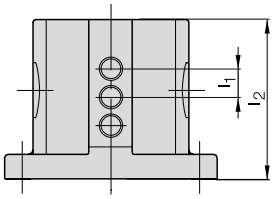


Complementary



	BES01FC BES 516-346-H2-Y		
	BES01EU BES 516-341-H2-Y		
		BES017M BES 516-161-H3-L	
	BES01ZK BES 516-344-H2-Y		
	BES01ET BES 516-340-H2-Y		
	54 x 22 x 48 mm	74 x 28 x 60.5 mm	
	block style	block style	
	Flush	Flush	
	5 mm	7 mm	
	500 Hz	300 Hz	
	Aluminum	Aluminum	
	PA 12	PA 12	
	Screw terminal	Screw terminal	
	10...30 VDC	10...30 VDC	
	–25...+70 °C	–25...+70 °C	
	IP67	IP67	
	CE, EAC	CE, EAC	
	Page 725	Page 725	

Inductive multiple position switches	**SERIES 602-11 COMPLIANT WITH DIN 43697**
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M25 x 1.5 for cable gland or connector
Ambient temperature	–25...+70 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 725



Available sizes

Number of plungers		2	3	4	5	6	8	10	12
Dimension l_2 with	Dimension l_1= 12 mm	70	80	90	105	120	140	170	200
	Dimension l_4	88	88	88	88	88	80	80	80
	Dimension l_5	14	14	14	14	14	20	20	20
	Dimension l_1= 16 mm	70	90	105	120	140	170	200	240
	Dimension l_4	88	88	88	88	80	80	80	80
	Dimension l_5l	14	14	14	14	20	20	20	20
Number of connectors	S80	on request							
	S90	on request							
Dimension l_3	4 mm for inductive switch elements with sensing head 10 mm								
	2 mm for inductive switch elements with sensing head 15.5 mm								

Dimensions in mm

Ordering example:

BNS 816-B_ _-_ _ _ _-_ _-602-11-_ _ _ _

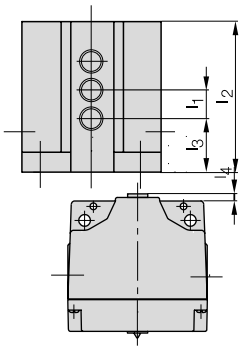
Number of plungers
02 2-way
03 3-way
04 4x ...

Code for switch elements
(see table Seite 35)

Switch position spacing
12 12 mm
16 16 mm

Optional Male
S80R 5-pin, right
S80L 5-pin, left
S80S 5-pin, right and left
S90R 12-pin, right
S90L 12-pin, left
S90S 12-pin, right and left

Inductive multiple position switches	**BNS 816-B_ _-_ _ _-_ _-610/611/612/613-11-_ _ _**
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M20 x 1.5 for cable gland or connector
Ambient temperature	–25...+70 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 726



Available sizes

Number of switch-positions	Number of Male S80/S90	Switch-position-spacing Dimen-sion	Series 610 Housing B Standard Dimension		Series 611 Housing B Standard Dimension		Series 612 Housing B Dimension		Series 612 Housing C Dimension		Series 613 Housing B Housing C Dimension	
		l_1	l_2	l_3	l_2	l_3	l_2	l_3	l_2	l_3	l_2	l_3
2	on request	12	36	12					48	24	60	30
3		12	48	12			60	24	60	24		
4		12	60	12								
5		12	72	12								
6		12	84	12								
2		16			48	16					60	30
3		16			72	16						
4		16			84	16						

Dimensions in mm
Dimension l_4 = 4 mm for inductive switch elements with sensing head Ø 10 mm
Dimension l_4 = 2 mm for inductive switch elements with sensing head Ø15.5 mm

Ordering example:

BNS 816- _ _ _ **-** _ _ _ **-** _ _ **-** _ _ **-11-** _ _ _ _

Housing style
B Standard 2 × M20 x 1.5 side
B 3 × M20 x 1.5 side and in flange
C 2 × M20 x 1.5 side and cable gland in flange

Number of plungers
02 2-way
03 3-way
04 4-way

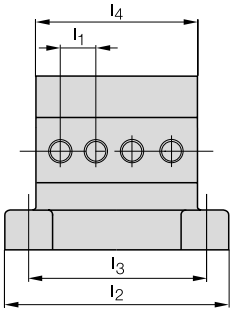
Code for switch elements
(see table Seite 35)

Switch position spacing
12 12 mm
16 16 mm

Spacing l_3
610 12 mm
611 16 mm
612 24 mm
613 30 mm

Optional Male
S80R 5-pin, right
S80L 5-pin, left
S80S 5-pin, right and left
S90R 12-pin, right
S90L 12-pin, left
S90S 12-pin, right and left

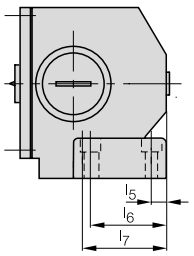
Inductive multiple position switches	**SERIES 605-11**
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M25 x 1.5 for cable gland or connector
Ambient temperature	–25...+70 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 726



Available sizes

Number of switching positions		2	3	4	5	6	7	8	10	12
Dimension l_2 with	Dimension l_1 = 12 mm	84	84	100	116	132	148	164	180	
Dimension l_3 with	Dimension l_1 = 12 mm	66	66	82	98	114	130	146	162	
Dimension l_4 with	Dimension l_1 = 12 mm	54	54	68	84	100	164	132	148	
Dimension l_2 with	Dimension l_1 = 16 mm	84	100	116	132	148	146	180	212	224
Dimension l_3 with	Dimension l_1 = 16 mm	66	82	98	114	130	132	162	194	226
Dimension l_4 with	Dimension l_1 = 16 mm	54	68	84	100	116		148	180	212
Number of connectors	S80	on request								
	S90	on request								

Dimensions in mm



Dimensions when using inductive switch elements with sensing head Ø 10 mm	
Dimension l_2	10 mm
Dimension l_3	40 mm
Dimension l_4	43.5 mm

Dimensions when using inductive switch elements with sensing head Ø 15.5 mm	
Dimension l_2	8 mm
Dimension l_3	38 mm
Dimension l_4	41.5 mm

Dimensions in mm

Ordering example:

BNS 816-B__-_____-___-605-11-____

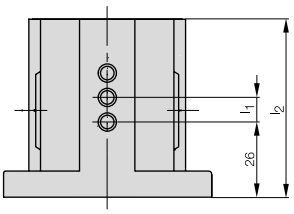
Number of plungers
02 2-way
03 3-way
04 4x ...

Code for switch elements
(see table 7215)

Switch position spacing
12 12 mm
16 16 mm

Optional Male
S80R 5-pin, right
S80L 5-pin, left
S80S 5-pin, right and left
S90R 12-pin, right
S90L 12-pin, left
S90S 12-pin, right and left

Inductive multiple position switches	SERIES 603-11
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M16 x 1.5 for cable gland or connector
Ambient temperature	–25...+70 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 727



Available sizes

Number of switching positions		2	3	4	5	6	8	10
Dimension l_2 with	Dimension l_1 = 8 mm	49	59	64	72	80	96	112
	Dimension l_3 =	54	54	54	54	54	50	50
	Dimension l_1 = 10 mm	49	59	72	80	89	112	129
	Dimension l_3 =	54	54	54	54	50	50	50
Number of connectors	S80 on request							

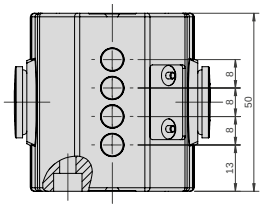
Dimensions in mm
Size 12-x with 8 mm spacing on request.

Ordering example:

BNS 816-B__-____-__-603-11-____

Number of plungers	Code for switch elements	Switch position spacing	Optional Male
02 2-way	TOB PNP, NO	08 8 mm	S80R 5-pin, right
03 3-way	TNB NPN, NO	10 16 mm	S80L 5-pin, left
04 4x ...			S80S 5-pin, right and left

Inductive multiple position switches	SERIES 650-11
Housing material	Cast aluminum, corrosion-resistant, anodized finish
Connection type	M16 x 1.5 for cable gland or connector
Ambient temperature	–25...+70 °C
Degree of protection as per IEC 60529	IP67
Approval/Conformity	CE
Productview and installation	Page 727



Available sizes

Number of switching positions	2	3	4	5	6
Dimension l_1	34	42	50	58	66
No. of connectors S80 on request					

Dimensions in mm

Ordering example:

BNS 816-B__-____-__-650-11-____

Number of plungers
02 2-way
03 3-way
04 4x ...

Code for switch elements
TOB PNP, NO
TNB NPN, NO

Switch position spacing
08 8 mm

Optional Male
S80R 5-pin, right
S80L 5-pin, left
S80S 5-pin, right and left

Inductive switch elements with sensing head Ø 10 mm, for use with switch position spacing 12 and 16 mm

Code	Order code for spare switch elements	Electrical version	Rated-switching distance s_n	Assured switching distance s_a
PA	BES 517-110	PNP, changeover, 10...60 V DC, short-circuit protected	2 mm	0...1.6 mm
NA	BES 517-108	NPN, changeover, 10...60 V DC, short-circuit protected	2 mm	0...1.6 mm
WS	BES 517-410	NO, up to 250 V AC	2 mm	0...1.6 mm
WO	BES 517-421	NC, up to 250 V AC	2 mm	0...1.6 mm
KHG	BES 517-560-H	2-wire, NO, 10...55 V DC, short-circuit protected	2 mm	0...1.6 mm
KHH	BES 517-561-H	2-wire, NC, 10...55 V DC, short-circuit protected	2 mm	0...1.6 mm
NG	BES 516-314-N	2-wire, NAMUR, 7.7...9 V DC	2 mm	0...1.6 mm

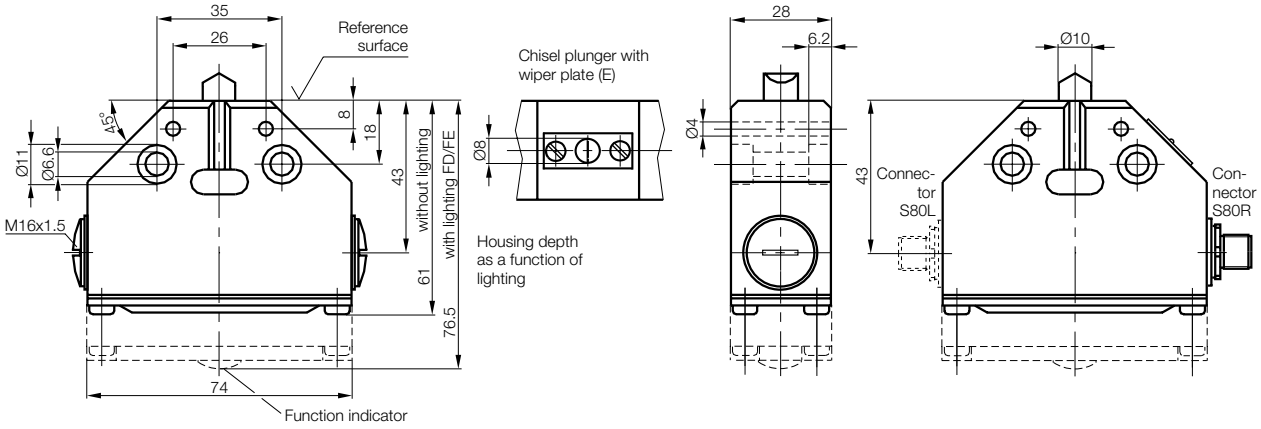
Inductive switch elements with sensing head Ø 15.5 mm, for use with switch position spacing 16 mm

Code	Order code for spare switch elements	Electrical version	Rated-switching distance s_n	Assured switching distance s_a
THA	BES 517-142-Y	PNP, changeover, 10...30 V DC, short-circuit protected	5 mm	0...4 mm
EJA	BES 517-463	NO, up to 250 V AC	5 mm	0...4 mm
AAA	BES 517-464	NC, up to 250 V AC	5 mm	0...4 mm

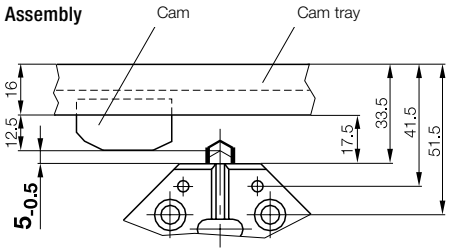
Hybrid switch element with mechanical plunger and inductive processing

Code	Order code for spare switch elements	Electrical version	Rated-switching distance s_n	Assured switching distance s_a
DH	BES 516-110-D	PNP, changeover, 10...30 V DC	More information on request!	

Position switch Series F60 compliant with DIN 43693

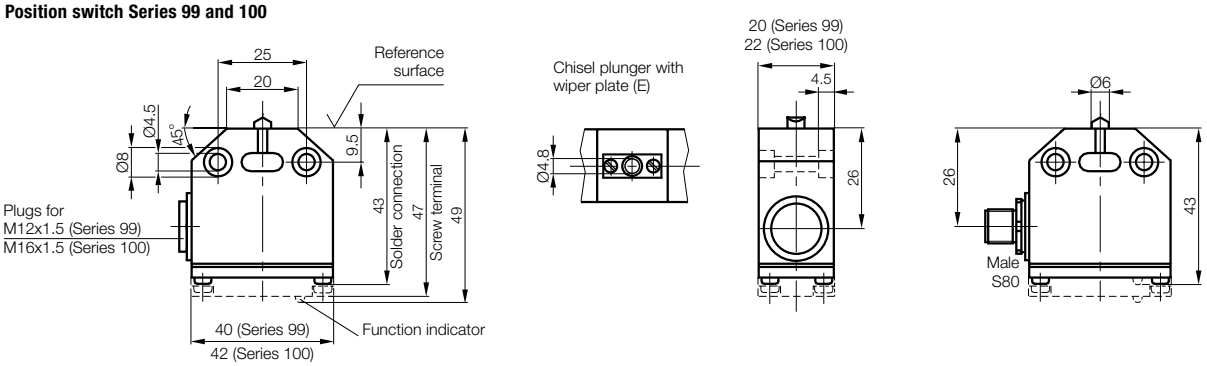


Assembly

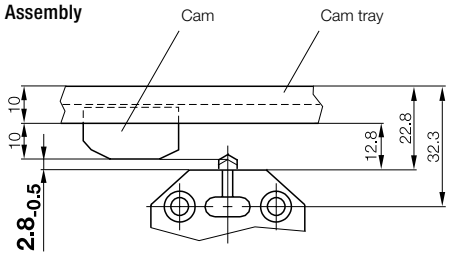


Attention!
To assure
the switching function
Dimension 5-0.5 especially
must be maintained.

Position switch Series 99 and 100

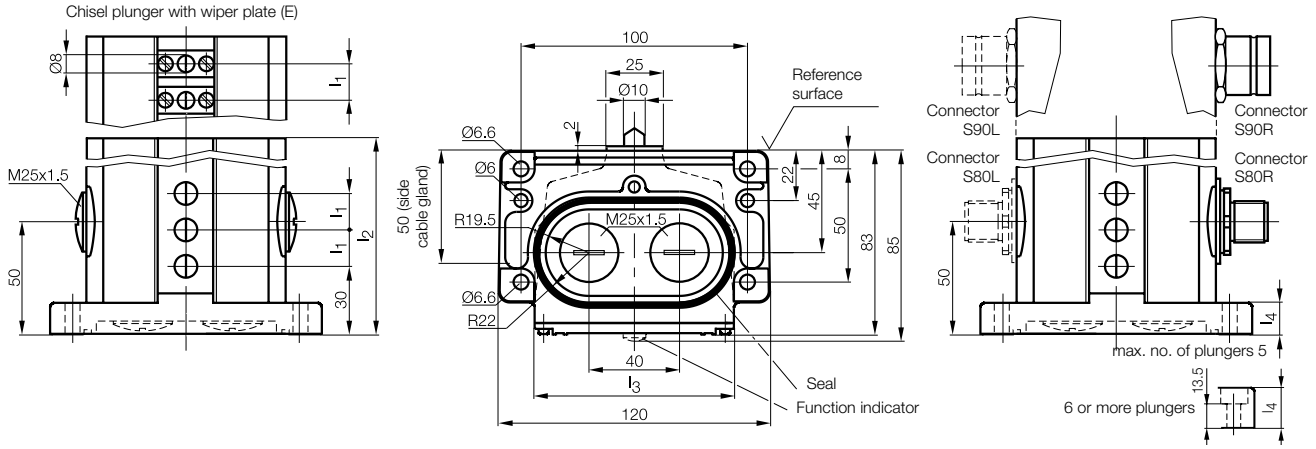


Assembly

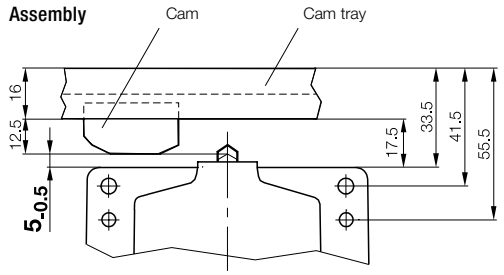


Attention!
To assure the switching function
dimension $2.8_{-0.5}$ especially must be
maintained.

Multiple position switches 100 compliant with DIN 43697

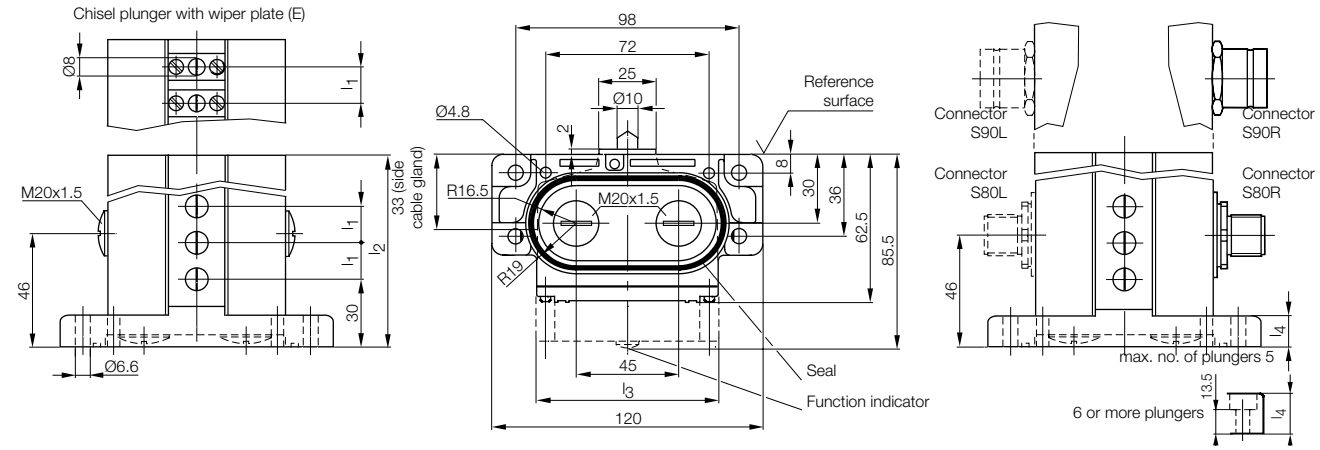


Assembly

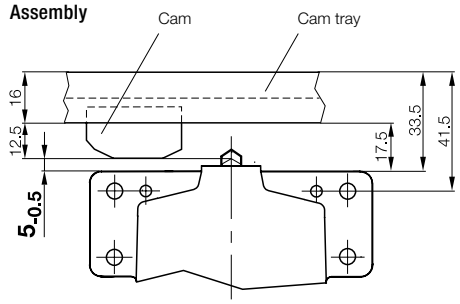


Attention!
To assure the switching function dimension $5_{-0.5}$ especially must be maintained.

Series 62 multiple position switch

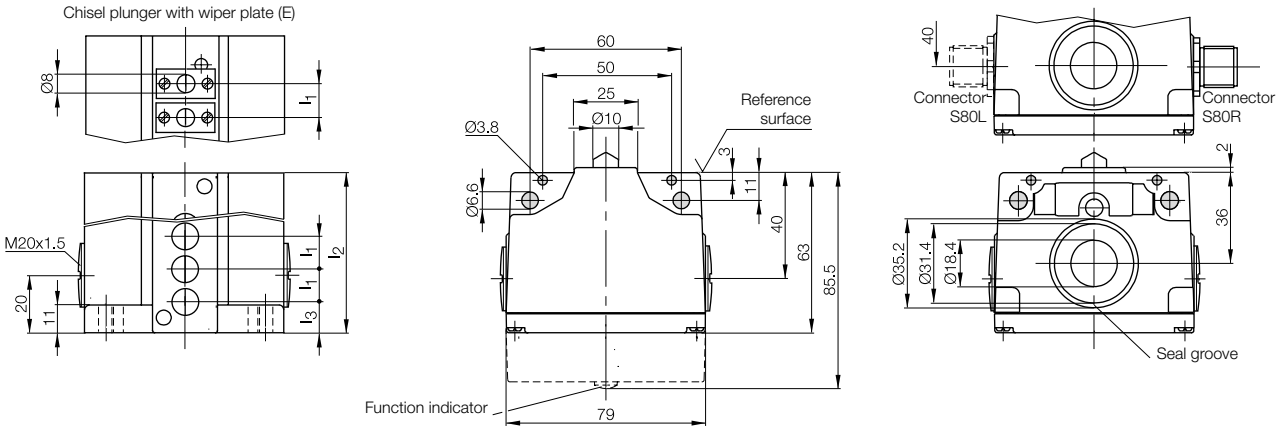


Assembly

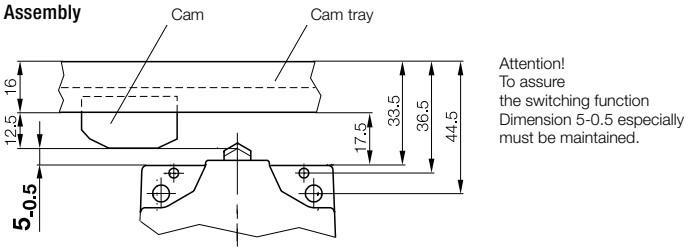


Attention!
To assure
the switching function
Dimension 5-0.5 especially
must be maintained.

Series 61 multiple position switch

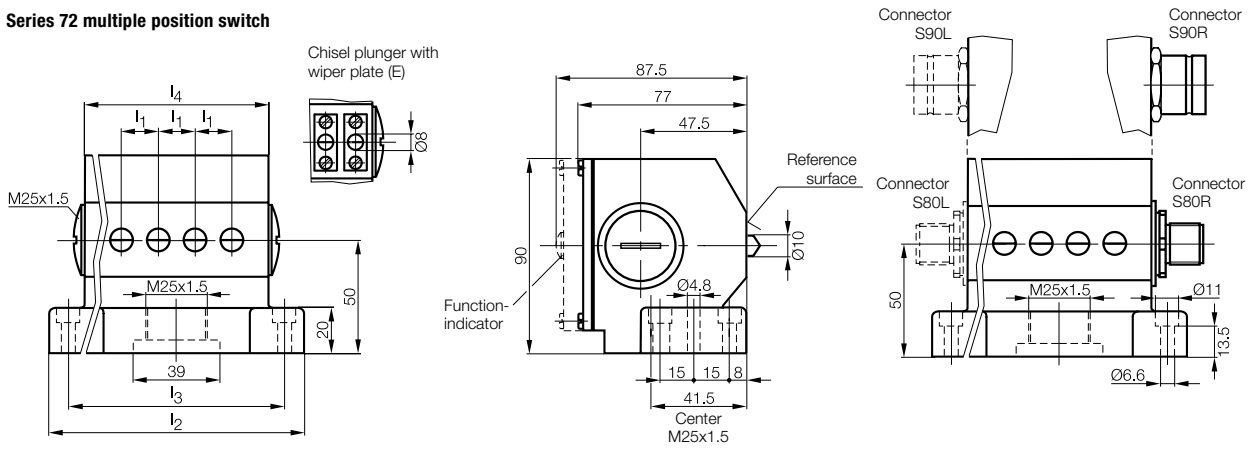


Assembly

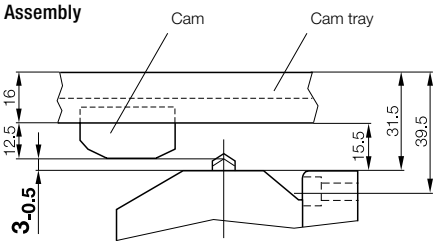


Attention!
To assure
the switching function
Dimension 5-0.5 especially
must be maintained.

Series 72 multiple position switch

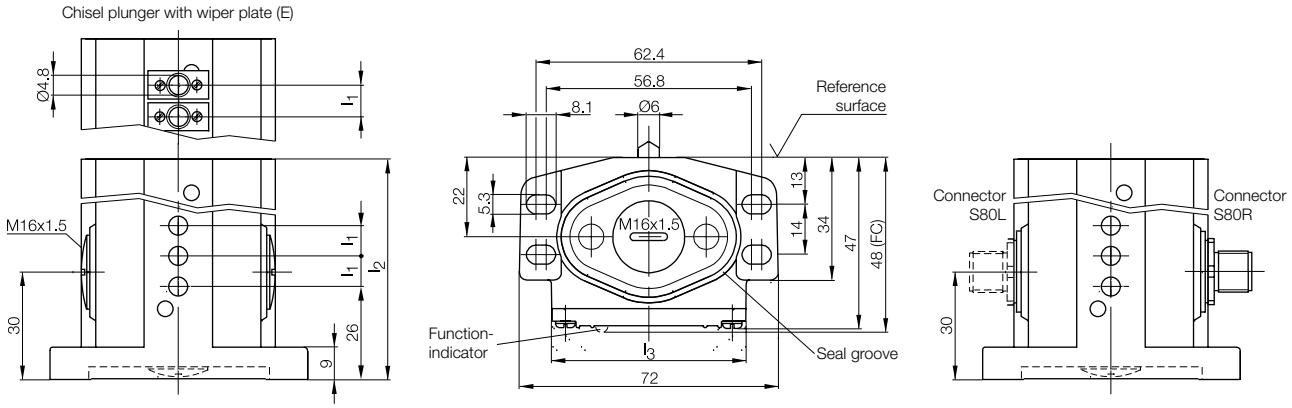


Assembly

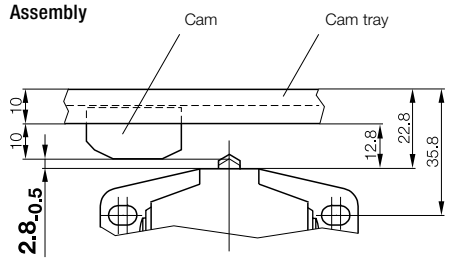


Attention!
To assure
the switching function
dimension 3-0.5 especially must be
maintained.

Series 46 multiple position switch



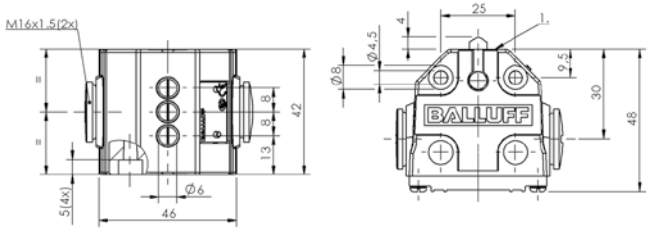
Assembly



Attention!
To assure
the switching function
dimension 2.8-0.5 especially
must be maintained.

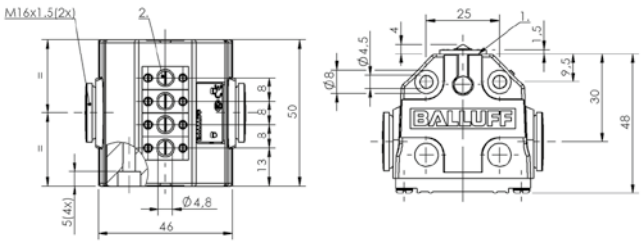
Series 40 multiple position switch

Standard:



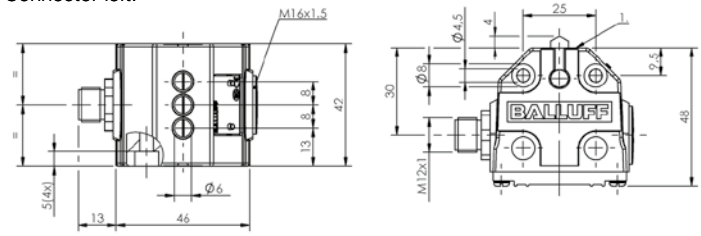
1) Reference edge

Chisel plunger with wiper plate:



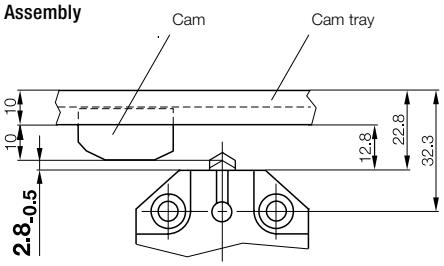
1) Reference edge
2) Anti-crystallization plunger

Connector left:



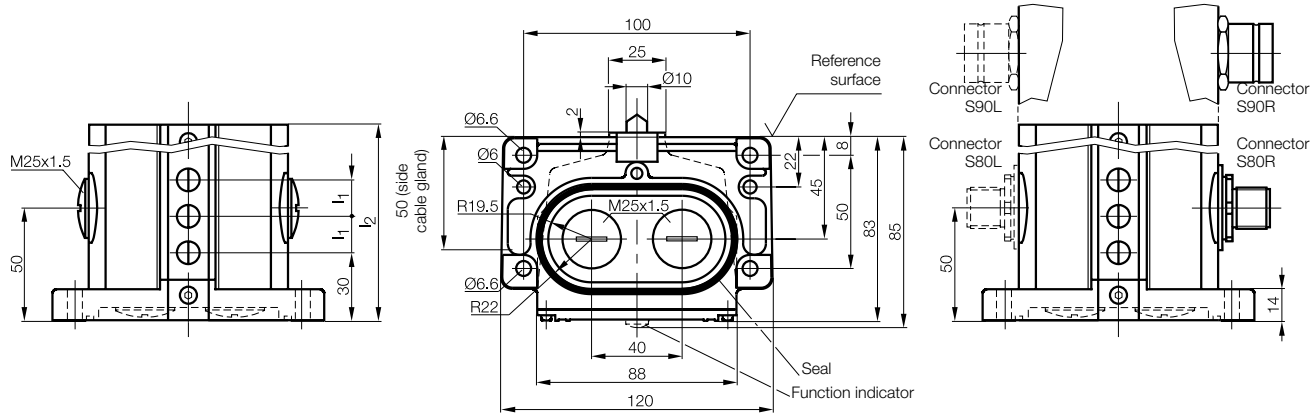
1) Reference edge

Assembly

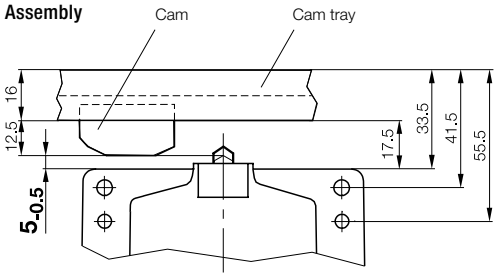


Attention!
To assure the switching function
dimension $2.8_{-0.5}$
especially must be maintained.

Multiple position switches with quick-change plunger block Series 100 compliant with DIN 43697

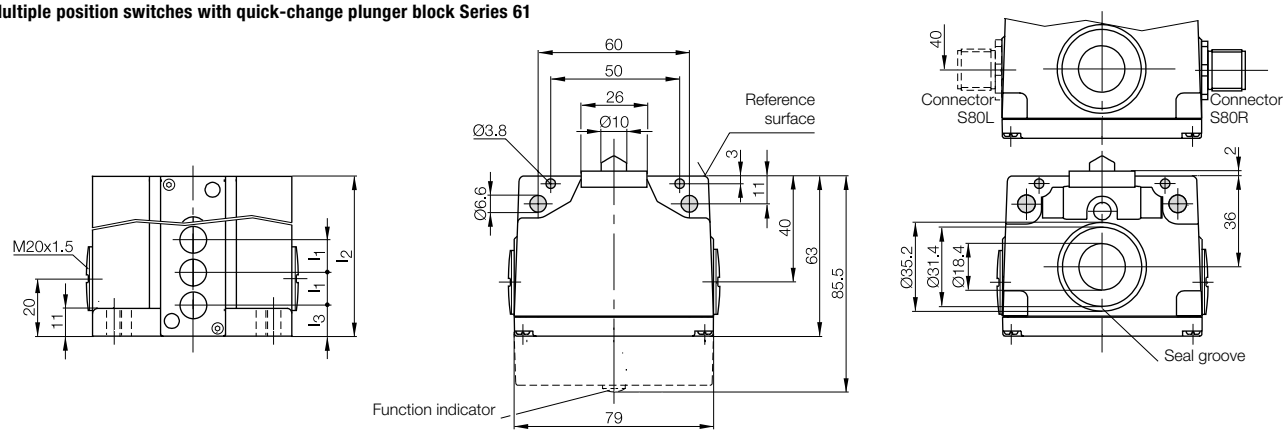


Assembly

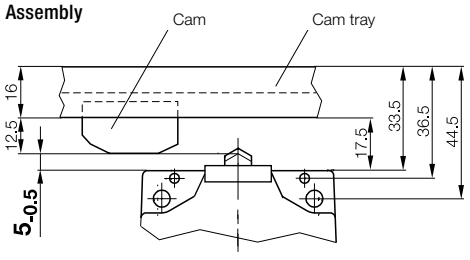


Attention!
To assure the switching function dimension $5_{-0.5}$ especially must be maintained.

Multiple position switches with quick-change plunger block Series 61

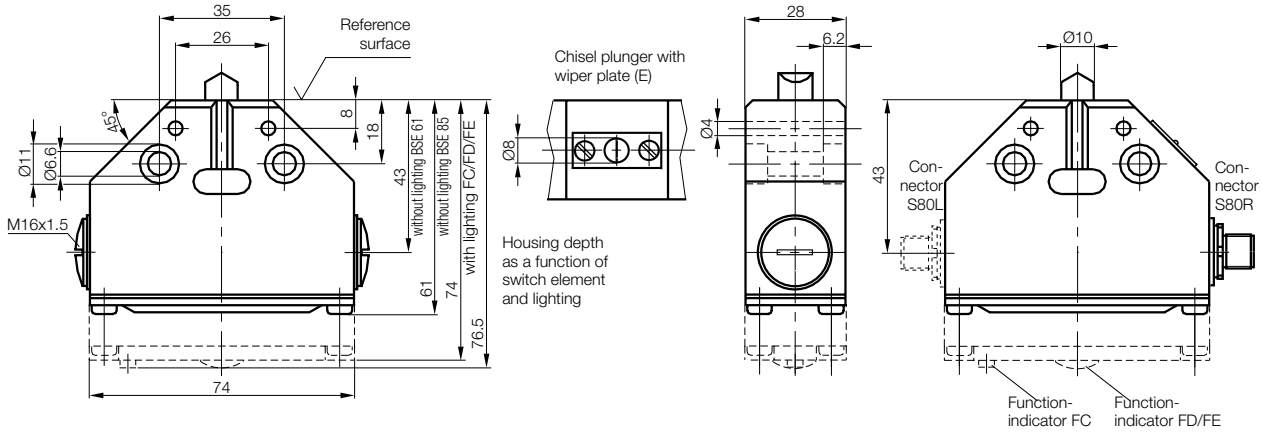


Assembly

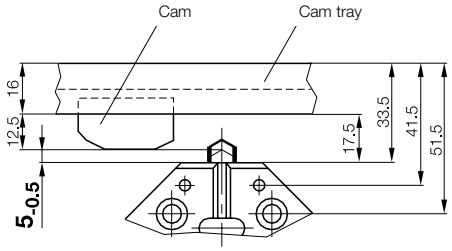


Attention!
To assure the switching function dimension $5_{-0.5}$ especially must be maintained.

Position switch with safety switch positions Series F60 DIN 43693

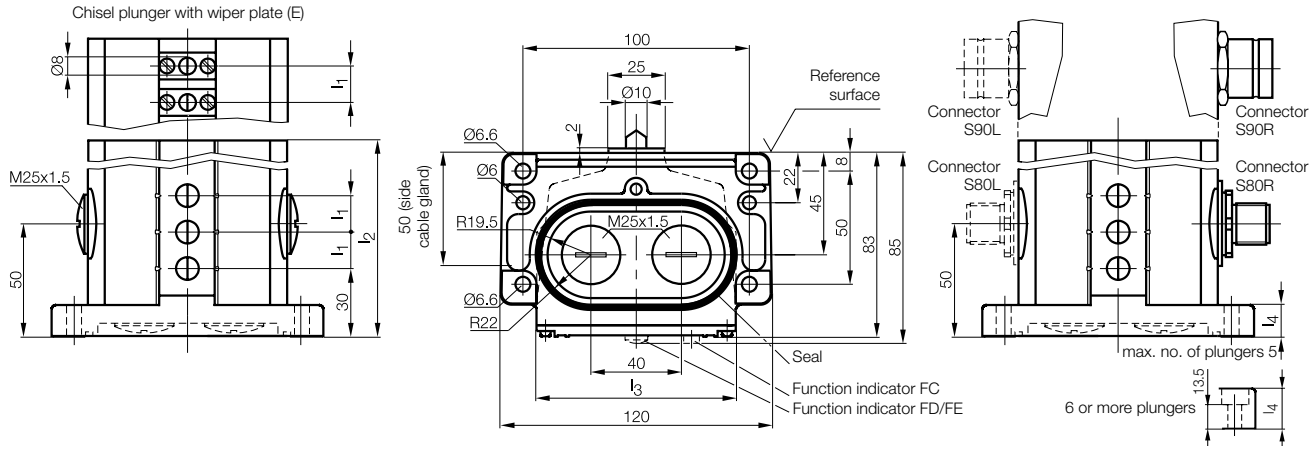


Assembly

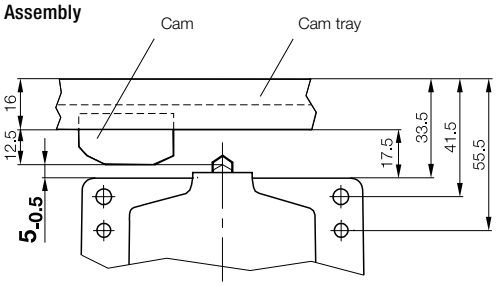


Attention!
To assure the switching function dimension $5_{-0.5}$ especially must be maintained.

Multiple position limit switches with safety switch positions Series 100 DIN 43697

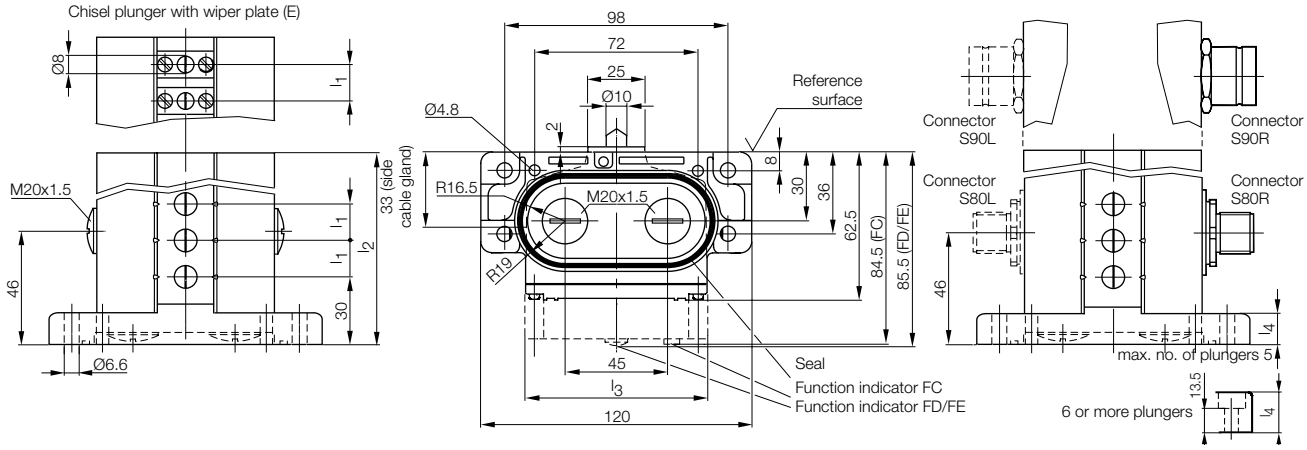


Assembly

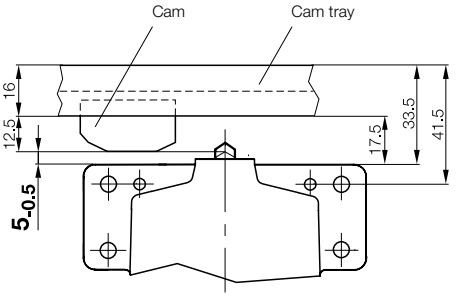


Attention!
To assure the switching function dimension $5_{-0.5}$ especially must be maintained.

Multiple position limit switches with safety switch positions Series 62

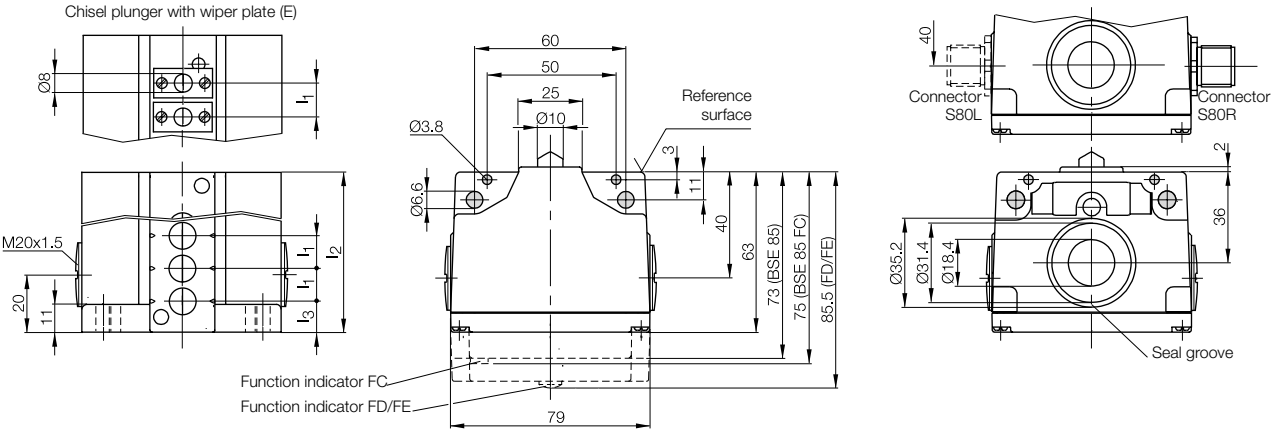


Assembly

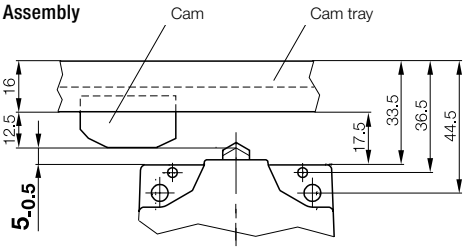


Attention!
To assure the switching function dimension $5_{-0.5}$ especially must be maintained.

Multiple position limit switches with safety switch positions Series 61

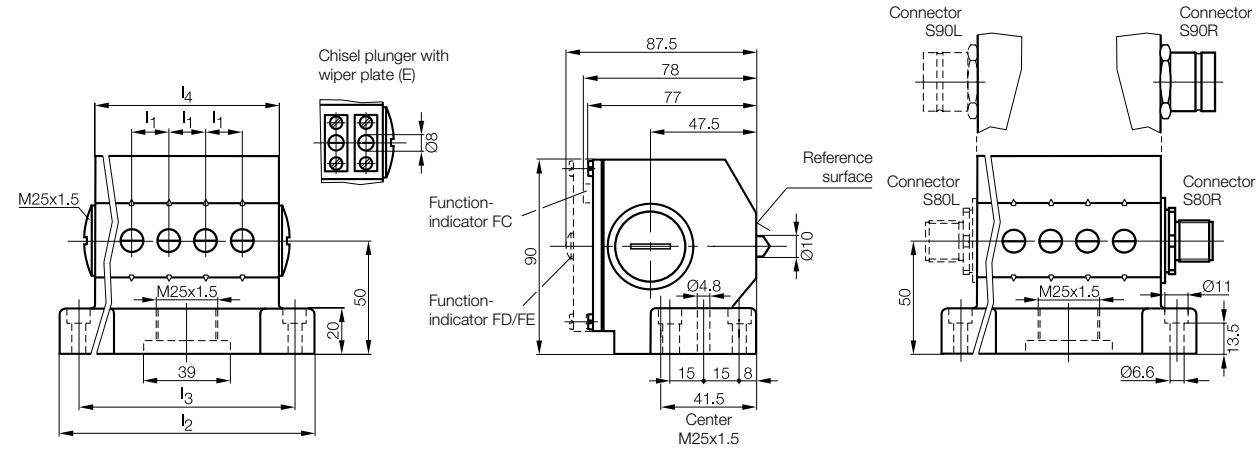


Assembly

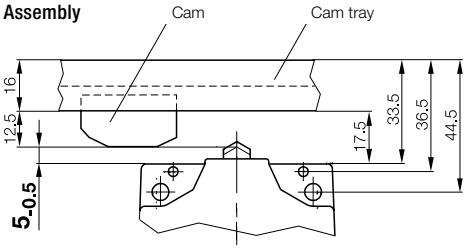


Attention!
To assure the switching function dimension $5_{-0.5}$ especially must be maintained.

Multiple position limit switches with safety switch positions Series 72

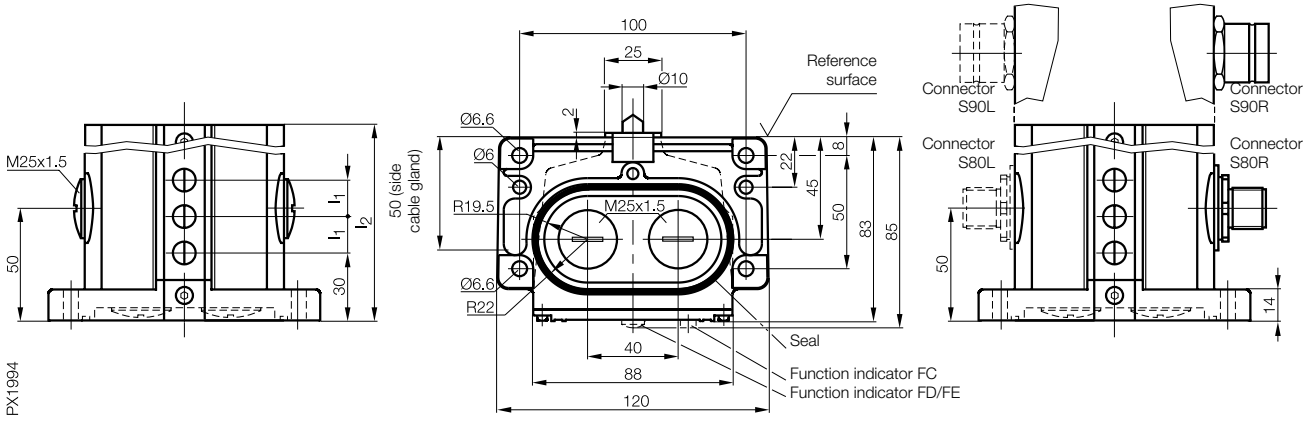


Assembly

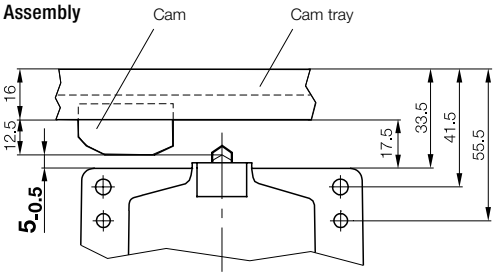


Attention!
To assure the switching function dimension $5_{-0.5}$ especially must be maintained.

Multiple position limit switches with safety switch positions and quick-change plunger block Series 100

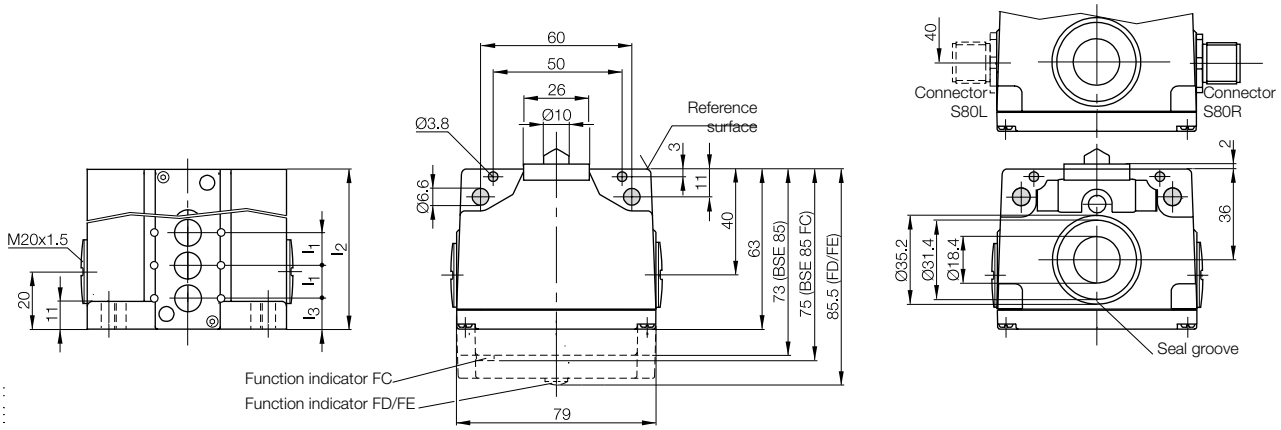


Assembly

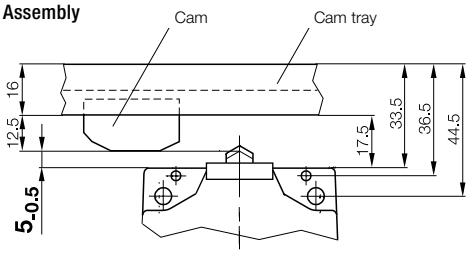


Attention!
To assure the switching function dimension $5_{-0.5}$ especially must be maintained.

Multiple position limit switches with safety switch positions and quick-change plunger block Series 61

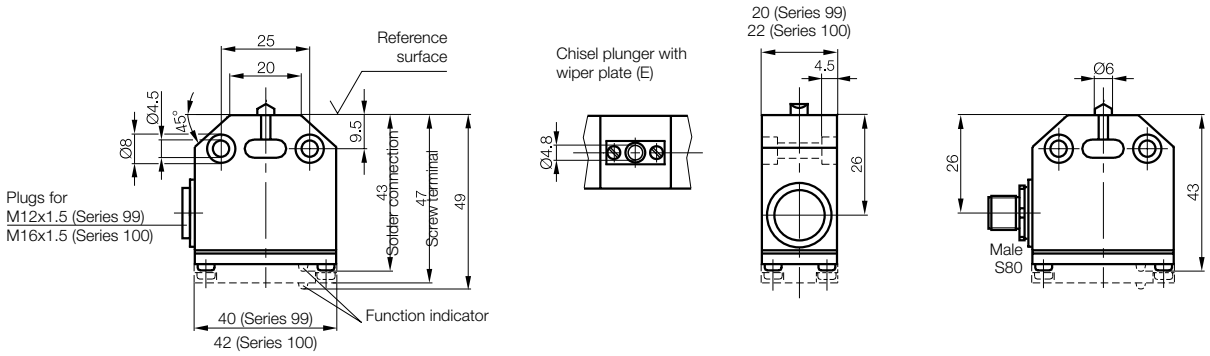


Assembly

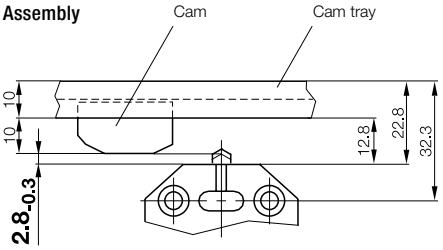


Attention!
To assure
the switching function
dimension $5_{-0.5}$ especially
must be maintained.

Position switch with positive opening Series 99 and 100

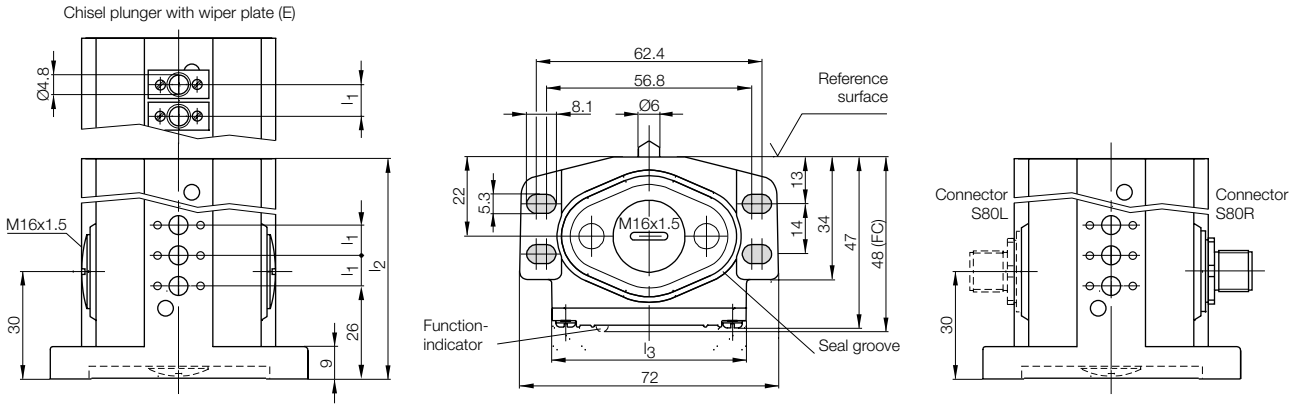


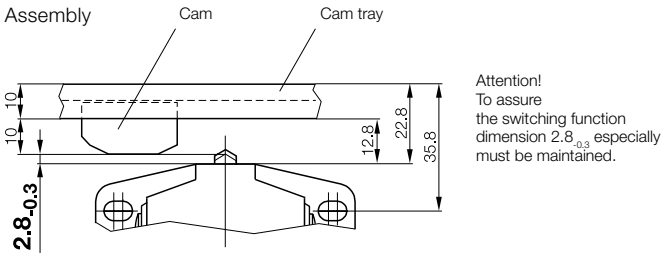
Assembly



Attention!
To assure
the switching function
dimension $2.8_{-0.3}$ especially
must be maintained.

Multiple position limit switches with positive opening Series 46

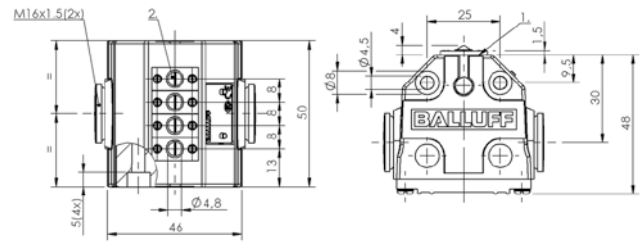




Attention!
To assure
the switching function
dimension $2.8_{-0.3}$ especially
must be maintained.

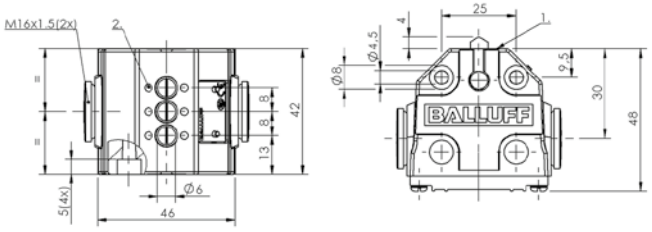
Multiple position limit switches with positive opening Series 40

Chisel plunger with wiper plate:



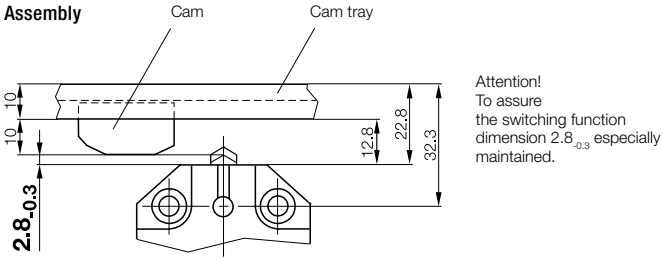
1) Reference edge
2) Anti-crystallization plunger

Standard:



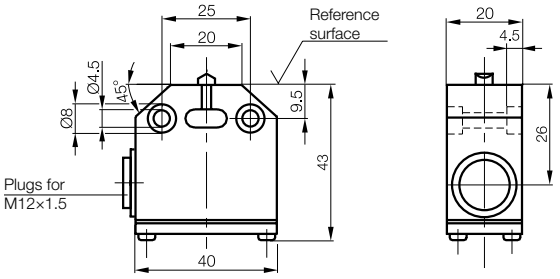
1) Reference edge
2) Mark. Safety switch position

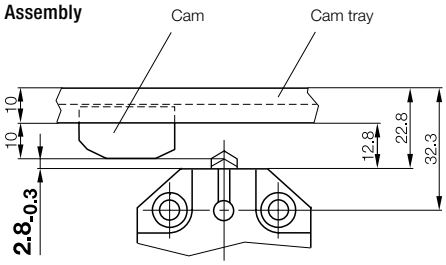
Assembly



Attention!
To assure
the switching function
dimension $2.8_{-0.3}$ especially must be
maintained.

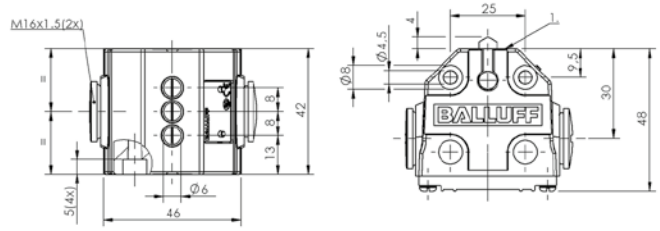
High-temperature position switch Series 99 and 100



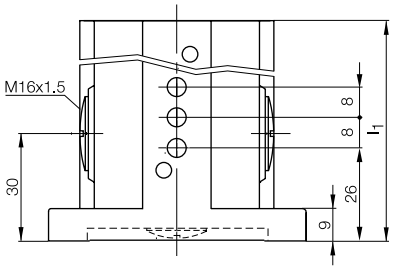


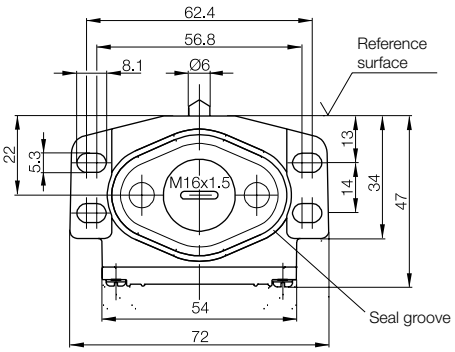
Attention!
To assure
the switching function
dimension $2.8_{-0.3}$ especially
must be maintained.

High-temperature multiple position switches Series 46 and 40

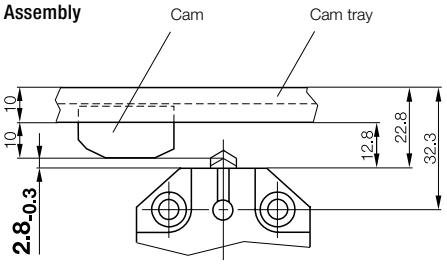


1) Reference edge



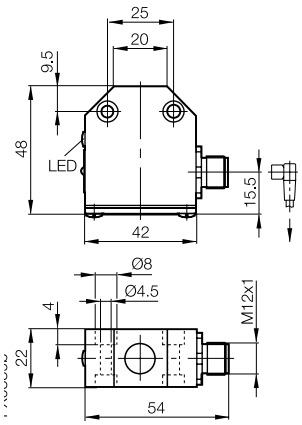


Assembly

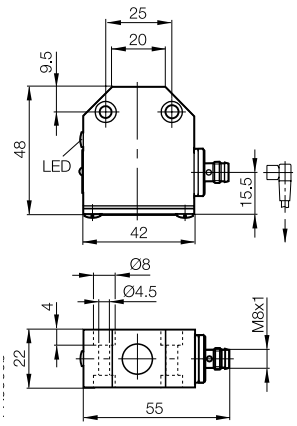


Attention!
To assure
the switching function
dimension $2.8_{-0.3}$ especially
must be maintained.

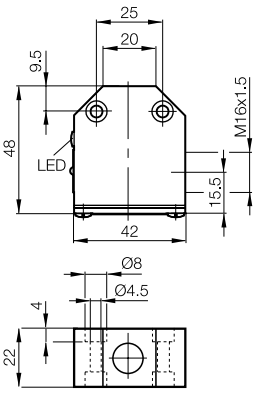
Inductive Position Switches Series H2 and H3



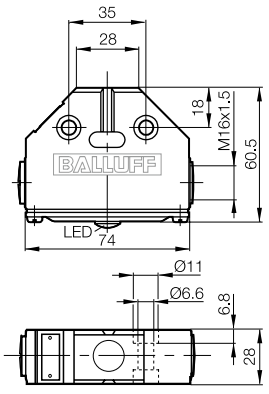
BES01FE, BES01EW



BES01FF

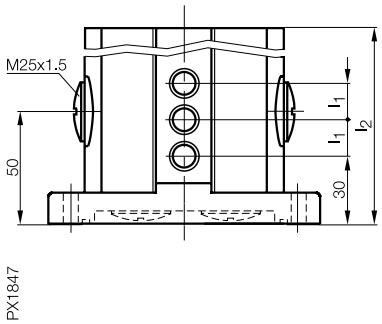


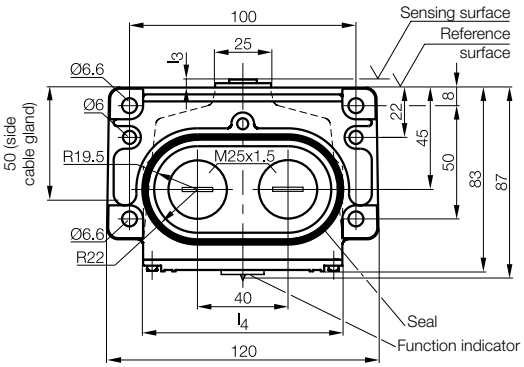
BES01FC, BES01EU, BES01ZK, BES01ET

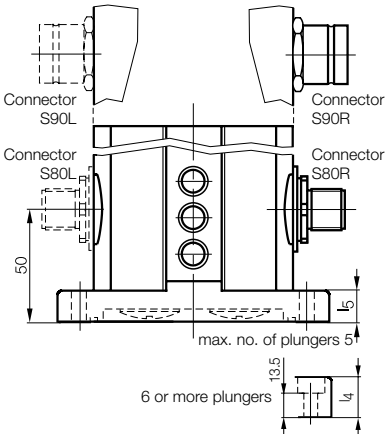


BES017M, BES017L

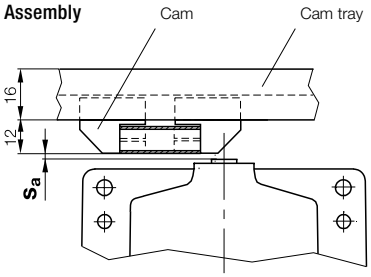
Inductive multiple position switches Series 602-11





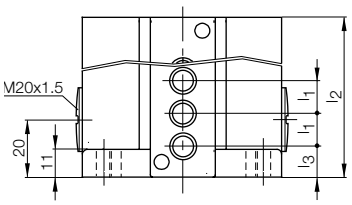


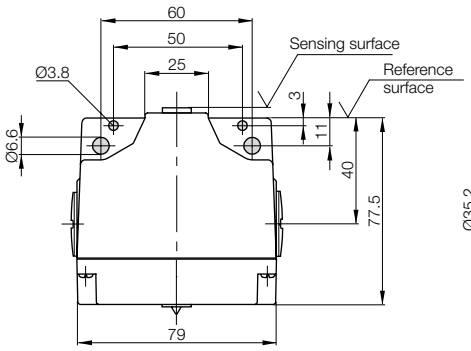
Assembly

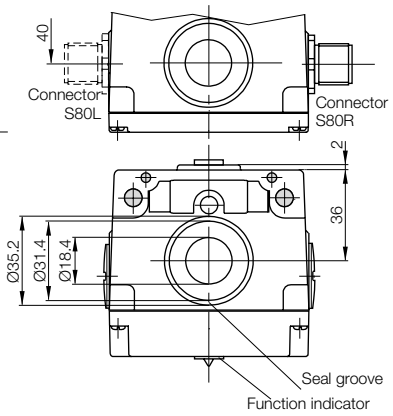


Attention!
To assure
the switching function
s_a must lie within
$0 < s_a \leq 0.81\ s_n$.

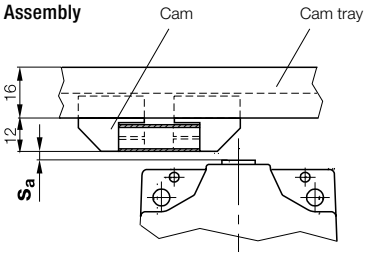
Inductive multiple position switches Series 610-11...613-11





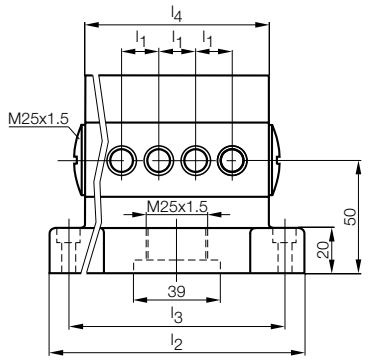


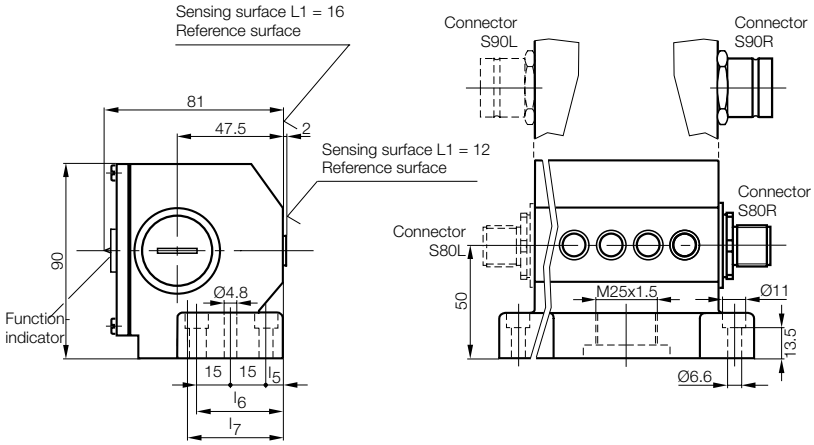
Assembly



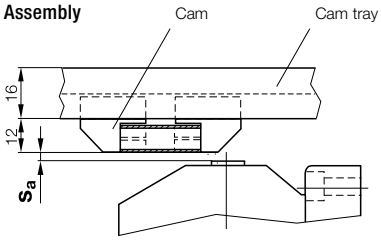
Attention!
To assure
the switching function
s_a must lie within
$0 < s_a \leq 0.81\ s_n$.

Inductive multiple position switches Series 605-11



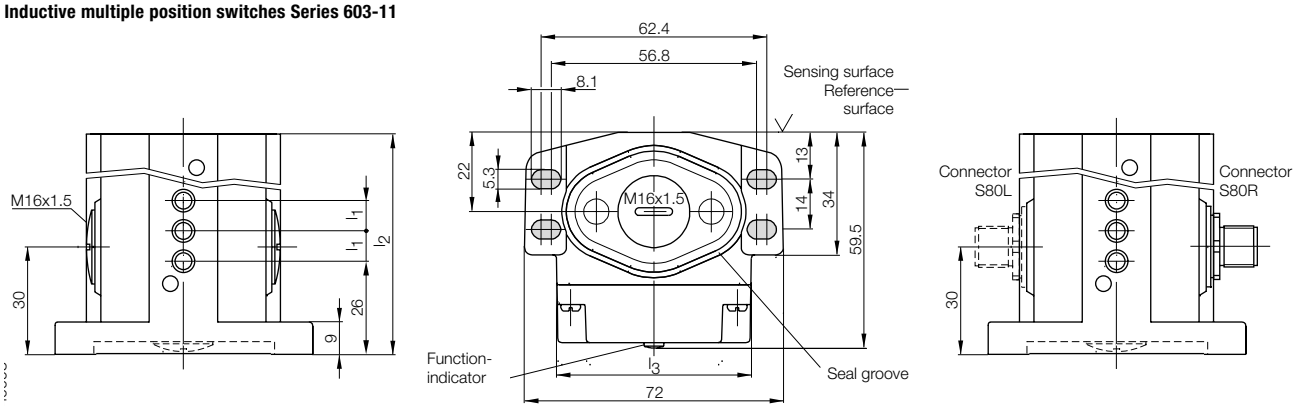


Assembly

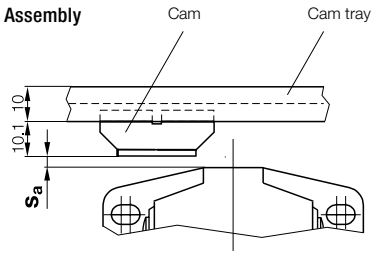


Attention!
To assure
the switching function
s_a must lie within
$0 < s_a \leq 0.81\ s_n$.

Inductive multiple position switches Series 603-11



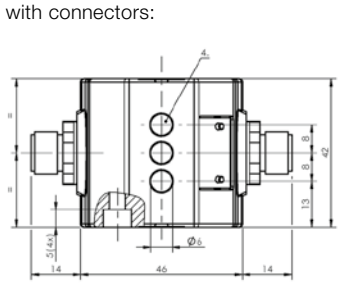
Assembly

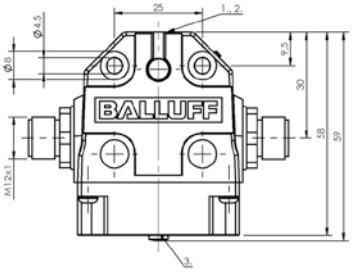


Attention!
To assure
the switching function
s_a must lie within
$0 < s_a \leq 0.81\ s_n$.

Inductive multiple position switches Series 650-11

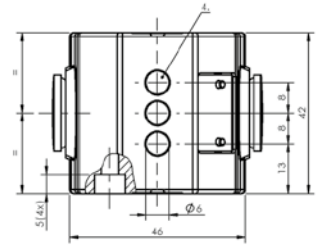
with connectors:

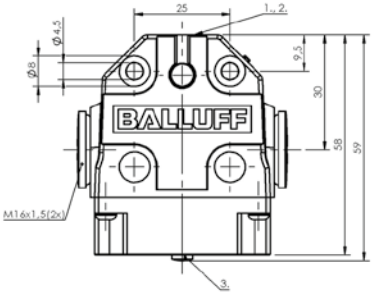




1) Reference edge
2) Sensing surface
3) Function indicator FD/FE/LL
4) 1st pos.

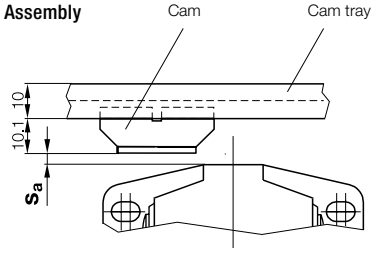
without connector:





1) Reference edge
2) Sensing surface
3) Function indicator FD/FE/LL
4) 1st pos.

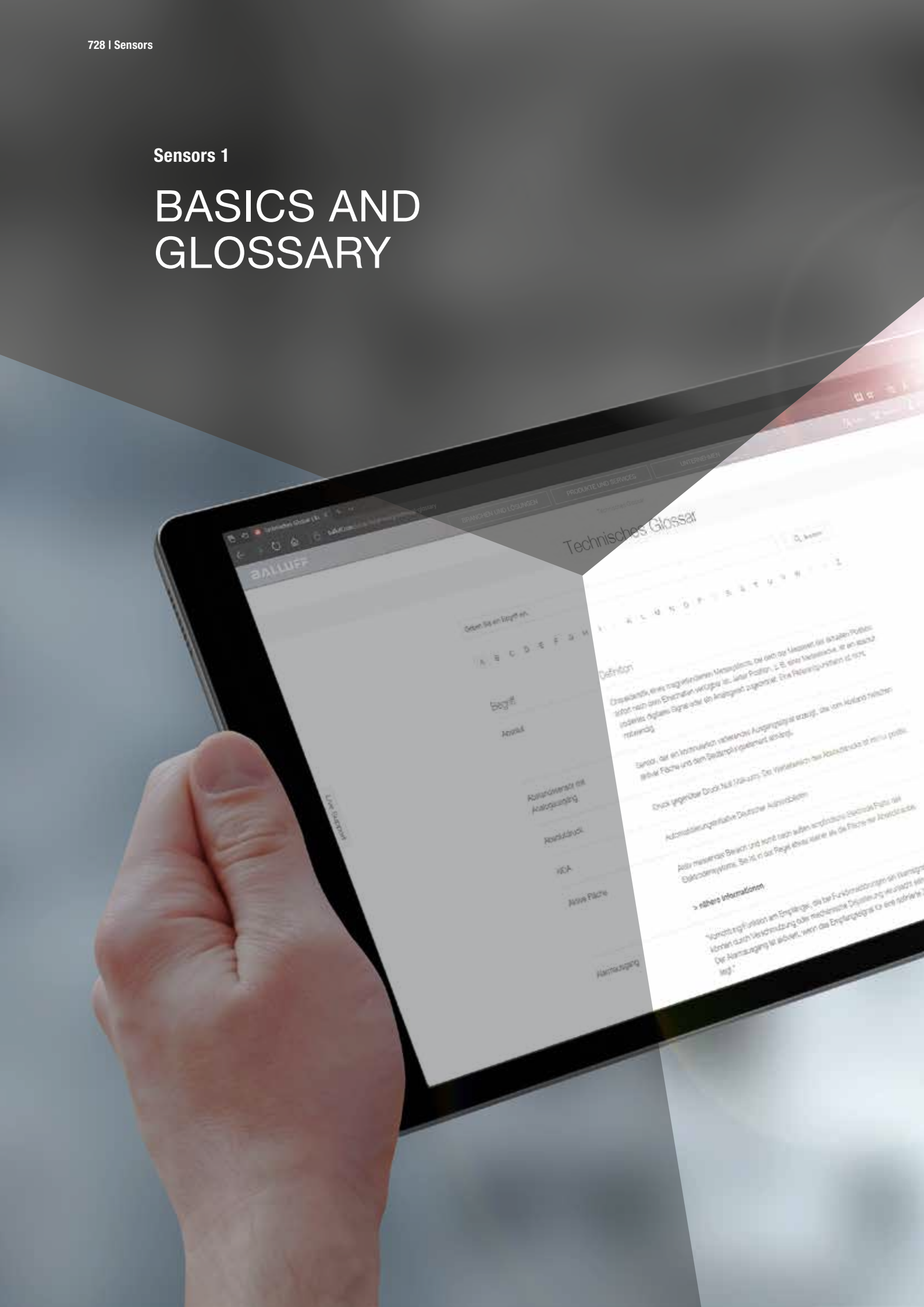
Assembly

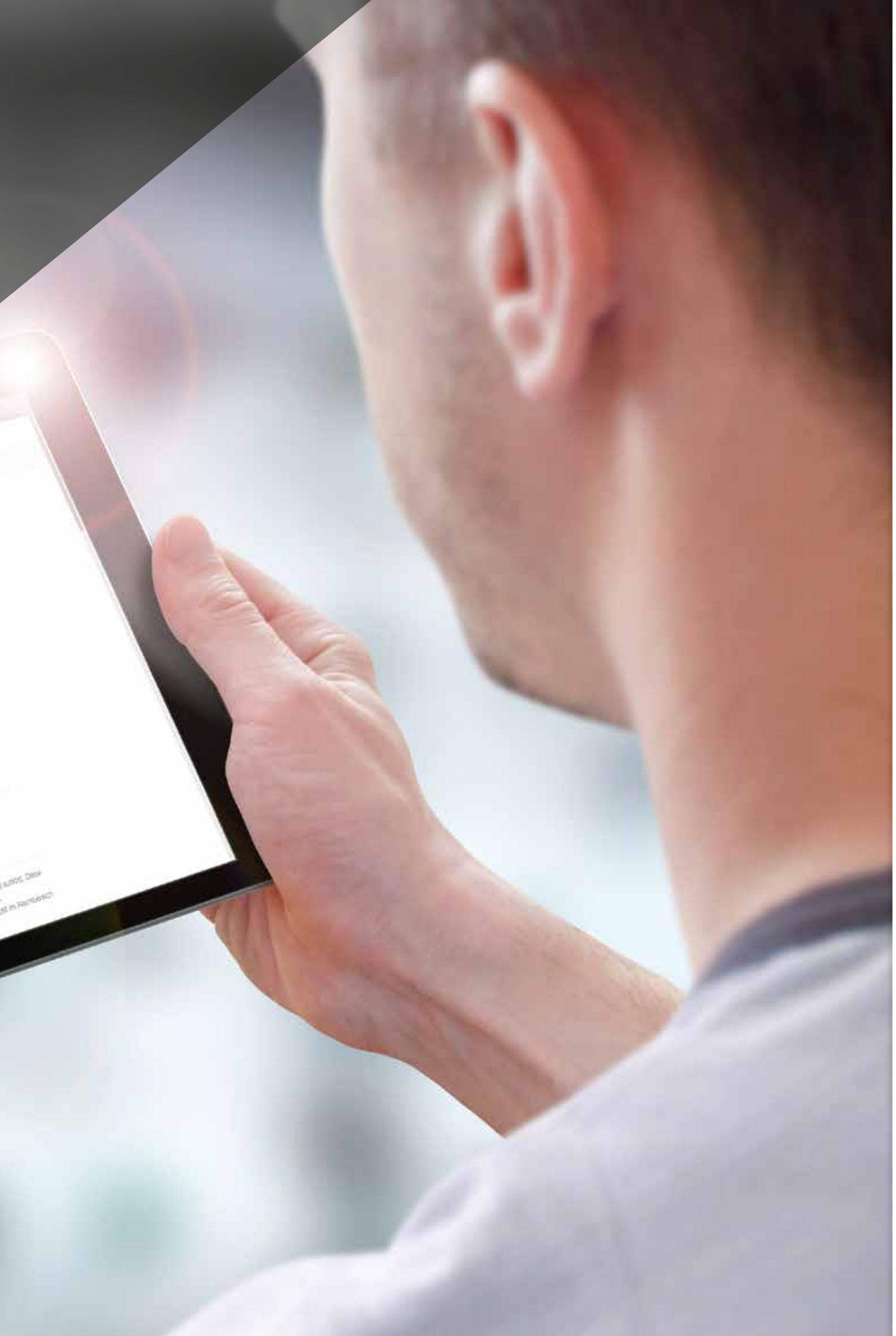


Attention!
To assure
the switching function
s_a must lie within
$0 < s_a \leq 0.81\ s_n$.

Sensors 1

BASICS AND GLOSSARY



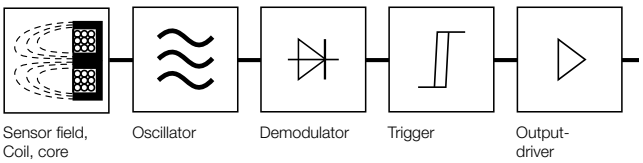


INDUCTIVE SENSORS

Principle

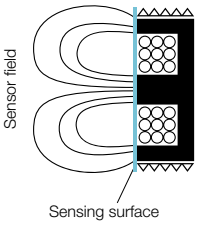
Inductive sensors are based on the interaction of metallic targets with the electromagnetic alternating field of the sensor. Eddy currents are induced in the metallic damping material, which removes energy from the field and reduces the height of the oscillation amplitude. This change is processed in the inductive sensor.

The functional groups of Balluff sensors are:



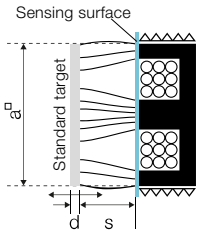
Sensing surface

Actively measuring area and thereby the externally sensitive electrode/plate of the electrode system. It is generally somewhat smaller than the surface of the cover.



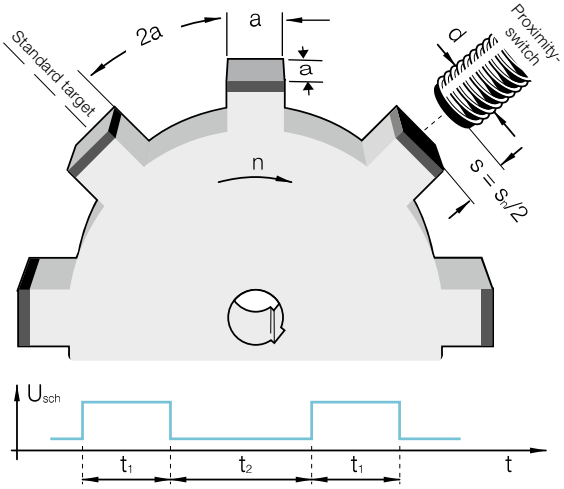
Standard target

A square plate made of Fe 360 (ISO 630), used to define sensing distances per EN 60947-5-2. Thickness is 1 mm; the side length "a" corresponds to the diameter of the inscribed circle of the active surface or 3 s_n, if the value is larger than the named diameter.



Switching frequency

The maximum speed at which the sensor can reliably detect an object under standardized conditions. This corresponds to the maximum number of switching operations (ON/OFF) per second. The value is dependent on the size and speed of the object and its distance from the sensing face.



Correction factor

Reduction in the switching distance for damping materials that are not Fe 360.

Material	Factor
Steel	1.0
Copper	0.25...0.45
Brass	0.35...0.50
Aluminum	0.30...0.45
Stainless steel	0.60...1.00
Nickel	0.65...0.75
Cast iron	0.93...1.05

Factor 1 sensors
Identical switching distance for metals such as steel, stainless steel, aluminum or brass.

Steelface sensors
Effective switching distance = rated switching distance × correction factor

Model	Steel FE 360	Stainless steel	Aluminum	Copper	Brass
M8 Ferrous	1	0.1... 0.7	0	0	0.1
M12 Ferrous	1	0.1... 0.7	0	0	0
M12 Non-Ferrous	0	0	1	1.1	0.9
M18 Ferrous	1	0.1... 0.7	0	0	0
M18 Non-Ferrous	0	0	1	1.1	0.9
M30 Ferrous	1	0.1... 0.7	0	0	0
M30 Non-Ferrous	0	0	1	1.1	0.9

Ferrous
Detection of ferromagnetic steel and iron.

Non-Ferrous
Detection of non-magnetizing metals such as aluminum, copper, brass and many stainless steels.

Delay times

Time delay before availability

Duration between the application of power and the availability of a sensor.

Temperature effects and limits

Ambient temperature T_a

The maximum permissible temperature range at which a sensor may be operated while ensuring reliable functioning of the sensor.

Temperature drift

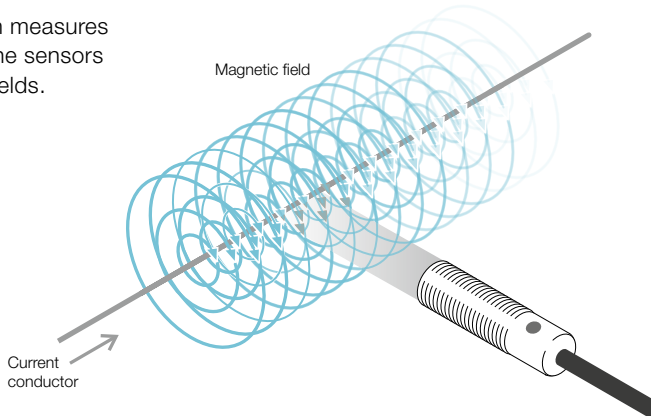
The temperature drift is the deviation of the real switching distance within the temperature range of –25 °C ≤ Ta ≤ +70 °C. In accordance with EN 60947-5-2: $\Delta s_r/s_r \leq 10$ %

Magnetic field immunity

Operating principle

Error-free function depends on the magnitude of the welding current and the distance between the sensor and the current-carrying line.

Construction and circuitry design measures ensure that magnetic field immune sensors are not influenced by magnetic fields.



Operating voltage U_B

Voltage range (V) n which flawless functioning of the sensor is assured.
It includes all voltage tolerances and ripple.

Rated operating voltage

The maximum voltage at which the sensor can be used in normal use.
Indicated by U_e. DC switches: U_e = 24 V DC; AC and AC/DC switches: U_e = 110 V AC.

Voltage drop U_d

The maximum voltage loss of the switching final stage between switching output and $+U_B$ (PNP) or $-U_B$ (NPN) at the maximum specified load current.

Rated isolation voltage

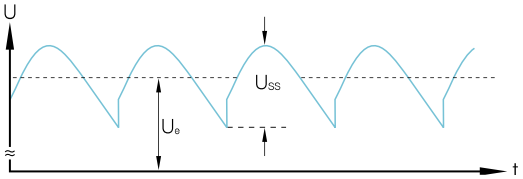
The voltage to which the insulation checks and the air and creepage distances refer.
For sensors, the highest rated operating voltage is considered the rated insulation voltage.

Rated supply frequency

Frequency of the operating voltage when using alternating current

Ripple

The maximum permissible AC voltage (peak-to-peak of U_e which may be superimposed on the operating voltage U_S without affecting the function of the sensor.



Ue = Rated operating voltage
Uss = Oscillation width

$$\text{Ripple } \sigma = \frac{U_{pp}}{U_e} \times 100\ [\%]$$

Rated operating current

The permissible output current which flows through the load R_L.

Off-state current

The current which flows in the load circuit when a sensor is not conducting (open).

Short-term current carrying capacity I_k

For an AC device the short-term permissible current I_k (A_{eff}) during a specified turn-on duration t_k (ms) and repetition rate f (Hz).

Limited rated short-circuit current

Value of the unaffected short circuit current which the short circuit protected circuit can withstand during the entire turn-off time (duration of current flow) of the device under specified conditions. This current is prescribed in the standard in order to test the short-circuit protection of sensors.

No-load current

The maximum internal current consumption with no load connected to the switching output (in general at $U_{B\ max.}$ and actuated).

Minimum operating current

Minimum current (mA) required when energizing the output to maintain operation.

Output resistance

Resistance (Ra) at the output of a circuit or component. The output resistance is generally a frequency-dependent, complex resistance with amount and phase and is referred to as output resistance.

Load capacitance

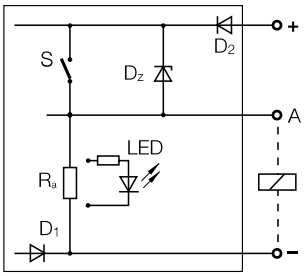
The load capacitance is the permitted total capacitance at the sensor output, including cable capacitance.

Output circuits

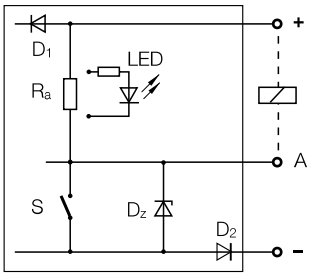
Driver stages

3-wire DC-switch

PNP, positive switching (current source)



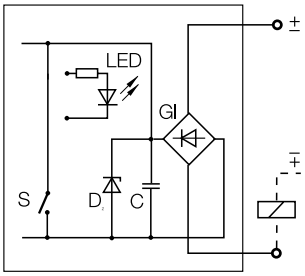
NPN, negative switching (current sink)



S = Semiconductor switch
R_a = output resistance
LED = Light diode
D_z = Z-diode, delimiter
D_1 = Polarity reversal-protected diode
D_2 = Polarity reversal-protected diode in the load circuit (only with short-circuit protected version)

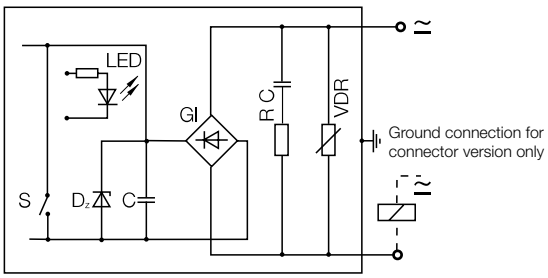
2-wire DC-switch

Non-polarized



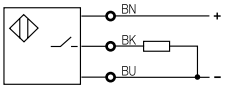
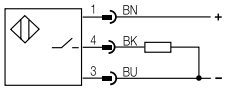
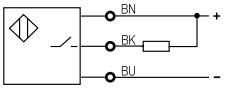
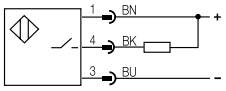
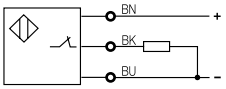
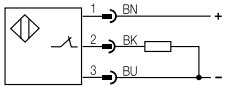
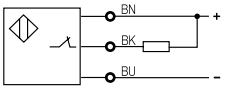
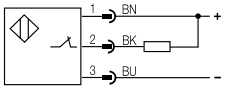
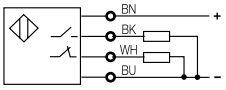
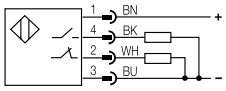
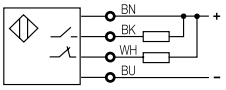
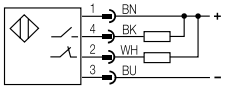
S = Semiconductor switch
Dz = Z-diode, delimiter
C = capacitor
GI = bridge rectifier
LED = light emitting diode

2-wire AC- and AC/DC-switch (all current switch)

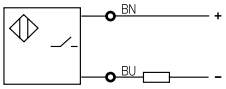
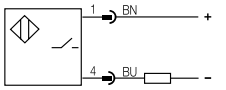
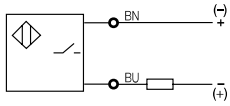
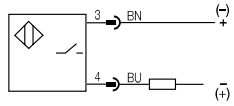
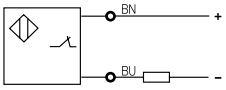
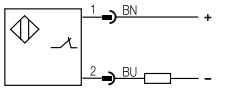
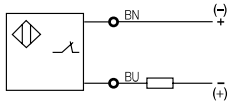
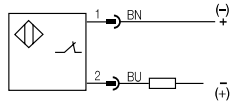


S = Semiconductor switch
D_z = Z-diode, delimiter
C = Sieve condenser
RC = HF-points-limit
GI = bridge rectifier
LED = Light diode
VDR = Voltage point limiter

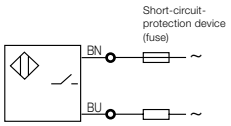
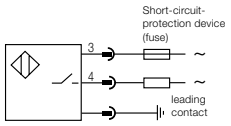
DC 3-/4-wire

	Cable/terminals	Male	Cable/terminals	Male
	PNP (+) sourcing		NPN (–) sinking	
NO				
NC				
Complementary				

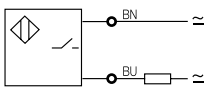
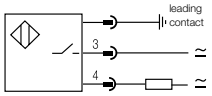
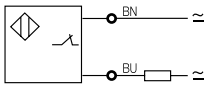
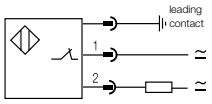
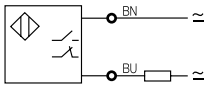
DC 2-wire

	polarized		Non-polarized	
NO				
NC				

AC sensors

	Protection isolated (Protection Class II ⧈)	with protection ground (insulation class I)
NO		

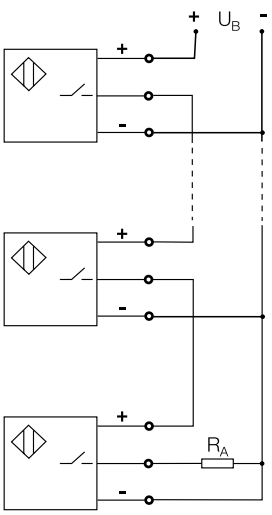
AC/DC sensors

	Protection isolated (Protection Class II ⧈)	with protection ground (insulation class I)
NO		
NC		
Closer-opener, programmable		

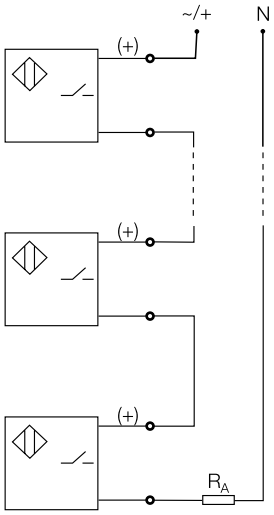
Series connection

Electrical circuit type in which the components are connected to each other in a string so that they form a single current path.

3-wire DC-switch



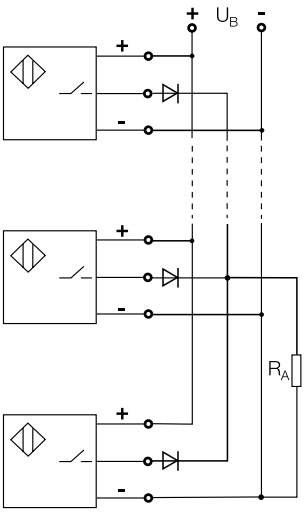
2-wire DC-switch (AC/DC)



Parallel circuit

Electrical circuit type in which all the switching elements and their same named poles are connected in common to each other, so that multiple current paths result.

3-wire DC-switch



2-wire DC-switch

Parallel wiring of 2-wire-sensors is not recommended, since missed pulses can be caused by the ready delay as the oscillator begins to oscillate.

Utilization categories in accordance with EN 60947-5-2/IEC 60947-5-2

Category		Typical load applications
AC 12	AC-switch	Resistance- and semiconductor loads, optocouplers
AC 140	AC-switch	Small electromagnetic load Ia ≤ 0.2 A; e.g. contactor relay
DC12	DC-switch	Resistance- and semiconductor loads, optocouplers
DC 13	DC-switch	Electromagnets

Smallest bending radius for standard PUR and standard PVC cables

Bending radius at rest: min. 5 × cable diameter
Bending radius in motion: min. 10 × cable diameter

Cable break protection

Characteristic of 3-wire switches which prevent malfunction when there is a cable break. A built-in diode prevents the current from flowing via the output line A.

Reverse polarity protection

Also called polarity reversal protection. This sensor technology protects against reversal of the supply voltage (plus and minus) and reversal of the connection wires (brown and blue).

Short-circuit rating

Characteristic of components or assemblies which indicates the short-circuit current which the component or assembly can withstand.

Short-circuit protection (sensors with a maximum voltage of 60 V DC)

The short-circuit protection is achieved in Balluff sensors with clocked or thermal short-circuit protection circuitry. The output stage is thereby protected against overload and short circuit. The release current of the short-circuit protection is above the rated operating current I_e. Currents from switching and load capacitances are specified in the sensor data and do not trigger this function, but rather are masked by a short delay time.

Short-circuit protected/overload protected (sensors for operation optional with AC or DC power supply)

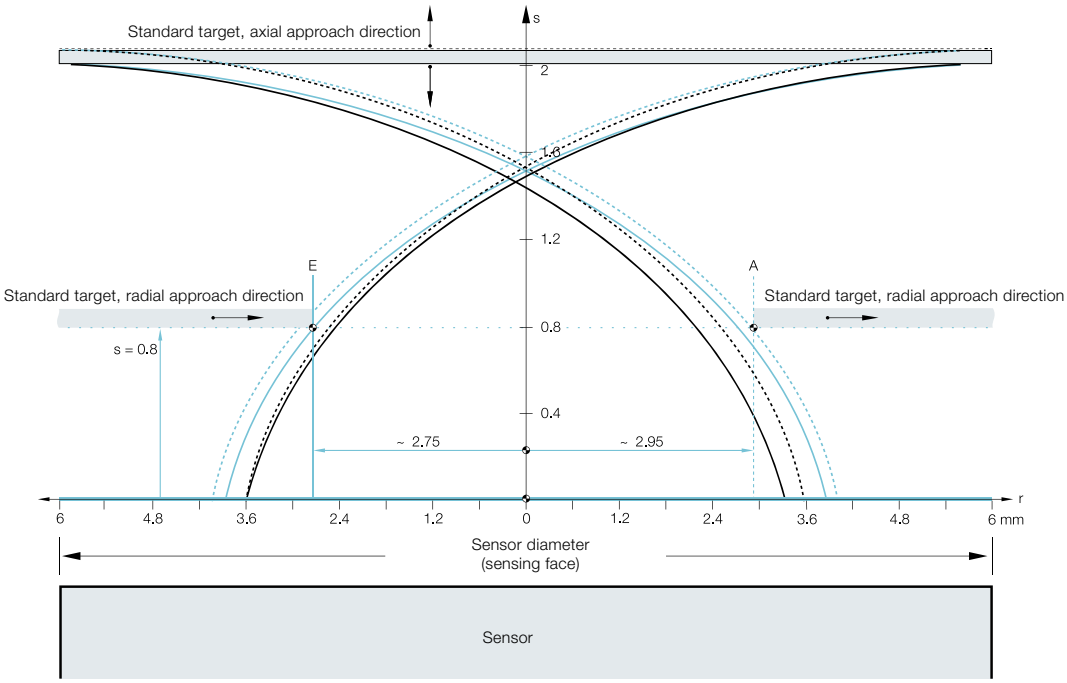
Short-circuit protected/overload protected sensors are often operated with relays or contactors as load. At switch-on, alternating current switching amplifiers (protection contactor/relay) for the sensor are briefly a substantially higher load (6...10 × rated current) than later in the later static operation, because their core is still open. The static value of the load (current) is only reached after several milliseconds. Not until the magnetic field is closed does the max. permissible rated operating current I_e listed in the data sheet flow through the sensor. The release value for a short-circuit in these sensors therefore has to be significantly greater. If for example the contactor can no longer be entire closed due to mechanical or electrical reasons, this could lead to an overload of the sensors. This is where the overload protection comes into play. It is designed as slow-acting (time-delayed). Its trigger threshold lies only slightly above the maximum permissible Ie. A reaction (in other words, shutoff) occurs, depending on the height of the overload, only after more than 20 ms. This ensures that properly working relays and contactors can be switched normally, while defective devices will not destroy the Balluff sensors. The short-circuit/overload protection usual has a bistable design and has to be reset after triggering by switching the operating voltage.

Recommended short-circuit protection device for BES033J, BES033H, BES017M

Miniature fuse in accordance with IEC 60127-2 sheet 1,
≤ 2 A (fast-acting). The fuse has to be in the load current line;
the fuse may not be placed in the output line.

Approach direction

Direction of an object as it enters the detection range/active range of a sensor.



Axial and radial damping

When damping in an axial direction, the standard target is moved concentric to the system axis. The switchpoint is thereby determined only by the distance "s" from the sensing surface of the sensor. When damping in the radial direction, the location of the switching point is additionally affected by the radial distance "r" of the target from the system axis. The diagram shows the response curves, which indicate the dependency of the switching point on "s" and "r". The primary purpose of this drawing is to show the possibility of damping using a lateral approach and the difference compared with axial approach.

Application

Due in part to manufacturing tolerances within a production run, the exact switchpoint must in any case be established on site. The solid curves indicate the respective turn-on point, the dashed curves the turn-off point A. The blue curves apply to switches with a clear zone, and the black ones for flush-mountable switches. Since the switching operation can be induced from either direction, the curves are shown mirrored from the system axis.

Examples

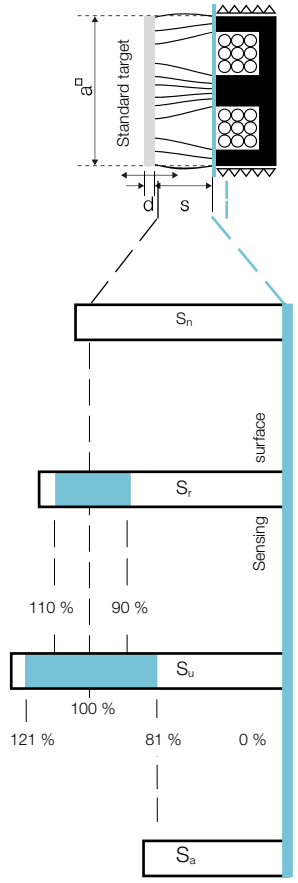
Passing objects on conveyor lines generate a signal change when their front edge crosses the turn-on curve on the entry side. The signal reverses again when the back edge of the passing object crosses the (mirrored) turn-off curve on the opposite side. In the case of reversing parts (e. g. end of travel), the signal reversal occurs at the turn-off curve on the same side.

The vertical axis in the diagram shows the distance of the switching point from the sensing surface. It is based on the rated switching distance sn. At a distance of 0.8 mm, a laterally approaching target reaches the solid line turn-on curve at point "E" and leaves the turn-off curve at point "A". the horizontal axis in the graph is referenced to the radius of the sensing surface. The zero point of this axis lies in the center of the shell core cap. In our example for the M12 switch, the radius is r = 6 mm.

Switching distances

Switching distance

The distance between the standard target and the sensing surface of the sensor at which a signal change is triggered as per EN 60947-5-2. For a normally open switch this means from OFF to ON and for normally closed from ON to OFF.



Assured switching distance S_a

Switching distance within which assured operation of the sensor at a specified voltage and temperature range is given ($0 \leq s_a \leq 0.81\ s_n$).

Effective operating distance s_r

The switching distance of a single proximity switch measured under specified conditions, e.g. flush mountable, rated operating voltage U_e, temperature T_a.

Rated operating distance S_n

Maximum achievable switching distance from the standard target under device specification (generally with s_n as shipped from the factory).

Usable operating distance

The permissible operating distance is the permitted switching distance within fixed voltage and temperature limits ($0.81\ s_n \leq s_u \leq 1.21\ s_n$).

Switching distance labeling

Switching distance	Size	Switching distance
■ Standard-switching distance according to EN 60947-5-2		
■■ **2 ×** switching distance compared to standard	Ø 3 mm*	1 mm flush
	Ø 4 mm/M5*	1.5 mm flush
	Ø 6.5 mm...M30	1.5...2-x
■■■ **3×** switching distance compared to standard	Ø 3 mm*	3 mm non-flush
	Ø 4 mm/M5*	5 mm non-flush
	Ø 6.5 mm...M12	2.2...3-x
	M18...M30	depending on version
■■■■ **4×** switching distance compared to standard		

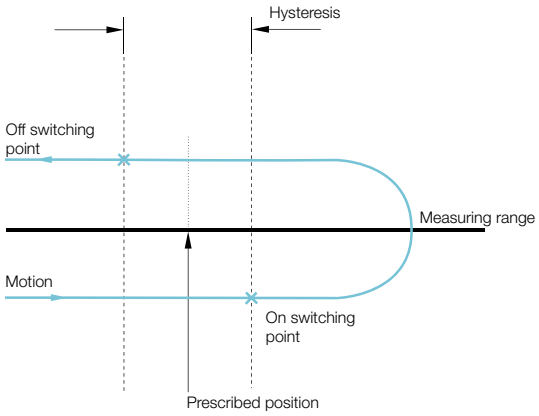
*Information for switching distance in mm. The switching distances of these sensors are not standardized.

Repeat accuracy

Variance in the output values when approaching a mechanically prescribed position repeatedly from the same direction.

Hysteresis

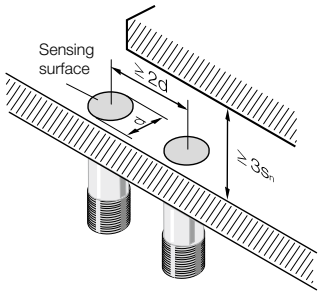
Signal difference resulting for measurement sensors when a mechanically prescribed position is approached from one side, then crosses this point and afterwards approaches this same position from the other direction. Position difference between switching point (object approaches) and switch-back point (object travels away) for switching sensors.



Installation in metal: Sensors with standard switching distance ■

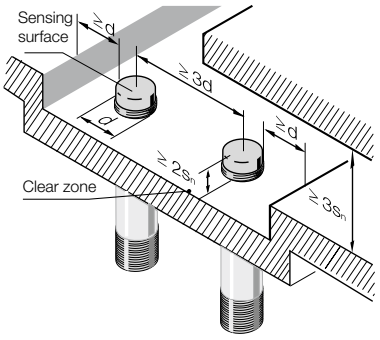
Flush mountable sensors

Flush mountable sensors can be installed with their sensing surfaces flush to the metal. The distance to the opposite metal surfaces has to be ≥ 3 s_n, and the distance between two sensors (with row mounting) has to be ≥ 2d.



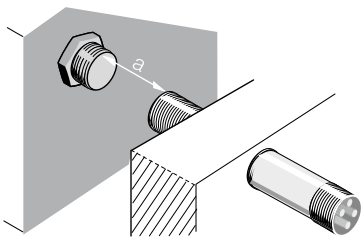
Non-flush mountable sensors

Non-flush mountable sensors can be identified by their "caps", since they have no metal housing surrounding the area of the sensing face. The sensing surface must extend ≥ 2 s_n from the metallic installation medium. The distance to the opposite metal surfaces has to be ≥ 3 s_n, and the distance between two sensors (with row mounting) has to be ≥ 3 d.



Opposing installation of two sensors

The opposing (facing) installation of two sensors requires a minimum distance of a ≥ 3d between the sensing faces.



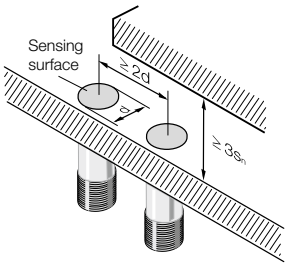
Installation medium

Materials	Description
Ferromagnetic materials	Iron, steel or other magnetizable materials
Non-ferrous metal	Brass, aluminum or other non-magnetizable materials
Other materials	Plastics, electrical non-conductive materials

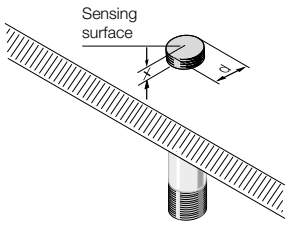
Installation in metal: Sensors with 2 × switching distance ■■

Flush mountable sensors

Flush mountable sensors can be embedded flush up to their sensing surfaces in non-ferrous materials. Installation in non-ferrous metal may result in a reduction of the switching distance. The distance to the opposite metal surfaces has to be ≥ 3 sn, and the distance between two sensors (with row mounting) has to be ≥ 2d. In order to install the sensor in ferromagnetic materials, the following guidelines are used for dimension "x".



Size d	Dimension x
Ø 3 mm	1 mm
Ø 4 mm	1.5 mm
M5	1.5 mm
Ø 6.5 mm	0 mm
M8	0 mm
M12	1.5 mm
M18	2.5 mm
M30	3.5 mm



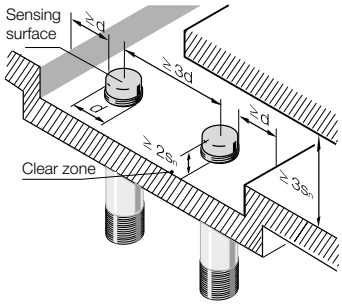
For DC 2-wire sensors, the following apply:

Size d	Dimension x
M8	0 mm
M12	0 mm
M18	0.7 mm
M30	3.5 mm

In the Factor 1 and ATEX NAMUR sensor family, dimension x is not needed when installing in metal.

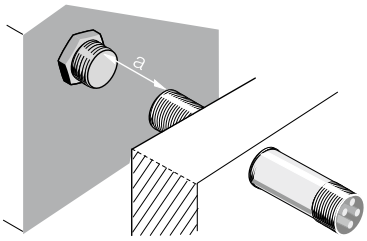
Non-flush mountable sensors

Non-flush mountable sensors can be identified by their "caps", since they have no metal housing surrounding the area of the sensing face. The sensing face must extend ≥ 2 sn from the metallic installation medium. The distance to the opposite metal surfaces must be ≥ 3 sn, and the distance between two sensors (with row mounting) has to be ≥ 3 d.



Opposing installation of two sensors

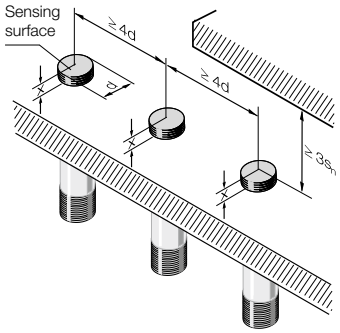
The opposing installation of two sensors requires a minimum distance of a ≥ 4d between the sensing surfaces.



Installation in metal: Sensors with 3 × and 4 × switching distance ■■■ and ■■■■

Quasi-flush mountable sensors

Quasi-flush mountable sensors require space behind the sensing surface which is free of conductive materials. Under this condition the specified switching distance is available without limitation. Dimension "×" (see fig.) indicates the shortest distance between the sensing face and the conductive material behind it.

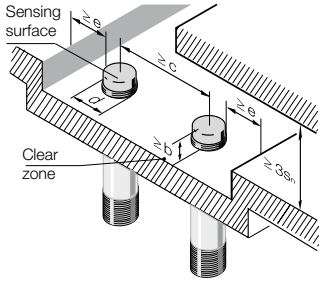


Size d	3x switching distance: Dimension x for installation in		4x switching distance: Dimension x for installation in	
	Ferromagnetic material	Other metals	Ferromagnetic material	Other metals
Ø 6.5 mm	2 mm	1 mm	3 mm	2 mm
M8	2 mm	1 mm	3 mm	2 mm
M12	2.5 mm	2 mm	4 mm	3 mm
M18	4 mm	2.5 mm		
M30	8 mm	4 mm		

Non-flush mountable sensors

Non-flush mountable sensors can be identified by their "caps", since they have no metal housing surrounding the area of the sensing face. The distance to opposing metal surfaces must be ≥ 3 s_n.

Installation conditions:

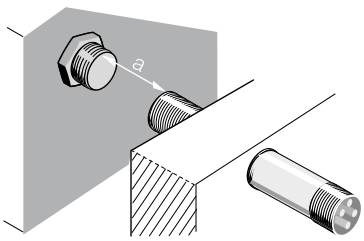


Size d	Dimension x	Dimension x	Dimension x
Size d	Dimension b	Dimension c	Dimension e
Ø 3 mm	≥ 10 mm	≥ 30 mm	≥ 10 mm
Ø 4 mm	≥ 15 mm	≥ 40 mm	≥ 20 mm
M5	≥ 15 mm	≥ 40 mm	≥ 20 mm
Ø 6.5 mm	≥ 8 mm	≥ 32 mm	≥ 8 mm
M8	≥ 8 mm	≥ 32 mm	≥ 8 mm
M12	≥ 10 mm	≥ 48 mm	≥ 12 mm
M18	≥ 20 mm	≥ 72 mm	≥ 18 mm
M30	≥ 35 mm in steel ≥ 25 mm in non-ferrous metal ≥ 20 mm in stainless steel	≥ 120 mm	≥ 30 mm

Opposing installation of two sensors

The opposing installation of two sensors requires a minimum distance of a ≥ 5d between the sensing surfaces.

For exceptions see table:

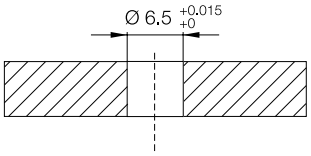


Size d	Dimension a
Ø 3 mm	20 mm
Ø 4 mm	45 mm
M5	45 mm

Installation instructions for block-style designs and sensors with special properties

Recommendation for gluing in the sensor Ø 6.5 mm smooth

Prepare and clean drill hole and sensor according to the specifications of the glue used. Coat hole and sensor with adhesive and position sensor in hole. Allow to cure. For additional instructions, see the data sheet.

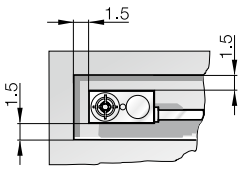


Features

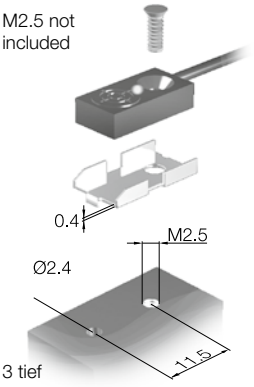
- Simple installation with glue-in sensor
- Flexible use with optional radial cable outlet

Installation notice for BES R04... with s_n 2.5 mm

Aluminum: can be mounted completely flush
Steel: all the way around with a 1.5 mm clear zone



Mounting bracket BAM00K3 for BES R04... with s_n 1.5 mm (please order separately)

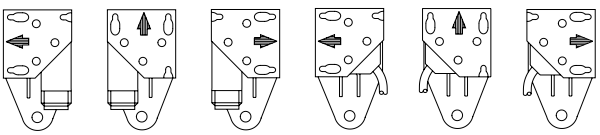


Installation note for BES030E and BES030F

Small, compact block sensor with increased switching distance for quick installation. The connector mount can be rotated and the sensing face can be oriented in three directions.

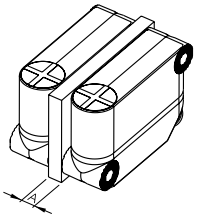
Simple replacement with no loss of position thanks to the fixed mounting plate:

- Cost savings
- No special tools necessary
- Simple to install



Installation note for BES R05KB...

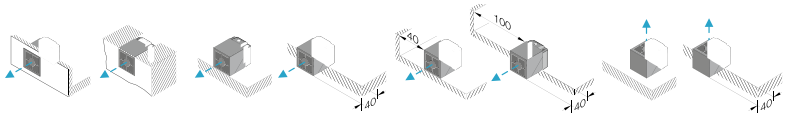
Row mounting



- With plastics or no material present in the space:
- Distance A = at least 5 mm
- With metal in the space:
- Distance A = at least 4 mm

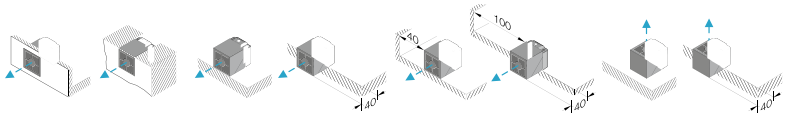
Installation note for 40 × 40 mm series Unicompact

Flush installation



Sensing distance	Mounting	Permissible installation options							
15 mm	Original mounting bracket (plastic)	■	■	■	■	■	■	■	■
	Mounting bracket BES Q40-HW-2 (metal)	■	■	■	■	■	■	■	■
20 mm	Original mounting bracket (plastic)	■	■	■	■	■	■	■	■
	Mounting bracket BES Q40-HW-2 (metal)	■	■	■	■	■	■	■	■

Non-flush installation

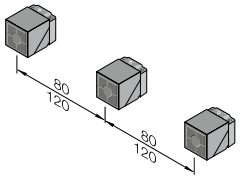


Sensing distance	Mounting	Permissible installation options							
25 mm	Original mounting bracket (plastic)			■	■	■	■	■	■
	Mounting bracket BES Q40-HW-2 (metal)			■	■	■	■	■	■ [3]
35 mm [1]	Original mounting bracket (plastic)				■		■		■
	Mounting bracket BES Q40-HW-2 (metal)				■		■		
35 mm [2]	Original mounting bracket (plastic)			■	■	■	■	■	■
	Mounting bracket BES Q40-HW-2 (metal)				■		■		■ [3]
40 mm	Original mounting bracket (plastic)				■		■		■
	Mounting bracket BES Q40-HW-2 (metal)				■		■		

[1] with BES ...35E... [2] with BES ...35Z...011 [3] Switching distance can be reduced by 15 %

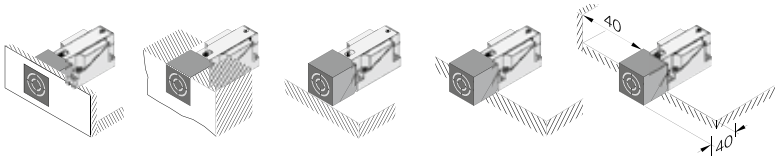
Row mounting

80 mm flush
120 mm non-flush



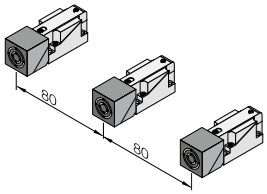
Installation note for 40 × 40 mm series Unisensor

Flush installation

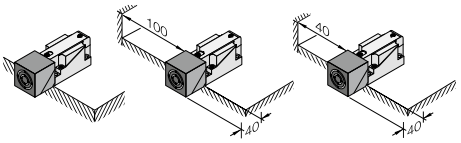


Sensing distance	Permissible installation options				
15 mm	■	■	■	■	■
20 mm	■	■	■	■	■

Row mounting

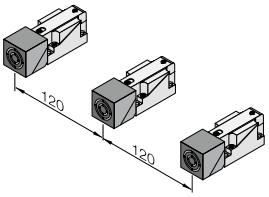


Non-flush installation



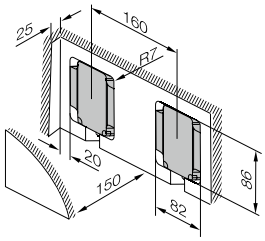
Sensing distance	Permissible installation options		
20 mm	■	■	■
25 mm	■	■	■
30 mm	■	■	
40 mm	■	■	

Row mounting

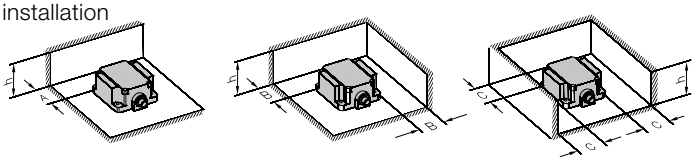


Installation note for 80 × 80 mm series Maxisensor

Flush installation



Non-flush installation

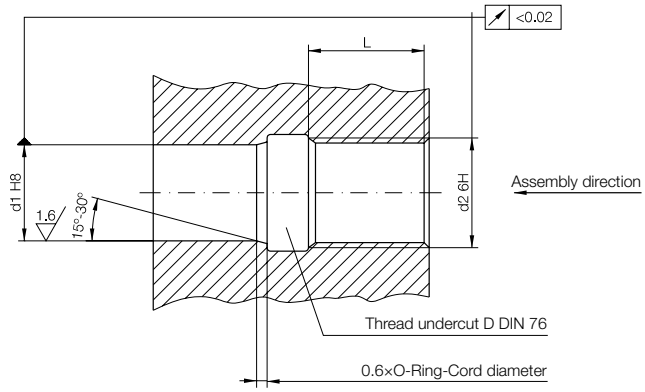


Minimum distances in metal

Metal/measurements	h	A	B	C
Stahl	40 mm	70 mm	80 mm	90 mm
Stahl	70 mm	80 mm	90 mm	100 mm
Aluminum	40 mm	0 mm	10 mm	10 mm
Aluminum	70 mm	10 mm	20 mm	20 mm

Please note whether it is installed in ferrous or non-ferrous materials.

Installation instruction for high pressure rated sensors with O-ring



For example, with BHS0035:

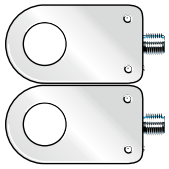
d_1: Ø of the positioning hole for the switch head Ø 10^{H8} = Ø $10^{+0.022}$

d_2: Nominal thread diameter M12 × 1 6H

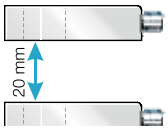
L: Recommended screw-in depth L ≥ 0.8 × d_2 = 0.8 × 12 = 9.6

Installation note for ring sensors

Installation in row

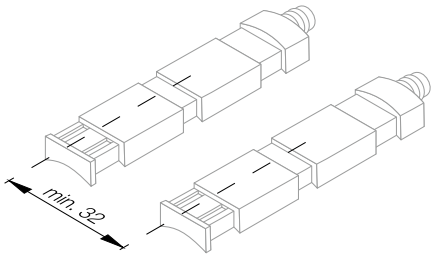


Installation in a stack



Installation note hose sensors

Centerline spacing for side-by-side mounting



INDUCTIVE DISTANCE SENSORS WITH ANALOG OUTPUT

Distance sensor with analog output

A sensor which generates a continuously varying output signal which is a function of the distance between the sensing surface and the actuation element.

Effective distance s_e

Point in the middle of a sensor's range of linearity s_l. Serves as a reference point for further specifications.

Linearity range

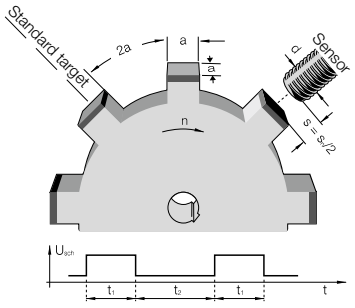
Working range in which the sensor has defined linearity.

Linearity error

Maximum deviation from the straight line that connects the zero point of the measuring range to the end point or full extension. There is a linear relationship between the position or path to be measured and the output signal for a voltage, current or digitized output information. This feature may be restricted to a defined linearity range.

Limit frequency

Maximum possible number of switching operations per second. Damping is done according to EN 60947 -5-2 with standard targets on a rotating, non-conductive disc.
The area ratio of iron to non-conductor is 1:2. The rated value of the limit frequency (–3 dB limit) is reached when the output signal has dropped to approx. 70% of the original signal level.



Measurement speed

Speed with which changes to the active surface of a sensor are registered, processed and outputted. Up to the specified measuring speed the distance to a linear moving object can be reliably detected. The direction of movement of the object is parallel to the sensing face of the sensor.

Repeat accuracy

Variance in the output values when approaching a mechanically prescribed position repeatedly from the same direction.

Response time

The time which a sensor requires in order to reliably and steadily change the output signal. The specified time, which was determined at the maximum measuring speed, includes both the electrical response time of the sensor and the time for the mechanical change of the damping state.

Slope

The slope is a measure of the sensitivity of the sensor with respect to a distance change. This physical relationship can be calculated for travel sensors as follows:

$$\text{Slope S [V/mm]} = \frac{U_a\,\text{max} - U_a\,\text{min}}{s_a\,\text{max} - s_a\,\text{min}}$$

or

$$\text{Slope S [mA/mm]} = \frac{I_a\,\text{max} - I_a\,\text{min}}{s_a\,\text{max} - s_a\,\text{min}}$$

Temperature drift

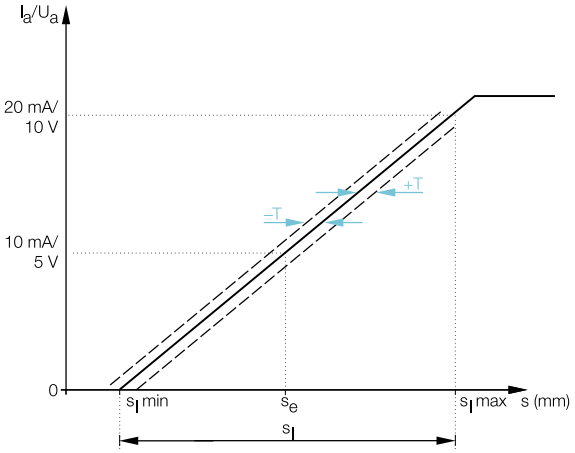
The temperature drift is the shift a point experiences on the actual output curve at different temperatures. The temperature drift is described by the temperature coefficient.

Temperature coefficient

Describes the deviation of the sensor output signal under the effect of a temperature change, and thus represents a quality criterion for the sensor also.

Tolerance T

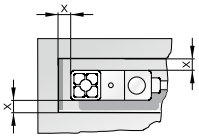
A variable which defines the manufacturing tolerance band of the output curve, thereby determining the maximum sample deviation.



Size	Tolerance for flush sensors	Tolerance for non-flush sensors
Ø 6.5 mm	±0.125 mm	
M8	±0.1 mm	±0.15 mm
M12	±0.125 mm	±0.25 mm
M18	±0.3 mm	±0.5 mm
M30	±0.6 mm	±0.8 mm
PG 36	±0.1 mm	
20×30×8 mm	±0.125 mm	
80×80×40 mm	±1.0 mm	

Installation note for BAW R03K...

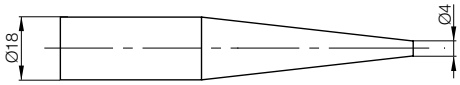
Material	Installation dimensions x
Steel	0 mm
Brass	5 mm
Aluminum	5 mm
Stainless steel	5 mm



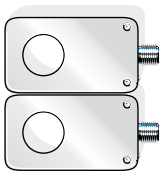
Installation note for Analog-Ringsensor

Compact analog ring sensor with 20 mm opening. Measured value changes are produced by different metallic objects or insertion depths. Applications include thickness measurement of various screws, rods or wires, and position measurement on machines by inserting conical objects into the sensor.

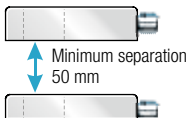
Testing cone for determining insertion depth (measuring range and linearization)



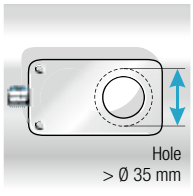
No mutual interference for front-mounting of two sensors.



No mutual interference for parallel mounting of two sensors.



When stacking multiple sensors, the separation must be at least 50 mm.

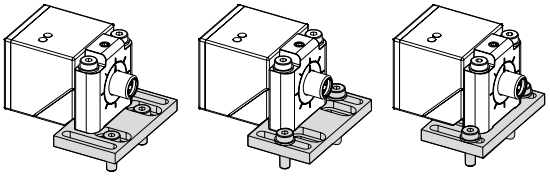


The opening should be at least Ø 35 mm for flat installation on metal surfaces.

ACCESSORIES FOR INDUCTIVE SENSORS

Mounting options for inductive sensors 40 × 40 mm

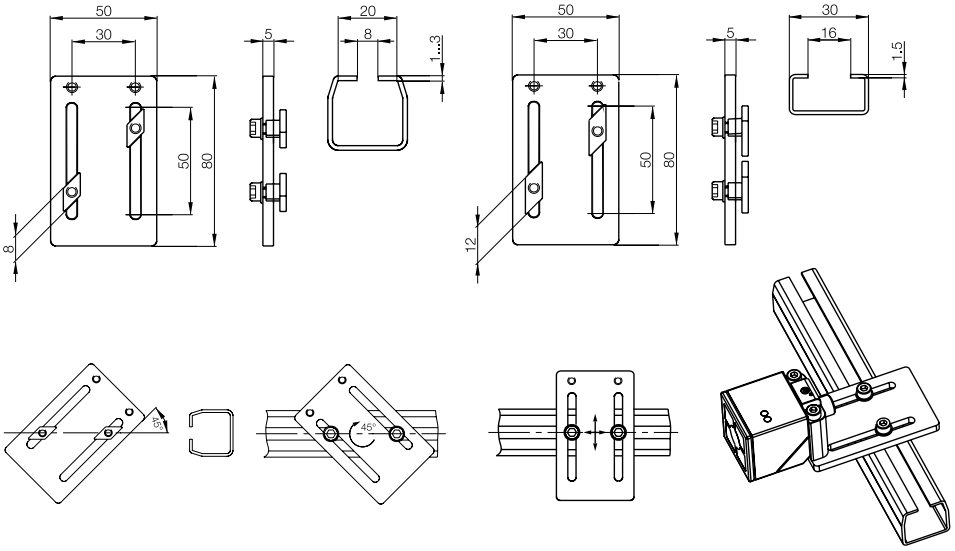
Mounting bracket BAM00JW



Three different mounting options

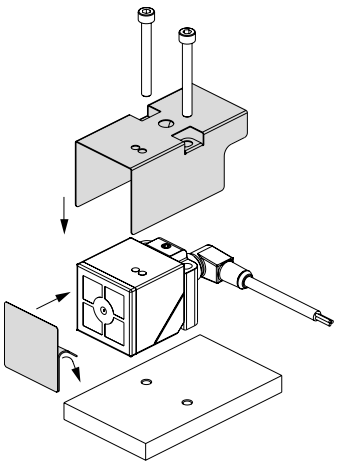
Fastener set BAM026J

- 1 mounting plate
- 2 slot nuts
- 2 cheese head screws M5 × 10 DIN 912
- 2 washers Ø 5.3, DIN 533
- 2 cheese head screws M5 × 40, ISO 4762



Weld protection for inductive sensors 40 × 40 mm

The BAM00K0 weld protection consists of a protective cover and a self-adhering PTFE film for protecting the active surface. If the sensor head is replaced, the welding protection must not be removed.

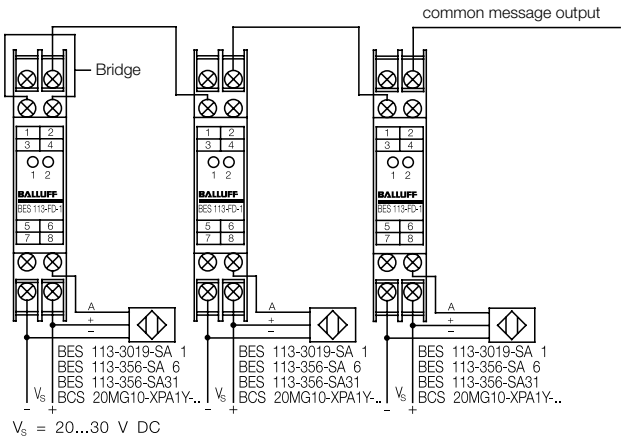


Cascading

When cascading several BES 113-FD-1 (series connection), the output (2) must be connected to the input (3) of the downstream device. The jumper between VI is not needed except for the first device. When there is a malfunction, the message appears on the last device.

The defective sensor is indicated by the first weakly illuminated LED in the cascade.

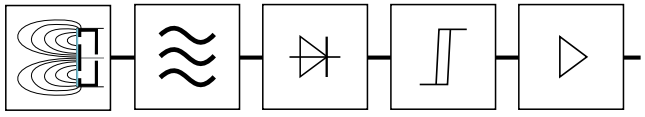
Small and space-saving, the BES 113-FD-1 can be mounted in a DIN rail according to DIN EN 50022-35.



CAPACITIVE SENSORS

Principle of operation

The non-contacting capacitive sensor converts a variable of interest in technical production terms (e.g. object or level detection) into a signal which can be processed further. The function is based on the alteration in the electrical field around its active zone. The sensor consists essentially of an electrode system, oscillator, demodulator, trigger stage, output driver/switching amplifier. The electrode systems together with an active measuring electrode (sensing face) form an open plate capacitor. This is part of an RC oscillator.



When metallic or non-metallic objects approach the sensing surface of the capacitive sensor, the capacitance of the open plate capacitor changes and the oscillator begins to oscillate. This causes the trigger stage downstream of the oscillator to trip, and the switching amplifier to change its output state. The function of the capacitive sensor can be explained using the equation for capacitance of a plate capacitor:
$C = \varepsilon 0 \times \varepsilon r \times F \times (1/S)$
εr: As a relative dielectric constant (property of the target medium)
ε0: As an absolute dielectric constant (natural constant)
F: As electrode surface
S: As distance
From the above formula it follows that objects which have a sufficiently large relative dielectric constant (εr) as well as area (as a ratio with the sensing surface) and sufficiently close distance are detected by the capacitive sensor. In addition to the described universal technology in which the sensor is a component of an oscillator circuit, there are also more modern technologies which satisfy the special application requirements.

Sensor for object detection (flush)

Sensors with a straight line electrical field (no side sensitivity). These detect solid bodies, e.g. cartons, paper stacks, plastic blocks and plates as well as glass. They also detect media levels through a wall made of plastic or glass. The wall thickness may not exceed 4 mm.

Sensor for level detection (non-flush)

Sensors with a spherical electrical field. These units are designed to detect the product, bulk goods or liquids (e.g. granulate, sugar, flour, corn, sand, or oil and water) with their sensing surface, preferably by contacting the medium or through a glass or plastic wall.

Foam and residue compensation (smart level technology)

Patented technology which enables optimal detection of levels of electrically conductive (polar) media (water, lyes, acids, ...). This is accomplished with direct contact (immersion probes) and through a maximum 10 mm thick wall of plastic, glass or ceramic. The sensors which are based on this technology compensate for the dielectric effect of the container wall and enable reliable distinguishing between the target medium and its build-up, films and foaming.

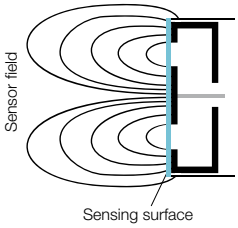
Setting the sensitivity on capacitive sensors

In most cases adjusting the sensor sensitivity (capacitance value which when exceeded causes the sensor to switch) to the environment is required (pre-loading by other objects in the capture area, e.g. a container wall). The setting is done depending on the device generation using a potentiometer, a key, a separate line or IO-Link.

Definitions and Characteristic Values

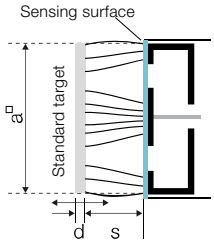
Sensing surface

Actively measuring area and thereby the externally sensitive electrode/plate of the electrode system. It is generally somewhat smaller than the surface of the cover.



Standard target

A square plate made of Fe 360 (ISO 630), used to define sensing distances per EN 60947-5-2. Thickness is 1 mm; the side length "a" corresponds to the diameter of the inscribed circle of the active surface or 3 s_n, if the value is larger than the named diameter.



Rated operating distance S_n

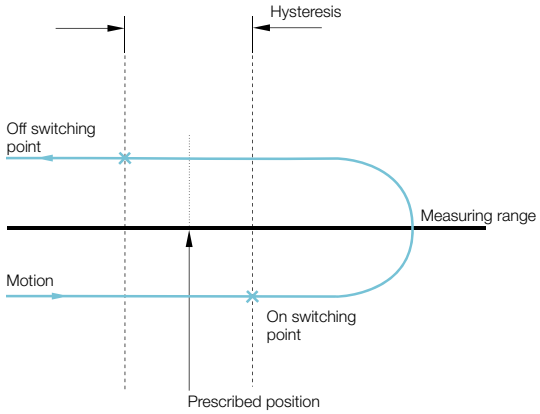
Maximum achievable switching distance from the standard target under device specification (generally with s_n as shipped from the factory).

Effective operating distance S_r

The switching distance of a single proximity switch measured under specified conditions, e.g. flush mountable, rated operating voltage U_e, temperature T_a.

Hysteresis

The hysteresis is the difference in distance between the switch-on point (for an object that is approaching) and the switch-off point (for an object that is receding).



Repeat accuracy

Variance in the output values when approaching a mechanically prescribed position repeatedly from the same direction.

Switching frequency

The maximum speed at which the sensor can reliably detect an object under standardized conditions. This corresponds to the maximum number of switching operations (ON/OFF) per second. The value is dependent on the size and speed of the object and its distance from the sensing face.

Temperature drift

The temperature drift indicates by what percentage amount of Sr the switching distance may change (maximum) within a defined temperature range.

Ambient temperature T_a

The maximum permissible temperature range at which a sensor may be operated while ensuring reliable functioning of the sensor.

Degree of protection

Indicates the suitability of electrical components for various ambient conditions and protection of persons from potential hazard in their use. The degrees of protection are specified according to IEC 60529. Code letters IP (International Protection Marking) designate protection against shock hazard, ingress of solid foreign bodies, and water, for electrical equipment. Example IP69K: Protection against ingress of water at high pressure and steam cleaning per DIN 40050 Part 9.

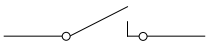
Output functions, connections and electric characteristic values

Normally closed (NC)

Also "normally closed" – sensor principle/output function in which the switching output is inactive (not energized) when the sensor detects an object. The switching output is energized when no object is present.

Normally open (NO)

Also "normally open" – sensor principle/output function in which the switching output is active (energized) when the sensor detects an object. The switching output is not energized when no object is present. This principle is the most commonly used in automation technology.



PNP

Switched positive – the load is connected to negative and the positive is switched.

NPN

Switched negative – the load is connected to the positive and the negative is switched.

PNP/NPN (push/pull)

The sensor can be used both as PNP or NPN, depending on the wiring of the load.
(The outputs from multiple devices cannot be wired in parallel)

PNP/NPN NO/NC codable

The sensor can be used both as PNP or NPN, depending on the wiring of the load.
By reversing the supply voltage (brown to –, blue to +) the switching function can be set from NO to NC.

IO-Link

The capacitive sensor can with an appropriate counterpart (master) enter into data communication (com2, 30Kbit) through its switching output. On one hand it can transmit much data (e.g. the continuous degree of damping by an object or fill medium as a numerical value), and on the other hand be configured remotely from the counterpart. If there is no master the sensor automatically goes into its normal switching mode (SIO): e.g. PNP/NC

Analog output

Output switches between $+U_B$ and $-U_B$. By reversing the supply voltage (brown to –, blue to +) the switching function can be set from NO to NC.

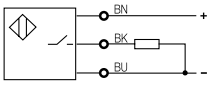
Connection diagrams

DC 3-/4-wire

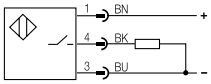
PNP (+) sourcing

Cable/terminals

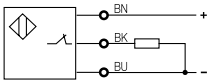
NO

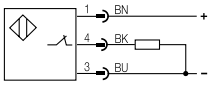


Male



NC

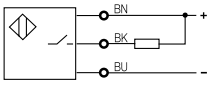




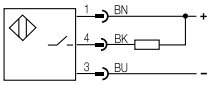
NPN (–) sinking

Cable/terminals

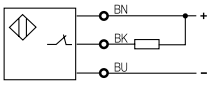
NO

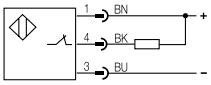


Male



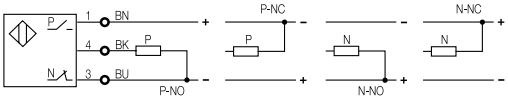
NC





PNP/NPN selectable

NO/NC user selectable

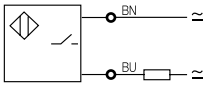


AC/DC 2-wire

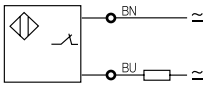
Protection isolated (Protection Class II)

Cable/terminals

NO



NC



Smallest bending radius for standard PUR and standard PVC cables

Bending radius at rest: min. 5 × cable diameter
Bending radius in motion: min. 10 × cable diameter

Operating voltage U_B

Voltage range (V) n which flawless functioning of the sensor is assured.
It includes all voltage tolerances and ripple.

Voltage drop U_d

The maximum voltage loss of the switching final stage between switching output and $+U_B$ (PNP) or $-U_B$ (NPN) at the maximum specified load current.

Ripple

The maximum permissible AC voltage (peak-to-peak of U_e) which may be superimposed on the operating voltage U_S without affecting the function of the sensor.

Output current I_e

The maximum current with which the output of the sensor may be loaded in continuous operation. Also referred to as operating current.

No-load current

The maximum internal current consumption with no load connected to the switching output (in general at $U_{B\ max.}$ and actuated).

Short-circuit protection

Protective device for overload and short-circuit. Present in all our DC sensors. In the event of overload or short-circuit at the output, the output transistor is automatically switched off. As soon as the malfunction has been corrected, the output stage is reset to normal functioning.

Reverse polarity protection

Also called polarity reversal protection. This sensor technology protects against reversal of the supply voltage (plus and minus) and reversal of the connection wires (brown and blue).

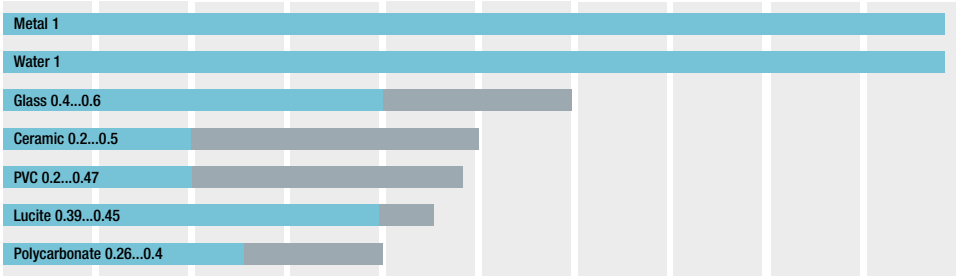
Reverse protected

The sensor electronics is protected against any possible reversal combination of all the leads.

Correction factors and guide values for smart level technology

Conditions of operation and correction factors

If an electrically non-conducting actuation element (target) enters the sensor field, the capacitance changes proportionally to εr and to the immersion depth or to the distance to the sensing surface. Since the rated switching distance sn is based on a grounded standard target made of Fe , the switching distances must be corrected when using other materials:



These data depend among other things on the sensor type and the object dimensions and should be used for reference only.

Application area for foam and residue compensation (smart level technology) with guide values

The media and conductivity values given here are only guide values and are for general orientation only. Basically all the media listed can be reliably detected. The differences are in the compensation ability for buildup, foaming and films when the level is falling. When in doubt, testing should be carried out, since factors such as temperature and media concentration can affect the conductivity values. Please contact us.
Conductivity values for other media on request.

BCS Standard up to approx. 0.7 mS	Smart level technology 15 approx. 0.7...15 mS	Smart level technology 50 approx. 15...50 mS	Smart level technology 500+ approx. 50...500 mS and greater
Industrial waste water (select the sensor according to conductivity of the medium			
	Disinfectants (media containing chlorine)		
	Table salt solution		
Alcohol	Rinsing agents		
Marmalade	Milk/buttermilk/yogurt		
Demineralized water	Fruit juice		
Mineral oils	Coolant/lubricants		Ketchup/ mayonnaise/mustard
Plant oils	Formic acid (30 %)		Phosphoric acid (10 %)
Ammonia (30 %)	Vinegar		Sulfuric acid (10 %)
Drinking water	Cola		Calcium chloride (30 %)
Sugar solution, diluted	Honey/glue	Blood	Hydrochloric acid (40 %)
Toothpaste	Beer	Seawater	Nitric acid (12 %)

Application and setting examples for basic sensor types

Flush sensors

Normally, the rectilinear field of flush-mounted sensors scans objects from a distance.
To ensure flawless switching of the sensor, the maximum switching distance must be checked before using the device. The following example applications show how you can do this.

Detecting solid bodies made of different materials

A flush mountable capacitive sensor will be used to detect a ceramic plate. The sensor is set to the maximum rated switching distance sn of, for example, 4mm from metal or by approximation from your hand. With this preset distance of 4 mm, move the sensor towards the ceramic plate. The rated switching distance sn to the ceramic plate has been reduced to approx. 2mm.
The distance of 2 mm is now the maximum permissible switching distance for the ceramic plate. Only adjustment for smaller sensing distances than 2mm is permitted.

Attention! To ensure that our sensors work reliably within their technical specifications, they have a greater sensing distance than the maximum rated switching distance sn indicated in the catalog. If the user now adjusts the switching distance for the above described ceramic plate to 4 mm, the sensor will operate outside the permitted range. This entails a risk that temperature and other environmental factors, plus electrical interference in the mains, may lead to faulty switching by the sensor.

Sensing levels through container walls

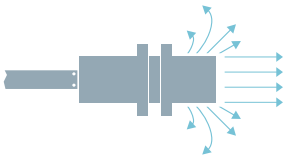
A flush mountable capacitive sensor will be used to detect a liquid, e.g. water, through the container wall. The dividing wall must be made of a non-conductive material, e.g. glass or plastic. The max. permissible wall thickness increases with the diameter of the sensing face: max. 4 mm (except SmartLevel technology).

The sensor's face (sensing surface) is now attached to the glass or plastic wall as tightly as possible. The tank is then filled with water until approx. 30 to 50% of the sensor's sensing surface is covered.

Particularly when small and ultra-small quantities of liquid are being scanned, and if the sensor has not been mounted in a form-fitting configuration (flat sensor surface on a tank wall with a small radius), 30 % should be chosen as a coverage area. Now turn the sensor's potentiometer counter-clockwise (less sensitivity) until it turns off (NO). Now turn the potentiometer clockwise again (greater sensitivity) until the LED and sensor turn on again. For modern versions with a teach function at 30-50 % coverage of the sensing face through the fill material hold down the key or placed a defined potential on the Teach line until the LED flashes (full teach).

Non-flush sensors

These capacitive sensors with their spherical electrical field are especially suited as level detectors for liquids, granulates or powders.



Sensing levels directly in the container

A non-flush mountable capacitive sensor will be used to detect a granulate in a tank. The sensor is now installed in the tank with its sensing surface (clear zone at the head as described in the catalog), in a configuration ensuring that the head is completely covered by the product.

Now turn the sensor's potentiometer counter-clockwise (lower sensitivity) until the LED, and thus the output signal, switch off. Now turn the potentiometer clockwise again (higher sensitivity) just enough until the LED, and thus the output signal, switch on again. Then turn the potentiometer another ½-turn (180°-rotation) clockwise. This compensates for possible temperature fluctuations or humidity changes in the product you are detecting. If a medium has a high εr, especially water, the sensor will react much more sensitively. Therefore the adjustment should be for around 50 % coverage or a sensor resp. immersion probe in the SmartLevel technology series should be used.

Detecting levels of conductive liquids directly in the container or through a container wall

Level sensors using SmartLevel technology detect liquid, conductive and even sticking liquids directly or indirectly through container walls. And they do it without adjustment using the factory default setting as long as the wall thickness does not exceed 6mm. For thicker walls or extremely conductive and adhering media the SmartLevel technology sensor can be adjusted.

Adjustment:

First install the sensor flush against the container wall. Bring level to 30...50 % coverage of the sensing face. Set the switching point on the potentiometer so that the sensor is just switching. For the new device generation with Teach key hold down or place a defined potential on the Teach line until the LED flashes.

Adjustment can also be made with a totally filled or empty container:

Full compensation: turn the potentiometer slowly counter-clockwise until the sensor turns off. Now slowly turn the potentiometer (with the sensor switched off) clockwise until the sensor turns on again. At the turn-on point then turn the potentiometer another half-turn (approx. 180°) clockwise and the SmartLevel sensor is adjusted.

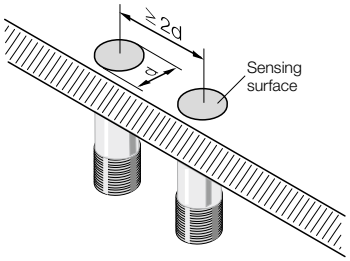
Empty compensation: Now slowly turn the potentiometer (with the sensor switched off) clockwise until the sensor turns on again. At the turn-on point the potentiometer only needs to be turned 3 times by approx. 360° counter-clockwise and the SmartLevel sensor is adjusted.

In essence the switching point for a SmartLevel sensor should be at 30-50 % coverage of the sensing face with the medium.

Installation guidelines

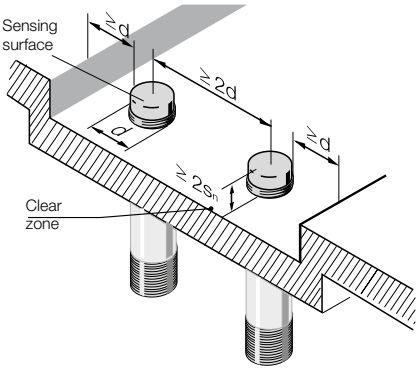
Flush-mount Proximity switches

Flush mountable sensors can be installed with their sensing surface flush to the metal. The distance between two proximity switches (in row mounting) must be ≥ 2d.



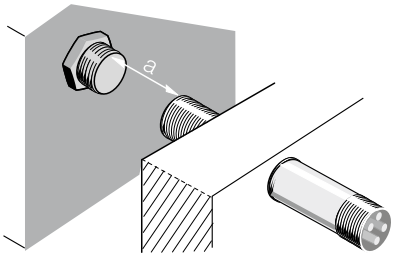
Non-flush mountable proximity switches

The sensing surface must extend ≥ 2 sn from the metallic installation medium. The distance between two proximity switches must be ≥ 2d.

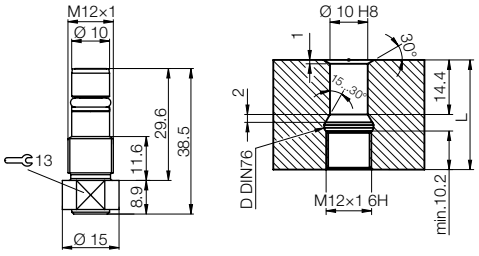


Opposing Installation of two sensors

The opposing installation of two sensors requires a minimum distance of a ≥ 4d between the sensing surfaces.



Installation note for high-temperature and pressure-resistant capacitive sensors



Installation and mounting options

Mounting sensors for object detection

Central mounting in a drilled hole
- M5, M8, M12, M18, M30
- Simple, flexible fastening with two nuts
- Flexible positioning in the sensor axis

Through-holes in the sensor
- Standard mounting for cubical sensors
- Simple mounting through threaded hole
- Clear positioning when replacing

Threaded holes in the sensor
- Central hole with M3 thread
- Very easy installation
- Clear positioning when replacing

Clamping a cylindrical sensor
- Suitable for all cylindrical designs
- Simple, reliable fastening
- Very flexible positioning

Installation as a leak sensor
- Simple to install
- Clear positioning when fastening
- Use of sensors with a fixed switching distance

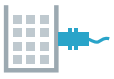
Installation of fill-level indicators

Flange mounting
- Pressure-tight screw connection
- Can be used in metal containers
- Installation in standard bushings is possible

Hole mounting
- Simple screw connection
- Can be used for every container material
- Not pressure-tight
- Suitable for powders and granules

Installation of cable ties
- Simple, subsequent fastening
- No contact with product necessary
- For non-metallic containers

Wall mounting
- Simple fastening
- For non-metallic containers
- No drilling of container
- No contamination of the medium



PHOTOELECTRIC SENSORS

Ambient light

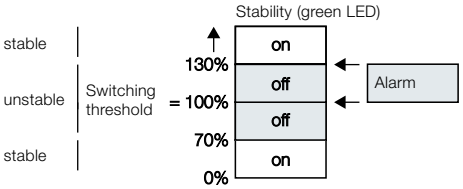
The portion of light which is picked up by the receiver, but does not originate from the emitter.

Ambient temperature T_a

The maximum permissible temperature range at which a sensor may be operated while ensuring reliable functioning of the sensor.

Alarm output

Device/function on the receiver which generates a warning signal when there is a malfunction. This can be caused by contamination or mechanical maladjustment. The alarm output is activated if the received signal lies in the alarm range for a defined amount of time.

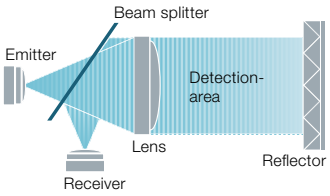


Amplifier

Amplifiers prepare signals from sensor heads or fiber optics and convert them into a switching or analog signal.

Autocollimation

Principle of reflection in which the light beam striking a reflector is reflected back to itself in parallel. The emitter and receiver use the same optical lens, so that the emitted light and the light beam reflected back from the reflector lie on the same optical axis. The advantage compared with the dual lens principle is that there is no dead zone in front of the sensor and that the switching response does not depend on the approach direction.



Background suppression (BGA)

Procedure for reliably distinguishing an object against its background. Can be done nearly regardless of the color and surface of the object. A reflecting background has no effect. Sensors with background suppression consist of a light emitter and several light receivers. By means of triangulation the position of an object can be determined. Depending on this position the switching distance can be set and the object thereby distinguished from the background.

Beam shape

Focused
With a focused light beam the emitter light is bundled at a certain distance into a minimum diameter. This location is referred to as the point of focus. At this point small parts detection and switching accuracy are at their greatest.

Collimated
With a collimated light beam the light emitted is radiated out in parallel. This means the size of the light spot remains virtually unchanged over the entire working range of the sensor. This allows distance-independent yet precise object detection.

Divergent
In a divergent light beam the light spot created by the emitter becomes larger with increasing object distance. In the case of through-beam sensors a divergent light beam makes possible simple alignment with the reflector or receiver.

Blind zone

Area between the active surface and minimum switching distance within which a target cannot be detected.

Color sensor

Photoelectric sensor for detecting and evaluating colors.

Contamination

Dirt and dust particles which collect on a sensor and reduce the range of photoelectric sensors and fiber objects compared with pure air. Deposits on the lens reduce its light transmission. The light is absorbed and scattered in the beam path. An oil-free source of compressed air can be used to prevent the effects of dirt and contamination due to impure air.

Correction factors (for diffuse sensors)

Values for determining the range of a sensor which is dependent on the differing reflection properties of an object. For example the range of the sensor is reduced with darker objects due to the greater light absorption.

For objects with different reflective properties the following correction factors can be applied (see table).

Correction factor	Object, surface
1	Paper, white, matte 200 g/m²
1.2...1.6	Metal, shiny
1	Styrofoam, white
0.6	Cotton fabric, white
0.5	PVC, gray
0.4	Wood, rough
0.3	Cardboard, black, shiny
0.1	Cardboard, black, matte

Dark switching

Type of photoelectric sensor in which the output becomes active when there is no light at the receiver.

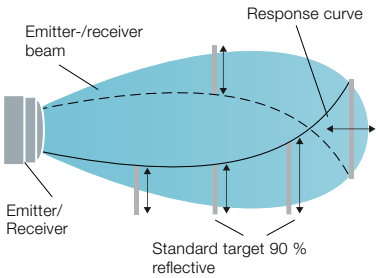
Light receiver	Amplifier	Consumer
Non-illuminated	Fully modulated	Switched on
Illuminated	Not fully modulated	switched off

Detection range

Range in which the switching distance of a sensor from the standard target can be adjusted.

Diffuse sensors

Photoelectric sensor in which the emitter and the receiver are in one housing. The alignment to a detection object is largely uncritical. A target object (e. g. a standard target which is 90 % reflective) bounces a part of the light from its surface back to the receiver. If the standard target reaches the response curve, the output signal will change. The sensing distance depends on the size, shape, color and properties of the reflective object surface. Using a Kodak gray card with 90 % reflectivity (like white paper), distances of up to 2 m can be obtained.



Distance sensor with analog output

A sensor which generates a continuously varying output signal which is a function of the distance between the sensing surface and the target point. It generates a linear output signal within a certain range (measuring range).

Fiber optics

Optical fiber made of glass or plastic with a diameter of down to 50 µm, consisting of several hundred individual fibers. Extremely flexible. The optical properties are not affected by moisture or aggressive media.

Mounting notes for fiber optics

The resistance of the sealing ring must be overcome when connecting the fiber optics to the base unit.

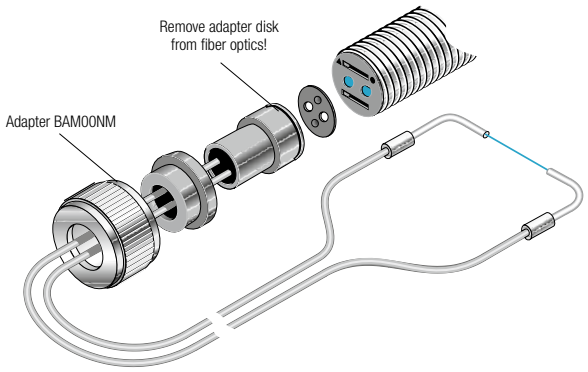
Fiber optics design

UZG type
- Polyurethane jacket
- Strain relief
- Glass optical fiber bundle
- Flexible
- Excellent chemical resistance
- Does not become brittle from oils and cooling emulsions
- Temperature resistance –20...+85 °C

MZG type
- Corrugated metal armor
- Strain relief
- Glass optical fiber bundle
- Resistant to high temperatures –20...+170 °C (up to +250 °C for a fixed installation)
- Flexible
- Crush-resistant
- Resistant to hot swarf

SMG type
- Silicon protection jacket
- Corrugated metal armor with glass optical fiber bundle strain relief
- Extended temperature range –40...+150 °C
- Highly flexible
- Crush-resistant

Mounting instruction BOS 30M with BFO 18V



Fork sensors

U-shaped housing style of through-beam sensors with the emitter and receiver facing each other. Advantage: Ease of installation, alignment and simple electrical connection.

Gray value shift

The switching distance difference when calibrating using different object reflectivities. The sensor is calibrated for a distance using a Kodak gray card with 90 % reflection. A Kodak gray card having 18 % Reflexion is used and the resulting distance measured. The difference between these two switchpoints in % is referred to as the gray value shift. The smaller the gray value shift, the more color-independently the sensor operates.

Hysteresis

Signal difference resulting for measurement sensors when a mechanically prescribed position is approached from one side, then crosses this point and afterwards approaches this same position from the other direction. Position difference between switching point (object approaches) and switch-back point (object travels away) for switching sensors.

Lasers, laser class

Designation both for a physical effect as well as a device used to generate laser beams. Laser stands for "light amplification by stimulated emission of radiation". Laser beams are electromagnetic waves. The purpose of laser protection classes is to protect persons from laser radiation by specifying limit values. Based on this, the lasers used are classified according to a scale reflecting the degree of hazard. The calculations and associated limit values relevant for the classification are described in the standard EN 60825-1:2001-11. The grouping is based on a combination of output power and wavelength, taking into account emission duration, number of pulses and angle extension.

Balluff sensors have the following laser protection classes:
Class 1: Non-hazardous, no special caution.
Class 2: Low power, eyelid closing reflex is sufficient.

Light

The medium with which photoelectric sensors operate. In the sensor there is a change in the light intensity on an optical path (between emitter and receiver) caused by a target object. This change is evaluated by the sensor. Depending on the properties of this object and the characteristics of the optical beam, the light beam is either interrupted, reflected or scattered. The emitter usually consists of high-power red light LEDs and laser LEDs, with photodiodes or CCD (charge coupled devices) used as the receiver. Red light LEDs are used because the light beam and the detection point can be measured visually and can be adjusted more easily. In the case of laser sensors the light spot is usually more sharply delineated and is highly visible. Even over great distances.

Light band sensor

LED light band sensor
Photoelectric sensor with LEDs consisting of multiple emitters and receivers in a row in separate housings. The close arrangement of the optical components means the emitter generates a light band is generated and the entire light intensity measured at the facing receiver side.

Laser light band sensor
Photoelectric laser sensor in which a laser beam is refracted on the emitter side over a prism at a sharp angle for generating a homogeneous light band. The receiver contains a CCD (charge coupled device) used for precisely detecting edges, even at up to 2 m of distance. A CCD consists of very precisely arranged light-sensitive cells whose charge is measured and processed by the electronics.

Light grids

Photoelectric sensor in which the emitter and the receiver are located in separate housings. By placing individual emitter and receiver elements in a row a large area can be monitored. As soon as an object enters this area, a switching signal is triggered. Light grids with analog output also tell you the object location or its size.

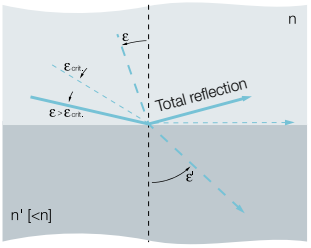
Light-on switching

Type of photoelectric sensor in which the output becomes active when there is light at the receiver.

Light receiver	Amplifier	Consumer
Illuminated	Fully modulated	Switched on
Non-illuminated	Not fully modulated	switched off

Light refraction

A change in direction of light rays at the interface between two optical media having different optical density (e.g. glass/air). The degree of refraction depends on the quotients of the optical densities of both media and on the angle of incidence ε to the optical axis.
If a light beam travels from a dense medium, n, into a thinner one, n', its course there will show a greater angle ε '. Above $\varepsilon_{crit.}$ (critical angle at which the refracted ray travels parallel to the interface). If however it again enters the medium having density n, the result is total reflection.



Light type

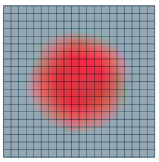
Photoelectric sensors make use of the differing wavelengths of light, with some using visible light in different colors and others using light invisible to the human eye. Photoelectric sensors use mainly the following light types:
Red light: Visible, easy to align, universal for many applications
Infrared light (IR): Invisible, essentially color-independent, ideal in dirty environments
Laser red light: Visible, physical properties of the laser make it ideal for small parts detection and for long ranges, high switching accuracy
White light: Visible, for special applications, e.g. contrast and color sensors
Ultraviolet light (UV): Hardly visible, ideal for luminescent marks

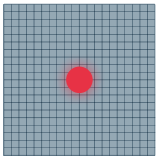
MICROmote

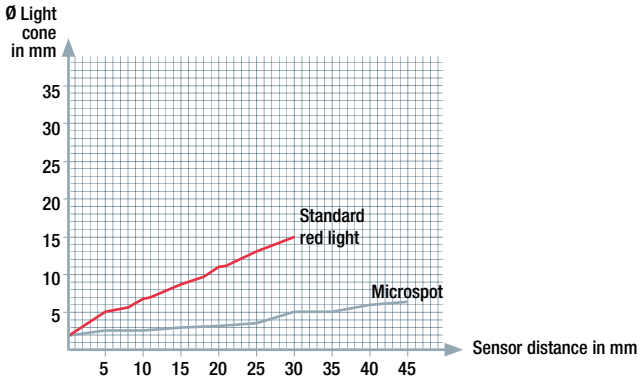
Photoelectric sensor system which combines an external processor unit (amplifier) with exceptionally small photoelectric sensor heads. This allows miniaturized sensor heads to be realized.

Microspot/Pin Point

LEDs with opening angles of ≤3°. These are used where small, extremely sharp light spots are required.


Standard red light


Microspot

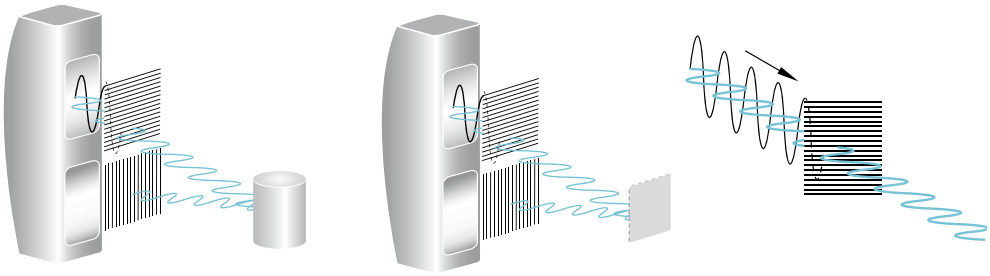


On delay

Time a sensor requires to be ready when an object enters the capture range.

Polarizing filter

Light filters which allow only a certain oscillation plane to pass and thereby effectively filters out scattered light: the light is polarized. Reduces reflections from metallic surfaces and reduces spurious switching. Also referred to as a polarizing filter.



Relative humidity

Ambient condition which can affect the sensor function. For example if the lens is subjected to high relative humidity.

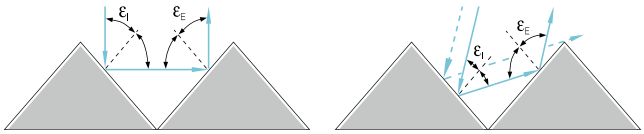
Reflector

Light beams extend to a straight line in free space. Upon striking an object, they are reflected. Depending on the surface properties of the object, we distinguish between the following reflection types: total reflection, retroreflection, and diffuse reflection.

In optical object detection and image processing retro-reflectors are often used. The retro-reflection is caused by two mirrors aligned vertically to each other. A light beam is again projected back through double reflection in the same direction. The angle of incidence can thus be altered in a relatively wide range. The two-dimensional principle of retroreflection can be carried over to a spatial system with three mirrors which are oriented at right angles to each other (one corner of a cube standing on its point). A light beam entering this system is totally reflected by all three surfaces and exits parallel to the incident beam.

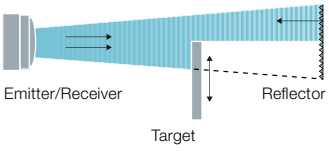
Retroreflection

A light beam which is again projected back through double reflection in the same direction. The angle of incidence can thus be altered in a relatively wide range. Is caused by two mirrors at vertical angles to each other.



Retroreflective sensor

Photoelectric sensor in which the emitter and the receiver are in one housing. A reflector on the opposite side of the beam bounces the emitter's light back to the receiver. A target object interrupts the reflected light beam and causes a change in the output signal. With reflective surfaces it is recommended that the light reflected from the object be filtered out using a polarizing filter in front of the receiver, in order to prevent any possible fault signals.



Reverse polarity protection

Also called polarity reversal protection. This sensor technology protects against reversal of the supply voltage (plus and minus) and reversal of the connection wires (brown and blue).

Sensor heads

Sensor heads consist of an emitter and receiver element. In through-beam sensors the emitter and receiver elements are housed in separate enclosures.

Short-circuit protection

Protective device for overload and short-circuit. Present in all our DC sensors. In the event of overload or short-circuit at the output, the output transistor is automatically switched off. As soon as the malfunction has been corrected, the output stage is reset to normal functioning.

Smallest bending radius for standard PUR and standard PVC cables

Bending radius at rest: min. 5 × cable diameter
Bending radius in motion: min. 10 × cable diameter

Teach-in

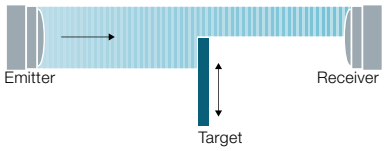
Method for setting sensors by pressing a button. No potentiometers or slide switches are used. Because there are defined setting increments, the advantage is that the sensor cannot be set in an unreliable range. The microcontroller also assumes control of the contamination indicator and the contamination output.

Test input

Input on a photoelectric sensor which enables function checking of the emitter and receiver by interrupting its light pulses. Contamination or maladjustment of the optical axis causes the emitter signal to reach the receiver only weakly, if at all. Therefore, the output will not switch, even though the test input is activated. The test function corresponds to a remote monitoring of the photoelectric sensor and enables a preventive system control.

Through-beam sensor

A photoelectric sensor consisting of separate emitter and receiver units which must be aligned on opposite sides of the sensing path. Long ranges of up to 50 m. When an object interrupts the light beam, the receiver switches, i.e. the output signal changes – regardless of the surface composition of the target. In unfavorable conditions (e.g. dust, moisture, oil), you achieve the best results with through-beam sensors.



Time-of-flight sensor

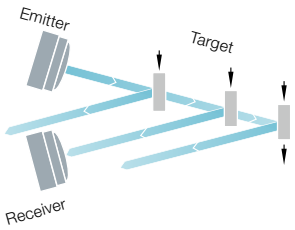
Photoelectric sensor in which the light time-of-flight between emitter, the object and the receiver is measured. The duration of this time-of-flight allows the distance to the object to be determined.

Transmission

Measure for the transparency of a medium. It is defined as the ratio of: – passed to – entering light (in %). Diffuse transmission is the term which is used when the light is partially or completely diffused.

Triangulation

Procedure whereby the light cones of the emitter and receiver lobe of a through-beam system intersect each other at a narrow angle. A target object is detected where the lobes overlap. The emitter light which is reflected or diffused from objects outside this limited zone cannot be registered by the photo-receiver. Benefit: With triangulation, relatively small changes in distance can be recognized (e.g. slots, offsets on shafts). Color and shape of the object have very little effect.



Turn-off time

The time a sensor requires to respond when the target leaves the detection range at a factor of 0.5 of the radiant power.

Sensors part 2

Precise, flexible all-rounders

ULTRASONIC SENSORS

Whether for position detection, distance detection or detection of powdery and fluid media – our ultrasonic sensors are precise all-rounders. They measure fill levels, heights and sag without making contact as well as count and monitor the presence of objects. These universal sensors work regardless of color or surface composition and are unaffected by transparent objects with strong reflection. Fog, dust and impurities are also not a problem for them. Their high resolution and small blind zones guarantee the highest precision. Since they offer a generous detection range, they also work reliably at greater object distances.

Ultrasonic sensors from Balluff are available as switching or analog output types. Depending on the output signal you can either reliably detect and count objects or determine distances with high precision. These sensors therefore have versatile uses.

The most important benefits

- Contactless detection
- Reliable in critical environmental conditions such as fog, dust and impurities
- Irrespective of color, transparency, reflection properties and surface finish on the object
- Precise detection of even smaller objects
- Rectangular and cylindrical heads allow for greater freedom of design
- Can be used as normally open or normally closed – various output functions



PNP normally open/normally closed	**BUS0065** BUS M12M1-PPX-02/015-S04G	**BUS0066** BUS M12M1-PPX-05/024-S04G		
NPN normally open/normally closed	**BUS0063** BUS M12M1-NPX-02/015-S04G	**BUS0064** BUS M12M1-NPX-05/024-S04G		
PNP/NPN normally open/normally closed push-pull			**BUS0020** BUS M18M1-GPXI-02/015-S92G	
Style	block style	Ø 12 mm	Ø 18 mm	
Interface	IO-Link 1.0	—	IO-Link 1.1	
Connection	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 5-pin	
Housing material	PBT	Nickel-plated brass PBT	Brass PBT	
Material sensing surface	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	
Range	600...8000 mm	40...350 mm	25...250 mm	
Switching frequency	3 Hz	20 Hz	25 Hz	
Approval/Conformity	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	
Ambient temperature	-25...70 °C	-25...70 °C	-25...70 °C	
Protection degree	IP67	IP67	IP67	
Repeat accuracy	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	
Operating voltage Ub	9...30 VDC	10...30 VDC	10...30 VDC	
Productview	Page 24	Page 24	Page 24	





	BUS0023 BUS W18M1-GPXI-02/015-S92G	**BUS0029** BUS M18M1-GPXI-03/025-S92G	**BUS002A** BUS W18M1-GPXI-03/025-S92G	**BUS004Z** BUS M18M1-GPXI-07/035-S92G	**BUS004Y** BUS W18M1-GPXI-07/035-S92G
	Ø 18 mm	Ø 18 mm	Ø 18 mm	Ø 18 mm	Ø 18 mm
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin
	Brass PBT	Brass PBT	Brass PBT	Brass PBT	Brass PBT
	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass
	25...250 mm	30...350 mm	30...350 mm	65...600 mm	65...600 mm
	25 Hz	25 Hz	25 Hz	12 Hz	12 Hz
	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67	IP67
	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	Page 24	Page 24	Page 24	Page 24	Page 24



PNP normally open/normally closed				
2 × PNP normally open/normally closed			**BUS002P** BUS M30E1-PWX-03/025-S92K	
PNP/NPN normally open/normally closed push-pull	**BUS004P** BUS M18M1-GPXI-12/100-S92G	**BUS004N** BUS W18M1-GPXI-12/100-S92G		
Style	Ø 18 mm	Ø 18 mm	Ø 30 mm	
Interface	IO-Link 1.1	IO-Link 1.1	—	
Connection	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	
Housing material	Brass PBT	Brass PBT	Stainless steel PBT, TPU	
Material sensing surface	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	
Range	120...1300 mm	120...1300 mm	30...350 mm	
Switching frequency	10 Hz	10 Hz	25 Hz	
Approval/Conformity	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	
Ambient temperature	-25...70 °C	-25...70 °C	-25...70 °C	
Protection degree	IP67	IP67	IP67	
Repeat accuracy	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	
Operating voltage Ub	10...30 VDC	10...30 VDC	9...30 VDC	
Productview	Page 25	Page 25	Page 25	





		BUS002T BUS M30E1-PPX-03/025-S92K	**BUS0022** BUS M30M1-PPX-03/025-S92K		
	BUS002R BUS M30M1-PWX-03/025-S92K			**BUS005J** BUS M30E1-PWX-07/035-S92K	**BUS005H** BUS M30M1-PWX-07/035-S92K
	Ø 30 mm	Ø 30 mm	Ø 30 mm	Ø 30 mm	Ø 30 mm
	–	–	–	–	–
	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin
	Brass PBT, TPU	Stainless steel PBT, TPU	Brass PBT, TPU	Stainless steel PBT, TPU	Brass PBT, TPU
	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass
	30...350 mm	30...350 mm	30...350 mm	65...600 mm	65...600 mm
	25 Hz	25 Hz	25 Hz	12 Hz	12 Hz
	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67	IP67
	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS
	9...30 VDC	9...30 VDC	9...30 VDC	9...30 VDC	9...30 VDC
	Page 25	Page 25	Page 25	Page 25	Page 25



PNP normally open/normally closed	**BUS005T** BUS M30E1-PPX-07/035-S92K	**BUS005F** BUS M30M1-PPX-07/035-S92K		
2 × PNP normally open/normally closed			**BUS003H** BUS M30E1-PWX-20/130-S92K	
Style	Ø 30 mm	Ø 30 mm	Ø 30 mm	
Interface	—	—	—	
Connection	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	
Housing material	Stainless steel PBT, TPU	Brass PBT, TPU	Stainless steel PBT, TPU	
Material sensing surface	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	
Range	65...600 mm	65...600 mm	200...2000 mm	
Switching frequency	12 Hz	12 Hz	8 Hz	
Approval/Conformity	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	
Ambient temperature	-25...70 °C	-25...70 °C	-25...70 °C	
Protection degree	IP67	IP67	IP67	
Repeat accuracy	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	
Operating voltage Ub	9...30 VDC	9...30 VDC	9...30 VDC	
Productview	Page 25	Page 25	Page 25	





		BUS003A BUS M30E1-PPX-20/130-S92K	**BUS0039** BUS M30M1-PPX-20/130-S92K		
	BUS003C BUS M30M1-PWX-20/130-S92K			**BUS003U** BUS M30E1-PWX-35/340-S92K	**BUS003W** BUS M30M1-PWX-35/340-S92K
	Ø 30 mm	Ø 30 mm	Ø 30 mm	Ø 47.5 mm	Ø 47.5 mm
	—	—	—	—	—
	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin
	Brass PBT, TPU	Stainless steel PBT, TPU	Brass PBT, TPU	Stainless steel PBT, TPU	Brass PBT, TPU
	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass
	200...2000 mm	200...2000 mm	200...2000 mm	350...5000 mm	350...5000 mm
	8 Hz	8 Hz	8 Hz	4 Hz	4 Hz
	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67	IP67
	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS
	9...30 VDC	9...30 VDC	9...30 VDC	9...30 VDC	9...30 VDC
	Page 25	Page 25	Page 25	Page 25	Page 25



PNP normally open/normally closed	**BUS003R** BUS M30E1-PPX-35/340-S92K	**BUS003P** BUS M30M1-PPX-35/340-S92K		
2 × PNP normally open/normally closed			**BUS0040** BUS M30E1-PWX-60/600-S92K	
Style	Ø 47.5 mm	Ø 47.5 mm	Ø 65 mm	
Interface	—	—	—	
Connection	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	
Housing material	Stainless steel PBT, TPU	Brass PBT, TPU	Stainless steel PBT, TPU	
Material sensing surface	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	
Range	350...5000 mm	350...5000 mm	600...8000 mm	
Switching frequency	4 Hz	4 Hz	3 Hz	
Approval/Conformity	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	
Ambient temperature	-25...70 °C	-25...70 °C	-25...70 °C	
Protection degree	IP67	IP67	IP67	
Repeat accuracy	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	
Operating voltage Ub	9...30 VDC	9...30 VDC	9...30 VDC	
Productview	Page 25	Page 25	Page 25	





	BUS003Z BUS M30M1-PWX-60/600-S92K	**BUS0047** BUS M30E1-PPX-60/600-S92K	**BUS0045** BUS M30M1-PPX-60/600-S92K	**BUS0021** BUS R06K1-PPX-02/007-S75G	**BUS004C** BUS R06K1-PPX-02/015-S75G
	Ø 65 mm	Ø 65 mm	Ø 65 mm	block style	block style
	—	—	—	—	—
	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M8x1 connector, 4-pin	Connector, M8x1 connector, 4-pin
	Brass PBT, TPU	Stainless steel PBT, TPU	Brass PBT, TPU	ABS	ABS
	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass
	600...8000 mm	600...8000 mm	600...8000 mm	20...100 mm	20...250 mm
	3 Hz	3 Hz	3 Hz	250 Hz	25 Hz
	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	CE, EAC	CE, EAC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67	IP67
	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS
	9...30 VDC	9...30 VDC	9...30 VDC	20...30 VDC	20...30 VDC
	Page 25	Page 25	Page 25	Page 25	Page 25

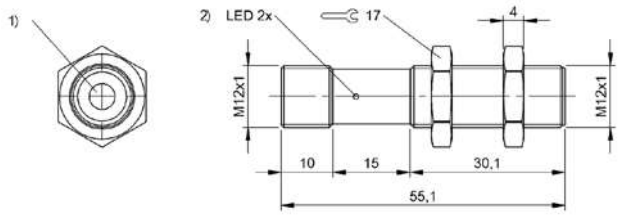


PNP normally open/normally closed	**BUS0049** BUS R06K1-PPX-02/015-S75G-F01	**BUS004L** BUS R06K1-PPX-05/024-S75G	**BUS0057** BUS R06K1-PPX-03/025-S75G	
2 × PNP normally open/normally closed				
PNP/NPN normally open/normally closed push-pull				
Style	block style	block style	block style	
Interface	—	—	—	
Connection	Connector, M8x1 connector, 4-pin	Connector, M8x1 connector, 4-pin	Connector, M8x1 connector, 4-pin	
Housing material	ABS	ABS	ABS	
Material sensing surface	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	
Range	20...250 mm	50...350 mm	30...350 mm	
Switching frequency	100 Hz	25 Hz	25 Hz	
Approval/Conformity	CE, EAC	CE, EAC	CE, EAC	
Ambient temperature	-25...70 °C	-25...70 °C	-25...70 °C	
Protection degree	IP67	IP67	IP67	
Repeat accuracy	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	
Operating voltage Ub	20...30 VDC	20...30 VDC	20...30 VDC	
Productview	Page 25	Page 26	Page 26	



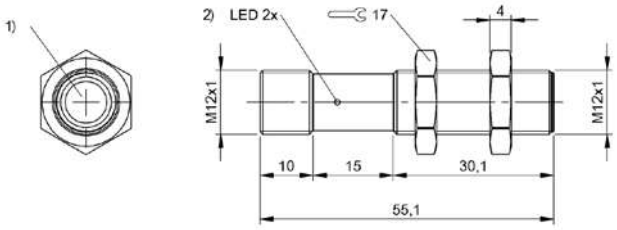


	BUS0059 BUS R06K1-PPX-12/070-S75G				
		BUS006F BUS Q62K1-PWX-35/340-S92K		**BUS006H** BUS Q62K1-PWX-60/600-S92K	
			BUS006C BUS Q62K1-GPXI-35/340-S92K		**BUS006E** BUS Q62K1-GPXI-60/600-S92K
	block style	block style	block style	block style	block style
	—	—	IO-Link 1.0	—	IO-Link 1.0
	Connector, M8x1 connector, 4-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin
	ABS	PBT	PBT	PBT	PBT
	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass
	120...1000 mm	350...5000 mm	350...5000 mm	600...8000 mm	600...8000 mm
	14 Hz	4 Hz	4 Hz	3 Hz	3 Hz
	CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67	IP67
	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS
	20...30 VDC	9...30 VDC	9...30 VDC	9...30 VDC	9...30 VDC
	Page 26	Page 26	Page 26	Page 26	Page 26



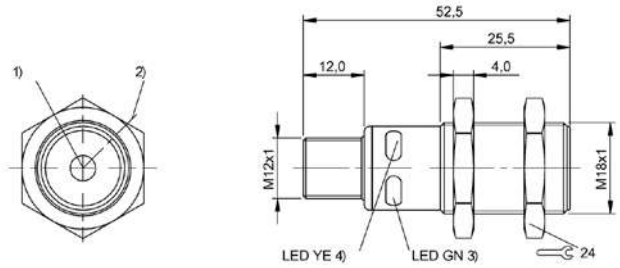
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Operating voltage, 4) Output function

BUS0063, BUS0065



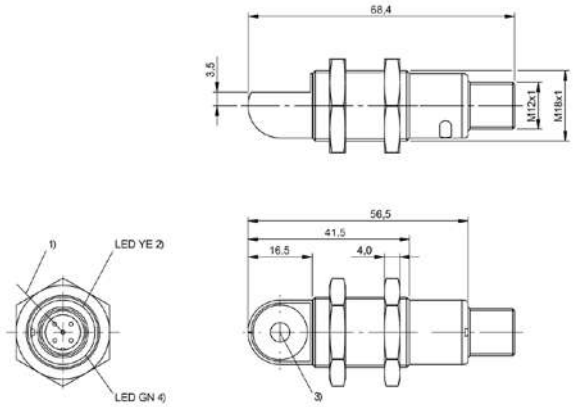
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Operating voltage, 4) Output function

BUS0064, BUS0066



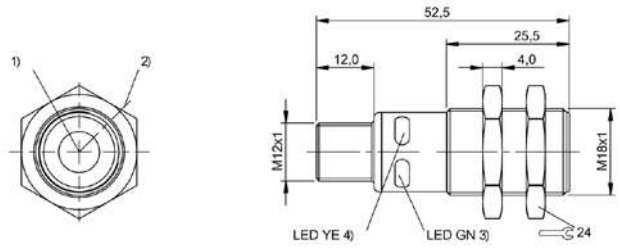
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Operating voltage, 4) Output function

BUS0020



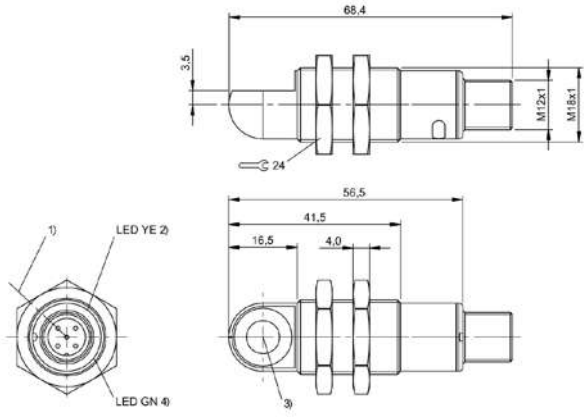
1) Exit direction 90° connector, 2) Output function, 3) Ultrasonic transducer axis, 4) Operating voltage

BUS0023



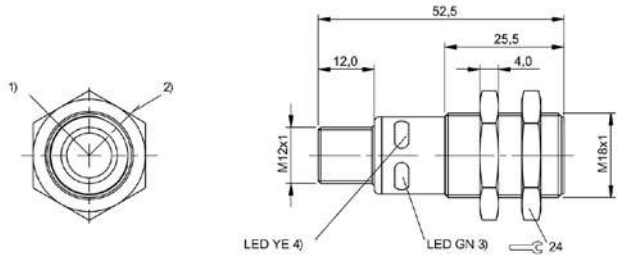
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Operating voltage, 4) Output function

BUS0029



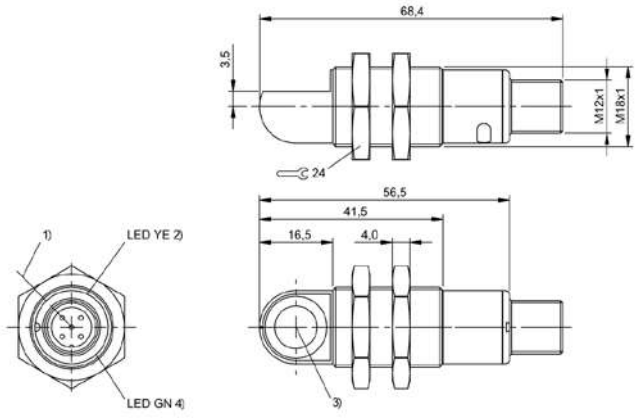
1) Exit direction 90° connector, 2) Output function, 3) Ultrasonic transducer axis, 4) Operating voltage

BUS002A



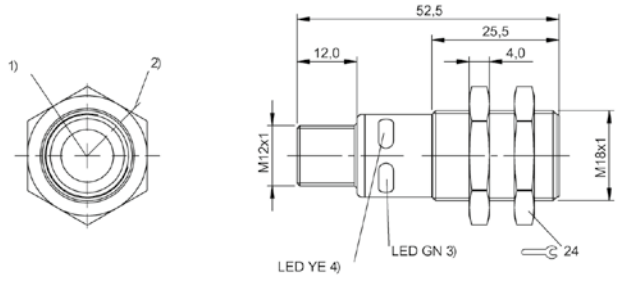
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Operating voltage, 4) Output function

BUS004Z



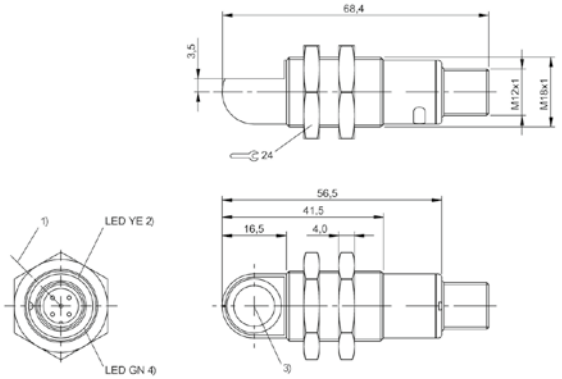
1) Exit direction 90° connector, 2) Output function, 3) Ultrasonic transducer axis, 4) Operating voltage

BUS004Y



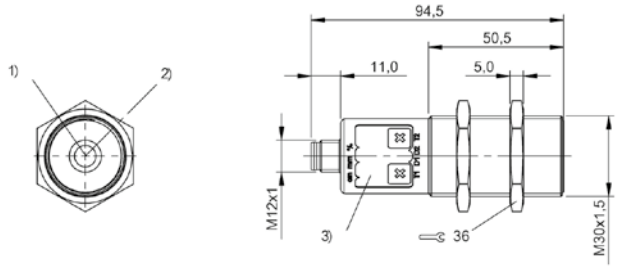
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) LED function indicator, 4) Output function

BUS004P



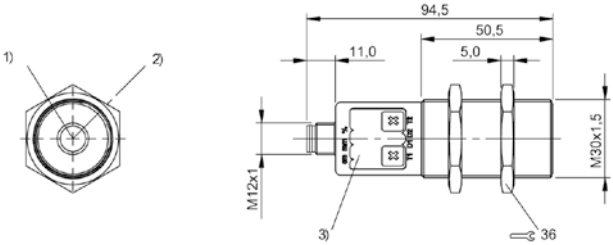
1) Exit direction 90° connector, 2) Output function, 3) Ultrasonic transducer axis, 4) Operating voltage

BUS004N



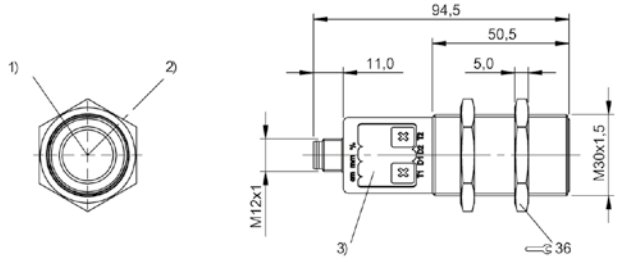
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Display and control panel

BUS002P, BUS002R, BUS002T, BUS0022



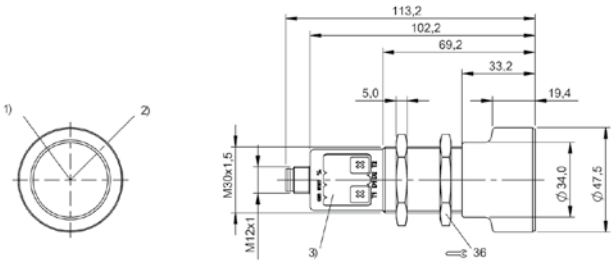
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Display and control panel

BUS005J, BUS005H, BUS005T, BUS005F



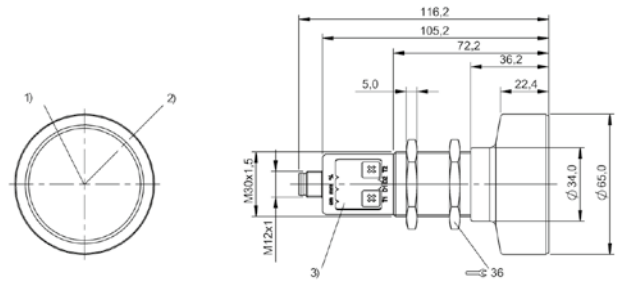
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Display and control panel

BUS003H, BUS003C, BUS003A, BUS0039



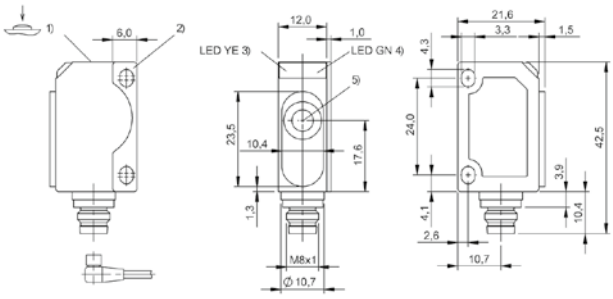
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Display and control panel

BUS003U, BUS003W, BUS003R, BUS003P



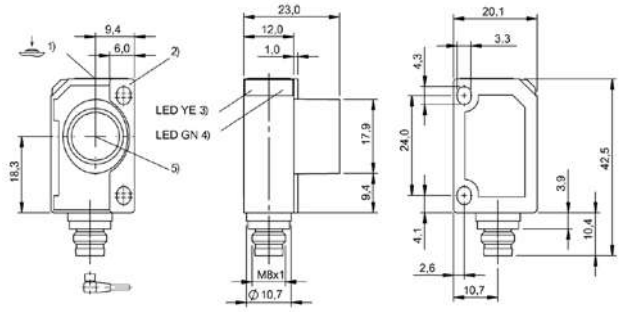
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Display and control panel

BUS0040, BUS003Z, BUS0047, BUS0045



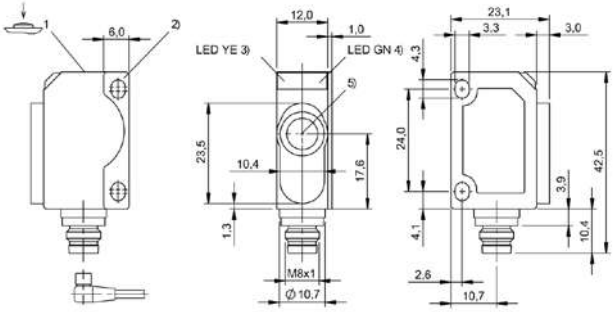
1) Set sensor, 2) Mounting plate, 3) Status indicator, 4) Operating voltage/mode, 5) Ultrasonic transducer axis

BUS0021, BUS004C, BUS0049



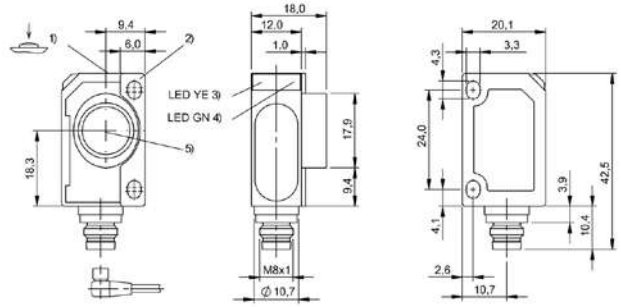
1) Set sensor, 2) Mounting plate, 3) Status indicator, 4) Operating voltage/mode, 5) Ultrasonic transducer axis

BUS0057



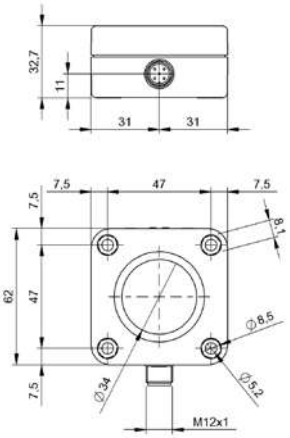
1) Set sensor, 2) Mounting plate, 3) Status indicator, 4) Operating voltage/mode, 5) Ultrasonic transducer axis

BUS004L



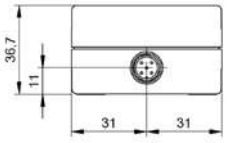
1) Set sensor, 2) Mounting plate, 3) Status indicator, 4) Operating voltage/mode, 5) Ultrasonic transducer axis

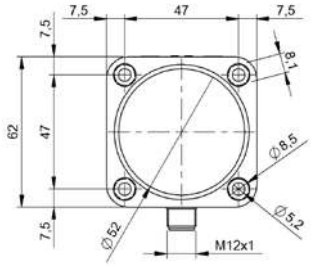
BUS0059



1) Ultrasonic transducer, 2) Display and control panel

BUS006F, BUS006C





1) Ultrasonic transducer, 2) Display and control panel

BUS006H, BUS006E



Analog, voltage 0...10 V, linear rising/falling	**BUS0067** BUS M12M1-XA-02/015-S04G	**BUS0068** BUS M12M1-XA-05/024-S04G	**BUS0026** BUS M18M1-XA-02/015-S92G	
Analog, current 4...20 mA, linear rising/falling	**BUS0069** BUS M12M1-XB-02/015-S04G	**BUS006A** BUS M12M1-XB-05/024-S04G	**BUS0025** BUS M18M1-XB-02/015-S92G	
Style	Ø 12 mm	Ø 12 mm	Ø 18 mm	
Switching output	—	—	—	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 5-pin	
Housing material	Nickel-plated brass PBT	Nickel-plated brass PBT	Nickel-plated brass PBT	
Material sensing surface	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	
Range	20...250 mm	40...350 mm	25...250 mm	
Switching frequency	—	—	—	
Approval/Conformity	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	
Ambient temperature	-25...70 °C	-25...70 °C	-25...70 °C	
Protection degree	IP67	IP67	IP67	
Repeat accuracy	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	
Operating voltage Ub	15...30 VDC	15...30 VDC	15...30 VDC	
Productview	Page 38	Page 38	Page 38	





	BUS0028 BUS W18M1-XA-02/015-S92G	**BUS0024** BUS M18M1-XA-03/025-S92G	**BUS0050** BUS W18M1-XA-03/025-S92G	**BUS004T** BUS M18M1-XA-07/035-S92G	**BUS004R** BUS W18M1-XA-07/035-S92G
	BUS0027 BUS W18M1-XB-02/015-S92G	**BUS002C** BUS M18M1-XB-03/025-S92G	**BUS002E** BUS W18M1-XB-03/025-S92G	**BUS004W** BUS M18M1-XB-07/035-S92G	**BUS004U** BUS W18M1-XB-07/035-S92G
	Ø 18 mm	Ø 18 mm	Ø 18 mm	Ø 18 mm	Ø 18 mm
	—	—	—	—	—
	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin
	Brass PBT	Brass PBT	Brass PBT	Brass PBT	Brass PBT
	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass
	25...250 mm	30...350 mm	30...350 mm	65...600 mm	65...600 mm
	—	—	—	—	—
	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67	IP67
	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS
	15...30 VDC	15...30 VDC	15...30 VDC	15...30 VDC	15...30 VDC
	Page 38	Page 38	Page 38	Page 38	Page 38



Analog, voltage 0...10 V, linear rising/falling	**BUS0052** BUS M18M1-XA-12/100-S92G	**BUS0051** BUS W18M1-XA-12/100-S92G		
Analog, current 4...20 mA, linear rising/falling	**BUS004M** BUS M18M1-XB-12/100-S92G	**BUS0053** BUS W18M1-XB-12/100-S92G		
Analog, voltage/analog, current 0...10 V/4...20 mA, linear rising/falling			**BUS002M** BUS M30E1-XC-03/025-S92K	
Style	Ø 18 mm	Ø 18 mm	Ø 30 mm	
Switching output	—	—	—	
Connection	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	
Housing material	Brass PBT	Brass PBT	Stainless steel PBT, TPU	
Material sensing surface	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	
Range	120...1300 mm	120...1300 mm	30...350 mm	
Switching frequency	—	—	—	
Approval/Conformity	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	
Ambient temperature	-25...70 °C	-25...70 °C	-25...70 °C	
Protection degree	IP67	IP67	IP67	
Repeat accuracy	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	
Operating voltage Ub	15...30 VDC	15...30 VDC	9...30 VDC	
Productview	Page 39	Page 39	Page 39	





	BUS002N BUS M30M1-XC-03/025-S92K	BUS002K BUS M30E1-PPC-03/025-S92K	BUS002L BUS M30M1-PPC-03/025-S92K	BUS005L BUS M30E1-XC-07/035-S92K	BUS005K BUS M30M1-XC-07/035-S92K
	Ø 30 mm	Ø 30 mm	Ø 30 mm	Ø 30 mm	Ø 30 mm
	—	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	—	—
	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin
	Brass PBT, TPU	Stainless steel PBT, TPU	Brass PBT, TPU	Stainless steel PBT, TPU	Brass PBT, TPU
	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass
	30...350 mm	30...350 mm	30...350 mm	65...600 mm	65...600 mm
	—	25 Hz	25 Hz	—	—
	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67	IP67
	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS
	9...30 VDC	9...30 VDC	9...30 VDC	9...30 VDC	9...30 VDC
	Page 39	Page 39	Page 39	Page 39	Page 39



Analog, voltage/analog, current 0...10 V/4...20 mA, linear rising/falling	**BUS005N** BUS M30E1-PPC-07/035-S92K	**BUS005M** BUS M30M1-PPC-07/035-S92K	**BUS003E** BUS M30E1-XC-20/130-S92K	
Style	Ø 30 mm	Ø 30 mm	Ø 30 mm	
Switching output	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	—	
Connection	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	
Housing material	Stainless steel PBT, TPU	Brass PBT, TPU	Stainless steel PBT, TPU	
Material sensing surface	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	
Range	65...600 mm	65...600 mm	200...2000 mm	
Switching frequency	12 Hz	12 Hz	—	
Approval/Conformity	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	
Ambient temperature	-25...70 °C	-25...70 °C	-25...70 °C	
Protection degree	IP67	IP67	IP67	
Repeat accuracy	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	
Operating voltage Ub	9...30 VDC	9...30 VDC	9...30 VDC	
Productview	Page 39	Page 39	Page 39	





	BUS003F BUS M30M1-XC-20/130-S92K	BUS0037 BUS M30E1-PPC-20/130-S92K	BUS0038 BUS M30M1-PPC-20/130-S92K	BUS003N BUS M30M1-PWC-20/130-S92K	BUS003M BUS M30E1-XC-35/340-S92K
	Ø 30 mm	Ø 30 mm	Ø 30 mm	Ø 30 mm	Ø 47.5 mm
	—	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	2x PNP normally open/ normally closed (NO/NC)	—
	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin
	Brass PBT, TPU	Stainless steel PBT, TPU	Brass PBT, TPU	Brass PBT, TPU	Stainless steel PBT, TPU
	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass
	200...2000 mm	200...2000 mm	200...2000 mm	200...2000 mm	350...5000 mm
	—	8 Hz	8 Hz	8 Hz	—
	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67	IP67
	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS
	9...30 VDC	9...30 VDC	9...30 VDC	9...30 VDC	9...30 VDC
	Page 39	Page 39	Page 39	Page 39	Page 39



Analog, voltage/analog, current 0...10 V/4...20 mA, linear rising/falling	**BUS003T** BUS M30M1-XC-35/340-S92K	**BUS003K** BUS M30E1-PPC-35/340-S92K	**BUS003L** BUS M30M1-PPC-35/340-S92K	
Style	Ø 47.5 mm	Ø 47.5 mm	Ø 47.5 mm	
Switching output	—	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	
Connection	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	
Housing material	Brass PBT, TPU	Stainless steel PBT, TPU	Brass PBT, TPU	
Material sensing surface	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	
Range	350...5000 mm	350...5000 mm	350...5000 mm	
Switching frequency	—	4 Hz	4 Hz	
Approval/Conformity	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	
Ambient temperature	-25...70 °C	-25...70 °C	-25...70 °C	
Protection degree	IP67	IP67	IP67	
Repeat accuracy	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	
Operating voltage Ub	9...30 VDC	9...30 VDC	9...30 VDC	
Productview	Page 39	Page 39	Page 39	



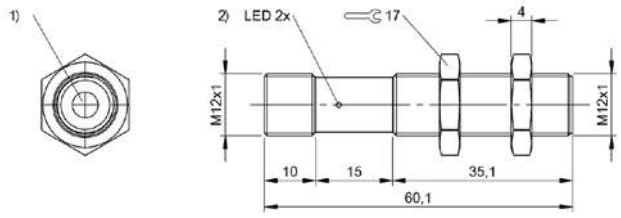


	BUS0044 BUS M30M1-PWC-35/340-S92K	BUS0042 BUS M30E1-XC-60/600-S92K	BUS0041 BUS M30M1-XC-60/600-S92K	BUS003Y BUS M30E1-PPC-60/600-S92K	BUS0043 BUS M30M1-PPC-60/600-S92K
	Ø 47.5 mm	Ø 65 mm	Ø 65 mm	Ø 65 mm	Ø 65 mm
	2x PNP normally open/ normally closed (NO/NC)	—	—	PNP normally open/nor-mally closed (NO/NC)	PNP normally open/nor-mally closed (NO/NC)
	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin
	Brass PBT, TPU	Stainless steel PBT, TPU	Brass PBT, TPU	Stainless steel PBT, TPU	Brass PBT, TPU
	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass
	350...5000 mm	600...8000 mm	600...8000 mm	600...8000 mm	600...8000 mm
	4 Hz	—	—	3 Hz	3 Hz
	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	IP67	IP67	IP67	IP67	IP67
	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS
	9...30 VDC	9...30 VDC	9...30 VDC	9...30 VDC	9...30 VDC
	Page 39	Page 39	Page 39	Page 39	Page 39



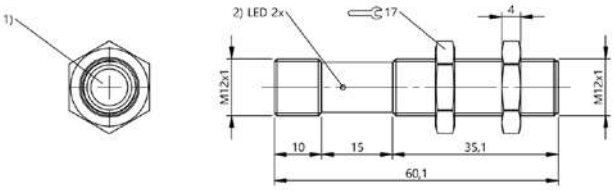
Analog, voltage 0...10 V, linear rising/falling	**BUS004K** BUS R06K1-XA-02/015-S75G	**BUS0056** BUS R06K1-XA-05/024-S75G	**BUS005E** BUS R06K1-XA-12/070-S75G	
Analog, current 4...20 mA, linear rising/falling	**BUS004J** BUS R06K1-XB-02/015-S75G	**BUS004F** BUS R06K1-XB-05/024-S75G	**BUS005C** BUS R06K1-XB-12/070-S75G	
Analog, voltage/analog, current 0...10 V/4...20 mA, linear rising/falling				
Style	block style	block style	block style	
Switching output	—	—	—	
Connection	Connector, M8x1 connector, 4-pin	Connector, M8x1 connector, 4-pin	Connector, M8x1 connector, 4-pin	
Housing material	ABS	ABS	ABS	
Material sensing surface	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	
Range	20...250 mm	50...350 mm	120...1000 mm	
Switching frequency	—	—	—	
Approval/Conformity	CE, EAC	CE, EAC	CE, EAC	
Ambient temperature	-25...70 °C	-25...70 °C	-25...70 °C	
Protection degree	IP67	IP67	IP67	
Repeat accuracy	± 0.15 %FS	± 0.15 %FS	± 0.15 %FS	
Operating voltage Ub	20...30 VDC	20...30 VDC	20...30 VDC	
Productview	Page 40	Page 40	Page 40	

	BUS006J BUS Q62K1-XC-35/340-S92K	**BUS006K** BUS Q62K1-XC-60/600-S92K			
	block style	block style			
	—	—			
	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin			
	PBT	PBT			
	PU foam epoxy resin glass	PU foam epoxy resin glass			
	350...5000 mm	600...8000 mm			
	—	—			
	cULus LISTED, CE, EAC	cULus LISTED, CE, EAC			
	-25...70 °C	-25...70 °C			
	IP67	IP67			
	± 0.15 %FS	± 0.15 %FS			
	9...30 VDC	9...30 VDC			
	Page 40	Page 40			



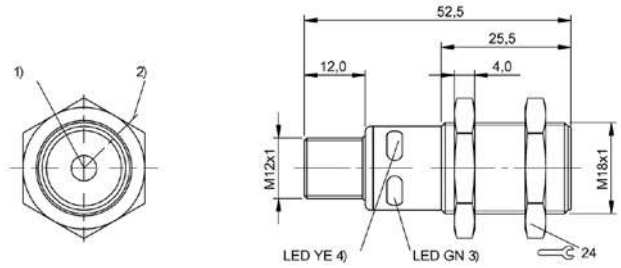
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Operating voltage, 4) Output function

BUS0067, BUS0069



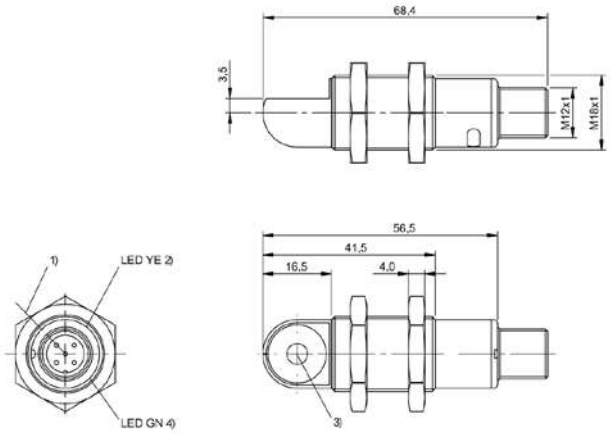
1) Ultrasonic transducer axis, 2) Function indicator

BUS0068, BUS006A



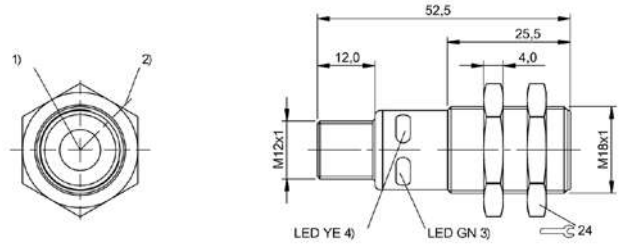
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Operating voltage, 4) Output function

BUS0026, BUS0025



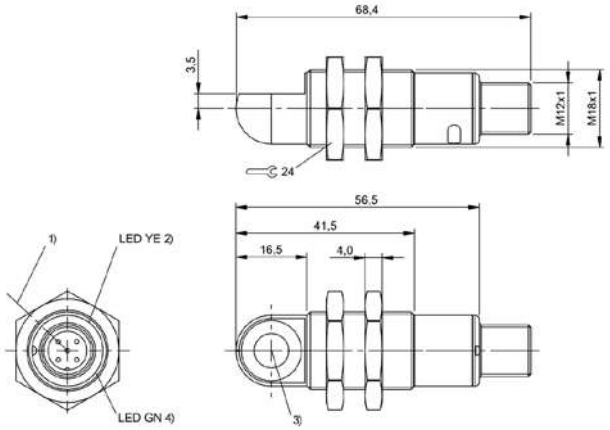
1) Exit direction 90° connector, 2) Output function, 3) Ultrasonic transducer axis, 4) Operating voltage

BUS0028, BUS0027



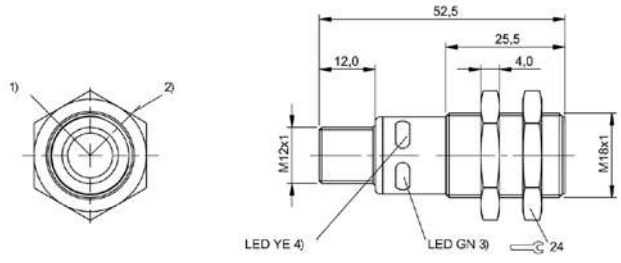
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Operating voltage, 4) Output function

BUS0024, BUS002C



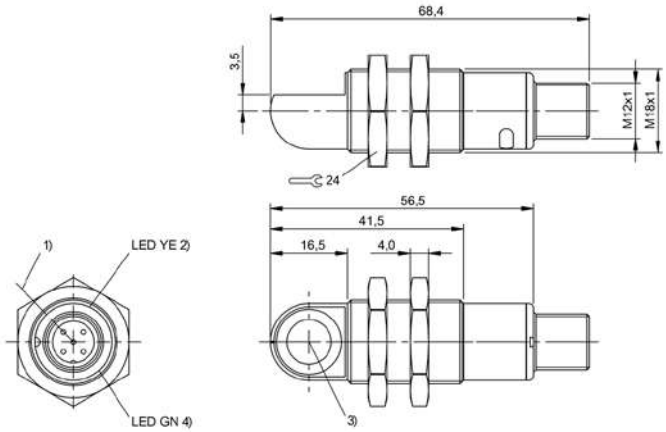
1) Exit direction 90° connector, 2) Output function, 3) Ultrasonic transducer axis, 4) Operating voltage

BUS0050, BUS002E



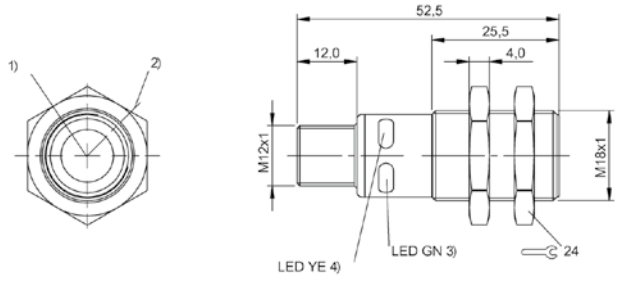
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Operating voltage, 4) Output function

BUS004T, BUS004W



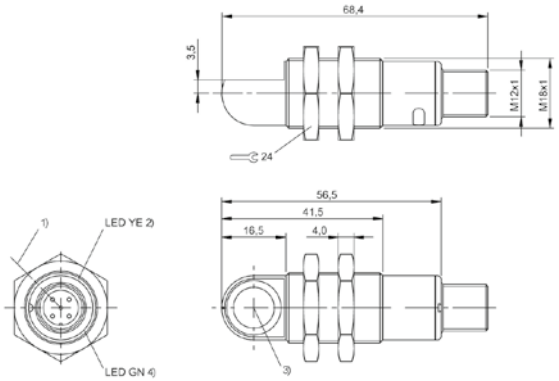
1) Exit direction 90° connector, 2) Output function, 3) Ultrasonic transducer axis, 4) Operating voltage

BUS004R, BUS004U



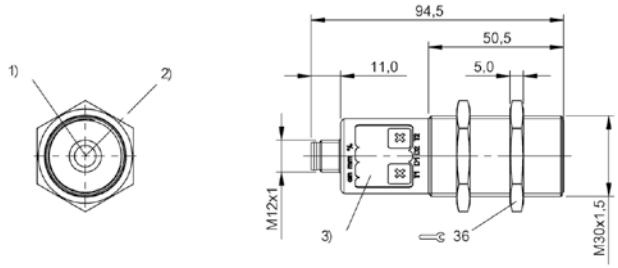
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) LED function indicator, 4) Output function

BUS0052, BUS004M



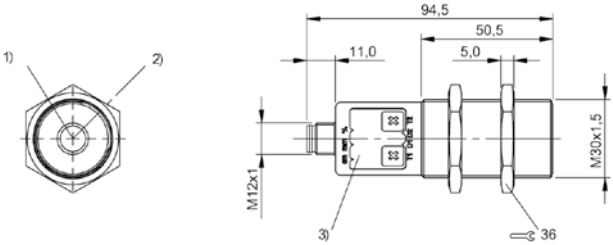
1) Exit direction 90° connector, 2) Output function, 3) Ultrasonic transducer axis, 4) Operating voltage

BUS0051, BUS0053



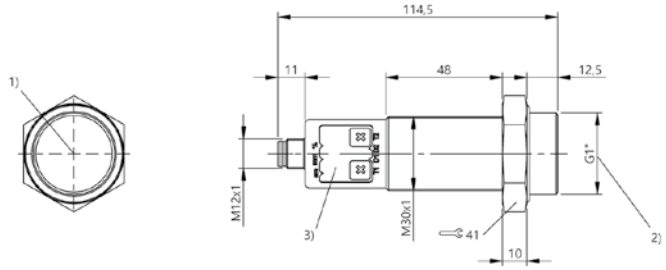
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Display and control panel

BUS002M, BUS002N, BUS002K, BUS002L



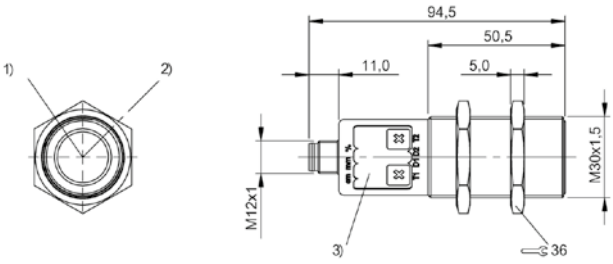
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Display and control panel

BUS005L, BUS005K, BUS005N, BUS005M



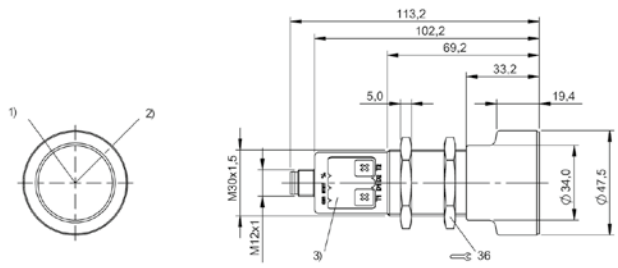
1) Ultrasonic transducer, 2) Process connection, 3) Display and control panel

BUS005Y, BUS005W



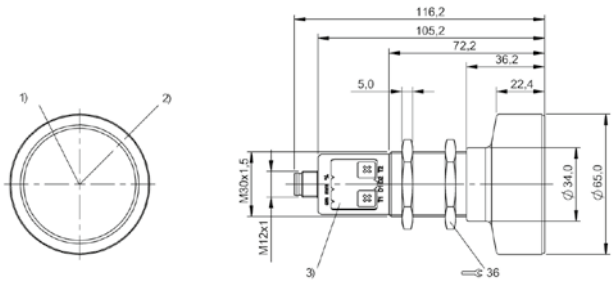
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Display and control panel

BUS003E, BUS003F, BUS003N, BUS0037, BUS0038



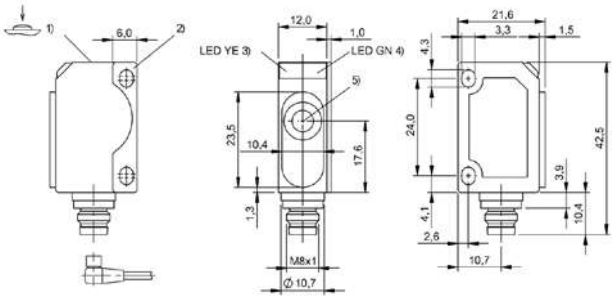
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Display and control panel

BUS003M, BUS003T, BUS0044, BUS003K, BUS003L



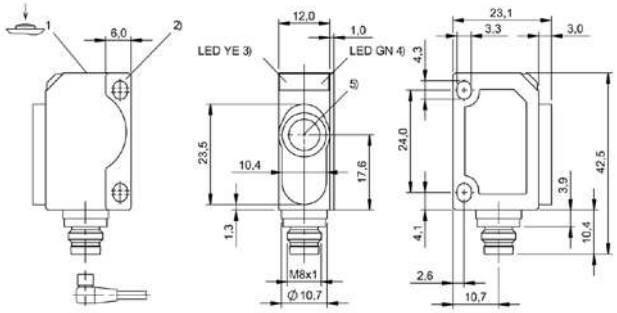
1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Display and control panel

BUS0042, BUS0041, BUS003Y, BUS0043



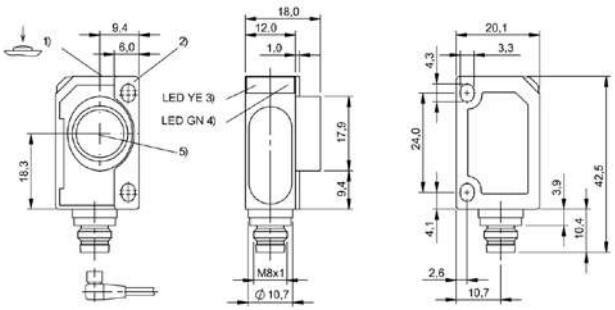
1) Set sensor, 2) Mounting plate, 3) Status indicator, 4) Operating voltage/mode, 5) Ultrasonic transducer axis

BUS004K, BUS004J



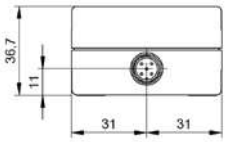
1) Set sensor, 2) Mounting plate, 3) Status indicator, 4) Operating voltage/mode, 5) Ultrasonic transducer axis

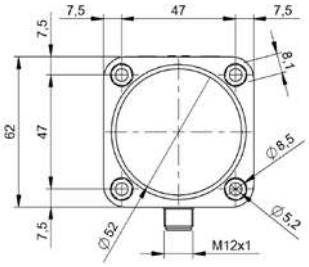
BUS0056, BUS004F



1) Set sensor, 2) Mounting plate, 3) Status indicator, 4) Operating voltage/mode, 5) Ultrasonic transducer axis

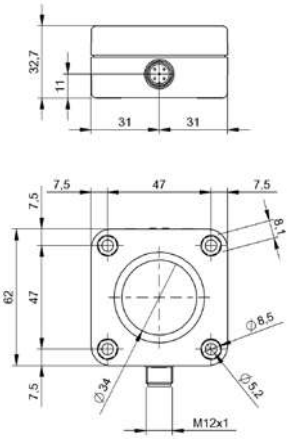
BUS005E, BUS005C





1) Ultrasonic transducer, 2) Display and control panel

BUS006K

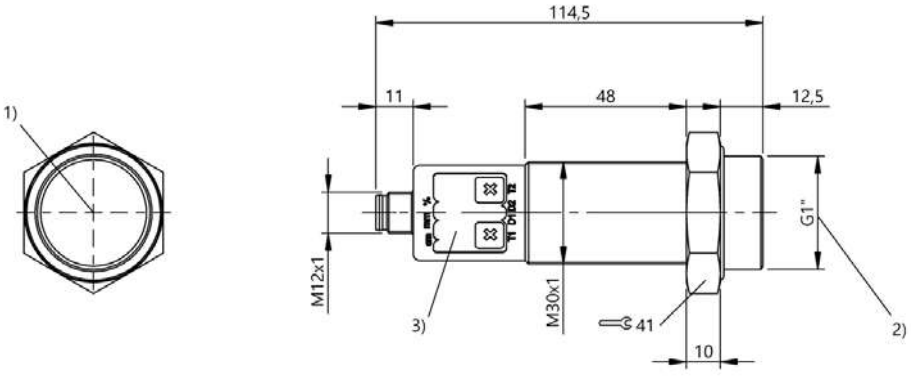


1) Ultrasonic transducer, 2) Display and control panel

BUS006J

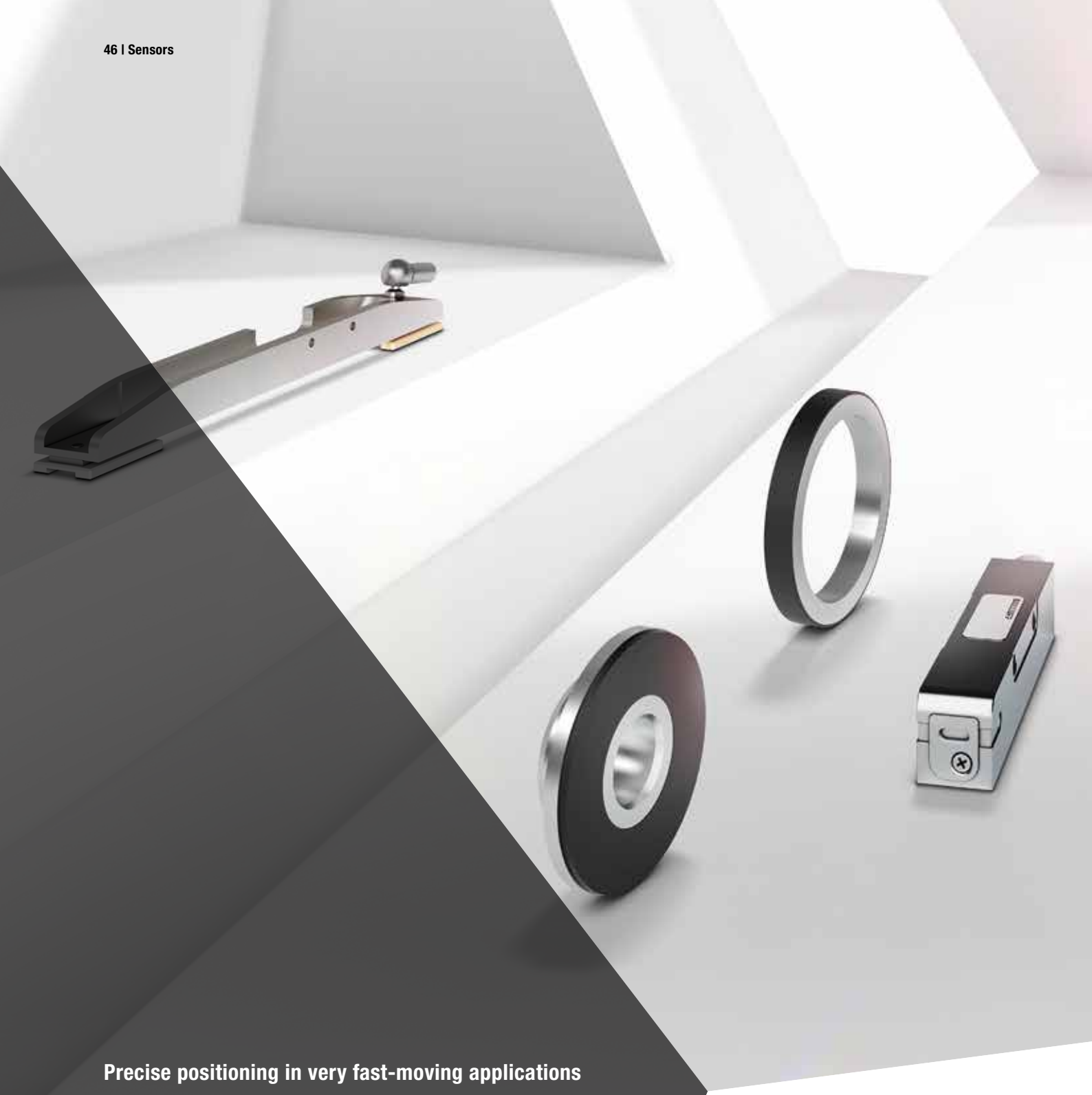
PNP normally open/normally closed	**BUS005Y** BUS M30E2-PPC-09/035-S92K-G1	
2 × PNP normally open/normally closed		
Style	Ø 47 mm	
Process connection	G 1“	
Analog output	Analog, voltage/Analog, current 0…10 V/4…20 mA linear rising/falling	
Connection	Connector, M12x1 connector, 5-pin	
Housing material	Stainless steel (1.4571) PBT, TPU	
Material sensing surface	PTFE	
Range	85...1500 mm	
Switching frequency	9 Hz	
Approval/Conformity	CE	
Ambient temperature	-25...70 °C	
Protection degree	IP67	
Repeat accuracy	± 0.15 %FS	
Pressure rating max.	6 bar	
Operating voltage Ub	9...30 VDC	
Productview	Page 44	

	BUS005U BUS M30E2-PWX-20/130-S92K-G1	BUS005W BUS M30E2-PPC-20/130-S92K-G1
	Ø 47 mm	Ø 47 mm
	G 1“	G 1“
	—	Analog, voltage/Analog, current 0…10 V/4…20 mA linear rising/falling
	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin
	Stainless steel (1.4571) PBT, TPU	Stainless steel (1.4571) PBT, TPU
	PTFE	PTFE
	200...5000 mm	200...5000 mm
	5 Hz	5 Hz
	CE	CE
	-25...70 °C	-25...70 °C
	IP67	IP67
	± 0.15 %FS	± 0.15 %FS
	6 bar	6 bar
	9...30 VDC	9...30 VDC
	Page 44	Page 44



1) Ultrasonic transducer, 2) Process connection, 3) Display and control panel

BUS005Y, BUS005U, BUS005W



Precise positioning in very fast-moving applications

MAGNETIC ENCODERS

Balluff's magnetic encoders were developed for precise positioning and speed detection in very dynamic applications. The highly-precise, fastresponse encoders are optionally equipped with magnetic linear or rotational measuring elements. They are appropriate for linear as well as rotational applications, and incremental or absolute position detection.

Their rugged design makes them ideal in extreme ambient conditions. They also ensure increased uptime of your machines and equipment.

Features

- Contact-free and therefore wear-free
- Incremental or absolute interfaces
- High resolution to 1 µm
- Measurement lengths to 48 m
- Flexible installation and handling
- Long operational life, since very rugged

Preferred models

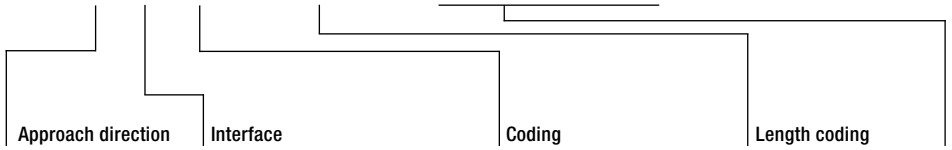
- BML-S1H1-S6QC-M3CA-D0-KA00,3-S284 (BML0393)
  Approach direction longitudinal to tape, SSI interface, binary code increasing, 256 length coding, pigtail 0.3 m with M12 plug
- BML-S1H2-S6QC-M3CA-D0-KA00,3-S284 (BML0394)
  Approach direction transverse to tape, SSI interface, binary code increasing, 256 length coding, pigtail 0.3 m with M12 plug

Absolute interface
Data format
Incremental interface
Resolution
Repeat accuracy
Overall system accuracy
Operating voltage
Current consumption
Max. read distance sensor/tape
Max. measuring length
Pole division incremental track
Traverse speed max.
Degree of protection
Approval/Conformity
Operating temperature
Housing material
Productview

For all specifications in conjunction with magnetic tape see page 62

Ordering example:

BML-S1H_-_6_C-M3_A-D0-KA00.3-S284



Approach direction

1	Parallel
2	Perpendicular

Interface

B	BiSS (bidirectional, serial synchronous)
S	SSI (serial, synchronous)

Coding

Q	Binary code, rising
R	Gray code, rising
S	Binary code decreasing
T	Gray code decreasing

Length coding

A	64
C	256
F	1024

Connection

KA00,3-S284
0.3 m cable with M12 connector, 12-pin

BML-S1H BML-S1H_-_6_C-M3_A-D0-KA00,3-S284
SSI or BiSS-C
16-bit (BML-S1H...-M3AA-...), 18-bit (BML-S1H...-M3CA-...) or 20-bit (BML-S1H...-M3FA-...)
Analog signals Sin/Cos 1 Vpp
~0.98 µm
±1 increment
±7 µm
5 V ±5%
< 50 mA at 5 V operating voltage
0.35 mm
64 mm (...-M3AA-...), 256 mm (...-M3CA-...) or 1024 mm (...-M3FA-...)
1 mm
5 m/s (absolute)
IP67
CE, cURus, EAC
-20...+80 °C
Aluminum, stainless steel
Page 65

	BML0903 BML SL1-ALZ1-UMZZ-ZU1L-S4	
Dimension	16 x 18.6 x 54 mm	
Interface	IO-Link 1.1	
Measuring range	8190 mm	
Connection	M12x1-Male, 4-pin	
Connection	Connector, M12x1-Male, 4-pin	
Resolution	1 µm	
Housing material	Die-cast zinc, nickel plated, Chrome-plated	
Operating voltage Ub	18...30 VDC	
Approval/Conformity	cURus, CE, EAC, WEEE	
Productview	Page 64	

Ordering example: **BML SL1 - ALZ0 - U1ZZ - ZU1L - S4**

S = Sensor head

Style/housing geometry (W x H x L):
L1 = 16 × 18.6 × 54.6 mm

Alignment:
0= lengthwise, together with Data Format 1
1= lengthwise, together with Data Format M or E

Interface:
U= IO-Link, absolute

Data format:
1= Smart Sensor Profile
m= Smart Sensor Profile Ed. 2
E= Smart Sensor Profile Ed. 2 Enhanced

Additional signal:
Z= no additional signal (BML…-S4/KA_ _)
A = 1 Vpp (additional analog, incremental real-time signal) (BML…-S284/KA_ _)

Resolution:
U1 = 1 µm

Operating voltage:
L= 18…30 V

Electrical connection:
S4 = M12×1, 4-pin
S284 = M12×1, 12-pin

	BML0905 BML SL1-ALZ1-UMZZ-AU1L-KA05	BML0901 BML SL1-ALZ1-UMZZ-AU1L-S284	BML0904 BML SL1-ALZ1-UEZZ-ZU1L-S4
	16 x 18.6 x 54 mm	16 x 18.6 x 54 mm	16 x 18.6 x 54 mm
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	8190 mm	8190 mm	8190 mm
		M12x1-Male, 12-pin	M12x1-Male, 4-pin
	Cable, 5 m, PUR	Connector, M12x1-Male, 12-pin	Connector, M12x1-Male, 4-pin
	1 µm	1 µm	1 µm
	Die-cast zinc, nickel plated, Chrome-plated	Die-cast zinc, nickel plated, Chrome-plated	Die-cast zinc, nickel plated, Chrome-plated
	18...30 VDC	18...30 VDC	18...30 VDC
	cURus, CE, EAC, WEEE	cURus, CE, EAC, WEEE	cURus, CE, EAC, WEEE
	Page 64	Page 64	Page 64

	BML085L BML SGA-AEZ1-LZZZ-ZU11-S115	
Dimension	16 x 18.6 x 54 mm	
Interface	DRIVE-CLiQ	
Measuring range	48 m	
Connection	M12x1-Male, 8-pin	
Connection	Connector, M12x1-Male, 8-pin	
Resolution	1 µm	
Housing material	Die-cast zinc, nickel plated, Chrome-plated	
Operating voltage Ub	10...30 VDC	
Approval/Conformity	cURus, CE, EAC, WEEE	
Productview	Page 66	

Ordering example:

BML SGA - AEZ1 - LZZZ - ZU11 - S115

S = Sensor head

Style/housing geometry (W x H x L):
GA= 16 × 18.6 × 54.6 mm

Alignment:
1= longitudinal

Interface:
L= DRIVE-CLiQ, absolute

Additional signal:
Z= No additional signal
T =T emperature sensor input

Resolution:
U1 = 1 µm/increment

Operating voltage:
1= 10 to 30 V DC

Electrical connection:
S115 = M12×1, 8-pin for DRIVE-CLiQ
S284 = M12×1, 12-pin for DRIVE-CLiQ with temperature sensor input

	BML08MH BML SGA-AEZ1-LZZZ-TU11-S284
	16 x 18.6 x 54 mm
	DRIVE-CLiQ
	48 m
	M12x1-Male, 12-pin
	Connector, M12x1-Male, 12-pin
	1 µm
	Die-cast zinc, nickel plated, Chrome-plated
	10...30 VDC
	cURus, CE, EAC, WEEE
	Page 66

Preferred models

- BML-S1G0-S7ED-M5EA-D0-S284 (BML041H)
  SSI interface, 1 µm resolution, additional real time signal Sin/Cos, M12 connector, 12-pin
- BML-S1G0-B7ED-M5EZ-90-S284 (BML042T)
  BiSS-C interface, 1 µm resolution, no real time signal, M12 connector, 12-pin

Absolute interface
Data format
Incremental interface
Resolution
Repeat accuracy
Overall system accuracy
Operating voltage
Current consumption
Max. read distance sensor/tape
Max. measuring length
Pole division incremental track
Traverse speed max.
Degree of protection
Approval/Conformity
Operating temperature
Housing material
Productview

For all specifications in conjunction with magnetic tape see page 62

Ordering example:

BML-S1G0-_7_ _-M5E_-_0-S284

Interface

B BiSS C (bidirectional, serial synchronous). absolute

S SSI (serial, synchronous), absolute

Data format

Interface B:
E binary, increasing (32 bits)

Interface S:
0 binary, increasing (24 bits)
1 Gray, increasing (24 bits)
6 binary, increasing (25 bits)
7 Gray, increasing (25 bits)
A binary, increasing (26 bits)
B Gray, increasing (26 bits)
E binary, increasing (32 bits)
F Gray, increasing (32 bits)

Resolution per LSB

C ~ 0.98 µm
D 1 µm
E 2 µm
F 5 µm
G 10 µm

Additional real time signal

Z-9 None
A-D analog (Sin/Cos), period 2 mm
Q-D digital, 0.12 µs edge separation
Q-G digital, 1 µs edge separation
Q-L digital, 8 µs edge separation
Q-P digital, 24 µs edge separation
G-D analog SIL2 (Sin/Cos), period 2 mm

Connection

S284 M12 connector axial with pin contacts, 12-pin

BML-S1G0 BML-S1G0-_7_ _-M5E_-_0-S284
SSI or BiSS-C
24, 25, 26 or 32 bit
Digital square wave signals RS 422 A, /A, B, /B, Z, /Z, analog signals Sin/Cos 1 Vpp, or safety-related analog signals Sin/Cos 1 Vpp (SIL2)
~0.98, 1, 2, 5 or 10 µm
±1 increment
±20 µm
5 V ±5 % and 10…28 V DC
70 mA at 24 V DC operating voltage
0.8 mm
48 m
2 mm
10 m/s
IP 67
CE, cURus, EAC
-20...+70 °C
Die-case zinc, stainless steel
Page 64

Features

- 1 µm resolution (digital)
- ±10 µm system accuracy permits high gain factors
- High repeat accuracy ±1 increment
- Reference signal
- Smallest form factor
- Rugged metal housing
- Mounted parallel or perpendicular to tape
- Pole separation 1 mm

Preferred models

- BML-S1F1-A62Z-M310-90-KA05 (BML02J1): Installation parallel to tape, analog output Sin/Cos, with reference signal, 5 m cable

- BML-S1F1-Q61D-M310-F0-KA05 (BML001A): Installation parallel to tape, analog output Sin/Cos, with reference signal, 5 m cable, resolution 1 µm, edge separation 0.48 µs, traverse speed up to 1 m/s

Incremental interface
Resolution
Repeat accuracy
Overall system accuracy
Operating voltage
Current consumption
Max. read distance sensor/tape
Pole division incremental track
Traverse speed max.
Degree of protection
Approval/Conformity
Operating temperature
Housing material
Productview

For all specifications in conjunction with magnetic tape see page 62

Ordering example:

BML-S1F_-A62Z-M3_0-90-_ _ _ _ (with analog output signal Sin/Cos)

BML-S1F_-Q61_-M3_0-_0-_ _ _ _ (with digital square wave signal RS422)

Approach direction

1	Parallel
2	Perpendicular

Resolution

D	1 µm
E	2 µm
F	5 µm
G	10 µm

Reference signal

0	None
1	Individually or fixed-periodic
2	pole-periodic, digital version only …-Q61_-…

Min. edge separation*

D	0.12 µs
E	0.29 µs
F	0.48 µs
G	1 µs
H	2 µs
K	4 µs
L	8 µs
N	16 µs
P	24 µs

Connection

KA02	PUR cable 2 m
KA05	PUR cable 5 m
KA10	PUR cable 10 m
KA20	PUR cable 20 m

BML-S1F BML-S1F_-A62Z-M3_0-90-_ _ _ _, BML-S1F_-Q61_-M3_0-_0-_ _ _ _
Digital square wave signals RS422 A, /A, B, /B, Z, /Z, sinusoidal analog signals Sin/Cos 1 Vpp
1 µm, 2 µm, 5 µm or 10 µm
±1 increment
±10 µm
5 V ±5%
< 50 mA at 5 V operating voltage
0.35 mm
1 mm
20 m/s
IP67
CE, cURus, EAC
-20...+80 °C
Aluminum, stainless steel
Page 64

Preferred models

- BML SF2-I201-AZZZ-ZZZ5-KA05 (BML07RR)
  Output signal analog Sin/Cos 1 Vpp
- BML SF2-I201-QZ11-ZU25-KA05 (BML0870)
  Output signal digital A/B/Z TTL
- BML SF2-I211-AZZZ-ZZZ5-KA05 (BML07RT)
  Output signal analog Sin/Cos 1 Vpp with reference signal
- BML SF2-I211-QZ11-ZU25-KA05 (BML085N)
  Output signal digital A/B/Z TTL
  with reference signal

Incremental interface
Resolution
Repeat accuracy
Overall system accuracy
Operating voltage
Current consumption
Max. read distance sensor/tape
Pole division incremental track
Traverse speed max.
Degree of protection
Approval/Conformity
Operating temperature
Housing material
Productview

For all specifications in conjunction with magnetic tape see page 62

Ordering example:

BML SF2-I2_ _-AZZZ-ZZZ5-_ _ _ _ (with analog output signal Sin/Cos)

BML SF2-I2_ _-QZ_ _-Z_ _5-_ _ _ _ (with digital square wave signal RS422)

Reference signal

0	no signal
1	Single signal (or fixed-periodic)
2	Pole-periodic signal

Approach direction

1	Parallel
2	Perpendicular

Minimum edge separation

11	0.11 µs
26	0.6 µs
42	0.42 µs
94	0.94 µs
N1	1.8 µs
J3	3.5 µs
A7	7 µs
B4	14 µs
C1	21 µs

Resolution

U1	1 µs
U2	2 µs
UD	10 µs
UZ	20 µs

Connection

KA02	PUR cable 2 m
KA05	PUR cable 5 m
KA10	PUR cable 10 m
KA20	PUR cable 20 m

BML SF2 BML SF2-I2_ _-AZZZ-ZZZ5-_ _ _ _, BML SF2-I2_ _-QZ_ _-Z_ _5-_ _ _ _
Digital square wave signals RS422 A, /A, B, /B, Z, /Z, sinusoidal analog signals Sin/Cos 1 Vpp
1, 2, 10 or 20 µm
±1 increment
up to ±12 µm (depending on the mechanical installation)
5 V ±5%
< 50 mA at 5 V operating voltage
1.8 mm
1 mm
20 m/s
IP67
CE, cURus, EAC
-20...+80 °C
Aluminum, stainless steel
Page 65

Preferred type
BML S1C0-Q53L-M400-M0-KA05 (BML0034)
Digital signal, 10...30 V, 5 m cable, resolution 0.1 mm, edge separation 10 µs, traverse speed up to 8 m/s

Incremental interface
Resolution
Repeat accuracy
Overall system accuracy
Operating voltage
Current consumption
Max. read distance sensor/tape
Traverse speed max.
Pole division, incremental track
Degree of protection
Approval/Conformity
Operating temperature
Housing material
Productview

For all specifications in conjunction with magnetic tape see page 62

Ordering example:

BML-S1C0-Q53_-M400-_0-KA__

Resolution
L 0.1 mm
M 0.2 mm
N 0.5 mm
P 1.0 mm
R 2.0 mm

Max. Edge separation
M 10 µs
R 100 µs

Connection
KA02 PUR cable 2 m
KA05 PUR cable 5 m
KA10 PUR cable 10 m
KA20 PUR cable 20 m

Ordering example: **BML-S2C0-____-M6__-_0-____**

Interface/supply voltage/output signal
Q51 digital square-wave signals, 10...30 V DC, differential voltage signal (RS422)
Q53 digital square-wave signals, 10...30 V DC, level same as operating voltage HTL
Q61 digital square-wave signals, 5 V DC, differential voltage signal (RS422)

Resolution (edge separation A/B)
G 10 µm K 50 µm L 100 µm
N 500 µm T 2500 µm

Reference signal
0 no signal
2 pole-periodic signal

Error signal
0 no error signal
4 Error signal (not for BML-...-KF...)

Min. edge separation /max. travel speed
K 10 µm L 8 µm M 10 µm
N 16 µm P 24 µm R 100 µm
S 1 ms T 2 ms

Connection
KA05 5 m cable, PUR, 12-conductor, cable lengths 2, 5, 10, 20 m
KF05 5 m cable, PUR, 8-conductor, possible cable lengths 2, 5, 10, 20 m
KA00,3-S284 0.3 m cable with M12 connector, 12-pin

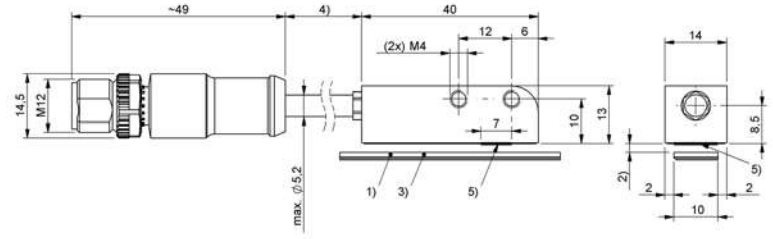
	BML-S1C0 BML-S1C0-Q53_-M400-_0-KA__	BML-S2C0 BML-S2C0-____-M6__-_0-____
	Digital square wave signals HTL A, B	Digital square wave signals RS422 A, /A, B, /B, Z, /Z or HTL A, B, Z
	5 µm, 10 µm, 25 µm or 50 µm	10 µm, 50 µm, 100 µm, 500 µm, 2500 µm
	±1 increment	±1 increment
	±100 µm	±400 µm
	10...30 V	10...30 V or 5 V ±5%
	< 40 mA at 24 V operating voltage	< 80 mA at 24 V operating voltage
	2 mm	1...5 mm (without cover strip)
	10 m/s	10 m/s
	5 mm	10 mm
	IP67	IP67
	CE, cURus, EAC	CE, cURus, EAC
	-20...+80 °C	-20...+80 °C
	PBT	PBT
	Page 65	Page 65



Model	Magnetic Tape	Magnetic Tape	Magnetic Tape	
Suitable for sensor heads	BML-S1H	BML-S1G	BML SL1	
Type code	BML-M02-A33-A3-M0009-A BML-M02-A33-A3-M0028-C BML-M02-A33-A3-M0102-F	BML-M02-A55-A3-M_ _ _ _-E	BML TSC-ALCZ-1_ZZ-M_ _ _ _	
Total length	91 mm, 283 mm, 1024 mm	up to 48 m	up to 8.19 m	
Measuring length	64 mm, 256 mm, 997 mm	up to 48 m	up to 8.19 m	
Accuracy class	5 µm	18 µm	40 µm	
Reference points	not relevant	not relevant	not relevant	
Magnetic tape material	Rubber ferrite	Rubber ferrite	Rubber ferrite	
Cover strip and tape carrier material	Stainless steel	Stainless steel	Stainless steel	
Productview	Page 65	Page 65	Page 65	

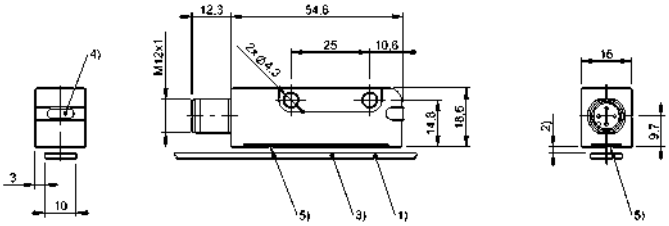



	Magnetic Tape	Magnetic Tape	Magnetic Tape	Magnetic Tape
	BML-S1F	BML SF2	BML-S2B BML-S2E BML-S1C	BML-S2C
	BML-M02-I3_-A_-M_ _ _ _ -R0000	BML TSC-I2__-1_ZZ-M____	BML-M02-I4_-A_-M____-R0000	BML-M07-I68-A_-M_ _ _ _-R0000
	up to 48 m	up to 48 m	up to 48 m	up to 48 m
	up to 48 m	up to 48 m	up to 48 m	up to 48 m
	8 µm, 18 µm	8 µm, 18 µm	18 µm, 50 µm	250 µm
	with/without	with/without	with/without	without
	Rubber ferrite	Rubber ferrite	Rubber ferrite	Rubber ferrite
	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	Page 65	Page 65	Page 65	Page 65



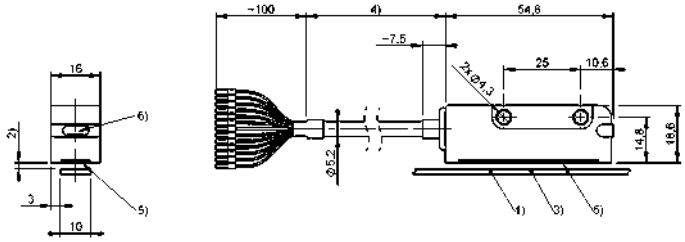
1) Not included in scope of delivery, 2) Distance to tape, 3) Tape, 4) Cable length, 5) Active measuring surface

BML-S1H...



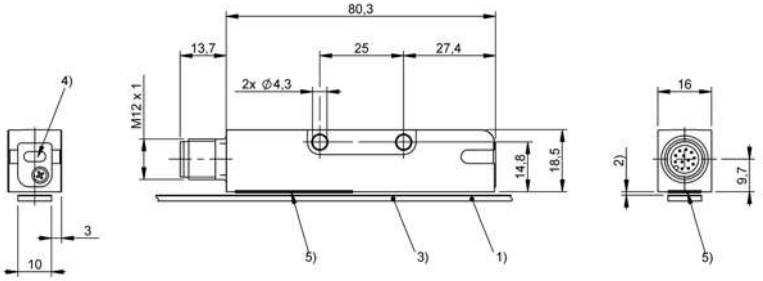
1) Not included in scope of delivery, 2) Distance to tape, 3) Tape, 4) Cable length, 5) Active measuring surface
6) LED function indicator

BML SL1-ALZ1-..., BML06HE, BML06HC



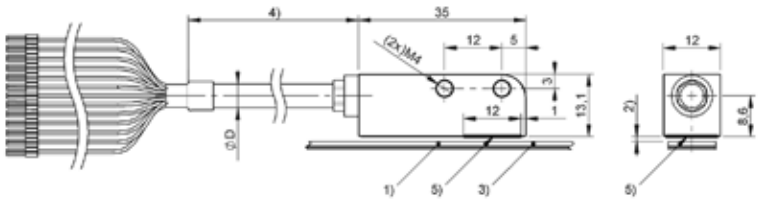
1) Not included in scope of delivery, 2) Distance to tape, 3) Tape, 4) Cable length, 5) Active measuring surface
6) LED function indicator

BML0905



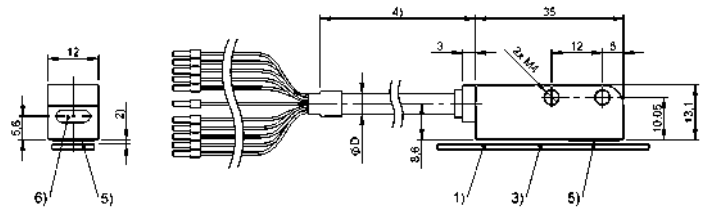
1) Not included in scope of delivery, 2) Distance to tape, 3) Tape, 4) Insulator, 5) Active measuring surface
6) LED function indicator

BML-S1G0...



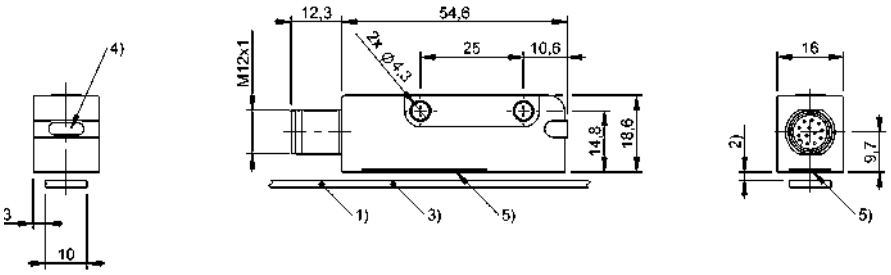
1) Not included in scope of delivery, 2) Distance to tape, 3) Tape, 4) Cable length

BML-S1F...



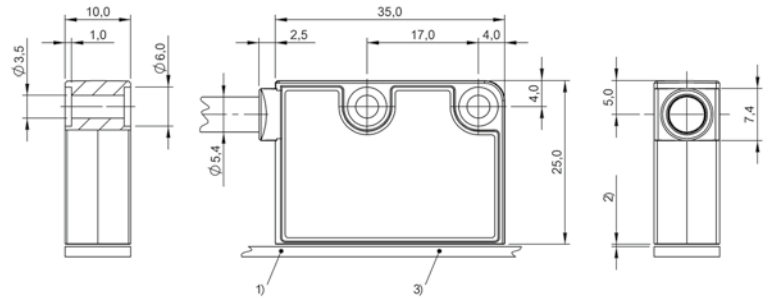
1) Not included in scope of delivery, 2) Distance to tape, 3) Tape, 4) Cable length,
5) Active measuring surface, 6) LED function indicator

BML SF2..



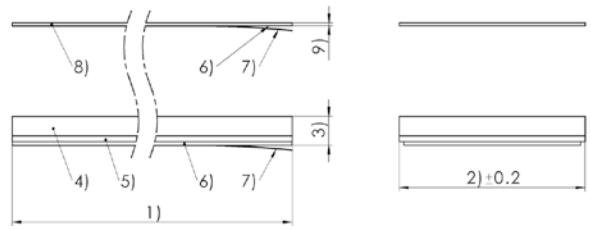
1) not included in delivery, 2) distance to measuring body, 3) measuring body, 4) LED function display,
5) active measuring area

BML085L, BML08MH



1) Not included in scope of delivery, 2) Distance to tape, 3) tape

BML-S1C0-..., BML-S2C0-...

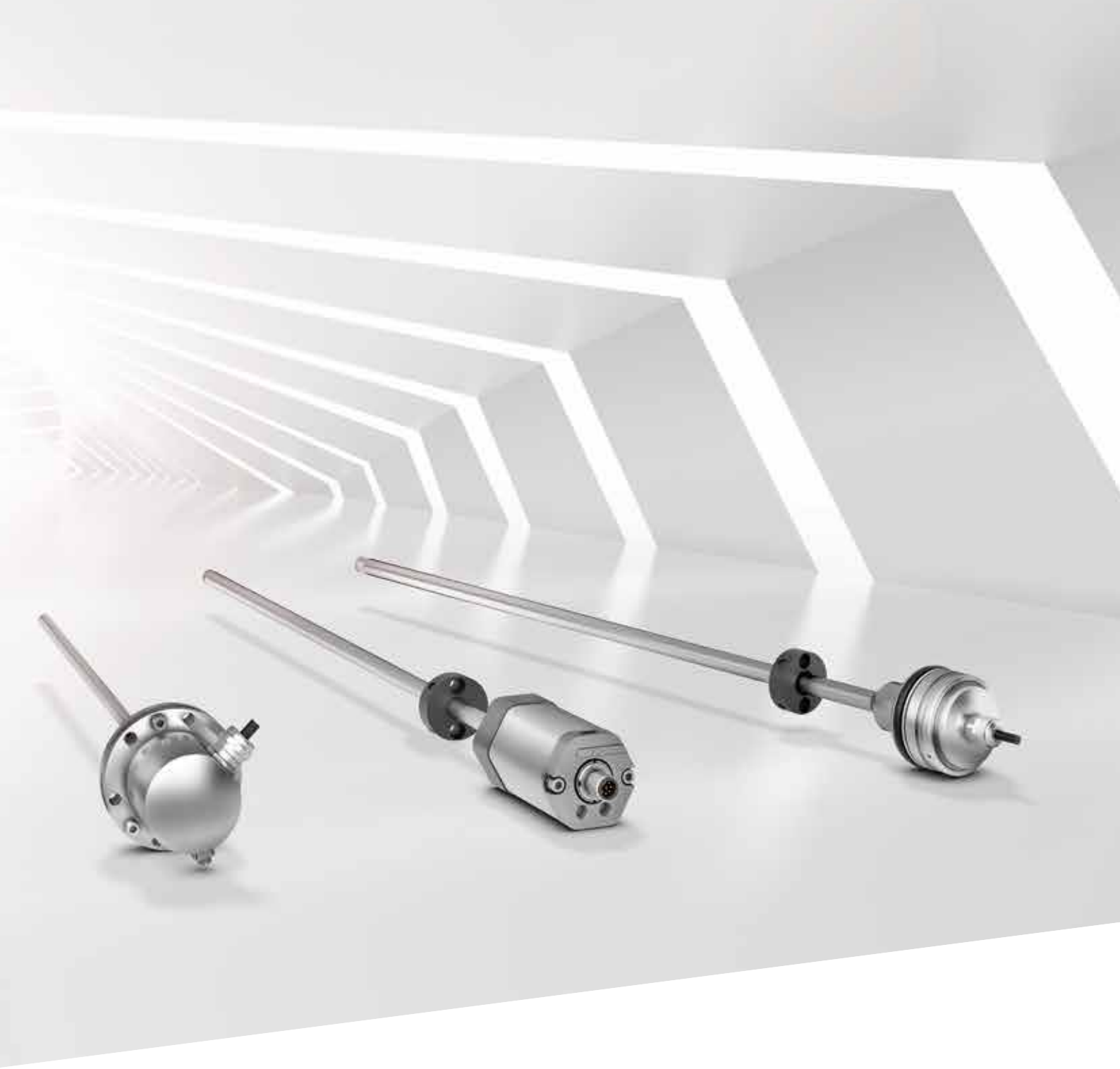


1) Nominal length/order length, 2) Width, 3) Height of tape, 4) Magnetic layer, 5) Carrier tape, 6) Adhesive layer,
7) Protective film for removing, 8) Cover tape, 9) Height of cover tape

MAGNETIC TAPE
BML-S1H, BML-S1G, BML-SL1, BML-S1F, BML SF2, BML-S2B, BML-S2E, BML-S2C, BML-S1C

Reliable even over long stroke lengths and in harsh conditions

MAGNETOSTRICTIVE SENSORS



Magnetostrictive sensors come into use wherever high reliability and precision is demanded in position and speed measurement. Also over long stroke lengths.

Our contact-free and absolute measuring systems are suitable for all industry-standard interfaces for a wide range of applications. Even under extreme surrounding conditions, they guarantee a high machine and system availability.

Features

- Precise, absolute measurement without a reference run
- Contact-free, so wear- and maintenance-free
- Resistant to shock, vibration and contamination
- Hermetically sealed housing
- Highly dynamic control applications through synchronizedeasurement data
- High durability and long service life
- Flexible installation and handling

	BTL7 -P- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	50...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm nnnn = 0501…5500: ± 0.01% FS nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	l = S: IP67 with connector l = KA: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL7-abcd-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
01 = 2 outputs, each 1 x rising/falling settable/programmable

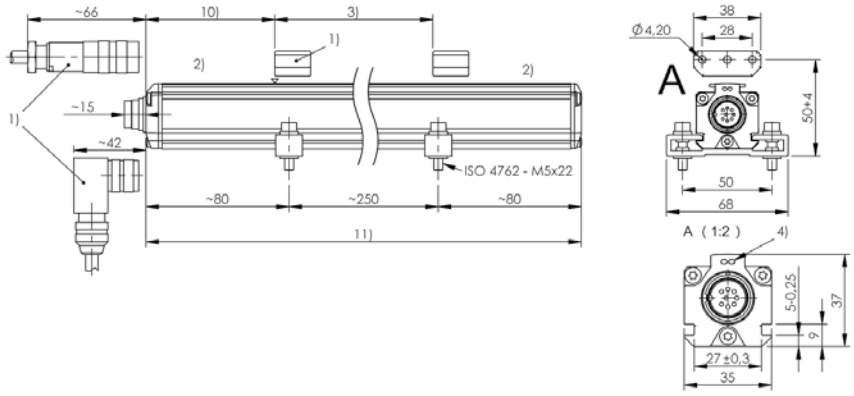
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M7620)

f Style
P = Profile

l Connection type
S = Connector
KA = Cable (PUR)

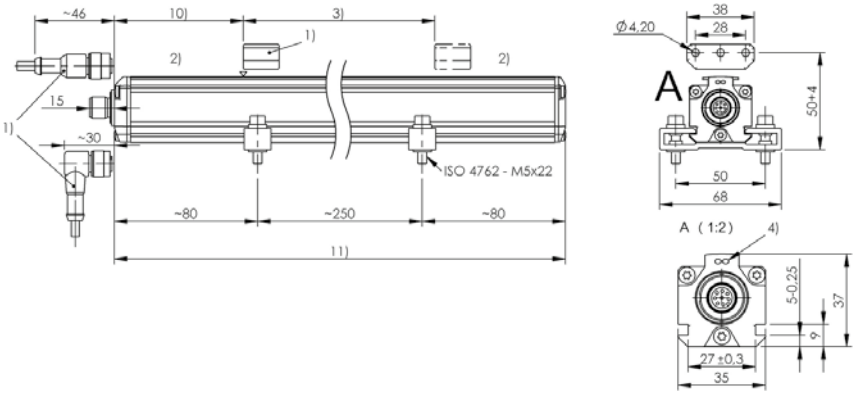
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30

BTL7-A501-Mxxxx-P-S32



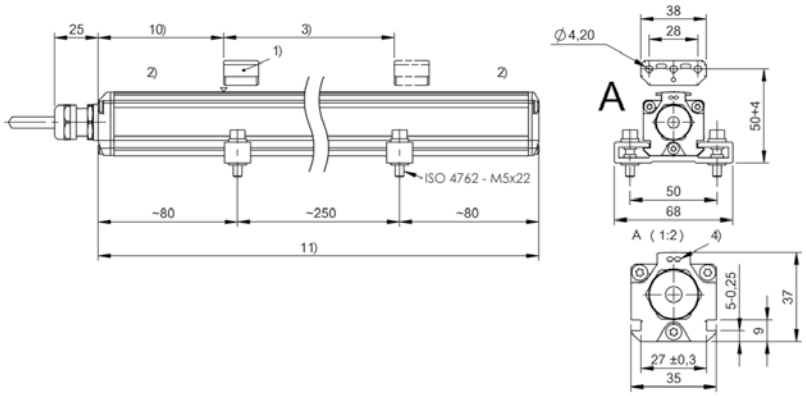
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) LED function indicator
10) Null point
11) Installation length

BTL7-G501-Mxxxx-P-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) LED function indicator
10) Null point
11) Installation length

BTL7-A501-Mxxxx-P-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) LED function indicator
10) Null point
11) Installation length

	BTL7 -P- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	50...7620 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm nnnn = 0501…5500: ± 0.01% FS nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	l = S: IP67 with connector l = KA: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL7-abcd-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
01 = 2 outputs, each 1 x rising/falling settable/programmable
08 = 1 output, rising, 1 auxiliary output voltage, rising settable/programmable
09 = 1 output, rising, 1 auxiliary output voltage, falling settable/programmable
12 = 1 output, falling, 1 auxiliary output voltage, rising settable/programmable
13 = 1 output, falling, 1 auxiliary output voltage, falling settable/programmable

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M7620)

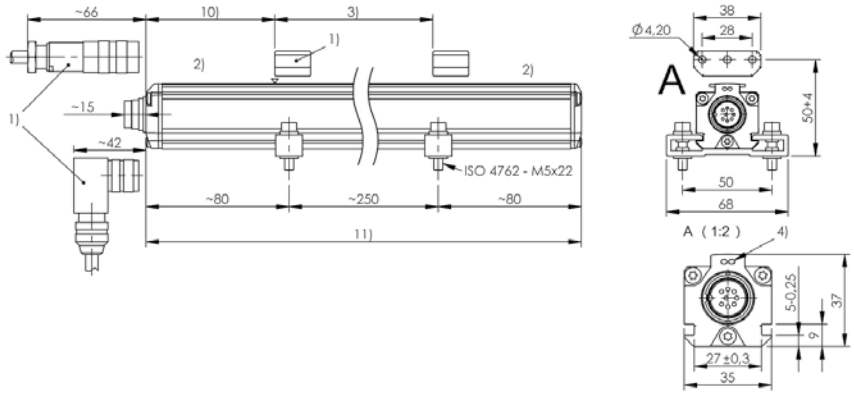
f Style
P = Profile

l Connection type
S = Connector
KA = Cable (PUR)

m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins

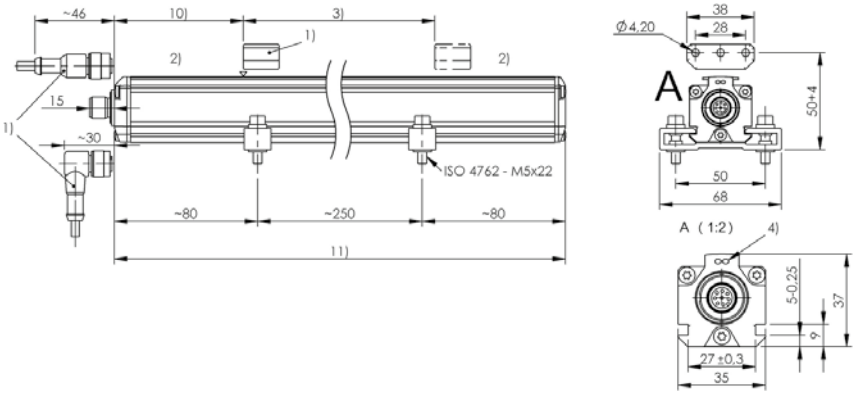
for cable (length in meters):
02, 05, 10, 15, 20, 50, 100

BTL7-E501-Mxxxx-P-S32



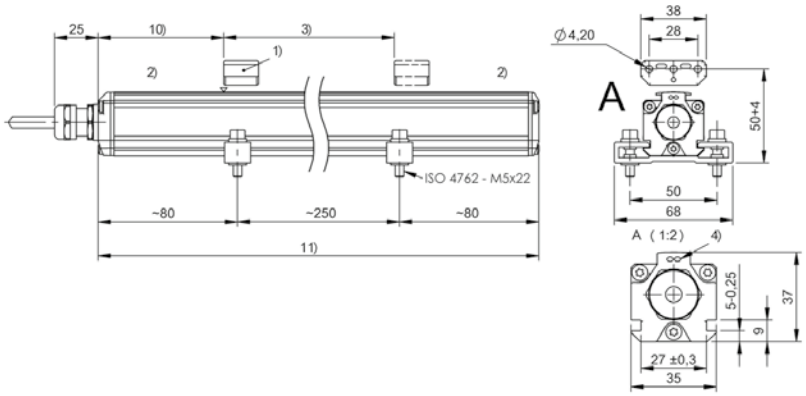
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) LED function indicator
10) Null point
11) Installation length

BTL7-C501-Mxxxx-P-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) LED function indicator
10) Null point
11) Installation length

BTL7-E508-Mxxxx-P-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) LED function indicator
10) Null point
11) Installation length

	BTL7 -P- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	50...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0050…5500: ± 50 µm nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	l = S: IP67 with connector l = KA: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL7-abcd-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
P = Digital pulse interface

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
1 = Digital start/stop interface

d Interface characteristic 2
1 = DPI/IP communication interface

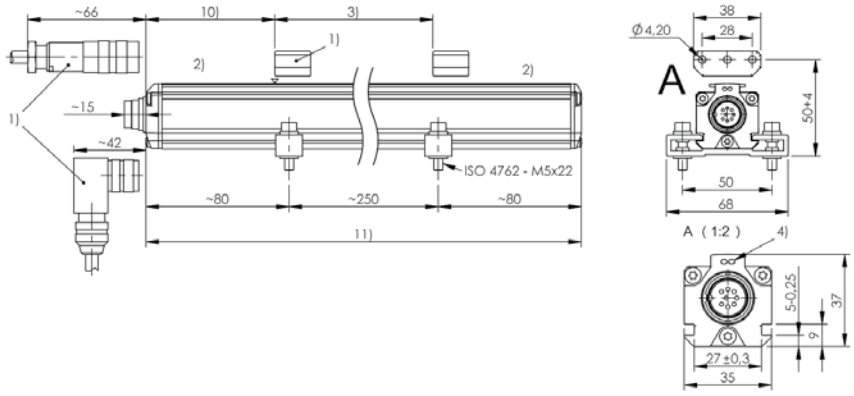
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M7620)

f Style
P = Profile

l Connection type
S = Connector
KA = Cable (PUR)

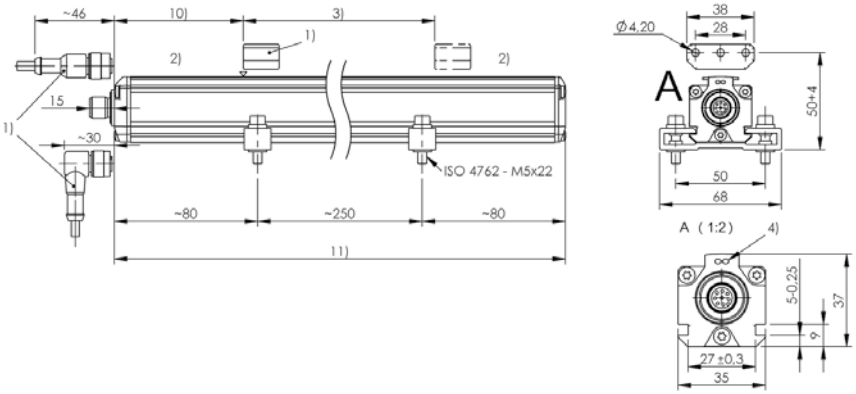
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30, 50, 100

BTL7-P511-Mxxxx-P-S32



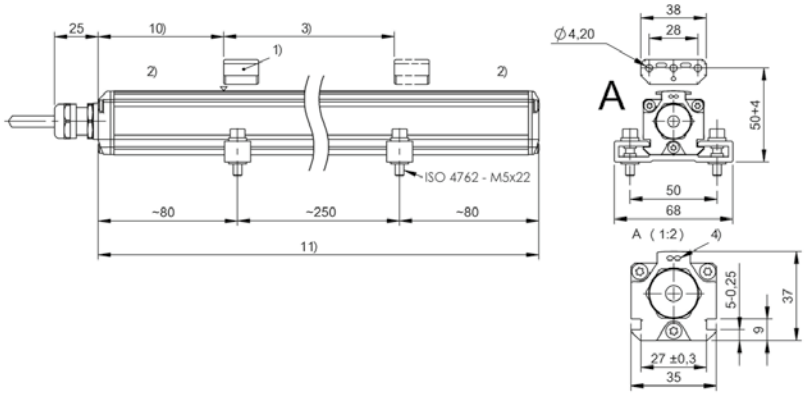
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) LED function indicator
10) Null point
11) Installation length

BTL7-P511-Mxxxx-P-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) LED function indicator
10) Null point
11) Installation length

BTL7-P511-Mxxxx-P-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) LED function indicator
10) Null point
11) Installation length

	BTL7 -P- SERIES - SSI
Interface	SSI
Measuring length	50...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7, 9: nnnn = 50…5500: ± 30µm d = 4, 5, 6, 8 nnnn = 50…5500: ± 2 LSB nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	l = S: IP67 with connector l = KA: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL7-abcde-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
S = SSI

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling
A = 26 bits, binary, rising
B = 26 bits, gray, rising
C = 26 bits, binary, falling
D = 26 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm
9 = 0.5 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

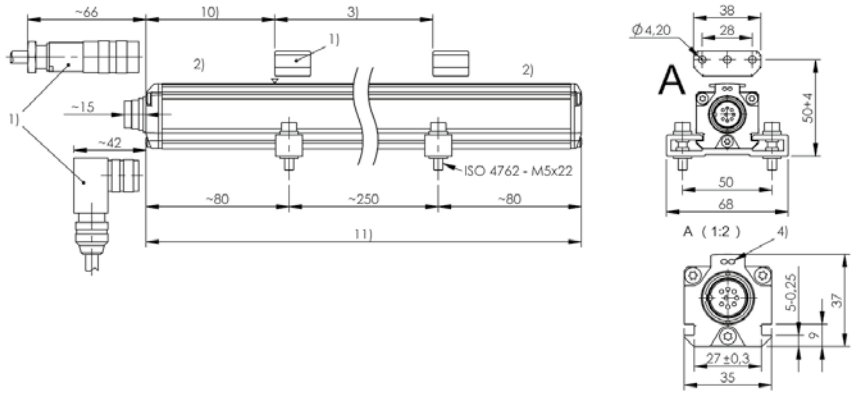
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M7620)

f Style
P = Profile

l Connection type
S = Connector
KA = Cable (PUR)

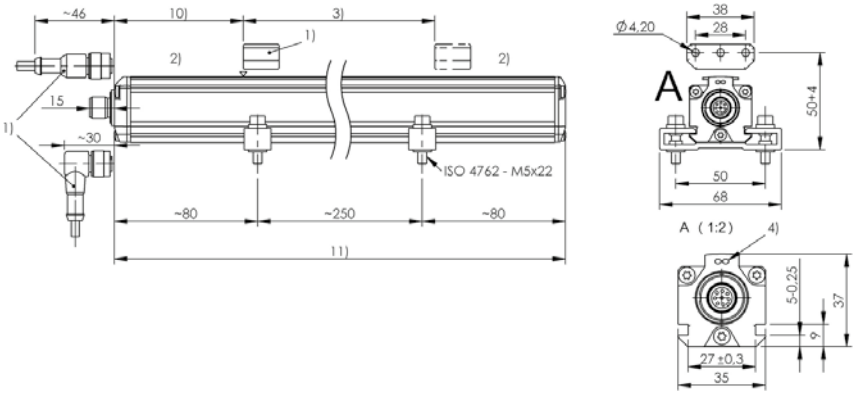
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
147 = M16x0.75 connector with 7 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30, 50, 100

BTL7-S510x-Mxxxx-P-S32



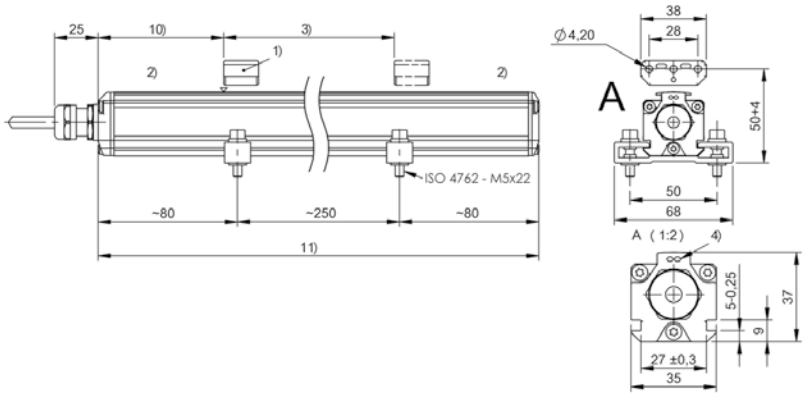
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) LED function indicator
10) Null point
11) Installation length

BTL7-S5xxx-Mxxxx-P-S115



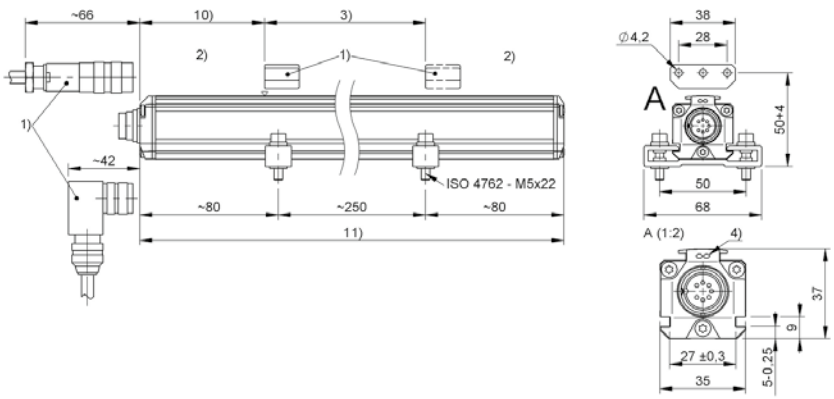
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) LED function indicator
10) Null point
11) Installation length

BTL7-S5xxx-Mxxxx-P-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) LED function indicator
10) Null point
11) Installation length

BTL7-S5xxx-Mxxxx-P-S147



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) LED function indicator
10) Null point
11) Installation length

	BTL5 -P- SERIES - CANOPEN
Interface	CANopen
Measuring length	25...4000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	±30 µm
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-abcd-Mnnnn-f-lm

BTL5
Magnetostrictive linear position sensor Generation 5

a interface
H = CANopen

b Operating voltage
1 = 20 … 28 V

c Interface characteristic 1
1 = 1 magnet
2 = 2 magnets
3 = 4 magnets

d Interface characteristic 2
Data transmission rate:
0 = 1 MBaud
1 = 800 MBaud
2 = 500 kBaud
3 = 250 kBaud
4 = 125 kBaud
5 = 100 kBaud
6 = 50 kBaud
7 = 25 kBaud
8 = 10 kBaud

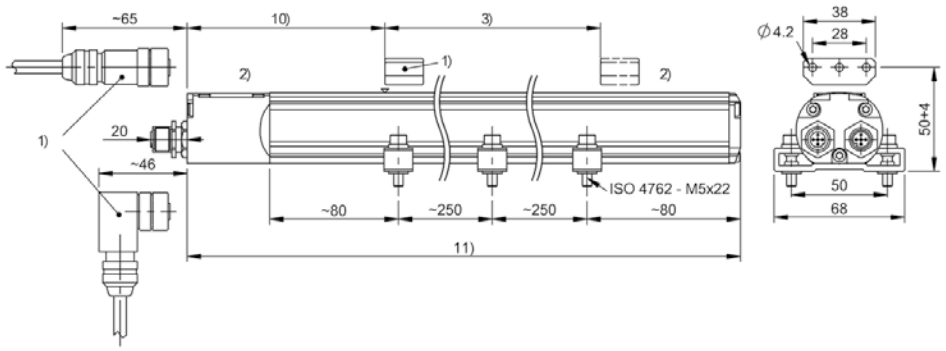
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

f Style
P = Profile

l Connection type
S = Connector

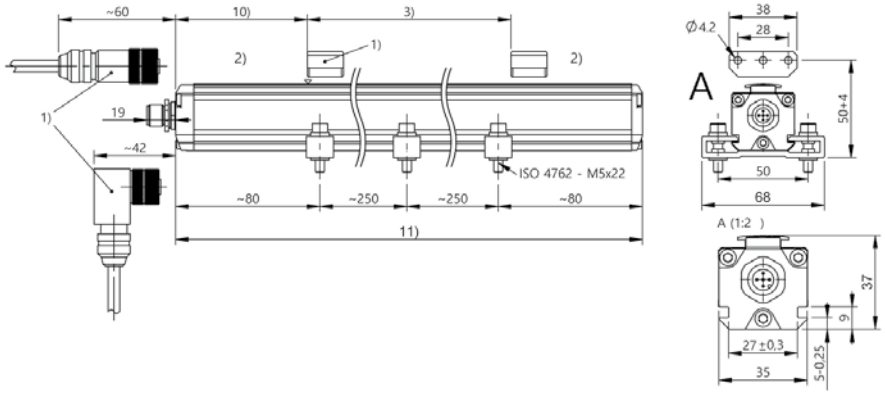
m Connection type characteristic
92 = 1 x M12x1 connector with 5 pins
94 = 1 x M12x1 connector with 5 pins + 1 x M12x1 female with 5 pins

BTL5-Hxxx-Mxxxx-P-S94



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
10) Null point
11) Installation length

BTL5-Hxxx-Mxxxx-P-S92



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
10) Null point
11) Installation length

	BTL7 -P- SERIES - PROFINET
Interface	Profinet
Measuring length	50...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0050…5500: ± 30 µm nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL7-abcd-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
V = EtherNet

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = Flexible Magnet Mode (1 - 16 magnets)

d Interface characteristic 2
T = Profinet

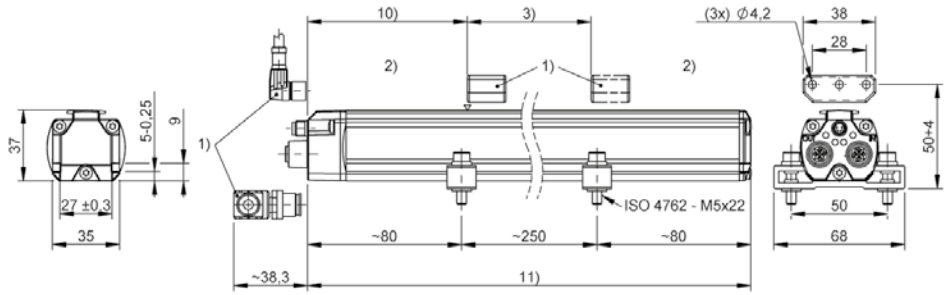
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M7620)

f Style
P = Profile

l Connection type
C = Connector

m Connection type characteristic
003 = 1 x M8x1 with 4 pins + 2 x M12x1 with 4 pins

BTL7-V50T-Mxxxx-P-C003



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
10) Null point
11) Installation length

	BTL7 -P- SERIES - ETHERNET/IP
Interface	Ethernet/IP
Measuring length	50...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0050…5500: ± 30 µm nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL7-abcd-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
V = EtherNet

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = Flexible Magnet Mode (1 - 16 magnets)

d Interface characteristic 2
D = EtherNet IP

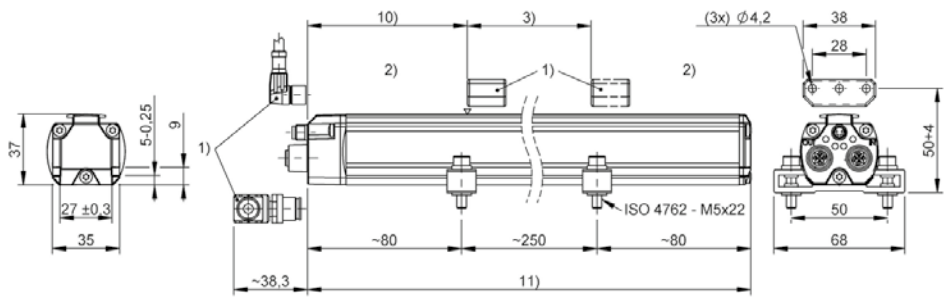
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M7620)

f Style
P = Profile

l Connection type
C = Connector

m Connection type characteristic
003 = 1 x M8x1 with 4 pins + 2 x M12x1 with 4 pins

BTL7-V50D-Mxxxx-P-C003



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
10) Null point
11) Installation length

	BTL7 -P- SERIES - ETHERCAT
Interface	EtherCAT
Measuring length	50...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0050…5500: ± 30 µm nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL7-abcd-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
V = EtherNet

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = Flexible Magnet Mode (1 - 16 magnets)

d Interface characteristic 2
E = EtherCAT

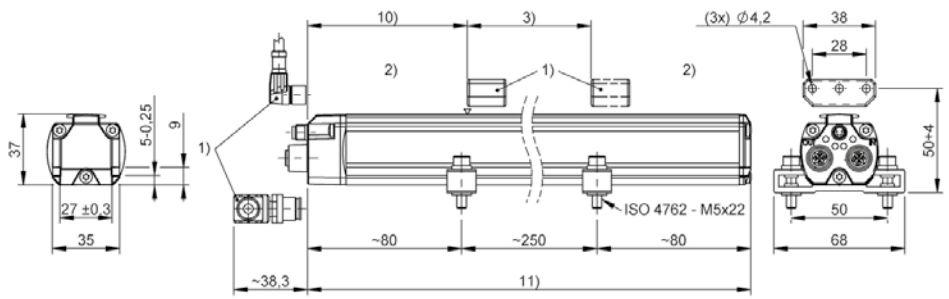
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M7620)

f Style
P = Profile

l Connection type
C = Connector

m Connection type characteristic
003 = 1 x M8x1 with 4 pins + 2 x M12x1 with 4 pins

BTL7-V50E-Mxxxx-P-C003



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
10) Null point
11) Installation length

	BTL5 -P- SERIES - PROFIBUS
Interface	Profibus
Measuring length	25...4000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	±30 µm
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-abcd-Mnnnn-f-lm

BTL5
Magnetostrictive linear position sensor
Generation 5

a interface
T = Profibus

b Operating voltage
1 = 20 … 28 V

c + d Interface characteristic 1 + 2
10 = 1 magnet (1 - 4 magnets can be set)

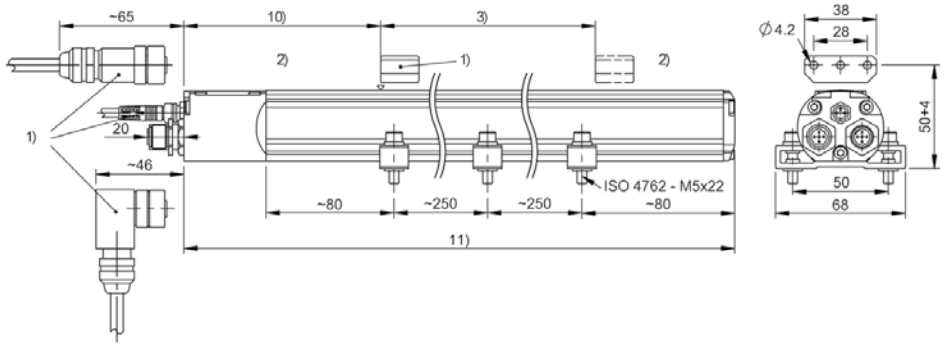
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

f Style
P = Profile

l Connection type
S = Connector

m Connection type characteristic
103 = 1 x M8x1 connector with 3 pins
+ 1 x M12x1 connector with 5 pins
+ 1 x M12x1 female with 5 pins

BTL5-Txxx-Mxxxx-P-S103



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
10) Null point
11) Installation length

	BTL6 -A1- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	50...4012 mm
Repeat accuracy	—
Linearity deviation	nnnn = 0050…0500: ± 200 µm, nnnn > 500: ± 0.04% FS
Operating voltage Ub	—
Ambient temperature	0...70 °C
Mechanical configuration	Round profile, Ø30 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL6-abcd-Mnnnn-f-lm

BTL6
Magnetostrictive linear position sensor
Generation 6

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
1 = 20 … 28 V
3 = 20 … 28 V (if c + d = 10)
3 = 18 … 30 V (if c + d = 01)

c + d Interface characteristic 1 + 2
01 = 2 outputs, each 1 x rising/falling settable/programmable
10 = 2 outputs, 1 x rising/1x falling

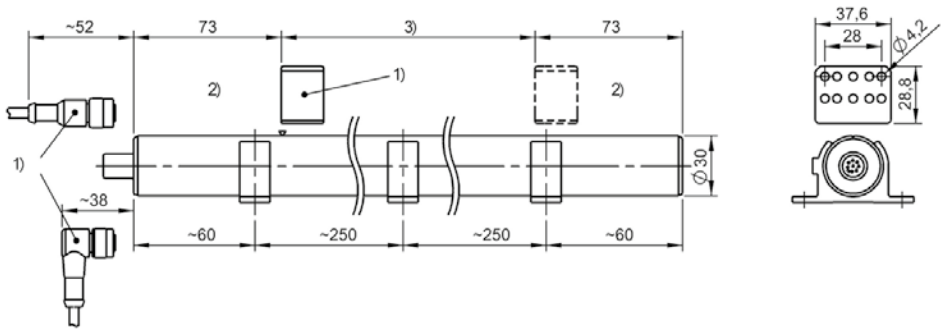
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4012 when c+d = 10)
(M0050…M1512 when c+d = 01)

f Style
A1 = Round profile

l Connection type
S = Connector

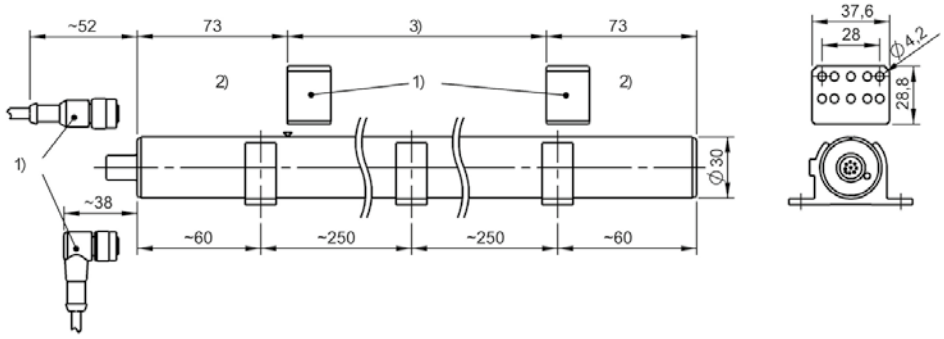
m Connection type characteristic 1
115 = M12x1 connector with 8 pins

BTL6-A110-Mxxxx-A1-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length

BTL6-G301-Mxxxx-A1-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length

	BTL6 -A1- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	50...4012 mm
Repeat accuracy	≤ 10 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm nnnn > 500: ± 0.04% FS
Operating voltage Ub	20...28 VDC
Ambient temperature	0...70 °C
Mechanical configuration	Round profile, Ø30 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL6-abcd-Mnnnn-f-lm

BTL6
Magnetostrictive linear position sensor
Generation 6

a interface
P = Digital pulse interface

b Operating voltage
1 = 20 … 28 V

c Interface characteristic 1
1 = Digital start/stop interface

d Interface characteristic 2
0 = No communication interface
1 = DPI/IP communication interface

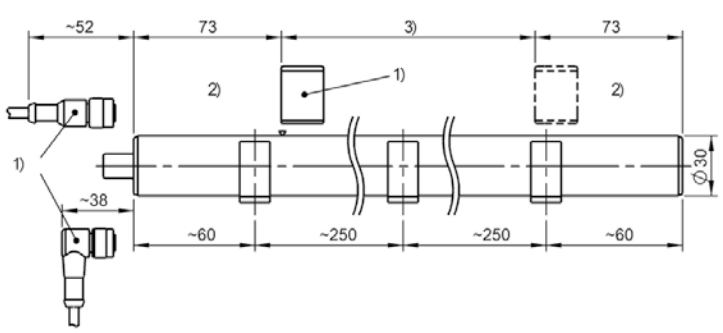
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4012)

f Style
A1 = Round profile

l Connection type
S = Connector

m Connection type characteristic 1
115 = M12x1 connector with 8 pins

BTL6-P11x-Mxxxx-A1-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length

	BTL6 -A1- SERIES - ETHERCAT
Interface	EtherCAT
Measuring length	50...4012 mm
Repeat accuracy	≤ 30 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm, nnnn > 500: ± 0.04% FS
Operating voltage Ub	20...28 VDC
Ambient temperature	0...70 °C
Mechanical configuration	Round profile, Ø30 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL6-abcd-Mnnnn-f-lm

BTL6
Magnetostrictive linear position sensor
Generation 6

a interface
V = EtherNet

b Operating voltage
1 = 20 … 28 V

c Interface characteristic 1
1 = 1 magnet
2 = 2 magnets

d Interface characteristic 2
E = EtherCAT

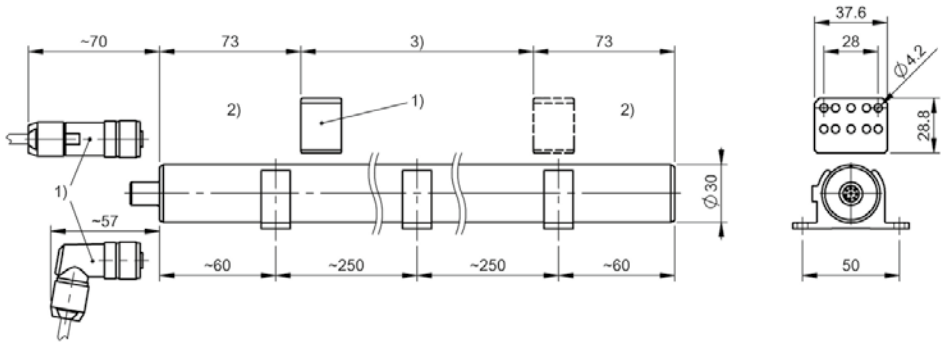
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4012)

f Style
A1 = Round profile

l Connection type
S = Connector

m Connection type characteristic 1
115 = M12x1 connector with 8 pins

BTL6-V1xE-Mxxxx-A1-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length

	BTL6 -A1- SERIES - VARAN
Interface	Varan
Measuring length	50...4012 mm
Repeat accuracy	≤ 30 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm nnnn > 0500: ± 0.04% FS
Operating voltage Ub	20...28 VDC
Ambient temperature	0...70 °C
Mechanical configuration	Round profile, Ø30 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL6-abcd-Mnnnn-f-lm

BTL6
Magnetostrictive linear position sensor
Generation 6

a interface
V = EtherNet

b Operating voltage
1 = 20 … 28 V

c Interface characteristic 1
1 = 1 magnet

d Interface characteristic 2
V = Varan

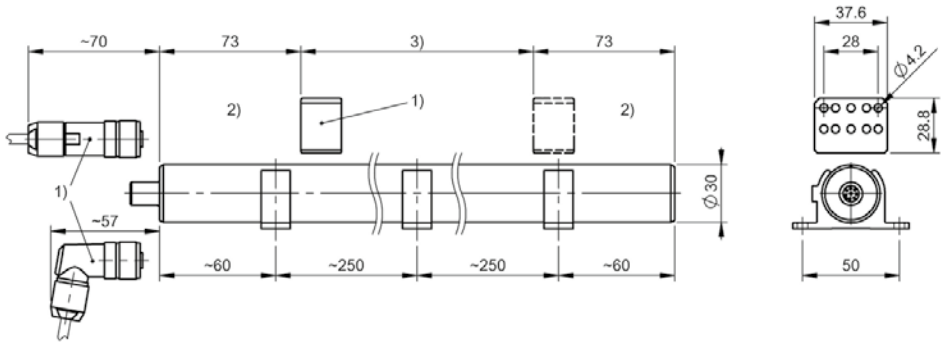
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4012)

f Style
A1 = Round profile

l Connection type
S = Connector

m Connection type characteristic 1
115 = M12x1 connector with 8 pins

BTL6-V11V-Mxxxx-A1-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length

	BTL6 -PF- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	50...5080 mm
Repeat accuracy	—
Linearity deviation	nnnn = 0050…0500: ± 200 µm nnnn > 0500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-25...70 °C
Mechanical configuration	Flat profile - 21 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL6-abcd-Mnnnn-f-lm

BTL6
Magnetostrictive linear position sensor
Generation 6

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
00 = 1 output, rising

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M5080)

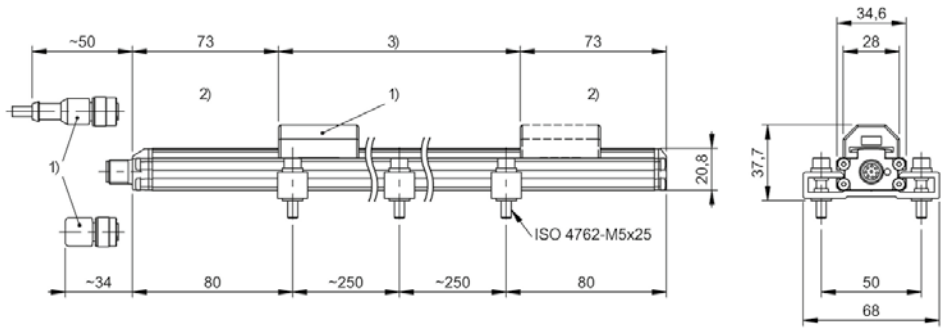
f Style
PF = Flat profile

l Connection type
S = Connector

m Connection type characteristic 1
115 = M12x1 connector with 8 pins

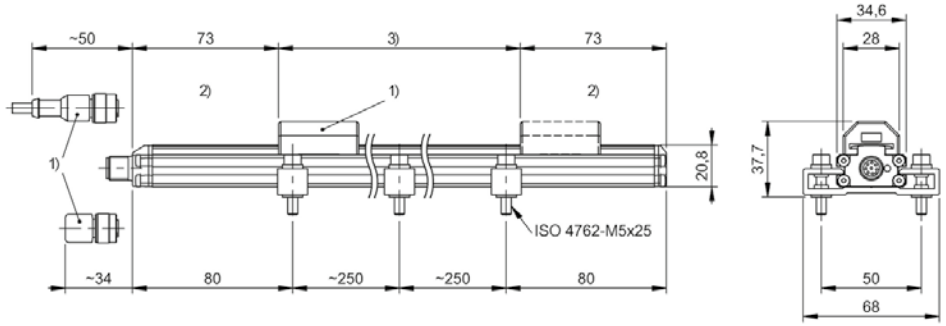
BTL6-A500-Mxxxx-PF-S115

1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length



BTL6-G500-Mxxxx-PF-S115

1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length



	BTL6 -PF- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	50...5080 mm
Repeat accuracy	—
Linearity deviation	nnnn = 0050…0500: ± 200 µm nnnn > 0500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-25...70 °C
Mechanical configuration	Flat profile - 21 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL6-abcd-Mnnnn-f-lm

BTL6
Magnetostrictive linear position sensor
Generation 6

a interface
C = Current output 0.1 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
00 = 1 output, rising

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M5080)

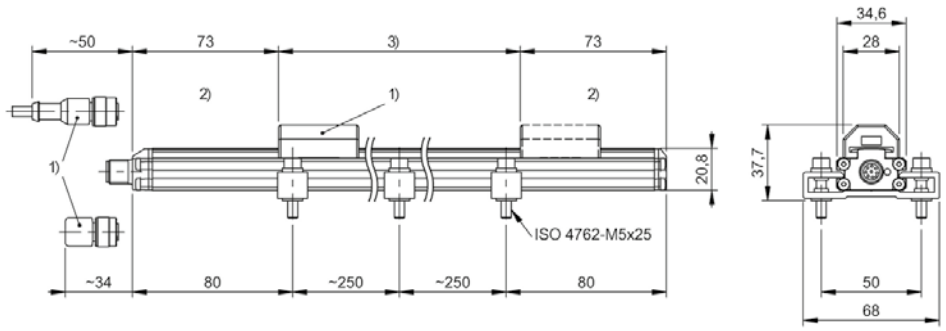
f Style
PF = Flat profile

l Connection type
S = Connector

m Connection type characteristic 1
115 = M12x1 connector with 8 pins

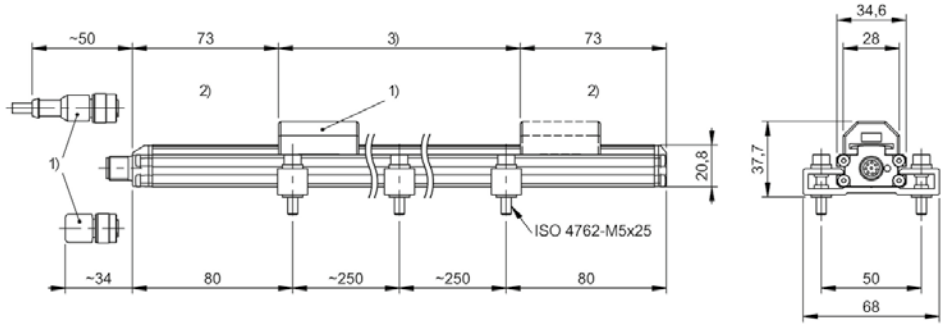
BTL6-E500-Mxxxx-PF-S115

1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length



BTL6-C500-Mxxxx-PF-S115

1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length



	BTL6 -PF- SERIES - IO-LINK
Interface	IO-Link
Measuring length	50...4572 mm
Repeat accuracy	≤ 30 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm, nnnn > 0500: ± 0.04% FS
Operating voltage Ub	18...30 VDC
Ambient temperature	-25...70 °C
Mechanical configuration	Flat profile - 21 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL6-abcd-Mnnnn-f-lm

BTL6
Magnetostrictive linear position sensor
Generation 6

a interface
U = IO-Link

b Operating voltage
1 = 18 … 30 V

c + d Interface characteristic 1 + 2
10 = 1 magnet

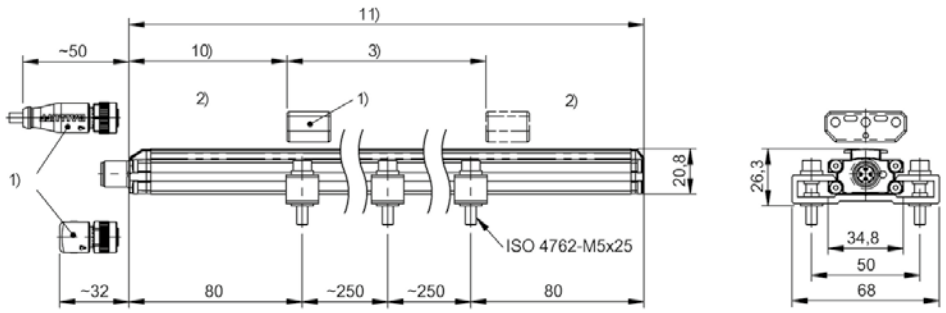
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4572)

f Style
PF = Flat profile

l Connection type
S = Connector

m Connection type characteristic 1
4 = M12x1 connector with 4 pins

BTL6-U110-Mxxxx-PF-S4



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
10) Null point
11) Installation length

	BTL6 -PF- SERIES - VARAN
Interface	Varan
Measuring length	50...4572 mm
Repeat accuracy	≤ 10 µm
Linearity deviation	nnnn = 0050…0500: ± 150 µm nnnn > 0500: ± 0.03% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	0...85 °C
Mechanical configuration	Flat profile - 21 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL6-abcd-Mnnnn-f-lm

BTL6
Magnetostrictive linear position sensor
Generation 6

a interface
V = EtherNet

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
1 = Device profile length measuring systems
5 = Device Profile EUROMAP 75

d Interface characteristic 2
V = Varan

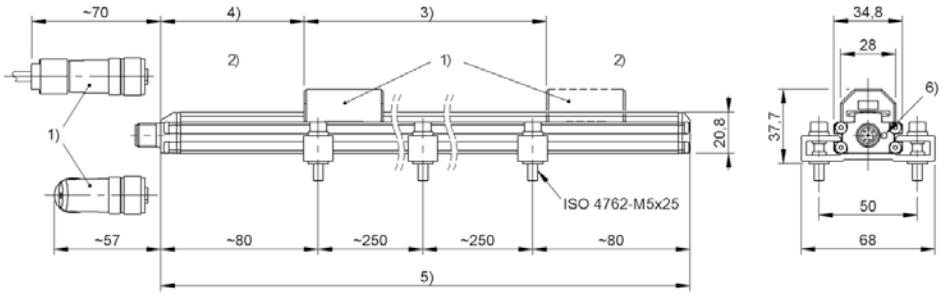
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4572)

f Style
PF = Flat profile

l Connection type
S = Connector

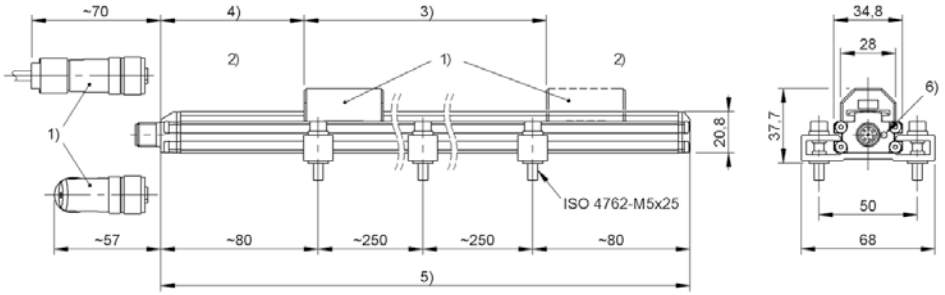
m Connection type characteristic 1
115 = M12x1 connector with 8 pins

BTL6-V55V-Mxxxx-PF-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Null point
5) Installation length
6) LED function indicator

BTL6-V51V-Mxxxx-PF-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Null point
5) Installation length
6) LED function indicator

	BTL7 -A/B- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm nnnn = 0501…5500: ± 0.01% FS nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	l = S AND m ≠ 140: IP67 with connector l = S AND m = 140: IP65 with connector l = KA, FA: IP68
Approval/Conformity	nnnn ≤ 500: l = S, KA: CE + cULus + EAC + GL + WEEE l = FA: CE + EAC + GL + WEEE nnnn > 500: l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
1 = 20 … 28 V
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
01 = 2 outputs, each 1 x rising/falling settable/programmable
10 = 2 outputs, each 1 x rising/falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

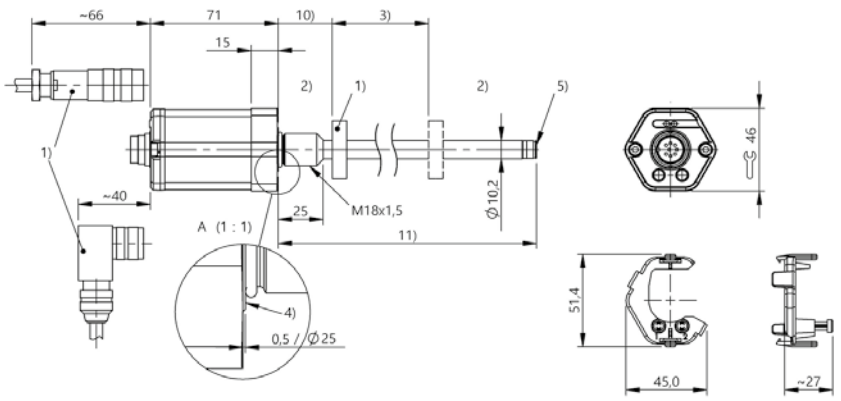
f Style
A = Mounting threads M18x1.5, for flat seal
B = Mounting threads M18x1.5, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

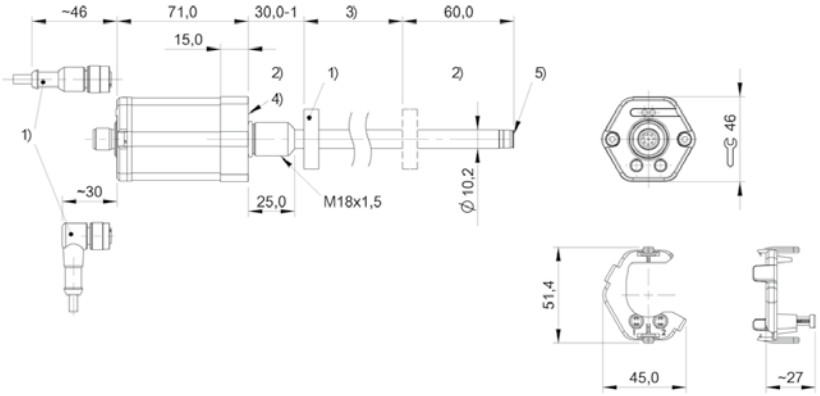
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
135 = M16x1 connector with 6 pins
140 = MS, 10-pin
for cable (length in meters):
02, 05, 10, 15, 20, 30

BTL7-A501-Mxxxx-B-S32



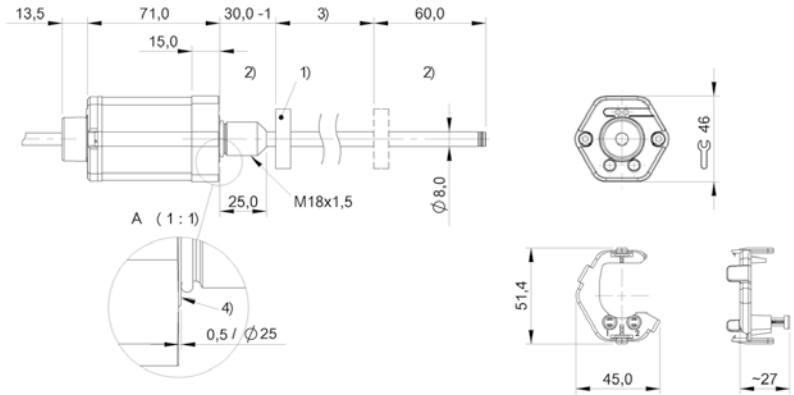
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-G510-Mxxxx-A-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-A510-Mxxxx-B8-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL7 -A/B- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm nnnn = 0501…5500: ± 0.01% FS nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	l = S AND m ≠ 140: IP67 with connector l = S AND m = 140: IP65 with connector l = KA, FA: IP68
Approval/Conformity	nnnn ≤ 500: l = S, KA: CE + cULus + EAC + GL + WEEE l = FA: CE + EAC + GL + WEEE nnnn > 500: l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
01 = 2 outputs, each 1 x rising/falling settable/programmable
00 = 1 output, rising
70 = 1 output, falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

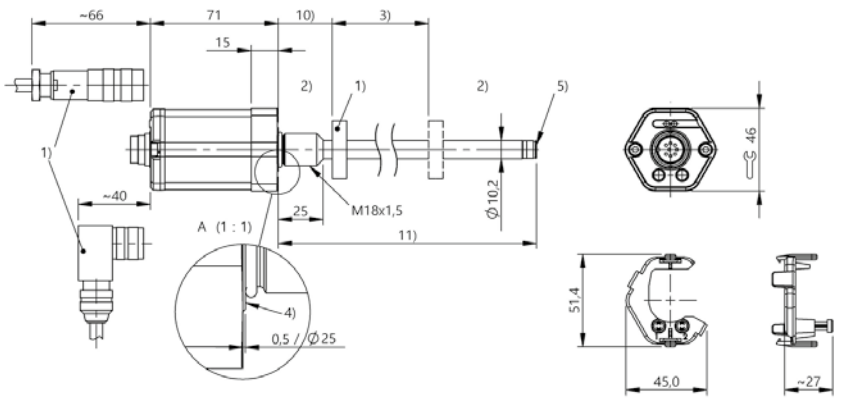
f Style
A = Mounting threads M18x1.5, for flat seal
B = Mounting threads M18x1.5, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

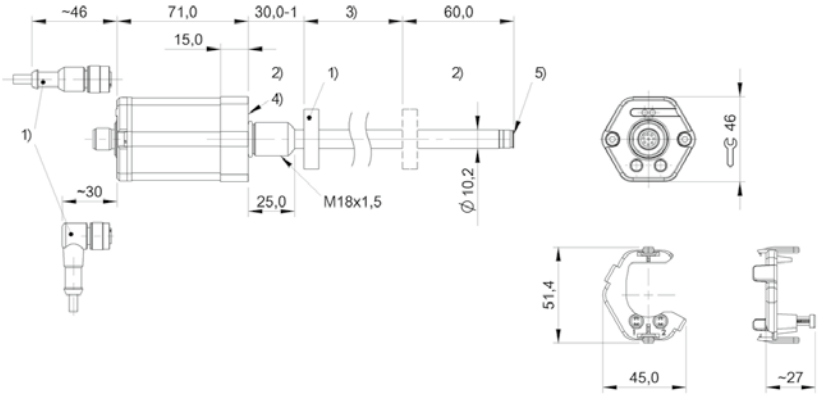
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
135 = M16x1 connector with 6 pins
140 = MS, 10-pin
for cable (length in meters):
02, 05, 10, 15, 20, 50, 100

BTL7-E501-Mxxxx-B-S32



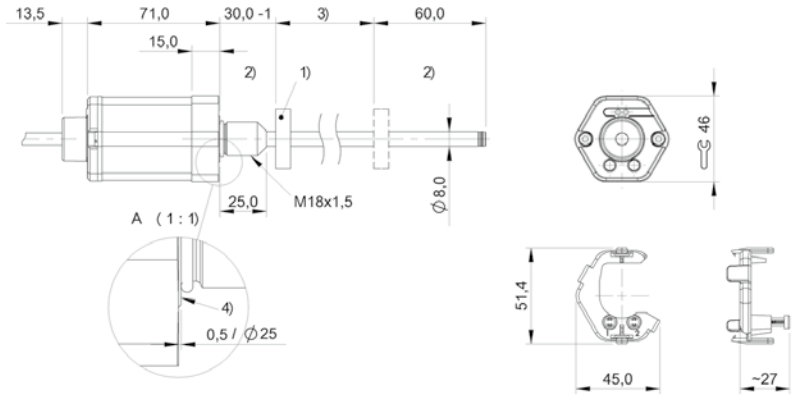
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-C500-Mxxxx-A-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-E570-Mxxxx-B8-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL7 -A/B- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0025…5500: ± 50 µm nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	l = S: IP67 with connector l = KA, FA: IP68
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
P = Digital pulse interface

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
1 = Digital start/stop interface

d Interface characteristic 2
1 = DPI/IP communication interface

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

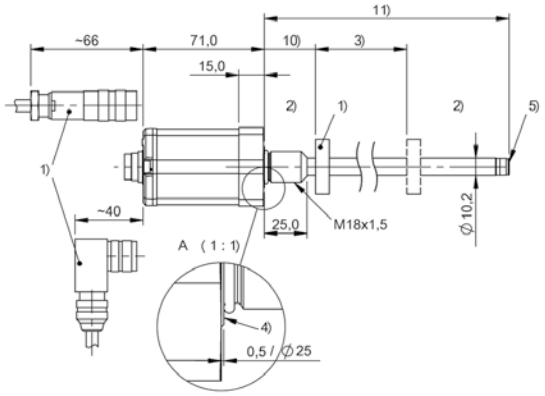
f Style
A = Mounting threads M18x1.5, for flat seal
B = Mounting threads M18x1.5, for O-Ring

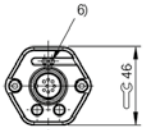
g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
135 = M16x0.75 connector with 6 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30, 50, 100

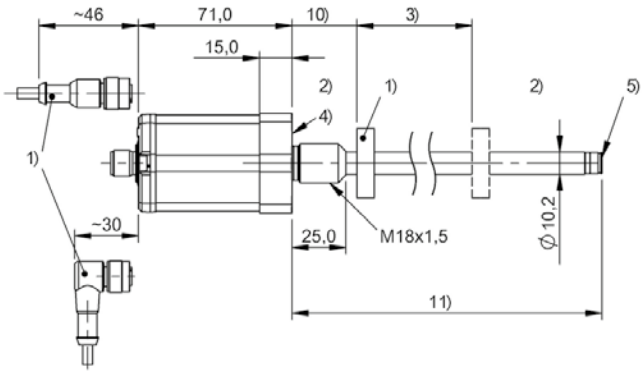
BTL7-P511-Mxxxx-B-S32

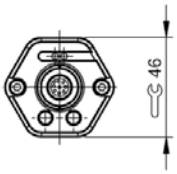




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

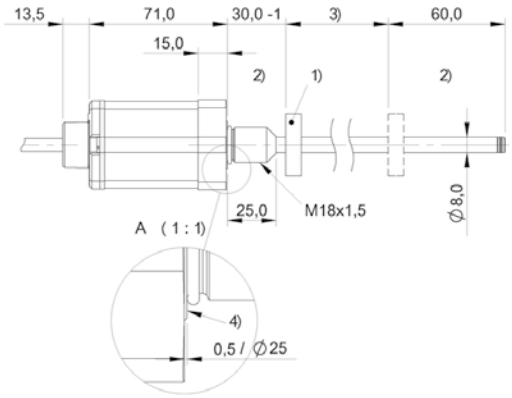
BTL7-P511-Mxxxx-A-S115

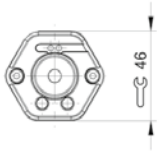




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-P511-Mxxxx-B8-KAxx





1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL7 -A/B- SERIES - SSI
Interface	SSI
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7: nnnn = 50…5500: ± 30µm d = 4, 5, 6, 8 nnnn = 50…5500: ± 2 LSB nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	l = S AND m ≠ 140: IP67 with connector l = S AND m = 140: IP65 with connector l = KA, FA: IP68
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcde-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
S = SSI

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling
A = 26 bits, binary, rising
B = 26 bits, gray, rising
C = 26 bits, binary, falling
D = 26 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

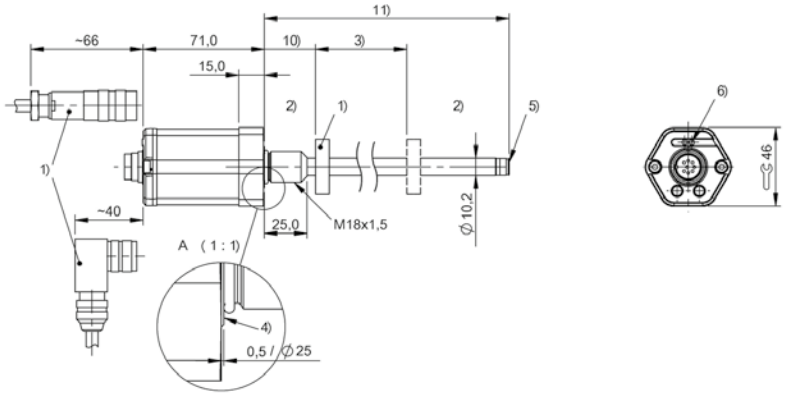
f Style
A = Mounting threads M18x1.5, for flat seal
B = Mounting threads M18x1.5, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

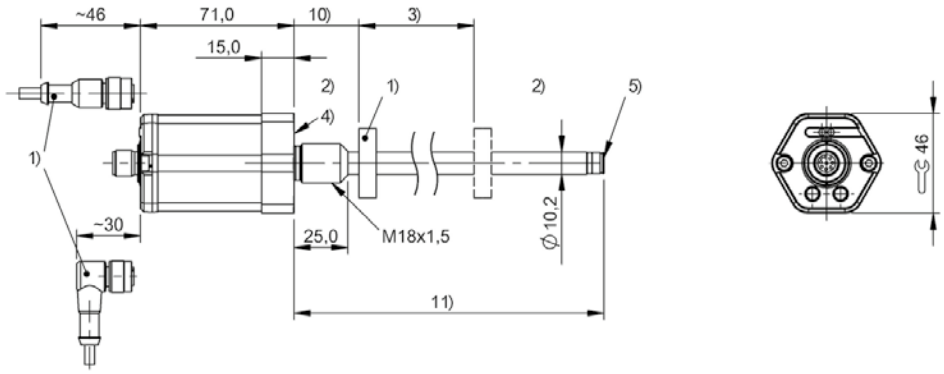
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
140 = MS, 10-pin
147 = M16x0.75 connector with 7 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30, 50, 100

BTL7-S510x-Mxxxx-B-S32



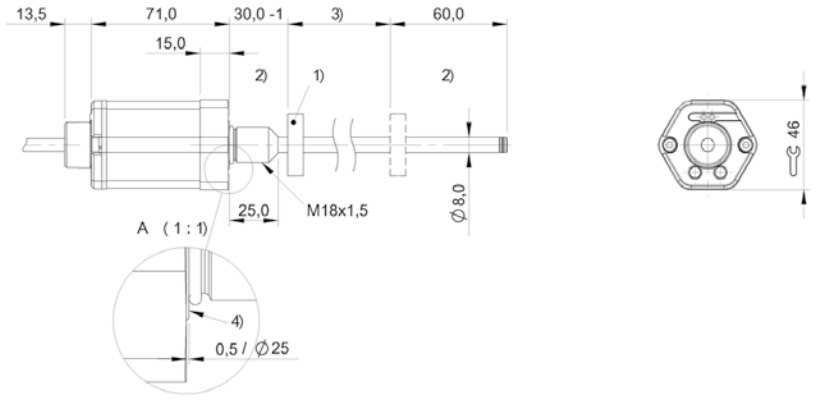
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-S5xxx-Mxxxx-A-S115



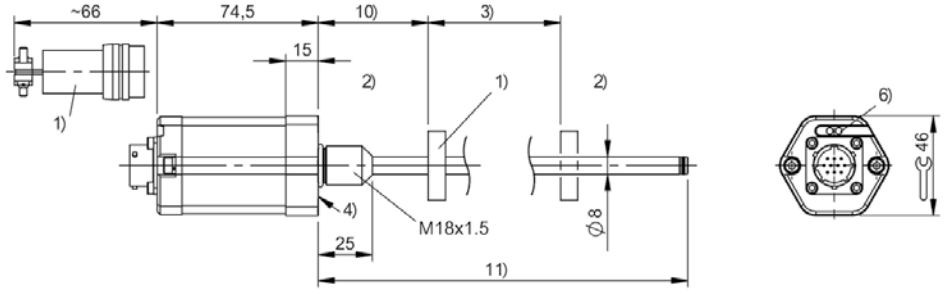
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-S5xxx-Mxxxx-B8-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

BTL7-S5xxx-Mxxxx-A8-S140



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

	BTL6 -A/B- SERIES - IO-LINK
Interface	IO-Link
Measuring length	25...4572 mm
Repeat accuracy	≤ 30 µm
Linearity deviation	± 50 µm
Operating voltage Ub	18...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL6-abcd-Mnnnn-f-lm

BTL6
Magnetostrictive linear position sensor
Generation 6

a interface
U = IO-Link

b Operating voltage
1 = 18 … 30 V

c Interface characteristic 1
0 = Flexible Magnet Mode

d Interface characteristic 2
1 = COM3, 8 bytes inputs

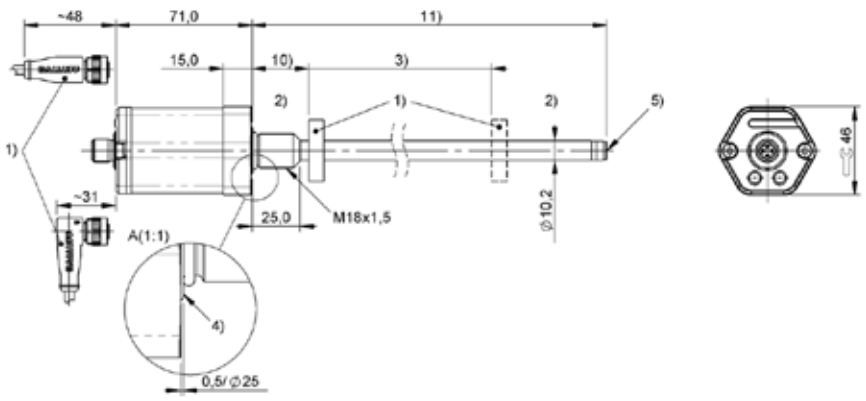
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M4572)

f Style
A = Mounting threads M18x1.5,
for flat seal
B = Mounting threads M18x1.5,
for O-Ring

l Connection type
S = Connector

m Connection type characteristic 1
4 = M12x1 connector with 4 pins

BTL6-U101-Mxxxx-B-S4



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

	BTL5 -A/B- SERIES - CANOPEN
Interface	CANopen
Measuring length	25...4000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	±30 µm
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-abcd-Mnnnn-fg-lm

BTL5
Magnetostrictive linear position sensor
Generation 5

a interface
H = CANopen

b Operating voltage
1 = 20 … 28 V

c Interface characteristic 1
1 = 1 magnet
2 = 2 magnets
3 = 4 magnets

d Interface characteristic 2
Data transmission rate:
0 = 1 MBaud
1 = 800 MBaud
2 = 500 kBaud
3 = 250 kBaud
4 = 125 kBaud
5 = 100 kBaud
6 = 50 kBaud
7 = 25 kBaud
8 = 10 kBaud

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

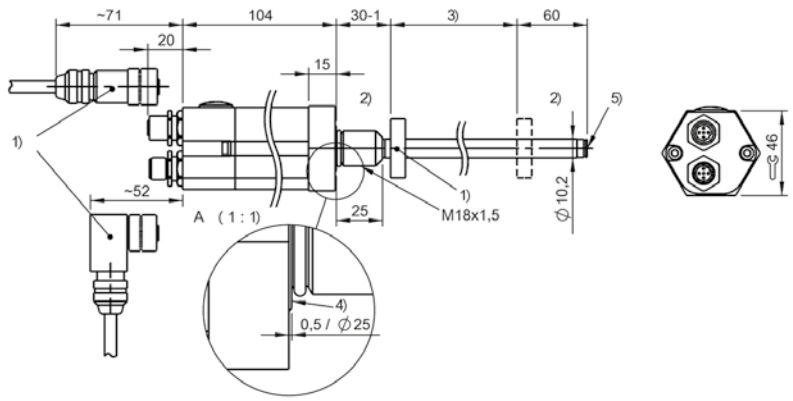
f Style
A = Mounting threads M18x1.5, for flat seal
B = Mounting threads M18x1.5, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector

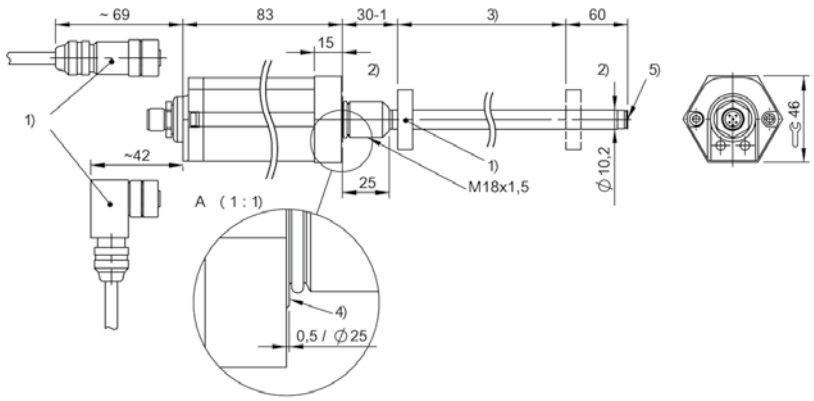
m Connection type characteristic
92 = 1 x M12x1 connector with 5 pins
94 = 1 x M12x1 connector with 5 pins + 1 x M12x1 female with 5 pins

BTL5-Hxxx-Mxxxx-B-S94



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL5-Hxxx-Mxxxx-B-S92



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

	BTL7 -A/B- SERIES - PROFINET
Interface	Profinet
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0050…5500: ± 30 µm nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
V = EtherNet

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = Flexible Magnet Mode (1 - 16 magnets)

d Interface characteristic 2
T = Profinet

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

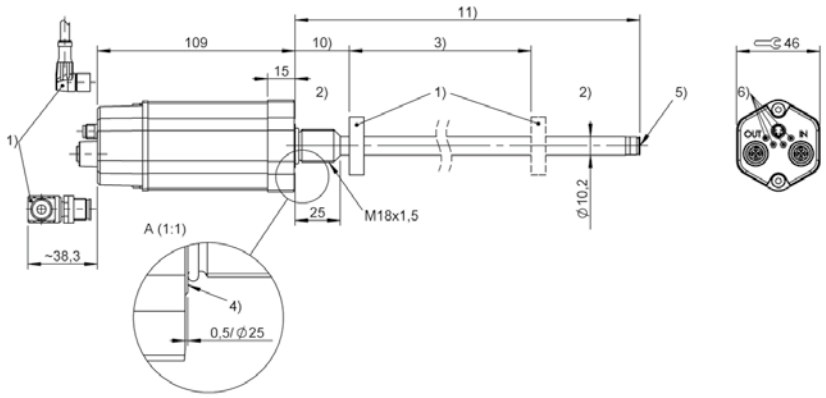
f Style
A = Mounting threads M18x1.5, for flat seal
B = Mounting threads M18x1.5, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
C = Connector

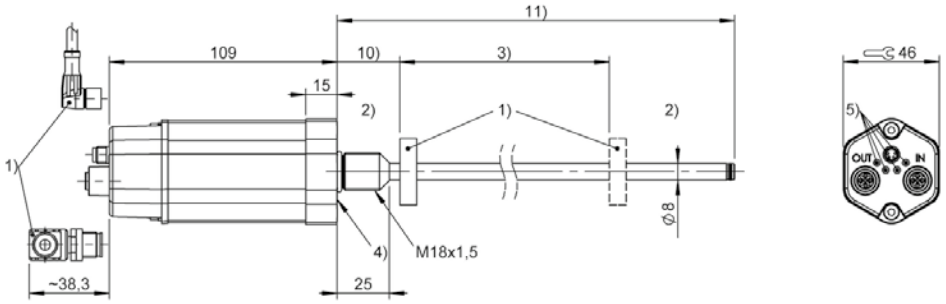
m Connection type characteristic
003 = 1 x M8x1 with 4 pins + 2 x M12x1 with 4 pins

BTL7-V50T-Mxxxx-B-C003



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-V50T-Mxxxx-A8-C003



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) LED function indicator
10) Null point
11) Installation length

	BTL7 -A/B- SERIES - ETHERNET/IP
Interface	Ethernet/IP
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0050…5500: ± 30 µm nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
V = EtherNet

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = Flexible Magnet Mode (1 - 16 magnets)

d Interface characteristic 2
D = EtherNet IP

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

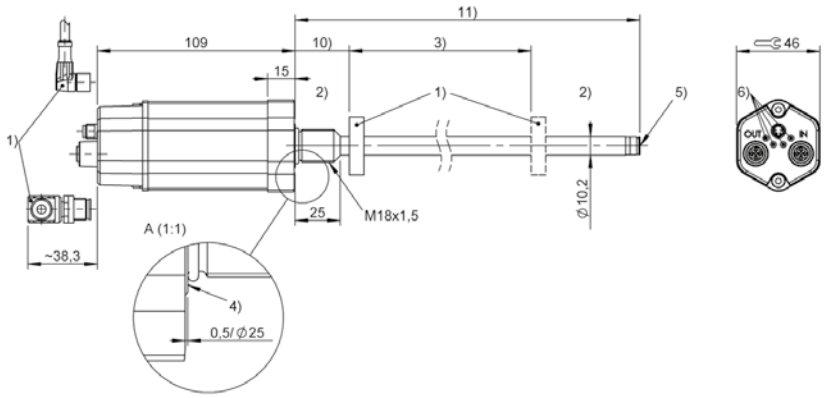
f Style
A = Mounting threads M18x1.5, for flat seal
B = Mounting threads M18x1.5, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
C = Connector

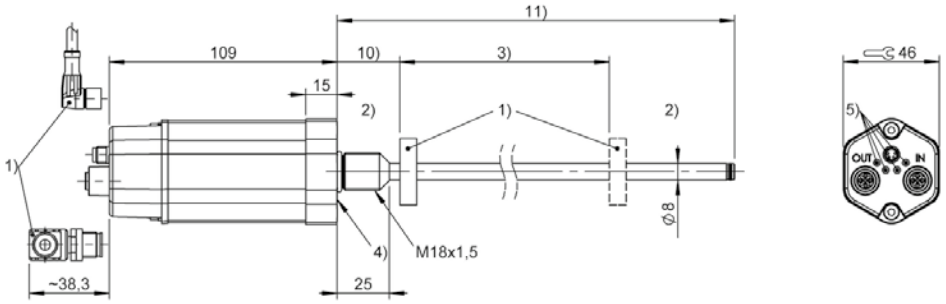
m Connection type characteristic
003 = 1 x M8x1 with 4 pins + 2 x M12x1 with 4 pins

BTL7-V50D-Mxxxx-B-C003



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-V50D-Mxxxx-A8-C003



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) LED function indicator
10) Null point
11) Installation length

	BTL7 -A/B- SERIES - ETHERCAT
Interface	EtherCAT
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0050…5500: ± 30 µm nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
V = EtherNet

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = Flexible Magnet Mode (1 - 16 magnets)

d Interface characteristic 2
E = EtherCAT

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

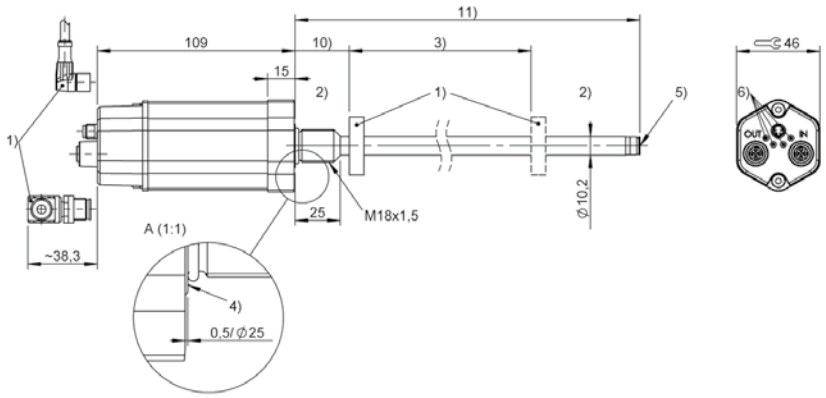
f Style
A = Mounting threads M18x1.5, for flat seal
B = Mounting threads M18x1.5, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
C = Connector

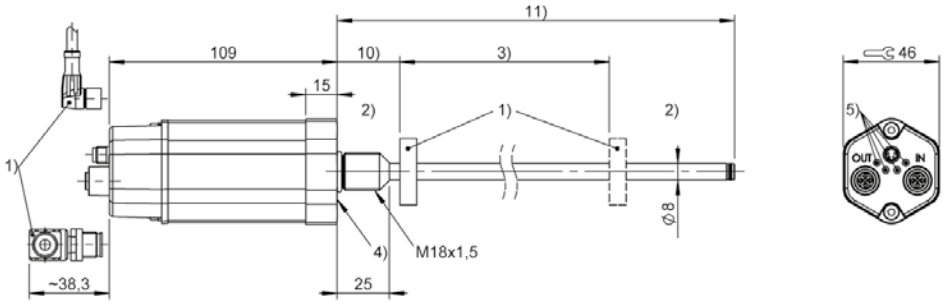
m Connection type characteristic
003 = 1 x M8x1 with 4 pins + 2 x M12x1 with 4 pins

BTL7-V50E-Mxxxx-B-C003



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-V50E-Mxxxx-A8-C003



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) LED function indicator
10) Null point
11) Installation length

	BTL5 -A/B- SERIES - PROFIBUS
Interface	Profibus
Measuring length	25...4000 mm
Repeat accuracy	—
Linearity deviation	±30 µm
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-abcd-Mnnnn-fg-lm

BTL5
Magnetostrictive linear position sensor Generation 5

a interface
T = Profibus

b Operating voltage
1 = 20 … 28 V

c + d Interface characteristic 1 + 2
10 = 1 magnet
(1 - 4 magnets can be set)

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

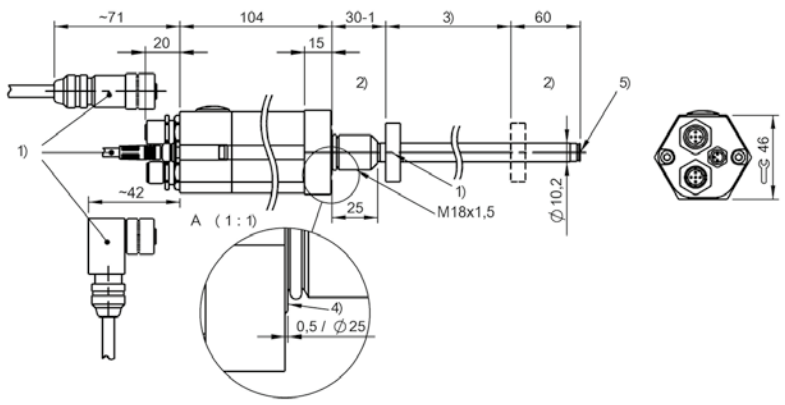
f Style
A = Mounting threads M18x1.5, f or flat seal
B = Mounting threads M18x1.5, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector

m Connection type characteristic
103 = 1 x M8x1 connector with 3 pins + 1 x M12x1 connector with 5 pins + 1 x M12x1 female with 5 pins

BTL5-Txxx-Mxxxx-B-S103



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

	BTL6 -A/B- SERIES - VARAN
Interface	Varan
Measuring length	25...4012 mm
Repeat accuracy	≤ 30 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm, nnnn > 0500: ± 0.04% FS
Operating voltage Ub	20...28 VDC
Ambient temperature	0...70 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL6-abcd-Mnnnn-fg-lm

BTL6
Magnetostrictive linear position sensor
Generation 6

a interface
V = EtherNet

b Operating voltage
1 = 20 … 28 V

c Interface characteristic 1
1 = 1 magnet

d Interface characteristic 2
E = Varan

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M4012: for rod diameter 10.2 mm)

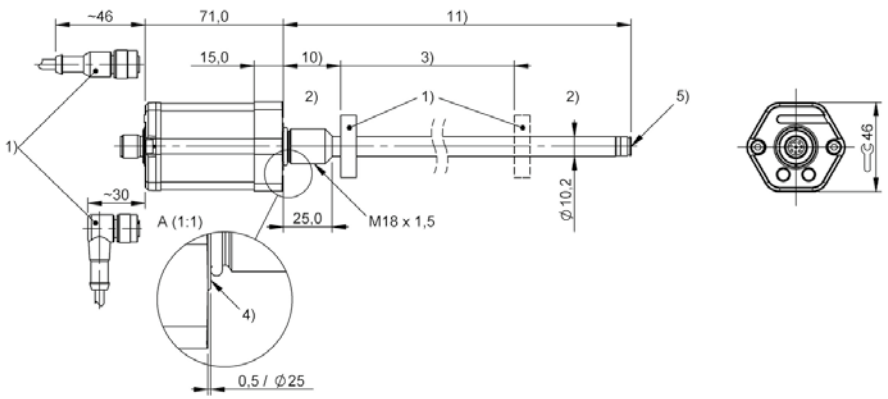
f Style
A = Mounting threads M18x1.5, for flat seal
B = Mounting threads M18x1.5, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector

m Connection type characteristic 1
115 = M12x1 connector with 8 pins

BTL-V11V-Mxxxx-B-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

	BTL7 -BE/BF- SERIE - DIGITAL
Interface	Digital pulse
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0025…5500: ± 50 µm nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4404)
IP rating	IP69K
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
P = Digital pulse interface

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
1 = Digital start/stop interface

d Interface characteristic 2
1 = DPI/IP communication interface

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

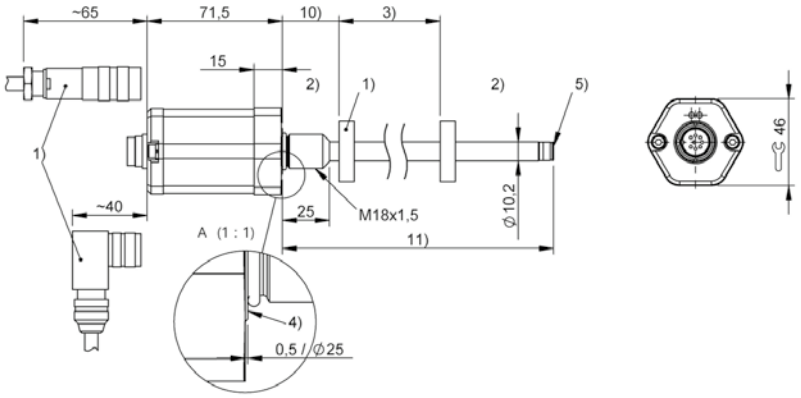
f Style
A = Mounting threads M18x1.5, for flat seal
B = Mounting threads M18x1.5, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

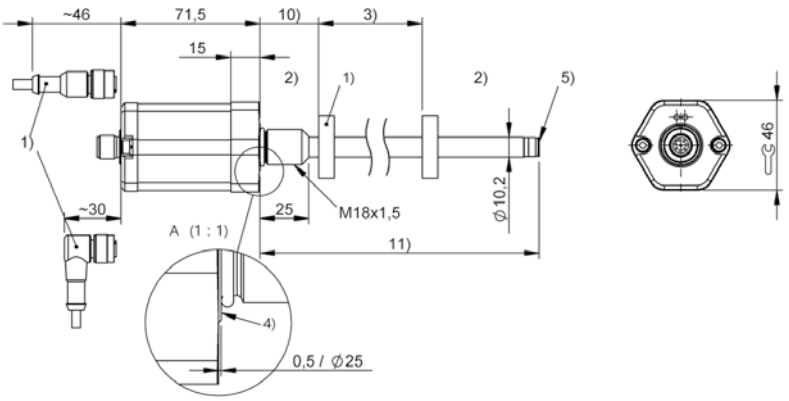
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
135 = M16x0.75 connector with 6 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30, 50, 100

BTL7-P511-Mxxxx-BE-S32



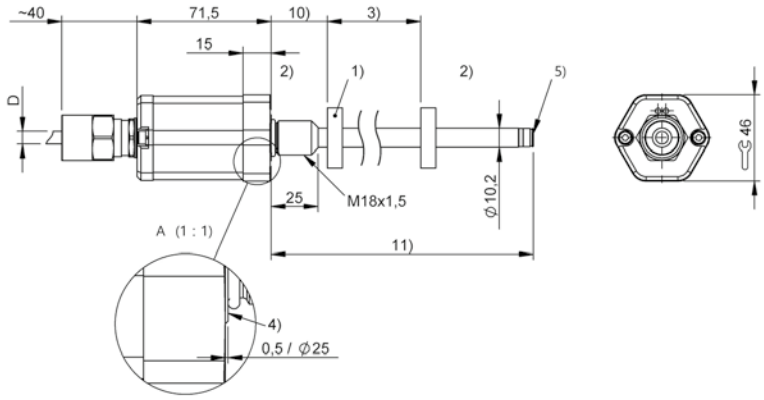
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-P511-Mxxxx-BE-S115



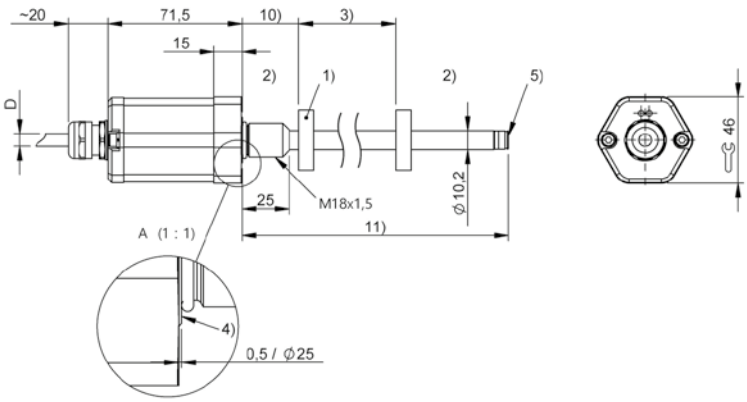
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-P511-Mxxxx-BF-FA/KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-P511-Mxxxx-BE-FA/KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

	BTL7 -BE/BF- SERIE - SSI
Interface	SSI
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7: nnnn = 50…5500: ± 30µm d = 4, 5, 6, 8 nnnn = 50…5500: ± 2 LSB nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4404)
IP rating	IP69K
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcde-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
S = SSI

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling
A = 26 bits, binary, rising
B = 26 bits, gray, rising
C = 26 bits, binary, falling
D = 26 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

f Style
A = Mounting threads M18x1.5, for flat seal
B = Mounting threads M18x1.5, for O-Ring

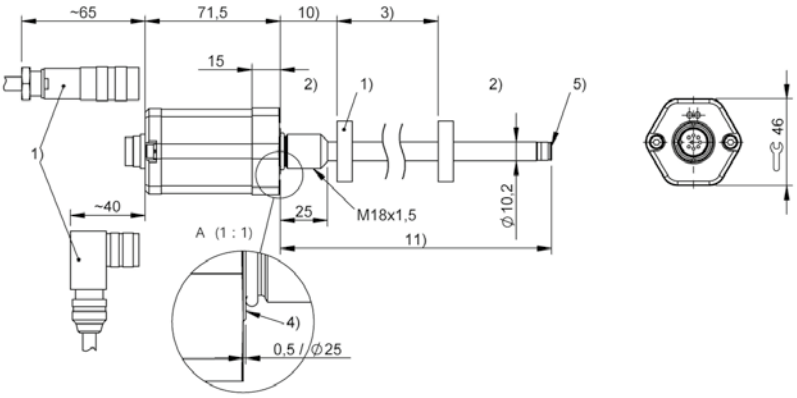
g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
140 = MS, 10-pin
147 = M16x0.75 connector with 7 pins

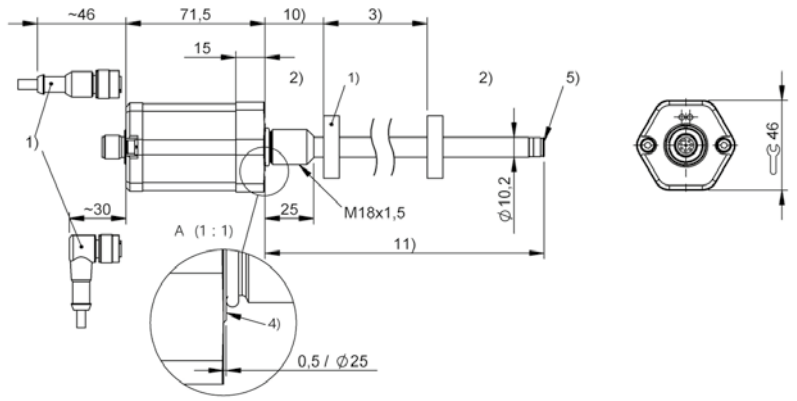
for cable (length in meters):
02, 05, 10, 15, 20, 30, 50, 100

BTL7-S510-Mxxxx-BE-S32



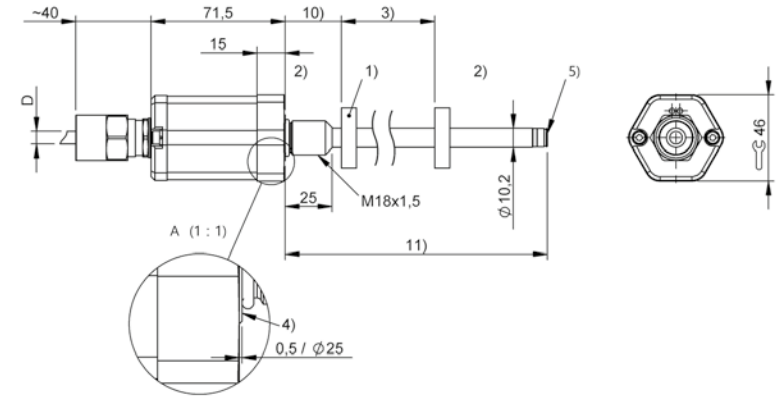
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-S5xx-Mxxxx-BE-S115



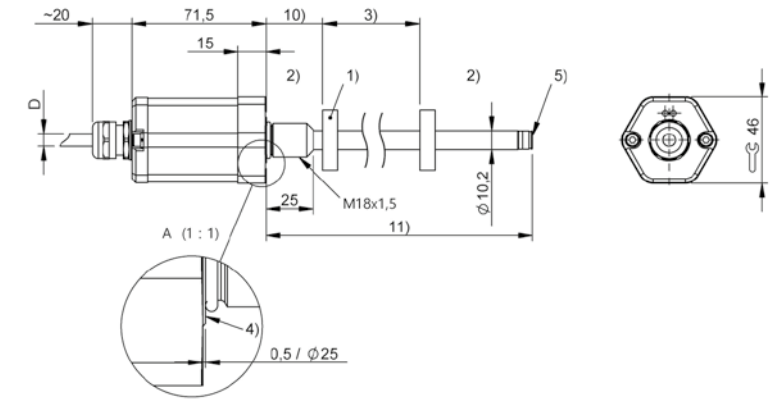
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-S5xx-Mxxxx-BF-FA/KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-S5xx-Mxxxx-BE-FA/KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

	BTL7 -Y/Z- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	l = S AND m ≠ 140: IP67 with connector l = S AND m = 140: IP65 with connector l = KA, FA: IP68
Approval/Conformity	nnnn ≤ 500: l = S, KA: CE + cULus + EAC + GL + WEEE l = FA: CE + EAC + GL + WEEE nnnn > 500: l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
1 = 20 … 28 V
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
01 = 2 outputs, each 1 x rising/falling settable/programmable
10 = 2 outputs, 1x each rising/falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

f Style
Y = Inch threads 3/4“-16UNF, for flat seal
Z = Inch threads 3/4“-16UNF, for O-Ring

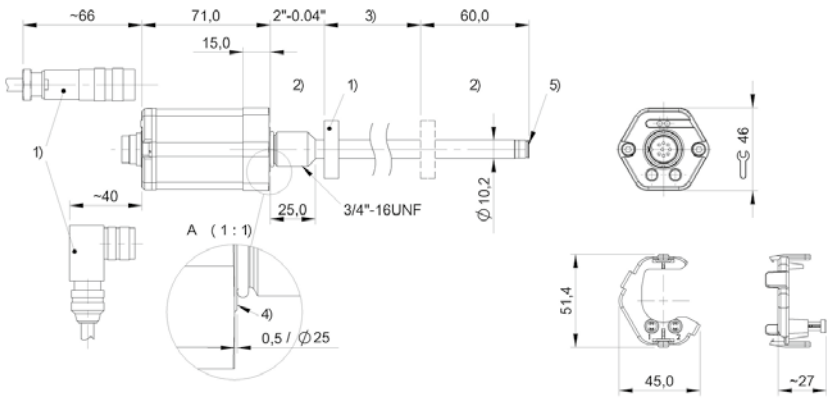
g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
135 = M16x1 connector with 6 pins
140 = MS, 10-pin

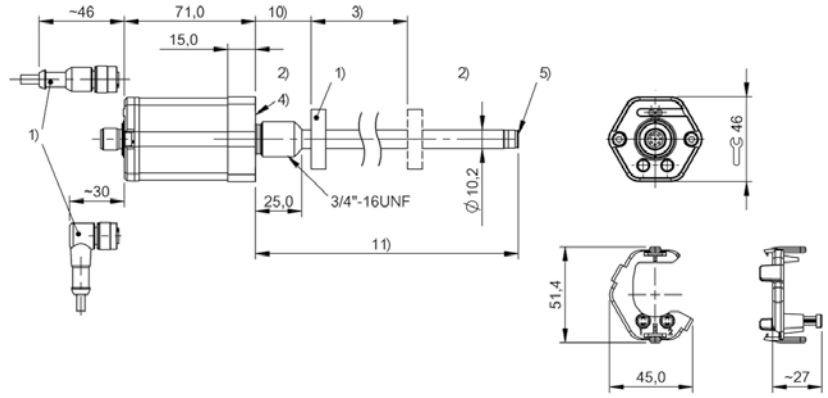
for cable (length in meters):
02, 05, 10, 15, 20, 30

BTL7-A501-Mxxxx-Z-S32



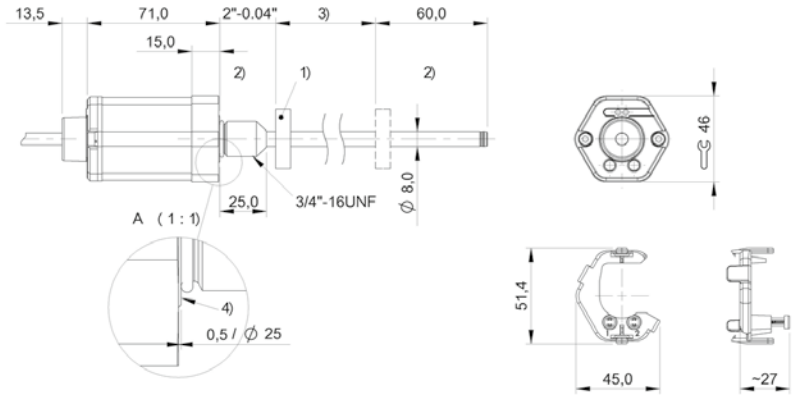
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-G510-Mxxxx-Y-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-A510-Mxxxx-Z8-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL7 -Y/Z- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	l = S AND m ≠ 140: IP67 with connector l = S AND m = 140: IP65 with connector l = KA, FA: IP68
Approval/Conformity	nnnn ≤ 500: l = S, KA: CE + cULus + EAC + GL + WEEE l = FA: CE + EAC + GL + WEEE nnnn > 500: l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
01 = 2 outputs, 1x each rising/falling settable/programmable
00 = 1 output, rising
70 = 1 output, falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

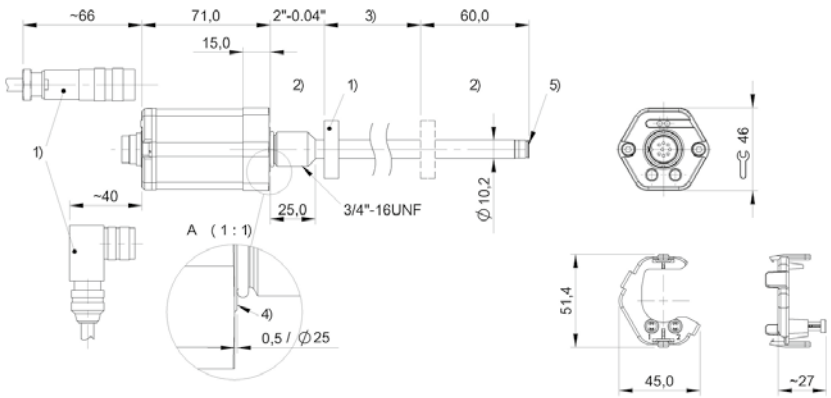
f Style
Y = Inch threads 3/4“-16UNF, for flat seal
Z = Inch threads 3/4“-16UNF, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

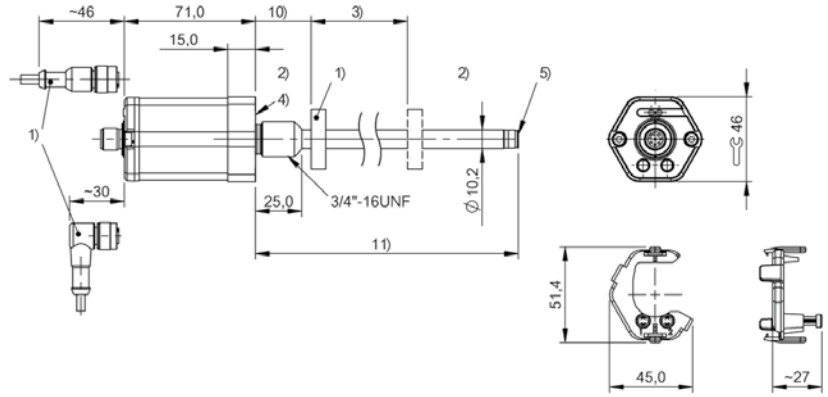
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
135 = M16x1 connector with 6 pins
140 = MS, 10-pin
for cable (length in meters):
02, 05, 10, 15, 20, 50, 100

BTL7-E501-Mxxxx-Z-S32



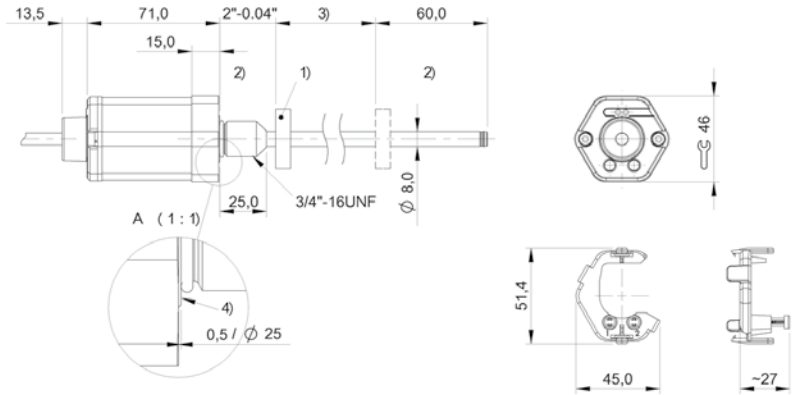
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-C500-Mxxxx-Y-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-E570-Mxxxx-Z8-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL7 -Y/Z- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0025…5500: ± 50 µm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	l = S: IP67 with connector l = KA, FA: IP68
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
P = Digital pulse interface

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
1 = Digital start/stop interface

d Interface characteristic 2
1 = DPI/IP communication interface

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

f Style
Y = Inch threads 3/4“-16UNF, for flat seal
Z = Inch threads 3/4“-16UNF, for O-Ring

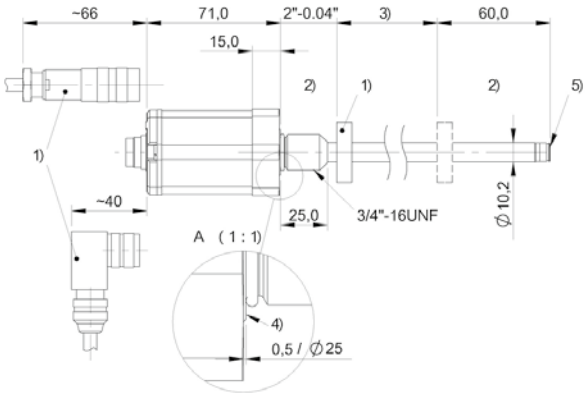
g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

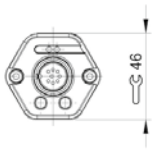
l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
135 = M16x0.75 connector with 6 pins

for cable (length in meters):
02, 05, 10, 15, 20, 30, 50, 100

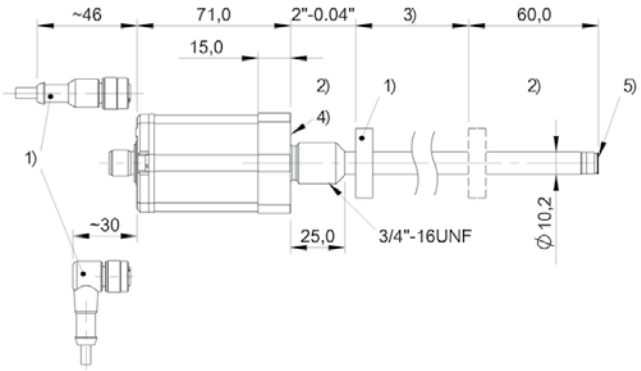
BTL7-P511-Mxxxx-Z-S32

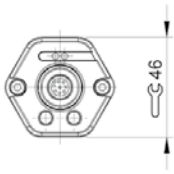




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

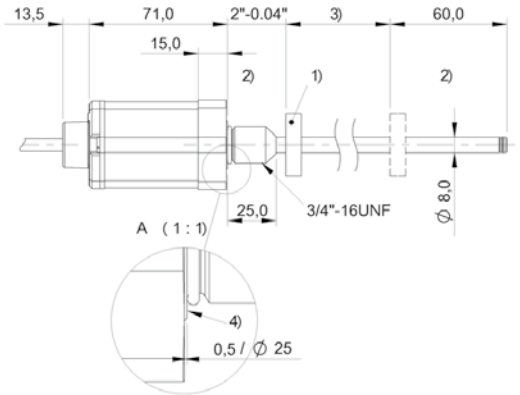
BTL7-P511-Mxxxx-Y-S115

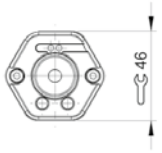




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-P511-Mxxxx-Z8-KAxx





1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL7 -Y/Z- SERIES - SSI
Interface	SSI
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7: nnnn = 25…5500: ± 30µm d = 4, 5, 6, 8 nnnn = 25…5500: ± 2 LSB nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	l = S AND m ≠ 140: IP67 with connector l = S AND m = 140: IP65 with connector l = KA, FA: IP68
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcde-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
S = SSI

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling
A = 26 bits, binary, rising
B = 26 bits, gray, rising
C = 26 bits, binary, falling
D = 26 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

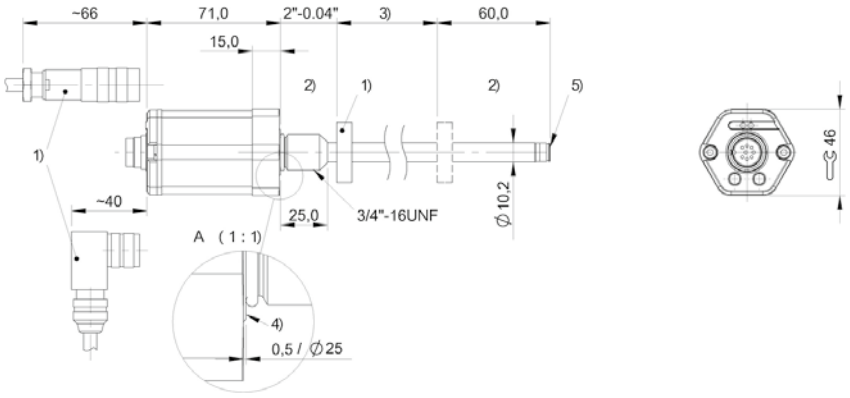
f Style
Y = Inch threads 3/4“-16UNF, for flat seal
Z = Inch threads 3/4“-16UNF, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

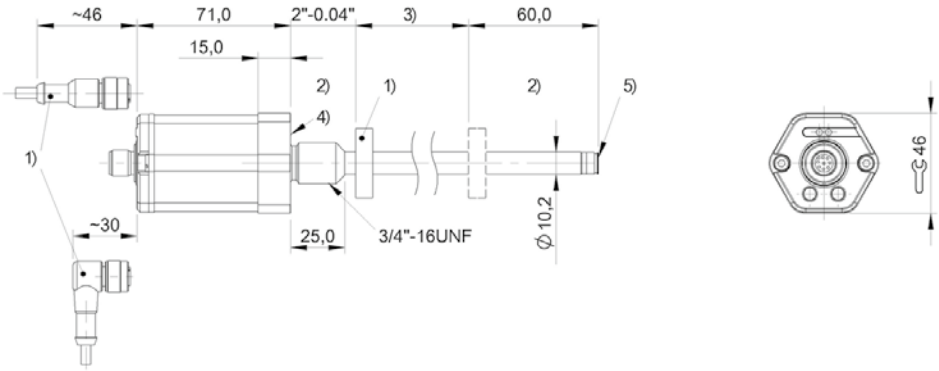
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
140 = MS, 10-pin
147 = M16x0.75 connector with 7 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30, 50, 100

BTL7-S510x-Mxxxx-Z-S32



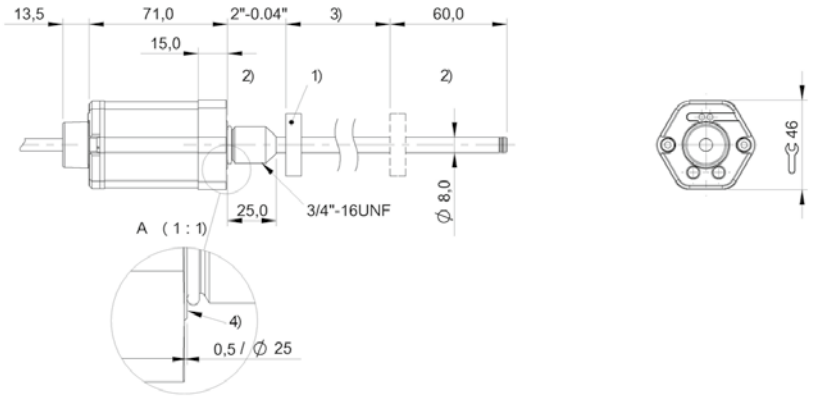
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-S5xxx-Mxxxx-Y-S115



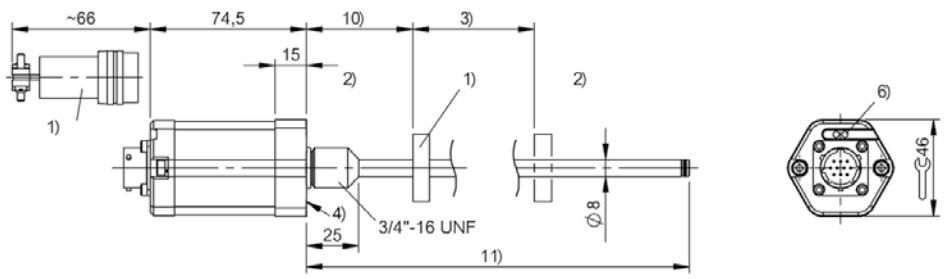
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-S5xxx-Mxxxx-Z8-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

BTL7-S5xxx-Mxxxx-Y8-S140



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

	BTL6 -Y/Z- SERIES - IO-LINK
Interface	IO-Link
Measuring length	25...4572 mm
Repeat accuracy	≤ 30 µm
Linearity deviation	± 50 µm
Operating voltage Ub	18...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL6-abcd-Mnnnn-f-lm

BTL6
Magnetostrictive linear position sensor
Generation 6

a interface
U = IO-Link

b Operating voltage
1 = 18 … 30 V

c Interface characteristic 1
0 = Flexible Magnet Mode

d Interface characteristic 2
1 = COM3, 8 bytes inputs

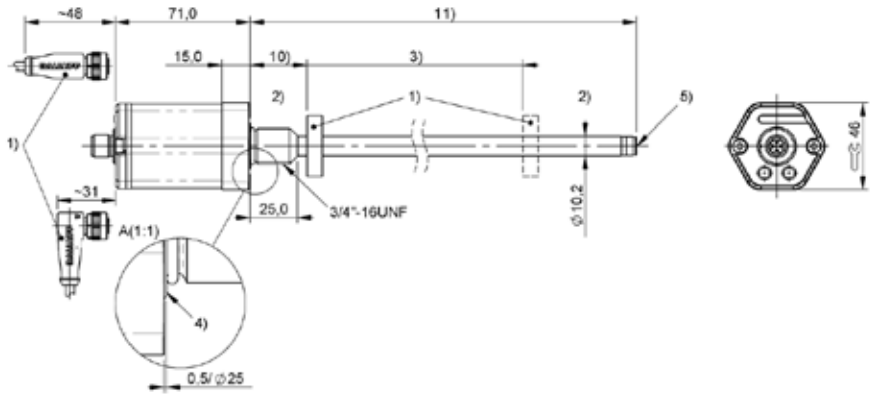
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M4572)

f Style
Y = Inch threads 3/4“-16UNF,
for flat seal
Z = Inch threads 3/4“-16UNF,
for O-Ring

l Connection type
S = Connector

m Connection type characteristic 1
4 = M12x1 connector with 4 pins

BTL6-U101-Mxxxx-Z-S4



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

	BTL5 -Y/Z- SERIES - CANOPEN
Interface	CANopen
Measuring length	25...4000 mm
Repeat accuracy	—
Linearity deviation	±30 µm
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-abcd-Mnnnn-fg-lm

BTL5
Magnetostrictive linear position sensor Generation 5

a interface
H = CANopen

b Operating voltage
1 = 20 … 28 V

c Interface characteristic 1
1 = 1 magnet
2 = 2 magnets
3 = 4 magnets

d Interface characteristic 2
Data transmission rate:
0 = 1 MBaud
1 = 800 MBaud
2 = 500 kBaud
3 = 250 kBaud
4 = 125 kBaud
5 = 100 kBaud
6 = 50 kBaud
7 = 25 kBaud
8 = 10 kBaud

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

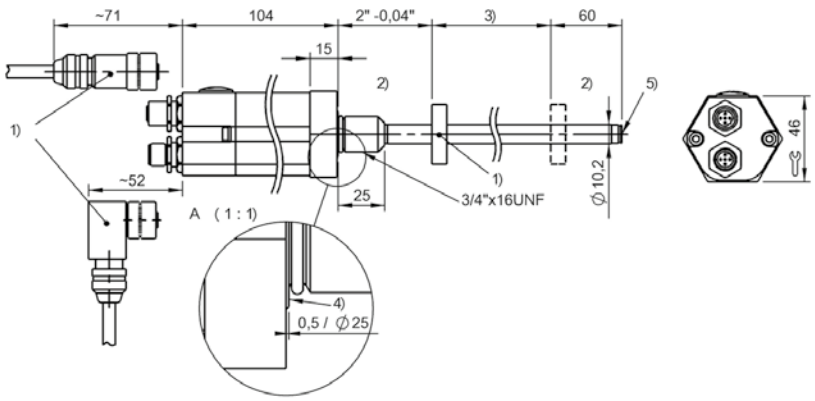
f Style
Y = Inch threads 3/4“-16UNF, for flat seal
Z = Inch threads 3/4“-16UNF, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector

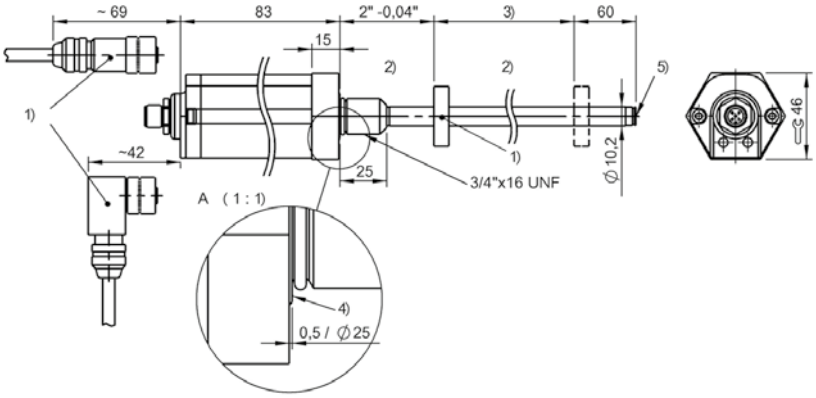
m Connection type characteristic
92 = 1 x M12x1 connector with 5 pins
94 = 1 x M12x1 connector with 5 pins + 1 x M12x1 female with 5 pins

BTL5-Hxxx-Mxxxx-Z-S94



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL5-Hxxx-Mxxxx-Z-S92



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

	BTL7 -Y/Z- SERIES - PROFINET
Interface	Profinet
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0050…5500: ± 30 µm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
V = EtherNet

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = Flexible Magnet Mode (1 - 16 magnets)

d Interface characteristic 2
T = Profinet

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

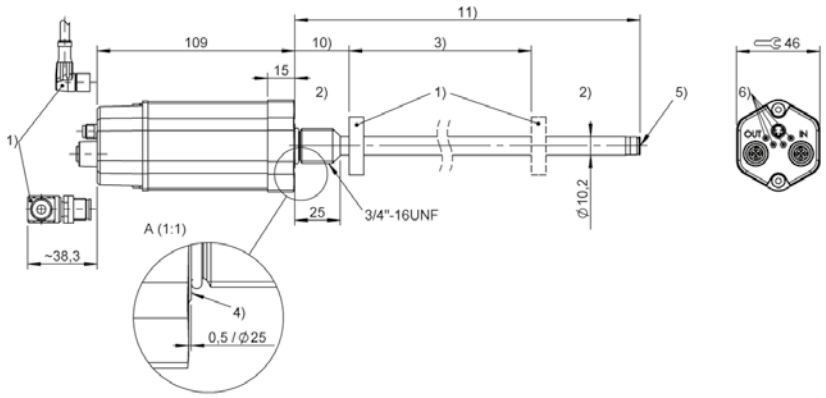
f Style
Y = Inch threads 3/4“-16UNF, for flat seal
Z = Inch threads 3/4“-16UNF, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
C = Connector

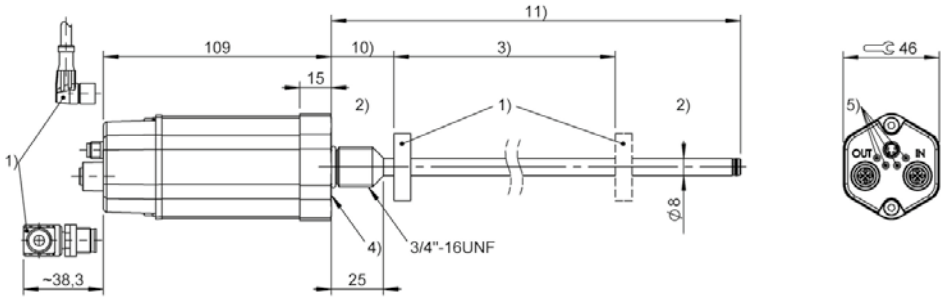
m Connection type characteristic 1
003 = 1 x M8x1 with 4 pins + 2 x M12x1 with 4 pins

BTL7-V50T-Mxxxx-Z-C003



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-V50T-Mxxxx-Y8-C003



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) LED function indicator
10) Null point
11) Installation length

	BTL7 -Y/Z- SERIES - ETHERNET/IP
Interface	Ethernet/IP
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0050…5500: ± 30 µm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
V = EtherNet

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = Flexible Magnet Mode (1 - 16 magnets)

d Interface characteristic 2
D = EtherNet IP

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

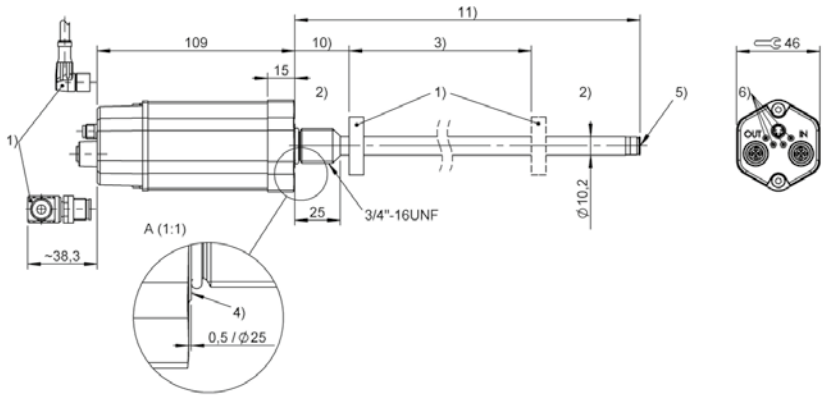
f Style
Y = Inch threads 3/4“-16UNF, for flat seal
Z = Inch threads 3/4“-16UNF, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
C = Connector

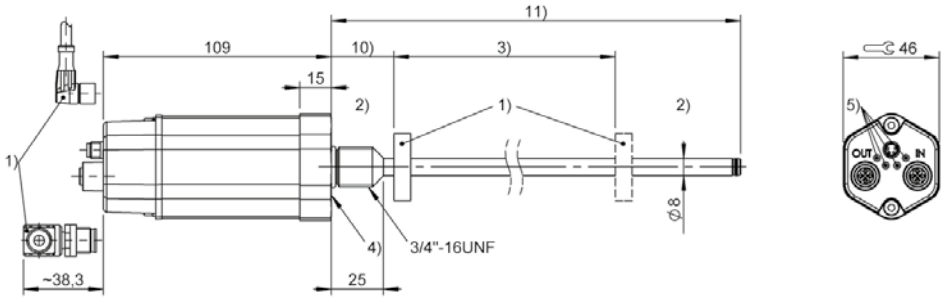
m Connection type characteristic 1
003 = 1 x M8x1 with 4 pins + 2 x M12x1 with 4 pins

BTL7-V50D-Mxxxx-Z-C003



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-V50D-Mxxxx-Y8-C003



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) LED function indicator
10) Null point
11) Installation length

	BTL7 -Y/Z- SERIES - ETHERCAT
Interface	EtherCAT
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0050…5500: ± 30 µm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
V = EtherNet

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = Flexible Magnet Mode (1 - 16 magnets)

d Interface characteristic 2
E = EtherCAT

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

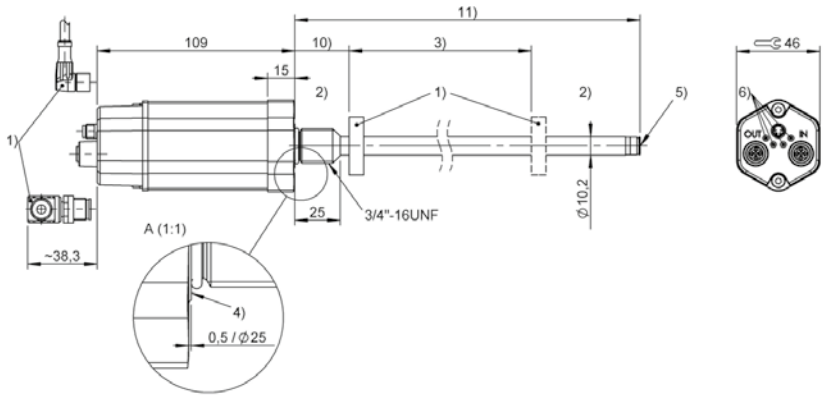
f Style
Y = Inch threads 3/4“-16UNF, for flat seal
Z = Inch threads 3/4“-16UNF, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
C = Connector

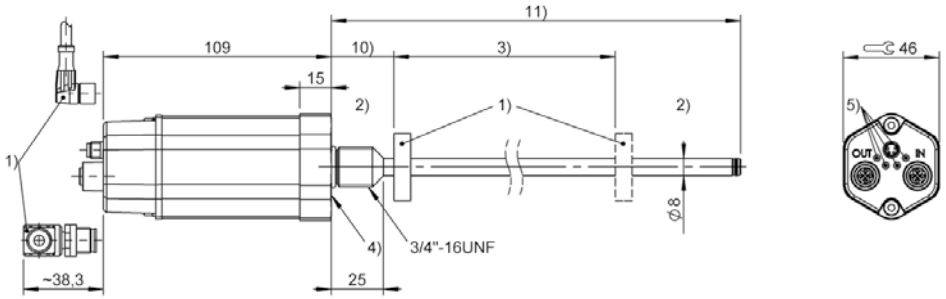
m Connection type characteristic 1
003 = 1 x M8x1 with 4 pins + 2 x M12x1 with 4 pins

BTL7-V50E-Mxxxx-Z-C003



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-V50E-Mxxxx-Y8-C003



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) LED function indicator
10) Null point
11) Installation length

	BTL5 -Y/Z- SERIES - PROFIBUS
Interface	Profibus
Measuring length	25...4000 mm
Repeat accuracy	—
Linearity deviation	±30 µm
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-abcd-Mnnnn-fg-lm

BTL5
Magnetostrictive linear position sensor Generation 5

a interface
T = Profibus

b Operating voltage
1 = 20 … 28 V

c + d Interface characteristic 1 + 2
10 = 1 magnet (1 - 4 magnets can be set)

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

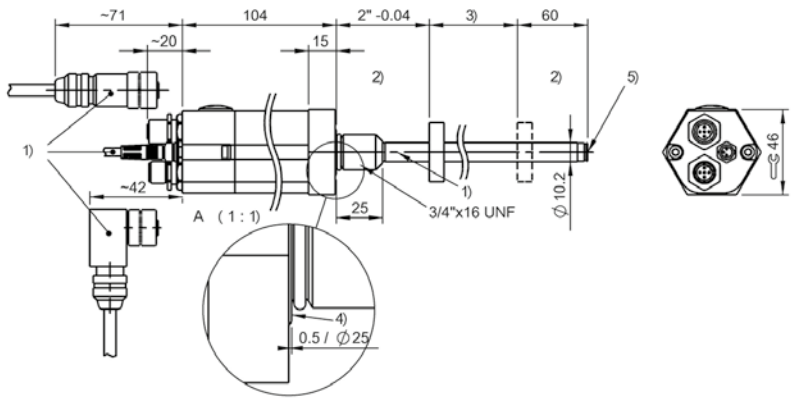
f Style
Y = Inch threads 3/4“-16UNF, f or flat seal
Z = Inch threads 3/4“-16UNF, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector

m Connection type characteristic
103 = 1 x M8x1 connector with 3 pins + 1 x M12x1 connector with 5 pins + 1 x M12x1 female with 5 pins

BTL5-Txxx-Mxxxx-Z-S103



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

	BTL6 -Y/Z- SERIES - VARAN
Interface	Varan
Measuring length	25...4012 mm
Repeat accuracy	≤ 30 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm, nnnn > 0500: ± 0.04% FS
Operating voltage Ub	20...28 VDC
Ambient temperature	0...70 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL6-abcd-Mnnnn-fg-lm

BTL6
Magnetostrictive linear position sensor Generation 6

a interface
V = EtherNet

b Operating voltage
1 = 20 … 28 V

c Interface characteristic 1
1 = 1 magnet

d Interface characteristic 2
E = Varan

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M4012: for rod diameter 10.2 mm)

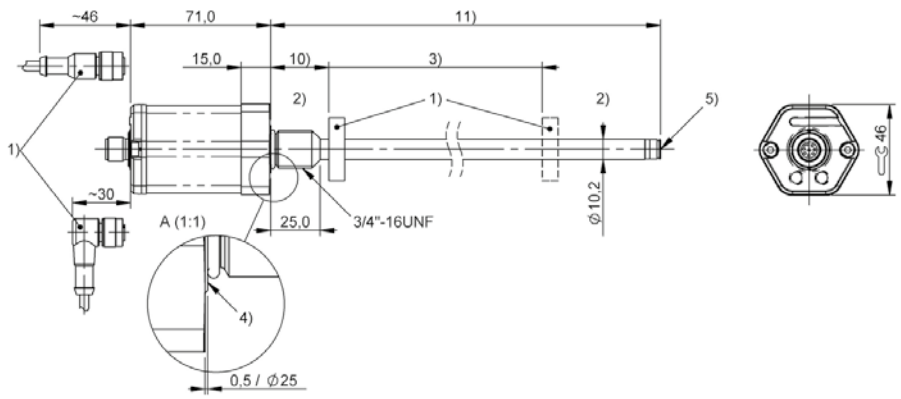
f Style
Y = Inch threads 3/4“-16UNF, for flat seal
Z = Inch threads 3/4“-16UNF, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector

m Connection type characteristic 1
115 = M12x1 connector with 8 pins

BTL-V11V-Mxxxx-Z-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

	BTL7 -ZE/ZF- SERIE - DIGITAL
Interface	Digital pulse
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0025…5500: ± 50 µm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Stainless steel (1.4404)
IP rating	IP69K
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
P = Digital pulse interface

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
1 = Digital start/stop interface

d Interface characteristic 2
1 = DPI/IP communication interface

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

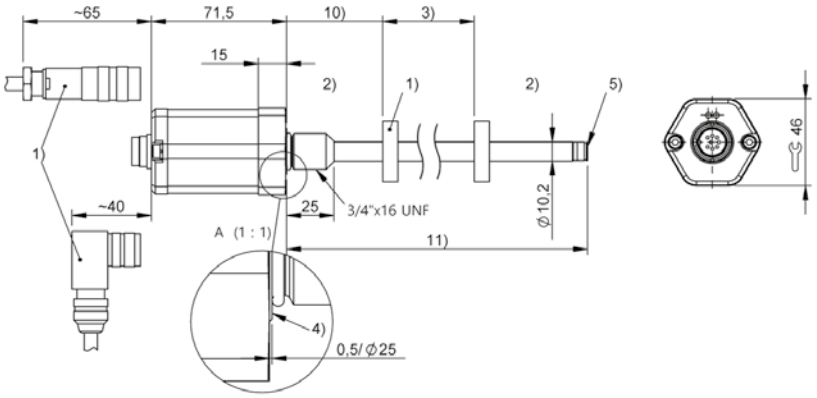
f Style
Y = Inch threads 3/4“-16UNF, for flat seal
Z = Inch threads 3/4“-16UNF, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

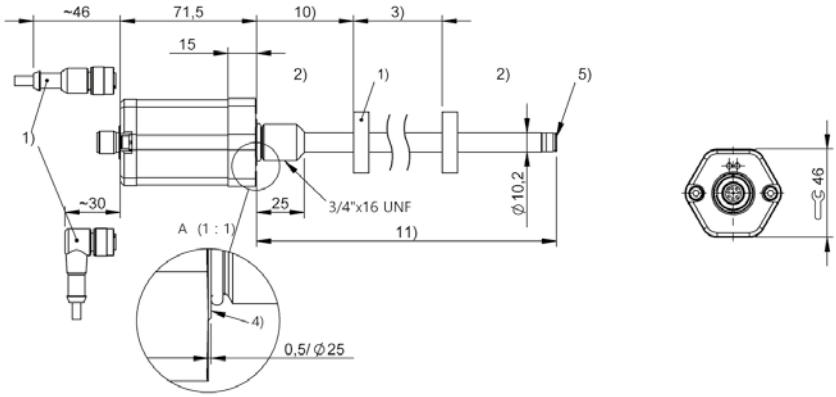
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
135 = M16x0.75 connector with 6 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30, 50, 100

BTL7-P511-Mxxxx-ZE-S32



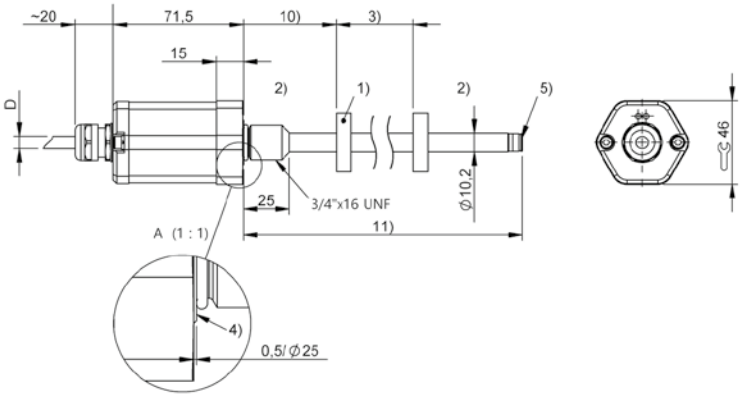
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-P511-Mxxxx-ZE-S115



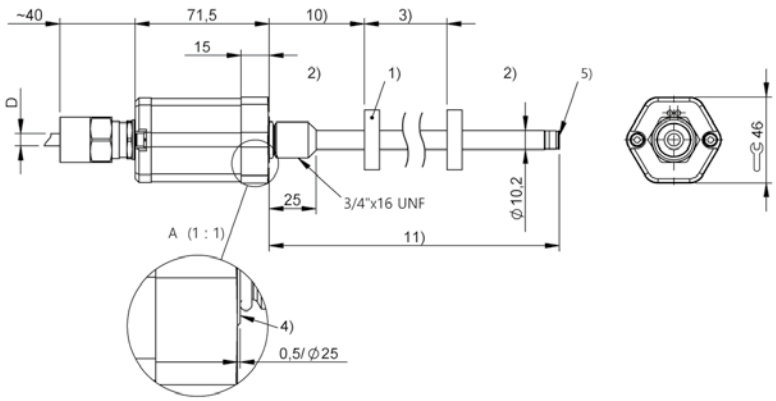
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-P511-Mxxxx-ZE-KA/FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-P511-Mxxxx-ZF-KA/FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

	BTL7 -ZE/ZF- SERIE - SSI
Interface	SSI
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7: nnnn = 25…5500: ± 30µm d = 4, 5, 6, 8 nnnn = 25…5500: ± 2 LSB nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Stainless steel (1.4404)
IP rating	IP69K
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcde-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
S = SSI

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling
A = 26 bits, binary, rising
B = 26 bits, gray, rising
C = 26 bits, binary, falling
D = 26 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

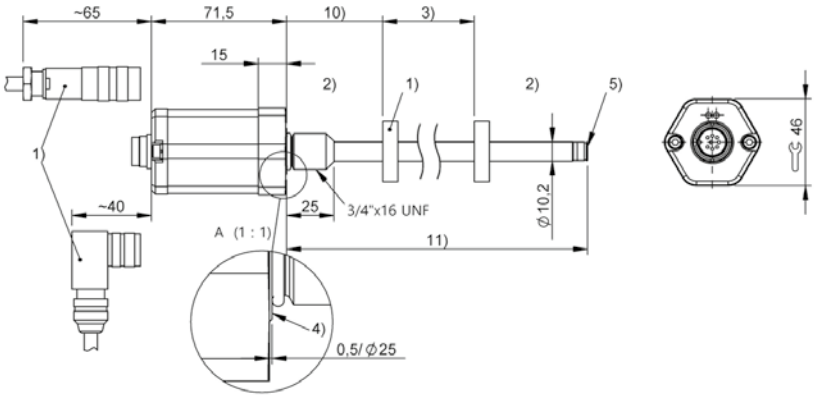
f Style
Y = Inch threads 3/4“-16UNF, for flat seal
Z = Inch threads 3/4“-16UNF, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

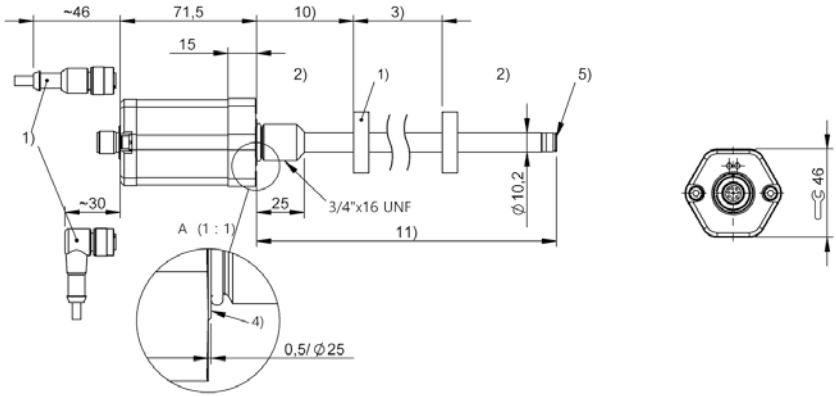
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
140 = MS, 10-pin
147 = M16x0.75 connector with 7 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30, 50, 100

BTL7-S510x-Mxxxx-ZE-S32



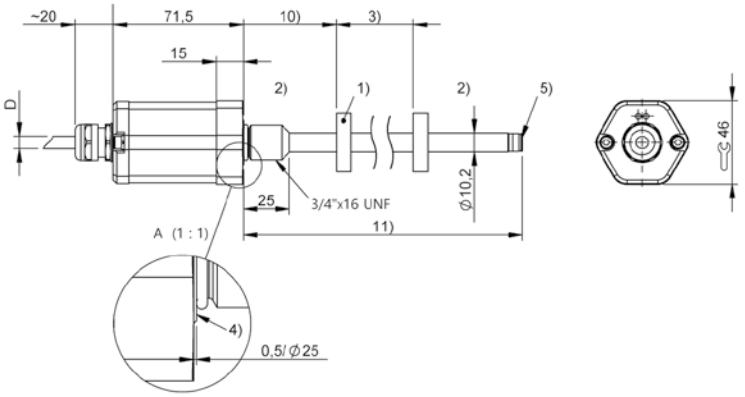
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-S5xxx-Mxxxx-ZE-S115



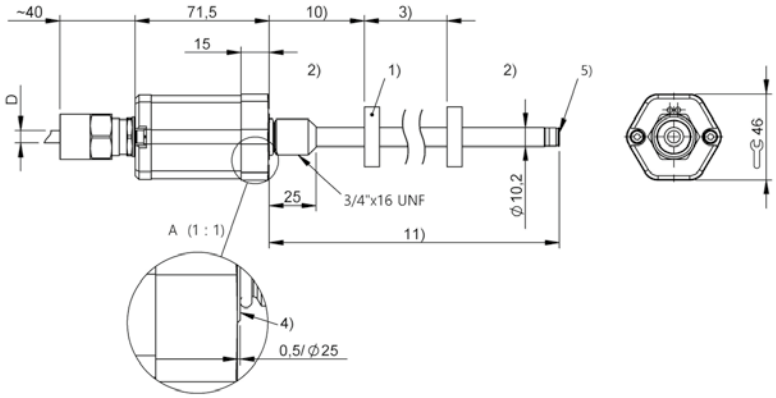
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-S5xxx-Mxxxx-ZE-KA/FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-S5xxx-Mxxxx-ZF-KA/FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

	BTL7 -CD- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...2000 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…2000: ± 0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M22 threads
Housing material	Aluminum, Anodized
IP rating	l = S: IP67 with connector l = KA: IP68
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
1 = 20 … 28 V
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
01 = 2 outputs, each 1 x rising/falling settable/programmable
10 = 2 outputs, each 1 x rising/falling

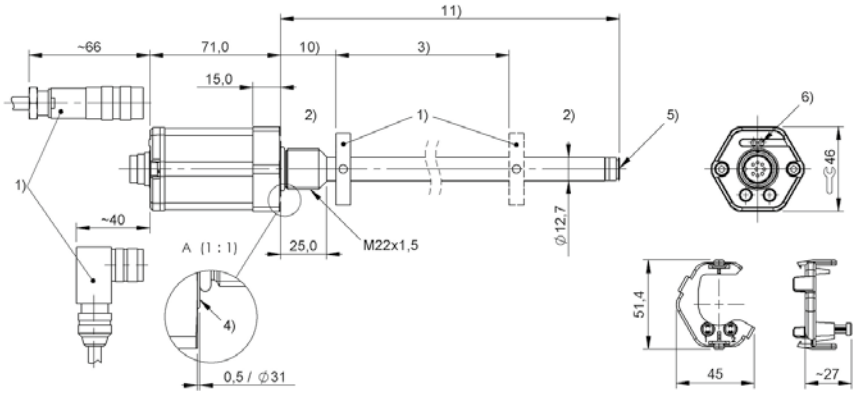
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M2000)

f Style
CD = Mounting threads M22x1.5, for O-Ring

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

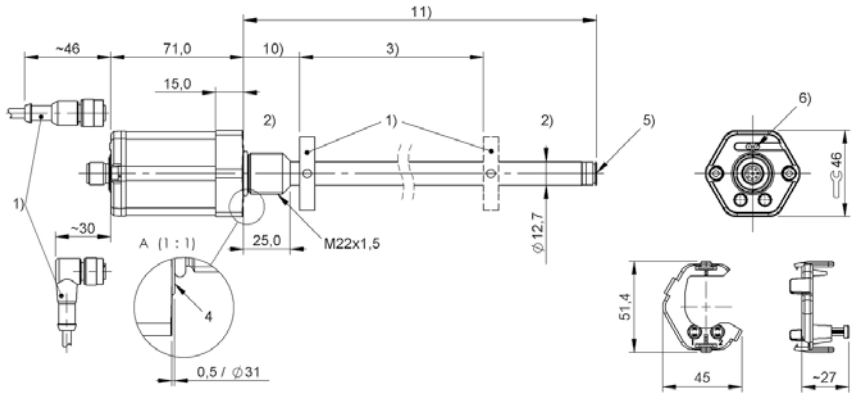
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30

BTL7-A501-Mxxxx-CD-S32



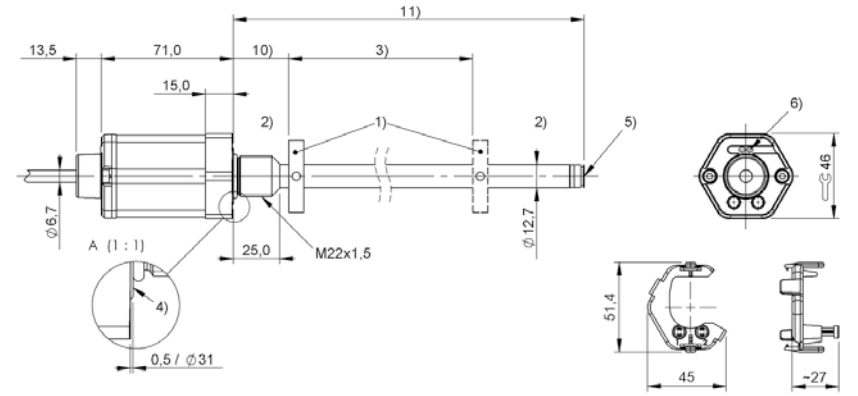
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-G510-Mxxxx-CD-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-A510-Mxxxx-CD-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

	BTL7 -CD- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...2000 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…2000: ± 0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M22 threads
Housing material	Aluminum, Anodized
IP rating	l = S: IP67 with connector l = KA: IP68
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
01 = 2 outputs, each 1 x rising/falling settable/programmable
00 = 1 output, rising
70 = 1 output, falling

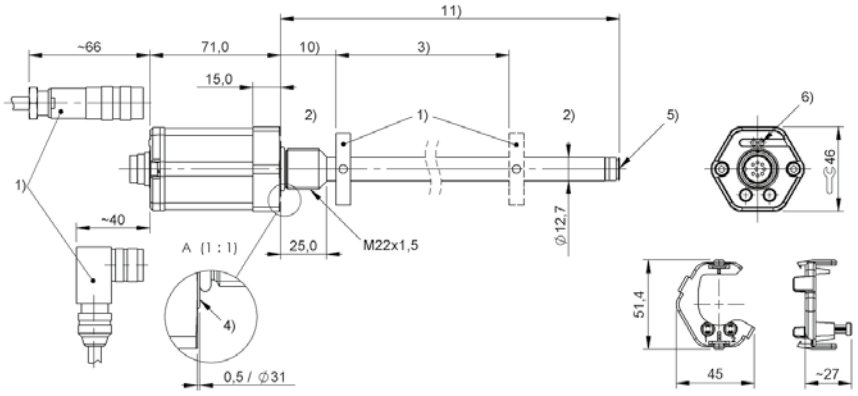
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M2000)

f Style
CD = Mounting threads M22x1.5, for O-Ring

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

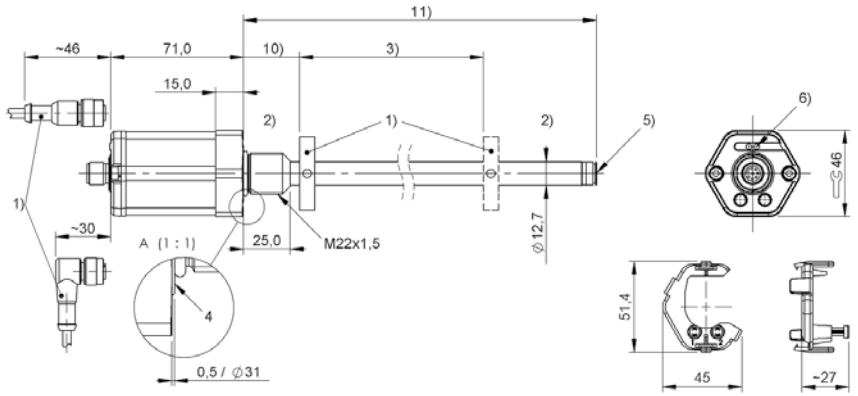
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 50, 100

BTL7-E501-Mxxxx-CD-S32



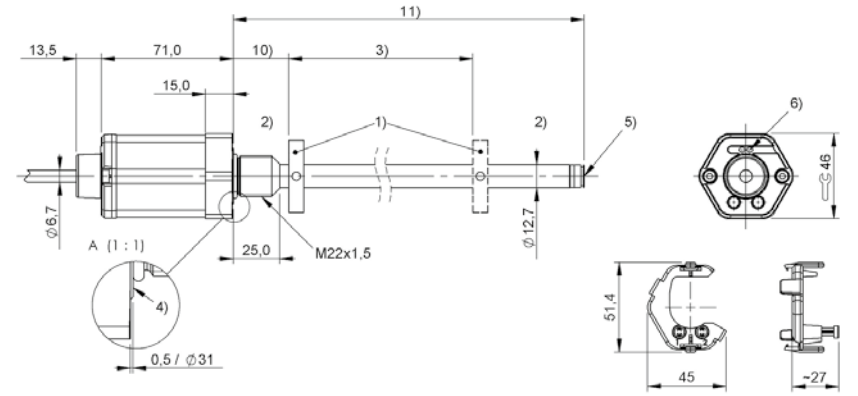
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-C500-Mxxxx-CD-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-E570-Mxxxx-CD-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

	BTL7 -CD- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	25...2000 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0025…2000: ± 50 µm
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M22 threads
Housing material	Aluminum, Anodized
IP rating	l = S: IP67 with connector l = KA: IP68
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
P = Digital pulse interface

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
1 = Digital start/stop interface

d Interface characteristic 2
1 = DPI/IP communication interface

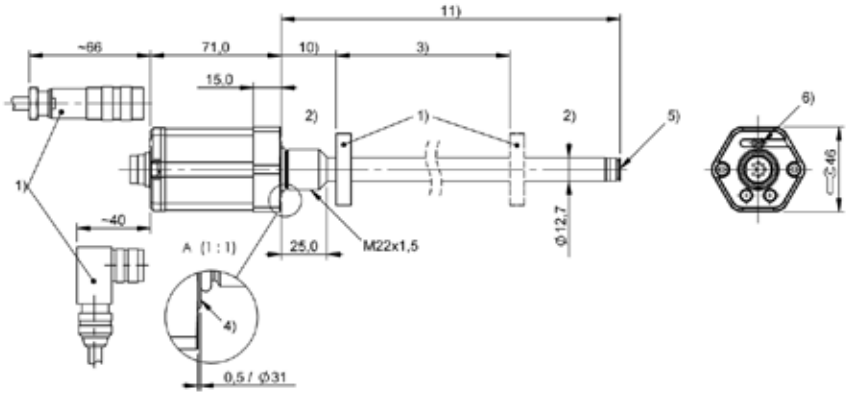
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M2000)

f Style
CD = Mounting threads M22x1.5, for O-Ring

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

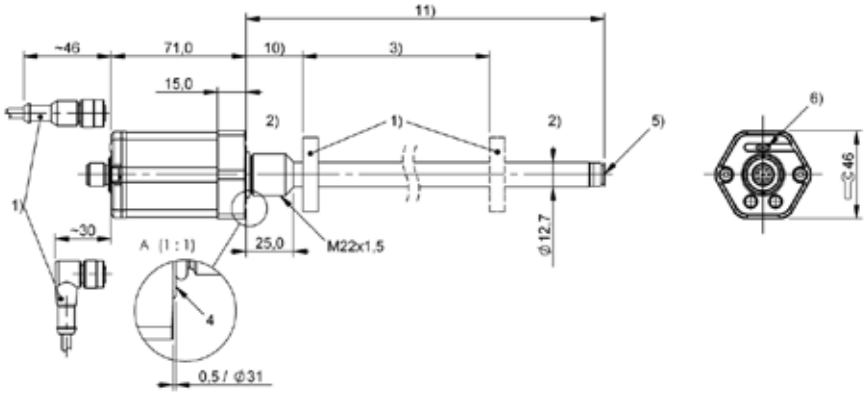
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30, 50, 100

BTL7-P511-Mxxxx-CD-S32



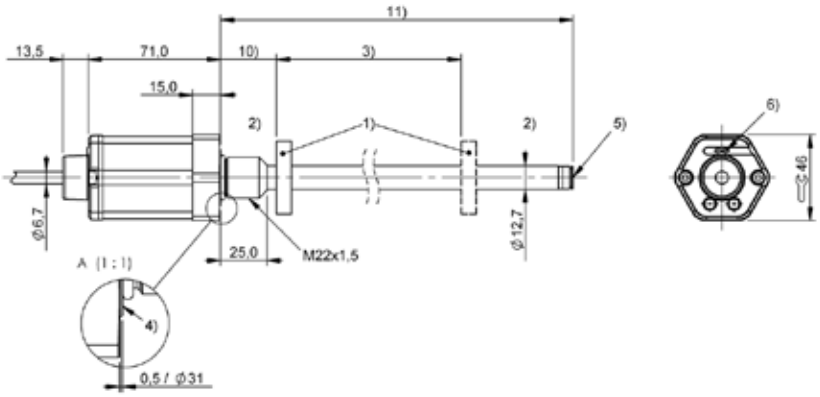
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-P511-Mxxxx-CD-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-P511-Mxxxx-CD-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

	BTL7 -CD- SERIES - SSI
Interface	SSI
Measuring length	25...2000 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7: ± 30µm, d = 4, 5, 6, 8: ± 2 LSB
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M22 threads
Housing material	Aluminum, Anodized
IP rating	l = S: IP67 with connector l = KA: IP68
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcde-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
S = SSI

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling
A = 26 bits, binary, rising
B = 26 bits, gray, rising
C = 26 bits, binary, falling
D = 26 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

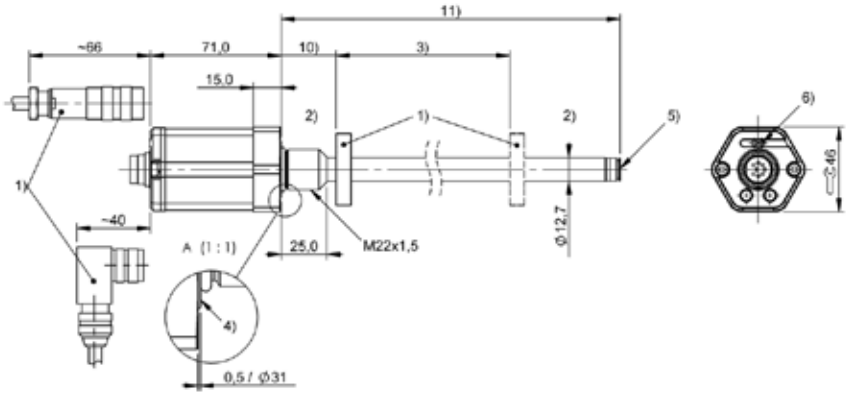
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M2000)

f Style
CD = Mounting threads M22x1.5, for O-Ring

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

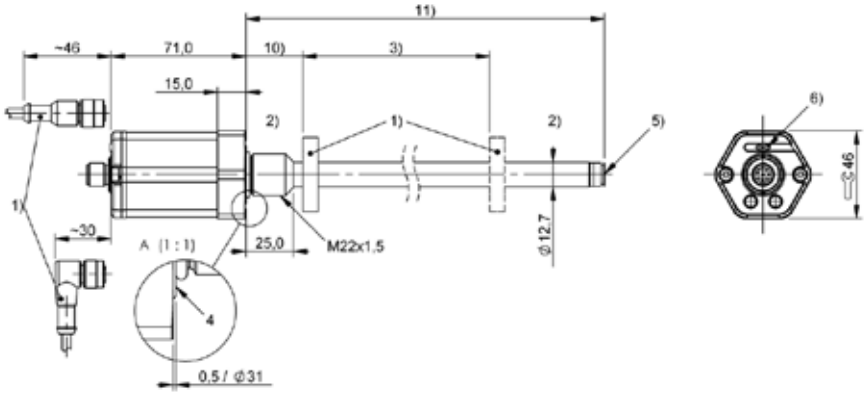
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30, 50, 100

BTL7-S510x-Mxxxx-CD-S32



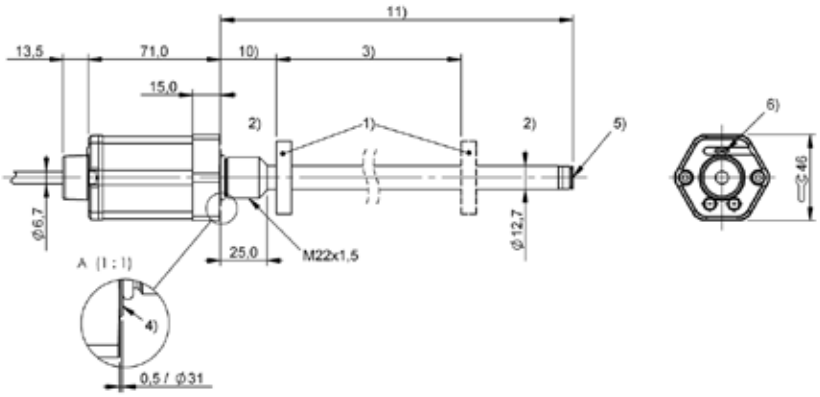
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-S5xxx-Mxxxx-CD-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-S5xxx-Mxxxx-CD-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

	BTL7 -CE- SERIE - DIGITAL
Interface	Digital pulse
Measuring length	25...2000 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0025…2000: ± 50 µm
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M22 threads
Housing material	Stainless steel (1.4404)
IP rating	IP69K
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
P = Digital pulse interface

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
1 = Digital start/stop interface

d Interface characteristic 2
1 = DPI/IP communication interface

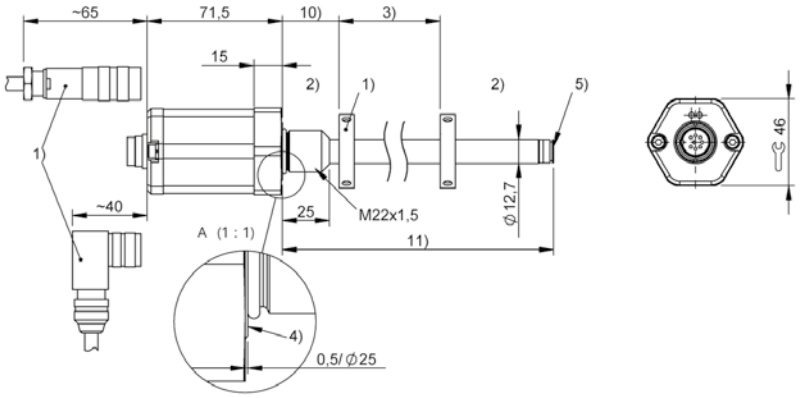
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M2000)

f Style
CD = Mounting threads M22x1.5, f or O-Ring

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

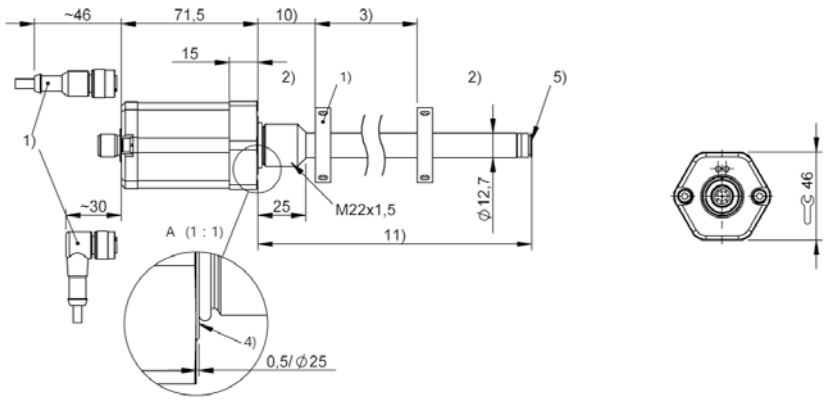
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30, 50, 100

BTL7-P511-Mxxxx-CE-S32



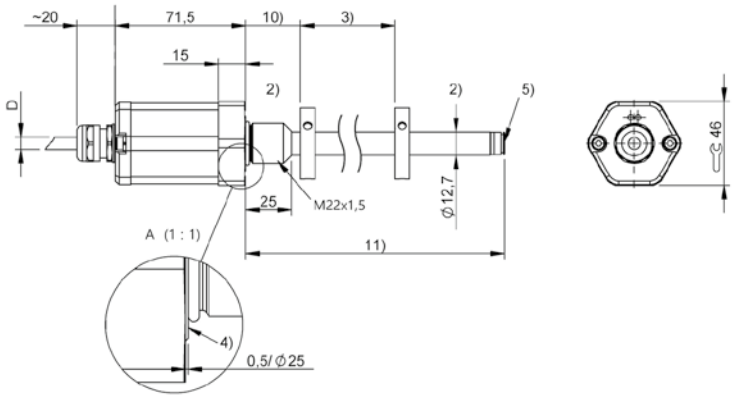
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-P511-Mxxxx-CE-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-P511-Mxxxx-CE-KA/FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

	BTL7 -CE- SERIE - SSI
Interface	SSI
Measuring length	25...2000 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7: ± 30µm, d = 4, 5, 6, 8: ± 2 LSB
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M22 threads
Housing material	Stainless steel (1.4404)
IP rating	IP69K
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcde-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
S = SSI

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling
A = 26 bits, binary, rising
B = 26 bits, gray, rising
C = 26 bits, binary, falling
D = 26 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

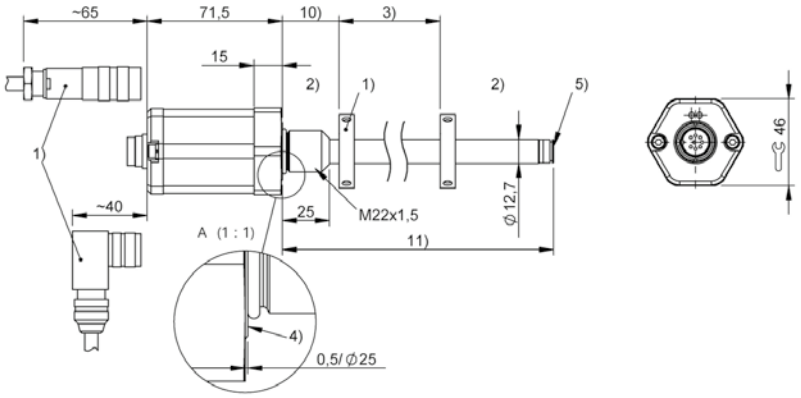
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M2000)

f Style
CD = Mounting threads M22x1.5,
for O-Ring

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

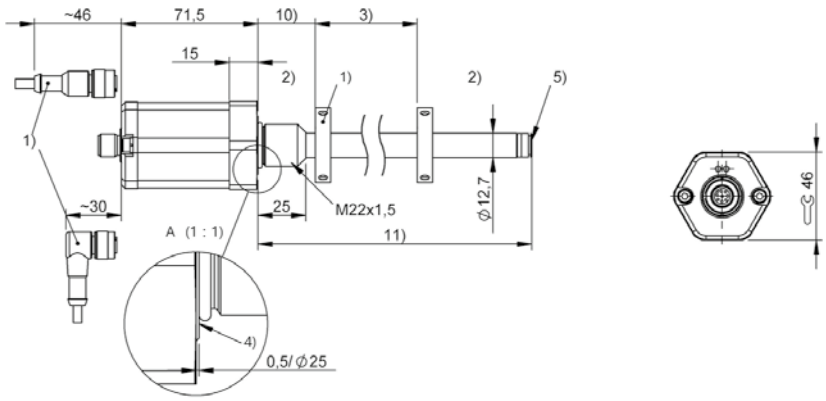
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30, 50, 100

BTL7-S510-Mxxxx-CE-S32



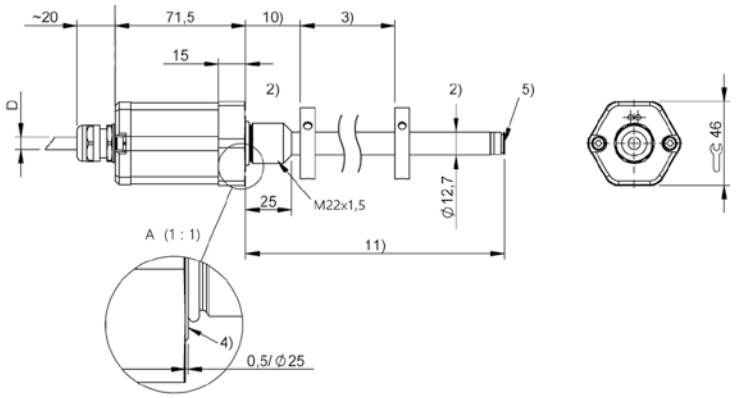
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-S5xx-Mxxxx-CE-S115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-S5xx-Mxxxx-CE-KA/FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

	BTL7 -H- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	l = S, SR: IP67 with connector l = K, KA, F, FA: IP68
Approval/Conformity	l = K, KA: CE + cULus + EAC + WEEE l = F, FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
10 = 2 outputs, each 1 x rising/falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

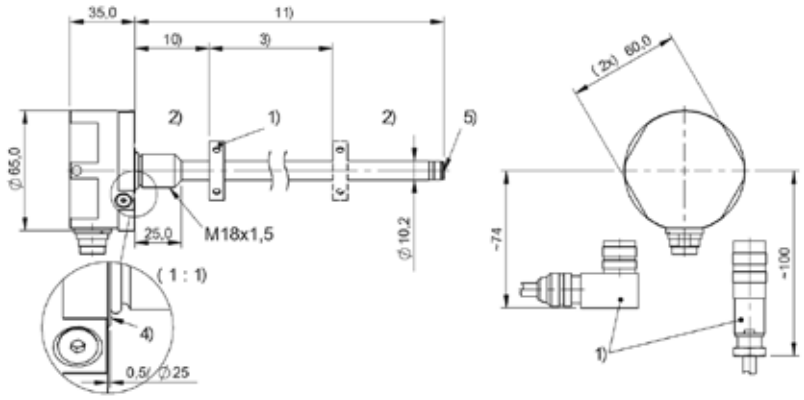
f Style
H = Compact rod, mounting threads M18x1.5, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector
K = Cable out radial (PUR)
KA = Cable out axial (PUR)
F = Cable out radial (PTFE)
FA = Cable out axial (PTFE)

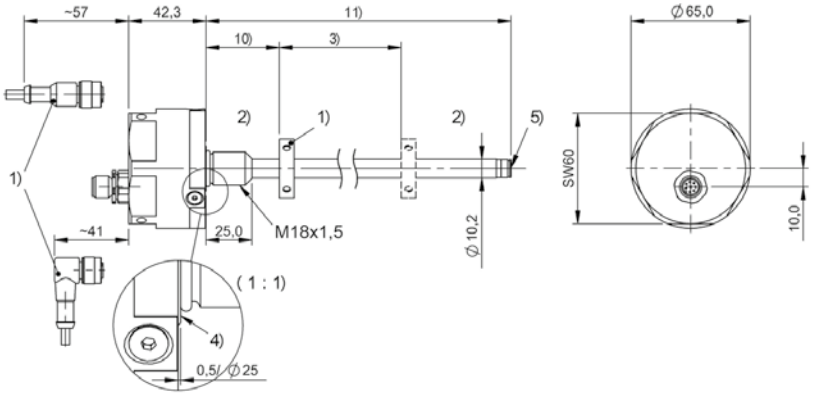
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30

BTL7-A510-Mxxxx-H-SR32



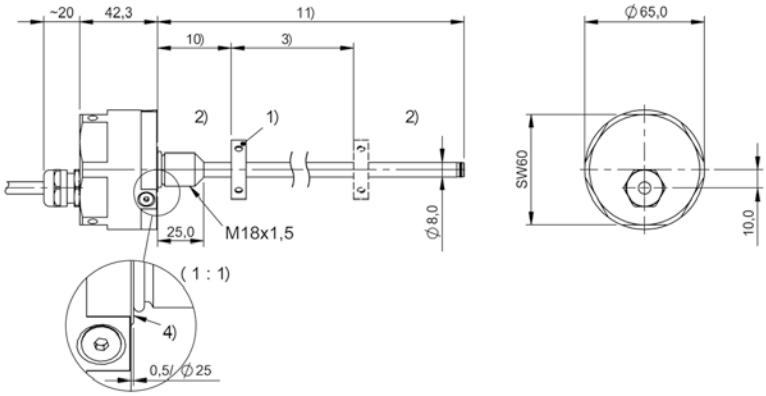
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-G510-Mxxxx-H-S115



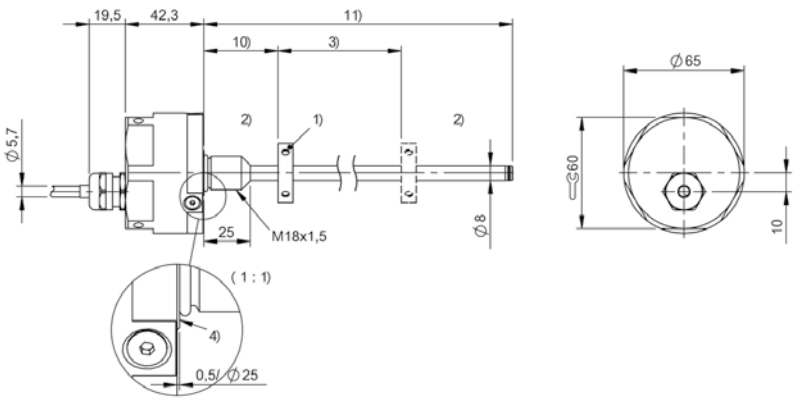
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-A510-Mxxxx-H8-Kxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

BTL7-G510-Mxxxx-H8-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL7 -H- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	l = S, SR: IP67 with connector l = K, KA, F, FA: IP68
Approval/Conformity	l = K, KA: CE + cULus + EAC + WEEE l = F, FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
00 = 1 output, rising
70 = 1 output, falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

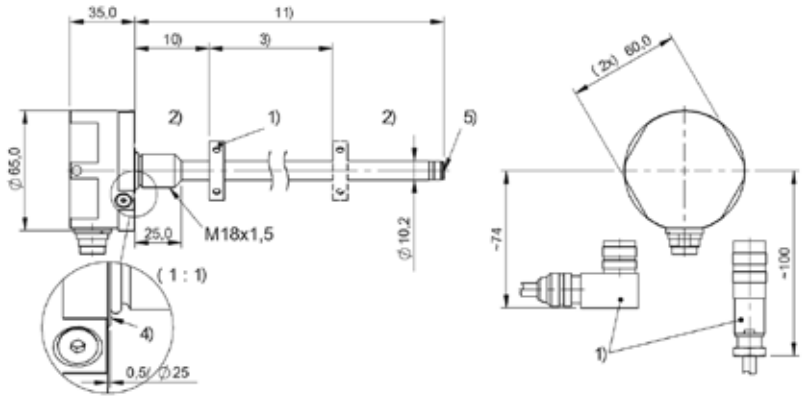
f Style
H = Compact rod, mounting threads M18x1.5, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector
K = Cable out radial (PUR)
KA = Cable out axial (PUR)
F = Cable out radial (PTFE)
FA = Cable out axial (PTFE)

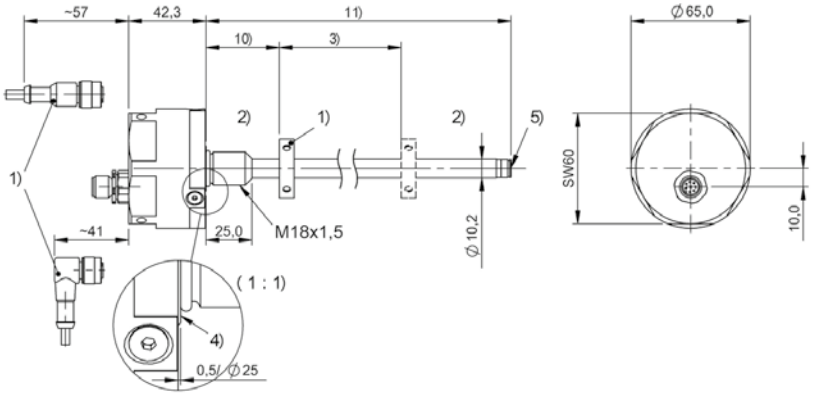
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 50, 100

BTL7-E500-Mxxxx-H-SR32



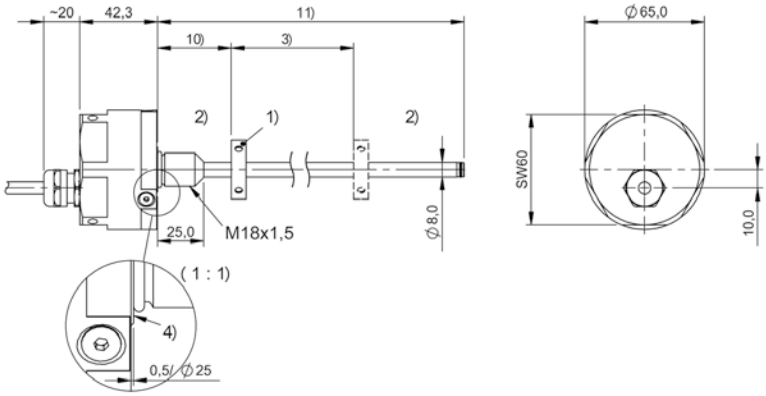
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-C570-Mxxxx-H-S115



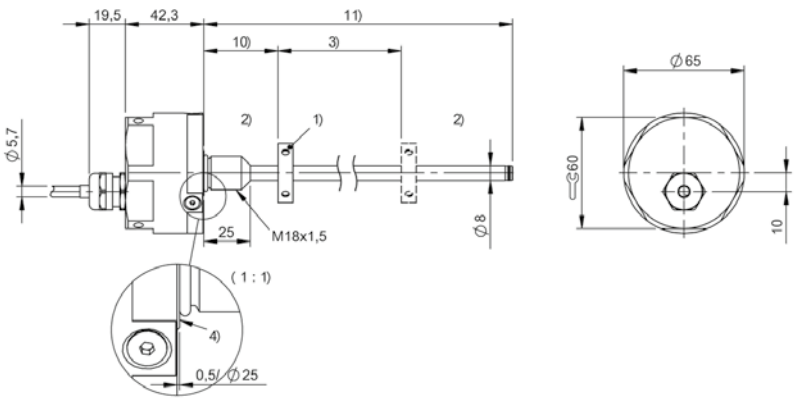
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-E570-Mxxxx-H8-Kxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

BTL7-C500-Mxxxx-H8-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL5 -H- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	25...4000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 0025…0500: ± 100 µm, nnnn > 0500: ± 0.02% FS
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	I = S: IP67 with connector I = K: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-ab-Mnnnn-fg-lm

BTL5
Magnetostrictive linear position sensor Generation 5

a interface
P = Digital pulse interface (falling edge stabilized)
M = Digital pulse interface (rising edge stabilized

b Operating voltage
1 = 20 … 28 V

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

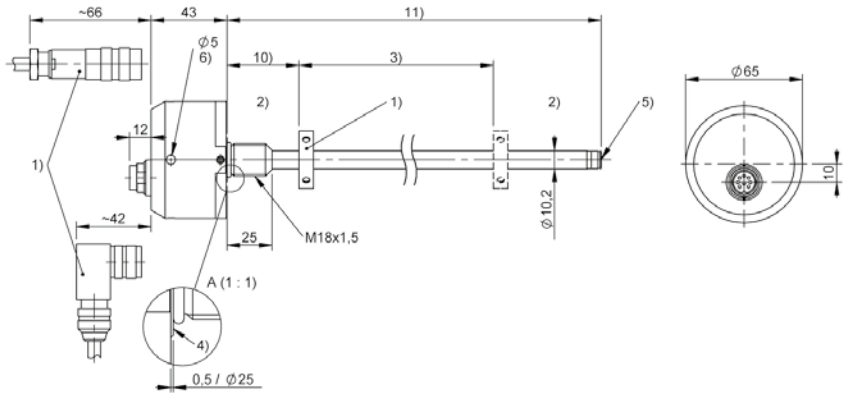
f Style
H = Compact rod, mounting threads M18x1.5, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector, axial
SR = Connector, radial
K = Cable out radial (PUR)
KA = Cable out axial (PUR)

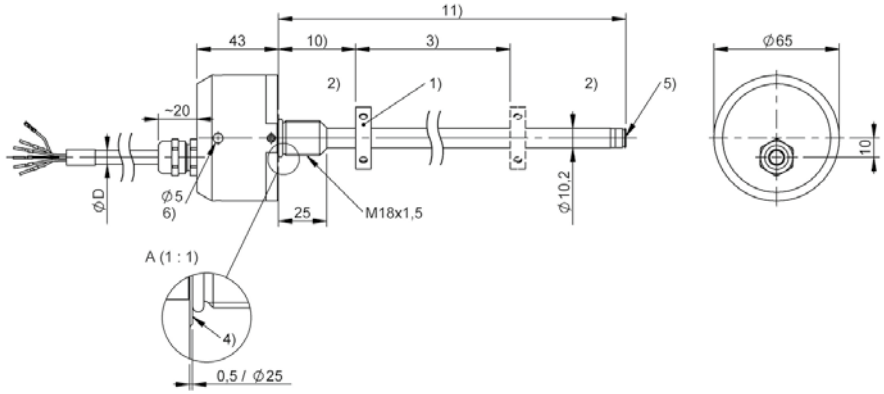
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL5-P1-Mxxxx-H-S32



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

BTL5-P1-Mxxxx-H-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

	BTL5 -H- SERIES - SSI
Interface	SSI
Measuring length	25...4000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 25…4000: ± 30µm d = 4, 5, 6, 8 nnnn = 25…4000: ± 2 LSB
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	l = S: IP67 with connector l = K: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-abcde-Mnnnn-fg-lm

BTL5
Magnetostrictive linear position sensor Generation 5

a interface
S = SSI

b Operating voltage
1 = 20 … 28 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

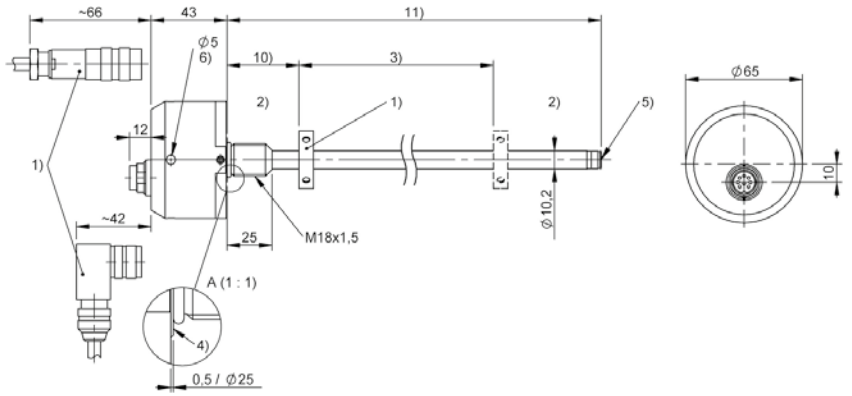
f Style
H = Compact rod, mounting threads M18x1.5, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector, axial
SR = Connector, radial
K = Cable out radial (PUR)
KA = Cable out axial (PUR)

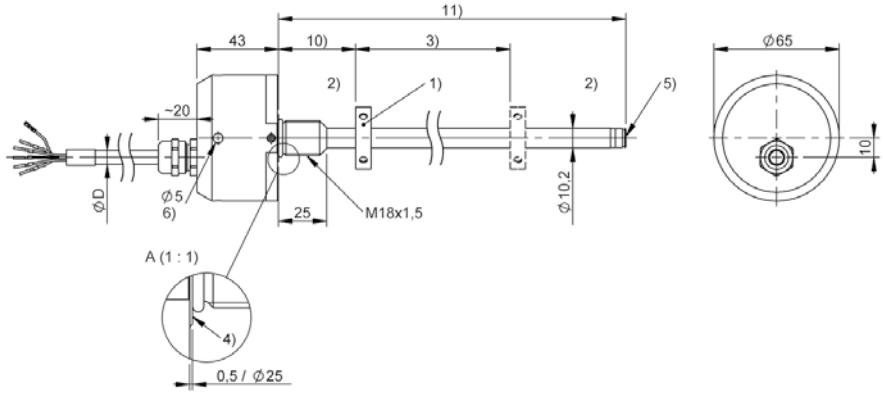
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL5-Sxxxx-Mxxxx-H-S32



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

BTL5-Sxxxx-Mxxxx-H-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

	BTL5 -H- SERIES - CANOPEN
Interface	CANopen
Measuring length	25...4000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	±30 µm
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	I = S: IP67 with connector I = K: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-abcd-Mnnnn-fg-lm

BTL5
Magnetostrictive linear position sensor Generation 5

a interface
H = CANopen

b Operating voltage
1 = 20 … 28 V

c Interface characteristic 1
1 = 1 magnet
2 = 2 magnets
3 = 4 magnets

d Interface characteristic 2
Data transmission rate:
0 = 1 MBaud
1 = 800 MBaud
2 = 500 kBaud
3 = 250 kBaud
4 = 125 kBaud
5 = 100 kBaud
6 = 50 kBaud
7 = 25 kBaud
8 = 10 kBaud

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

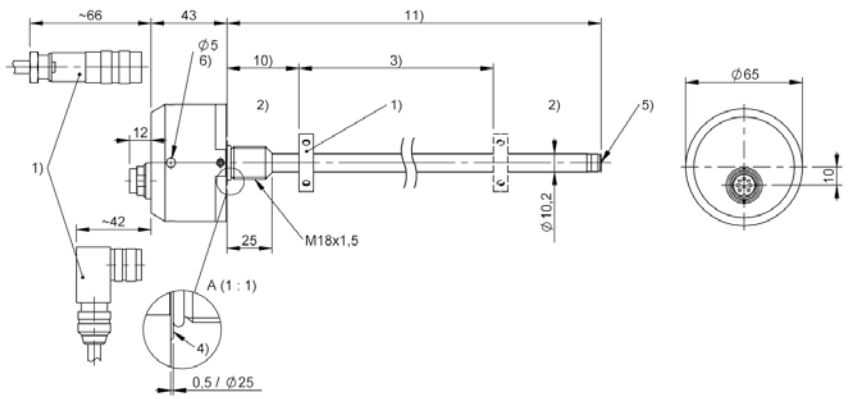
f Style
H = Compact rod, mounting threads M18x1.5, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector, axial
SR = Connector, radial
K = Cable out radial (PUR)
KA = Cable out axial (PUR)

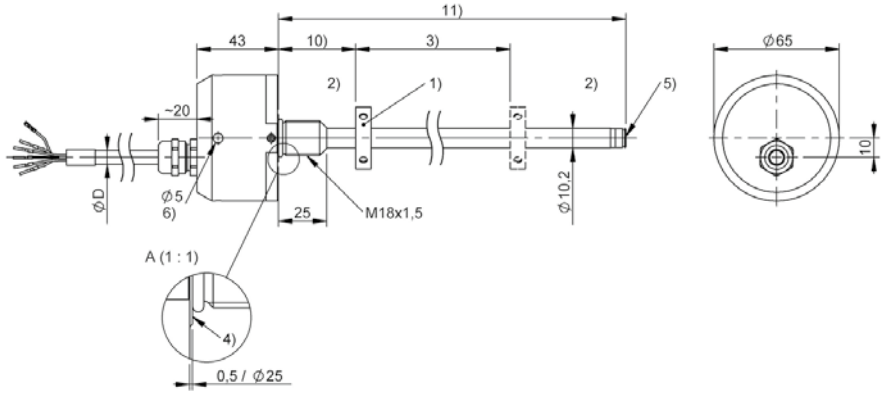
m Connection type characteristic
for connector:
92 = M12x1 connector with 5 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL5-Hxxx-Mxxxx-H-SR92



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

BTL5-Hxxx-Mxxxx-H-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

	BTL7 -W- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Stainless steel (1.4305)
IP rating	l = S, SR: IP67 with connector l = K, KA, F, FA: IP68
Approval/Conformity	l = K, KA: CE + cULus + EAC + WEEE l = F, FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
10 = 2 outputs, each 1 x rising/falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

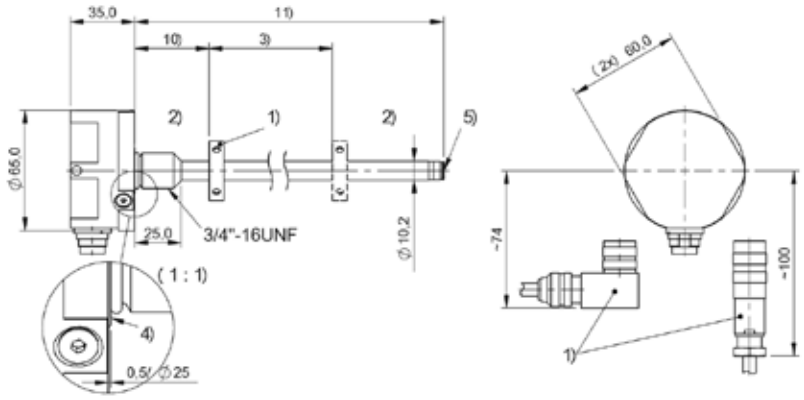
f Style
W = Compact rod, threads 3/4“-16UNF, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector
K = Cable out radial (PUR)
KA = Cable out axial (PUR)
F = Cable out radial (PTFE)
FA = Cable out axial (PTFE)

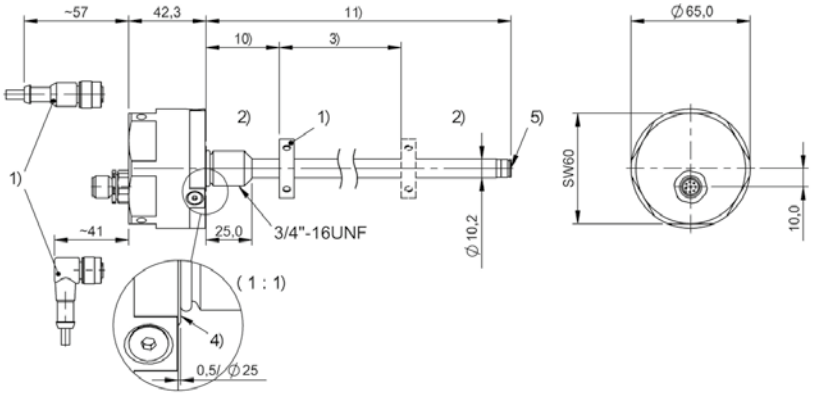
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30

BTL7-A510-Mxxxx-W-SR32



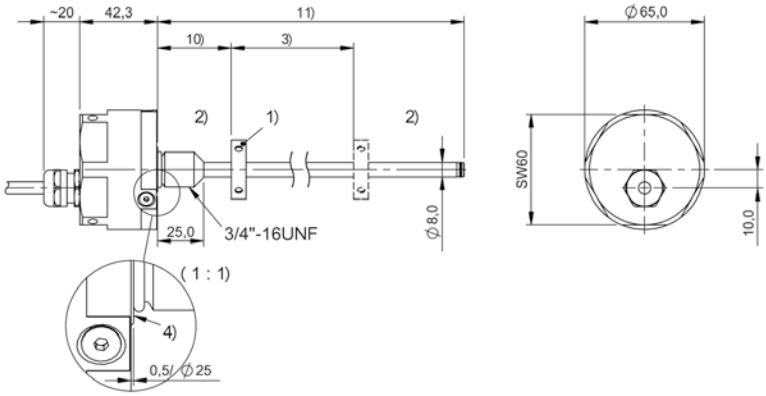
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-G510-Mxxxx-W-S115



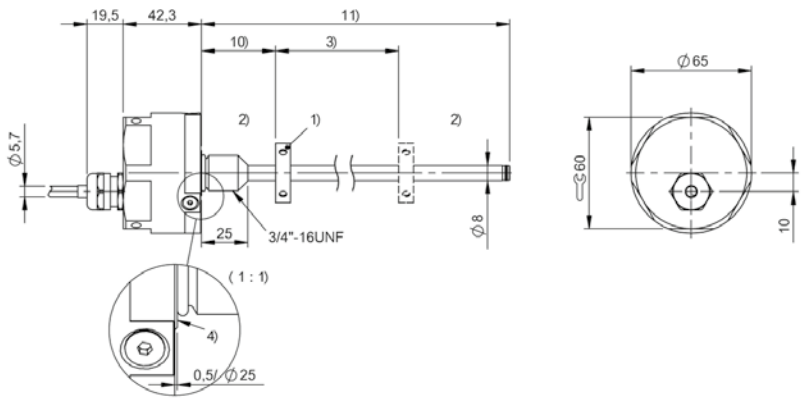
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-A510-Mxxxx-W8-Kxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

BTL7-G510-Mxxxx-W8-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL7 -W- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Stainless steel (1.4305)
IP rating	l = S, SR: IP67 with connector l = K, KA, F, FA: IP68
Approval/Conformity	l = K, KA: CE + cULus + EAC + WEEE l = F, FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
00 = 1 output, rising
70 = 1 output, falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

f Style
W = Compact rod, threads 3/4“-16UNF, for O-Ring

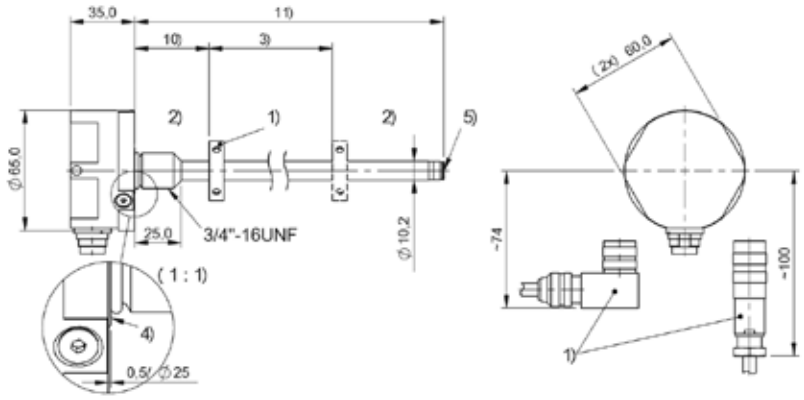
g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector
K = Cable out radial (PUR)
KA = Cable out axial (PUR)
F = Cable out radial (PTFE)
FA = Cable out axial (PTFE)

m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins

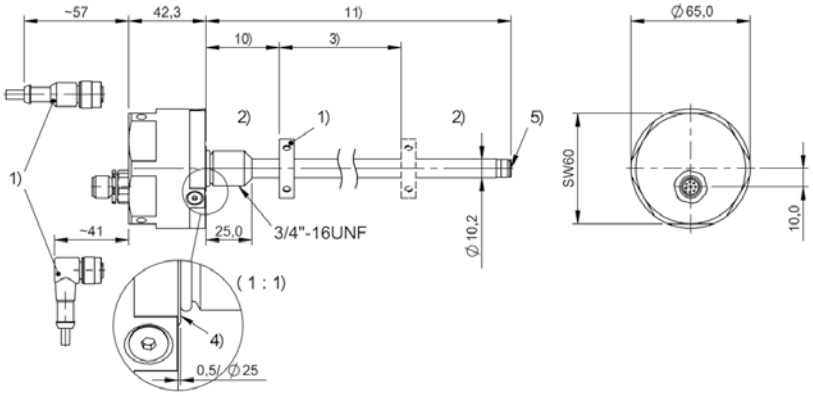
for cable (length in meters):
02, 05, 10, 15, 20, 50, 100

BTL7-E500-Mxxxx-W-SR32



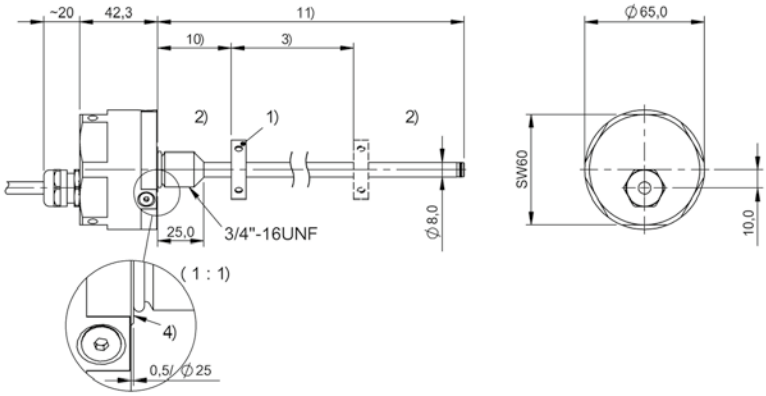
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-C570-Mxxxx-W-S115



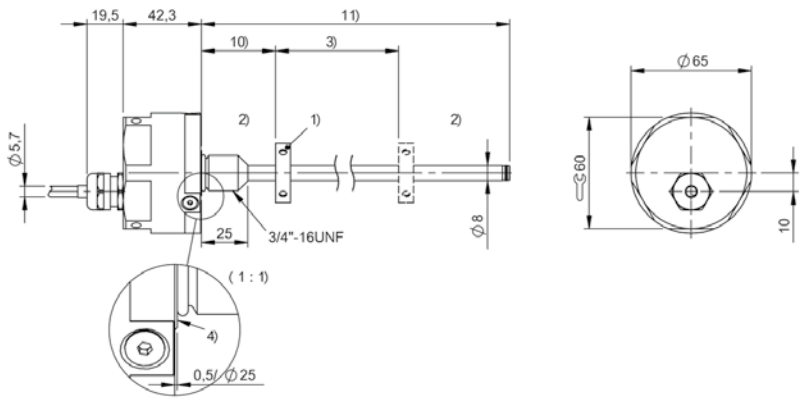
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-E570-Mxxxx-W8-Kxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

BTL7-C500-Mxxxx-W8-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL5 -W- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	25...4000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 0025…0500: ± 100 µm, nnnn > 0500: ± 0.02% FS
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Stainless steel (1.4305)
IP rating	l = S: IP67 with connector l = K: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-ab-Mnnnn-fg-lm

BTL5
Magnetostrictive linear position sensor Generation 5

a interface
P = Digital pulse interface (falling edge stabilized)
M = Digital pulse interface (rising edge stabilized

b Operating voltage
1 = 20 … 28 V

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

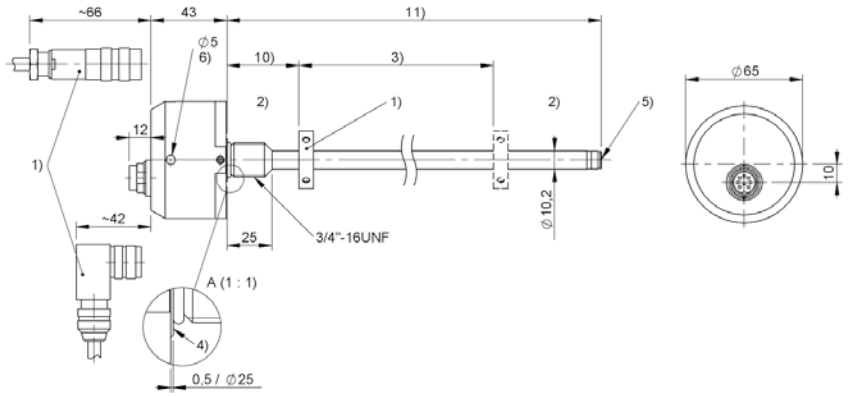
f Style
W = Compact rod, threads 3/4“-16UNF, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector, axial
SR = Connector, radial
K = Cable out radial (PUR)
KA = Cable out axial (PUR)

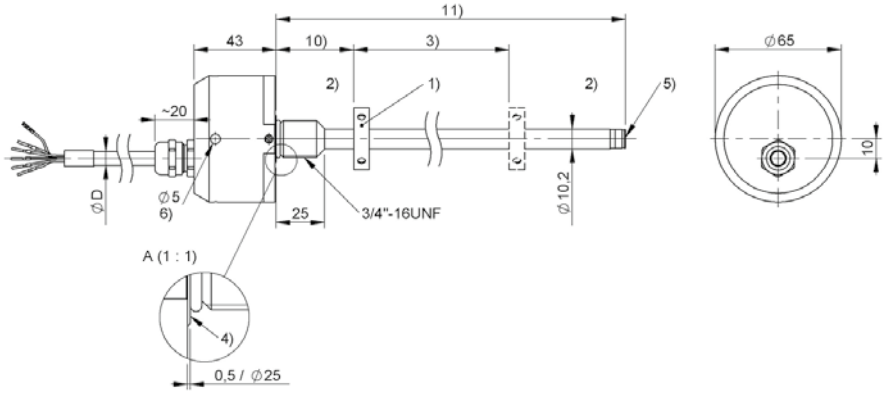
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL5-P1-Mxxxx-W-S32



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

BTL5-P1-Mxxxx-W-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

	BTL5 -W- SERIES - SSI
Interface	SSI
Measuring length	25...4000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 25…4000: ± 30µm d = 4, 5, 6, 8 nnnn = 25…4000: ± 2 LSB
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Stainless steel (1.4305)
IP rating	l = S: IP67 with connector l = K: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-abcde-Mnnnn-fg-lm

BTL5
Magnetostrictive linear position sensor
Generation 5

a interface
S = SSI

b Operating voltage
1 = 20 … 28 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

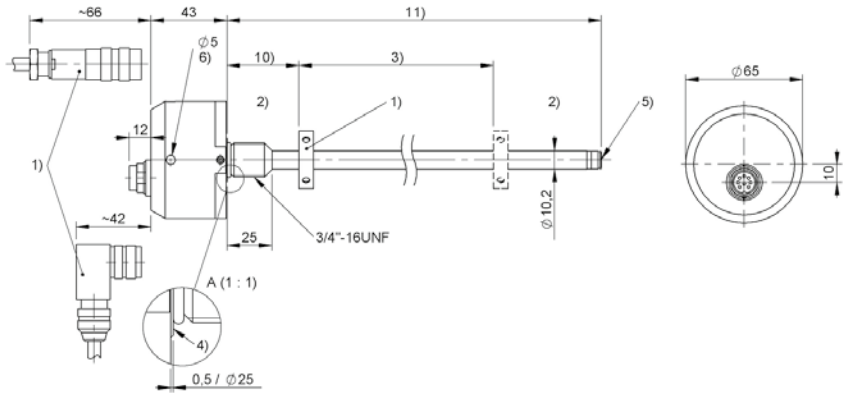
f Style
W = Compact rod, threads 3/4“-16UNF, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector, axial
SR = Connector, radial
K = Cable out radial (PUR)
KA = Cable out axial (PUR)

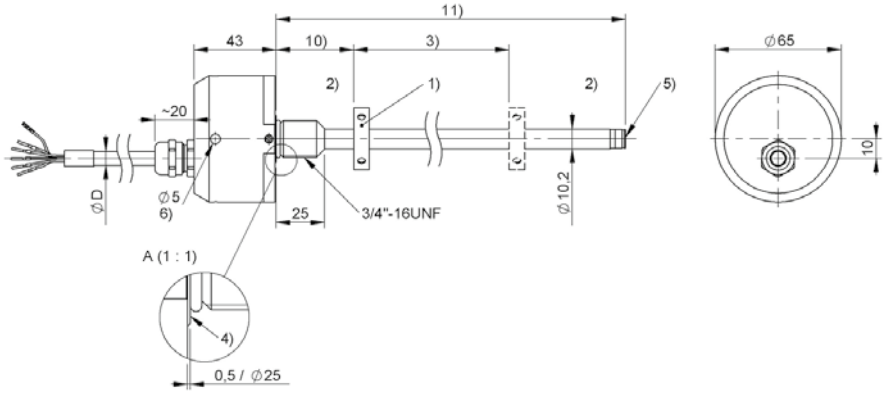
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL5-Sxxxx-Mxxxx-W-S32



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

BTL5-Sxxxx-Mxxxx-W-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

	BTL5 -W- SERIES - CANOPEN
Interface	CANopen
Measuring length	25...4000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	±30 µm
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Stainless steel (1.4305)
IP rating	l = S: IP67 with connector l = K: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-abcd-Mnnnn-fg-lm

BTL5
Magnetostrictive linear position sensor Generation 5

a interface
H = CANopen

b Operating voltage
1 = 20 … 28 V

c Interface characteristic 1
1 = 1 magnet
2 = 2 magnets
3 = 4 magnets

d Interface characteristic 2
Data transmission rate:
0 = 1 MBaud
1 = 800 MBaud
2 = 500 kBaud
3 = 250 kBaud
4 = 125 kBaud
5 = 100 kBaud
6 = 50 kBaud
7 = 25 kBaud
8 = 10 kBaud

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

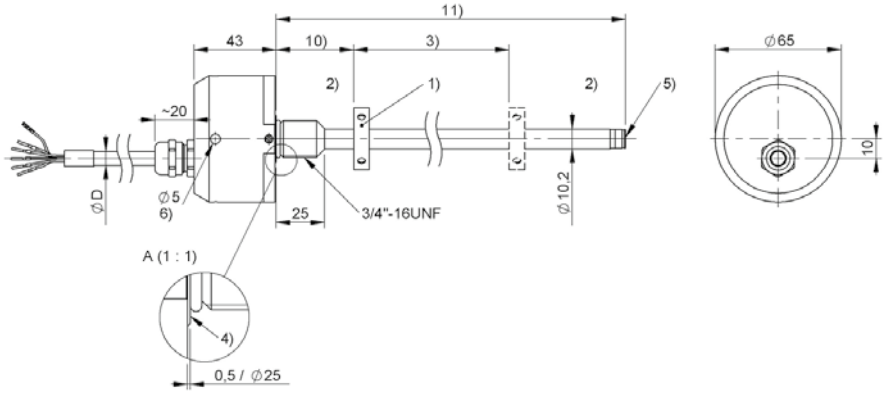
f Style
W = Compact rod, threads 3/4“-16UNF, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
S = Connector, axial
SR = Connector, radial
K = Cable out radial (PUR)
KA = Cable out axial (PUR)

m Connection type characteristic 1
for connector:
92 = M12x1 connector with 5 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL5-Hxxx-Mxxxx-W-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

	BTL7 -HB- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	IP68/IP69K
Approval/Conformity	I = K, KA: CE + cULus + EAC + WEEE I = F, FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
10 = 2 outputs, each 1 x rising/falling

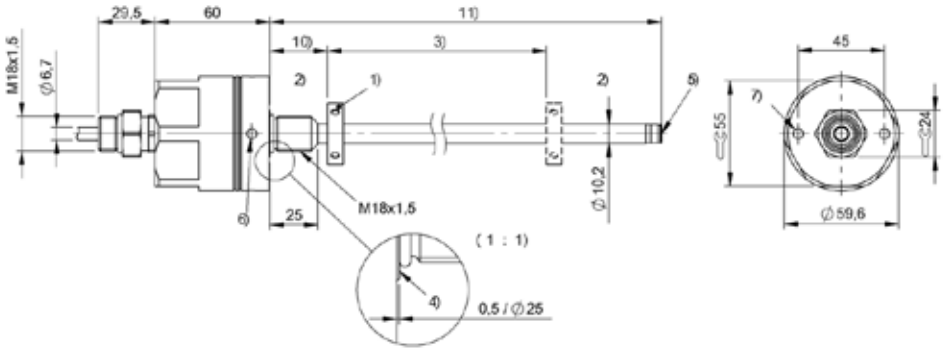
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

f Style
HB = Pro Compact, Mounting threads M18x1.5, for O-Ring

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)
F = Cable out radial (PTFE)
FA = Cable out axial (PTFE)

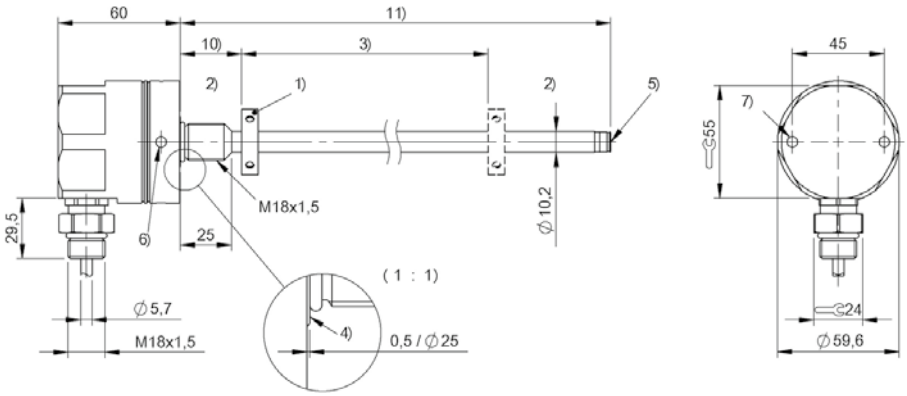
m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20, 30

BTL7-A510-Mxxxx-HB-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
7) Ø 5.1 for face wrench
10) Null point
11) Installation length

BTL7-G510-Mxxxx-HB-Fxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
7) Ø 5.1 for face wrench
10) Null point
11) Installation length

	BTL7 -HB- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	IP68/IP69K
Approval/Conformity	l = K, KA: CE + cULus + EAC + WEEE l = F, FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
00 = 1 output, rising
70 = 1 output, falling

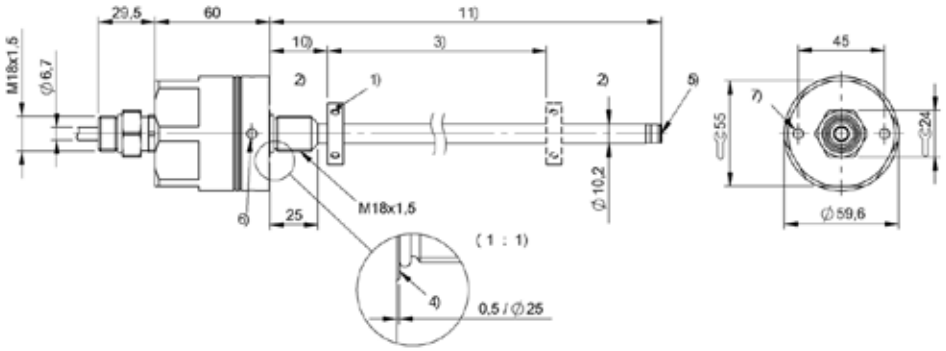
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

f Style
HB = Pro Compact, Mounting threads M18x1.5, for O-Ring

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)
F = Cable out radial (PTFE)
FA = Cable out axial (PTFE)

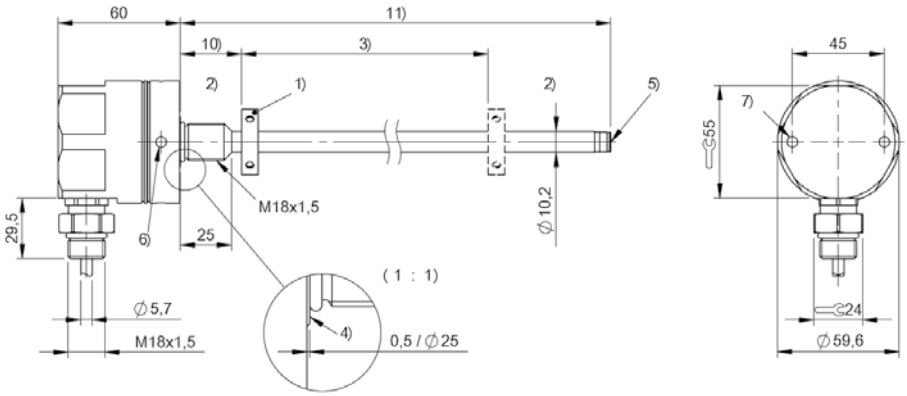
m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20, 50, 100

BTL7-E500-Mxxxx-HB-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
7) Ø 5.1 for face wrench
10) Null point
11) Installation length

BTL7-C570-Mxxxx-HB-Fxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
7) Ø 5.1 for face wrench
10) Null point
11) Installation length

	BTL5 -HB- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	25...4000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 0025…0500: ± 100 µm, nnnn > 0500: ± 0.02% FS
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	IP68/IP69K
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-ab-Mnnnn-f-lm

BTL5
Magnetostrictive linear position sensor
Generation 5

a interface
P = Digital pulse interface (falling edge stabilized)
M = Digital pulse interface (rising edge stabilized)

b Operating voltage
1 = 20 … 28 V

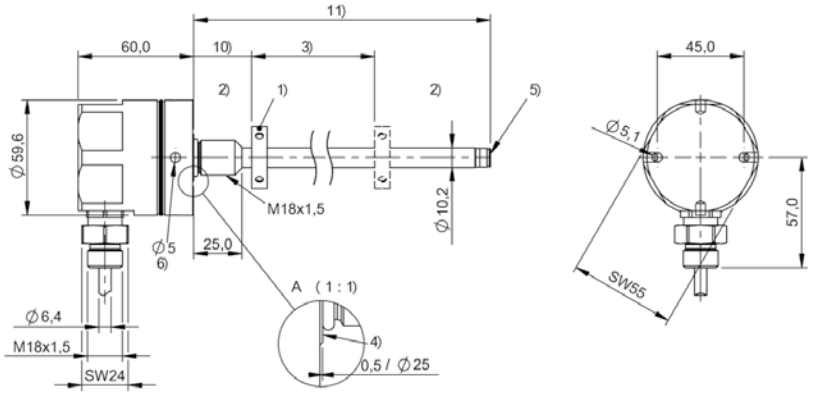
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

f Style
HB = Pro Compact, Mounting threads M18x1.5, for O-Ring

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)
F = Cable out radial (PTFE)
FA = Cable out axial (PTFE)

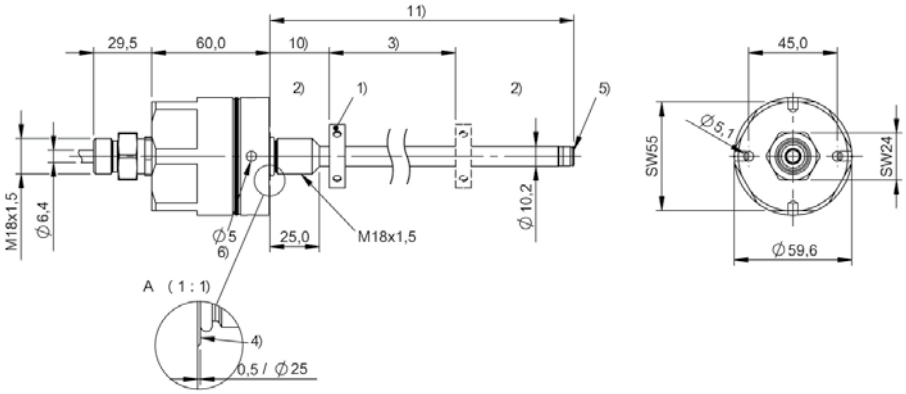
m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20

BTL5-P1-Mxxxx-HB-Fxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

BTL5-P1-Mxxxx-HB-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

	BTL5 -HB- SERIES - SSI
Interface	SSI
Measuring length	25...4000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 25…4000: ± 30µm d = 4, 5, 6, 8 nnnn = 25…4000: ± 2 LSB
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	IP68/IP69K
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-abcde-Mnnnn-f-lm

BTL5
Magnetostrictive linear position sensor
Generation 5

a interface
S = SSI

b Operating voltage
1 = 20 … 28 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

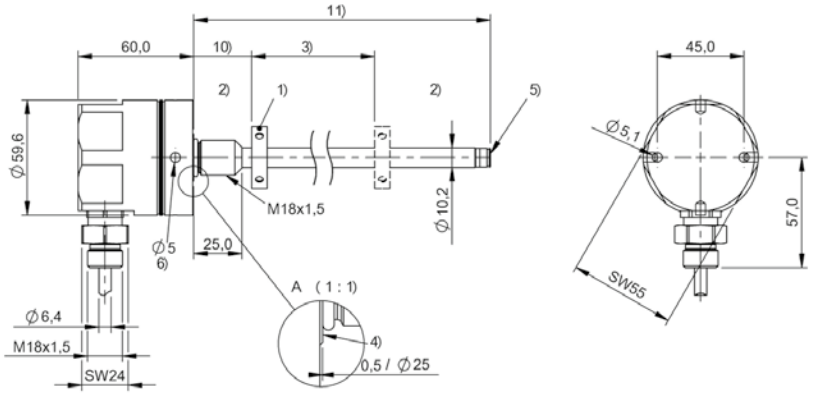
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

f Style
HB = Pro Compact, Mounting threads M18x1.5, for O-Ring

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)
F = Cable out radial (PTFE)
FA = Cable out axial (PTFE)

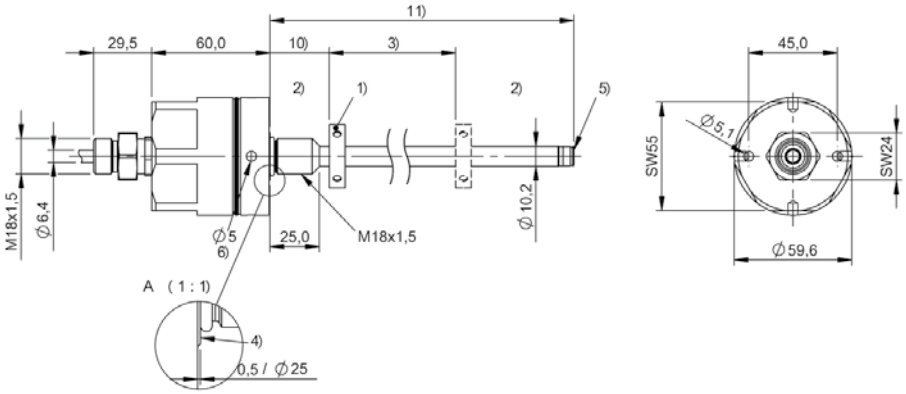
m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20

BTL5-Sxxxx-Mxxxx-HB-Fxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

BTL5-Sxxxx-Mxxxx-HB-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

	BTL7 -WB- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Stainless steel (1.4305)
IP rating	IP68/IP69K
Approval/Conformity	I = K, KA: CE + cULus + EAC + WEEE I = F, FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
10 = 2 outputs, each 1 x rising/falling

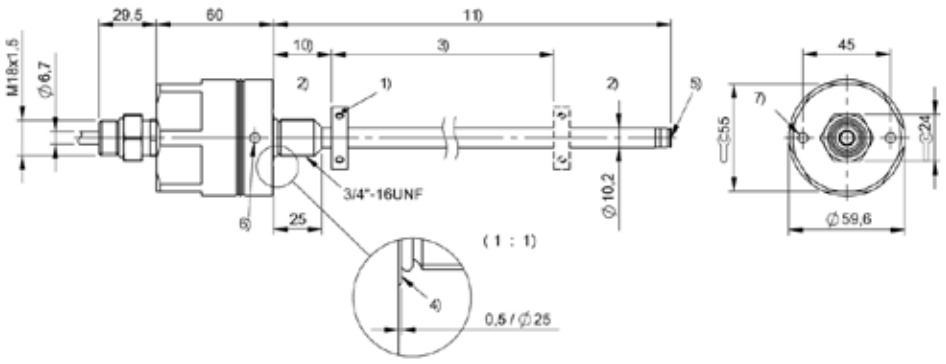
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

f Style
WB = Pro Compact inch threads 3/4“-16UNF, for O-Ring

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)
F = Cable out radial (PTFE)
FA = Cable out axial (PTFE)

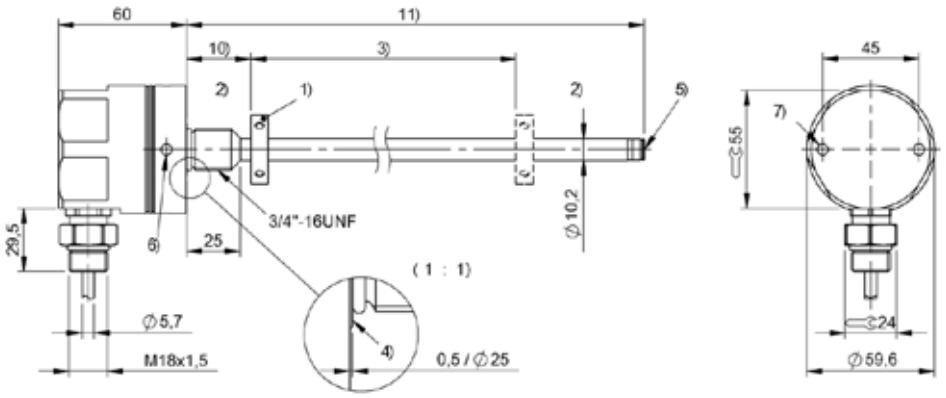
m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20, 30

BTL7-A510-Mxxxx-WB-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
7) Ø 5.1 for face wrench
10) Null point
11) Installation length

BTL7-G510-Mxxxx-WB-Fxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
7) Ø 5.1 for face wrench
10) Null point
11) Installation length

	BTL7 -WB- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Stainless steel (1.4305)
IP rating	IP68/IP69K
Approval/Conformity	l = K, KA: CE + cULus + EAC + WEEE l = F, FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
00 = 1 output, rising
70 = 1 output, falling

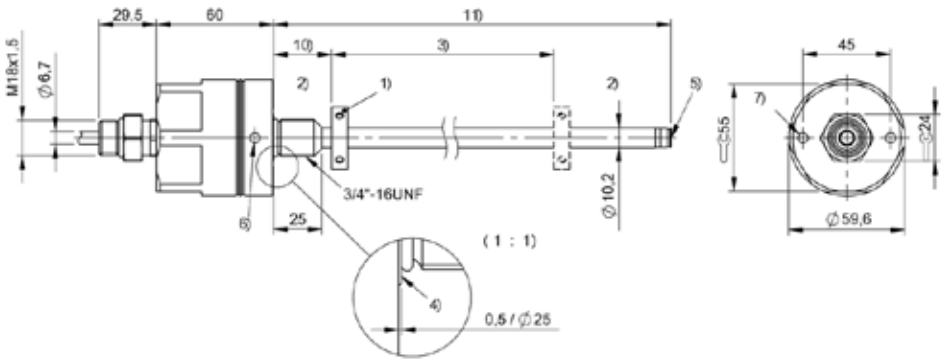
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

f Style
WB = Pro Compact, inch threads 3/4“-16UNF, for O-Ring

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)
F = Cable out radial (PTFE)
FA = Cable out axial (PTFE)

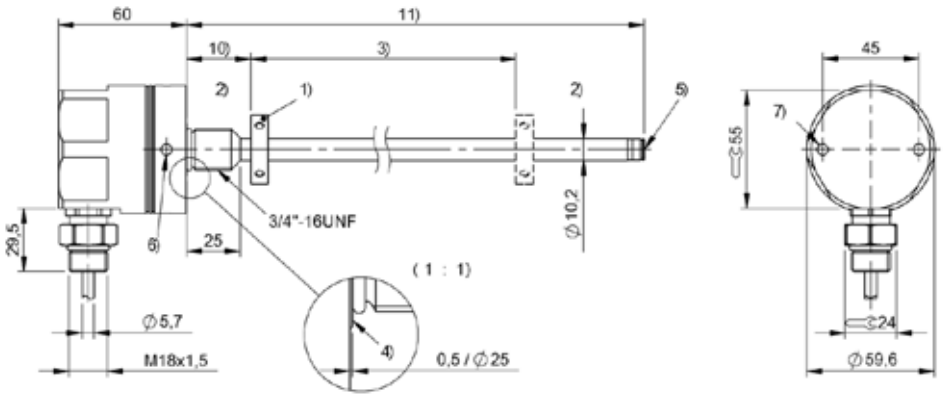
m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20, 50, 100

BTL7-E500-Mxxxx-WB-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
7) Ø 5.1 for face wrench
10) Null point
11) Installation length

BTL7-C570-Mxxxx-WB-Fxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
7) Ø 5.1 for face wrench
10) Null point
11) Installation length

	BTL5 -WB- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	25...4000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 0025…0500: ± 100 µm, nnnn > 0500: ± 0.02% FS
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Stainless steel (1.4305)
IP rating	IP68/IP69K
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-ab-Mnnnn-f-lm

BTL5
Magnetostrictive linear position sensor
Generation 5

a interface
P = Digital pulse interface (falling edge stabilized)
M = Digital pulse interface (rising edge stabilized

b Operating voltage
1 = 20 … 28 V

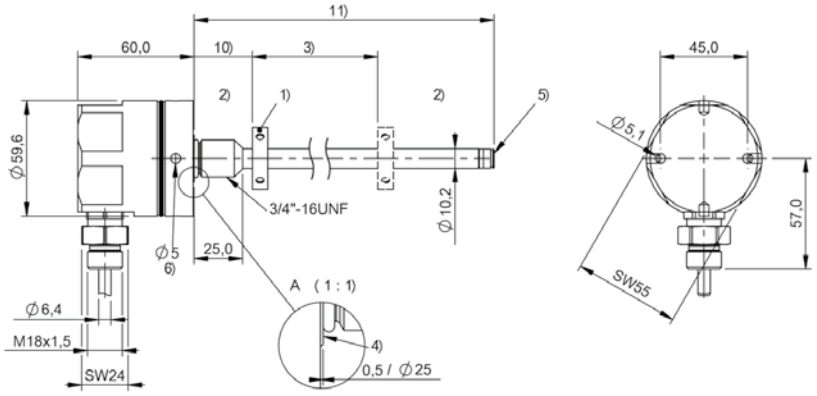
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

f Style
WB = Pro Compact, inch threads 3/4“-16UNF, for O-Ring

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)
F = Cable out radial (PTFE)
FA = Cable out axial (PTFE)

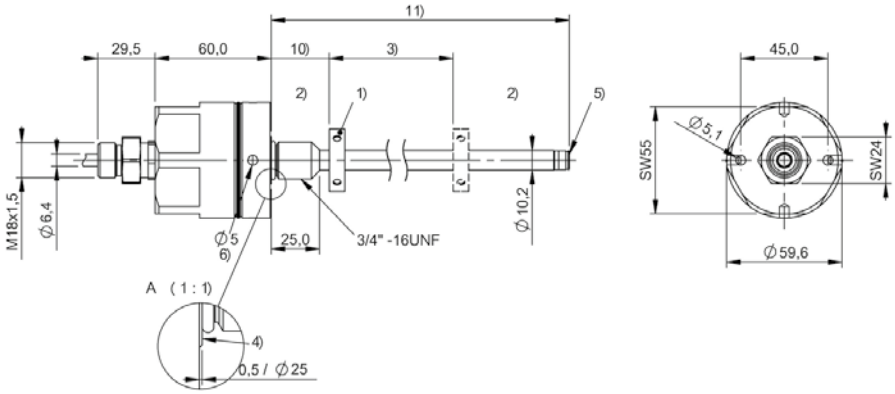
m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20

BTL5-P1-Mxxxx-WB-Fxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

BTL5-P1-Mxxxx-WB-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

	BTL5 -WB- SERIES - SSI
Interface	SSI
Measuring length	25...4000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 25…4000: ± 30µm d = 4, 5, 6, 8 nnnn = 25…4000: ± 2 LSB
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Stainless steel (1.4305)
IP rating	IP68/IP69K
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-abcde-Mnnnn-f-lm

BTL5
Magnetostrictive linear position sensor Generation 5

a interface
S = SSI

b Operating voltage
1 = 20 … 28 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

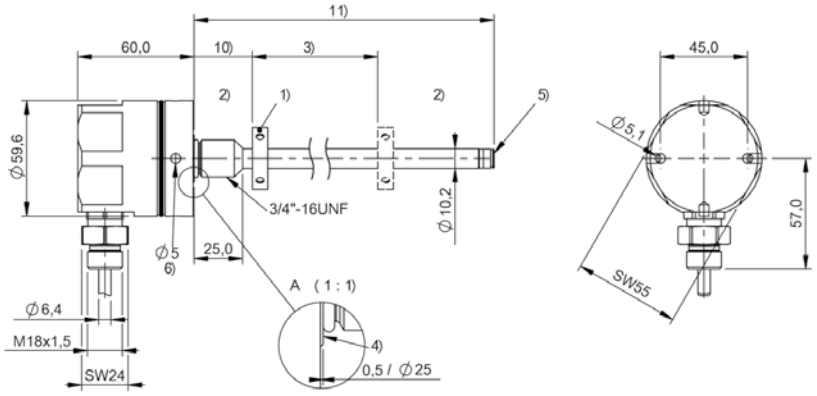
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

f Style
WB = Pro Compact, inch threads 3/4“-16UNF, for O-Ring

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)
F = Cable out radial (PTFE)
FA = Cable out axial (PTFE)

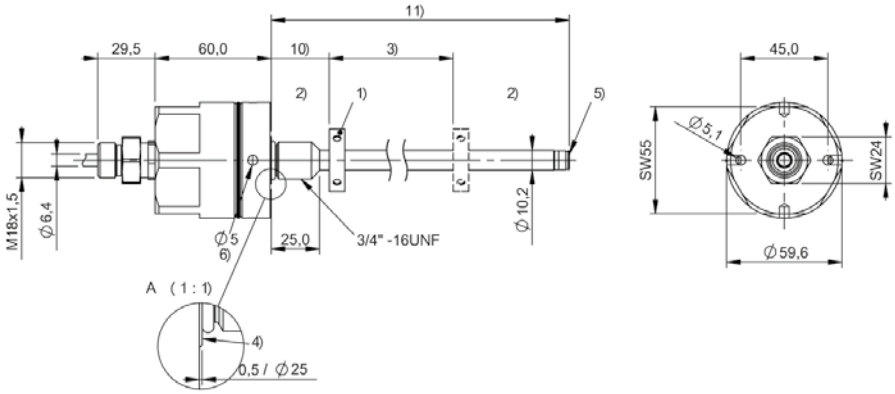
m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20

BTL5-Sxxxx-Mxxxx-WB-Fxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

BTL5-Sxxxx-Mxxxx-WB-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) for C-spanner Ø 58-62
10) Null point
11) Installation length

	BTL7 -K- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0025…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Stainless steel (1.4305)
IP rating	l = S: IP67 with connector l = K: IP68
Approval/Conformity	l = K: CE + cULus + EAC + WEEE l = F: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
10 = 2 outputs, each 1 x rising/falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

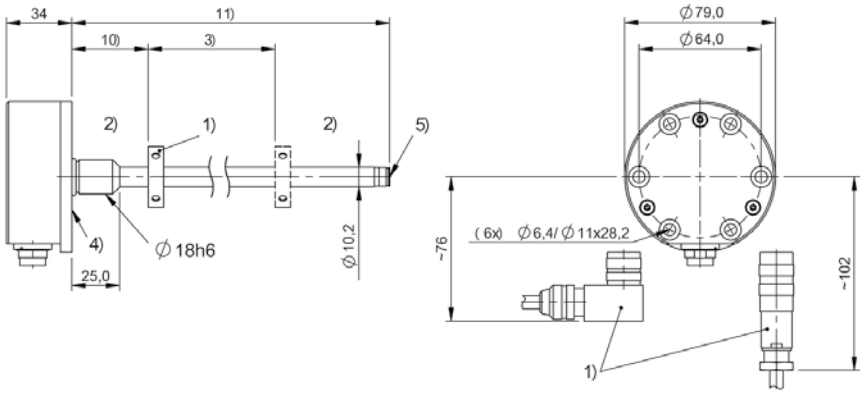
f Style
K = Compact rod, plug-in flange 18h6, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
SR = Connector
K = Cable out radial (PUR)
F = Cable out radial (PTFE)

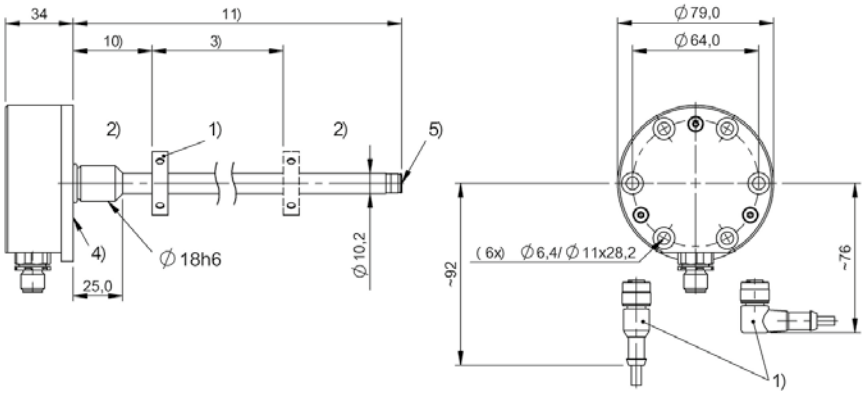
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30

BTL7-A510-Mxxxx-K-SR32



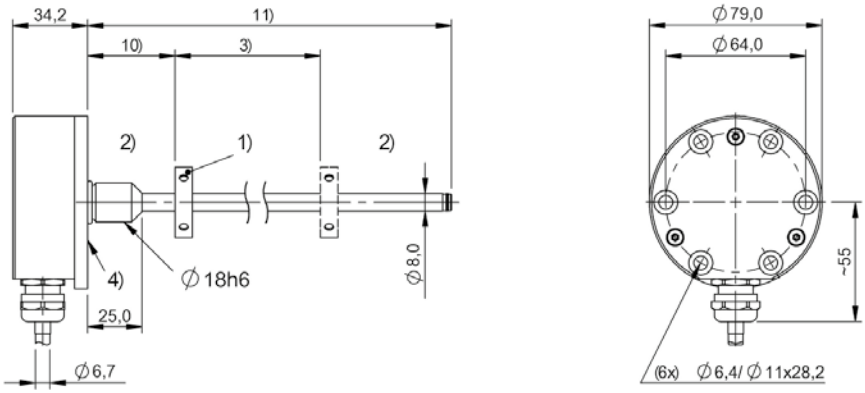
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-G510-Mxxxx-K-SR115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-A510-Mxxxx-K8-Kxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL7 -K- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Stainless steel (1.4305)
IP rating	l = S: IP67 with connector l = K: IP68
Approval/Conformity	l = K: CE + cULus + EAC + WEEE l = F: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fg-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
00 = 1 output, rising
70 = 1 output, falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M7620: for rod diameter 10.2 mm)

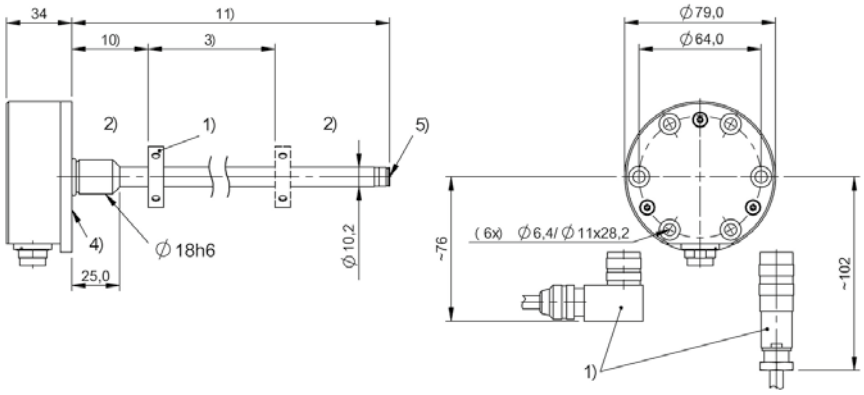
f Style
K = Compact rod, plug-in flange 18h6, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
SR = Connector
K = Cable out radial (PUR)
F = Cable out radial (PTFE)

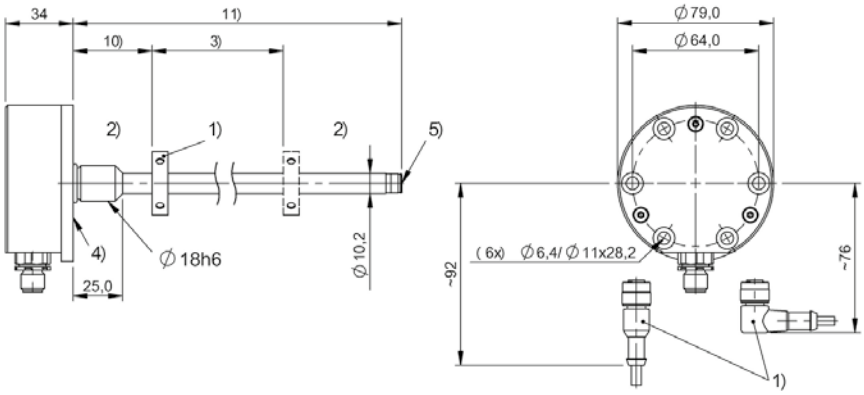
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
115 = M12x1 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 50, 100

BTL7-E500-Mxxxx-K-SR32



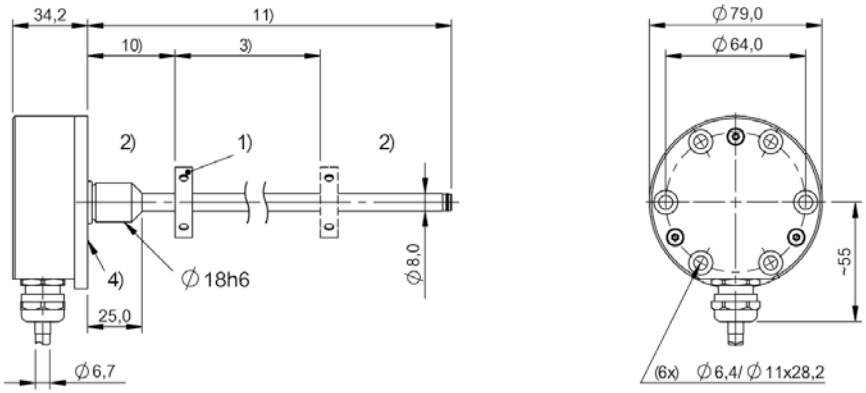
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-C570-Mxxxx-K-SR115



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-E570-Mxxxx-K8-Kxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL5 -K- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	25...4000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 0025…0500: ± 100 µm nnnn > 0500: ± 0.02% FS
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Stainless steel (1.4305)
IP rating	l = S: IP67 with connector l = K: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-ab-Mnnnn-fg-lm

BTL5
Magnetostrictive linear position sensor Generation 5

a interface
P = Digital pulse interface (falling edge stabilized)
M = Digital pulse interface (rising edge stabilized

b Operating voltage
1 = 20 … 28 V

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

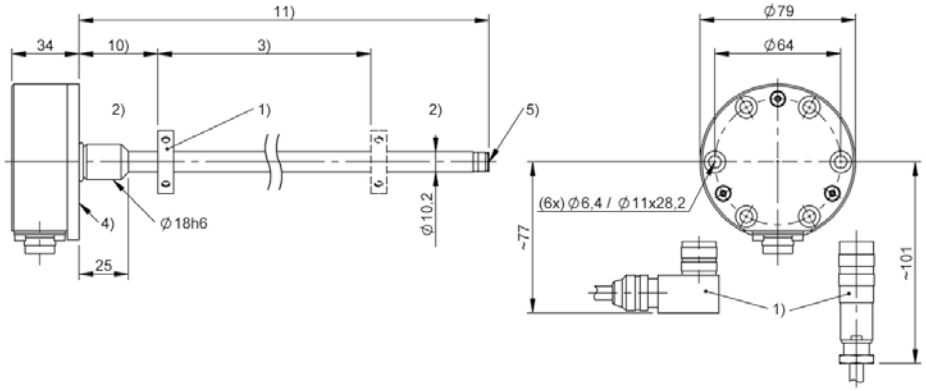
f Style
K = Compact rod, plug-in flange 18h6, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
SR = Connector, radial
K = Cable out radial (PUR)

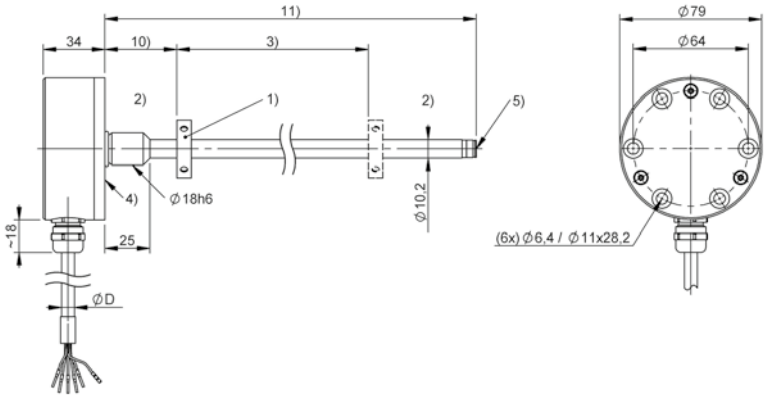
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL5-A11-Mxxxx-K-SR32



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL5-G11-Mxxxx-K8-Kxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

	BTL5 -K- SERIES - SSI
Interface	SSI
Measuring length	25...4000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 25…4000: ± 30µm d = 4, 5, 6, 8 nnnn = 25…4000: ± 2 LSB
Operating voltage Ub	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Stainless steel (1.4305)
IP rating	l = S: IP67 with connector l = K: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	—

BTL5-abcde-Mnnnn-fg-lm

BTL5
Magnetostrictive linear position sensor Generation 5

a interface
S = SSI

b Operating voltage
1 = 20 … 28 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

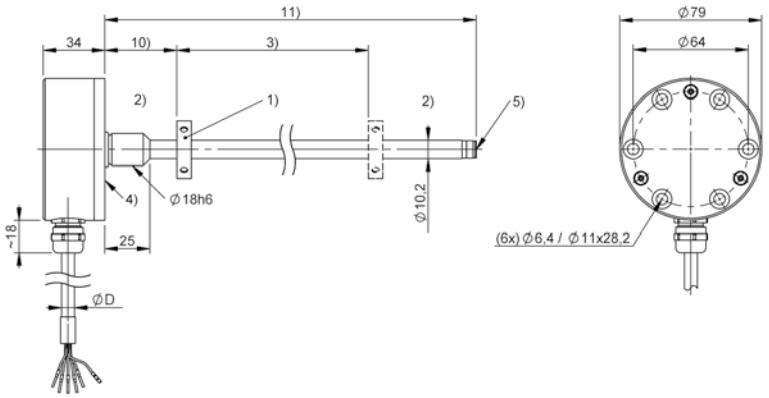
f Style
K = Compact rod, plug-in flange 18h6, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
SR = Connector, radial
K = Cable out radial (PUR)

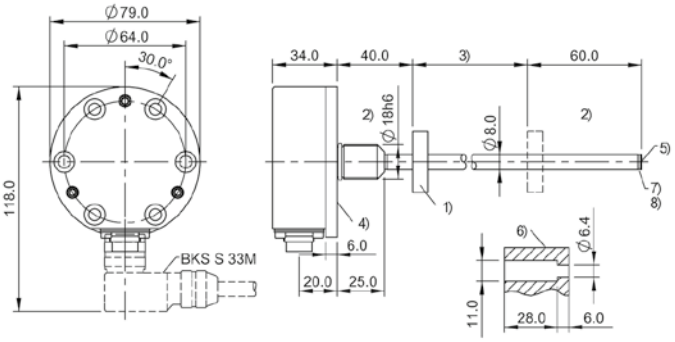
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL5-Sxxxx-Mxxxx-K-Kxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL5-Sxxxx-Mxxxx-K8-SR32



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) Detail locating hole. (6x)
7) Lockwasher
8) Ø9 DIN 6799

	BTL7 -SF- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	50...2500 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…2500: ± 0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 1 1/2“ Tri Clamp
Housing material	Stainless steel (1.4404)
IP rating	IP67
Approval/Conformity	CE 3-A EAC WEEE
Ex category	—

BTL7-abcd-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
A = Voltage output 0 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
10 = 2 outputs, each 1 x rising/falling

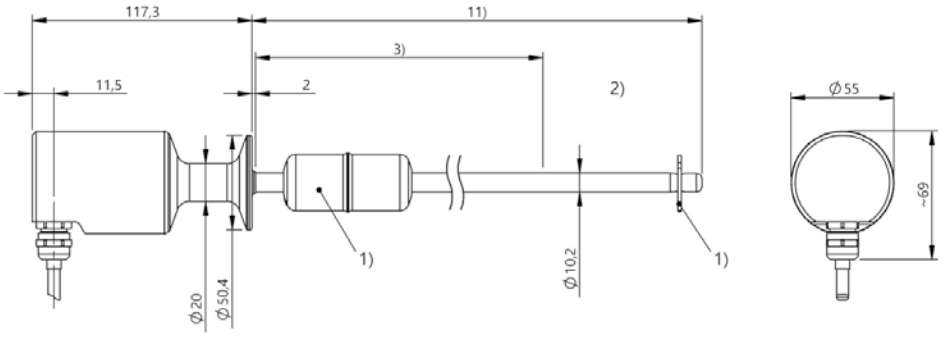
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M2500: for rod diameter
10.2 mm)

f Style
SF = Level transducer, 1.5“ Tri-Clamp

l Connection type
F = Cable out radial (PTFE)

m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20, 30

BTL7-A510-Mxxxx-SF-Fxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
11) Installation length

	BTL7 -SF- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	50...2500 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…2500: ± 0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 1 1/2“ Tri Clamp
Housing material	Stainless steel (1.4404)
IP rating	IP67
Approval/Conformity	CE 3-A EAC WEEE
Ex category	—

BTL7-abcd-Mnnnn-f-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
00 = 1 output, rising
70 = 1 output, falling

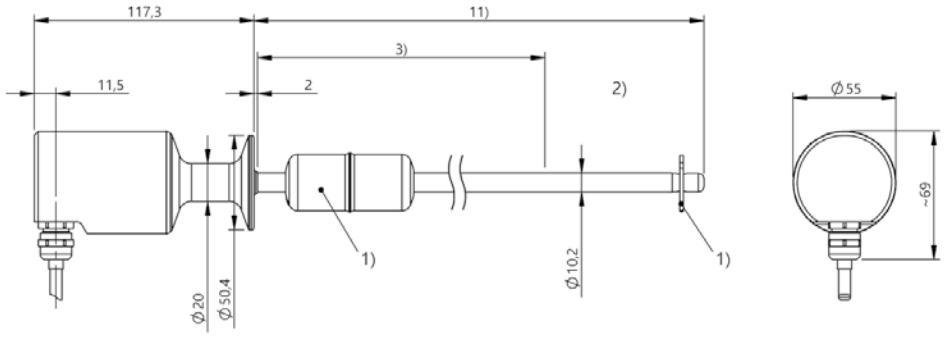
Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M2500: for rod diameter 10.2 mm)

f Style
SF = Level transducer, 1.5“ Tri-Clamp

l Connection type
F = Cable out radial (PTFE)

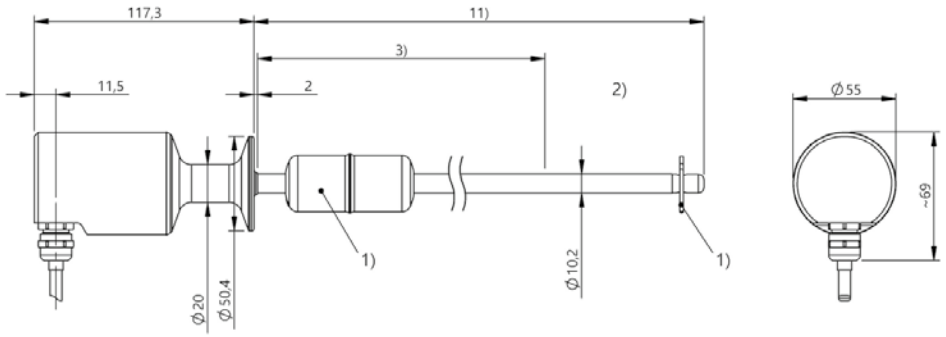
m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20, 50, 100

BTL7-E500-Mxxxx-SF-Fxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
11) Installation length

BTL7-C570-Mxxxx-SF-Fxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
11) Installation length

	BTL6 -E- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	50...2000 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm nnnn > 0500: ± 0.04% FS (typ.± 0.02% FS)
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 48h7 fit
Housing material	Stainless steel (1.4404)
IP rating	IP67
Approval/Conformity	I = KA: CE + cULus + EAC + WEEE I = LA: CE + EAC + WEEE
Ex category	—

BTL6-abcd-Mnnnn-fg-lm

BTL6
Magnetostrictive linear position sensor
Generation 6

a interface
A = Voltage output 0 ... 10 V
B = Voltage output 0 ... 5 V/0.25 ... 4.75 V/0.5 ... 4.5 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
00 = 1 output, rising
02 = 1 output, only if a = B, then 0.25 ... 4.75 V
03 = 1 output, only if a = B, then 0.5 ... 4.5 V

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M1016: for rod diameter 8 mm)
(M0050…M2000: for rod diameter 10.2 mm)

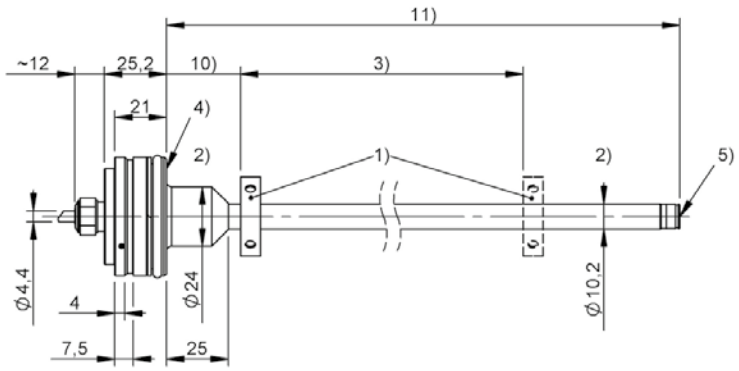
f Style
E2 = Mounting flange 18h6

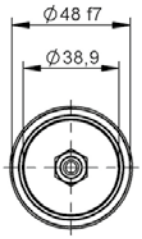
g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
KA = Cable (PUR)
LA = Leads (TPE-E)

m Connection type characteristic 1
for leads (length in meters):
0,07, 0,15, 0,20, 0,30
for cable (length in meters):
02, 05, 10, 15, 20

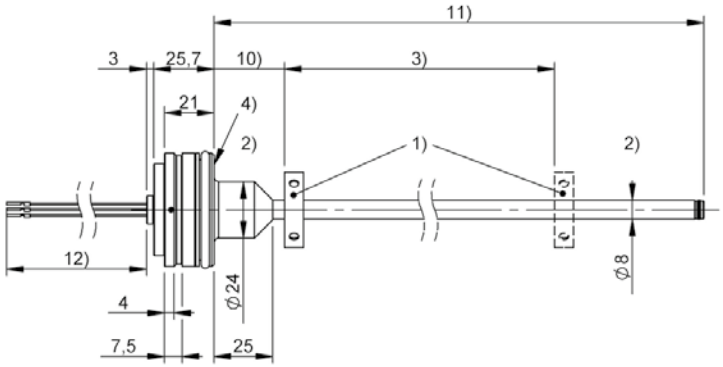
BTL6-A500-Mxxxx-E2-KAxx

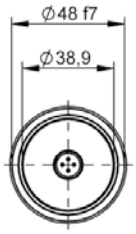




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length
12) Cable length

BTL6-B500-Mxxxx-E28-LAxx





1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length
12) Cable length

	BTL6 -E- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	50...2000 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm nnnn > 0500: ± 0.04% FS (typ.± 0.02% FS)
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 48h7 fit
Housing material	Stainless steel (1.4404)
IP rating	IP67
Approval/Conformity	l = KA: CE + cULus + EAC + WEEE l = LA: CE + EAC + WEEE
Ex category	—

BTL6-abcd-Mnnnn-fg-lm

BTL6
Magnetostrictive linear position sensor Generation 6

a interface
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
00 = 1 output, rising

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M1016: for rod diameter 8 mm)
(M0050…M2000: for rod diameter 10.2 mm)

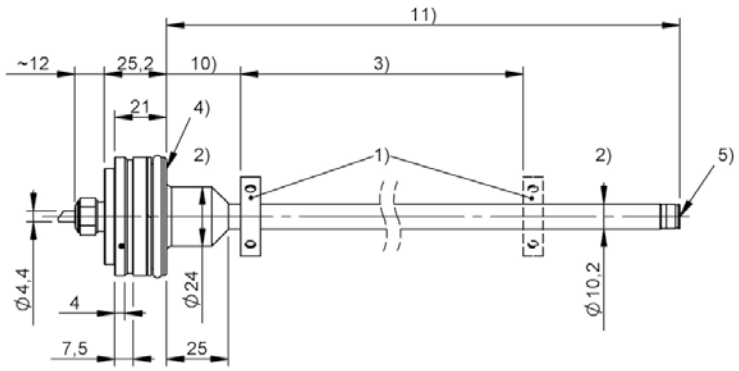
f Style
E2 = Mounting flange 18h6

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
KA = Cable (PUR)
LA = Leads (TPE-E)

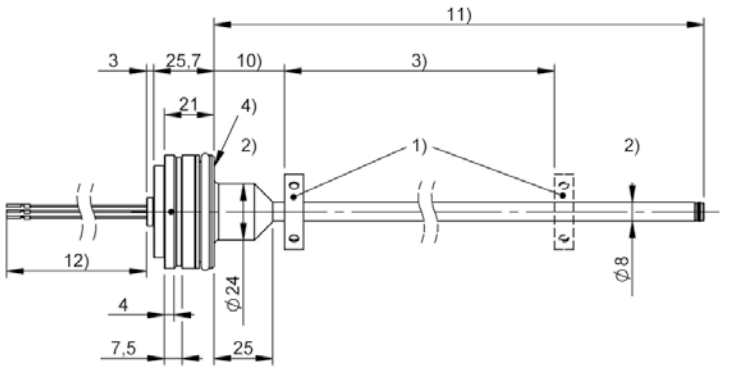
m Connection type characteristic 1
for leads (length in meters):
0,07, 0,15, 0,20, 0,30
for cable (length in meters):
02, 05, 10, 15, 20, 30

BTL6-E500-Mxxxx-E2-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length
12) Cable length

BTL6-E500-Mxxxx-E28-LAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length
12) Cable length

	BTL6 -E- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	50...2000 mm
Repeat accuracy	≤ 30 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm, nnnn > 0500: ± 0.04% FS (typ.± 0.02% FS)
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 48h7 fit
Housing material	Stainless steel (1.4404)
IP rating	IP67
Approval/Conformity	I = KA: CE + cULus + EAC + WEEE I = LA: CE + EAC + WEEE
Ex category	—

BTL6-abcd-Mnnnn-fg-lm

BTL6
Magnetostrictive linear position sensor Generation 6

a interface
P = Digital pulse interface

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
10 = Digital start/stop interface

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M1016: for rod diameter 8 mm)
(M0050…M2000: for rod diameter 10.2 mm)

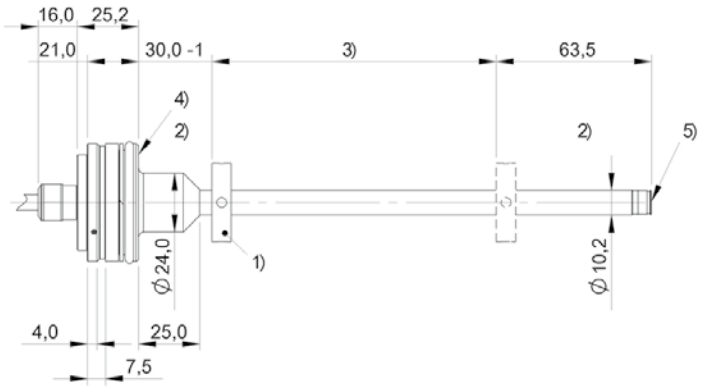
f Style
E2 = Mounting flange 18h6

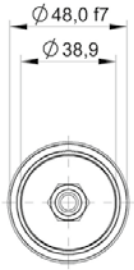
g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

l Connection type
KA = Cable (PUR)
LA = Leads (TPE-E)

m Connection type characteristic 1
for leads (length in meters):
0,07, 0,15, 0,20, 0,30
for cable (length in meters):
02, 05, 10, 15, 20, 30

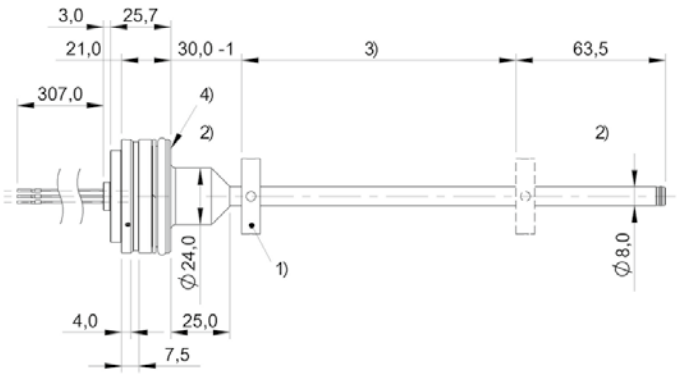
BTL6-P510-Mxxxx-E2-KAxx





1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL6-P510-Mxxxx-E28-LAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL7 -TB- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm nnnn > 0500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	nnnn ≤ 500: l = S, KA: CE + cULus + EAC + GL + WEEE l = FA: CE + EAC + GL + WEEE nnnn > 500: l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fh-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
04 = 1 output rising, configurable
05 = 1 output falling, configurable

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

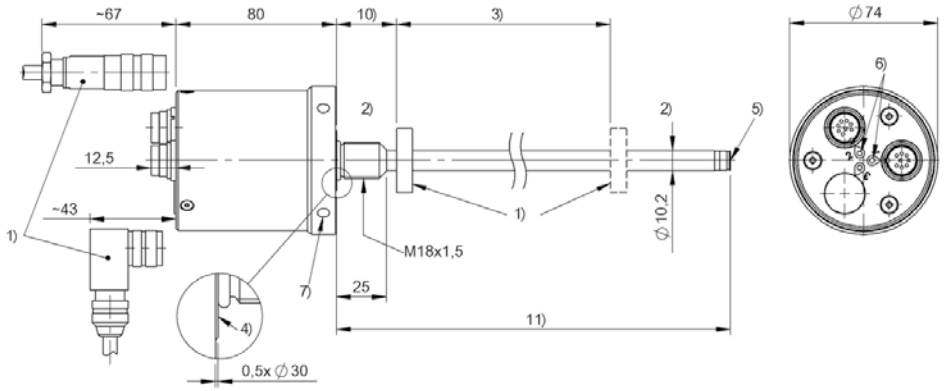
f Form factor
TB = Mounting threads M18x1.5, for O-Ring

h Redundant
2 = 2 times redundant
3 = 3 times redundant

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

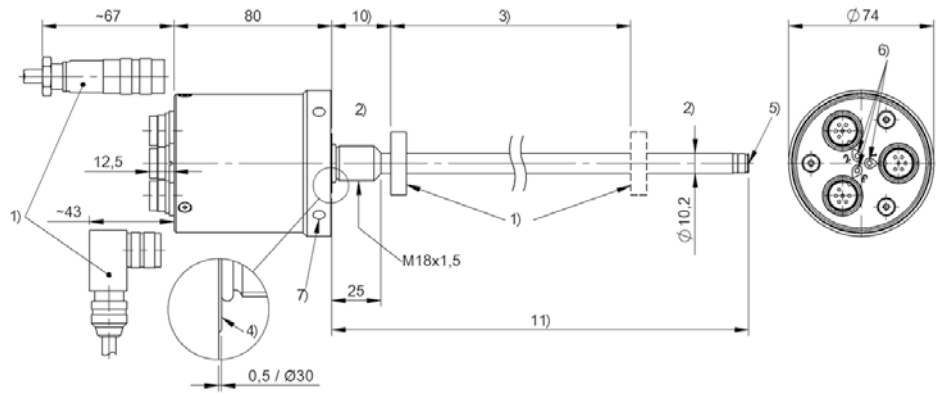
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
135 = M16x0.75 connector with 6 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL7-A504-Mxxxx-TB2-S32



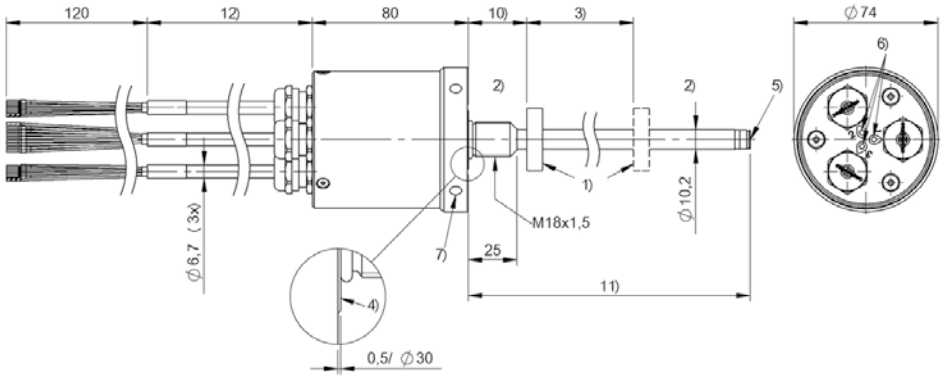
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length

BTL7-G505-Mxxxx-TB3-S135



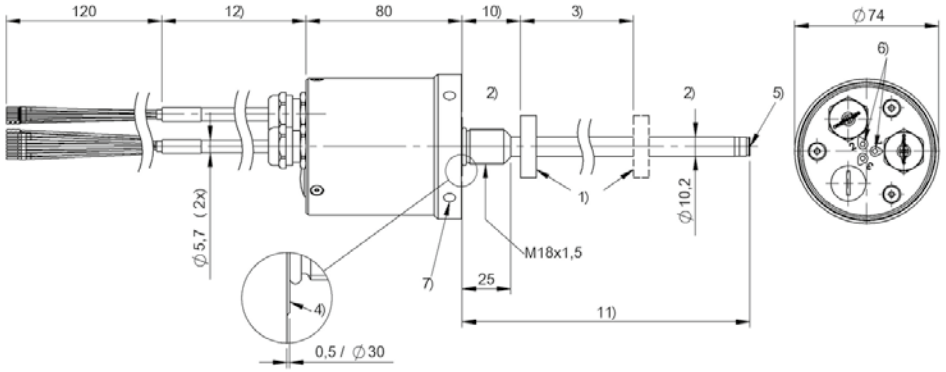
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length

BTL7-A505-Mxxxx-TB3-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

BTL7-G504-Mxxxx-TB2-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

	BTL7 -TB- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm, nnnn > 0500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	nnnn ≤ 500: l = S, KA: CE + cULus + EAC + GL + WEEE l = FA: CE + EAC + GL + WEEE nnnn > 500: l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fh-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
04 = 1 output rising, configurable
05 = 1 output falling, configurable

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

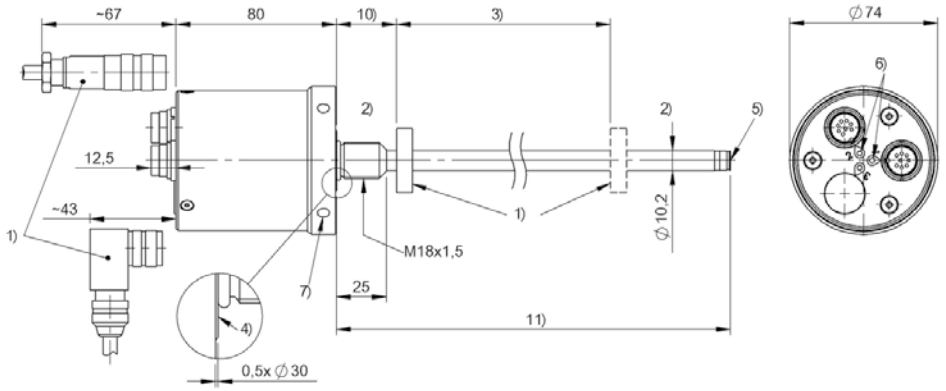
f Form factor
TB = Mounting threads M18x1.5, for O-Ring

h Redundant
2 = 2 times redundant
3 = 3 times redundant

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

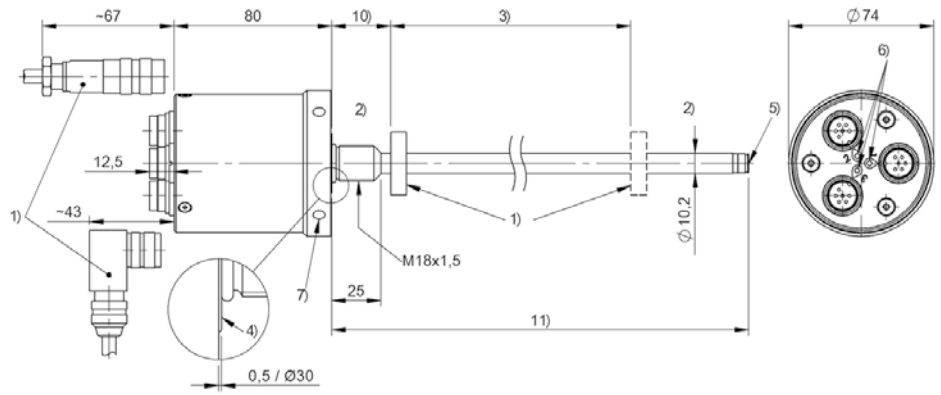
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
135 = M16x0.75 connector with 6 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL7-E504-Mxxxx-TB2-S32



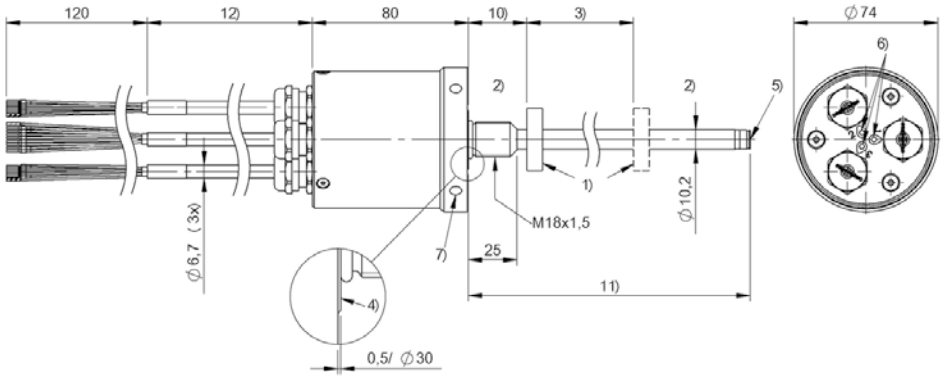
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length

BTL7-C505-Mxxxx-TB3-S135



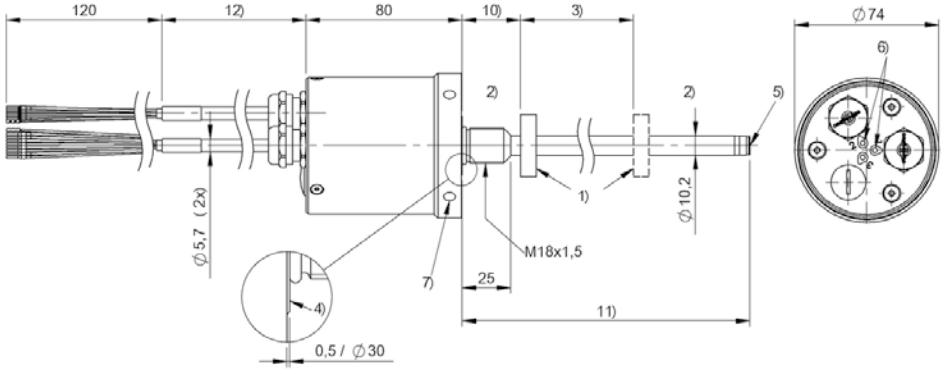
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length

BTL7-E505-Mxxxx-TB3-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

BTL7-C504-Mxxxx-TB2-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

	BTL7 -TB- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 25…2000: ± 60 µm nnnn = 2001…5500: ± 200 µm nnnn > 5500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fh-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a Interface
P = Digital pulse interface

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
1 = Digital start/stop interface

d Interface characteristic 2
1 = DPI/IP communication interface

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

f Form factor
TB = Mounting threads M18x1.5, for O-Ring

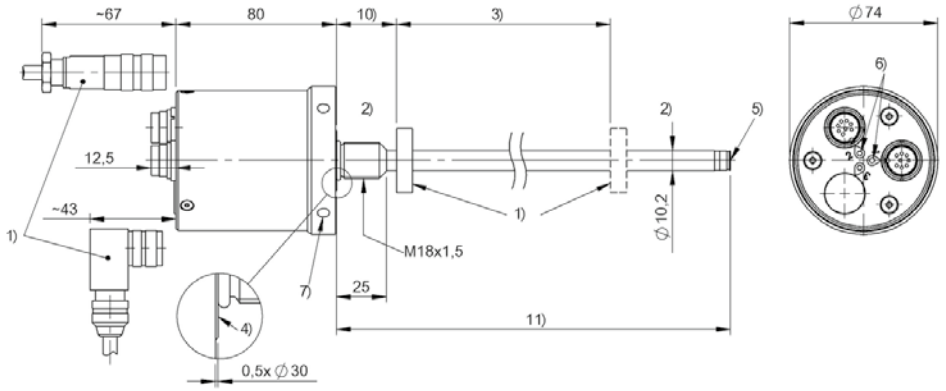
h Redundancy
2 = 2 times redundant
3 = 3 times redundant

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins

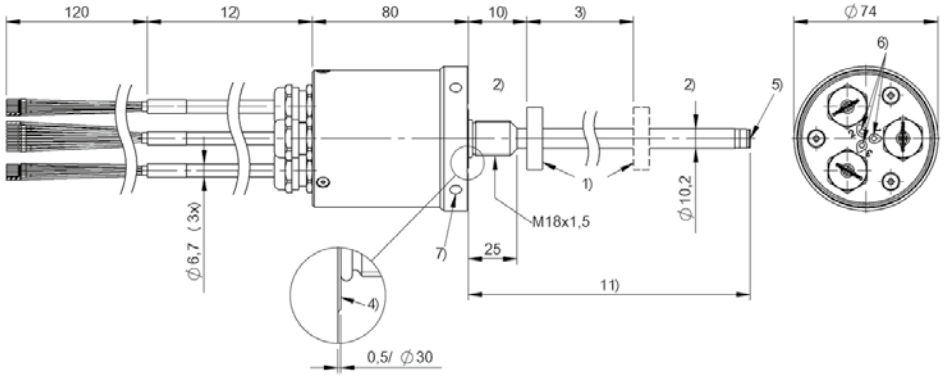
for cable (length in meters):
02, 05, 10,
15, 20 (only when h = 2 and Mnnnn < 2541 mm

BTL7-P511-Mxxxx-TB2-S32



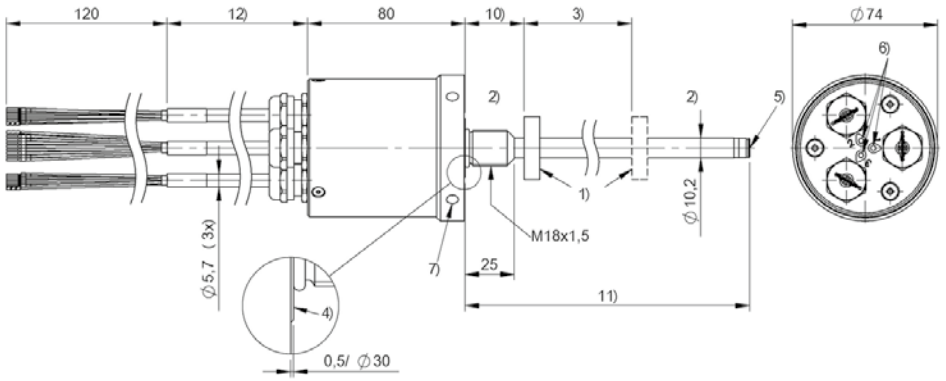
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length

BTL7-P511-Mxxxx-TB3-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

BTL7-P511-Mxxxx-TB3-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

	BTL7 -TB- SERIES - SSI
Interface	SSI
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7, 9: nnnn = 25…2000: ± 60 µm nnnn = 2001…5500: ± 200 µm d = 4, 5: nnnn = 25…2000: ± 4 LSB nnnn = 2001…5500: ± 200 µm d = 6, 8: nnnn = 25…5500: ± 4 LSB nnnn > 5500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcde-Mnnnn-fh-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
S = SS

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling
A = 26 bits, binary, rising
B = 26 bits, gray, rising
C = 26 bits, binary, falling
D = 26 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

f Form factor
TB = Mounting threads M18x1.5, for O-Ring

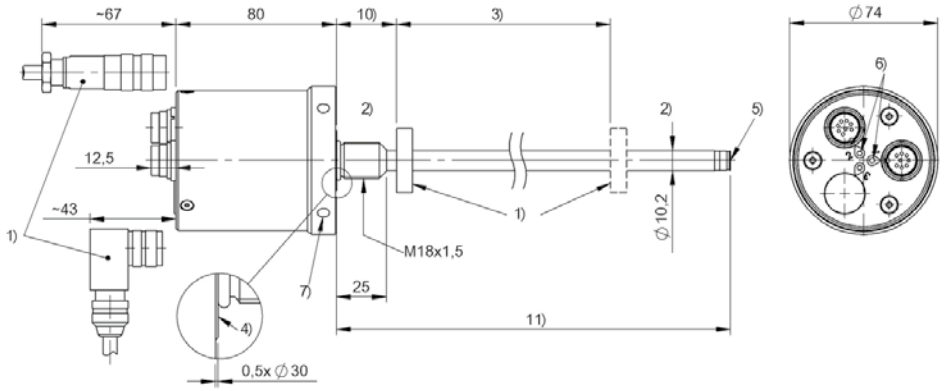
g Form factor characteristic
- = Rod diameter 10.2 mm

h Redundant
2 = 2 times redundant
3 = 3 times redundant

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

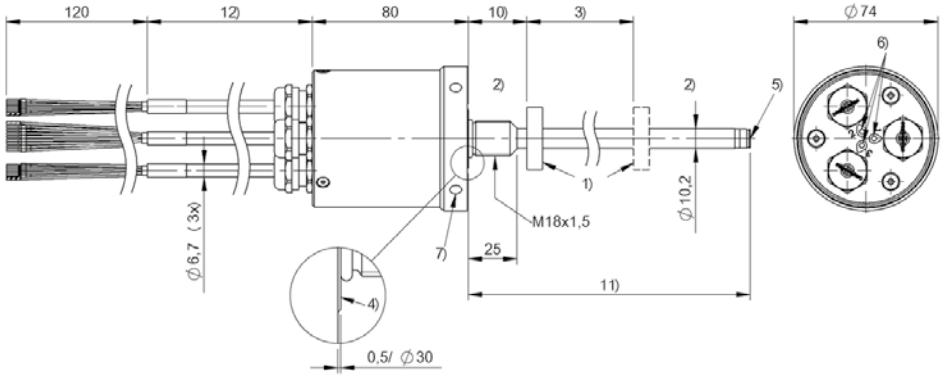
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL7-S5xxD-Mxxxx-TB2-S32



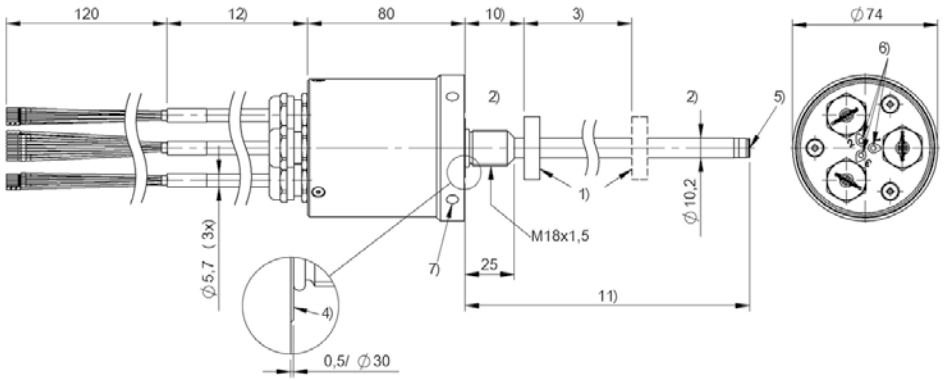
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length

BTL7-S5xxD-Mxxxx-TB3-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

BTL7-S5xxD-Mxxxx-TB3-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

	BTL7 -TZ- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm, nnnn > 0500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	nnnn ≤ 500: l = S, KA: CE + cULus + EAC + GL + WEEE l = FA: CE + EAC + GL + WEEE nnnn > 500: l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fh-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
04 = 1 output rising, configurable
05 = 1 output falling, configurable

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

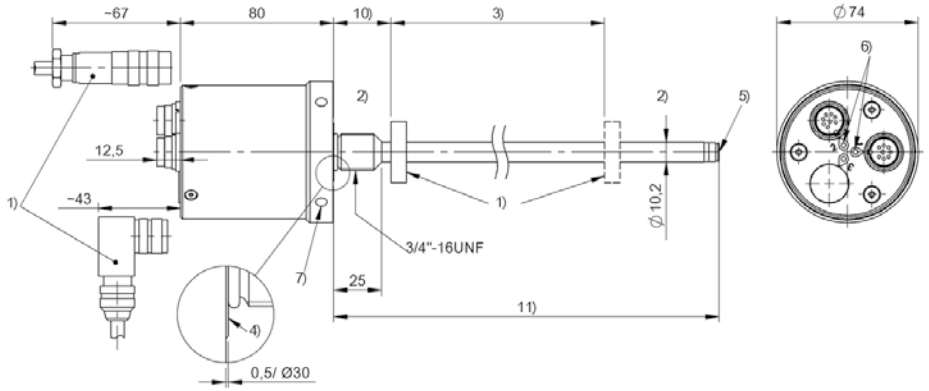
f Form factor
TZ = Threads 3/4“-16UNF, for O-Ring

h Redundant
2 = 2 times redundant
3 = 3 times redundant

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

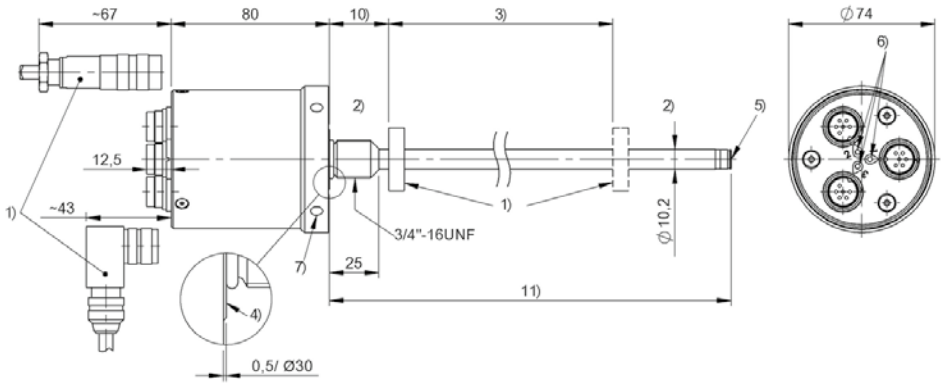
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
135 = M16x0.75 connector with 6 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL7-A504-Mxxxx-TZ2-S32



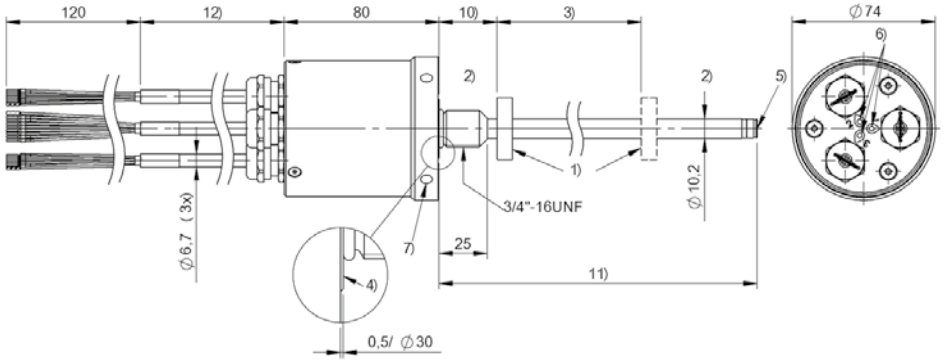
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length

BTL7-G505-Mxxxx-TZ3-S135



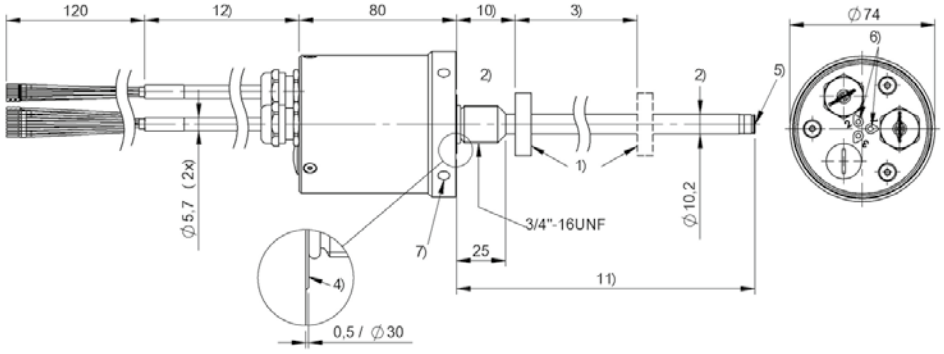
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length

BTL7-A505-Mxxxx-TZ3-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

BTL7-G504-Mxxxx-TZ2-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

	BTL7 -TZ- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm, nnnn > 0500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	nnnn ≤ 500: l = S, KA: CE + cULus + EAC + GL + WEEE l = FA: CE + EAC + GL + WEEE nnnn > 500: l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fh-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
04 = 1 output rising, configurable
05 = 1 output falling, configurable

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

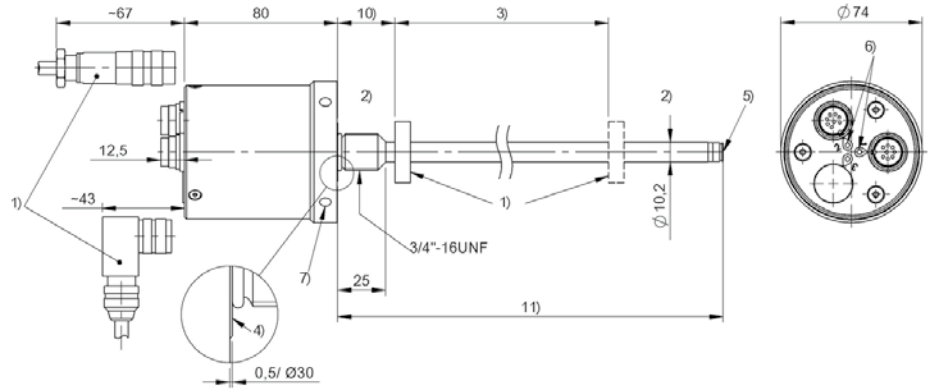
f Form factor
TZ = Threads 3/4“-16UNF, for O-Ring

h Redundant
2 = 2 times redundant
3 = 3 times redundant

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

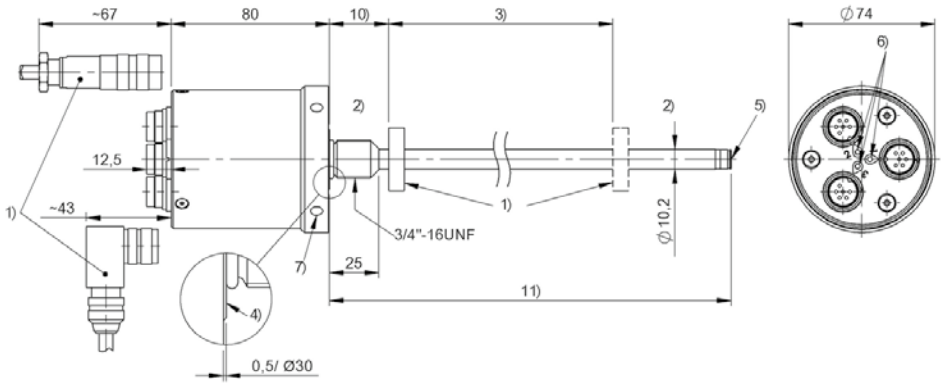
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
135 = M16x0.75 connector with 6 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL7-E504-Mxxxx-TZ2-S32



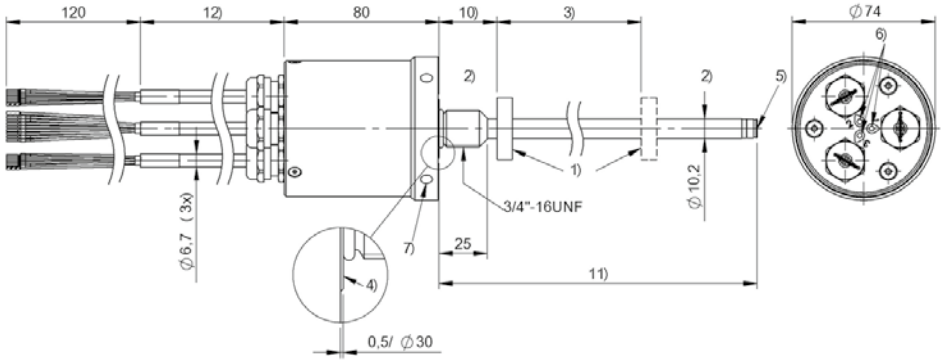
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length

BTL7-C505-Mxxxx-TZ3-S135



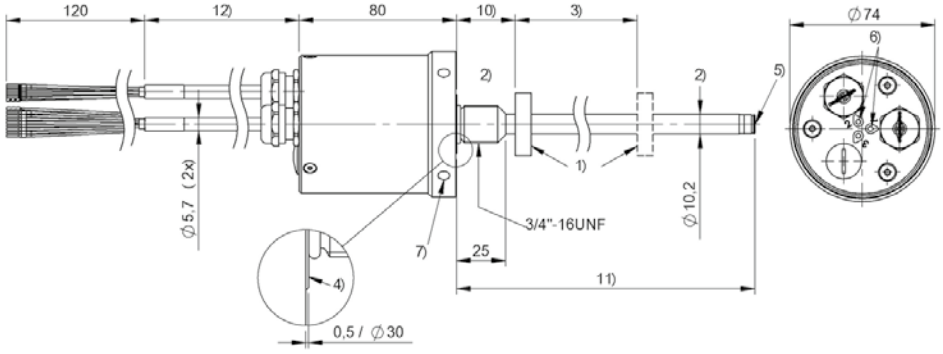
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length

BTL7-E505-Mxxxx-TZ3-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

BTL7-C504-Mxxxx-TZ2-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

	BTL7 -TZ- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 25…2000: ± 60 µm nnnn = 2001…5500: ± 200 µm nnnn > 5500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fh-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a Interface
P = Digital pulse interface

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
1 = Digital start/stop interface

d Interface characteristic 2
1 = DPI/IP communication interface

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

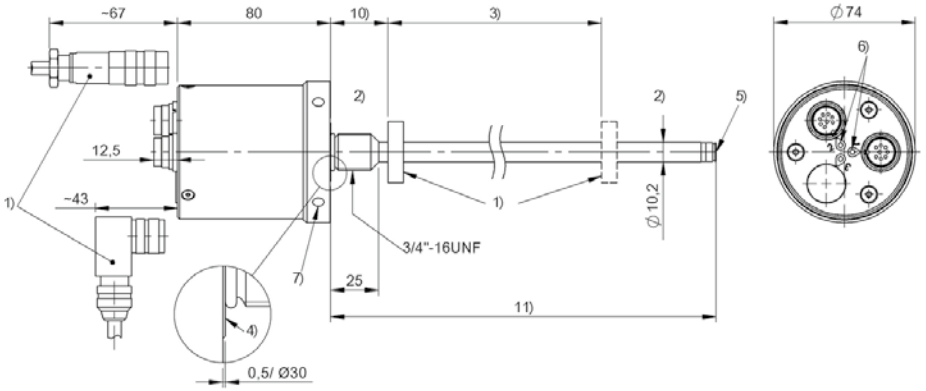
f Form factor
TZ = Threads 3/4““-16UNF, for O-Ring

h Redundancy
2 = 2 times redundant
3 = 3 times redundant

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

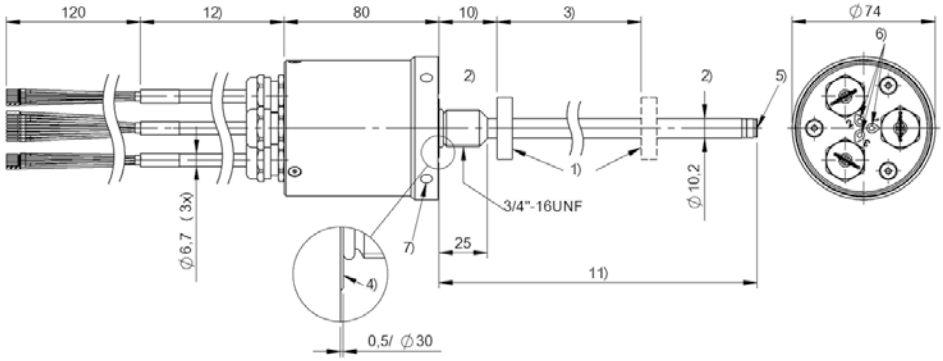
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10,
15, 20 (only when h = 2 and Mnnnn < 2541 mm

BTL7-P511-Mxxxx-TZ2-S32



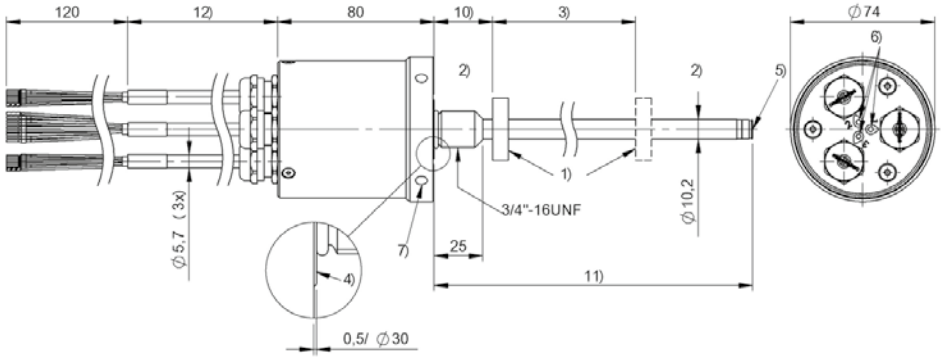
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length

BTL7-P511-Mxxxx-TZ3-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

BTL7-P511-Mxxxx-TZ3-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

	BTL7 -TZ- SERIES - SSI
Interface	SSI
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7, 9: nnnn = 25…2000: ± 60 µm nnnn = 2001…5500: ± 200 µm d = 4, 5: nnnn = 25…2000: ± 4 LSB nnnn = 2001…5500: ± 200 µm d = 6, 8: nnnn = 25…5500: ± 4 LSB nnnn > 5500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcde-Mnnnn-fh-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
S = SSI

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling
A = 26 bits, binary, rising
B = 26 bits, gray, rising
C = 26 bits, binary, falling
D = 26 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

f Form factor
TZ = Threads 3/4“-16UNF, for O-Ring

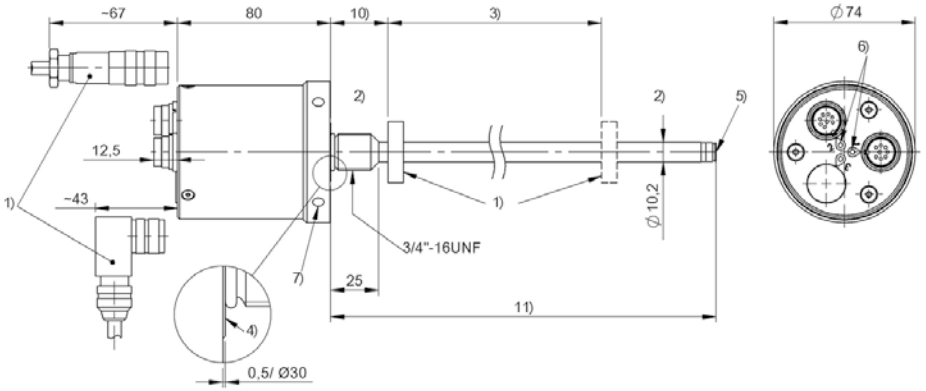
g Form factor characteristic
rod diameter 10.2 mm

h Redundant
2 = 2 times redundant
3 = 3 times redundant

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

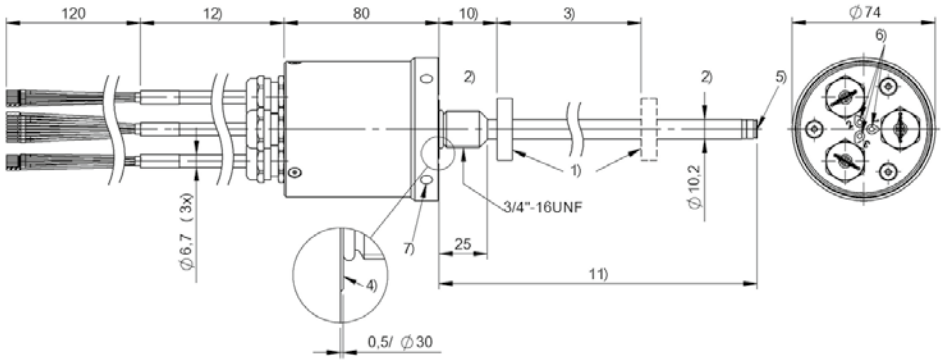
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL7-S5xxD-Mxxxx-TZ2-S32



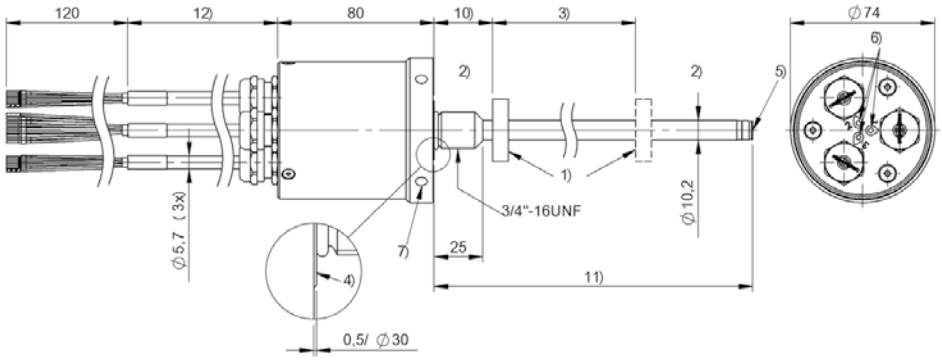
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length

BTL7-S5xxD-Mxxxx-TZ3-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

BTL7-S5xxD-Mxxxx-TZ3-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

	BTL7 -TK- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm, nnnn > 0500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fgh-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
04 = 1 output rising, configurable
05 = 1 output falling, configurable

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

f Form factor
TK = plug-in flange 18h6,, for O-Ring

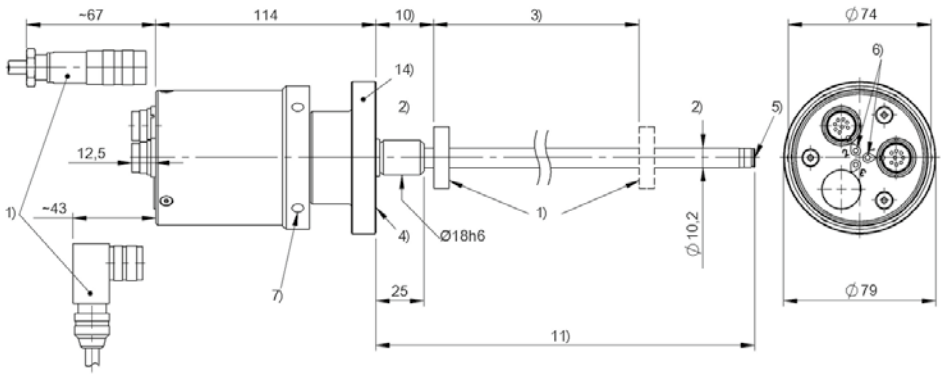
g Form factor characteristic
- = Rod diameter 10.2 mm

h Redundant
2 = 2 times redundant
3 = 3 times redundant

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

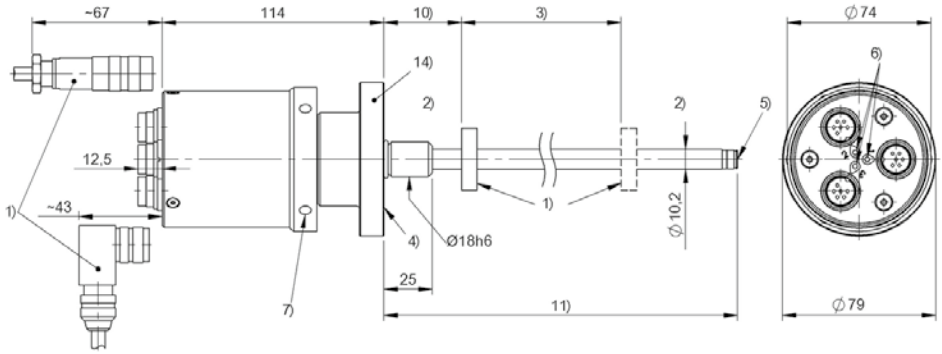
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
135 = M16x0.75 connector with 6 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL7-A504-Mxxxx-TK2-S32



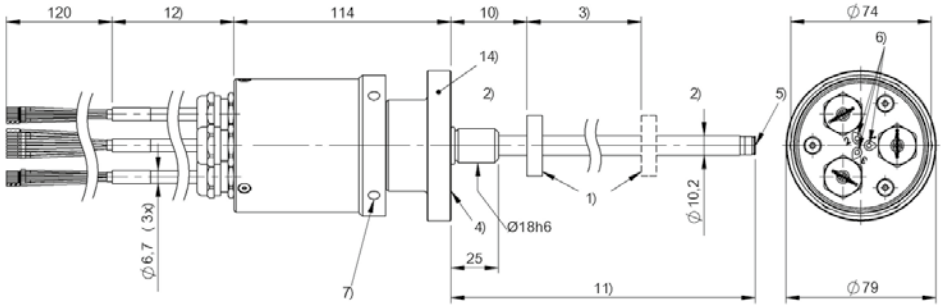
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
14) not installed

BTL7-G505-Mxxxx-TK3-S135



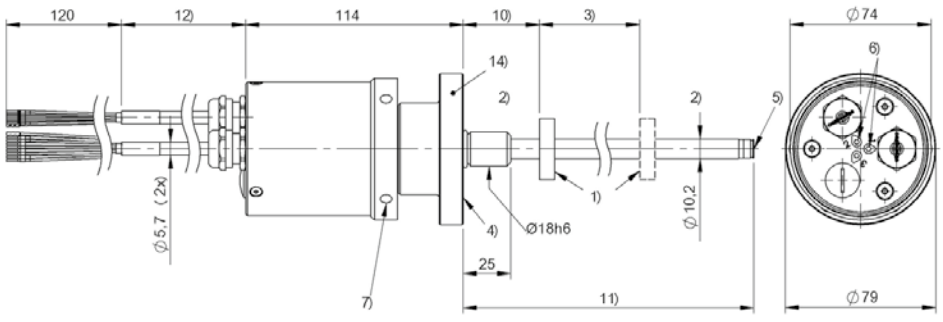
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
14) not installed

BTL7-A505-Mxxxx-TK3-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length
14) not installed

BTL7-G504-Mxxxx-TK2-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length
14) not installed

	BTL7 -TK- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm, nnnn > 0500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fh-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
04 = 1 output rising, configurable
05 = 1 output falling, configurable

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

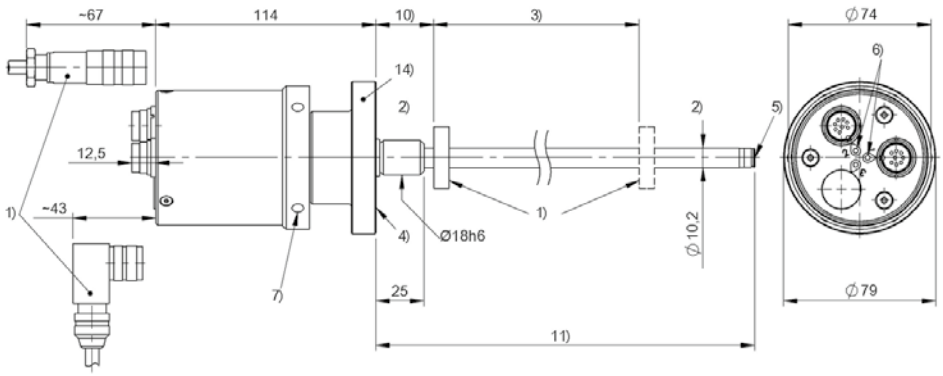
f Form factor
TK = plug-in flange 18h6,, for O-Ring

h Redundant
2 = 2 times redundant
3 = 3 times redundant

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

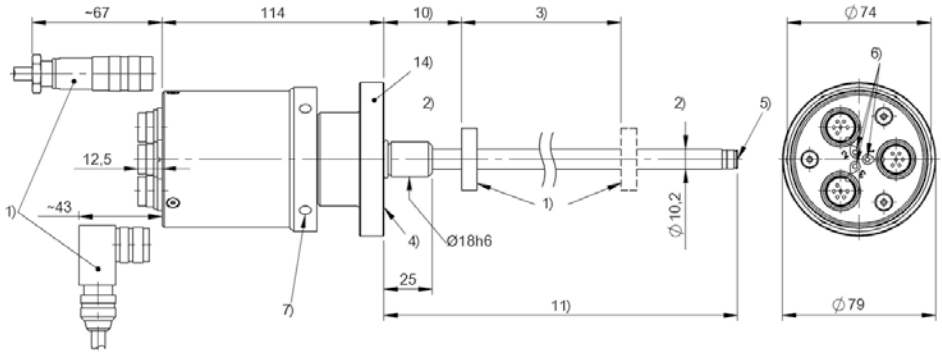
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
135 = M16x0.75 connector with 6 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL7-E504-Mxxxx-TK2-S32



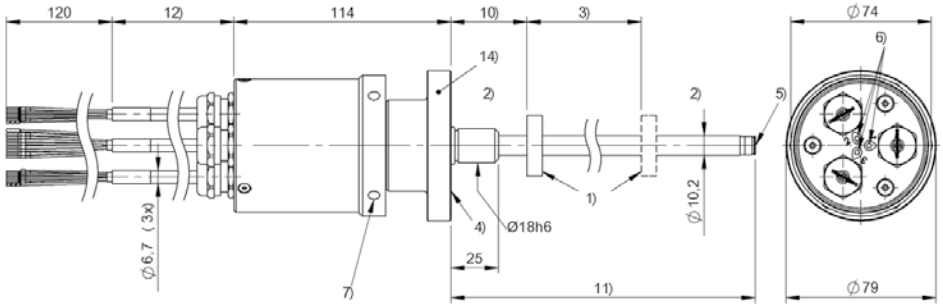
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
14) not installed

BTL7-C505-Mxxxx-TK3-S135



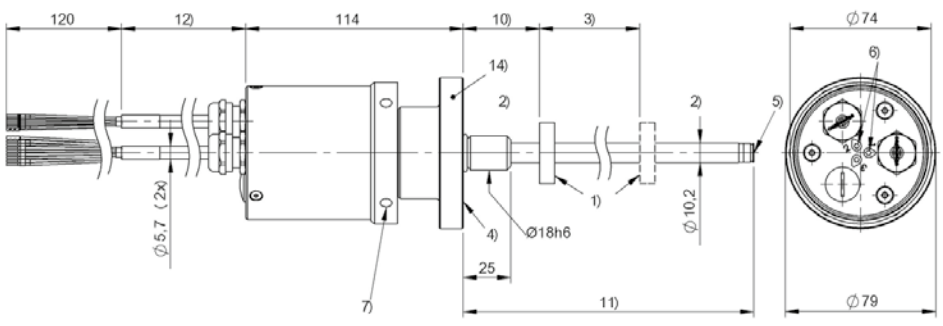
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
14) not installed

BTL7-E505-Mxxxx-TK3-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length
14) not installed

BTL7-C504-Mxxxx-TK2-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length
14) not installed

	BTL7 -TK- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 25…2000: ± 60 µm nnnn = 2001…5500: ± 200 µm nnnn > 5500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fh-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a Interface
P = Digital pulse interface

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
1 = Digital start/stop interface

d Interface characteristic 2
1 = DPI/IP communication interface

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

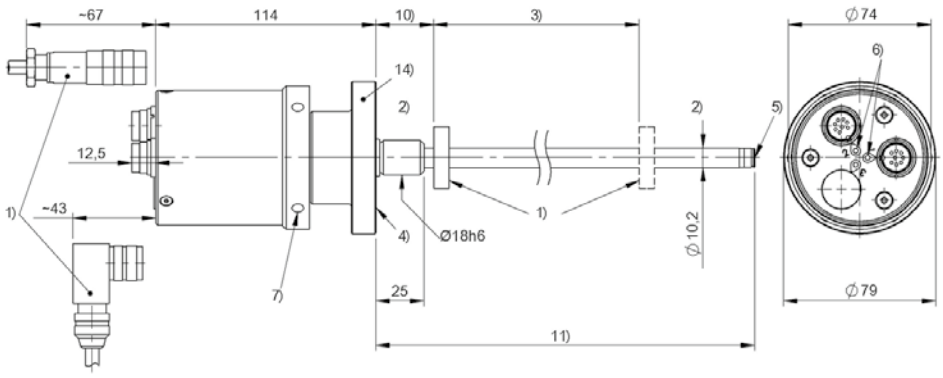
f Form factor
TK = plug-in flange 18h6,, for O-Ring

h Redundancy
2 = 2 times redundant
3 = 3 times redundant

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

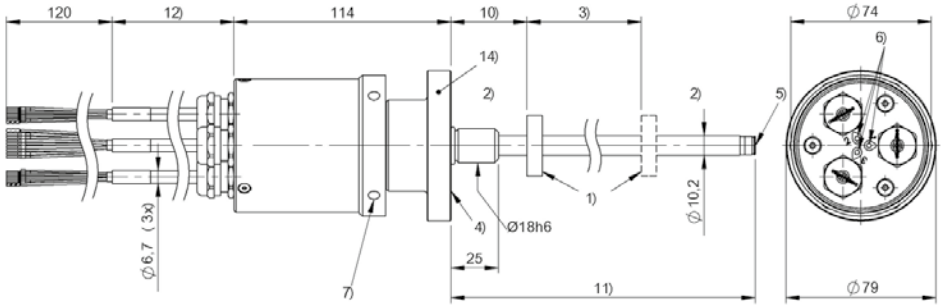
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10

BTL7-P511-Mxxxx-TK2-S32



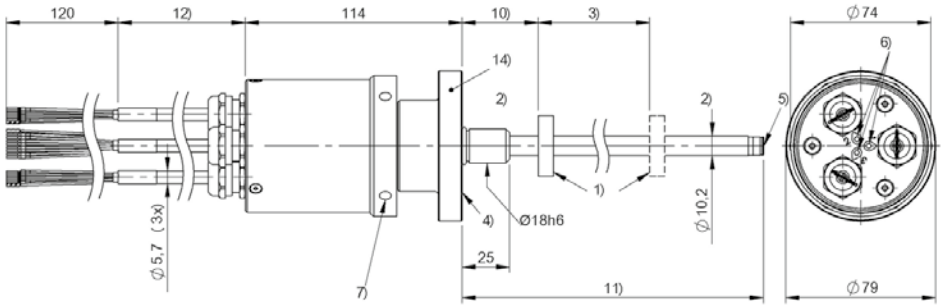
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
14) not installed

BTL7-P511-Mxxxx-TK3-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length
14) not installed

BTL7-P511-Mxxxx-TK3-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length
14) not installed

	BTL7 -TK- SERIES - SSI
Interface	SSI
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7, 9: nnnn = 25…2000: ± 60 µm nnnn = 2001…5500: ± 200 µm d = 4, 5: nnnn = 25…2000: ± 4 LSB nnnn = 2001…5500: ± 200 µm d = 6, 8: nnnn = 25…5500: ± 4 LSB nnnn > 5500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcde-Mnnnn-fh-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
S = SSI

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling
A = 26 bits, binary, rising
B = 26 bits, gray, rising
C = 26 bits, binary, falling
D = 26 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

f Form factor
TK = plug-in flange 18h6,, for O-Ring

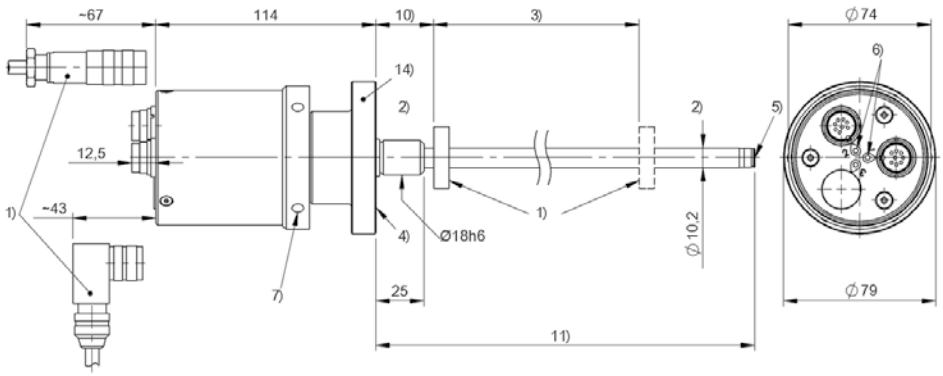
g Form factor characteristic
- = Rod diameter 10.2 mm

h Redundant
2 = 2 times redundant
3 = 3 times redundant

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

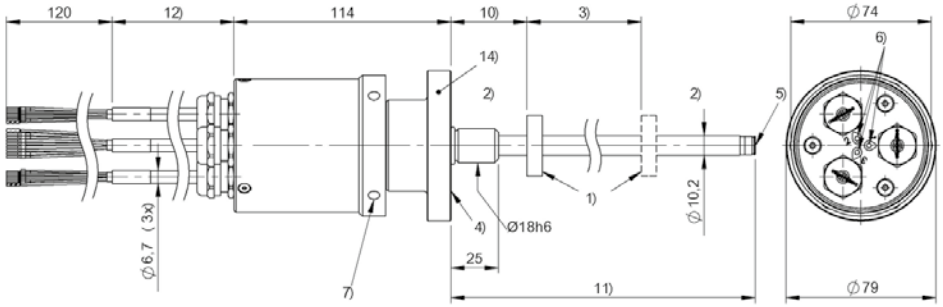
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL7-S5xxD-Mxxxx-TK2-S32



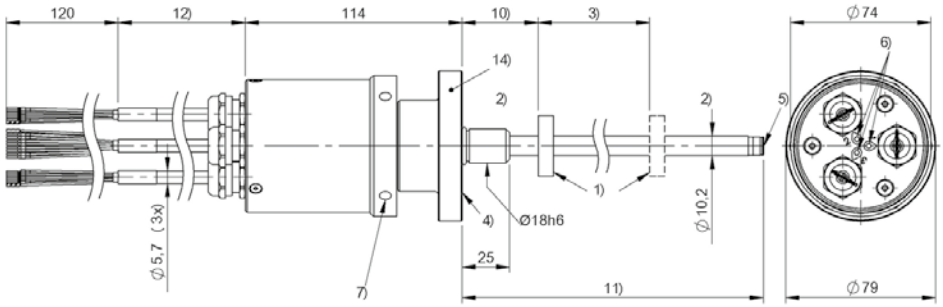
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
14) not installed

BTL7-S5xxD-Mxxxx-TK3-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length
14) not installed

BTL7-S5xxD-Mxxxx-TK3-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length
14) not installed

	BTL7 -TT- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...3250 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm, nnnn > 0500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M30 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	nnnn ≤ 240: l = S, KA: CE + cULus + EAC + GL + WEEE l = FA: CE + EAC + GL + WEEE nnnn > 240: l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fgh-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
04 = 1 output rising, configurable
05 = 1 output falling, configurable

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M3250)

f Form factor
TT = Mounting threads M30x1.5,
for O-Ring

g Form factor characteristic
- = Rod diameter 21 mm

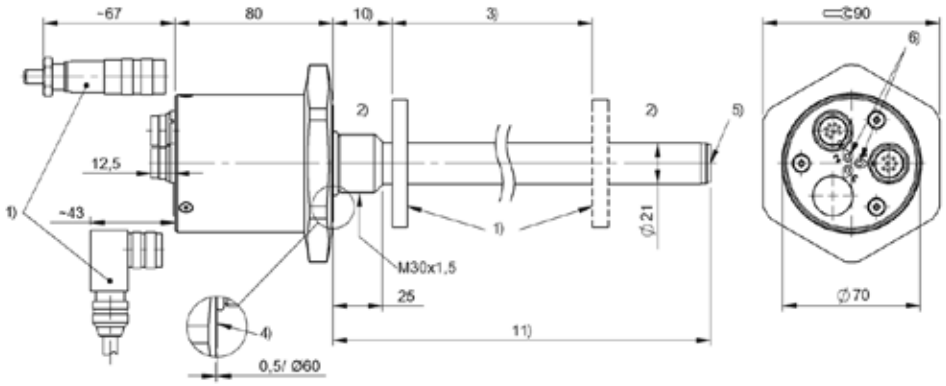
h Redundant
2 = 2 times redundant
3 = 3 times redundant

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins

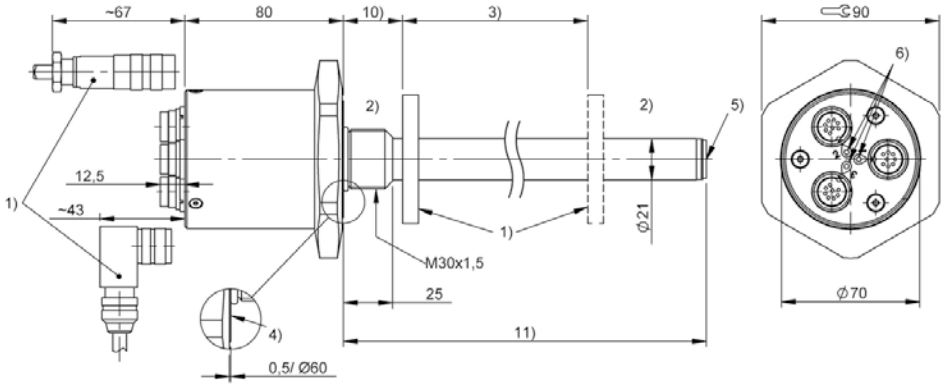
for cable (length in meters):
02, 05, 10

BTL7-A504-Mxxxx-TT2-S32



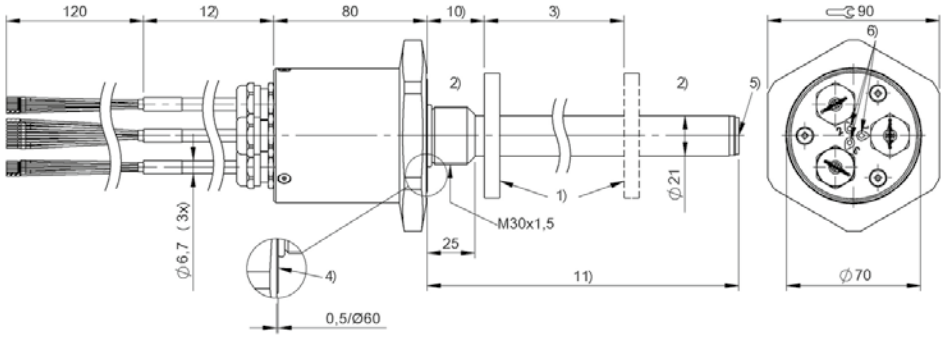
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-G505-Mxxxx-TT3-S32



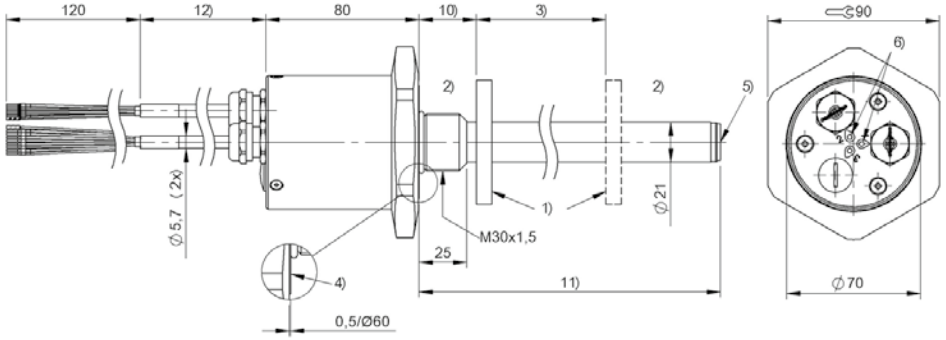
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-A505-Mxxxx-TT3-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length
12) Cable length

BTL7-G504-Mxxxx-TT2-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length
12) Cable length

	BTL7 -TT- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...3250 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm, nnnn > 0500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M30 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	nnnn ≤ 240: l = S, KA: CE + cULus + EAC + GL + WEEE l = FA: CE + EAC + GL + WEEE nnnn > 240: l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fh-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
04 = 1 output rising, configurable
05 = 1 output falling, configurable

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M3250)

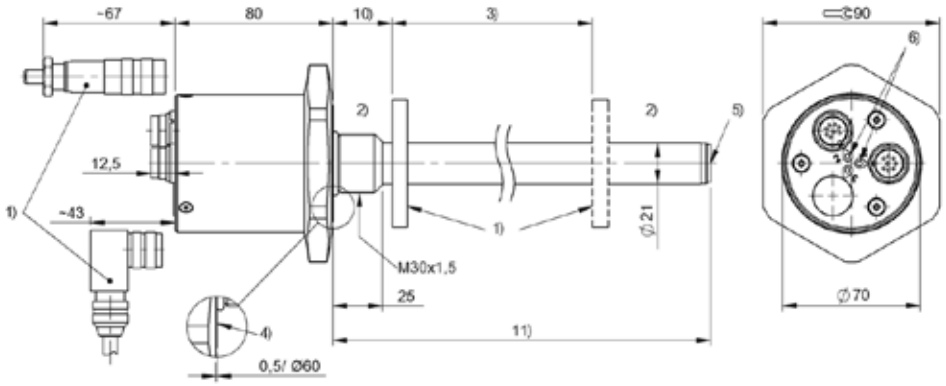
f Form factor
TT = Mounting threads M30x1.5, for O-Ring

h Redundant
2 = 2 times redundant
3 = 3 times redundant

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

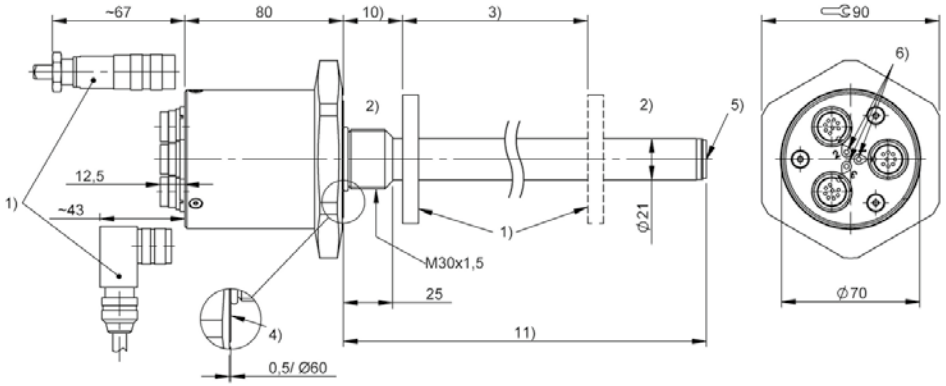
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10

BTL7-E504-Mxxxx-TT2-S32



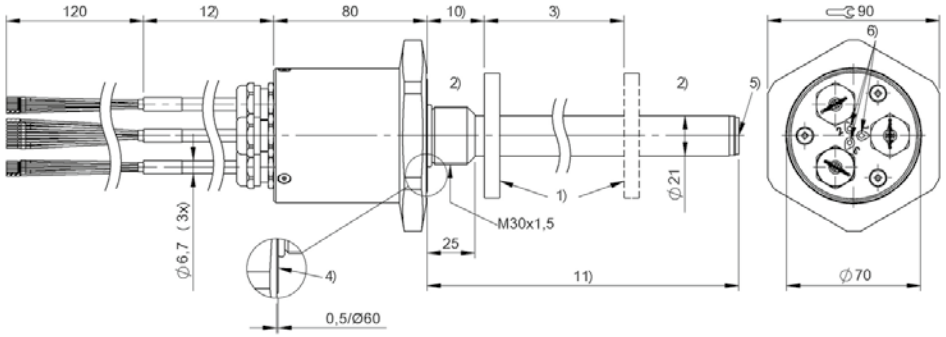
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-C505-Mxxxx-TT3-S32



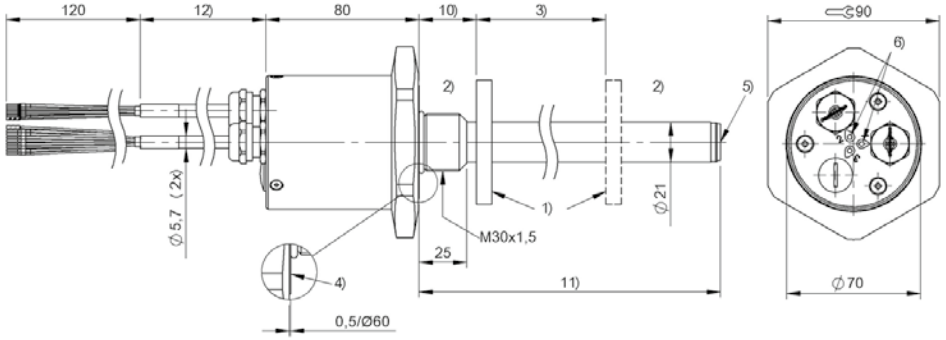
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-E505-Mxxxx-TT3-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length
12) Cable length

BTL7-C504-Mxxxx-TT2-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length
12) Cable length

	BTL7 -TT- SERIES - SSI
Interface	SSI
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7, 9: nnnn = 25…2000: ± 60 µm nnnn = 2001…3250: ± 200 µm d = 4, 5: nnnn = 25…2000: ± 4 LSB nnnn = 2001…3250: ± 200 µm d = 6, 8: nnnn = 25…3250: ± 4 LSB
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M30 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcde-Mnnnn-fh-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a Interface
S = SSI

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling
A = 26 bits, binary, rising
B = 26 bits, gray, rising
C = 26 bits, binary, falling
D = 26 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm
9 = 0.5 µm

e Interface characteristic 3
D = Synchronous / configurable

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M3250)

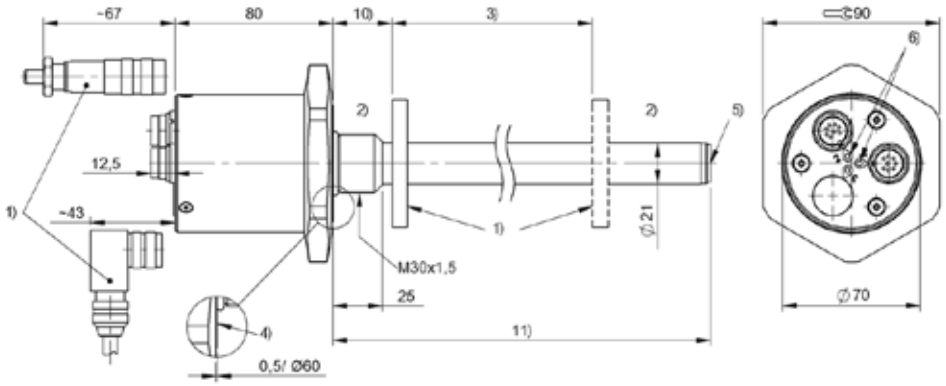
f Form factor
TT = Mounting threads M30x1.5, for O-ring, rod diameter 21 mm

h Redundancy
2 = 2 times redundant
3 = 3 times redundant

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

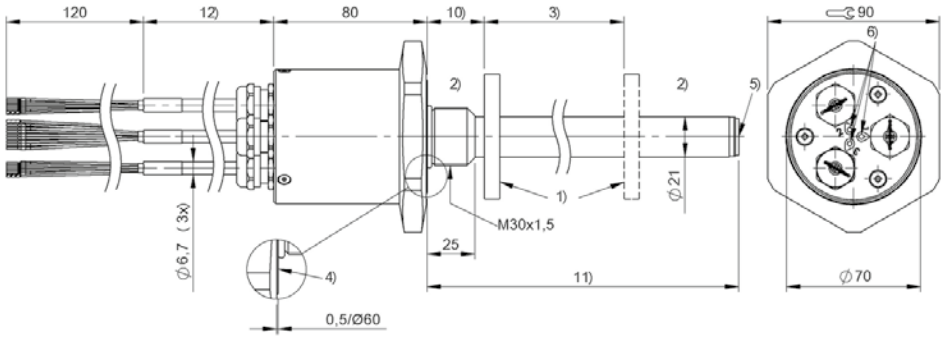
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10

BTL7-S5xxD-Mxxxx-TT2-S32



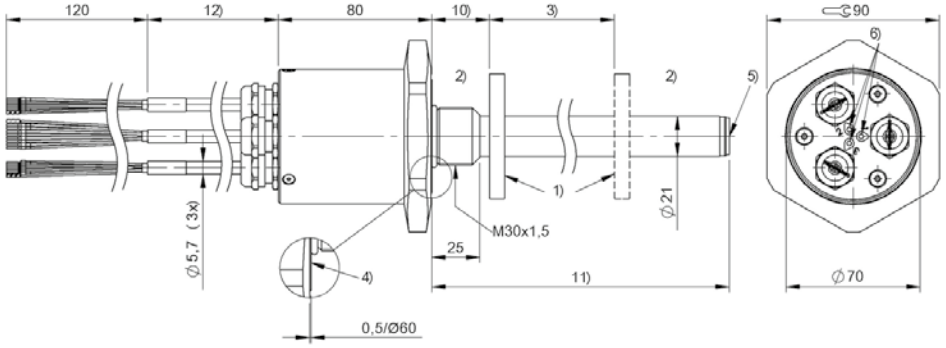
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-S5xxD-Mxxxx-TT3-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length
12) Cable length

BTL7-S5xxD-Mxxxx-TT3-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length
12) Cable length

	BTL7 -TT- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0025…2000: ± 60 µm nnnn = 2001…3250: ± 200 µm
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M30 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	l = S, KA: CE + cULus + EAC + WEEE l = FA: CE + EAC + WEEE
Ex category	—

BTL7-abcd-Mnnnn-fh-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a Interface
P = Digital pulse interface

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
1 = Digital start/stop interface

d Interface characteristic 2
1 = DPI/IP communication interface

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M3250)

f Form factor
TT = Mounting threads M30x1.5, for O-ring, rod diameter 21 mm

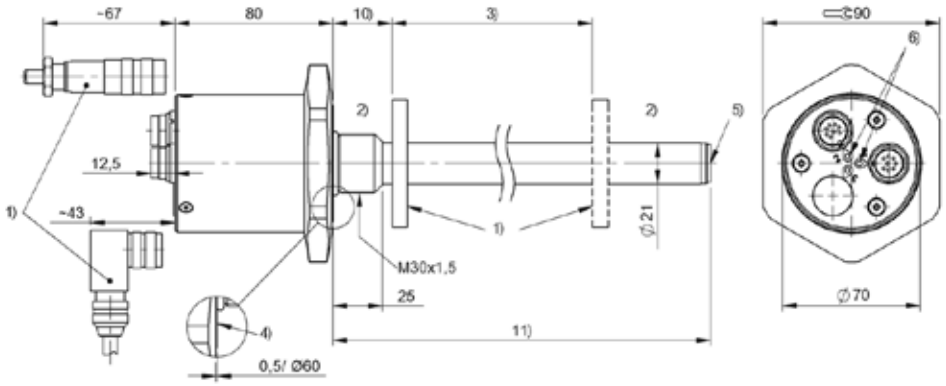
h Redundancy
2 = 2 times redundant
3 = 3 times redundant

l Connection type
S = Connector
KA = Cable (PUR)
FA = Cable (PTFE)

m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins

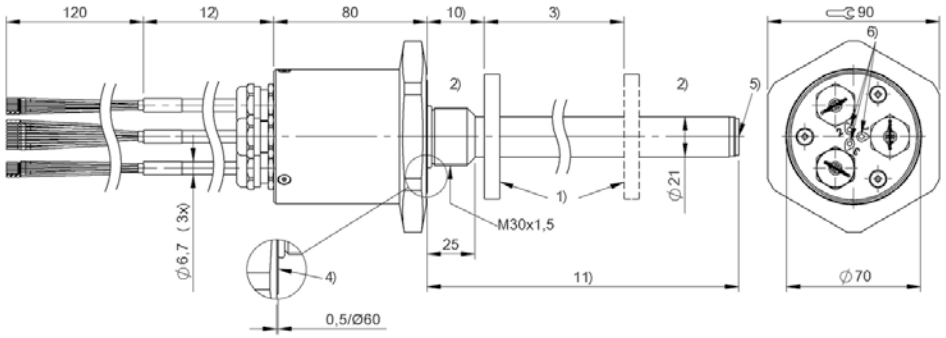
for cable (length in meters):
02, 05, 10

BTL7-P511-Mxxxx-TT2-S32



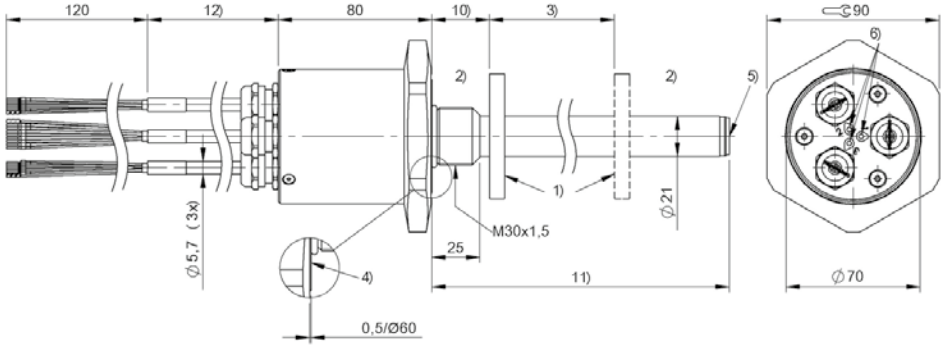
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-P511-Mxxxx-TT3-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length
12) Cable length

BTL7-P511-Mxxxx-TT3-FAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length
12) Cable length

	BTL7 -B-DEX- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...80 °C
Mechanical configuration	Fastening M18 threads
Housing material	—
IP rating	IP68
Approval/Conformity	CE IECEx EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-f-ij-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
10 = 2 outputs, each 1 x rising/falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

f Style
B = Mounting threads M18x1.5, for O-Ring

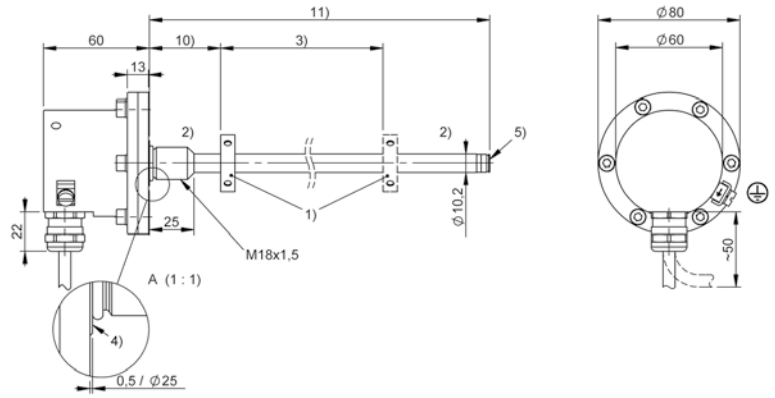
i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

j Variant characteristic
A = float plug
B = short plug

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)

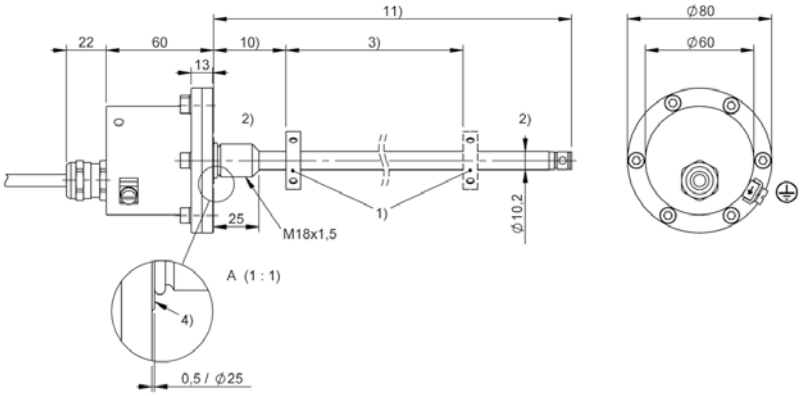
m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20, 30

BTL7-A510-Mxxxx-B-DEXB-Kxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-G510-Mxxxx-B-DEXA-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL7 -B-DEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...80 °C
Mechanical configuration	Fastening M18 threads
Housing material	—
IP rating	IP68
Approval/Conformity	CE IECEx EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-f-ij-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
00 = 1 output, rising
70 = 1 output, falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

f Style
B = Mounting threads M18x1.5, for O-Ring

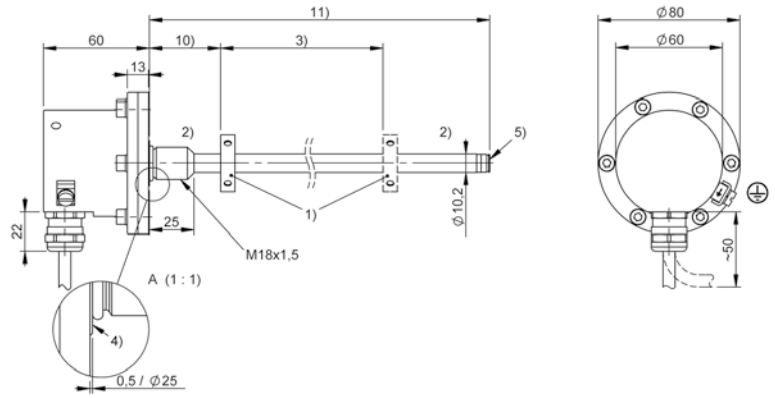
i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

j Variant characteristic
A = float plug
B = short plug

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)

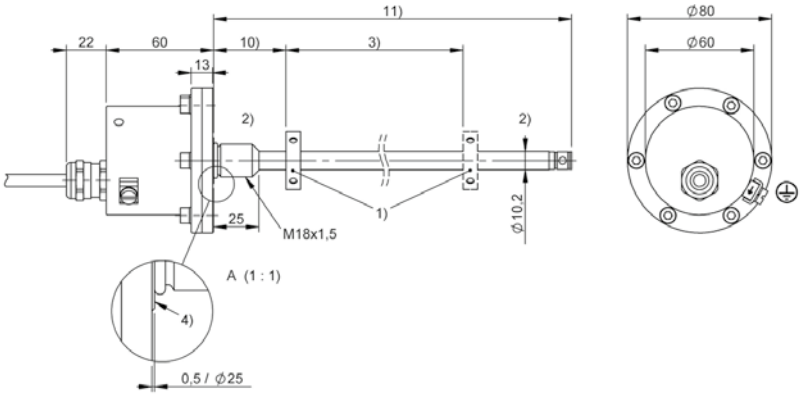
m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20, 50, 100

BTL7-E500-Mxxxx-B-DEXB-K05



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-C570-Mxxxx-B-DEXA-KA05



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL5 -B-DEX- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	25...4000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 0025…0500: ± 100 µm, nnnn > 0500: ± 0.02% FS
Operating voltage Ub	20...26 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening M18 threads
Housing material	—
IP rating	IP67
Approval/Conformity	CE EAC IECEx KC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc

BTL5-ab-Mnnnn-fg-ij-lm

BTL5
Magnetostrictive linear position sensor Generation 5

a interface
P = Digital pulse interface (falling edge stabilized)
M = Digital pulse interface (rising edge stabilized

b Operating voltage
1 = 20 … 28 V

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

f Style
B = Mounting threads M18x1.5, for O-Ring

g Form factor characteristic
- = Rod diameter 10.2 mm

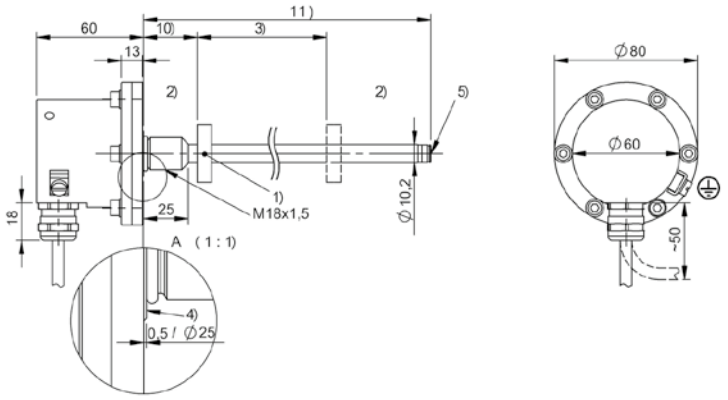
i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

j Variant characteristic
A = float plug
B = short plug

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)

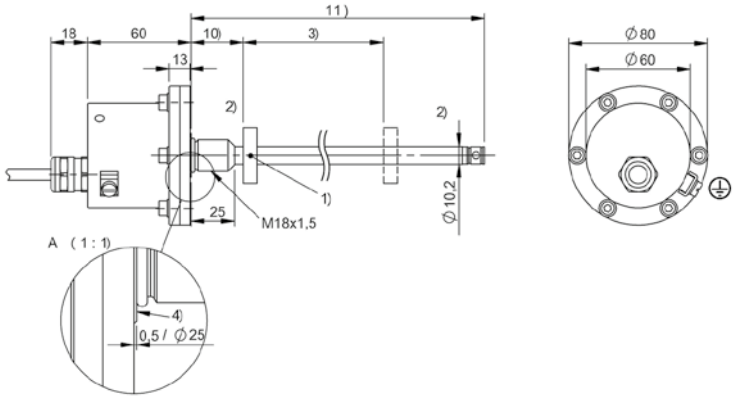
m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20, 30

BTL5-Px-Mxxxx-B-DEXB-Kxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL5-Px-Mxxxx-B-DEXA-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL5 -B-DEX- SERIES - SSI
Interface	SSI
Measuring length	25...4000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 25…4000: ± 30µm d = 4, 5, 6, 8 nnnn = 25…4000: ± 2 LSB
Operating voltage Ub	20...26 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening M18 threads
Housing material	—
IP rating	IP67
Approval/Conformity	CE EAC IECEx KC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc

BTL5-abcde-Mnnnn-fg-ij-lm

BTL5
Magnetostrictive linear position sensor
Generation 5

a interface
S = SSI

b Operating voltage
1 = 20 … 26 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

f Style
B = Mounting threads M18x1.5,
for O-Ring

g Form factor characteristic
- = Rod diameter 10.2 mm

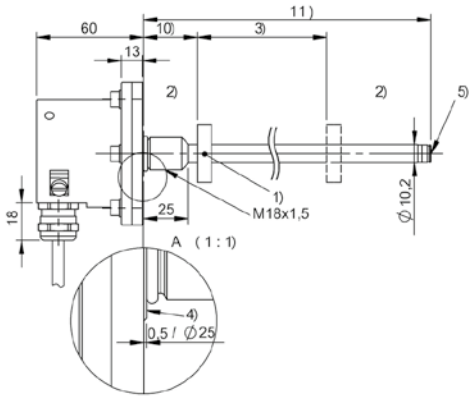
i Variant
DEX = Ignition protection category „d“ /
pressure-proof encapsulation

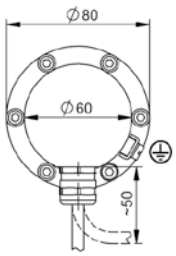
j Variant characteristic
A = float plug
B = short plug

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)

m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20, 30

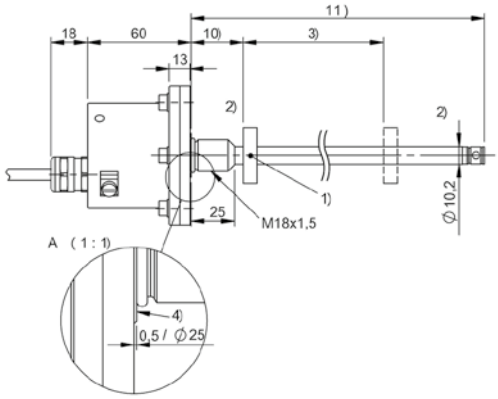
BTL5-Sxxxx-Mxxxx-B-DEXB-Kxx

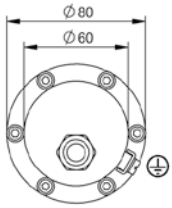




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL5-Sxxxx-Mxxxx-B-DEXA-KAxx





1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL7 -B-DEX- SERIES - PROFIBUS
Interface	Profibus
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 10 µm
Linearity deviation	nnnn = 0050…5500: ± 30 µm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening M18 threads
Housing material	—
IP rating	IP68
Approval/Conformity	CE IECEx WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-fg-ij-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
T = PROFIBUS DP

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
00 = Flexible number of magnets

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

f Style
B = Mounting threads M18x1.5, for O-Ring

g Form factor characteristic
- = Rod diameter 10.2 mm

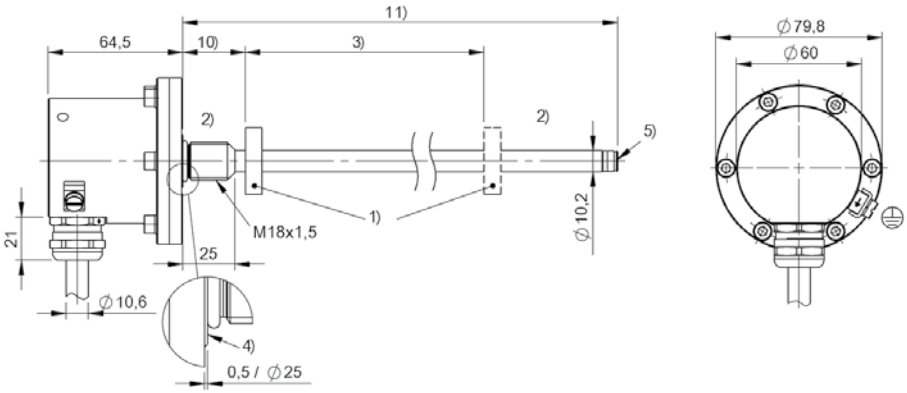
i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

j Variant characteristic
A/D = float plug
B/E = short plug

l Connection type
K = Cable out radial (PUR) / only for variant characteristic A or B
KA = Cable out axial (PUR) / only for variant characteristic A or B
ZA1K = Wiring chamber for attachment cover / only for variant characteristic D or E

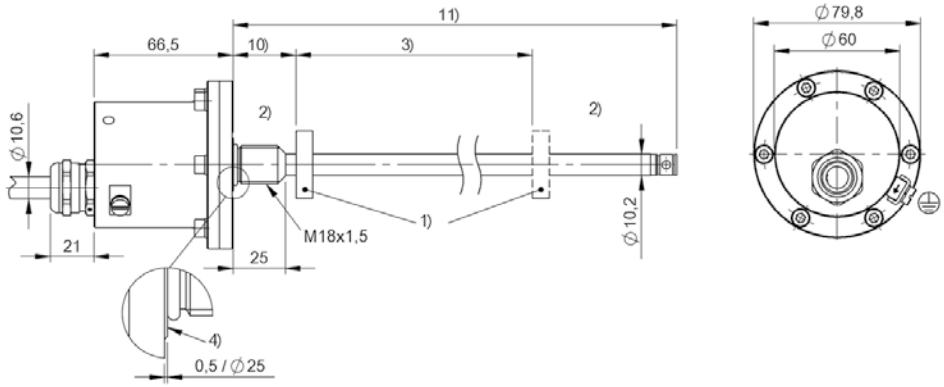
m Connection type characteristic 1
for cable (length in meters):
02, 05, 10, 15, 20, 50

BTL7-T500-Mxxxx-B-DEXB-Kxx



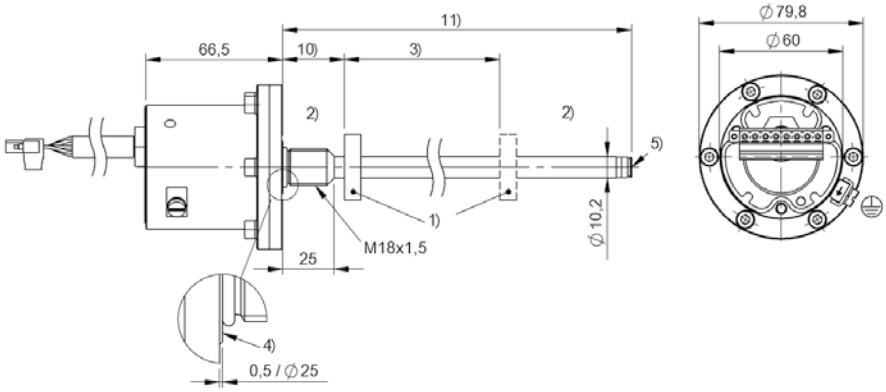
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-T500-Mxxxx-B-DEXA-KAxx



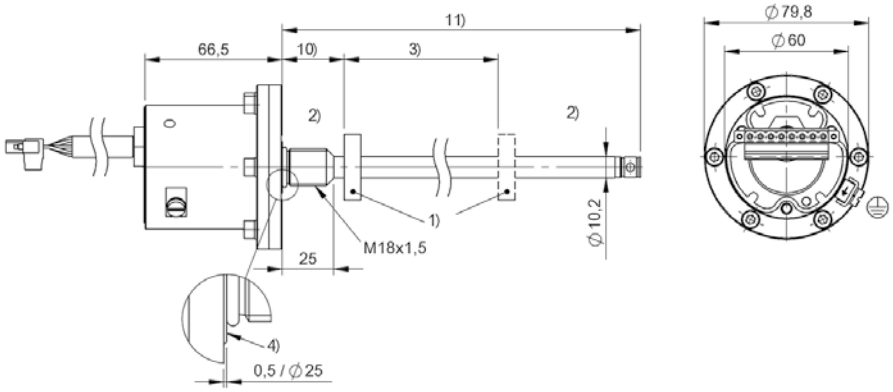
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

BTL7-T500-Mxxxx-B-DEXE-ZA1K



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-T500-Mxxxx-B-DEXD-ZA1K



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL7 -Z-DEX- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...80 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	—
IP rating	IP68
Approval/Conformity	CE IECEx EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-f-ij-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
10 = 2 outputs, each 1 x rising/falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

f Style
Z = Inch threads 3/4“-16UNF, for O-Ring

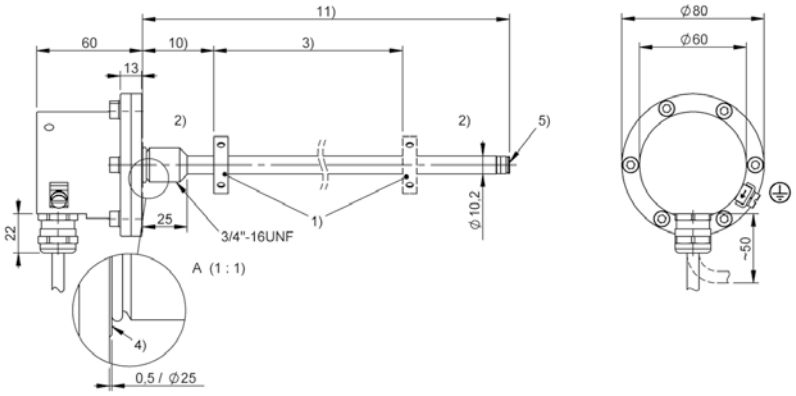
i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

j Variant characteristic
A = float plug
B = short plug

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)

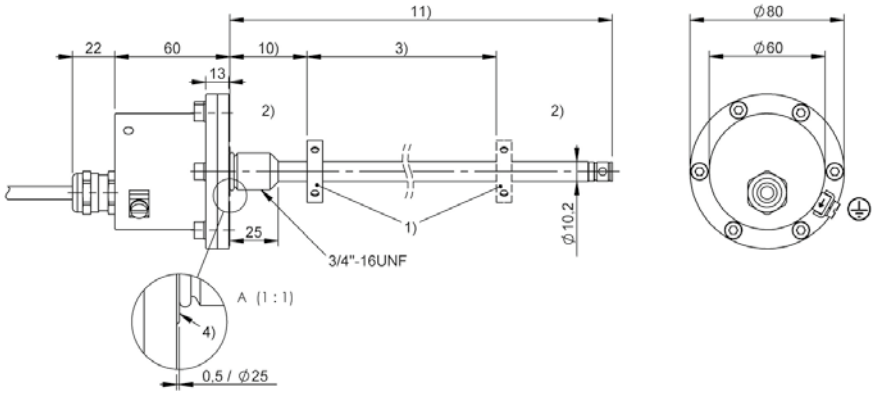
m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20, 30

BTL7-A510-Mxxxx-Z-DEXB-K05



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-G510-Mxxxx-Z-DEXA-KA05



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL7 -Z-DEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...80 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	—
IP rating	IP68
Approval/Conformity	CE IECEx EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-f-ij-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
00 = 1 output, rising
70 = 1 output, falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

f Style
Z = Inch threads 3/4“-16UNF, for O-Ring

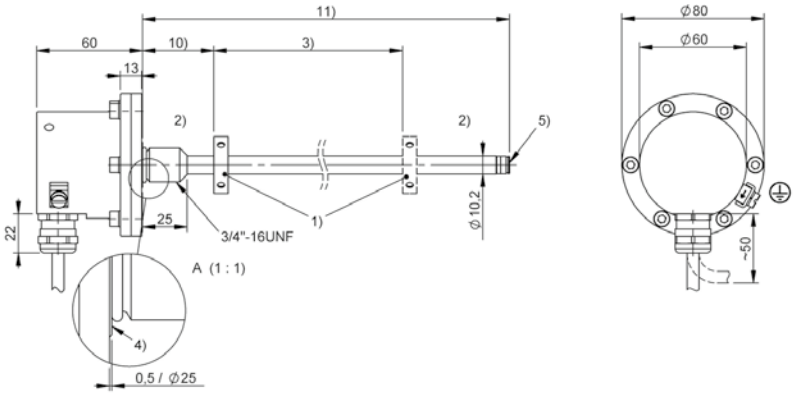
i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

j Variant characteristic
A = float plug
B = short plug

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)

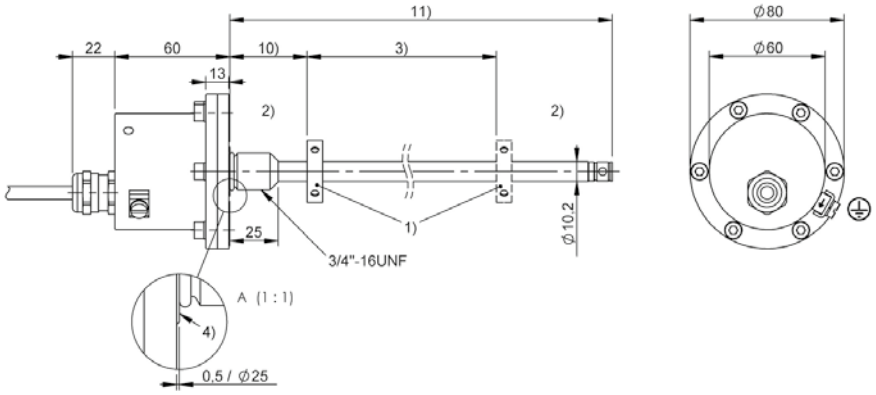
m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20, 50, 100

BTL7-E500-Mxxxx-Z-DEXB-K05



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-C570-Mxxxx-Z-DEXA-KA05



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL5 -Z-DEX- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	25...4000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 0025…0500: ± 100 µm, nnnn > 0500: ± 0.02% FS
Operating voltage Ub	20...26 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	—
IP rating	IP67
Approval/Conformity	CE EAC IECEx KC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc

BTL5-ab-Mnnnn-fg-ij-lm

BTL5
Magnetostrictive linear position sensor Generation 5

a interface
P = Digital pulse interface (falling edge stabilized)
M = Digital pulse interface (rising edge stabilized

b Operating voltage
1 = 20 … 28 V

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

f Style
Z = Inch threads 3/4“-16UNF, for O-Ring

g Form factor characteristic
- = Rod diameter 10.2 mm

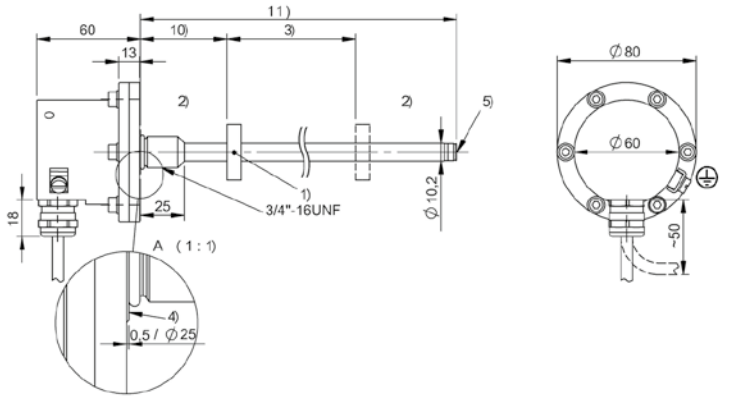
i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

j Variant characteristic
A = float plug
B = short plug

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)

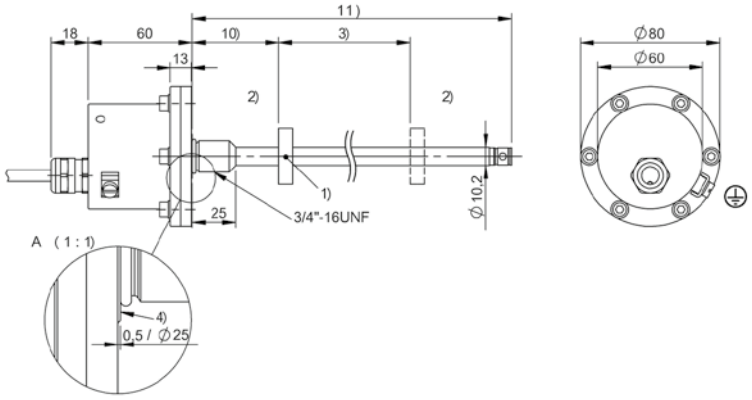
m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20, 30

BTL5-Px-Mxxxx-Z-DEXB-Kxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL5-Px-Mxxxx-Z-DEXA-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL5 -Z-DEX- SERIES - SSI
Interface	SSI
Measuring length	25...4000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 25…4000: ± 30µm d = 4, 5, 6, 8 nnnn = 25…4000: ± 2 LSB
Operating voltage Ub	20...26 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	—
IP rating	IP67
Approval/Conformity	CE EAC IECEx KC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc

BTL5-abcde-Mnnnn-fg-ij-lm

BTL5
Magnetostrictive linear position sensor
Generation 5

a interface
S = SSI

b Operating voltage
1 = 20 … 28 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

f Style
Z = Inch threads 3/4“-16UNF, for O-Ring

g Form factor characteristic
- = Rod diameter 10.2 mm

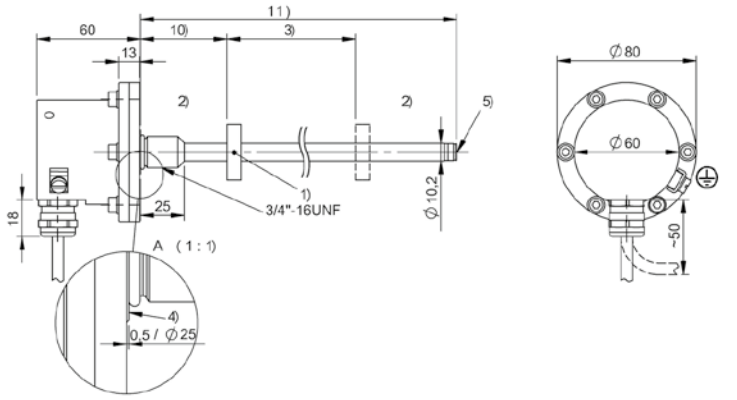
i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

j Variant characteristic
A = float plug
B = short plug

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)

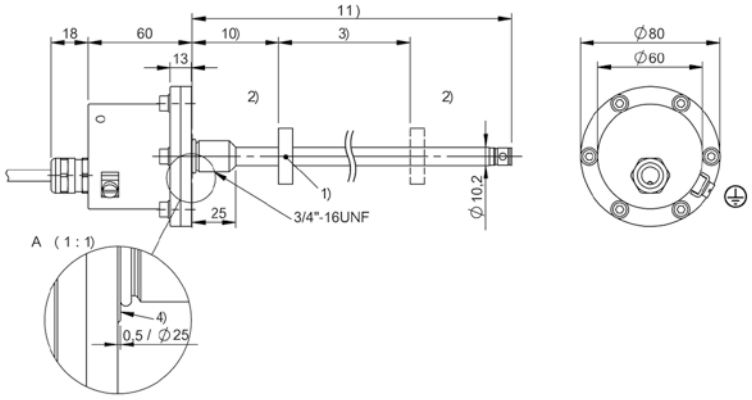
m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20, 30

BTL5-Sxxxx-Mxxxx-Z-DEXB-Kxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL5-Sxxxx-Mxxxx-Z-DEXA-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL7 -Z-DEX- SERIES - PROFIBUS
Interface	Profibus
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 10 µm
Linearity deviation	nnnn = 0050…5500: ± 30 µm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	—
IP rating	IP68
Approval/Conformity	CE IECEx WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-fg-ij-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
T = PROFIBUS DP

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
00 = Flexible number of magnets

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

f Style
Z = Inch threads 3/4“-16UNF, for O-Ring

g Form factor characteristic
- = Rod diameter 10.2 mm

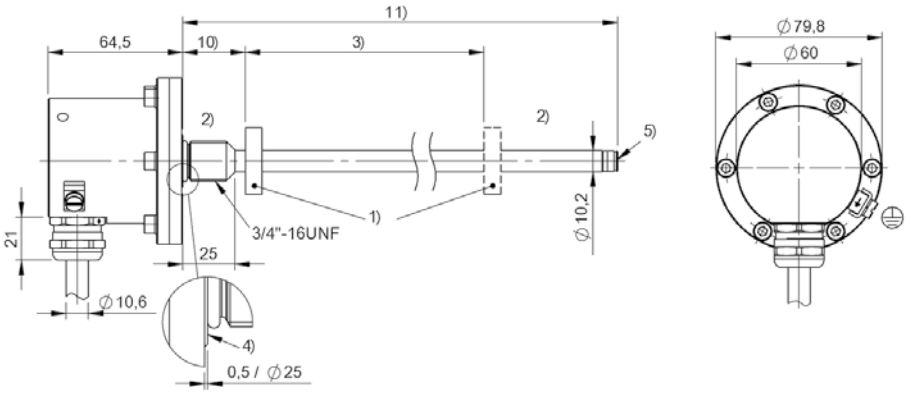
i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

j Variant characteristic
A/D = float plug
B/E = short plug

l Connection type
K = Cable out radial (PUR) / only for variant characteristic A or B
KA = Cable out axial (PUR) / only for variant characteristic A or B
ZA1K = Wiring chamber for attachment cover / only for variant characteristic D or E

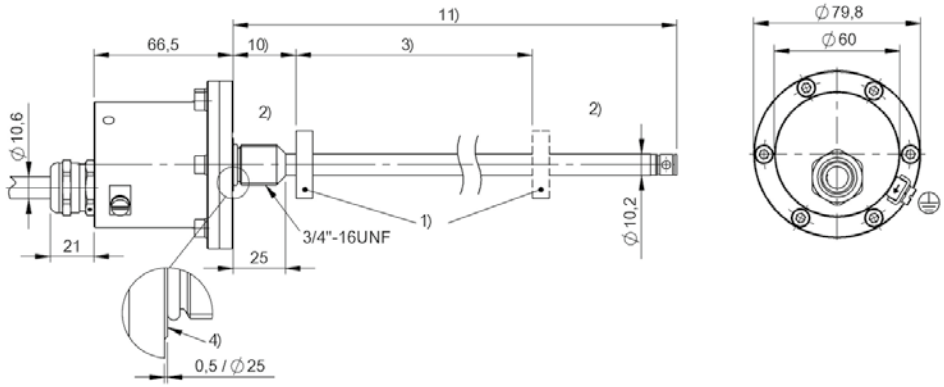
m Connection type characteristic 1
for cable (length in meters):
02, 05, 10, 15, 20, 50

BTL7-T500-Mxxxx-Z-DEXB-Kxx



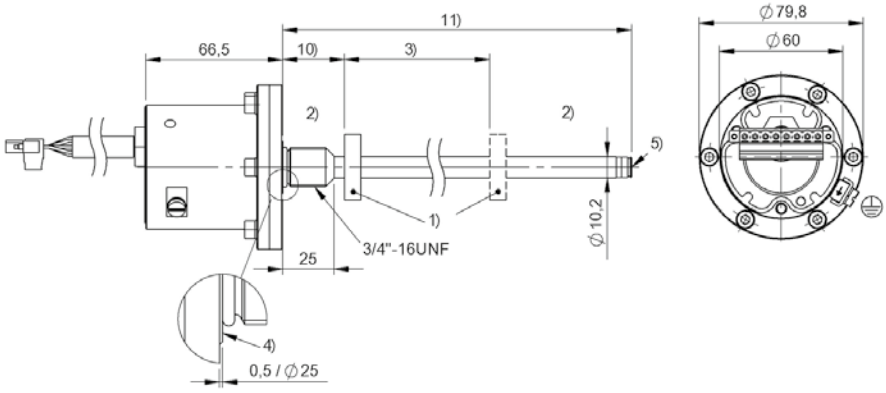
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-T500-Mxxxx-Z-DEXA-KAxx



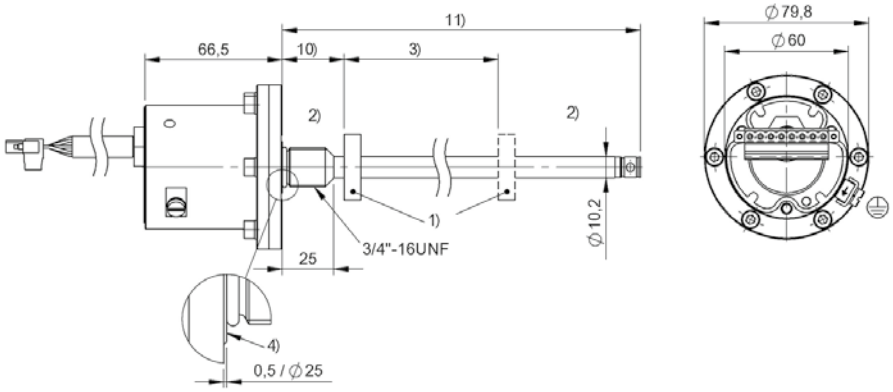
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

BTL7-T500-Mxxxx-Z-DEXE-ZA1K



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-T500-Mxxxx-Z-DEXD-ZA1K



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL7 -J-DEX-A/B- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...80 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	—
IP rating	IP68
Approval/Conformity	CE IECEx EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-f-ij-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
10 = 2 outputs, each 1 x rising/falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

f Style
J = Flange 18h6

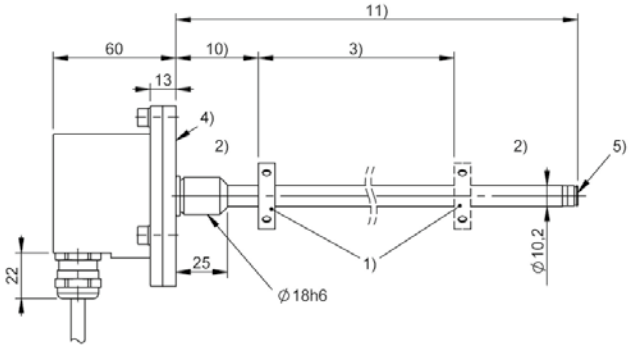
i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

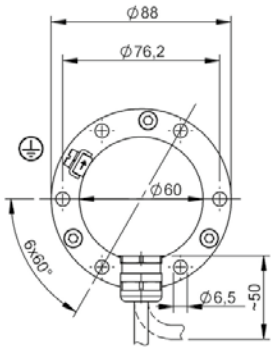
j Variant characteristic
A = float plug
B = short plug

l Connection type
K = Cable out radial (PUR)

m Connection type characteristic 1
for cable (length in meters):
02, 05, 10, 15, 20, 30

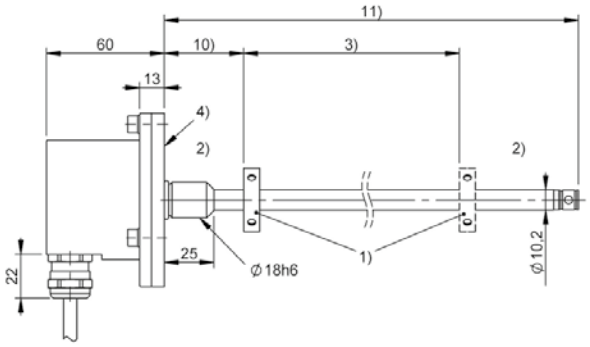
BTL7-A510-Mxxxx-J-DEXB-Kxx

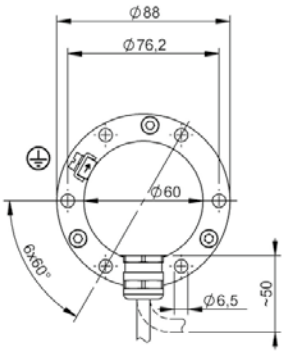




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-G510-Mxxxx-J-DEXA-Kxx





1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL7 -J-DEX-A/B- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...80 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	—
IP rating	IP68
Approval/Conformity	CE IECEx EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-f-ij-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
00 = 1 output, rising
70 = 1 output, falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

f Style
J = Flange 18h6

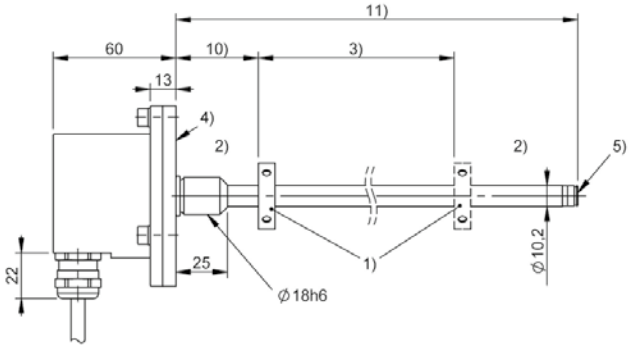
i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

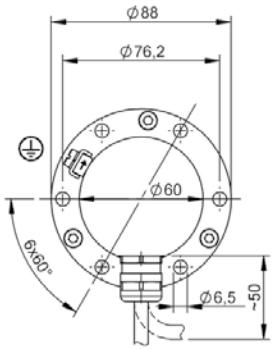
j Variant characteristic
A = float plug
B = short plug

l Connection type
K = Cable out radial (PUR)

m Connection type characteristic 1
for cable (length in meters):
02, 05, 10, 15, 20, 50, 100

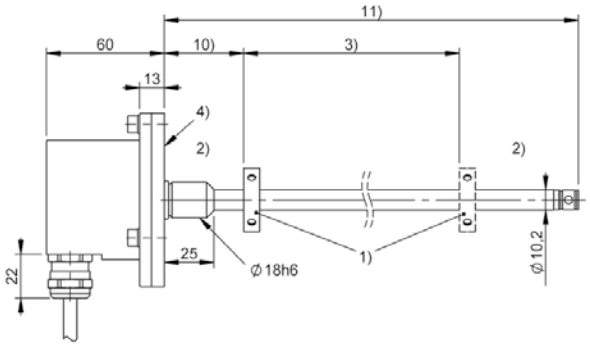
BTL7-E500-Mxxxx-J-DEXB-Kxx

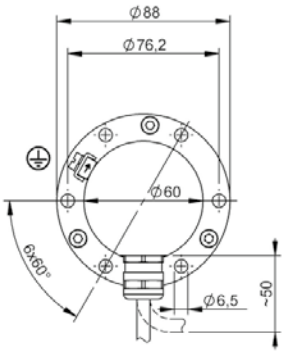




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-C570-Mxxxx-J-DEXA-Kxx





1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL5 -J-DEX-A/B- SERIES - SSI
Interface	SSI
Measuring length	25...4000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 25…4000: ± 30µm d = 4, 5, 6, 8 nnnn = 25…4000: ± 2 LSB
Operating voltage Ub	20...26 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	—
IP rating	IP67
Approval/Conformity	CE EAC IECEx KC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc

BTL5-abcde-Mnnnn-fg-ij-lm

BTL5
Magnetostrictive linear position sensor Generation 5

a interface
S = SSI

b Operating voltage
1 = 20 … 28 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

f Style
J = Flange 18h6

g Form factor characteristic
- = Rod diameter 10.2 mm

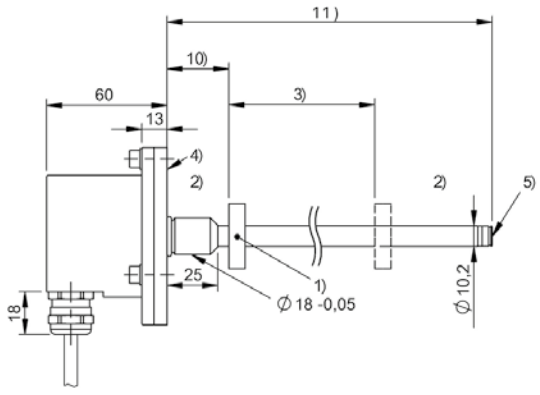
i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

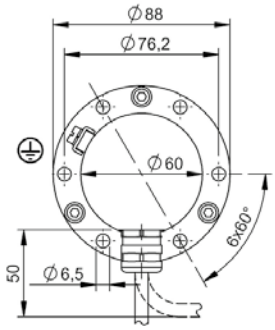
j Variant characteristic
A = float plug
B = short plug

l Connection type
K = Cable out radial (PUR)

m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20, 30

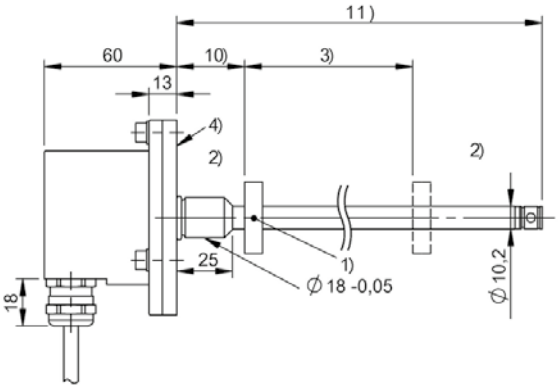
BTL5-Sxxxx-Mxxxx-J-DEXB-Kxx

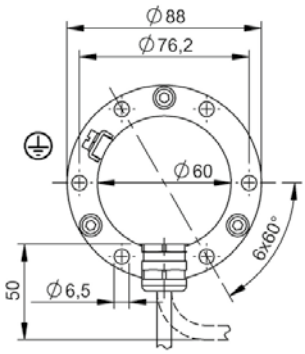




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL5-Sxxxx-Mxxxx-J-DEXA-Kxx





1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL5 -J-DEX-A/B- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	25...4000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 0025…0500: ± 100 µm, nnnn > 0500: ± 0.02% FS
Operating voltage Ub	20...26 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	—
IP rating	IP67
Approval/Conformity	CE EAC IECEx KC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc

BTL5-ab-Mnnnn-fg-ij-lm

BTL5
Magnetostrictive linear position sensor Generation 5

a interface
P = Digital pulse interface (falling edge stabilized)
M = Digital pulse interface (rising edge stabilized

b Operating voltage
1 = 20 … 28 V

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0050…M4000)

f Style
J = Flange 18h6

g Form factor characteristic
- = Rod diameter 10.2 mm

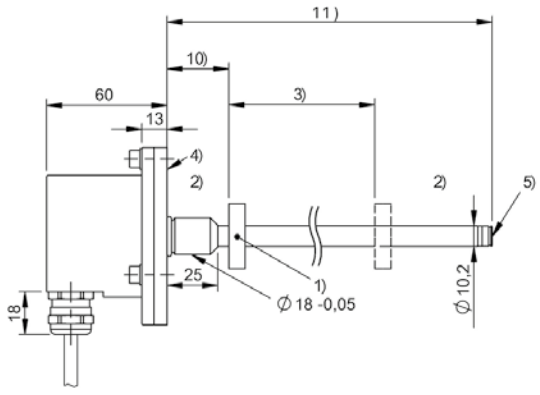
i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

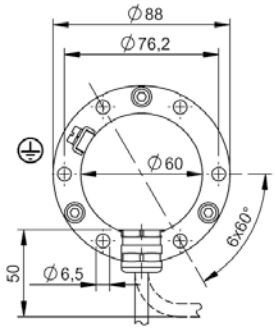
j Variant characteristic
A = float plug
B = short plug

l Connection type
K = Cable out radial (PUR)

m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20, 30

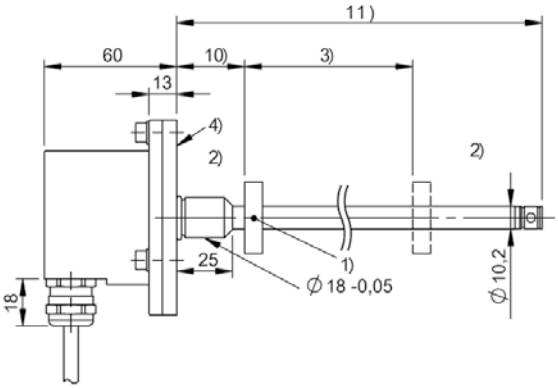
BTL5-Px-Mxxxx-J-DEXB-Kxx

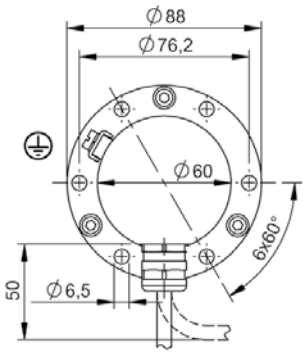




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL5-Px-Mxxxx-J-DEXA-Kxx





1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL7 -J-DEX-A/B/D/E- SERIES - PROFIBUS
Interface	Profibus
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 10 µm
Linearity deviation	nnnn = 0050…5500: ± 30 µm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	—
IP rating	IP68
Approval/Conformity	CE IECEx WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-fg-ij-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
T = PROFIBUS DP

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
00 = Flexible number of magnets

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

f Style
J = Flange 18h6

g Form factor characteristic
- = Rod diameter 10.2 mm

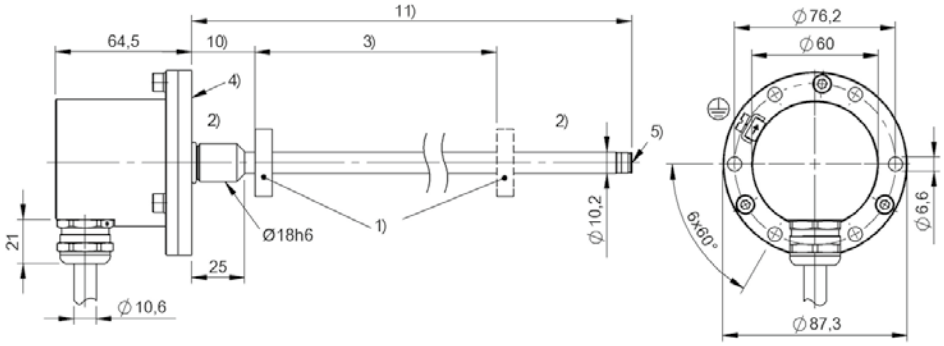
i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

j Variant characteristic
A/D = float plug
B/E = short plug

l Connection type
K = Cable out radial (PUR) / only for variant characteristic A or B
ZA1K = Wiring chamber for attachment cover / only for variant characteristic D or E

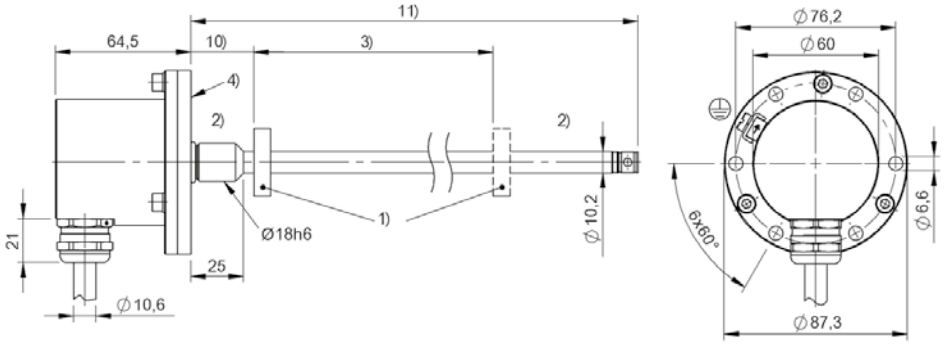
m Connection type characteristic 1
for cable (length in meters):
02, 05, 10, 15, 20, 50

BTL7-T500-Mxxxx-J-DEXB-Kxx



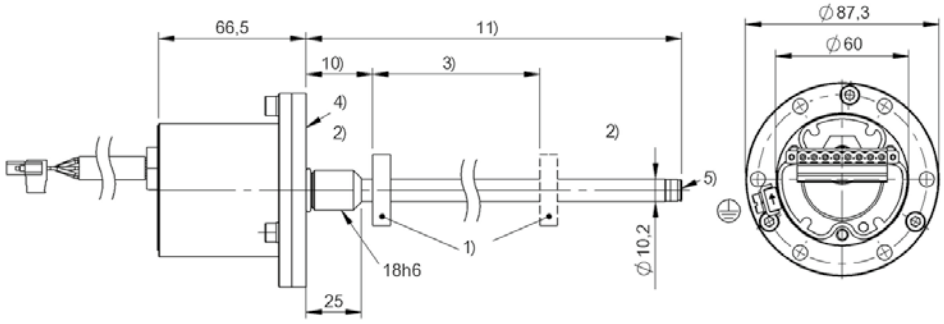
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-T500-Mxxxx-J-DEXA-Kxx



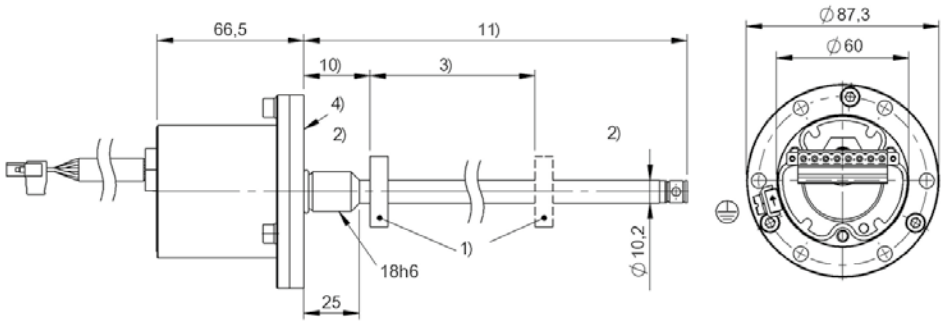
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

BTL7-T500-Mxxxx-J-DEXE-ZA1K



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-T500-Mxxxx-J-DEXD-ZA1K



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL7 -J-DEXC- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...80 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	—
IP rating	IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 1D (EPL Da), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc, IECEx: EPL Da, IECEx: EPL Db, IECEx: EPL Dc, NEC 500: Class I, Division 1, NEC 500: Class I, Division 2, NEC 500: Class II, Division 1, NEC 500: Class II, Division 2, NEC 500/505: Class III, NEC 505: Class I, Zone 1

BTL7-abcd-Mnnnn-f-ij-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
01 = 2 outputs, each 1 x rising/falling settable/programmable
10 = 2 outputs, each 1 x rising/falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

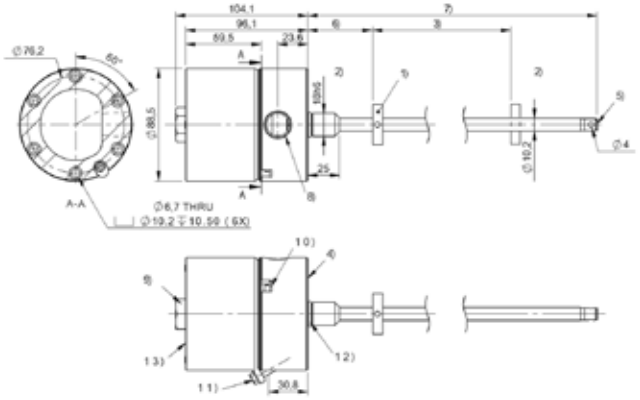
f Style
J = Flange 18h6

i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

j Variant characteristic
C = float plug

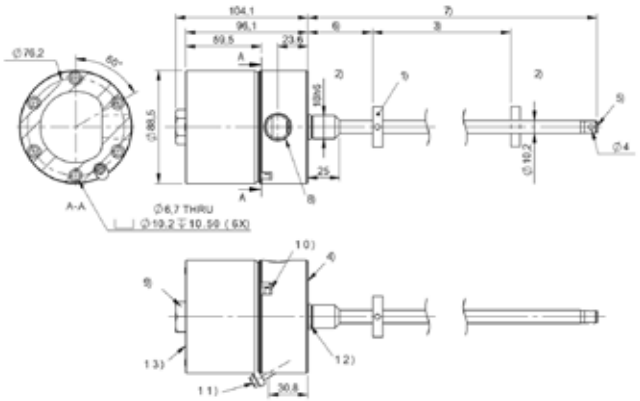
l + m connection type + connection type characteristic 1
TA12 = Clamp with 1/2“-14 NPT (cable entry)

BTL7-A501-Mxxxx-J-DEXC-TA12



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) Null point
7) Installation length
8) 1/2" - 14 NPT (cable entry)
9) 15/16" or 24 mm wrench
10) External Housing GND
11) Cover fastening screw
12) O-ring
13) Part label, metal

BTL7-G510-Mxxxx-J-DEXC-TA12



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) Null point
7) Installation length
8) 1/2" - 14 NPT (cable entry)
9) 15/16" or 24 mm wrench
10) External Housing GND
11) Cover fastening screw
12) O-ring
13) Part label, metal

	BTL7 -J-DEXC- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...80 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	—
IP rating	IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 1D (EPL Da), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc, IECEx: EPL Da, IECEx: EPL Db, IECEx: EPL Dc, NEC 500: Class I, Division 1, NEC 500: Class I, Division 2, NEC 500: Class II, Division 1, NEC 500: Class II, Division 2, NEC 500/505: Class III, NEC 505: Class I, Zone 1

BTL7-abcd-Mnnnn-f-ij-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
01 = 2 outputs, each 1 x rising/falling settable/programmable
00 = 1 output, rising
70 = 1 output, falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

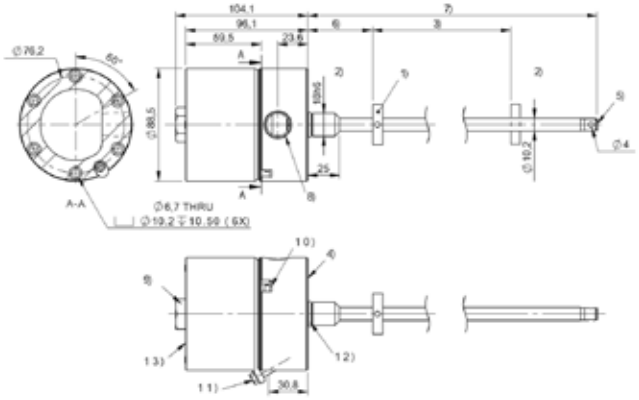
f Style
J = Flange 18h6

i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

j Variant characteristic
C = float plug

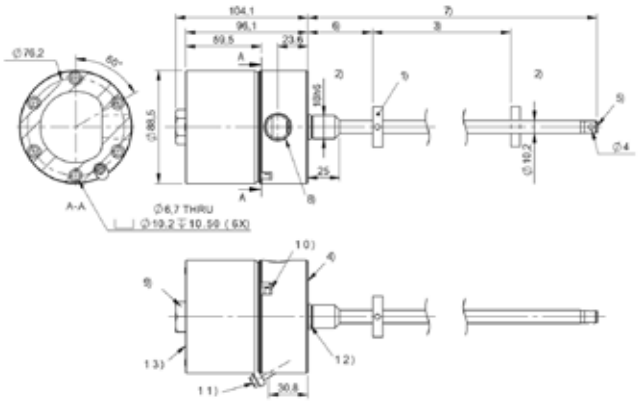
l + m connection type + connection type characteristic 1
TA12 = Clamp with 1/2“-14 NPT (cable entry)

BTL7-E501-Mxxxx-J-DEXC-TA12



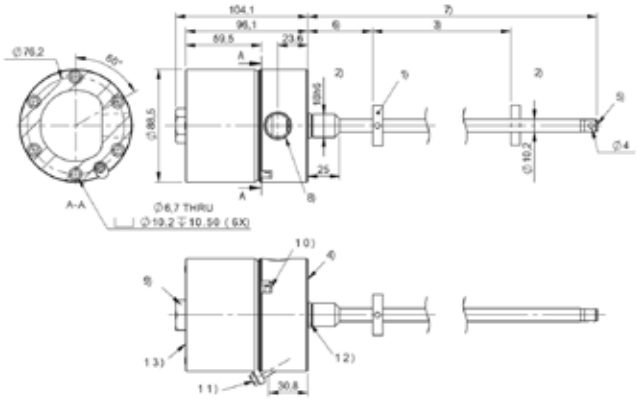
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) Null point
7) Installation length
8) 1/2" - 14 NPT (cable entry)
9) 15/16" or 24 mm wrench
10) External Housing GND
11) Cover fastening screw
12) O-ring
13) Part label, metal

BTL7-E500-Mxxxx-J-DEXC-TA12



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) Null point
7) Installation length
8) 1/2" - 14 NPT (cable entry)
9) 15/16" or 24 mm wrench
10) External Housing GND
11) Cover fastening screw
12) O-ring
13) Part label, metal

BTL7-E570-Mxxxx-J-DEXC-TA12



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) Null point
7) Installation length
8) 1/2" - 14 NPT (cable entry)
9) 15/16" or 24 mm wrench
10) External Housing GND
11) Cover fastening screw
12) O-ring
13) Part label, metal

	BTL7 -J-DEXC- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 0025…5500: ± 50 µm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...80 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	—
IP rating	IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 1D (EPL Da), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc, IECEx: EPL Da, IECEx: EPL Db, IECEx: EPL Dc, NEC 500: Class I, Division 1, NEC 500: Class I, Division 2, NEC 500: Class II, Division 1, NEC 500: Class II, Division 2, NEC 500/505: Class III, NEC 505: Class I, Zone 1

BTL7-abcd-Mnnnn-f-ij-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
P = Digital pulse interface

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
1 = Digital start/stop interface

d Interface characteristic 2
1 = DPI/IP communication interface

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

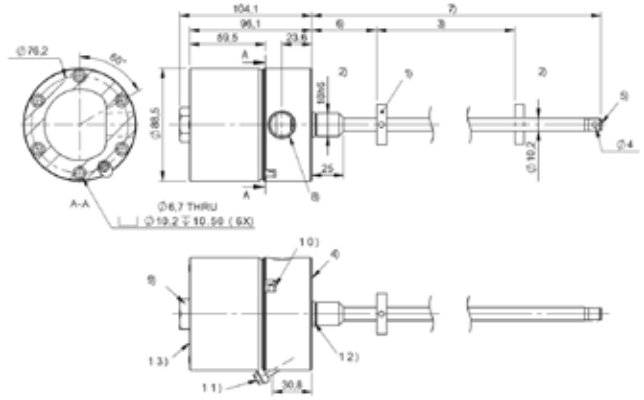
f Style
J = Flange 18h6

i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

j Variant characteristic
C = float plug

l + m connection type + connection type characteristic 1
TA12 = Clamp with 1/2“-14 NPT (cable entry)

BTL7-P511-Mxxxx-J-DEXC-TA12



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) Null point
7) Installation length
8) 1/2" - 14 NPT (cable entry)
9) 15/16" or 24 mm wrench
10) External Housing GND
11) Cover fastening screw
12) O-ring
13) Part label, metal

	BTL7 -J-DEXC- SERIES - SSI
Interface	SSI
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7: nnnn = 50…5500: ± 30µm d = 4, 5, 6, 8 nnnn = 50…5500: ± 2 LSB nnnn > 5500: ± 0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...80 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	—
IP rating	IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 1D (EPL Da), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc, IECEx: EPL Da, IECEx: EPL Db, IECEx: EPL Dc, NEC 500: Class I, Division 1, NEC 500: Class I, Division 2, NEC 500: Class II, Division 1, NEC 500: Class II, Division 2, NEC 500/505: Class III, NEC 505: Class I, Zone 1

BTL7-abcde-Mnnnn-f-ij-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
S = SSI

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling
A = 26 bits, binary, rising
B = 26 bits, gray, rising
C = 26 bits, binary, falling
D = 26 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

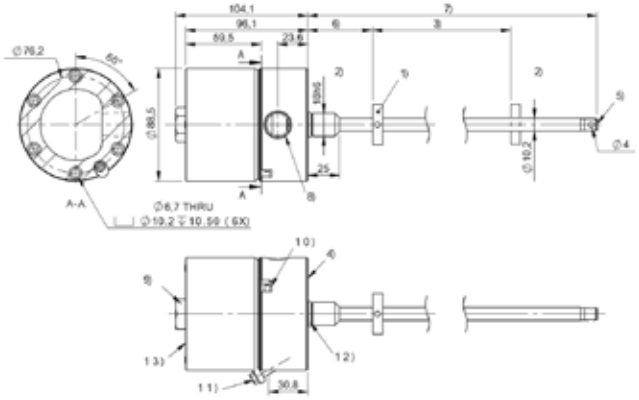
f Style
J = Flange 18h6

i Variant
DEX = Ignition protection category „d“ / pressure-proof encapsulation

j Variant characteristic
C = float plug

l + m connection type + connection type characteristic 1
TA12 = Clamp with 1/2“-14 NPT (cable entry)

BTL7-S5xxx-Mxxxx-J-DEXC-TA12



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) Null point
7) Installation length
8) 1/2" - 14 NPT (cable entry)
9) 15/16" or 24 mm wrench
10) External Housing GND
11) Cover fastening screw
12) O-ring
13) Part label, metal

	BTL7 -B-NEX- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...5500 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-fg-i-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
01 = 2 outputs, each 1 x rising/falling settable/programmable
10 = 2 outputs, each 1 x rising/falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M5500: for rod diameter 10.2 mm)

f Style
A = Mounting threads M18x1.5, for flat seal
B = Mounting threads M18x1.5, for O-Ring

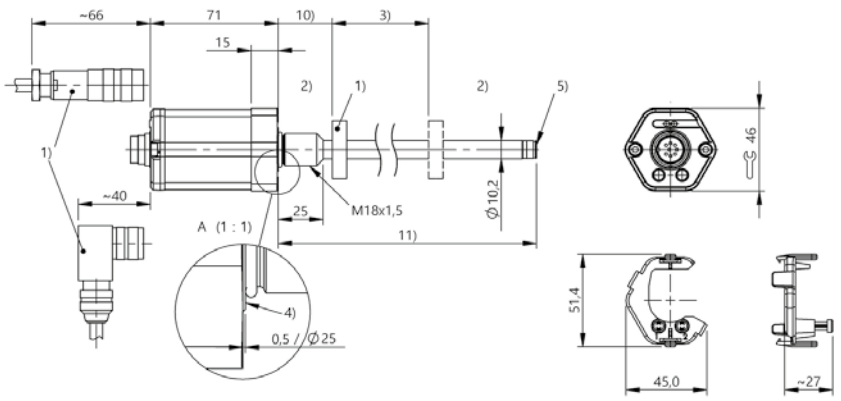
g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

i Variant
NEX = Ignition class „nA“ and „tb“

l Connection type
S = Connector
KA = Cable (PUR)

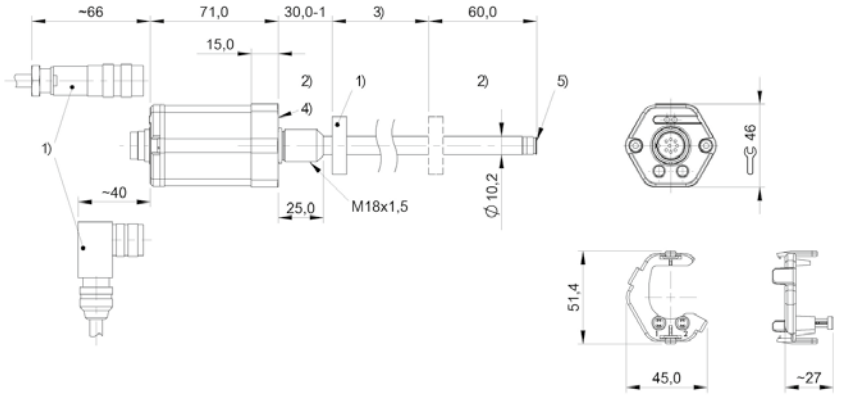
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30

BTL7-A501-Mxxxx-B-NEX-S32



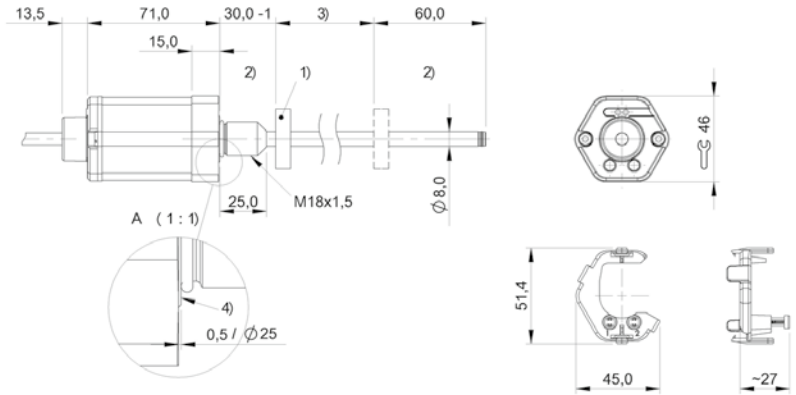
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-G510-Mxxxx-A-NEX-S32



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-A510-Mxxxx-B8-NEX-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL7 -B-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...5500 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-fg-i-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
01 = 2 outputs, each 1 x rising/falling settable/programmable
00 = 1 output, rising
70 = 1 output, falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M5500: for rod diameter 10.2 mm)

f Style
A = Mounting threads M18x1.5, for flat seal
B = Mounting threads M18x1.5, for O-Ring

g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

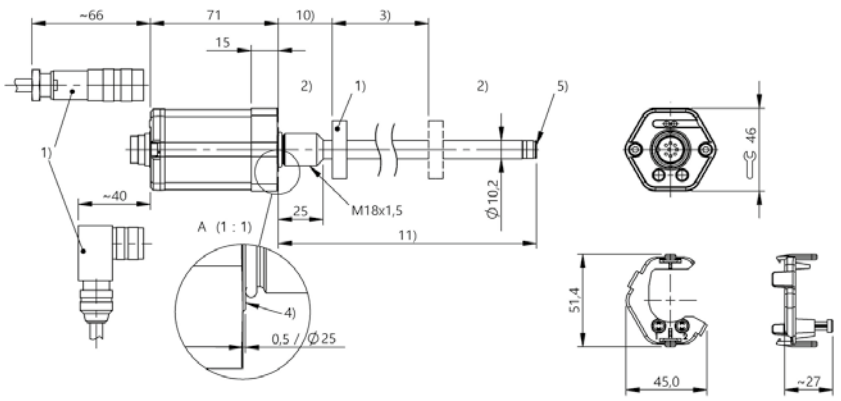
i Variant
NEX = Ignition class „nA“ and „tb“

l Connection type
S = Connector
KA = Cable (PUR)

m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins

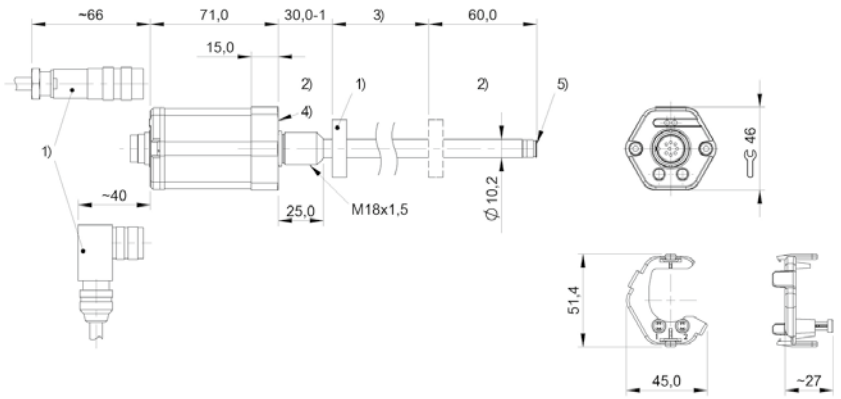
for cable (length in meters):
02, 05, 10, 15, 20, 50, 100

BTL7-E501-Mxxxx-B-NEX-S32



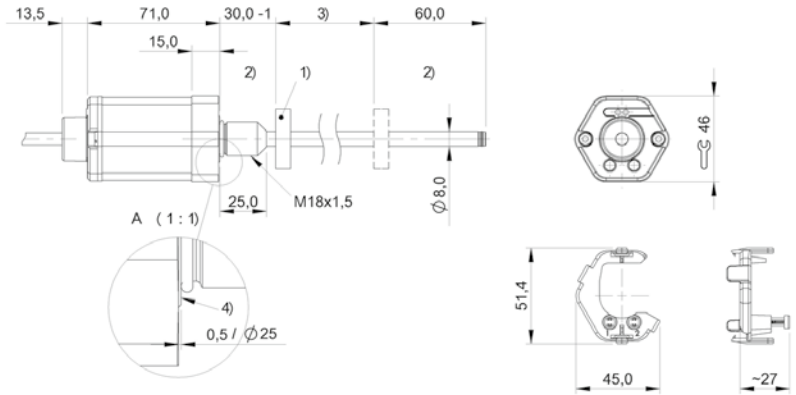
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-C500-Mxxxx-A-NEX-S32



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-E570-Mxxxx-B8-NEX-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL7 -B-NEX- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	25...5500 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	± 50 µm
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-fg-i-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
P = Digital pulse interface

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
1 = Digital start/stop interface

d Interface characteristic 2
1 = DPI/IP communication interface

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M5500: for rod diameter 10.2 mm)

f Style
A = Mounting threads M18x1.5, for flat seal
B = Mounting threads M18x1.5, for O-Ring

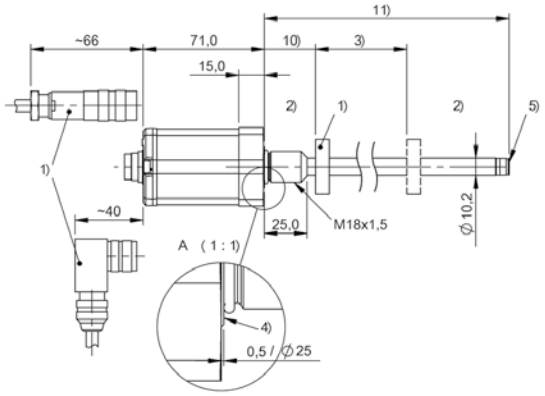
g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

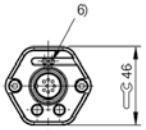
i Variant
NEX = Ignition class „nA“ and „tb“

l Connection type
S = Connector
KA = Cable (PUR)

m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 50, 100

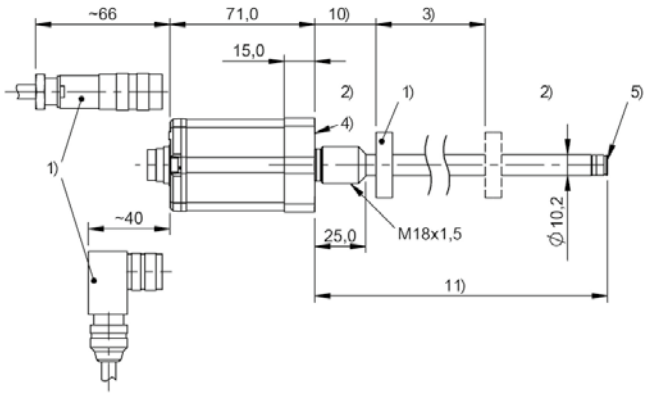
BTL7-P511-Mxxxx-B-NEX-S32

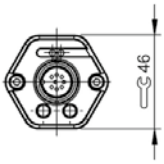




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

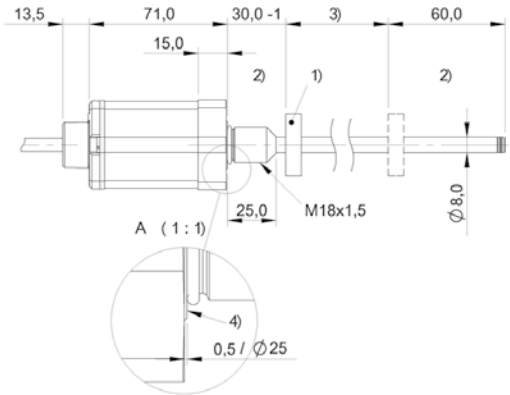
BTL7-P511-Mxxxx-A-NEX-S32

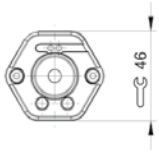




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-P511-Mxxxx-B8-NEX-KAxx





1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL7 -B-NEX- SERIES - SSI
Interface	SSI
Measuring length	25...5500 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7: ± 30µm, d = 4, 5, 6, 8: ± 2 LSB
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcde-Mnnnn-fg-i-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
S = SSI

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling
A = 26 bits, binary, rising
B = 26 bits, gray, rising
C = 26 bits, binary, falling
D = 26 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M5500: for rod diameter 10.2 mm)

f Style
A = Mounting threads M18x1.5, for flat seal
B = Mounting threads M18x1.5, for O-Ring

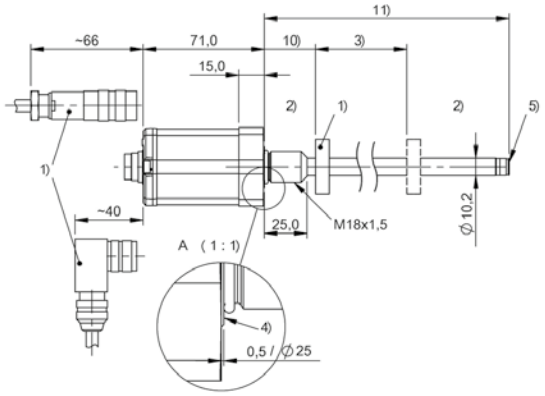
g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

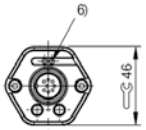
i Variant
NEX = Ignition class „nA“ and „tb“

l Connection type
S = Connector
KA = Cable (PUR)

m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 50, 100

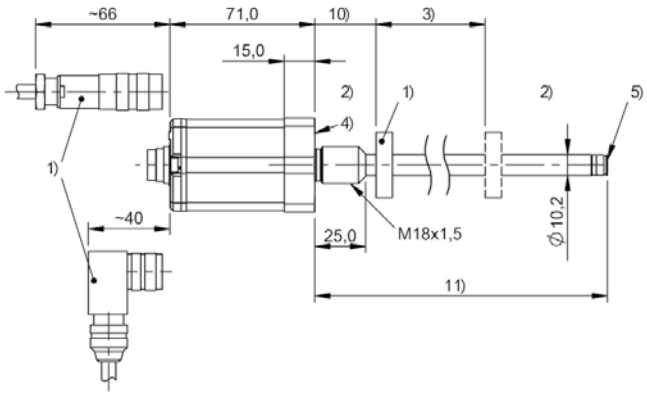
BTL7-S510x-Mxxxx-B-NEX-S32

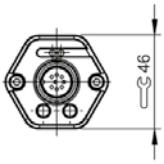




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

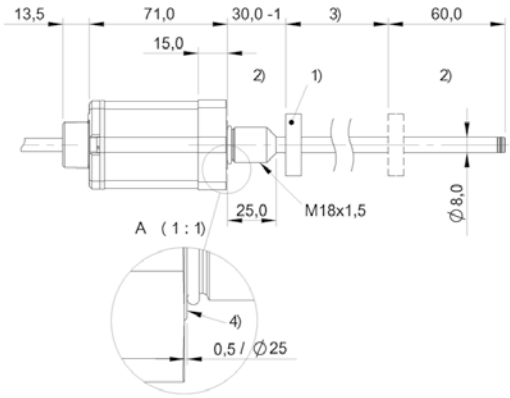
BTL7-S5xxx-Mxxxx-A-NEX-S32

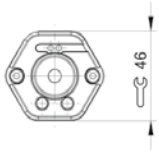




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-S5xxx-Mxxxx-B8-NEX-KAxx





1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL7 -Z-NEX- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...5500 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-fg-i-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
01 = 2 outputs, each 1 x rising/falling settable/programmable
10 = 2 outputs, 1x each rising/falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M5500: for rod diameter 10.2 mm)

f Style
Y = Inch threads 3/4“-16UNF, for flat seal
Z = Inch threads 3/4“-16UNF, f or O-Ring

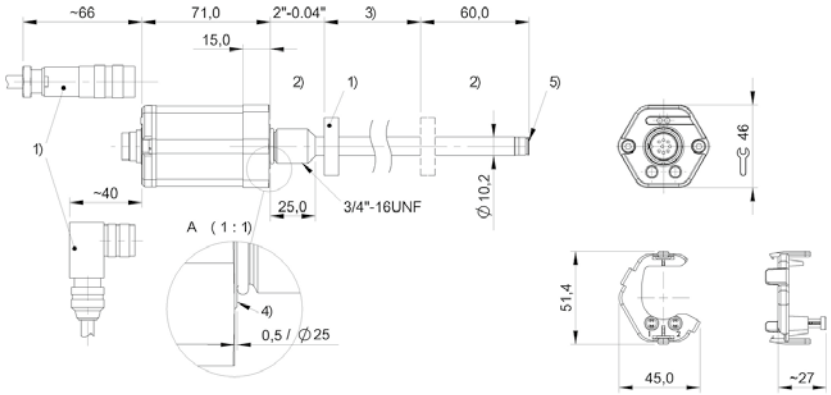
g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

i Variant
NEX = Ignition class „nA“ and „tb“

l Connection type
S = Connector
KA = Cable (PUR)

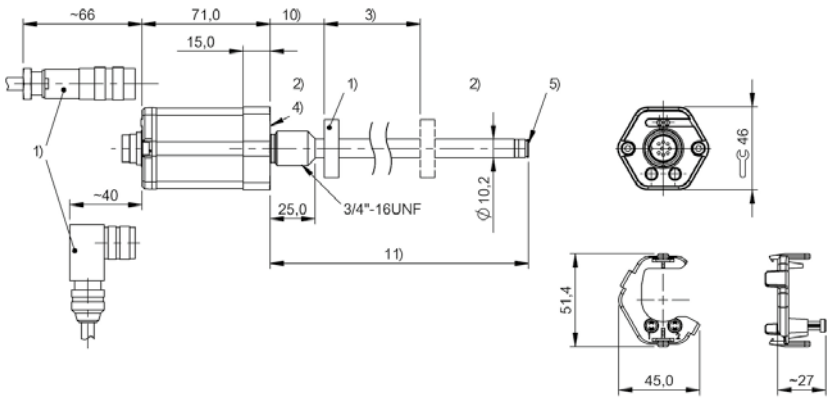
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30

BTL7-A501-Mxxxx-Z-NEX-S32



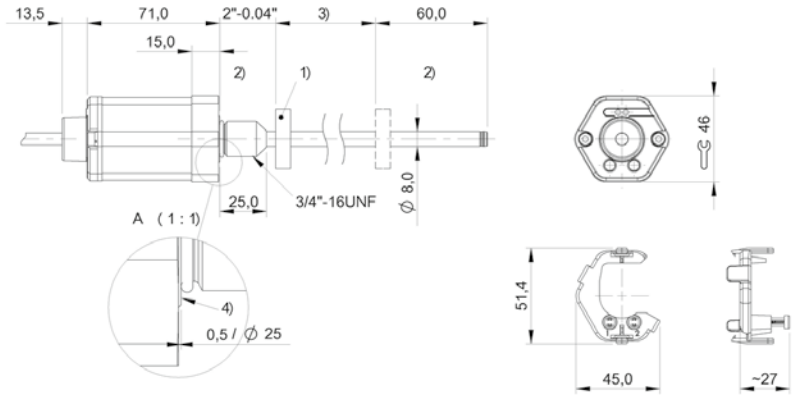
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-G510-Mxxxx-Y-NEX-S32



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-A510-Mxxxx-Z8-NEX-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL7 -Z-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...5500 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-fg-i-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
01 = 2 outputs, 1x each rising/falling settable/programmable
00 = 1 output, rising
70 = 1 output, falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M5500: for rod diameter 10.2 mm)

f Style
Y = Inch threads 3/4“-16UNF, for flat seal
Z = Inch threads 3/4“-16UNF, for O-Ring

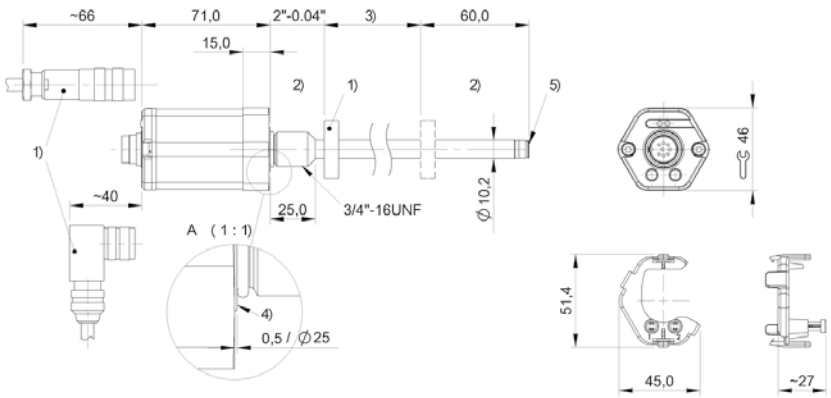
g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

i Variant
NEX = Ignition class „nA“ and „tb“

l Connection type
S = Connector
KA = Cable (PUR)

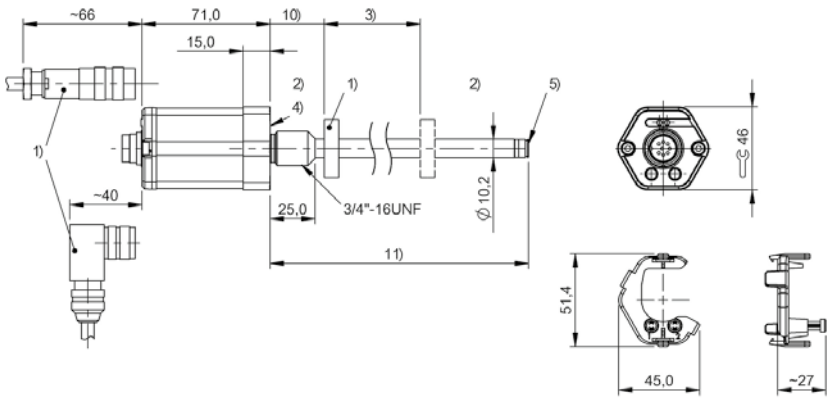
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 50, 100

BTL7-E501-Mxxxx-Z-NEX-S32



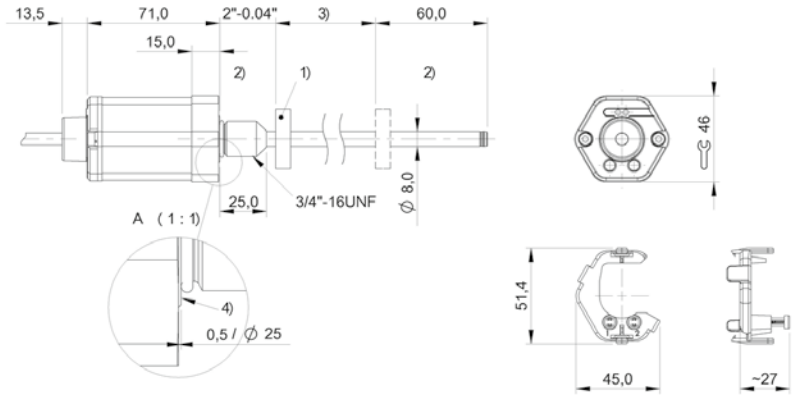
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-C500-Mxxxx-Y-NEX-S32



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-E570-Mxxxx-Z8-NEX-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL7 -Z-NEX- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	25...5500 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	± 50 µm
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-fg-i-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
P = Digital pulse interface

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
1 = Digital start/stop interface

d Interface characteristic 2
1 = DPI/IP communication interface

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M5500: for rod diameter 10.2 mm)

f Style
Y = Inch threads 3/4“-16UNF, for flat seal
Z = Inch threads 3/4“-16UNF, for O-Ring

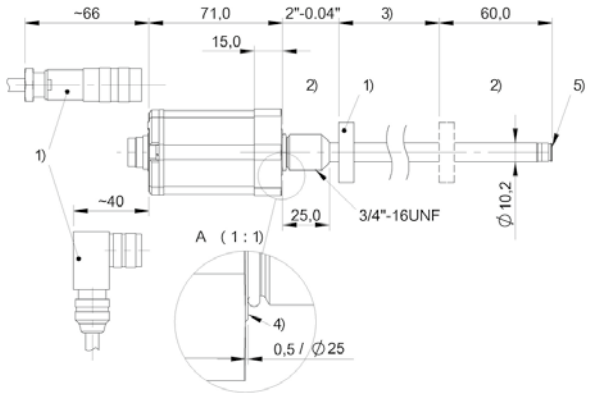
g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

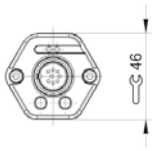
i Variant
NEX = Ignition class „nA“ and „tb“

l Connection type
S = Connector
KA = Cable (PUR)

m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 50, 100

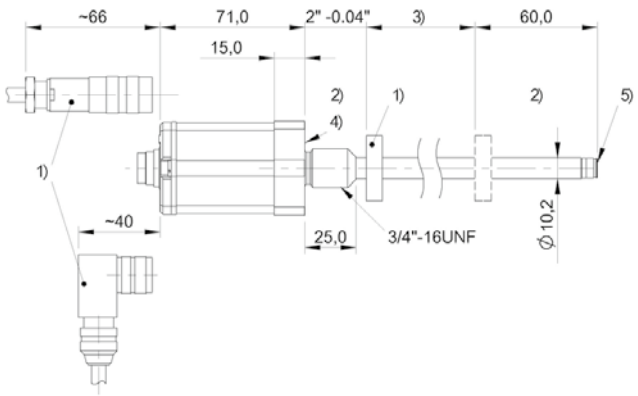
BTL7-P511-Mxxxx-Z-NEX-S32

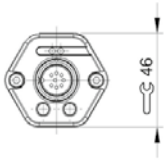




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

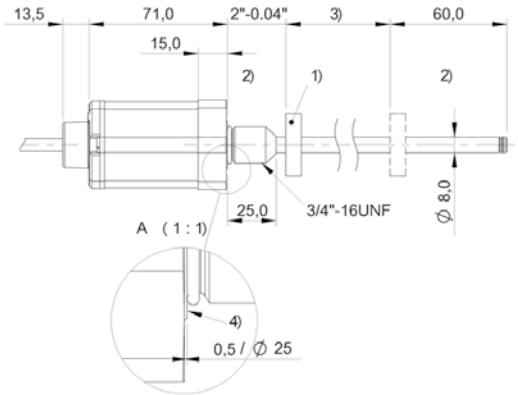
BTL7-P511-Mxxxx-Y-NEX-S32

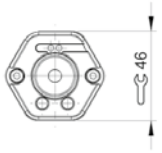




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-P511-Mxxxx-Z8-NEX-KAxx





1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL7 -Z-NEX- SERIES - SSI
Interface	SSI
Measuring length	25...5500 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7: ± 30µm, d = 4, 5, 6, 8: ± 2 LSB
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcde-Mnnnn-fg-i-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
S = SSI

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling
A = 26 bits, binary, rising
B = 26 bits, gray, rising
C = 26 bits, binary, falling
D = 26 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M5500: for rod diameter 10.2 mm)

f Style
Y = Inch threads 3/4“-16UNF, for flat seal
Z = Inch threads 3/4“-16UNF, for O-Ring

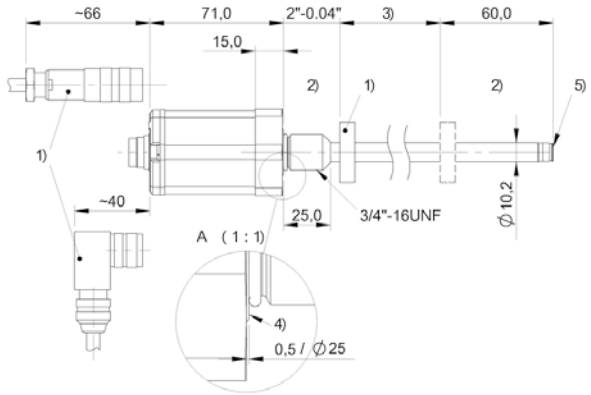
g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

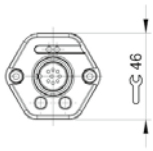
i Variant
NEX = Ignition class „nA“ and „tb“

l Connection type
S = Connector
KA = Cable (PUR)

m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 50, 100

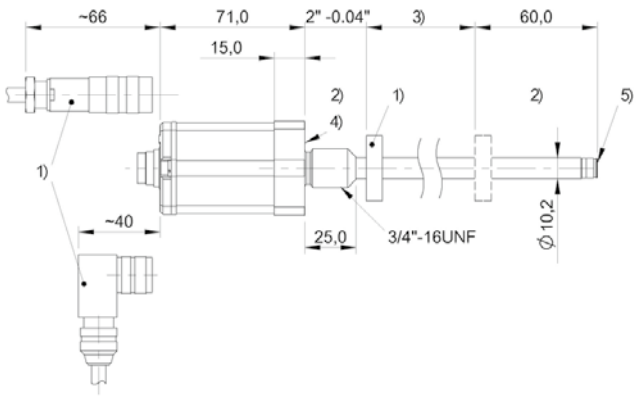
BTL7-S510x-Mxxxx-Z-NEX-S32

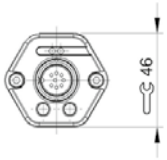




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

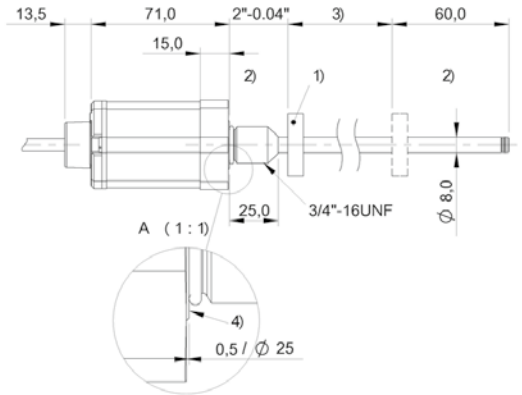
BTL7-S5xxx-Mxxxx-Y-NEX-S32

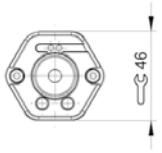




1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep

BTL7-S5xxx-Mxxxx-Z8-NEX-KAxx





1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface

	BTL7 -CD-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...2000 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…2000: ± 0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening M22 threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-f-i-lm

BTL7
Magnetostrictive linear position sensor Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
01 = 2 outputs, each 1 x rising/falling settable/programmable
00 = 1 output, rising
70 = 1 output, falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M2000)

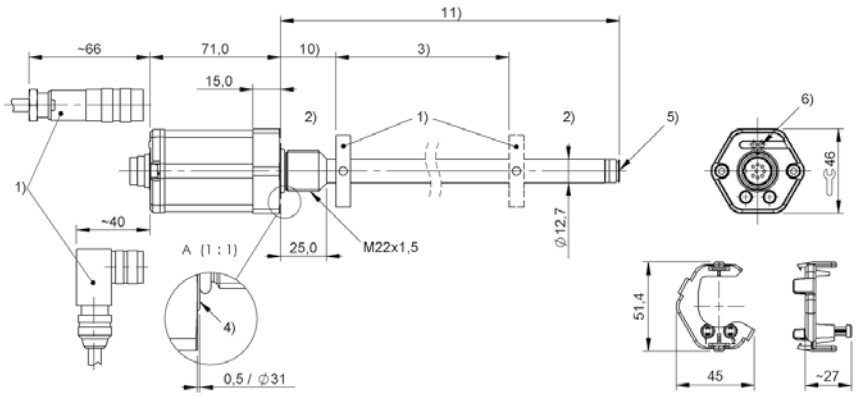
f Style
CD = Mounting threads M22x1.5, for O-Ring

i Variant
NEX = Ignition class „nA“ and „tb“

l Connection type
S = Connector
KA = Cable (PUR)

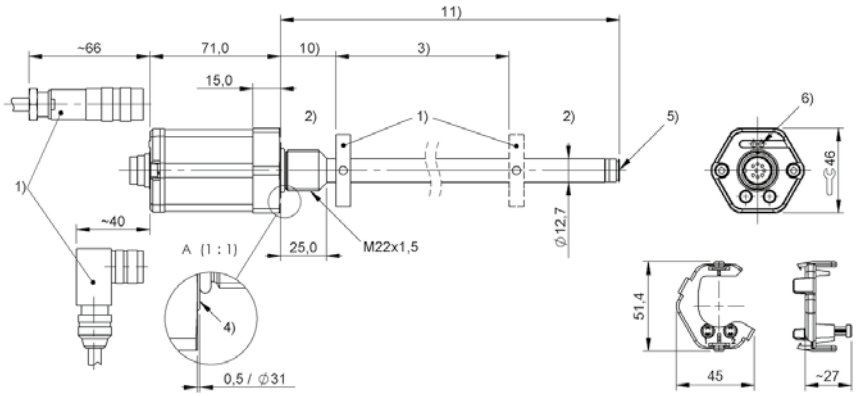
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 50, 100

BTL7-E501-Mxxxx-CD-NEX-S32



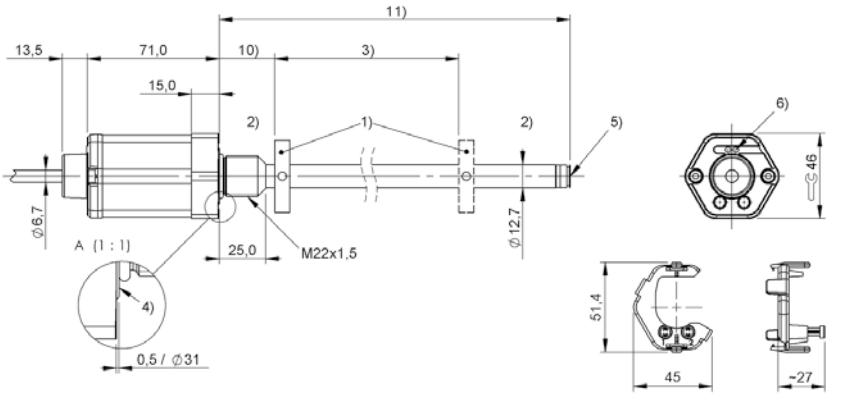
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-C500-Mxxxx-CD-NEX-S32



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-E570-Mxxxx-CD-NEX-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

	BTL7 -CD-NEX- SERIES - SSI
Interface	SSI
Measuring length	25...2000 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7: ± 30µm, d = 4, 5, 6, 8: ± 2 LSB
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening M22 threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcde-Mnnnn-f-i-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
S = SSI

b Operating voltage
5 = 10 … 30 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling
A = 26 bits, binary, rising
B = 26 bits, gray, rising
C = 26 bits, binary, falling
D = 26 bits, gray, falling

d Interface characteristic 2
1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3
B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M2000)

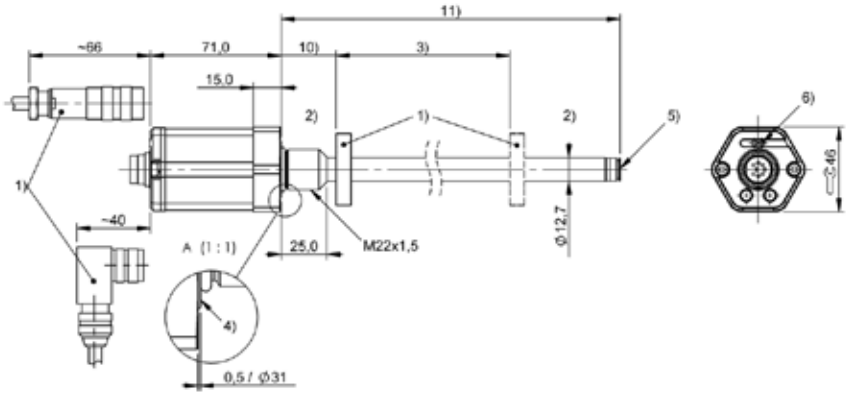
f Style
CD = Mounting threads M22x1.5, for O-Ring

i Variant
NEX = Ignition class „nA“ and „tb“

l Connection type
S = Connector
KA = Cable (PUR)

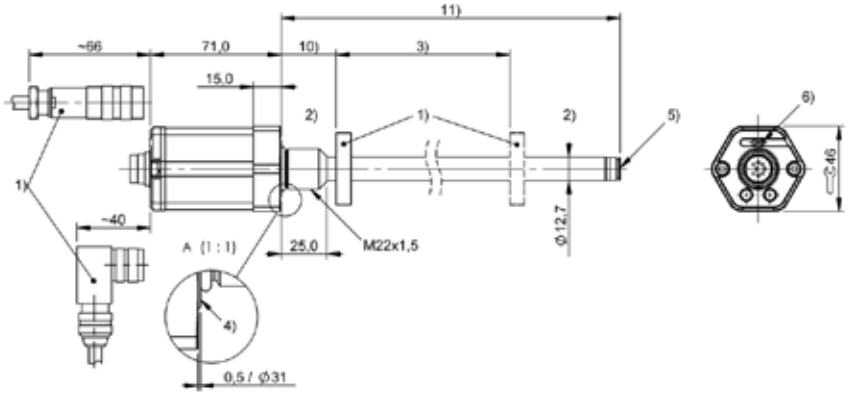
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30, 50, 100

BTL7-S510x-Mxxxx-CD-NEX-S32



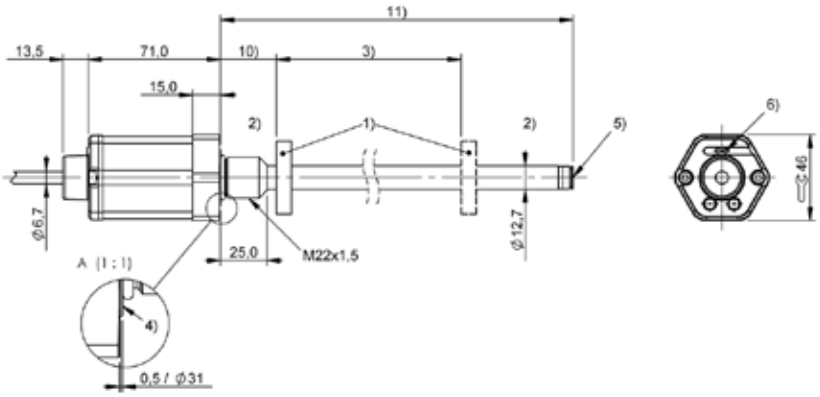
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-S5xxx-Mxxxx-CD-NEX-S32



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

BTL7-S5xxx-Mxxxx-CD-NEX-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
10) Null point
11) Installation length

	BTL7 -K-NEX- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...5500 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Stainless steel (1.4305)
IP rating	I = S: IP67 with connector I = K: IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-fg-i-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
A = Voltage output 0 ... 10 V
G = voltage output -10 ... 10 V

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
10 = 2 outputs, each 1 x rising/falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M5500: for rod diameter 10.2 mm)

f Style
K = Compact rod, plug-in flange 18h6, for O-Ring

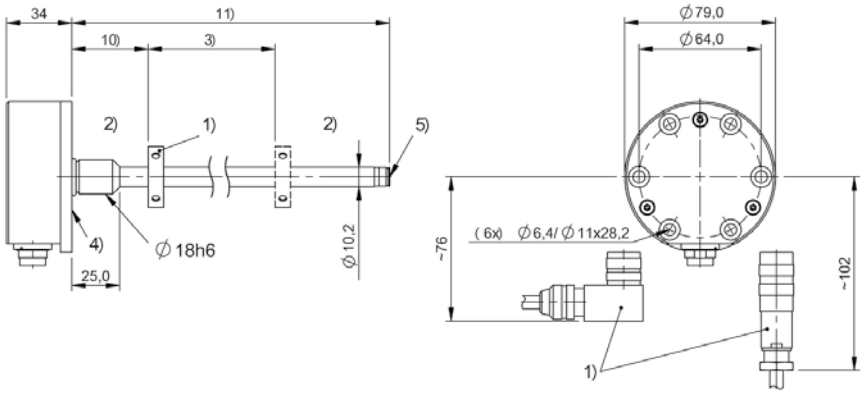
g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

i Variant
NEX = Ignition class „nA“ and „tb“

l Connection type
SR = Connector
K = Cable out radial (PUR)

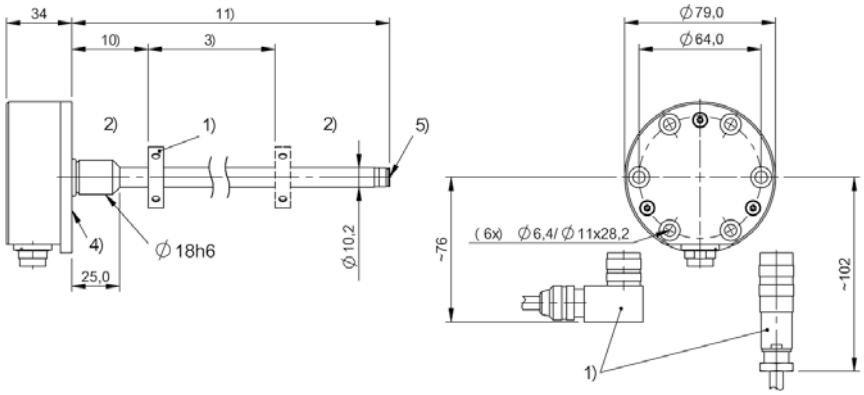
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 30

BTL7-A510-Mxxxx-K-NEX-SR32



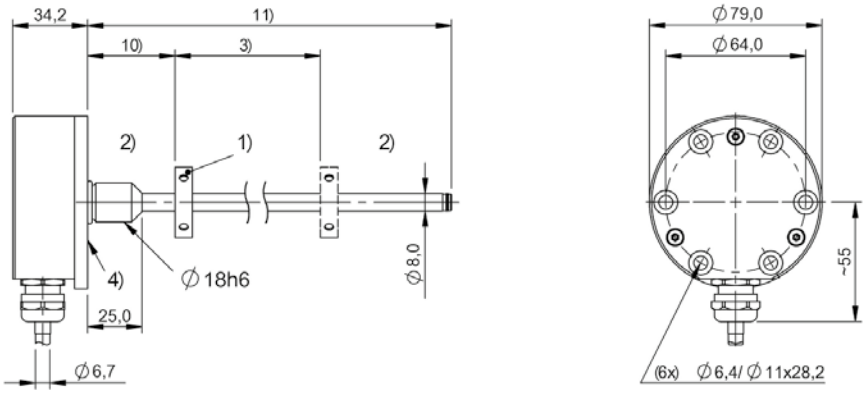
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-G510-Mxxxx-K-NEX-SR32



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-A510-Mxxxx-K8-NEX-Kxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL7 -K-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...5500 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 0050…0500: ± 50 µm, nnnn = 0501…5500: ± 0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Stainless steel (1.4305)
IP rating	I = S: IP67 with connector I = K: IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-fg-i-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
00 = 1 output, rising
70 = 1 output, falling

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M1016: for rod diameter 8 mm)
(M0025…M5500: for rod diameter 10.2 mm)

f Style
K = Compact rod, plug-in flange 18h6, for O-Ring

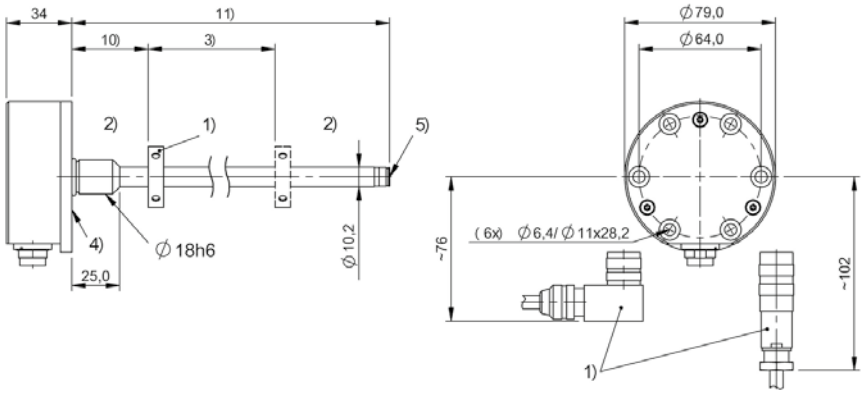
g Form factor characteristic
8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

i Variant
NEX = Ignition class „nA“ and „tb“

l Connection type
SR = Connector
K = Cable out radial (PUR)

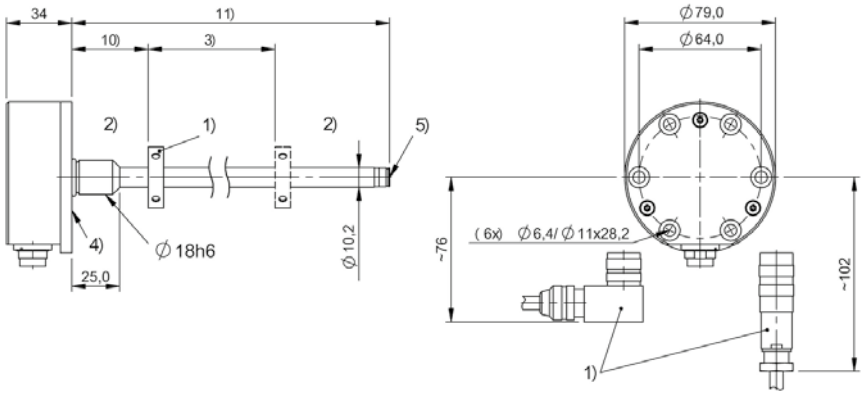
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20, 50, 100

BTL7-E500-Mxxxx-K-NEX-SR32



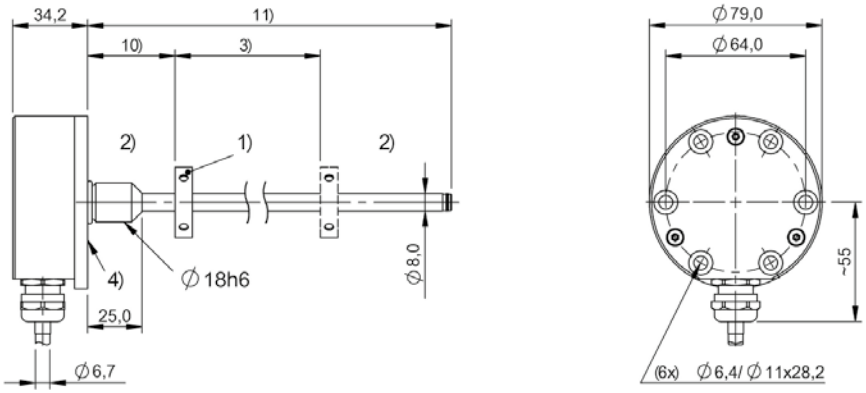
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-C570-Mxxxx-K-NEX-SR32



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
10) Null point
11) Installation length

BTL7-E570-Mxxxx-K8-NEX-Kxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
10) Null point
11) Installation length

	BTL7 -TB-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm, nnnn > 0500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	CE IECEx EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-fh-i-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
04 = 1 output rising, configurable
05 = 1 output falling, configurable

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

f Form factor
TB = Mounting threads M18x1.5, for O-Ring

h Redundant
2 = 2 times redundant
3 = 3 times redundant

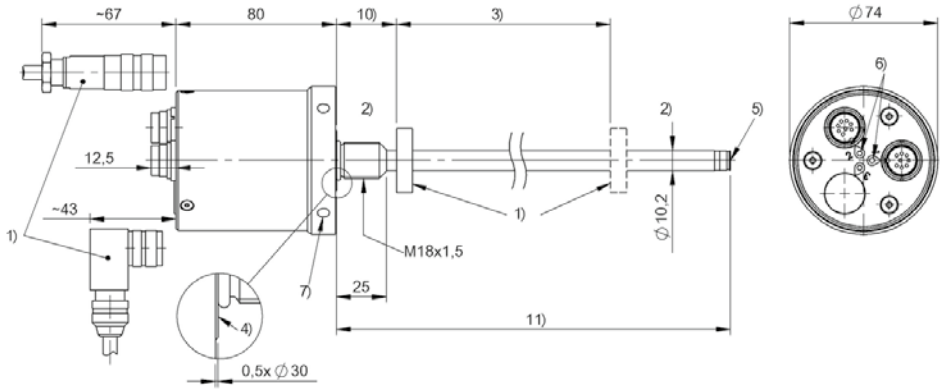
i Variant
NEX = Ignition class „nA“ and „tb“

l Connection type
S = Connector
KA = Cable (PUR)

m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins

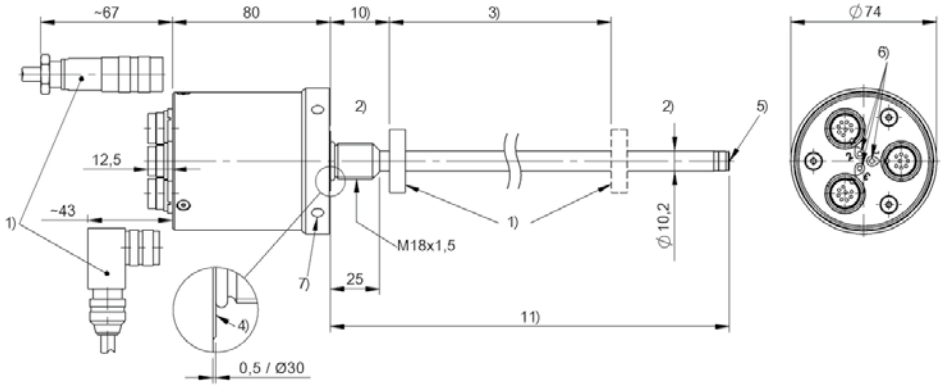
for cable (length in meters):
02, 05, 10, 15, 20

BTL7-E504-Mxxxx-TB2-NEX-S32



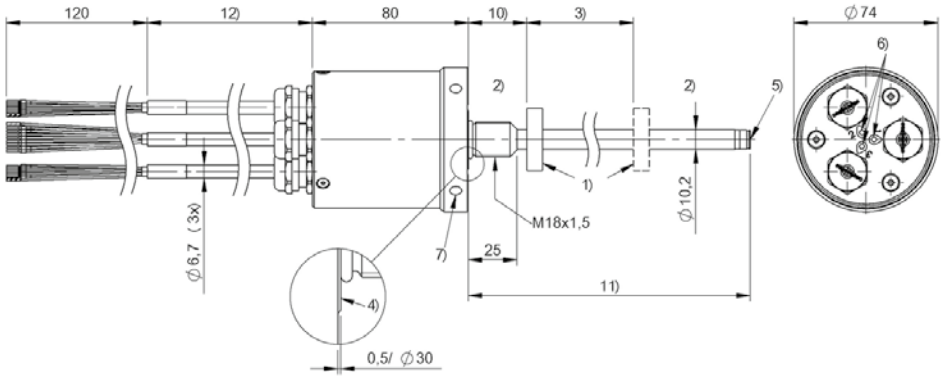
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length

BTL7-C505-Mxxxx-TB3-NEX-S32



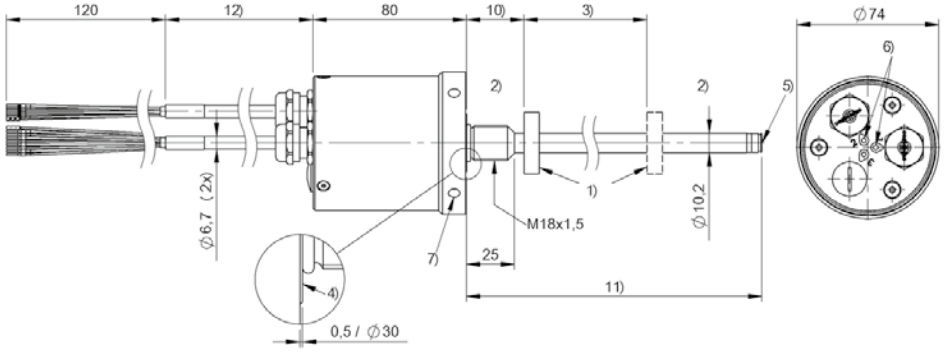
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length

BTL7-E505-Mxxxx-TB3-NEX-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

BTL7-C504-Mxxxx-TB2-NEX-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

	BTL7 -TZ-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 0050…0500: ± 200 µm, nnnn > 0500: ± 0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 3/4“ threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	CE IECEx EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

BTL7-abcd-Mnnnn-fh-i-lm

BTL7
Magnetostrictive linear position sensor
Generation 7

a interface
C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA

b Operating voltage
5 = 10 … 30 V

c + d Interface characteristic 1 + 2
04 = 1 output rising, configurable
05 = 1 output falling, configurable

Mnnnn Nominal length (4-position)
M0500 = metric in mm
(M0025…M7620: for rod diameter 10.2 mm)

f Form factor
TZ = Threads 3/4“-16UNF, for O-Ring

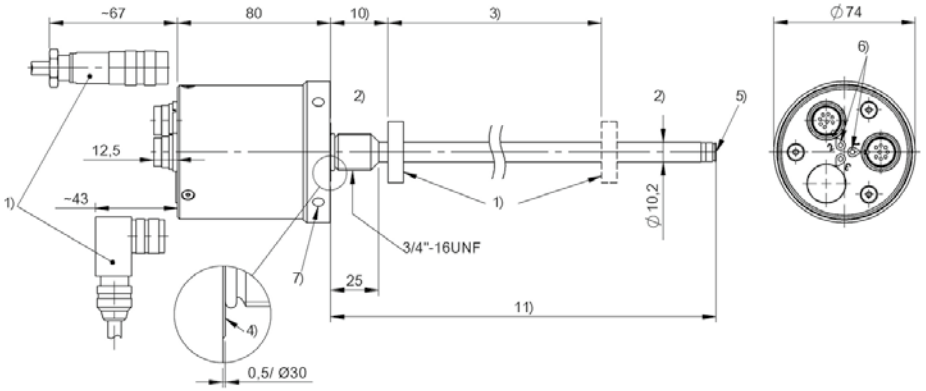
h Redundant
2 = 2 times redundant
3 = 3 times redundant

i Variant
NEX = Ignition class „nA“ and „tb“

l Connection type
S = Connector
KA = Cable (PUR)

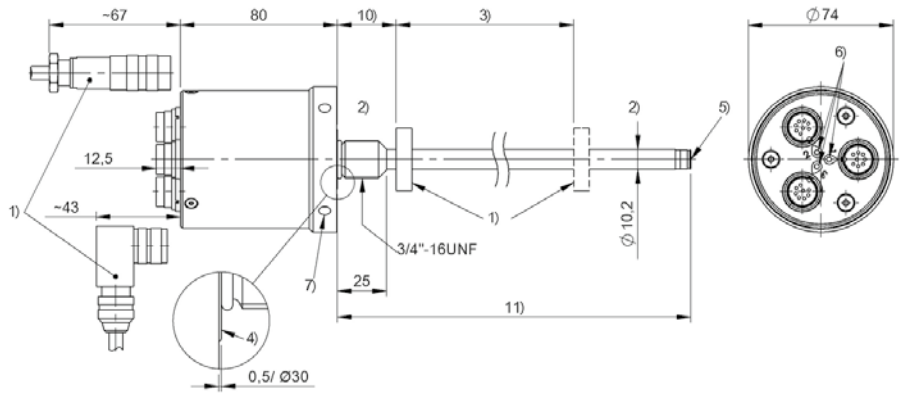
m Connection type characteristic 1
for connector:
32 = M16x0.75 connector with 8 pins
for cable (length in meters):
02, 05, 10, 15, 20

BTL7-E504-Mxxxx-TZ2-NEX-S32



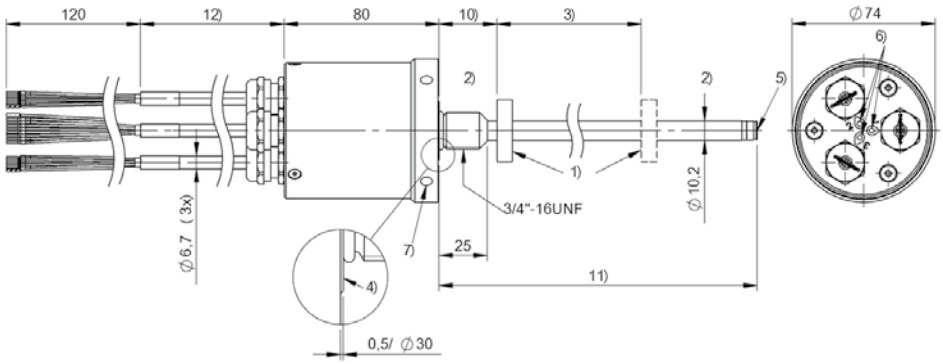
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length

BTL7-C505-Mxxxx-TZ3-NEX-S32



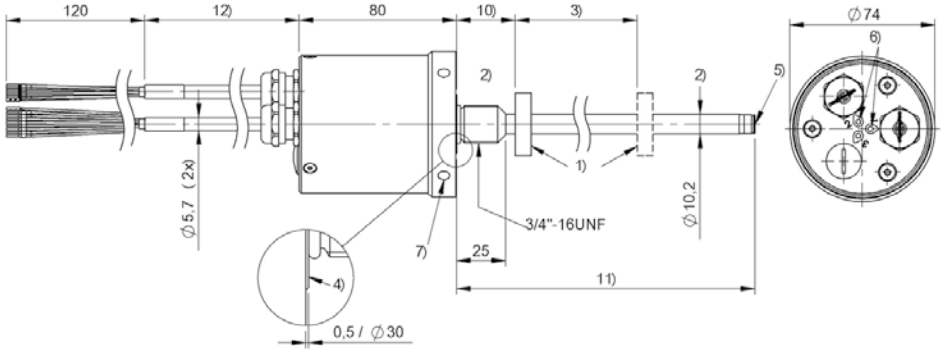
1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length

BTL7-E505-Mxxxx-TZ3-NEX-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length

BTL7-C504-Mxxxx-TZ2-NEX-KAxx



1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) LED function indicator
7) Ø6.1 for hook wrench Ø74
10) Null point
11) Installation length
12) Cable length


BALLUFF

Precise deviation measurement for numerous industries

INCLINATION SENSORS

Many applications require precise position control as well as continuous guiding and monitoring of rotary movements. Inclination sensors from Balluff measure the deviation from horizontal or vertical axes up to 360°. The sensors are available with two different measuring principles, making them ideal for numerous industries and applications.

The most important benefits

- Contactless and absolute
- Capacitive measuring principle and MEMS
- Direct inclination measurement without costly special constructions
- Interfaces: 4…20 mA, 0…10 V and Modbus
- Appropriate for use in harsh conditions with high protection class IP67
- Measuring range up to 360°
- Simple mounting and integration in your facility
- For use in many industries: factory automation, energy, hydraulics, packaging, plastics, rubber, tires, life sciences



	BSI000M BSI Q41K0-XA-MXS015-S92	**BSI000N** BSI Q41K0-XA-MXS030-S92	**BSI000T** BSI Q41K0-XA-MXS045-S92	
Measuring principle	MEMS	MEMS	MEMS	
Measuring axes	1	1	1	
Measuring range	-15...15°	-30...30°	-45...45°	
Operating voltage Ub	12...30 VDC	12...30 VDC	12...30 VDC	
Interface	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V	
Resolution	0.1°	0.1°	0.1°	
Accuracy	1.0°	1.0°	1.0°	
Connection	Connector, M12x1	Connector, M12x1	Connector, M12x1	
Housing material	Plastic	Plastic	Plastic	
Ambient temperature	-40...80 °C	-40...80 °C	-40...80 °C	
Protection degree	IP67, IP69	IP67, IP69	IP67, IP69	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Additional text	Can be centered over 360° in the vertical position	Can be centered over 360° in the vertical position	Can be centered over 360° in the vertical position	
Productview	Page 326	Page 326	Page 326	





	BSI000U BSI Q41K0-XA-MXS090-S92	BSI000L BSI Q41K0-XA-MXP360-S92	BSI000J BSI Q41K0-XB-MXS015-S92	BSI000K BSI Q41K0-XB-MXS030-S92	BSI000P BSI Q41K0-XB-MXS045-S92
	MEMS	MEMS	MEMS	MEMS	MEMS
	1	1	1	1	1
	-90...90°	0...360°	-15...15°	-30...30°	-45...45°
	12...30 VDC	12...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA
	0.1°	0.1°	0.1°	0.1°	0.1°
	1.0°	1.0°	1.0°	1.0°	1.0°
	Connector, M12x1	Connector, M12x1	Connector, M12x1	Connector, M12x1	Connector, M12x1
	Plastic	Plastic	Plastic	Plastic	Plastic
	-40...80 °C	-40...80 °C	-40...80 °C	-40...80 °C	-40...80 °C
	IP67, IP69	IP67, IP69	IP67, IP69	IP67, IP69	IP67, IP69
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Can be centered over 360° in the vertical position	Can be centered over 360° in the vertical position	Can be centered over 360° in the vertical position	Can be centered over 360° in the vertical position	Can be centered over 360° in the vertical position
	Page 326	Page 326	Page 326	Page 326	Page 326



	BSI000R BSI Q41K0-XB-MXS090-S92	**BSI000H** BSI Q41K0-XB-MXP360-S92	**BSI0002** BSI R11A0-XB-CXS045-S75G	
Measuring principle	MEMS	MEMS	Fluid	
Measuring axes	1	1	1	
Measuring range	-90...90°	0...360°	-45...45°	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Interface	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	
Resolution	0.1°	0.1°	≤ 0.01 °	
Accuracy	1.0°	1.0°	±0.1 % FS min. 0.1 °	
Connection	Connector, M12x1	Connector, M12x1	Connector, M8x1	
Housing material	Plastic	Plastic	Aluminum	
Ambient temperature	-40...80 °C	-40...80 °C	-40...85 °C	
Protection degree	IP67, IP69	IP67, IP69	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, EAC, WEEE	
Additional text	Can be centered over 360° in the vertical position	Can be centered over 360° in the vertical position	—	
Productview	Page 326	Page 326	Page 326	





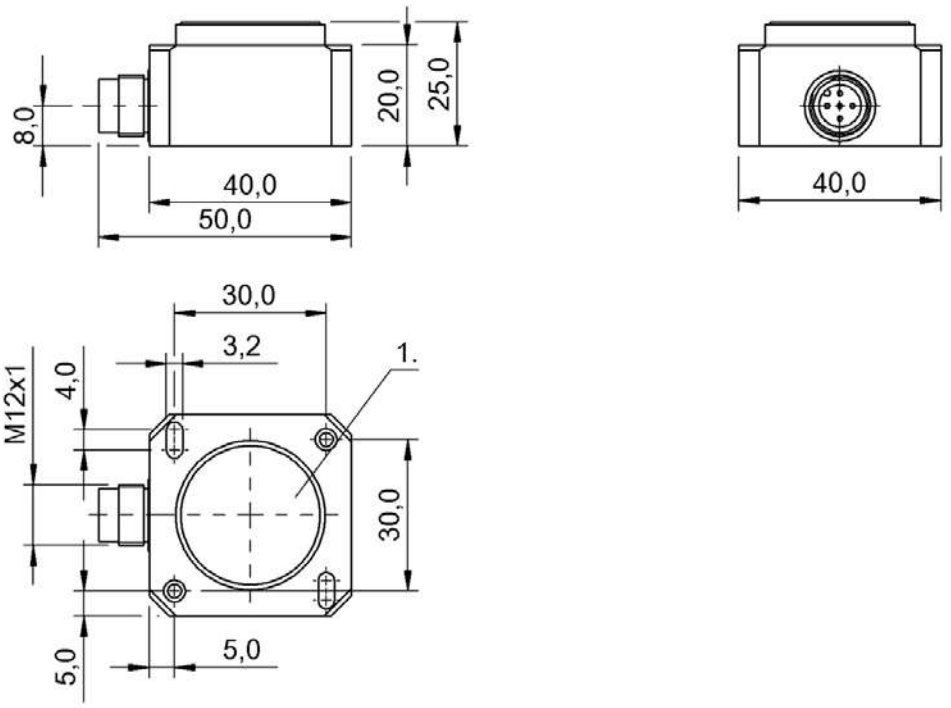
	BSI0004 BSI R11A0-XB-CXP360-S75G	BSI0003 BSI R11A0-XXR-CXP360-S75G	BSI001C BSI R65K0-XA-MXS015-S115	BSI0017 BSI R65K0-XA-MXS030-S115	BSI001F BSI R65K0-XA-MXS045-S115
	Fluid	Fluid	MEMS	MEMS	MEMS
	1	1	1	1	1
	0...360°	0...360°	-15...15°	-30...30°	-45...45°
	10...30 VDC	10...30 VDC	12...30 VDC	12...30 VDC	12...30 VDC
	Analog, current 4…20 mA	Modbus RTU	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V
	≤ 0.01 °	≤ 0.01 °	≤ 0.01 °	≤ 0.01 °	≤ 0.01 °
	±0.1 % FS min. 0.1 °	±0.1° (+10…+40 °C), ±0.15° (-40…+10 °C/+40…80 °C)	±0.2°	±0.2°	±0.2°
	Connector, M8x1	Connector, M8x1	Connector, M12x1	Connector, M12x1	Connector, M12x1
	Aluminum	Aluminum	Plastic	Plastic	Plastic
	-40...85 °C	-40...85 °C	-40…80 °C	-40…80 °C	-40…80 °C
	IP67	IP67	IP67	IP67	IP67
	CE, EAC, WEEE	CE, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	—	—	Can be centered over 360° in the vertical position	Can be centered over 360° in the vertical position	Can be centered over 360° in the vertical position
	Page 326	Page 326	Page 327	Page 327	Page 327



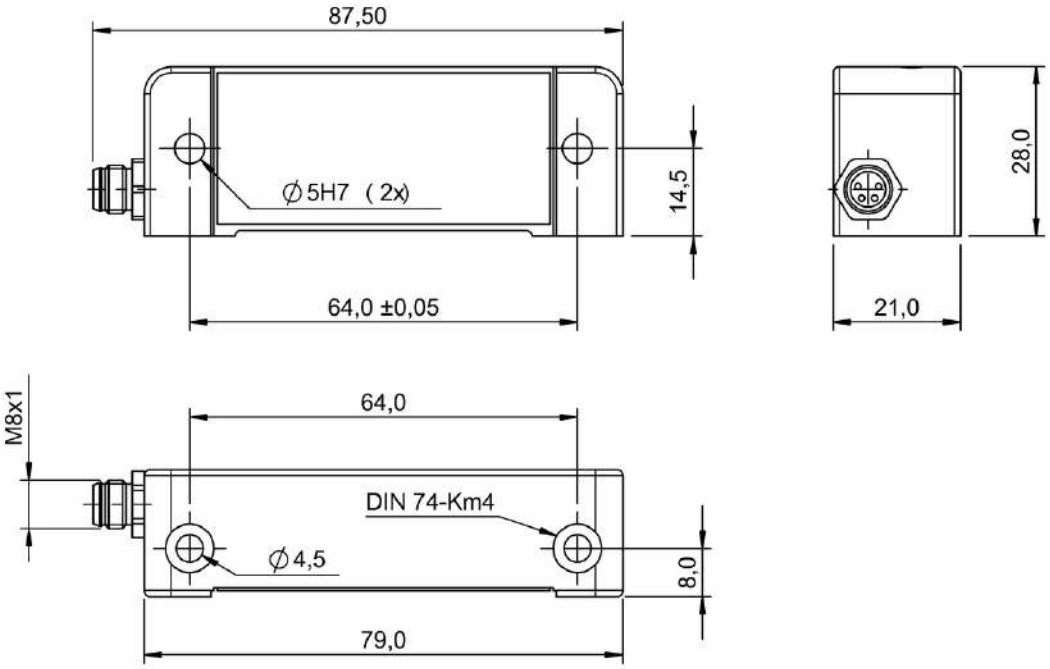
	BSI0005 BSI R65K0-XA-MXS090-S115	**BSI0016** BSI R65K0-XA-MXP360-S115	**BSI001E** BSI R65K0-XB-MXS015-S115	
Measuring principle	MEMS	MEMS	MEMS	
Measuring axes	1	1	1	
Measuring range	-90...90°	0...360°	-15...15°	
Operating voltage Ub	12...30 VDC	12...30 VDC	10...30 VDC	
Interface	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, current 4…20 mA	
Resolution	≤ 0.01 °	≤ 0.01 °	≤ 0.01 °	
Accuracy	±0.2°	±0.25°	±0.2°	
Connection	Connector, M12x1	Connector, M12x1	Connector, M12x1	
Housing material	Plastic	Plastic	Plastic	
Ambient temperature	-40…80 °C	-40…80 °C	-40…80 °C	
Protection degree	IP67	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Additional text	Can be centered over 360° in the vertical position	Can be centered over 360° in the vertical position	Can be centered over 360° in the vertical position	
Productview	Page 327	Page 327	Page 327	



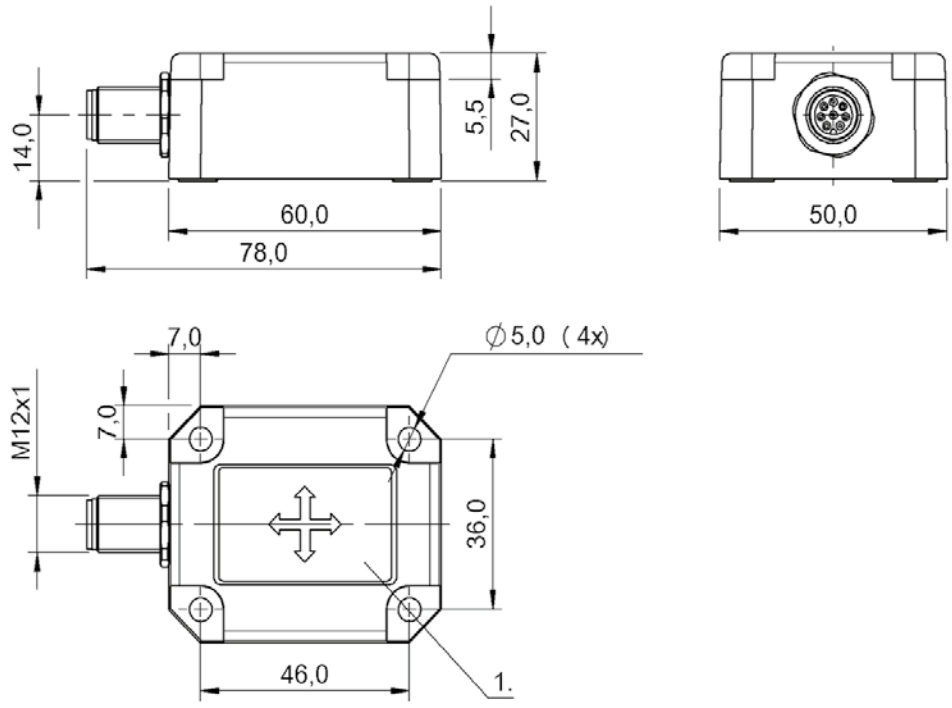

	BSI0018 BSI R65K0-XB-MXS030-S115	BSI0019 BSI R65K0-XB-MXS045-S115	BSI001A BSI R65K0-XB-MXS090-S115	BSI0015 BSI R65K0-XB-MXP360-S115	
	MEMS	MEMS	MEMS	MEMS	
	1	1	1	1	
	-30...30°	-45...45°	-90...90°	0...360°	
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	
	≤ 0.01 °	≤ 0.01 °	≤ 0.01 °	≤ 0.01 °	
	±0.2°	±0.2°	±0.2°	±0.25°	
	Connector, M12x1	Connector, M12x1	Connector, M12x1	Connector, M12x1	
	Plastic	Plastic	Plastic	Plastic	
	-40…80 °C	-40…80 °C	-40…80 °C	-40…80 °C	
	IP67	IP67	IP67	IP67	
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
	Can be centered over 360° in the vertical position	Can be centered over 360° in the vertical position	Can be centered over 360° in the vertical position	Can be centered over 360° in the vertical position	
	Page 327	Page 327	Page 327	Page 327	



BSI000M, BSI000N, BSI000T, BSI000U, BSI000L, BSI000J, BSI000K, BSI000P, BSI000R, BSI000H



BSI0002, BSI0004, BSI0003



BSI001C, BSI0017, BSI001F, BSI0005, BSI0016, BSI001E, BSI0018, BSI0019, BSI001A, BSI0015

	BSI000Z BSI Q41K0-XA-MYS015-S92	**BSI0010** BSI Q41K0-XA-MYS030-S92	**BSI0013** BSI Q41K0-XA-MYS045-S92	
Measuring principle	MEMS	MEMS	MEMS	
Measuring axes	2	2	2	
Measuring range	-15...15°	-30...30°	-45...45°	
Operating voltage Ub	12...30 VDC	12...30 VDC	12...30 VDC	
Interface	2x Analog, voltage 0…10 V	2x Analog, voltage 0…10 V	2x Analog, voltage 0…10 V	
Resolution	0.1°	0.1°	0.1°	
Accuracy	1.0°	1.0°	1.0°	
Connection	Connector, M12x1	Connector, M12x1	Connector, M12x1	
Housing material	Plastic	Plastic	Plastic	
Ambient temperature	-40…80 °C	-40…80 °C	-40…80 °C	
Protection degree	IP67, IP69	IP67, IP69	IP67, IP69	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Additional text	Centering in a range of ±5° from horizontal is possible	Centering in a range of ±5° from horizontal is possible	Centering in a range of ±5° from horizontal is possible	
Productview	Pager 332	Pager 332	Pager 332	





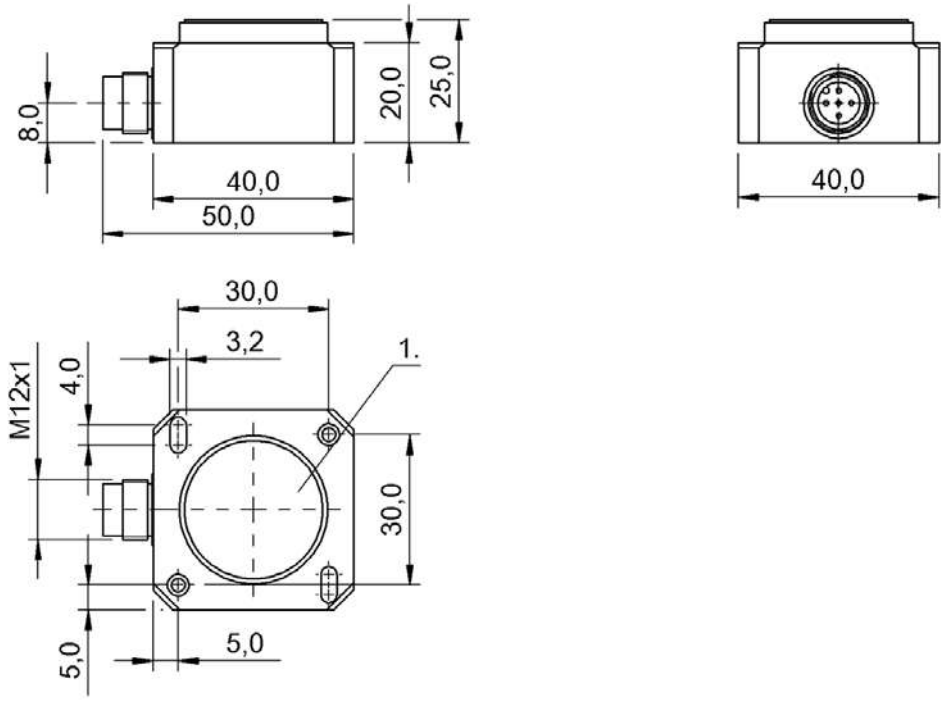
	BSI0014 BSI Q41K0-XA-MYS090-S92	BSI000W BSI Q41K0-XB-MYS015-S92	BSI000Y BSI Q41K0-XB-MYS030-S92	BSI0011 BSI Q41K0-XB-MYS045-S92	BSI0012 BSI Q41K0-XB-MYS090-S92
	MEMS	MEMS	MEMS	MEMS	MEMS
	2	2	2	2	2
	-90...90°	-15...15°	-30...30°	-45...45°	-90...90°
	12...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	2x Analog, voltage 0…10 V	2x Analog, current 4…20 mA	2x Analog, current 4…20 mA	2x Analog, current 4…20 mA	2x Analog, current 4…20 mA
	0.1°	0.1°	0.1°	0.1°	0.1°
	1.0°	1.0°	1.0°	1.0°	1.0°
	Connector, M12x1	Connector, M12x1	Connector, M12x1	Connector, M12x1	Connector, M12x1
	Plastic	Plastic	Plastic	Plastic	Plastic
	-40…80 °C	-40…80 °C	-40…80 °C	-40…80 °C	-40…80 °C
	IP67, IP69	IP67, IP69	IP67, IP69	IP67, IP69	IP67, IP69
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Centering in a range of ±5° from horizontal is possible	Centering in a range of ±5° from horizontal is possible	Centering in a range of ±5° from horizontal is possible	Centering in a range of ±5° from horizontal is possible	Centering in a range of ±5° from horizontal is possible
	Pager 332	Pager 332	Pager 332	Pager 332	Pager 332

	BSI000A BSI R65K0-XA-MYS015-S115	**BSI000C** BSI R65K0-XA-MYS030-S115	**BSI000E** BSI R65K0-XA-MYS045-S115	
Measuring principle	MEMS	MEMS	MEMS	
Measuring axes	2	2	2	
Measuring range	-15...15°	-30...30°	-45...45°	
Operating voltage Ub	12...30 VDC	12...30 VDC	12...30 VDC	
Interface	2x Analog, voltage 0…10 V	2x Analog, voltage 0…10 V	2x Analog, voltage 0…10 V	
Resolution	≤ 0.01 °	≤ 0.01 °	≤ 0.01 °	
Accuracy	±0.08°	±0.12°	±0.2°	
Connection	Connector, M12x1	Connector, M12x1	Connector, M12x1	
Housing material	Plastic	Plastic	Plastic	
Ambient temperature	-40…80 °C	-40…80 °C	-40…80 °C	
Protection degree	IP67	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Additional text	Centering in a range of ±5° from horizontal is possible	Centering in a range of ±5° from horizontal is possible	Centering in a range of ±5° from horizontal is possible	
Productview	Pager 332	Pager 332	Pager 332	

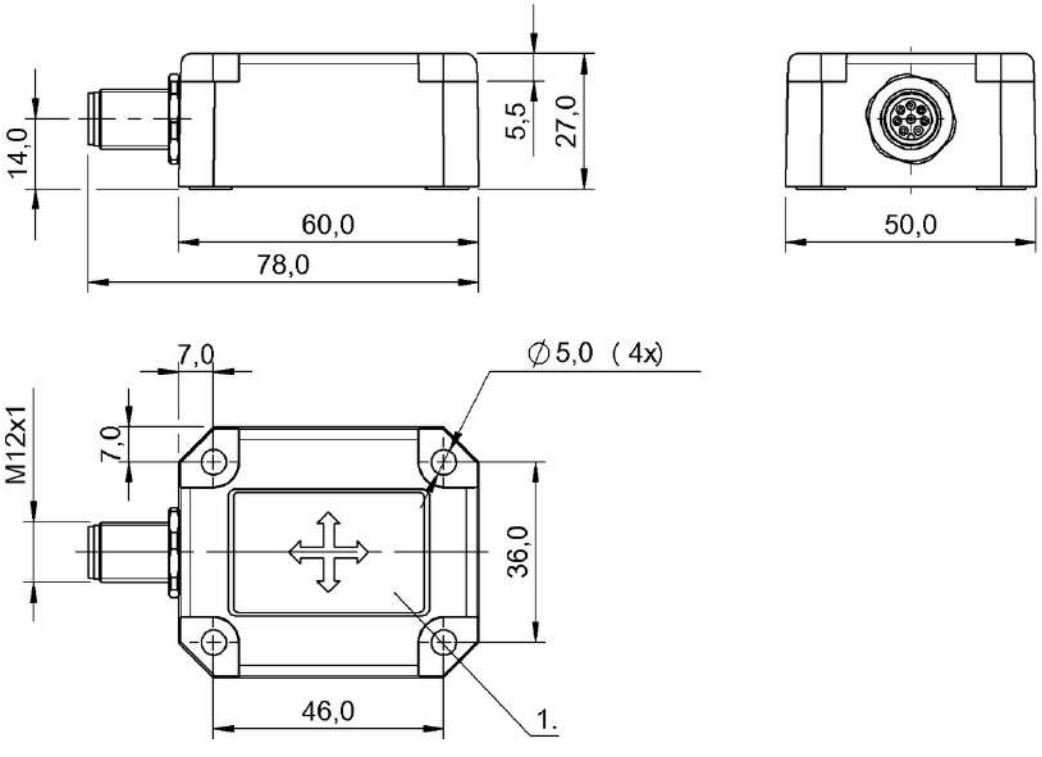




	BSI000F BSI R65K0-XA-MYS090-S115	BSI0006 BSI R65K0-XB-MYS015-S115	BSI0007 BSI R65K0-XB-MYS030-S115	BSI0008 BSI R65K0-XB-MYS045-S115	BSI0009 BSI R65K0-XB-MYS090-S115
	MEMS	MEMS	MEMS	MEMS	MEMS
	2	2	2	2	2
	-90...90°	-15...15°	-30...30°	-45...45°	-90...90°
	12...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	2x Analog, voltage 0…10 V	2x Analog, current 4…20 mA	2x Analog, current 4…20 mA	2x Analog, current 4…20 mA	2x Analog, current 4…20 mA
	≤ 0.01 °	≤ 0.01 °	≤ 0.01 °	≤ 0.01 °	≤ 0.01 °
	±0.2°	±0.08°	±0.12°	±0.2°	±0.2°
	Connector, M12x1	Connector, M12x1	Connector, M12x1	Connector, M12x1	Connector, M12x1
	Plastic	Plastic	Plastic	Plastic	Plastic
	-40…80 °C	-40…80 °C	-40…80 °C	-40…80 °C	-40…80 °C
	IP67	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Centering in a range of ±5° from horizontal is possible	Centering in a range of ±5° from horizontal is possible	Centering in a range of ±5° from horizontal is possible	Centering in a range of ±5° from horizontal is possible	Centering in a range of ±5° from horizontal is possible
	Pager 332	Pager 332	Pager 332	Pager 332	Pager 332



BSI000Z, BSI0010, BSI0013, BSI0014, BSI000W, BSI000Y, BSI0011, BSI0012



BSI000A, BSI000C, BSI000E, BSI000F, BSI0006, BSI0007, BSI0008, BSI0009

Compact and convenient measurement and monitoring

PRESSURE SENSORS

Our high-end pressure transmitters are optimally suited for pressure monitoring and pressure measurement of gaseous, fluid and viscous media. With their rotatable housing and the simple, VDMA-compliant programming, they can be flexibly mounted as well as conveniently serviced. The bright LED display always gives you an overview of the current system pressure.

The most important benefits

- Compact and rugged as a transmitter
- Convenient to operate, with a very legible display
- Pressure range –1…600 bar
- Process connection G½", G½", R¼", NPT¼"
- Flush with the front surface in G½" and Tri-Clamp 1½"
- Output 4…20 mA, 0...10 V, switching points (NPN/PNP) and IO-Link
- Fluid temperature –40…+125 °C
- Enclosure rating IP67
- UL approval
- Compact with M12 connection
- Stainless steel or PVDF process connection
- Dual rotation – easily installed
- Pressure values directly via IO-Link



	BSP00KP BSP B002-HV004-A04A1A-S4	BSP00KM BSP V002-HV004-A04A1A-S4	BSP00KR BSP B005-HV004-A04A1A-S4	
Measuring range	0...2 bar	–1...2 bar	0...5 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	4 bar	4 bar	12 bar	
Burst pressure	10.00 bar	10.00 bar	15.00 bar	
Operating voltage Ub	14...30 VDC	14...30 VDC	14...30 VDC	
Interface	—	—	—	
Analog output	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V	
Switching output	—	—	—	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Process connection	G 1/2“ (DIN 3852)	G 1/2“ (DIN 3852)	G 1/2“ (DIN 3852)	
Process connection material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Gasket, material	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Media temperature	-40...125 °C	-40...125 °C	-40...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
cal_protection_type_iec_60529	IP67, IP69k	IP67, IP69k	IP67, IP69k	
Approval/Conformity	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	
Productview	Page 368	Page 368	Page 368	





	BSP00KT BSP B010-HV004-A04A1A-S4	BSP00KN BSP V010-HV004-A04A1A-S4	BSP00KU BSP B020-HV004-A04A1A-S4	BSP00KW BSP B050-HV004-A04A1A-S4	BSP00KY BSP B100-HV004-A04A1A-S4
	0...10 bar	–1...10 bar	0...20 bar	0...50 bar	0...100 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	20 bar	20 bar	50 bar	120 bar	200 bar
	35.00 bar	35.00 bar	70.00 bar	150.00 bar	300.00 bar
	14...30 VDC	14...30 VDC	14...30 VDC	14...30 VDC	14...30 VDC
	—	—	—	—	—
	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V
	—	—	—	—	—
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	G 1/2“ (DIN 3852)	G 1/2“ (DIN 3852)	G 1/2“ (DIN 3852)	G 1/2“ (DIN 3852)	G 1/2“ (DIN 3852)
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k
	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,
	Page 368	Page 368	Page 368	Page 368	Page 368



	BSP00KZ BSP B250-HV004-A04A1A-S4	**BSP00L0** BSP B400-HV004-A04A1A-S4	**BSP00L1** BSP B600-HV004-A04A1A-S4	
Measuring range	0...250 bar	0...400 bar	0...600 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	400 bar	1200 bar	1200 bar	
Burst pressure	750.00 bar	1500.00 bar	1800.00 bar	
Operating voltage Ub	14...30 VDC	14...30 VDC	14...30 VDC	
Interface	—	—	—	
Analog output	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V	
Switching output	—	—	—	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Process connection	G 1/2“ (DIN 3852)	G 1/2“ (DIN 3852)	G 1/2“ (DIN 3852)	
Process connection material	Stainless steel (1.4301)	Stainless steel (1.4571)	Stainless steel (1.4571)	
Gasket, material	Fluoroelastomer	without, welded	without, welded	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Media temperature	-40...125 °C	-40...125 °C	-40...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
cal_protection_type_iec_60529	IP67, IP69k	IP67, IP69k	IP67, IP69k	
Approval/Conformity	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	
Productview	Page 368	Page 368	Page 368	





	BSP00JH BSP B002-DV004-A04A1A-S4	BSP00JE BSP V002-DV004-A04A1A-S4	BSP00JJ BSP B005-DV004-A04A1A-S4	BSP00L8 BSP B006-DV004-A04A1A-S4	BSP00JK BSP B010-DV004-A04A1A-S4
	0...2 bar	–1...2 bar	0...5 bar	0...6 bar	0...10 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	4 bar	4 bar	12 bar	12 bar	20 bar
	10.00 bar	10.00 bar	15.00 bar	18.00 bar	35.00 bar
	14...30 VDC	14...30 VDC	14...30 VDC	14...30 VDC	14...30 VDC
	—	—	—	—	—
	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V
	—	—	—	—	—
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k
	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,
	Page 368	Page 368	Page 368	Page 368	Page 368



	BSP00JF BSP V010-DV004-A04A1A-S4	**BSP00JL** BSP B020-DV004-A04A1A-S4	**BSP00JM** BSP B050-DV004-A04A1A-S4	
Measuring range	–1...10 bar	0...20 bar	0...50 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	20 bar	50 bar	120 bar	
Burst pressure	35.00 bar	70.00 bar	150.00 bar	
Operating voltage Ub	14...30 VDC	14...30 VDC	14...30 VDC	
Interface	—	—	—	
Analog output	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V	
Switching output	—	—	—	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Process connection	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	
Process connection material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Gasket, material	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Media temperature	-40...125 °C	-40...125 °C	-40...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
cal_protection_type_iec_60529	IP67, IP69k	IP67, IP69k	IP67, IP69k	
Approval/Conformity	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	
Productview	Page 368	Page 368	Page 368	





	BSP00JN BSP B100-DV004-A04A1A-S4	BSP00JP BSP B250-DV004-A04A1A-S4	BSP00JR BSP B400-DV004-A04A1A-S4	BSP00JT BSP B600-DV004-A04A1A-S4	BSP00JY BSP B002-FV004-A04A1A-S4
	0...100 bar	0...250 bar	0...400 bar	0...600 bar	0...2 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	200 bar	400 bar	1200 bar	1200 bar	4 bar
	300.00 bar	750.00 bar	1500.00 bar	1800.00 bar	10.00 bar
	14...30 VDC	14...30 VDC	14...30 VDC	14...30 VDC	14...30 VDC
	—	—	—	—	—
	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V
	—	—	—	—	—
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	NPT 1/4“
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4301)
	Fluoroelastomer	Fluoroelastomer	without, welded	without, welded	Fluoroelastomer
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k
	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,
	Page 368	Page 368	Page 369	Page 369	Page 369



	BSP00JU BSP V002-FV004-A04A1A-S4	**BSP00JZ** BSP B005-FV004-A04A1A-S4	**BSP00K0** BSP B010-FV004-A04A1A-S4	
Measuring range	–1...2 bar	0...5 bar	0...10 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	4 bar	12 bar	20 bar	
Burst pressure	10.00 bar	15.00 bar	35.00 bar	
Operating voltage Ub	14...30 VDC	14...30 VDC	14...30 VDC	
Interface	—	—	—	
Analog output	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V	
Switching output	—	—	—	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Process connection	NPT 1/4“	NPT 1/4“	NPT 1/4“	
Process connection material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Gasket, material	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Media temperature	-40...125 °C	-40...125 °C	-40...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
cal_protection_type_iec_60529	IP67, IP69k	IP67, IP69k	IP67, IP69k	
Approval/Conformity	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	
Productview	Page 370	Page 369	Page 369	





	BSP00JW BSP V010-FV004-A04A1A-S4	BSP00K1 BSP B020-FV004-A04A1A-S4	BSP00K2 BSP B050-FV004-A04A1A-S4	BSP00K3 BSP B100-FV004-A04A1A-S4	BSP00K4 BSP B250-FV004-A04A1A-S4
	–1...10 bar	0...20 bar	0...50 bar	0...100 bar	0...250 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	20 bar	50 bar	120 bar	200 bar	400 bar
	35.00 bar	70.00 bar	150.00 bar	300.00 bar	750.00 bar
	14...30 VDC	14...30 VDC	14...30 VDC	14...30 VDC	14...30 VDC
	—	—	—	—	—
	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V
	—	—	—	—	—
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	NPT 1/4“	NPT 1/4“	NPT 1/4“	NPT 1/4“	NPT 1/4“
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k
	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,
	Page 370	Page 369	Page 369	Page 369	Page 369



	BSP00K5 BSP B400-FV004-A04A1A-S4	**BSP00K6** BSP B600-FV004-A04A1A-S4	**BSP00K9** BSP B002-KV004-A04A1A-S4	
Measuring range	0...400 bar	0...600 bar	0...2 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	1200 bar	1200 bar	4 bar	
Burst pressure	1500.00 bar	1800.00 bar	10.00 bar	
Operating voltage Ub	14...30 VDC	14...30 VDC	14...30 VDC	
Interface	—	—	—	
Analog output	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V	
Switching output	—	—	—	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Process connection	NPT 1/4“	NPT 1/4“	R 1/4“	
Process connection material	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4301)	
Gasket, material	without, welded	without, welded	Fluoroelastomer	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Media temperature	-40...125 °C	-40...125 °C	-40...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
cal_protection_type_iec_60529	IP67, IP69k	IP67, IP69k	IP67, IP69k	
Approval/Conformity	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	
Productview	Page 370	Page 370	Page 370	





	BSP00K7 BSP V002-KV004-A04A1A-S4	BSP00KA BSP B005-KV004-A04A1A-S4	BSP00KC BSP B010-KV004-A04A1A-S4	BSP00K8 BSP V010-KV004-A04A1A-S4	BSP00KE BSP B020-KV004-A04A1A-S4
	–1...2 bar	0...5 bar	0...10 bar	–1...10 bar	0...20 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	4 bar	12 bar	20 bar	20 bar	50 bar
	10.00 bar	15.00 bar	35.00 bar	35.00 bar	70.00 bar
	14...30 VDC	14...30 VDC	14...30 VDC	14...30 VDC	14...30 VDC
	—	—	—	—	—
	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V
	—	—	—	—	—
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	R 1/4“	R 1/4“	R 1/4“	R 1/4“	R 1/4“
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k
	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,
	Page 370	Page 370	Page 370	Page 370	Page 370



	BSP00KF BSP B050-KV004-A04A1A-S4	**BSP00KH** BSP B100-KV004-A04A1A-S4	**BSP00KJ** BSP B250-KV004-A04A1A-S4	
Measuring range	0...50 bar	0...100 bar	0...250 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	120 bar	200 bar	400 bar	
Burst pressure	150.00 bar	300.00 bar	750.00 bar	
Operating voltage Ub	14...30 VDC	14...30 VDC	14...30 VDC	
Interface	—	—	—	
Analog output	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, voltage 0…10 V	
Switching output	—	—	—	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Process connection	R 1/4“	R 1/4“	R 1/4“	
Process connection material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Gasket, material	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Media temperature	-40...125 °C	-40...125 °C	-40...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
cal_protection_type_iec_60529	IP67, IP69k	IP67, IP69k	IP67, IP69k	
Approval/Conformity	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	
Productview	Page 370	Page 370	Page 370	





	BSP00KK BSP B400-KV004-A04A1A-S4	**BSP00KL** BSP B600-KV004-A04A1A-S4	**BSP00J4** BSP B002-HV004-A06A1A-S4	**BSP00J2** BSP V002-HV004-A06A1A-S4	**BSP00J5** BSP B005-HV004-A06A1A-S4
	0...400 bar	0...600 bar	0...2 bar	–1...2 bar	0...5 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	1200 bar	1200 bar	4 bar	4 bar	12 bar
	1500.00 bar	1800.00 bar	10.00 bar	10.00 bar	15.00 bar
	14...30 VDC	14...30 VDC	8...32 VDC	8...32 VDC	8...32 VDC
	—	—	—	—	—
	Analog, voltage 0…10 V	Analog, voltage 0…10 V	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA
	—	—	—	—	—
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	R 1/4“	R 1/4“	G 1/2“ (DIN 3852)	G 1/2“ (DIN 3852)	G 1/2“ (DIN 3852)
	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	without, welded	without, welded	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k
	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,
	Page 371	Page 371	Page 368	Page 368	Page 368



	BSP00J6 BSP B010-HV004-A06A1A-S4	BSP00J3 BSP V010-HV004-A06A1A-S4	BSP00J7 BSP B020-HV004-A06A1A-S4	
Measuring range	0...10 bar	–1...10 bar	0...20 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	20 bar	20 bar	50 bar	
Burst pressure	35.00 bar	35.00 bar	70.00 bar	
Operating voltage Ub	8...32 VDC	8...32 VDC	8...32 VDC	
Interface	—	—	—	
Analog output	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	
Switching output	—	—	—	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Process connection	G 1/2“ (DIN 3852)	G 1/2“ (DIN 3852)	G 1/2“ (DIN 3852)	
Process connection material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Gasket, material	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Media temperature	-40...125 °C	-40...125 °C	-40...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
cal_protection_type_iec_60529	IP67, IP69k	IP67, IP69k	IP67, IP69k	
Approval/Conformity	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	
Productview	Page 368	Page 368	Page 368	





	BSP00J8 BSP B050-HV004-A06A1A-S4	BSP00FT BSP B100-HV004-A06A1A-S4	BSP00FU BSP B160-HV004-A06A1A-S4	BSP00J9 BSP B250-HV004-A06A1A-S4	BSP00JA BSP B400-HV004-A06A1A-S4
	0...50 bar	0...100 bar	0...160 bar	0...250 bar	0...400 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	120 bar	200 bar	400 bar	400 bar	1200 bar
	150.00 bar	300.00 bar	500.00 bar	750.00 bar	1500.00 bar
	8...32 VDC	8...32 VDC	8...32 VDC	8...32 VDC	8...32 VDC
	—	—	—	—	—
	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA
	—	—	—	—	—
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	G 1/2“ (DIN 3852)	G 1/2“ (DIN 3852)	G 1/2“ (DIN 3852)	G 1/2“ (DIN 3852)	G 1/2“ (DIN 3852)
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4571)
	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	without, welded
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k
	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,
	Page 368	Page 368	Page 368	Page 368	Page 368



	BSP00JC BSP B600-HV004-A06A1A-S4	**BSP00FZ** BSP B002-DV004-A06A1A-S4	**BSP00FW** BSP V002-DV004-A06A1A-S4	
Measuring range	0...600 bar	0...2 bar	–1...2 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	1200 bar	4 bar	4 bar	
Burst pressure	1800.00 bar	10.00 bar	10.00 bar	
Operating voltage Ub	8...32 VDC	8...32 VDC	8...32 VDC	
Interface	—	—	—	
Analog output	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	
Switching output	—	—	—	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Process connection	G 1/2“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	
Process connection material	Stainless steel (1.4571)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Gasket, material	without, welded	Fluoroelastomer	Fluoroelastomer	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Media temperature	-40...125 °C	-40...125 °C	-40...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
cal_protection_type_iec_60529	IP67, IP69k	IP67, IP69k	IP67, IP69k	
Approval/Conformity	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	
Productview	Page 368	Page 368	Page 368	





	BSP00H0 BSP B005-DV004-A06A1A-S4	BSP00H1 BSP B010-DV004-A06A1A-S4	BSP00FY BSP V010-DV004-A06A1A-S4	BSP00H2 BSP B020-DV004-A06A1A-S4	BSP00H3 BSP B050-DV004-A06A1A-S4
	0...5 bar	0...10 bar	–1...10 bar	0...20 bar	0...50 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	12 bar	20 bar	20 bar	50 bar	120 bar
	15.00 bar	35.00 bar	35.00 bar	70.00 bar	150.00 bar
	8...32 VDC	8...32 VDC	8...32 VDC	8...32 VDC	8...32 VDC
	—	—	—	—	—
	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA
	—	—	—	—	—
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k
	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,
	Page 368	Page 368	Page 368	Page 368	Page 368



	BSP00H4 BSP B100-DV004-A06A1A-S4	**BSP00H5** BSP B250-DV004-A06A1A-S4	**BSP00F3** BSP B400-DV004-A06A1A-S4	
Measuring range	0...100 bar	0...250 bar	0...400 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	200 bar	400 bar	1200 bar	
Burst pressure	300.00 bar	750.00 bar	1500.00 bar	
Operating voltage Ub	8...32 VDC	8...32 VDC	8...32 VDC	
Interface	—	—	—	
Analog output	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	
Switching output	—	—	—	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Process connection	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	
Process connection material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4571)	
Gasket, material	Fluoroelastomer	Fluoroelastomer	without, welded	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Media temperature	-40...125 °C	-40...125 °C	-40...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
cal_protection_type_iec_60529	IP67, IP69k	IP67, IP69k	IP67, IP69k	
Approval/Conformity	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	
Productview	Page 368	Page 368	Page 369	

	BSP00H6 BSP B600-DV004-A06A1A-S4	BSP00H9 BSP B002-FV004-A06A1A-S4	BSP00H7 BSP V002-FV004-A06A1A-S4	BSP00HA BSP B005-FV004-A06A1A-S4	BSP00HC BSP B010-FV004-A06A1A-S4
	0...600 bar	0...2 bar	–1...2 bar	0...5 bar	0...10 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	1200 bar	4 bar	4 bar	10 bar	20 bar
	1800.00 bar	10.00 bar	10.00 bar	15.00 bar	35.00 bar
	8...32 VDC	8...32 VDC	8...32 VDC	8...32 VDC	8...32 VDC
	—	—	—	—	—
	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA
	—	—	—	—	—
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	G 1/4“ (DIN 3852)	NPT 1/4“	NPT 1/4“	NPT 1/4“	NPT 1/4“
	Stainless steel (1.4571)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	without, welded	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k
	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,
	Page 369	Page 369	Page 370	Page 369	Page 369



	BSP00H8 BSP V010-FV004-A06A1A-S4	**BSP00HE** BSP B020-FV004-A06A1A-S4	**BSP00HF** BSP B050-FV004-A06A1A-S4	
Measuring range	–1...10 bar	0...20 bar	0...50 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	20 bar	50 bar	120 bar	
Burst pressure	35.00 bar	70.00 bar	150.00 bar	
Operating voltage Ub	8...32 VDC	8...32 VDC	8...32 VDC	
Interface	—	—	—	
Analog output	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	
Switching output	—	—	—	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Process connection	NPT 1/4“	NPT 1/4“	NPT 1/4“	
Process connection material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Gasket, material	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Media temperature	-40...125 °C	-40...125 °C	-40...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
cal_protection_type_iec_60529	IP67, IP69k	IP67, IP69k	IP67, IP69k	
Approval/Conformity	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	
Productview	Page 370	Page 369	Page 369	





	BSP00HH BSP B100-FV004-A06A1A-S4	BSP00HJ BSP B250-FV004-A06A1A-S4	BSP00HK BSP B400-FV004-A06A1A-S4	BSP00HL BSP B600-FV004-A06A1A-S4	BSP00HP BSP B002-KV004-A06A1A-S4
	0...100 bar	0...250 bar	0...400 bar	0...600 bar	0...2 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	200 bar	400 bar	1200 bar	1200 bar	4 bar
	300.00 bar	750.00 bar	1500.00 bar	1800.00 bar	10.00 bar
	8...32 VDC	8...32 VDC	8...32 VDC	8...32 VDC	8...32 VDC
	—	—	—	—	—
	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA
	—	—	—	—	—
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	NPT 1/4“	NPT 1/4“	NPT 1/4“	NPT 1/4“	R 1/4“
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4301)
	Fluoroelastomer	Fluoroelastomer	without, welded	without, welded	Fluoroelastomer
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k
	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,
	Page 369	Page 369	Page 370	Page 370	Page 370



	BSP00HM BSP V002-KV004-A06A1A-S4	**BSP00HR** BSP B005-KV004-A06A1A-S4	**BSP00HT** BSP B010-KV004-A06A1A-S4	
Measuring range	–1...2 bar	0...5 bar	0...10 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	4 bar	12 bar	20 bar	
Burst pressure	10.00 bar	15.00 bar	35.00 bar	
Operating voltage Ub	8...32 VDC	8...32 VDC	8...32 VDC	
Interface	—	—	—	
Analog output	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	
Switching output	—	—	—	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Process connection	R 1/4“	R 1/4“	R 1/4“	
Process connection material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Gasket, material	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Media temperature	-40...125 °C	-40...125 °C	-40...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
cal_protection_type_iec_60529	IP67, IP69k	IP67, IP69k	IP67, IP69k	
Approval/Conformity	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	
Productview	Page 370	Page 370	Page 370	





	BSP00HN BSP V010-KV004-A06A1A-S4	BSP00HU BSP B020-KV004-A06A1A-S4	BSP00HW BSP B050-KV004-A06A1A-S4	BSP00HY BSP B100-KV004-A06A1A-S4	BSP00HZ BSP B250-KV004-A06A1A-S4
	–1...10 bar	0...20 bar	0...50 bar	0...100 bar	0...250 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	20 bar	50 bar	120 bar	200 bar	400 bar
	35.00 bar	70.00 bar	150.00 bar	300.00 bar	750.00 bar
	8...32 VDC	8...32 VDC	8...32 VDC	8...32 VDC	8...32 VDC
	—	—	—	—	—
	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA
	—	—	—	—	—
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	R 1/4“	R 1/4“	R 1/4“	R 1/4“	R 1/4“
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k
	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,
	Page 370	Page 370	Page 370	Page 370	Page 370



	BSP00J0 BSP B400-KV004-A06A1A-S4	BSP00J1 BSP B600-KV004-A06A1A-S4	BSP00W2 BSP B001-ZT004-A06A1A-S4-006	
Measuring range	0...400 bar	0...600 bar	0...1 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.18 % FSO BFSL	
Overload pressure	1200 bar	1200 bar	5 bar	
Burst pressure	1500.00 bar	1800.00 bar	7.50 bar	
Operating voltage Ub	8...32 VDC	8...32 VDC	8...32 VDC	
Interface	—	—	—	
Analog output	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	
Switching output	—	—	—	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Process connection	R 1/4“	R 1/4“	1 1/2“ Tri Clamp	
Process connection material	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4404)	
Gasket, material	without, welded	without, welded	without, welded	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4404)	
Media temperature	-40...125 °C	-40...125 °C	-10...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
cal_protection_type_iec_60529	IP67, IP69k	IP67, IP69k	IP69K	
Approval/Conformity	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, WEEE, EAC	
Productview	Page 371	Page 371	Page 371	





	BSP00W3 BSP B002-ZT004-A06A1A-S4-006	BSP00W4 BSP M100-ZT004-A06A1A-S4-006	BSP00W5 BSP M250-ZT004-A06A1A-S4-006	BSP00W6 BSP M500-ZT004-A06A1A-S4-006	BSP00W7 BSP M750-ZT004-A06A1A-S4-006
	0...2 bar	0 bar...100 mbar	0 bar...250 mbar	0 bar...500 mbar	0 bar...750 mbar
	±0.18 % FSO BFSL	±0.18 % FSO BFSL	±0.18 % FSO BFSL	±0.18 % FSO BFSL	±0.18 % FSO BFSL
	10 bar	0.5 bar	1 bar	5 bar	5 bar
	15.00 bar	1.50 bar	1.50 bar	7.50 bar	7.50 bar
	8...32 VDC	8...32 VDC	8...32 VDC	8...32 VDC	8...32 VDC
	—	—	—	—	—
	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA
	—	—	—	—	—
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	1 1/2“ Tri Clamp	1 1/2“ Tri Clamp	1 1/2“ Tri Clamp	1 1/2“ Tri Clamp	1 1/2“ Tri Clamp
	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)
	without, welded	without, welded	without, welded	without, welded	without, welded
	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)
	-10...125 °C	-10...125 °C	-10...125 °C	-10...125 °C	-10...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP69K
	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC
	Page 371	Page 371	Page 371	Page 371	Page 371



	BSP00PL BSP B002-DV004-D06S1A-S4	BSP00PJ BSP V002-DV004-D06S1A-S4	BSP00PM BSP B005-DV004-D06S1A-S4	
Measuring range	0...2 bar	–1...2 bar	0...5 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	5 bar	5 bar	12 bar	
Burst pressure	10.00 bar	10.00 bar	15.00 bar	
Operating voltage Ub	18...30 VDC	18...30 VDC	18...30 VDC	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Analog output	—	—	—	
Switching output	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Process connection	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	
Process connection material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Gasket, material	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Media temperature	-40...125 °C	-40...125 °C	-40...125 °C	
Ambient temperature	-25...85 °C	-25...85 °C	-25...85 °C	
cal_protection_type_iec_60529	IP67, IP69k	IP67, IP69k	IP67, IP69k	
Approval/Conformity	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	
Productview	Page 368	Page 368	Page 368	





	BSP00PN BSP B010-DV004-D06S1A-S4	BSP00PK BSP V010-DV004-D06S1A-S4	BSP00PP BSP B020-DV004-D06S1A-S4	BSP00PR BSP B050-DV004-D06S1A-S4	BSP00PT BSP B100-DV004-D06S1A-S4
	0...10 bar	–1...10 bar	0...20 bar	0...50 bar	0...100 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	20 bar	20 bar	50 bar	120 bar	200 bar
	35.00 bar	35.00 bar	70.00 bar	150.00 bar	300.00 bar
	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	—	—	—	—	—
	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-25...85 °C	-25...85 °C	-25...85 °C	-25...85 °C	-25...85 °C
	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k
	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,
	Page 368	Page 368	Page 368	Page 368	Page 368



	BSP00PU BSP B250-DV004-D06S1A-S4	BSP00PW BSP B400-DV004-D06S1A-S4	BSP00PY BSP B600-DV004-D06S1A-S4	
Measuring range	0...250 bar	0...400 bar	0...600 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	400 bar	1200 bar	1200 bar	
Burst pressure	750.00 bar	1500.00 bar	1800.00 bar	
Operating voltage Ub	18...30 VDC	18...30 VDC	18...30 VDC	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Analog output	—	—	—	
Switching output	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Process connection	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	
Process connection material	Stainless steel (1.4301)	Stainless steel (1.4571)	Stainless steel (1.4571)	
Gasket, material	Fluoroelastomer	without, welded	without, welded	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Media temperature	-40...125 °C	-40...125 °C	-40...125 °C	
Ambient temperature	-25...85 °C	-25...85 °C	-25...85 °C	
cal_protection_type_iec_60529	IP67, IP69k	IP67, IP69k	IP67, IP69k	
Approval/Conformity	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	
Productview	Page 368	Page 369	Page 369	





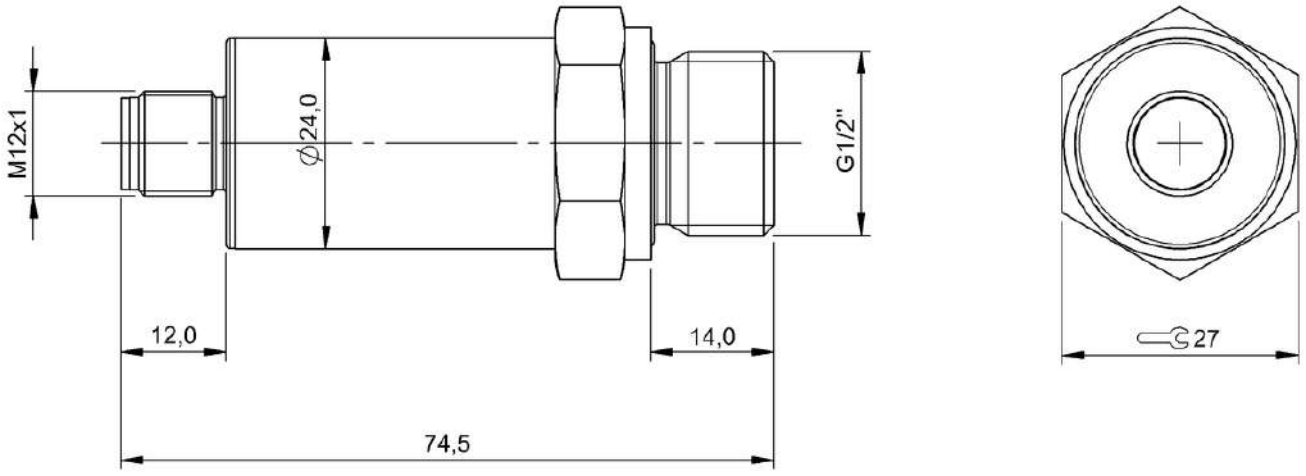
	BSP00T7 BSP B002-FV004-D06S1A-S4	BSP00T5 BSP V002-FV004-D06S1A-S4	BSP00T8 BSP B005-FV004-D06S1A-S4	BSP00T9 BSP B010-FV004-D06S1A-S4	BSP00T6 BSP V010-FV004-D06S1A-S4
	0...2 bar	–1...2 bar	0...5 bar	0...10 bar	–1...10 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	5 bar	5 bar	12 bar	20 bar	20 bar
	10.00 bar	10.00 bar	15.00 bar	35.00 bar	35.00 bar
	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	—	—	—	—	—
	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	NPT 1/4“	NPT 1/4“	NPT 1/4“	NPT 1/4“	NPT 1/4“
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-25...85 °C	-25...85 °C	-25...85 °C	-25...85 °C	-25...85 °C
	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k	IP67, IP69k
	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,
	Page 369	Page 369	Page 369	Page 369	Page 369



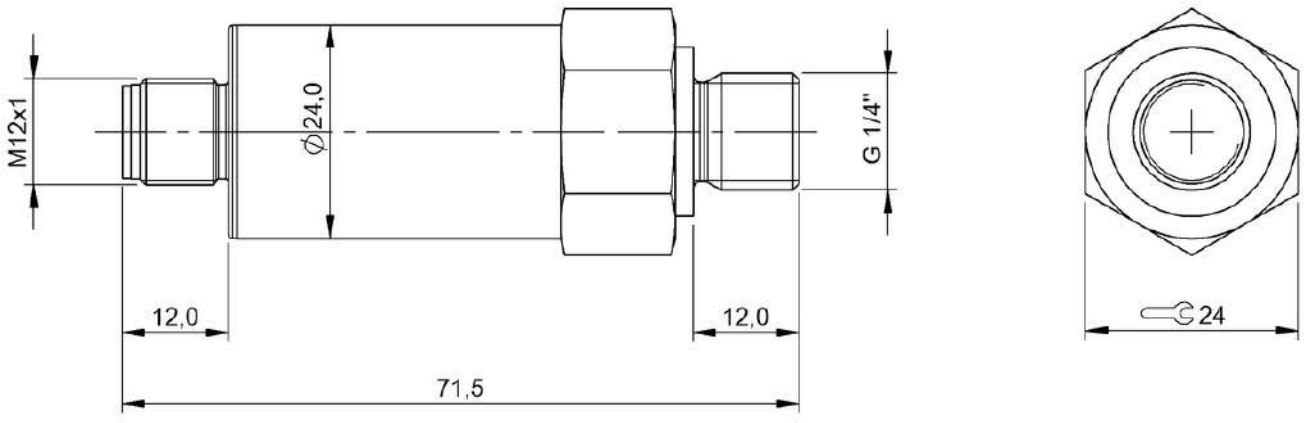
	BSP00TA BSP B020-FV004-D06S1A-S4	BSP00TC BSP B050-FV004-D06S1A-S4	BSP00TE BSP B100-FV004-D06S1A-S4	
Measuring range	0...20 bar	0...50 bar	0...100 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	50 bar	120 bar	200 bar	
Burst pressure	70.00 bar	150.00 bar	300.00 bar	
Operating voltage Ub	18...30 VDC	18...30 VDC	18...30 VDC	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Analog output	—	—	—	
Switching output	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Process connection	NPT 1/4“	NPT 1/4“	NPT 1/4“	
Process connection material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Gasket, material	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	
Housing material	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	
Media temperature	-40...125 °C	-40...125 °C	-40...125 °C	
Ambient temperature	-25...85 °C	-25...85 °C	-25...85 °C	
cal_protection_type_iec_60529	IP67, IP69k	IP67, IP69k	IP67, IP69k	
Approval/Conformity	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	
Productview	Page 369	Page 369	Page 369	



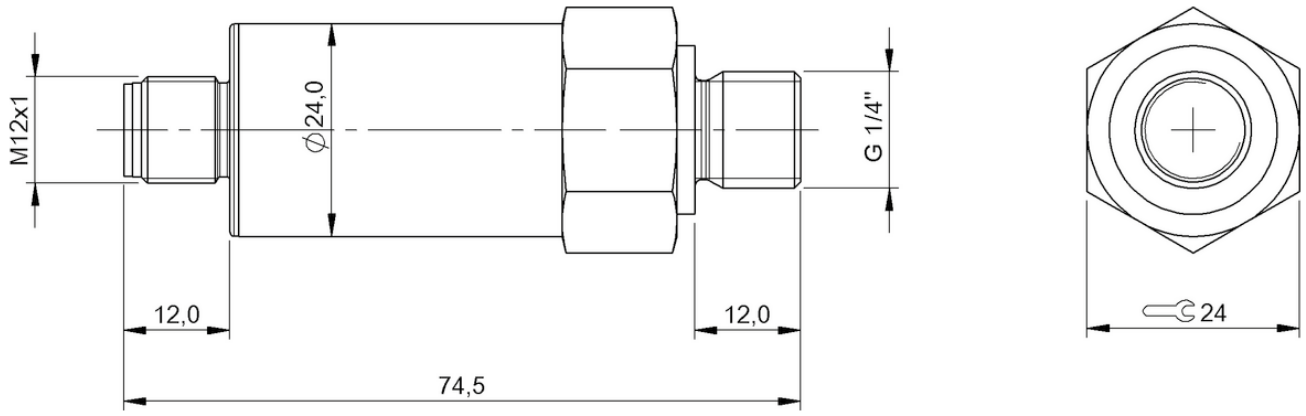
	BSP00TF BSP B250-FV004-D06S1A-S4	BSP00TH BSP B400-FV004-D06S1A-S4	BSP00TJ BSP B600-FV004-D06S1A-S4		
	0...250 bar	0...400 bar	0...600 bar		
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL		
	400 bar	1200 bar	1200 bar		
	750.00 bar	1500.00 bar	1800.00 bar		
	18...30 VDC	18...30 VDC	18...30 VDC		
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1		
	—	—	—		
	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)	PNP normally open/normally closed (NO/NC)		
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin		
	NPT 1/4“	NPT 1/4“	NPT 1/4“		
	Stainless steel (1.4301)	Stainless steel (1.4571)	Stainless steel (1.4571)		
	Fluoroelastomer	without, welded	without, welded		
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)		
	-40...125 °C	-40...125 °C	-40...125 °C		
	-25...85 °C	-25...85 °C	-25...85 °C		
	IP67, IP69k	IP67, IP69k	IP67, IP69k		
	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,	CE, cULus, EAC, WEEE,		
	Page 369	Page 370	Page 370		



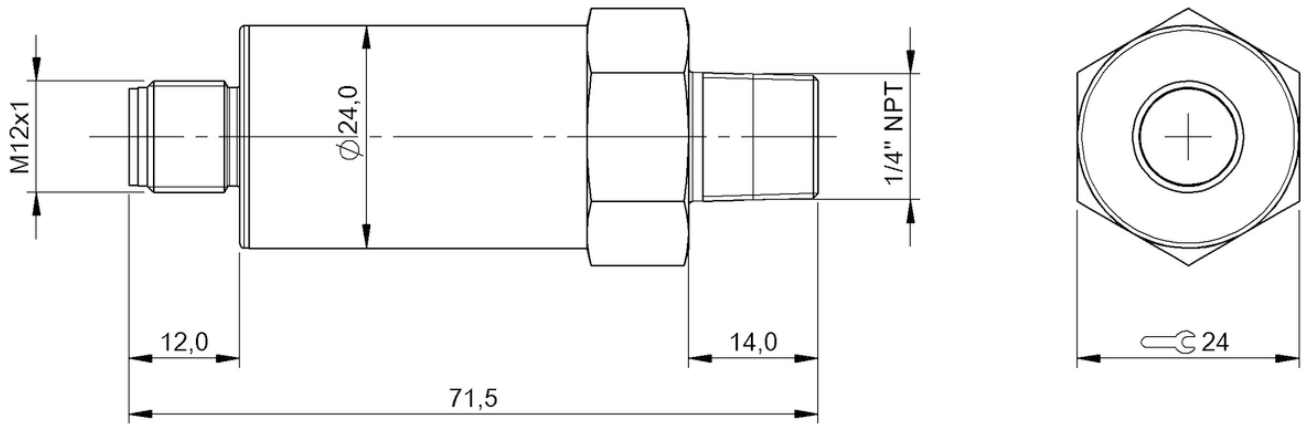
BSP00KP, BSP00KM, BSP00KR, BSP00KT, BSP00KN, BSP00KU, BSP00KW, BSP00KY, BSP00KZ, BSP00L0, BSP00L1, BSP00J4, BSP00J2, BSP00J5, BSP00J6, BSP00J3, BSP00J7, BSP00J8, BSP00FT, BSP00FU, BSP00J9, BSP00JA, BSP00JC



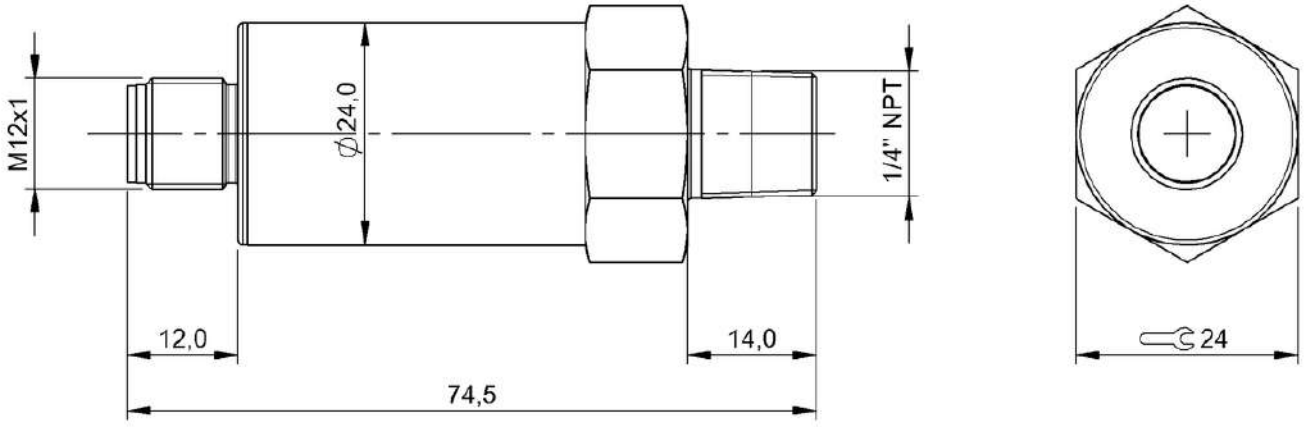
BSP00JH, BSP00JE, BSP00JJ, BSP00L8, BSP00JK, BSP00JF, BSP00JL, BSP00JM, BSP00JN, BSP00JP, BSP00FZ, BSP00FW, BSP00H0, BSP00H1, BSP00FY, BSP00H2, BSP00H3, BSP00H4, BSP00H5, BSP00PL, BSP00PJ, BSP00PM, BSP00PN, BSP00PK, BSP00PP, BSP00PR, BSP00PT, BSP00PU



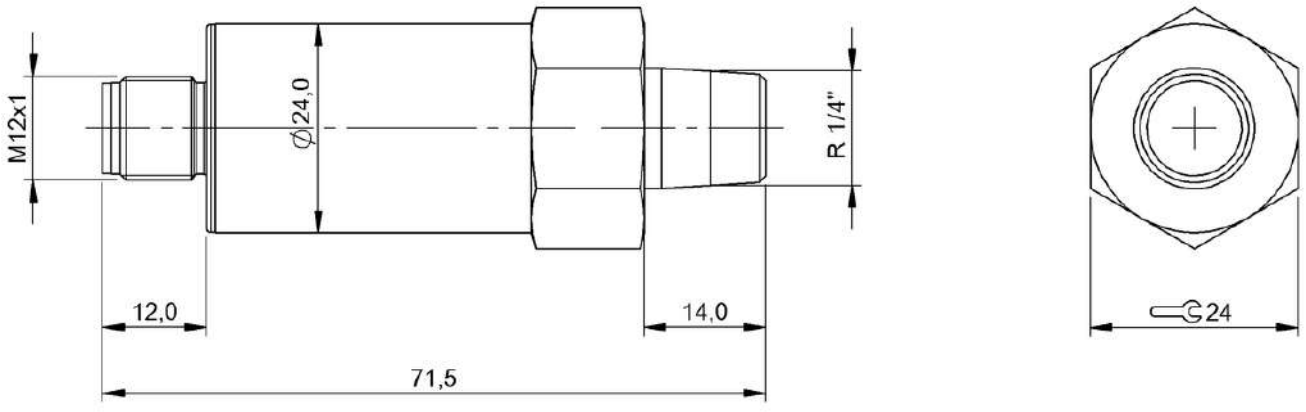
BSP00JR, BSP00JT, BSP00F3, BSP00H6, BSP00PW, BSP00PY



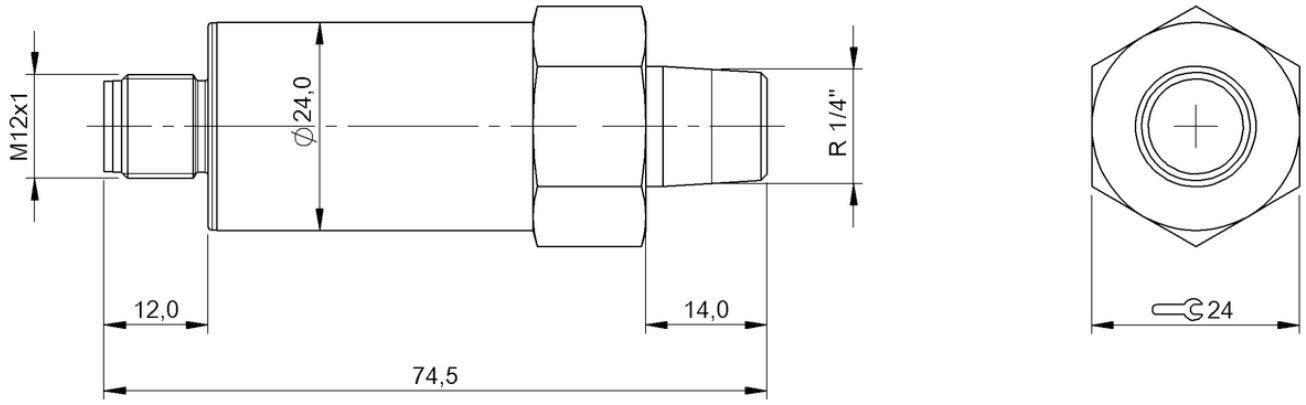
BSP00JY, BSP00JZ, BSP00K0, BSP00K1, BSP00K2, BSP00K3, BSP00K4, BSP00H9, BSP00HA, BSP00HC, BSP00HE, BSP00HF, BSP00HH, BSP00HJ, BSP00T7, BSP00T5, BSP00T8, BSP00T9, BSP00T6, BSP00TA, BSP00TC, BSP00TE, BSP00TF



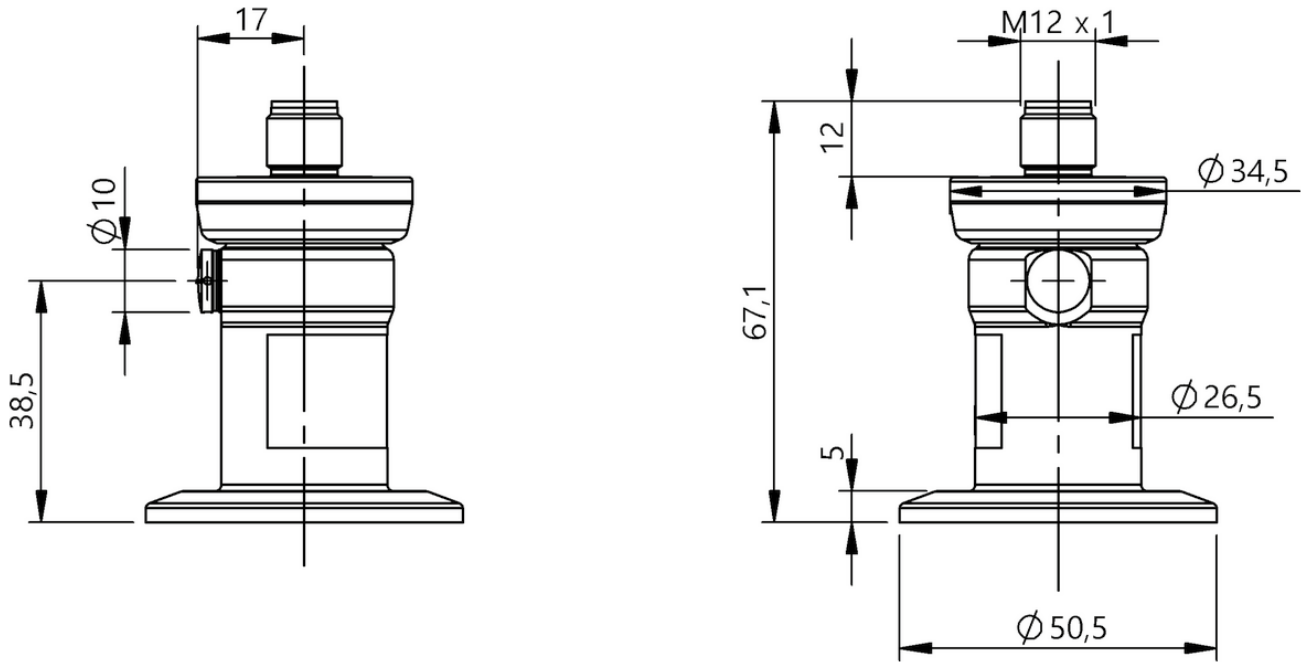
BSP00JU, BSP00JW, BSP00K5, BSP00K6, BSP00H7, BSP00H8, BSP00HK, BSP00HL, BSP00TH, BSP00TJ



BSP00K9, BSP00K7, BSP00KA, BSP00KC, BSP00K8, BSP00KE, BSP00KF, BSP00KH, BSP00KJ, BSP00HP, BSP00HM, BSP00HR, BSP00HT, BSP00HN, BSP00HU, BSP00HW, BSP00HY, BSP00HZ



BSP00KK, BSP00KL, BSP00J0, BSP00J1



BSP00W2, BSP00W3, BSP00W4, BSP00W5, BSP00W6, BSP00W7

	BSP00YZ BSP B010-HV009-P00S2B-S4-001	**BSP00Z0** BSP V050-HV009-P00S2B-S4-001	
Measuring range	0...10 bar	–1...50 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	20 bar	100 bar	
Burst pressure	35 bar	150 bar	
Operating voltage Ub	18...30 VDC	18...30 VDC	
Interface	IO-Link 1.1	IO-Link 1.1	
Analog output	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	
Switching output	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Process connection	G 1/2“ (DIN 3852)	G 1/2“ (DIN 3852)	
Process connection material	PVDF	PVDF	
Gasket, material	Fluoroelastomer	Fluoroelastomer	
Housing material	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	
Media temperature	-30...125 °C	-30...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE	
Productview	Page 378	Page 378	




	BSP00YN BSP M050-EV009-P00S2B-S4	BSP00Y2 BSP B002-EV009-P00S2B-S4	BSP00YR BSP V002-EV009-P00S2B-S4	BSP00Y3 BSP B005-EV009-P00S2B-S4
	0...0.05 bar	0...2 bar	–1...2 bar	0...5 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	0.5 bar	4 bar	4 bar	10 bar
	0.75 bar	10 bar	10 bar	15 bar
	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V
	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer
	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE
	Page 378	Page 378	Page 378	Page 378

	BSP00YY BSP V050-EV009-P00S2B-S4	BSP00YT BSP V010-EV009-P00S2B-S4	
Measuring range	-1...5 bar	–1...10 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	100 bar	20 bar	
Burst pressure	150 bar	35 bar	
Operating voltage Ub	18...30 VDC	18...30 VDC	
Interface	IO-Link 1.1	IO-Link 1.1	
Analog output	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	
Switching output	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Process connection	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	
Process connection material	Stainless steel (1.4301)	Stainless steel (1.4301)	
Gasket, material	Fluoroelastomer	Fluoroelastomer	
Housing material	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	
Media temperature	-40...125 °C	-40...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE	
Productview	Page 378	Page 378	

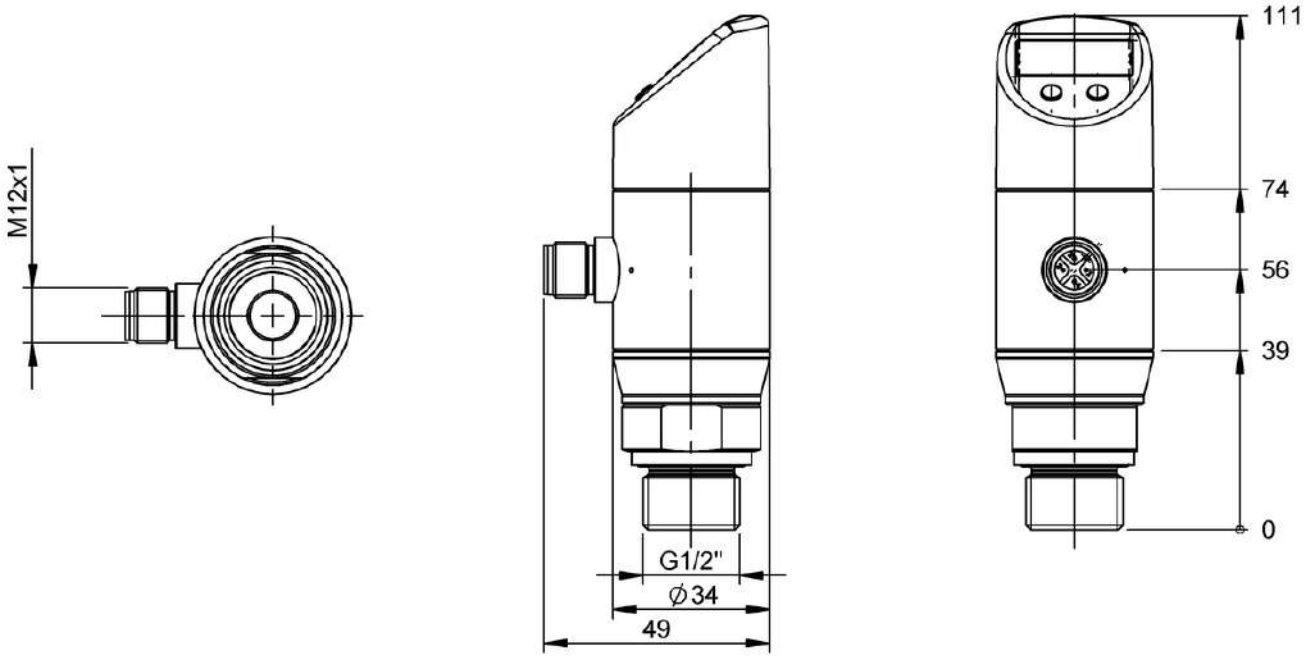



	BSP00Y4 BSP B010-EV009-P00S2B-S4	BSP00Y7 BSP B050-EV009-P00S2B-S4	BSP00Y8 BSP B100-EV009-P00S2B-S4	BSP00Y6 BSP B020-EV009-P00S2B-S4
	0...10 bar	0...50 bar	0...100 bar	0...250 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	20 bar	100 bar	200 bar	40 bar
	35 bar	150 bar	300 bar	70 bar
	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V
	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer
	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE
	Page 378	Page 378	Page 378	Page 378

	BSP00YC BSP B250-EV009-P00S2B-S4	BSP00YH BSP B400-EV009-P00S2B-S4	
Measuring range	0...250 bar	0...400 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	400 bar	650 bar	
Burst pressure	750 bar	1000 bar	
Operating voltage Ub	18...30 VDC	18...30 VDC	
Interface	IO-Link 1.1	IO-Link 1.1	
Analog output	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	
Switching output	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Process connection	G 1/4“ (DIN 3852)	G 1/4“ (DIN 3852)	
Process connection material	Stainless steel (1.4301)	Stainless steel (1.4301)	
Gasket, material	Fluoroelastomer	Fluoroelastomer	
Housing material	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	
Media temperature	-40...125 °C	-40...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE	
Productview	Page 376	Page 376	

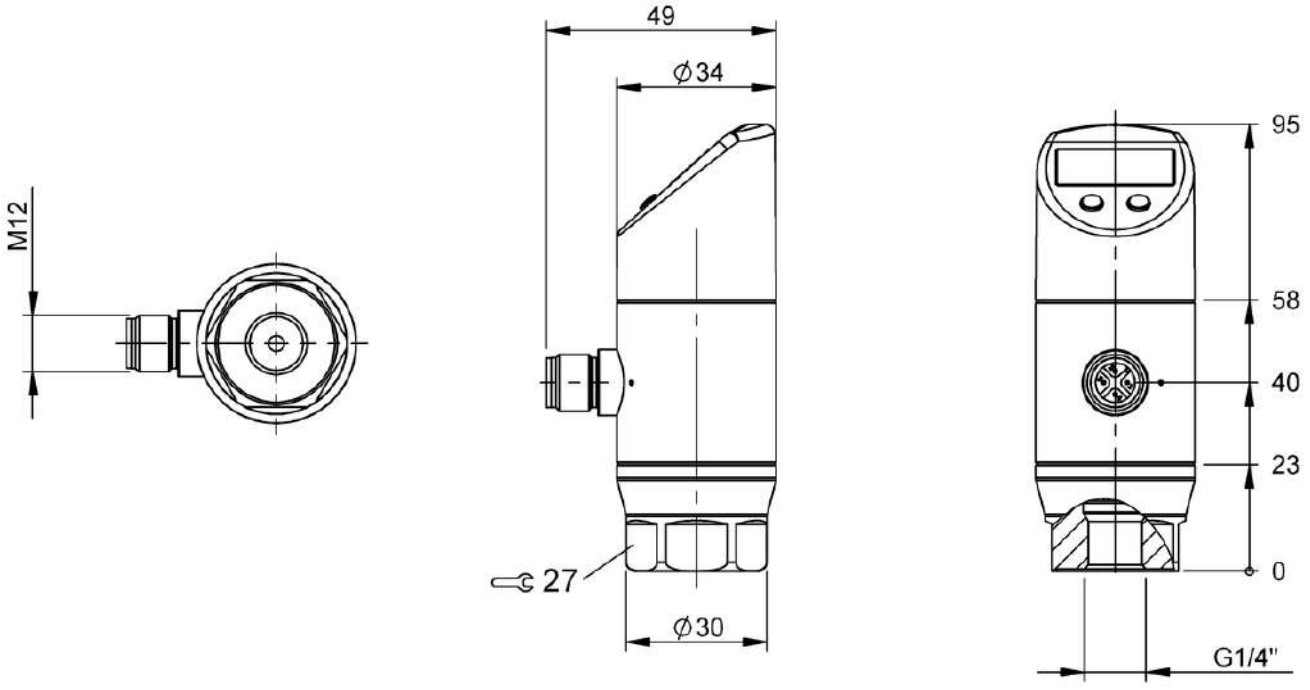



	BSP00YK BSP B600-EV009-P00S2B-S4	BSP00Z3 BSP V010-GV009-P00S2B-S4	BSP00Z1 BSP B100-GV009-P00S2B-S4	BSP00Z2 BSP B250-GV009-P00S2B-S4
	0...600 bar	–1...10 bar	0...100 bar	0...250 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	1000 bar	20 bar	200 bar	400 bar
	1800 bar	35 bar	300 bar	750 bar
	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V
	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	G 1/4“ (DIN 3852)	NPT 1/4“	NPT 1/4“	NPT 1/4“
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel (1.4301)
	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer
	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE
	Page 376	Page 376	Page 376	Page 376



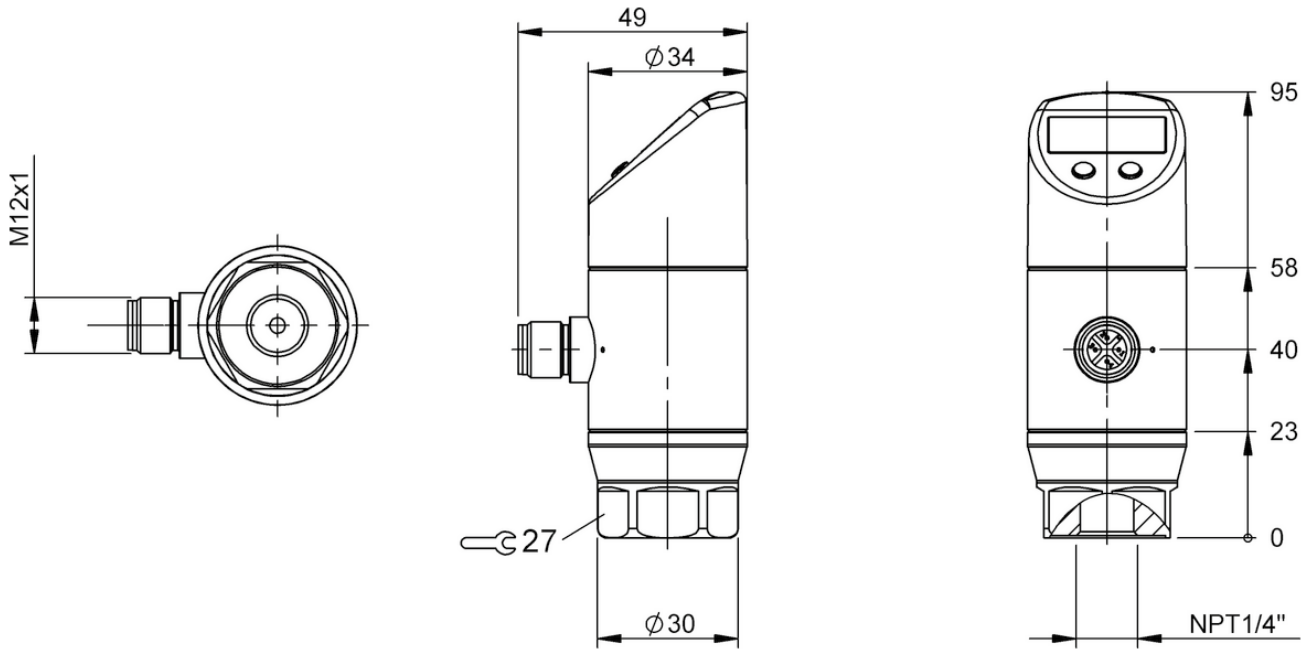
1) Display and control panel, 2) Process connection, 3) Housing rotatable 320°

BSP00YZ, BSP00Z0



1) Display and control panel, 2) Process connection, 3) Housing rotatable 320°

BSP00YN, BSP00Y2, BSP00YR, BSP00Y3, BSP00YY, BSP00YT, BSP00Y4, BSP00Y7, BSP00Y8, BSP00Y6, BSP00YC, BSP00YH, BSP00YK



1) Display and control panel, 2) Process connection, 3) Housing rotatable 320°

BSP00Z3, BSP00Z1, BSP00Z2

	BSP00ZU BSP B002-IV010-P00S2B-S4	**BSP00ZW** BSP B005-IV010-P00S2B-S4	
Measuring range	0...2 bar	0...5 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	10 bar	40 bar	
Burst pressure	15 bar	50 bar	
Operating voltage Ub	18...30 VDC	18...30 VDC	
Interface	IO-Link 1.1	IO-Link 1.1	
Analog output	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	
Switching output	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Process connection	G 1/2“ (DIN 3852) front-flush	G 1/2“ (DIN 3852) front-flush	
Process connection material	Stainless steel (1.4404)	Stainless steel (1.4404)	
Gasket, material	Fluoroelastomer	Fluoroelastomer	
Housing material	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	
Media temperature	-40...125 °C	-40...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	
Protection degree	IP67, IP69	IP67, IP69	
Approval/Conformity	CE, cULus, EAC, WEEE, ECOLAB	CE, cULus, EAC, WEEE, ECOLAB	
Productview	Pager 389	Pager 389	




	BSP00ZY BSP B010-IV010-P00S2B-S4	BSP00ZZ BSP B020-IV010-P00S2B-S4	BSP0102 BSP M100-ZT010-P00S2B-S4-006	BSP0103 BSP M500-ZT010-P00S2B-S4-006
	0...10 bar	0...20 bar	0...0.1 bar	0...0.5 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	40 bar	80 bar	0.5 bar	5 bar
	50 bar	120 bar	1.5 bar	7.5 bar
	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V
	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	G 1/2“ (DIN 3852) front-flush	G 1/2“ (DIN 3852) front-flush	1 1/2“ Clamp	1 1/2“ Clamp
	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)
	Fluoroelastomer	Fluoroelastomer	—	—
	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene
	-40...125 °C	-40...125 °C	-10...125 °C	-10...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67, IP69	IP67, IP69	IP67, IP69	IP67, IP69
	CE, cULus, EAC, WEEE, ECOLAB	CE, cULus, EAC, WEEE, ECOLAB	CE, cULus, EAC, WEEE, ECOLAB	CE, cULus, EAC, WEEE, ECOLAB
	Pager 389	Pager 389	Pager 389	Pager 389

	BSP0100 BSP B001-ZT010-P00S2B-S4-006	**BSP0101** BSP B002-ZT010-P00S2B-S4-006	
Measuring range	0...1 bar	0...2 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	5 bar	10 bar	
Burst pressure	7.5 bar	15 bar	
Operating voltage Ub	18...30 VDC	18...30 VDC	
Interface	IO-Link 1.1	IO-Link 1.1	
Analog output	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	
Switching output	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Process connection	1 1/2“ Clamp	1 1/2“ Clamp	
Process connection material	Stainless steel (1.4404)	Stainless steel (1.4404)	
Gasket, material	—	—	
Housing material	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	
Media temperature	-10...125 °C	-10...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	
Protection degree	IP67, IP69	IP67, IP69	
Approval/Conformity	CE, cULus, EAC, WEEE, ECOLAB	CE, cULus, EAC, WEEE, ECOLAB	
Productview	Pager 389	Pager 389	




	BSP00ZH BSP V002-IV009-P00S2B-S4	BSP00Z4 BSP B002-IV009-P00S2B-S4	BSP00ZJ BSP V003-IV009-P00S2B-S4	BSP00Z5 BSP B005-IV009-P00S2B-S4
	–1...2 bar	0...2 bar	-1...3 bar	0...5 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	10 bar	10 bar	20 bar	40 bar
	15 bar	15 bar	25 bar	50 bar
	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V
	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	G 1/2“ (DIN 3852) front-flush	G 1/2“ (DIN 3852) front-flush	G 1/2“ (DIN 3852) front-flush	G 1/2“ (DIN 3852) front-flush
	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)
	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer
	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Pager 389	Pager 389	Pager 389	Pager 389

	BSP00Z6 BSP B010-IV009-P00S2B-S4	**BSP00ZK** BSP V010-IV009-P00S2B-S4	
Measuring range	0...10 bar	–1...10 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	40 bar	40 bar	
Burst pressure	50 bar	50 bar	
Operating voltage Ub	18...30 VDC	18...30 VDC	
Interface	IO-Link 1.1	IO-Link 1.1	
Analog output	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	
Switching output	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Process connection	G 1/2“ (DIN 3852) front-flush	G 1/2“ (DIN 3852) front-flush	
Process connection material	Stainless steel (1.4404)	Stainless steel (1.4404)	
Gasket, material	Fluoroelastomer	Fluoroelastomer	
Housing material	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	
Media temperature	-40...125 °C	-40...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE	
Productview	Page 399	Page 399	




	BSP00Z7 BSP B020-IV009-P00S2B-S4	BSP00Z8 BSP B050-IV009-P00S2B-S4	BSP00Z9 BSP B100-IV009-P00S2B-S4	BSP00ZA BSP B120-IV009-P00S2B-S4
	0...20 bar	0...50 bar	0...100 bar	0...120 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	80 bar	100 bar	200 bar	200 bar
	120 bar	180 bar	300 bar	300 bar
	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V
	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	G 1/2“ (DIN 3852) front-flush	G 1/2“ (DIN 3852) front-flush	G 1/2“ (DIN 3852) front-flush	G 1/2“ (DIN 3852) front-flush
	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)
	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer
	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene
	-40...125 °C	-40...125 °C	-40...125 °C	-40...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE
	Page 399	Page 399	Page 399	Page 399

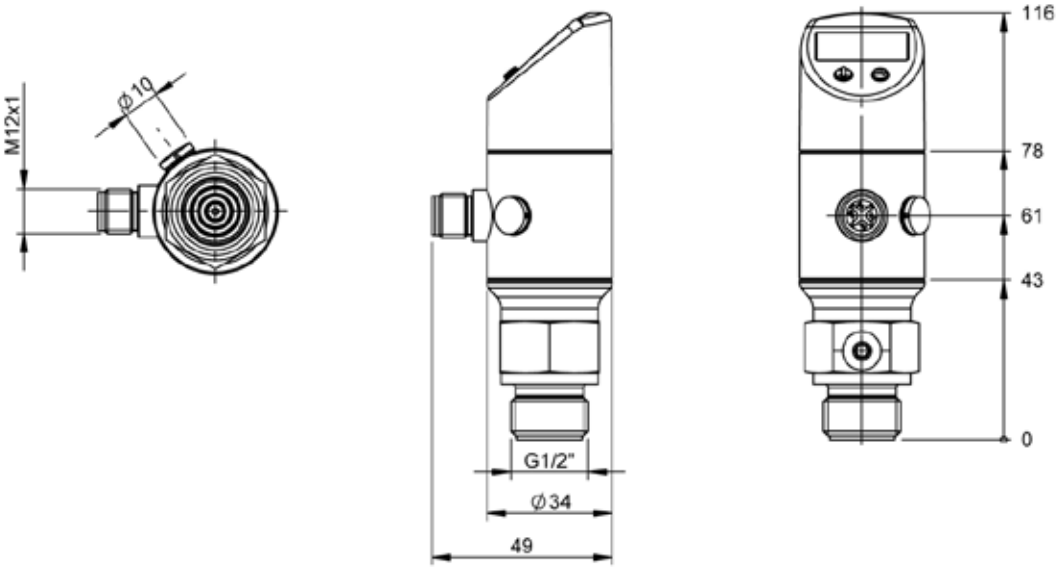
	BSP00ZC BSP B250-IV009-P00S2B-S4	**BSP00ZE** BSP B400-IV009-P00S2B-S4	
Measuring range	0...250 bar	0...400 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	400 bar	600 bar	
Burst pressure	750 bar	1000 bar	
Operating voltage Ub	18...30 VDC	18...30 VDC	
Interface	IO-Link 1.1	IO-Link 1.1	
Analog output	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	
Switching output	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Process connection	G 1/2“ (DIN 3852) front-flush	G 1/2“ (DIN 3852) front-flush	
Process connection material	Stainless steel (1.4404)	Stainless steel (1.4404)	
Gasket, material	Fluoroelastomer	Fluoroelastomer	
Housing material	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	
Media temperature	-40...125 °C	-40...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE	
Productview	Page 399	Page 399	




	BSP00ZF BSP B600-IV009-P00S2B-S4	BSP00ZN BSP M100-ZT009-P00S2B-S4-006	BSP00ZP BSP M250-ZT009-P00S2B-S4-006	BSP00ZR BSP M500-ZT009-P00S2B-S4-006
	0...600 bar	0...0.1 bar	0...0.25 bar	0...0.5 bar
	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
	800 bar	0.5 bar	1 bar	5 bar
	1100 bar	1.5 bar	1.5 bar	7.5 bar
	18...30 VDC	18...30 VDC	18...30 VDC	18...30 VDC
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V
	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	G 1/2“ (DIN 3852) front-flush	1 1/2“ Clamp	1 1/2“ Clamp	1 1/2“ Clamp
	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)
	Fluoroelastomer	—	—	—
	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene
	-40...125 °C	-10...125 °C	-10...125 °C	-10...125 °C
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	IP67	IP67	IP67	IP67
	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE
	Page 399	Page 399	Page 399	Page 399

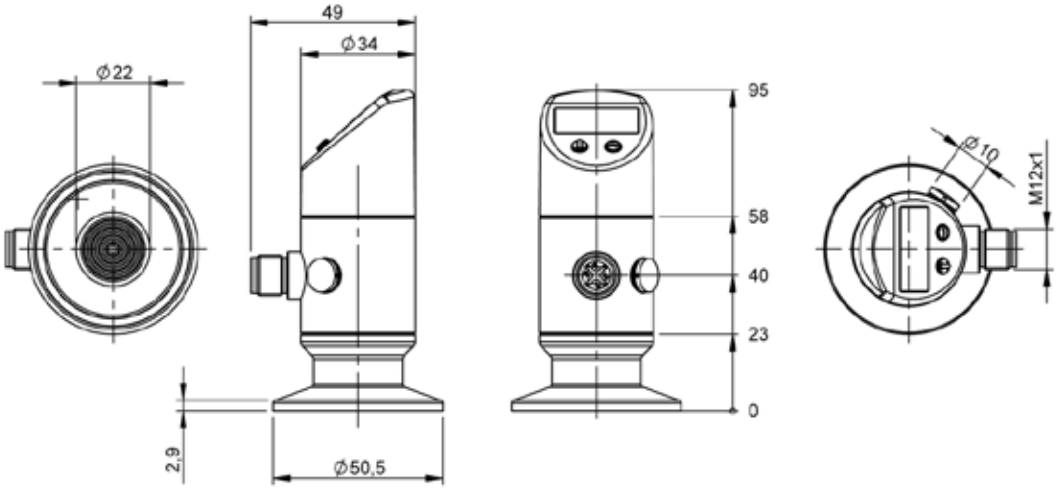
	BSP00ZT BSP M750-ZT009-P00S2B-S4-006	**BSP00ZL** BSP B001-ZT009-P00S2B-S4-006	
Measuring range	0...0.75 bar	0...1 bar	
Accuracy	±0.5 % FSO BFSL	±0.5 % FSO BFSL	
Overload pressure	5 bar	5 bar	
Burst pressure	7.5 bar	7.5 bar	
Operating voltage Ub	18...30 VDC	18...30 VDC	
Interface	IO-Link 1.1	IO-Link 1.1	
Analog output	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V	
Switching output	2x PNP/NPN NO/NC Switchable	2x PNP/NPN NO/NC Switchable	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Process connection	1 1/2“ Clamp	1 1/2“ Clamp	
Process connection material	Stainless steel (1.4404)	Stainless steel (1.4404)	
Gasket, material	—	—	
Housing material	Stainless steel (1.4301) PE, High-density polyethylene	Stainless steel (1.4301) PE, High-density polyethylene	
Media temperature	-10...125 °C	-10...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE, cULus, EAC, WEE	CE, cULus, EAC, WEE	
Productview	Page 399	Page 399	

	BSP002M BSP B002-ZT009-P00S2B-S4-006			
	0...2 bar			
	±0.5 % FSO BFSL			
	10 bar			
	15 bar			
	18...30 VDC			
	IO-Link 1.1			
	Analog, voltage/Analog, current selectable 4…20 mA/0…10 V			
	2x PNP/NPN NO/NC Switchable			
	Connector, M12x1 connector, 4-pin			
	1 1/2“ Clamp			
	Stainless steel (1.4404)			
	—			
	Stainless steel (1.4301) PE, High-density polyethylene			
	-10...125 °C			
	-40...85 °C			
	IP67			
	CE, cULus, EAC, WEE			
	Page 399			



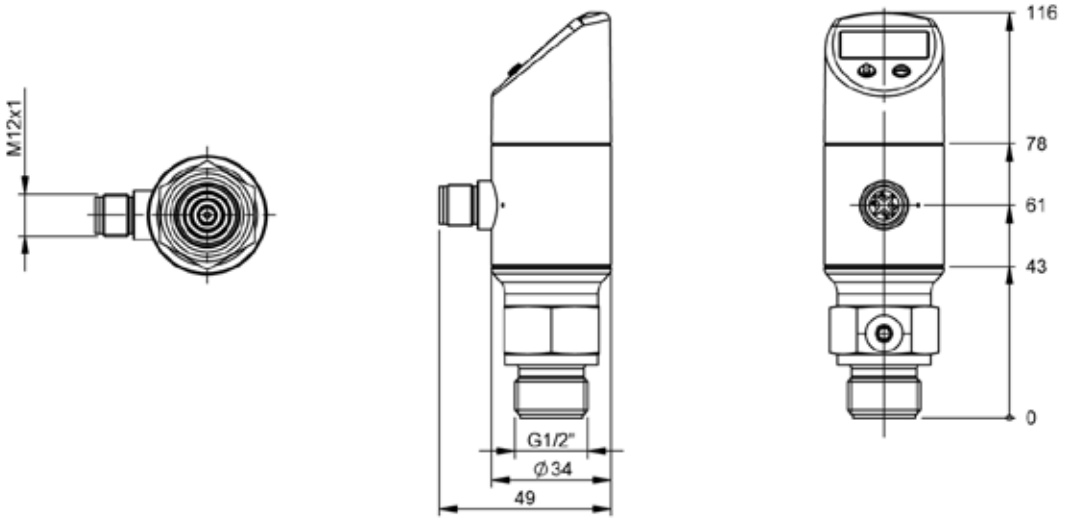
1) Display and control panel, 2) Process connection, 3) Housing rotatable 320°

BSP00ZU, BSP00ZW, BSP00ZY, BSP00ZZ



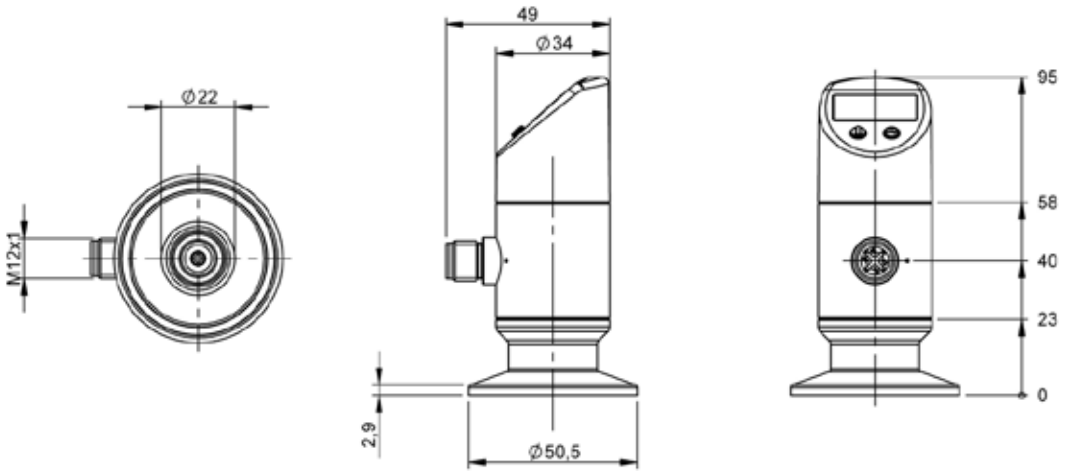
1) Display and control panel, 2) Process connection, 3) Housing rotatable 320°

BSP0102, BSP0103, BSP0100, BSP0101



1) Display and control panel, 2) Process connection, 3) Housing rotatable 320°

BSP00ZH, BSP00Z4, BSP00ZJ, BSP00Z5, BSP00Z6, BSP00ZK, PAGE 390, BSP00Z8, BSP00Z9, BSP00ZA, BSP00ZC, BSP00ZE, BSP00ZF



1) Display and control panel, 2) Process connection, 3) Housing rotatable 320°

BSP00ZN, BSP00ZP, BSP00ZR, BSP00ZT, BSP00ZL, BSP00ZM

Reliably detect and measure hot objects

TEMPERATURE SENSORS

With temperature sensors, you can measure and monitor temperatures by contact or contactlessly in a wide range of applications.

The most important benefits

- Rugged M30 stainless steel housing with IP67 protection
- Temperature range 250…1250 °C
- Numerous functions and settings using the IO-Link interface


BALLUFF
ON



	BFT0015 BFT 6025-HV003-A00A0C-S4	**BFT0012** BFT 6025-HV003-A02A0C-S4	**BFT001H** BFT 6025-HV003-D00A0C-S4	
Measuring range	-20...80 °C	-20...80 °C	-20...80 °C	
Measuring element	Pt1000	Pt1000	Pt1000	
Operating voltage Ub	15...35 VDC	15...35 VDC	15...35 VDC	
Analog output	Analog, voltage 0…10 V	Analog, current 4…20 mA	—	
Switching output	PNP	PNP	2x PNP	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Installation length from contact surface	25 mm	25 mm	25 mm	
Process connection	G 1/2“ outer	G 1/2“ outer	G 1/2“ outer	
Process connection material	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)	
Gasket, material	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	
Housing material	PC/ABS TPE-E, PC, Stainless steel (1.4301)	PC/ABS TPE-E, PC, Stainless steel (1.4301)	PC/ABS TPE-E, PC, Stainless steel (1.4301)	
Pressure rating max.	150 bar	150 bar	150 bar	
Ambient temperature	-20...80 °C	-20...80 °C	-20...80 °C	
IP rating	IP65, IP67	IP65, IP67	IP65, IP67	
Approval/Conformity	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	
Productview	Page 400	Page 400	Page 400	





	BFT001C BFT 6025-JC003-A00A0C-S4	BFT0018 BFT 6025-JC003-A02A0C-S4	BFT001L BFT 6025-JC003-D00A0C-S4	BFT0016 BFT 6050-HV003-A00A0C-S4	BFT0013 BFT 6050-HV003-A02A0C-S4
	-20...80 °C	-20...80 °C	-20...80 °C	-20...80 °C	-20...80 °C
	Pt1000	Pt1000	Pt1000	Pt1000	Pt1000
	15...35 VDC	15...35 VDC	15...35 VDC	15...35 VDC	15...35 VDC
	Analog, voltage 0…10 V	Analog, current 4…20 mA	—	Analog, voltage 0…10 V	Analog, current 4…20 mA
	PNP	PNP	2x PNP	PNP	PNP
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	25 mm	25 mm	25 mm	50 mm	50 mm
	NPT 1/2“ outer	NPT 1/2“ outer	NPT 1/2“ outer	G 1/2“ outer	G 1/2“ outer
	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)
	—	—	—	Fluoroelastomer	Fluoroelastomer
	PC/ABS TPE-E, PC, Stainless steel (1.4301)	PC/ABS TPE-E, PC, Stainless steel (1.4301)	PC/ABS TPE-E, PC, Stainless steel (1.4301)	PC/ABS TPE-E, PC, Stainless steel (1.4301)	PC/ABS TPE-E, PC, Stainless steel (1.4301)
	150 bar	150 bar	150 bar	150 bar	150 bar
	-20...80 °C	-20...80 °C	-20...80 °C	-20...80 °C	-20...80 °C
	IP65, IP67	IP65, IP67	IP65, IP67	IP65, IP67	IP65, IP67
	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC
	Page 400	Page 400	Page 400	Page 400	Page 400



	BFT001J BFT 6050-HV003-D00A0C-S4	**BFT001E** BFT 6050-JC003-A00A0C-S4	**BFT0019** BFT 6050-JC003-A02A0C-S4	
Measuring range	-20...80 °C	-20...80 °C	-20...80 °C	
Measuring element	Pt1000	Pt1000	Pt1000	
Operating voltage Ub	15...35 VDC	15...35 VDC	15...35 VDC	
Analog output	—	Analog, voltage 0…10 V	Analog, current 4…20 mA	
Switching output	2x PNP	PNP	PNP	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Installation length from contact surface	50 mm	50 mm	50 mm	
Process connection	G 1/2“ outer	NPT 1/2“ outer	NPT 1/2“ outer	
Process connection material	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)	
Gasket, material	Fluoroelastomer	—	—	
Housing material	PC/ABS TPE-E, PC, Stainless steel (1.4301)	PC/ABS TPE-E, PC, Stainless steel (1.4301)	PC/ABS TPE-E, PC, Stainless steel (1.4301)	
Pressure rating max.	150 bar	150 bar	150 bar	
Ambient temperature	-20...80 °C	-20...80 °C	-20...80 °C	
IP rating	IP65, IP67	IP65, IP67	IP65, IP67	
Approval/Conformity	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	
Productview	Page 400	Page 400	Page 400	





	BFT001M BFT 6050-JC003-D00A0C-S4	BFT0017 BFT 6100-HV003-A00A0C-S4	BFT0014 BFT 6100-HV003-A02A0C-S4	BFT001K BFT 6100-HV003-D00A0C-S4	BFT001F BFT 6100-JC003-A00A0C-S4
	-20...80 °C	-20...80 °C	-20...80 °C	-20...80 °C	-20...80 °C
	Pt1000	Pt1000	Pt1000	Pt1000	Pt1000
	15...35 VDC	15...35 VDC	15...35 VDC	15...35 VDC	15...35 VDC
	—	Analog, voltage 0…10 V	Analog, current 4…20 mA	—	Analog, voltage 0…10 V
	2x PNP	PNP	PNP	2x PNP	PNP
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	50 mm	100 mm	100 mm	100 mm	100 mm
	NPT 1/2“ outer	G 1/2“ outer	G 1/2“ outer	G 1/2“ outer	NPT 1/2“ outer
	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)
	—	Fluoroelastomer	Fluoroelastomer	Fluoroelastomer	—
	PC/ABS TPE-E, PC, Stainless steel (1.4301)	PC/ABS TPE-E, PC, Stainless steel (1.4301)	PC/ABS TPE-E, PC, Stainless steel (1.4301)	PC/ABS TPE-E, PC, Stainless steel (1.4301)	PC/ABS TPE-E, PC, Stainless steel (1.4301)
	150 bar	150 bar	150 bar	150 bar	150 bar
	-20...80 °C	-20...80 °C	-20...80 °C	-20...80 °C	-20...80 °C
	IP65, IP67	IP65, IP67	IP65, IP67	IP65, IP67	IP65, IP67
	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC
	Page 400	Page 400	Page 400	Page 400	Page 400

	BFT001A BFT 6100-JC003-A02A0C-S4	**BFT001N** BFT 6100-JC003-D00A0C-S4	**BFT0001** BFT 6025-DX001-R02A0A-S4	
Measuring range	-20...80 °C	-20...80 °C	-50...150 °C	
Measuring element	Pt1000	Pt1000	Pt1000	
Operating voltage Ub	15...35 VDC	15...35 VDC	—	
Analog output	Analog, current 4…20 mA	—	Analog, resistance	
Switching output	PNP	2x PNP	—	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Installation length from contact surface	100 mm	100 mm	25 mm	
Process connection	NPT 1/2“ outer	NPT 1/2“ outer	G 1/4“ outer	
Process connection material	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4305)	
Gasket, material	—	—	—	
Housing material	PC/ABS TPE-E, PC, Stainless steel (1.4301)	PC/ABS PE-E, PC, Stainless steel (1.4301)	—	
Pressure rating max.	150 bar	150 bar	50 bar	
Ambient temperature	-20...80 °C	-20...80 °C	-40...100 °C	
IP rating	IP65, IP67	IP65, IP67	IP66, IP67	
Approval/Conformity	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	CE, WEEE, EAC	
Productview	Page 400	Page 400	Page 401	



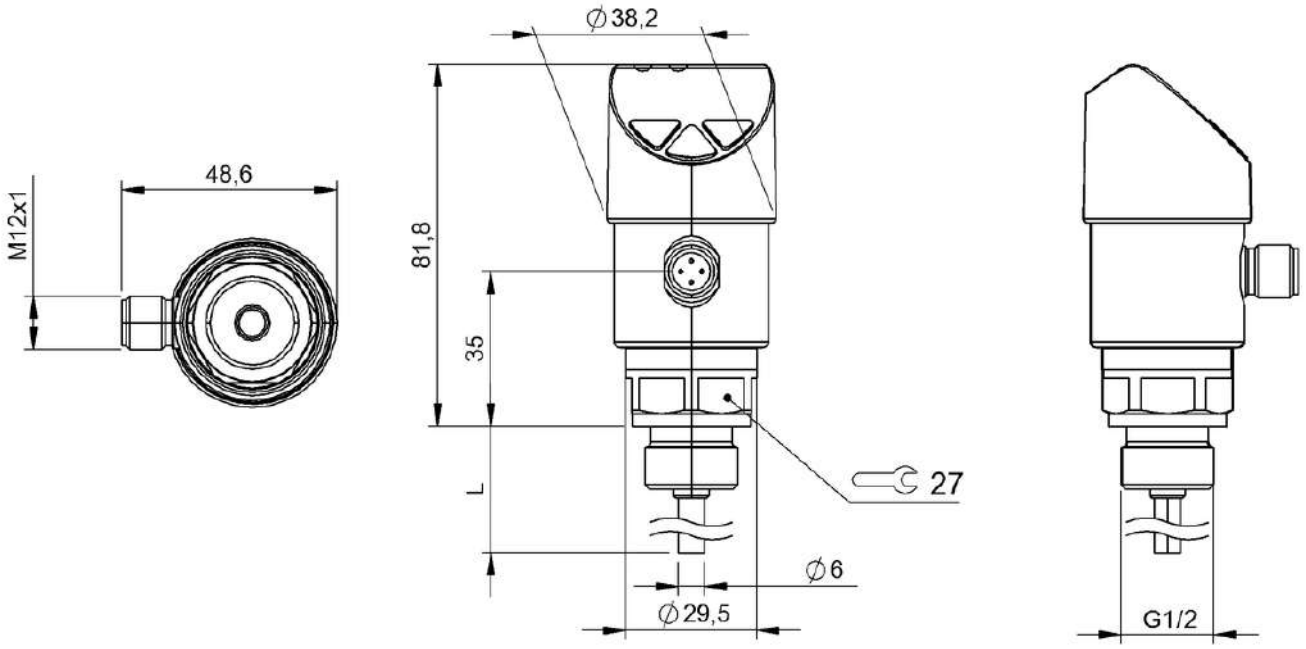


	BFT0003 BFT 6025-FC001-R02A0A-S4	BFT001P BFT 6025-HX001-R02A0A-S4	BFT0002 BFT 6050-DX001-R02A0A-S4	BFT0004 BFT 6050-FC001-R02A0A-S4	BFT001R BFT 6050-HV001-R02A0A-S4
	-50...150 °C	-50...150 °C	-50...150 °C	-50...150 °C	-50...150 °C
	Pt1000	Pt1000	Pt1000	Pt1000	Pt1000
	—	—	—	—	—
	Analog, resistance	Analog, resistance	Analog, resistance	Analog, resistance	Analog, resistance
	—	—	—	—	—
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin
	25 mm	25 mm	50 mm	50 mm	50 mm
	NPT 1/4“ outer	G 1/2“ outer	G 1/4“ outer	NPT 1/4“ outer	—
	Stainless steel (1.4305)	Stainless steel (1.4305)	Stainless steel (1.4305)	Stainless steel (1.4305)	Stainless steel (1.4305)
	—	—	—	—	—
	—	—	—	—	—
	50 bar	50 bar	50 bar	50 bar	50 bar
	-40...100 °C	-40...100 °C	-40...100 °C	-40...100 °C	-40...100 °C
	IP66, IP67	IP66, IP67	IP66, IP67	IP66, IP67	IP66, IP67
	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC
	Page 401	Page 401	Page 401	Page 401	Page 402

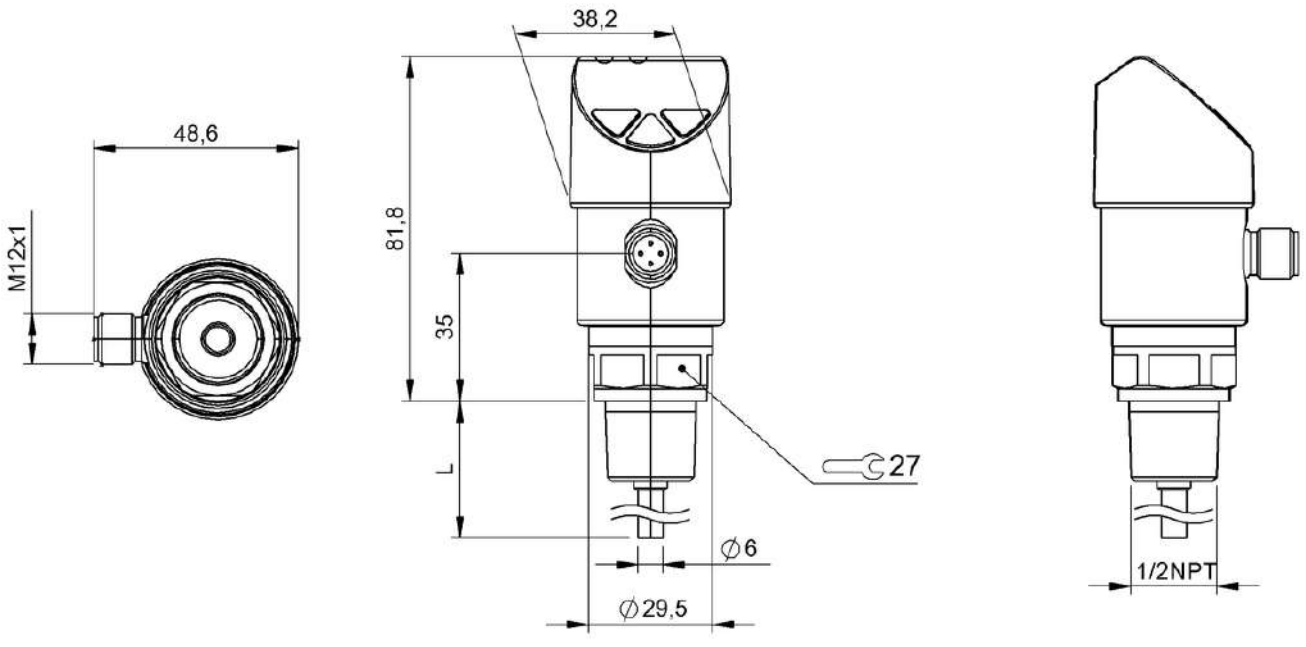


	BFT0005 BFT 6025-DX002-A06A1A-S4	**BFT0008** BFT 6025-FC002-A06A1A-S4	**BFT0006** BFT 6050-DX002-A06A1A-S4	
Measuring range	-30...150 °C	-30...150 °C	-30...150 °C	
Measuring element	Pt1000	Pt1000	Pt1000	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	
Analog output	Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA	
Switching output	—	—	—	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	
Installation length from contact surface	25 mm	25 mm	50 mm	
Process connection	G 1/4“ outer	NPT 1/4“ outer	G 1/4“ outer	
Process connection material	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)	
Gasket, material	—	—	—	
Housing material	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)	
Pressure rating max.	270 bar	270 bar	270 bar	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
IP rating	IP67, IP69, IP69K	IP67, IP69, IP69K	IP67, IP69, IP69K	
Approval/Conformity	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	
Productview	Page 403	Page 403	Page 403	

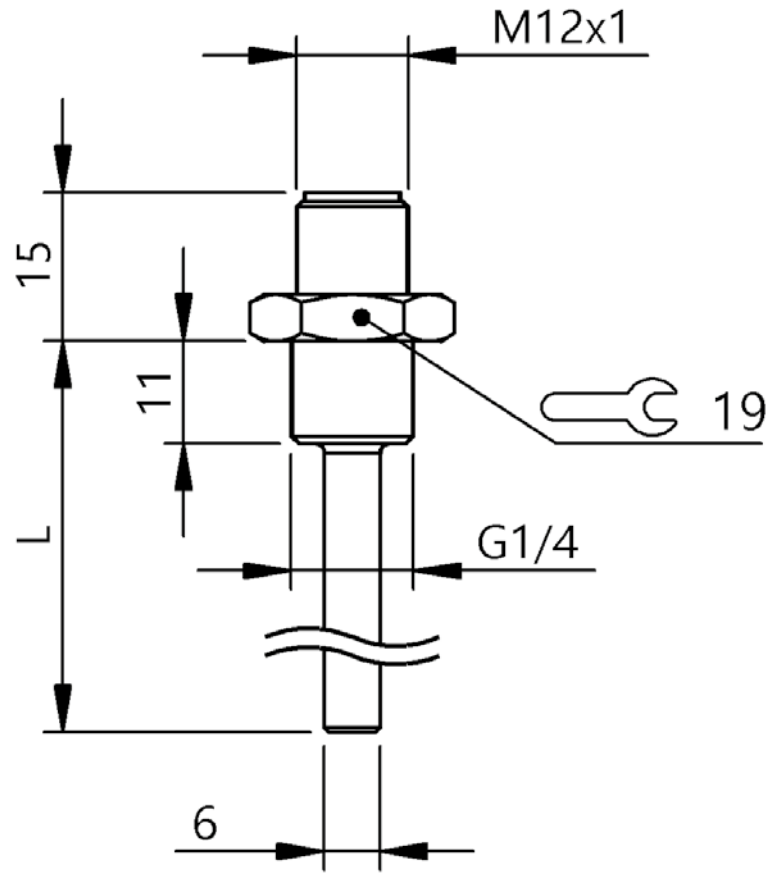
BFT0009 BFT 6050-FC002-A06A1A-S4	**BFT0007** BFT 6100-DX002-A06A1A-S4	**BFT000A** BFT 6100-FC002-A06A1A-S4		
-30...150 °C	-30...150 °C	-30...150 °C		
Pt1000	Pt1000	Pt1000		
10...30 VDC	10...30 VDC	10...30 VDC		
Analog, current 4…20 mA	Analog, current 4…20 mA	Analog, current 4…20 mA		
—	—	—		
Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin		
50 mm	100 mm	100 mm		
NPT 1/4“ outer	G 1/4“ outer	NPT 1/4“ outer		
Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)		
—	—	—		
Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)		
270 bar	270 bar	270 bar		
-40...85 °C	-40...85 °C	-40...85 °C		
IP67, IP69, IP69K	IP67, IP69, IP69K	IP67, IP69, IP69K		
CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC		
Page 403	Page 403	Page 403		



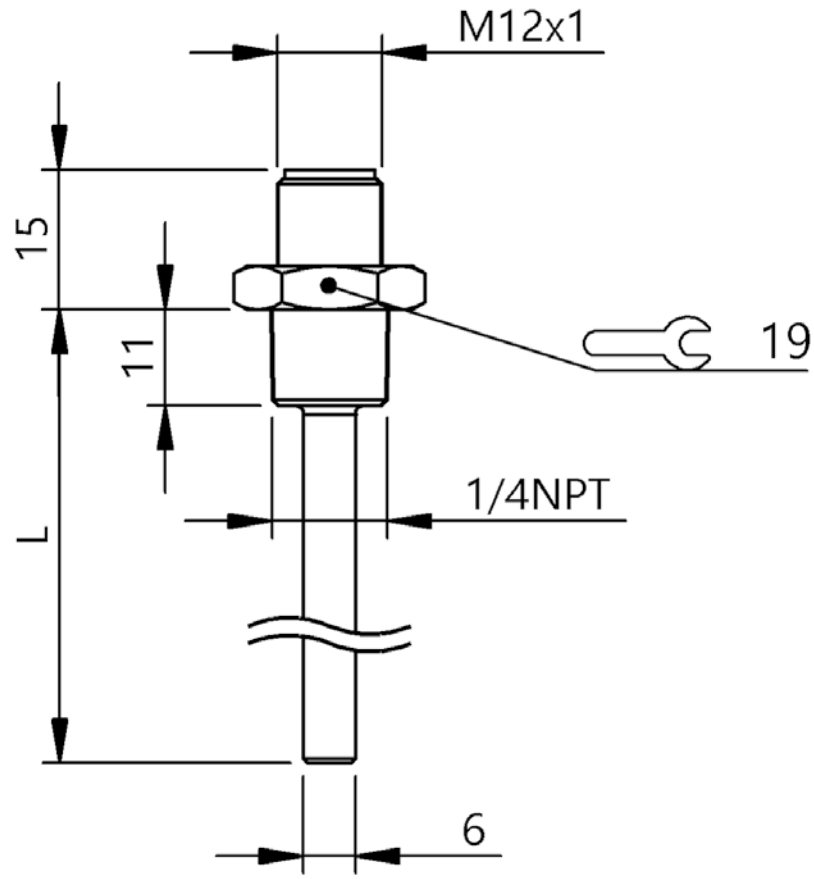
BFT0015, BFT0012, BFT001H, BFT0016, BFT0013, BFT001J, BFT0017, BFT0014, BFT001K



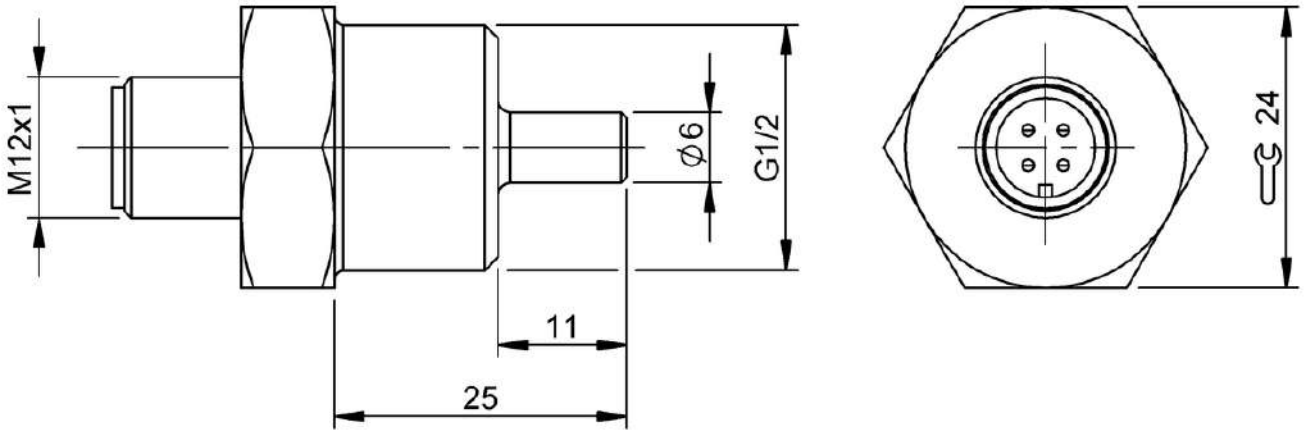
BFT001C, BFT0018, BFT001L, BFT001E, BFT0019, BFT001M, BFT001F, BFT001A, BFT001N



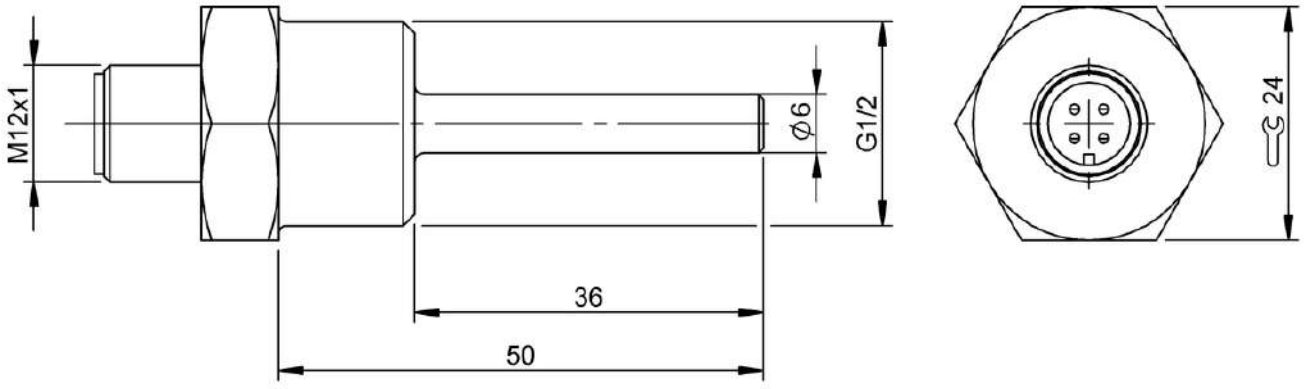
BFT0001, BFT0002



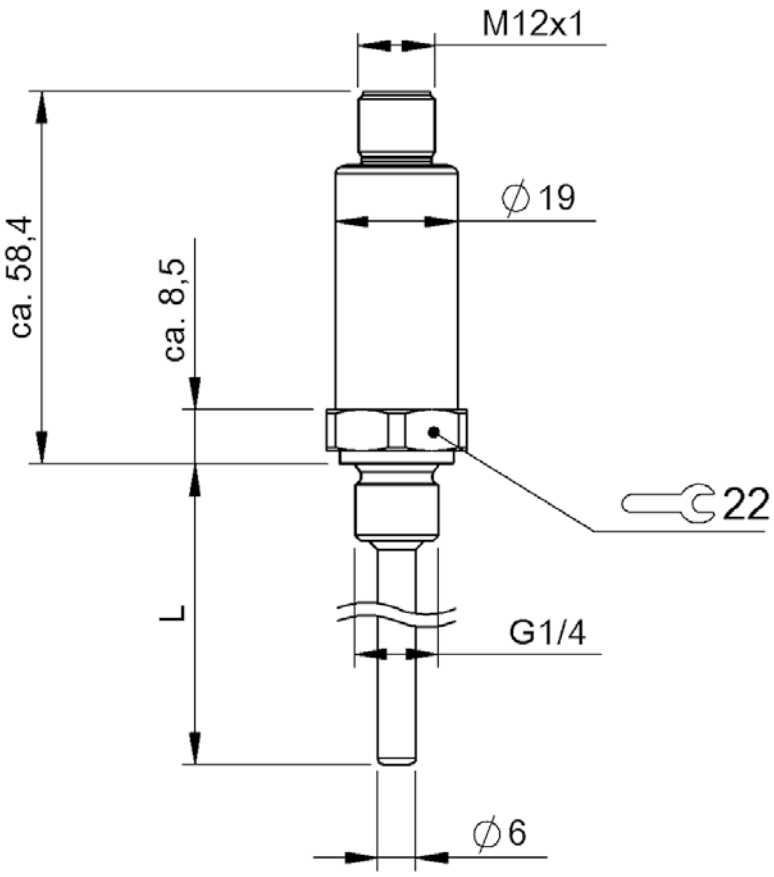
BFT0003, BFT0004



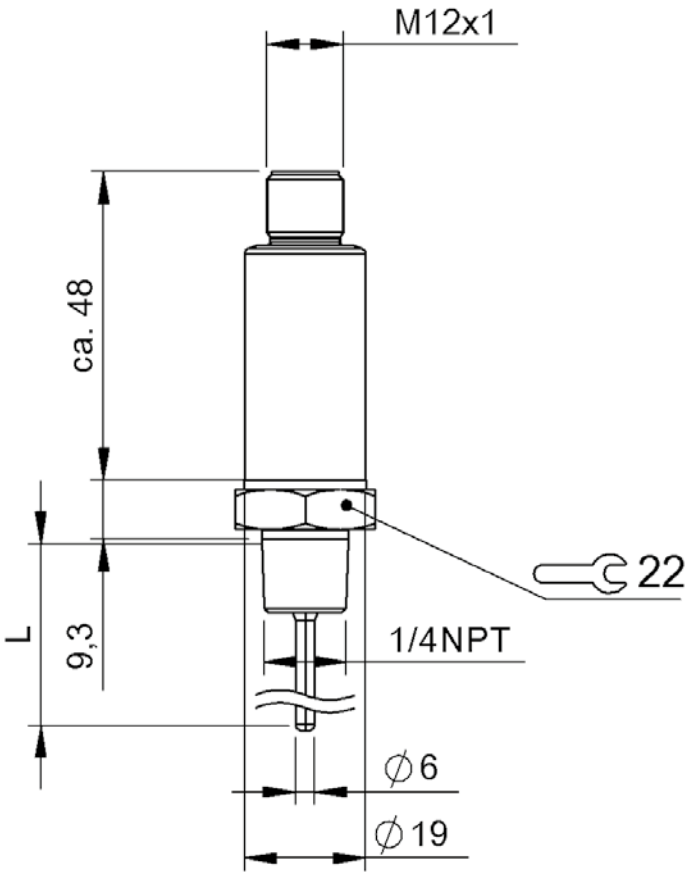
BFT001P



BFT001R



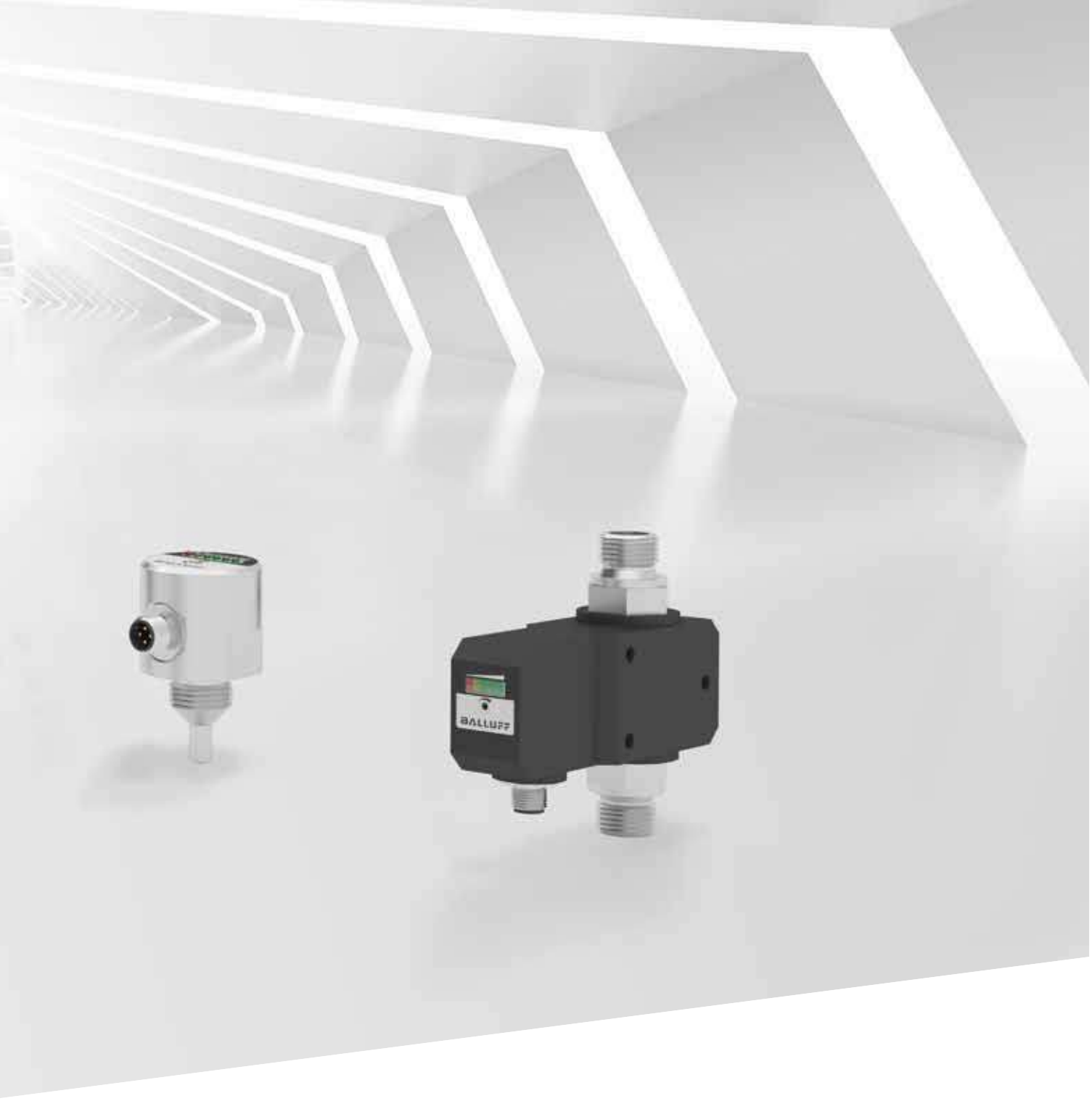
BFT0005, BFT0006, BFT0007



BFT0008, BFT0009, BFT000A

Process security written large

FLOW SENSORS



Flow sensors let you measure and monitor the flow of process media in a wide range of applications. For example the lubricant flow or reliable circulation of cooling water. Now you can detect a pump failure early and prevent an unplanned machine or even system stop.

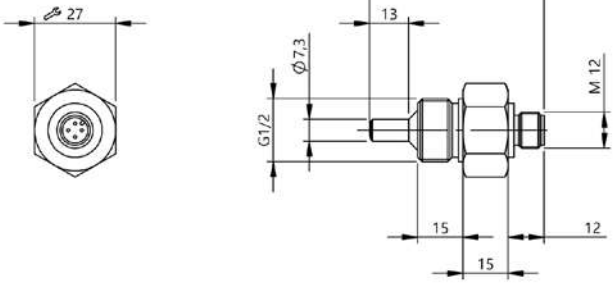
This is how flow sensors as well as pressure or temperature sensors contribute to process security.

	BFF0004 BFF T7031-HA002-R03A0A-S4	BFF0006 BFF T7040-JA002-R03A0A-S4	
Working range	1...150 cm/s aqueous media, 3...300 cm/s oil	1...150 cm/s aqueous media, 3...300 cm/s oil	
Operating voltage Ub	—	—	
Switching output	—	—	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Installation length from contact surface	31 mm	40 mm	
Inside diameter	—	—	
Process connection	G 1/2“ outer	NPT 1/2“ outer	
Process connection material	Stainless steel (1.4571)	Stainless steel (1.4571)	
Gasket, material	AFM 34	—	
Housing material	Stainless steel (1.4571)	Stainless steel (1.4571)	
Media temperature	-20...80 °C	-20...80 °C	
Pressure rating max.	100 bar	100 bar	
Ambient temperature	-20...80 °C	-20...80 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE	CE	
Additional text	Required accessories: Signal converter BAE00ZZ	Required accessories: Signal converter BAE00ZZ	
Productview	Pager 410	Pager 410	

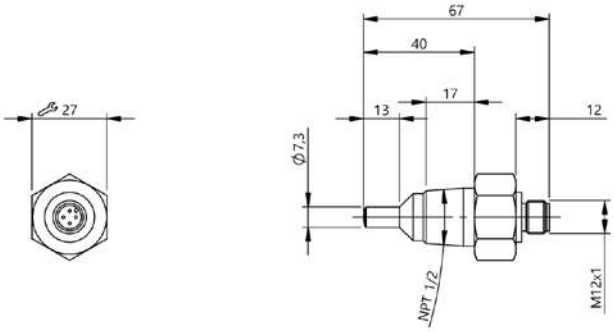
	BFF0005 BFF T7048-HA002-R03A0A-S4	**BFF0001** BFF T7031-HA001-D06A2A-S4	**BFF0003** BFF T7040-JA001-D06A2A-S4	**BFF0002** BFF T7048-HA001-D06A2A-S4
	1...150 cm/s aqueous media, 3...300 cm/s oil	1...150 cm/s aqueous media, 3...300 cm/s oil	1...150 cm/s aqueous media, 3...300 cm/s oil	1...150 cm/s aqueous media, 3...300 cm/s oil
	—	20...28 VDC	20...28 VDC	20...28 VDC
	—	PNP	PNP	PNP
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
	48 mm	31 mm	40 mm	48 mm
	—	—	—	—
	G 1/2“ outer	G 1/2“ outer	NPT 1/2“ outer	G 1/2“ outer
	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)
	AFM 34	AFM 34	—	AFM 34
	Stainless steel (1.4571)	Stainless steel (1.4571) Stainless steel (1.4305)	Stainless steel (1.4571) Stainless steel (1.4305)	Stainless steel (1.4571) Stainless steel (1.4305)
	-20...80 °C	-20...80 °C	-20...80 °C	-20...80 °C
	100 bar	100 bar	100 bar	100 bar
	-20...80 °C	-20...80 °C	-20...80 °C	-20...80 °C
	IP67	IP67	IP67	IP67
	CE	CE, cULus	CE, cULus	CE, cULus
	Required accessories: Signal converter BAE00ZZ	—	—	—
	Pager 410	Pager 410	Pager 410	Pager 410

	BFF000A BFF TX006-DA004-D00A2C-S4	**BFF0008** BFF TX010-HA004-D00A2C-S4	
Working range	0.1...2 l/min water	1...10 l/min aqueous media	
Operating voltage Ub	22...26 VDC	22...26 VDC	
Switching output	2x PNP normally open/normally closed (NO/NC)	2x PNP normally open/normally closed (NO/NC)	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Installation length from contact surface	—	—	
Inside diameter	6 mm	10 mm	
Process connection	G 1/4“ outer	G 1/2“ outer	
Process connection material	Stainless steel (1.4571)	Stainless steel (1.4571)	
Gasket, material	AFM 34	AFM 34	
Housing material	PBT	PBT	
Media temperature	0...60 °C	-10...80 °C	
Pressure rating max.	10 bar	20 bar	
Ambient temperature	0...60 °C	0...60 °C	
Protection degree	IP54	IP54	
Approval/Conformity	CE	CE	
Additional text	—	—	
Productview	Pager 410	Pager 410	

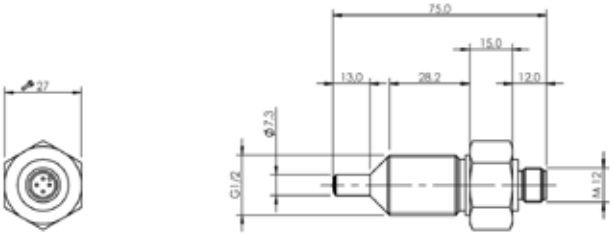
	BFF0009 BFF TX015-HA004-D00A2C-S4	BFF0007 BFF TX015-HA003-D06A2A-S4		
	1...20 l/min aqueous media	2...25 l/min aqueous media		
	22...26 VDC	20...28 VDC		
	2x PNP normally open/normally closed (NO/NC)	PNP		
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin		
	—	—		
	15 mm	15 mm		
	G 1/2“ outer	G 1/2“ outer		
	Stainless steel (1.4571)	Stainless steel (1.4571)		
	AFM 34	AFM 34		
	PBT	PBT		
	-10...80 °C	0...80 °C		
	20 bar	20 bar		
	0...60 °C	0...60 °C		
	IP54	IP67		
	CE	CE, cULus		
	—	—		
	Pager 410	Pager 410		



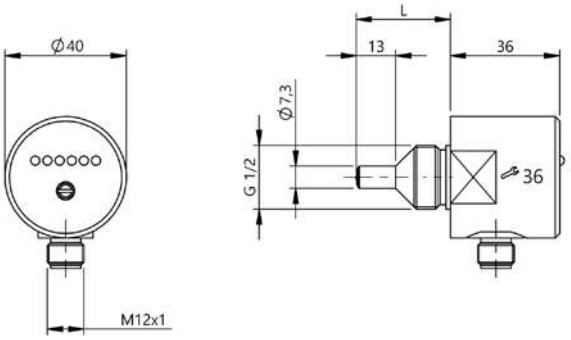
BFF0004



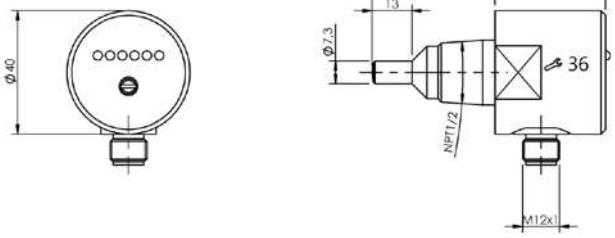
BFF0006



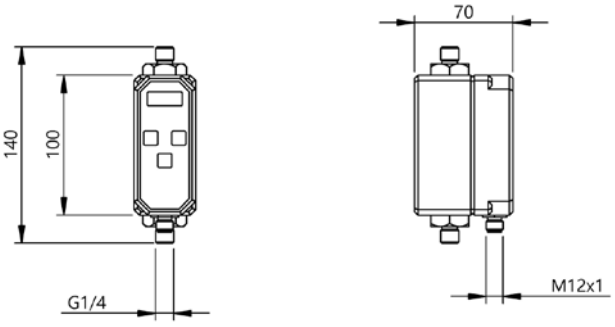
BFF0005



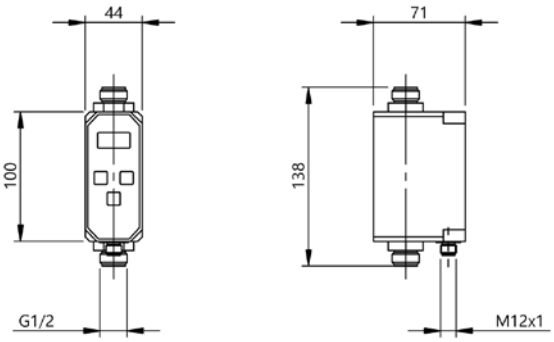
BFF0001, BFF0002



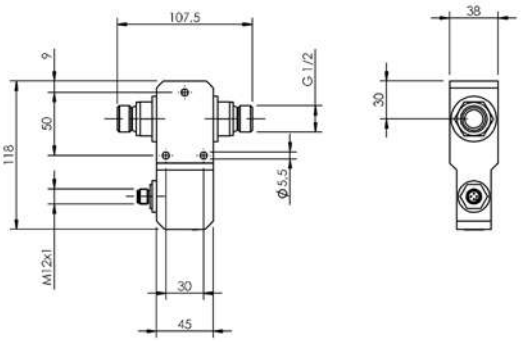
BFF0003



BFF000A



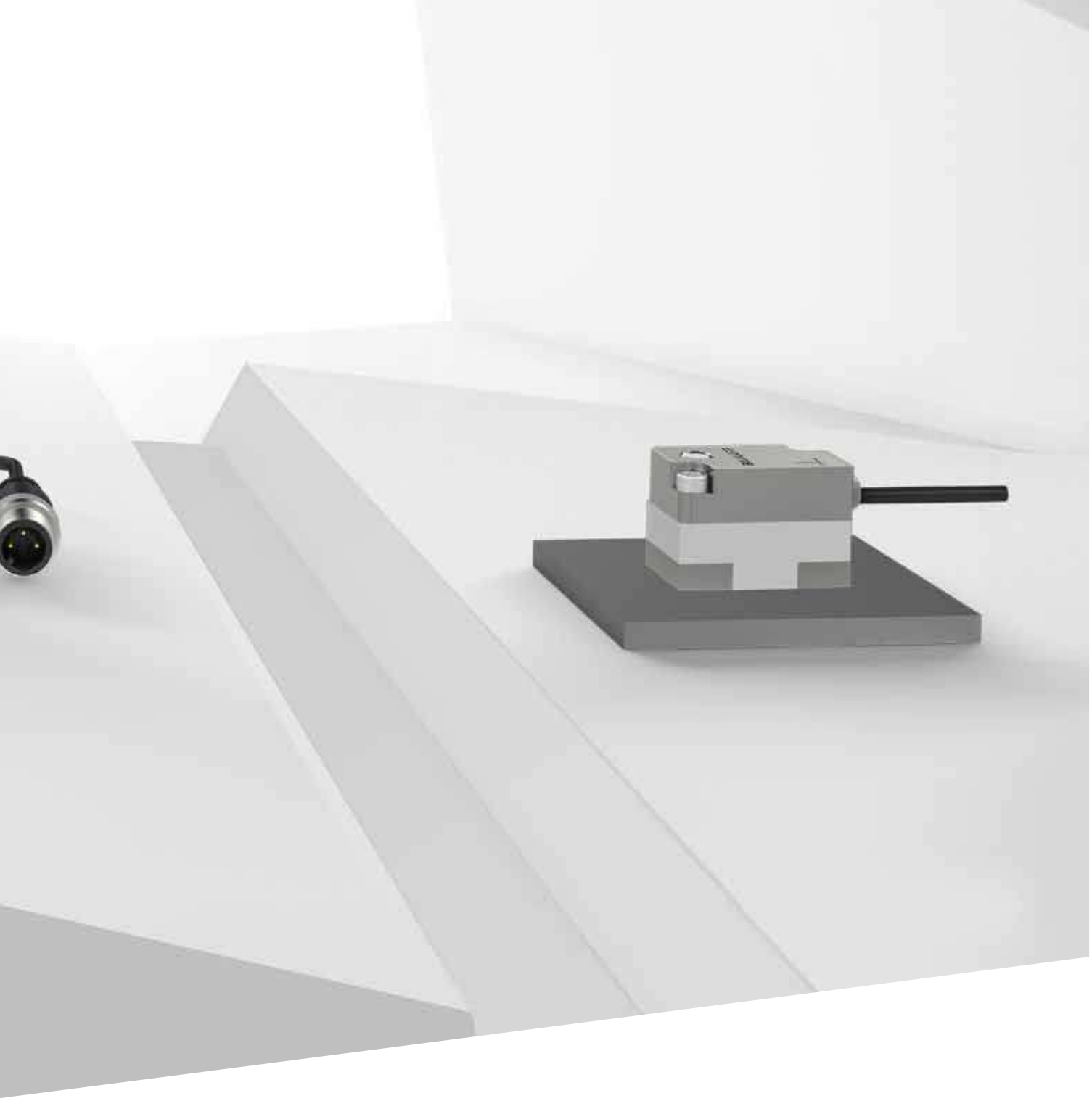
BFF0008, BFF0009



BFF0007

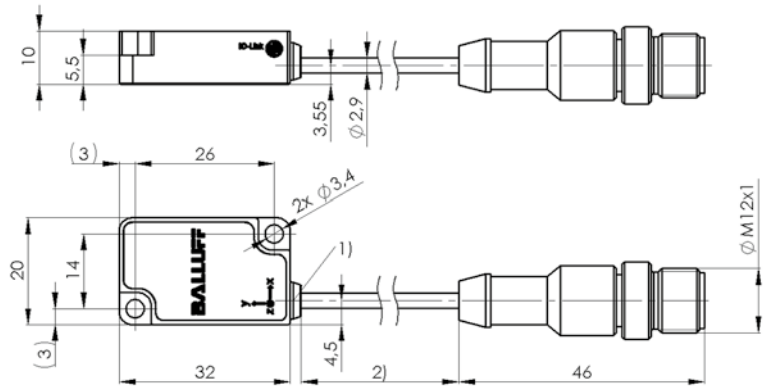
With integrated data pre-processing

CONDITION MONITORING SENSORS



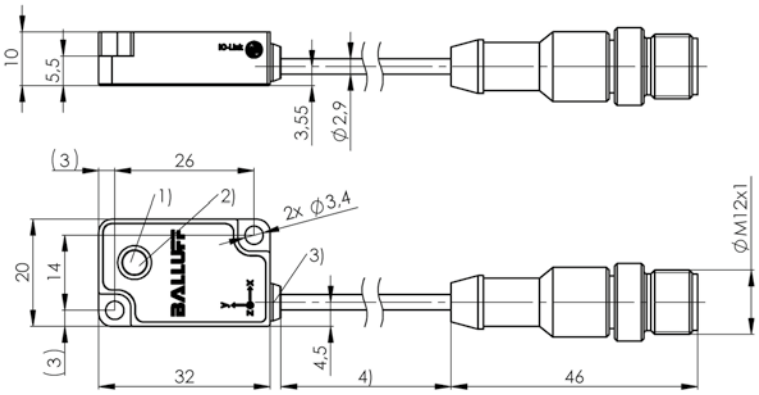
BCM multi-functional condition monitoring sensors support the efficient and fault-free operation of any equipment and significantly enhance the efficiency of the overall plant. Unplanned stoppages and interruptions in the production process can now be prevented because these intelligent sensors provide you with condition information which you can use for planning predictive maintenance and repair and automating cost-intensive manual inspections. Being able to detect, process and interpret the condition of machines and equipment as well as their associated components is also essential for the Industrial Internet of Things.

	BCM0001 BCM R15E-001-DI00-01,5-S4	**BCM0002** BCM R15E-002-DI00-01,5-S4
Function	Vibration Velocity, Vibration Acceleration, Vibration Severity Zone, Contact Temperature, Sensor Self-Awareness	Vibration Velocity, Vibration Acceleration, Vibration Severity Zone, Contact Temperature, Relative Humidity, Ambient Pressure, Sensor Self-Awareness
Vibration, frequency range	2...3200 Hz	2...3200 Hz
Vibration, number of measuring axes	3	3
Vibration velocity, measuring range RMS	0…220 mm/s @79.4 Hz	0…220 mm/s @79.4 Hz
Vibration acceleration, measuring range RMS	0…16 g	0…16 g
bas_contact_temperature_range	0…70 °C	0…70 °C
Relative humidity, measuring range	—	5…95 %rF
Ambient pressure, measuring range	—	300…1100 hPa
Rated operating voltage Ue DC	24 V	24 V
Interface	IO-Link 1.1	IO-Link 1.1
Interface setting option	Flexible process data configuration, Vibration measurement based on ISO 10816-3, Data preprocessing (statistics), Events (pre-alarms and main alarms), Delay times for alarms, Search function with LED display (ping)	Flexible process data configuration, Vibration measurement based on ISO 10816-3, Data preprocessing (statistics), Events (pre-alarms and main alarms), Delay times for alarms, Search function with LED display (ping)
Connection	Cable with connector, M12x1-Male, 3-pin, 1.5 m, PUR	Cable with connector, M12x1-Male, 3-pin, 1.5 m, PUR
Housing material	Stainless steel (1.4404)	Stainless steel (1.4404), Membrane: ePTFE with nylon fleece
IP rating	IP67, IP68, IP69K	IP67
Ambient temperature	0...70 °C	0...70 °C



1) LED, 2) Cable length

BCM0001



1) Membrane, 2) LED orange, 3) LED green, 4) Cable length

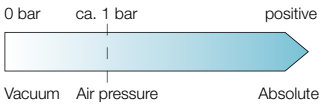
BCM0002

Absolute

Characteristic of a magnetic coded measuring system whereby the measured value for the current position is available as soon as the device is powered up. Each position, e.g. a measurement section, is assigned an absolute, coded digital signal or an analog value. A reference run is not required.

Absolute pressure

Pressure with respect to zero pressure (vacuum). The value range of absolute pressure is always positive.

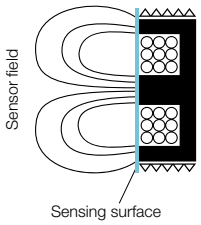


Distance sensor with analog output

A sensor which generates a continuously varying output signal which is a function of the distance between the sensing surface and the actuation element.

Sensing surface

Actively measuring area and thereby the externally sensitive electrode/plate of the electrode system. It is generally somewhat smaller than the surface of the cover.

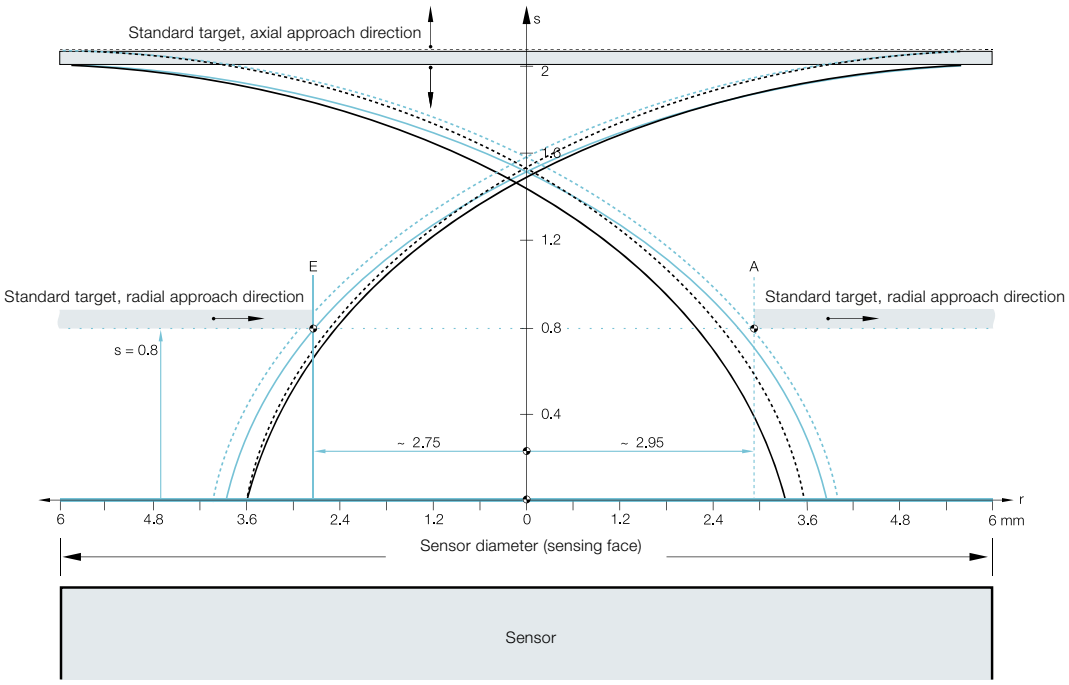


Analog sensor

A sensor whose output signal is represented as a continuously varying analog value (e.g. 0...10 V, 4...20 mA).

Approach direction

Direction of an object as it enters the detection range/active range of a sensor.



Response time

The time between the change in pressure and the change in the switching output state.

Non-equivalence

Switching function whereby a sensor provides two signals at the same time when it switches, the normally open (NO) and the normally closed (NC) function. When an object is detected, both outputs are switched.

Working range S_a

The travel distance available for position detection.

Resolution (sensor technology)

The minimum "movement increment" in a measuring system which can trigger a change in the output signal (for distance measuring systems) or how finely incremented an analog variable can be represented in binary (for network modules).

Output signal

Signal that a sensor sends to the controlling unit. Both sensor versions determine the type of output signal. Switching sensors work with a digital signal (switching state 0 or 1), measuring sensors with an analog signal or a digital count value.

Output current I_e

The maximum current with which the output of the sensor may be loaded in continuous operation. Also referred to as operating current.

Output current max.

The maximum current with which the switching output of the sensor may be loaded in continuous operation.

Output resistance

Resistance (Ra) at the output of a circuit or component. The output resistance is generally a frequency-dependent, complex resistance with amount and phase and is referred to as output resistance.

Turn-off time

The time a sensor requires to respond when the target leaves the detection range at a factor of 0.5 of the radiant power.

Limited rated short-circuit current

Value of the unaffected short circuit current which the short circuit protected circuit can withstand during the entire turn-off time (duration of current flow) of the device under specified conditions. This current is prescribed in the standard in order to test the short-circuit protection of sensors.

Effective distance s_e

Point in the middle of a sensor's range of linearity s_l. Serves as a reference point for further specifications.

Rated operating voltage

The maximum voltage at which the sensor can be used in normal use.
Indicated by U_e. DC switches: U_e = 24 V DC; AC and AC/DC switches: U_e = 110 V AC.

Rated operating current

The permissible output current which flows through the load R_L.

Rated supply frequency

Frequency of the operating voltage when using alternating current

Rated isolation voltage

The voltage to which the insulation checks and the air and creepage distances refer. For sensors, the highest rated operating voltage is considered the rated insulation voltage.

Rated operating distance S_n

Switching distance not taking into account manufacturing tolerances, sample deviations and external effects such as temperature and voltage.

Time delay before availability

Duration between the application of power and the availability of a sensor.

Burst pressure

Pressure in the medium which the pressure sensor must withstand without being destroyed. If this pressure is exceeded, it is certain that pressurized components will burst, the device will begin to leak or be mechanically destroyed.

Operating voltage U_B

Voltage range (V) n which flawless functioning of the sensor is assured.
It includes all voltage tolerances and ripple.

Operating current

The maximum current with which the output of the sensor may be loaded in continuous operation. Also referred to as output current.

Blind zone

Area between the active surface and minimum switching distance within which a target cannot be detected.

Flush installation

Installation type in which a proximity switch can be embedded in metal up to its active surface.

Distance sensor with analog output

A sensor which generates a continuously varying output signal which is a function of the distance between the sensing surface and the target point. It generates a linear output signal within a certain range (measuring range).

Flameproof encapsulation "d“ designation "Ex d“

Feature of parts which could ignite a potentially explosive atmosphere and which must therefore be housed in a special enclosure. This housing must withstand the pressure inside the housing if there is an explosion from an explosive mixture and must prevent transfer of the explosion to the explosive atmosphere surrounding the housing.

Pressure peak

An abrupt pressure load which can be magnitudes greater than the normal pressure. Pressure peaks are caused for example by rapidly closing valves. The pressure rises in a very short time to high values. Pressure peaks can cause lasting damage to the sealing system and the measuring cell of the pressure sensor as well as pressure carrying lines and other system components.

On delay

Time a sensor requires to be ready when an object enters the capture range.

Electromagnetic Compatibility (EMC)

The property of a sensor to neither interfere with or be interfered by undesired electrical or electromagnetic effects or by other devices.

Receiver lobe

Area in front of the receiver of a photoelectric sensor in which it can recognize the object.

Detection range

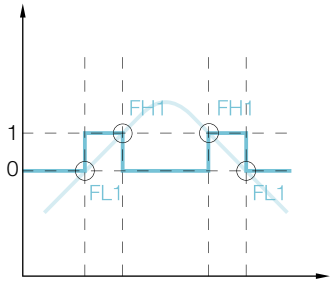
Range in which the switching distance of a sensor from the standard target can be adjusted.

Ex-Zone

Areas with high requirements for safety and reliability of sensors, since they may cause explosions. These areas are divided up by zones, each based on the frequency and duration of the occurrence of hazardous explosive atmosphere.

Window, adjustable

The output function is activated when the measured value falls between the preset switching and return point. Window function: The range between a defined lower pressure limit and a defined upper limit is known as a window. A switching operation is initiated as soon as the upper or lower limit of the programmed pressure range is exceeded.



Food and Drug Administration

Regulatory body for the US American food and drug industry. It certifies devices, materials and equipment in these sectors. Product designations of this kind make your system eligible for FDA approval.

Clear zone (sensor technology)

Installation area in which no material is permitted which could affect the characteristic values.

Full Scale (FS, end value)

Maximum measuring variable to which a device is adjusted, e.g. 20 mA.

Full Scale Output (FSO)

Difference between the upper and lower limit of the output. Example: A pressure sensor with a measuring range of 0...6 bar and a corresponding output signal of 4…20 mA has an FSO of 16 mA.

Magnetic coded function principle

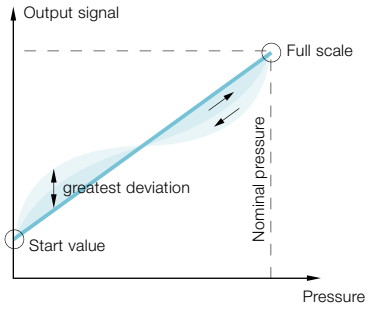
Technical procedure for determining the position using magnetic coding. A tape or disk with alternately polarized magnetic coding is read by a suitable read head passing over the tape. From the location of the read head from the individual magnetic codes the position information can be obtained.

Magnetostrictive function principle

Technical procedure for determining the position of a magnetic target by means of a torsional wave. The interaction of a moving magnetic target with an electrically stimulated magnetostrictive waveguide results in a torsional wave which propagates on the waveguide at a known velocity. By measuring the time until the torsional wave passes through a receiver coil the position of the target is determined.

Accuracy

Indicates how much the actual characteristic can deviate from the ideal characteristic (according to IEC 60770 non-linearity, hysteresis and repeatability). Accuracy specifications represent a percentage value of the measurement range (FSO) and never include dimensions. Nominal pressure 50 bar, output 4...20 mA, accuracy 0.5 % results in a maximum deviation of 0.08 mA (equivalent to a pressure value of 0.25 bar).

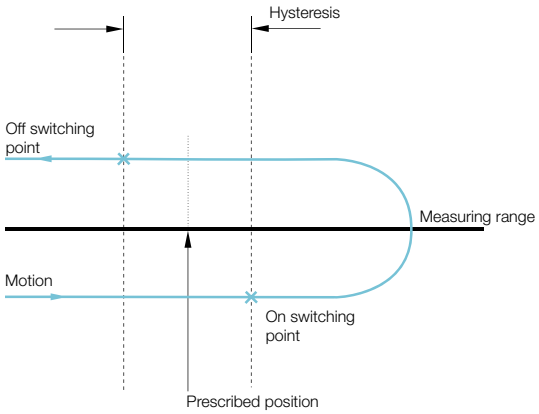


Assured switching distance S_a

Switching distance within which assured operation of the sensor at a specified voltage and temperature range is given ($0 \leq s_a \leq 0.81\ s_n$).

Hysteresis

Signal difference resulting for measurement sensors when a mechanically prescribed position is approached from one side, then crosses this point and afterwards approaches this same position from the other direction. Position difference between switching point (object approaches) and switch-back point (object travels away) for switching sensors.



Incremental

Characteristic of a measuring system whereby after the system is switched on, the current measured value is not available immediately. A reference run to a defined point, a reference point, is necessary in order to obtain a position value. The position value is calculated by adding or subtracting individual, equal increments from the reference point.

Characteristic curve

Dependency of the output signal on the input signal. The greater the effect of the input signal on the output signal, the more sensitive the measuring device is.
The sensitivity of a measuring device is indicated by the slope of the curve.

Minimum operating current

Minimum current (mA) required when energizing the output to maintain operation.

Short-circuit rating

Characteristic of components or assemblies which indicates the short-circuit current which the component or assembly can withstand.

Short-circuit protection

Protective device for overload and short-circuit. Present in all our DC sensors. In the event of overload or short-circuit at the output, the output transistor is automatically switched off. As soon as the malfunction has been corrected, the output stage is reset to normal functioning.

Short-term current carrying capacity I_k

For an AC device the short-term permissible current I_k $(_{eff})$ during a specified turn-on duration t_k (ms) and repetition rate f (Hz).

No-load current

The maximum internal current consumption with no load connected to the switching output (in general at $U_{B\ max.}$ and actuated).

Cable break protection

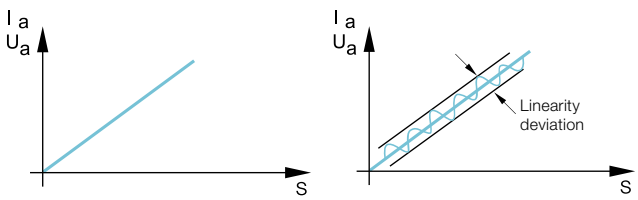
Characteristic of 3-wire switches which prevent malfunction when there is a cable break.
A built-in diode prevents the current from flowing via the output line A.

Reading distance (sensor technology)

The permissible working distance between sensor head and tape.

Non-linearity

Maximum deviation from the straight line that connects the zero point of the measuring range to the end point or full extension. There is a linear relationship between the position or path to be measured and the output signal for a voltage, current or digitized output information. This feature may be restricted to a defined linearity range.



Linear function

Linearity deviation of a linear function

Linearity range

Working range in which the sensor has defined linearity.

Linearity error

Maximum deviation from the straight line that connects the zero point of the measuring range to the end point or full extension. There is a linear relationship between the position or path to be measured and the output signal for a voltage, current or digitized output information. This feature may be restricted to a defined linearity range.

Magnetic function principle

Sensor principle based on detection of a magnetic field or its change. The sensitivity to the magnetic field can be set on the sensor.

Measurement speed

Speed with which changes to the active surface of a sensor are registered, processed and outputted. Up to the specified measuring speed the distance to a linear moving object can be reliably detected. The direction of movement of the object is parallel to the sensing face of the sensor.

Measuring length

Usable travel distance, i.e. the available distance/length measuring range of a measuring system

Sampling rate

The frequency at which the output distance/travel information is updated. It can be the same as the number of measurements per second. A high measurement rate for rapidly changing positions is important if a process is time-critical.

Nominal pressure

The maximum design pressure.

Rated operating distance S_n

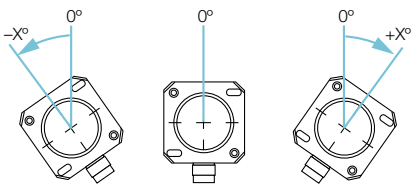
Maximum achievable switching distance from the standard target under device specification (generally with s_n as shipped from the factory).

Unusable area

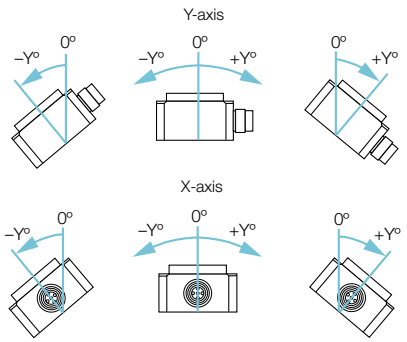
Area in which undesirable reflections are attenuated. This area is always outside of the measuring range. Depending on the transducer model, either an erroneous output signal or an error signal will be output if the encoder is allowed to travel into this zone, which must not be considered valid information.

Inclination axis

1-axis (vertical installation)



2-axis (horizontal installation)



Normally closed (NC)

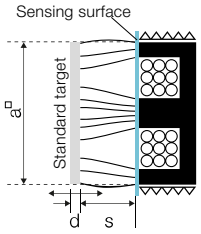
Also "Normally closed" – sensor principle/output function in which the switching output is inactive (not energized) when the sensor detects an object. The switching output is energized when no object is present.

Normally open (NO)

Also "Normally open" – sensor principle/output function in which the switching output is active (energized) when the sensor detects an object. The switching output is not energized when no object is present. This principle is the most commonly used in automation technology.

Standard target

A square plate made of Fe 360 (ISO 630), used to define sensing distances per EN 60947-5-2. Thickness is 1 mm; the side length "a" corresponds to the diameter of the inscribed circle of the active surface or 3 s_n, if the value is larger than the named diameter.



NPN output

An output type such that the load on the switching output is connected to the supply voltage (+ U_S as a reference point. When a threshold value is reached the ground (GND) is switched and the current can flow from + U_B through the load across the transistor to GND. The output switches to – U_B. Also referred to as a sinking output. This type of output is common in Asia.

Zero point

Position of the lowest value of the measuring range. The zero point can be custom set for some transducer models. The zero point must lie within the measuring range.

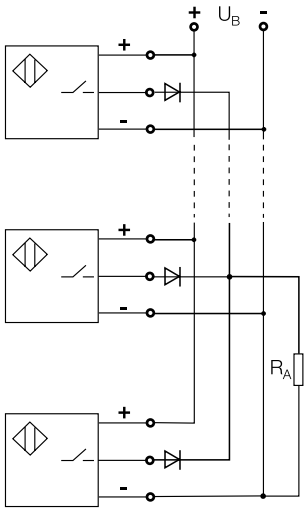
Usable operating distance

The permissible operating distance is the permitted switching distance within fixed voltage and temperature limits (0.81 $s_n \leq s_u \leq 1.21\ s_n$).

Parallel circuit

Electrical circuit type in which all the switching elements and their same named poles are connected in common to each other, so that multiple current paths result.

3-wire DC-switch



2-wire DC-switch

Parallel wiring of 2-wire-sensors is not recommended, since missed pulses can be caused by the ready delay as the oscillator begins to oscillate.

PNP output

An output type such that the load is connected on the switching output to GND as a reference point. When a threshold value is reached the supply voltage (+ U_B) is switched and the current can flow from + U_B through the load across the transistor to GND. The output switches to + U_B . Also referred to as a sourcing output. This type of output is common in Europe and North America.

Response time

The time which a sensor requires in order to reliably and steadily change the output signal. The specified time, which was determined at the maximum measuring speed, includes both the electrical response time of the sensor and the time for the mechanical change of the damping state.

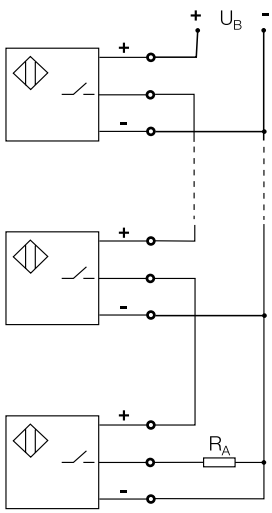
Effective operating distance S_r

The switching distance of a single proximity switch measured under specified conditions, e.g. flush mountable, rated operating voltage U_e, temperature T_a.

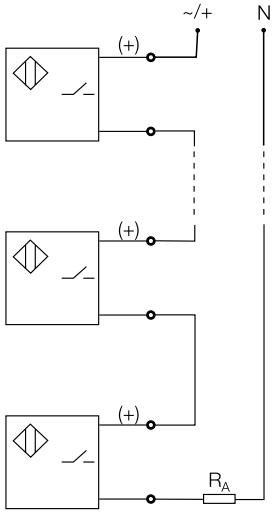
Series connection

Electrical circuit type in which the components are connected to each other in a string so that they form a single current path.

3-wire DC-switch

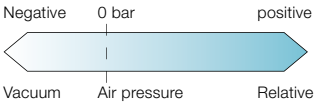


2-wire DC-switch (AC/DC)



Relative pressure

The pressure as a ratio to atmospheric air pressure (ambient pressure).
Measuring pressures greater than air pressure always produces positive values. Pressures lower than air pressure produce negative values.



Repeatability

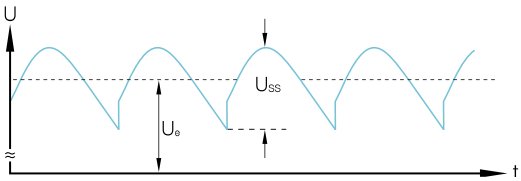
Measurement deviation when approaching a certain position from different directions. Reproducibility is the sum of the hysteresis and the resolution.

Off-state current

The current which flows in the load circuit when a sensor is not conducting (open).

Ripple

The maximum permissible AC voltage (peak-to-peak of U_e) which may be superimposed on the operating voltage U_S without affecting the function of the sensor.



Ue = Rated operating voltage
Uss = Oscillation width

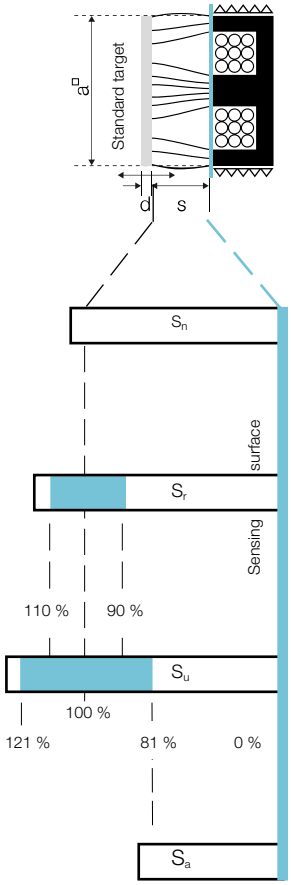
$$\text{Ripple } \sigma = \frac{U_{pp}}{U_e} \times 100\ [\%]$$

Sound deflection

Direction change/diversion of the sound beam which is caused by a smooth mechanical reflective surface. Used for example in tight mounting conditions or for protecting against contamination from the environment.

Switching distance

The distance between the standard target and the sensing surface of the sensor at which a signal change is triggered as per EN 60947-5-2. For a normally open switch this means from OFF to ON and for normally closed from ON to OFF.



Switching output

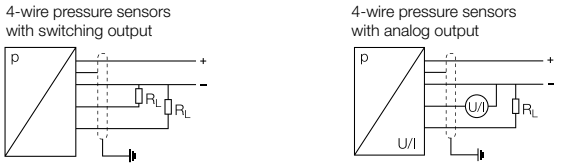
Electrical connection of a sensor by which the state (active/inactive) is indicated.

Switching sensor

A sensor with binary output signal which changes when a threshold is exceeded or under-shot (1 or 0, high/low, active/inactive). This indicates the switching status of the sensor.

Switching function

Output characteristic of a sensor. For example pressure sensors use the switching function to switch an output on or off depending on the pressure value and the set switching threshold. The switching threshold can be configured for example over IO-Link.



Sensor

"Sensory organ" of a machine which transforms the physical variable of an object to be measured into an electrical variable.

Voltage drop U_d

The maximum voltage loss of the switching final stage between switching output and $+U_B$ (PNP) or $–U_B$ (NPN) at the maximum specified load current.

Slope

The slope is a measure of the sensitivity of the sensor with respect to a distance change. This physical relationship can be calculated for travel sensors as follows:

$$\text{Slope S [V/mm]} = \frac{U_a \text{ max} - U_a \text{ min}}{s_a \text{ max} - s_a \text{ min}}$$

or

$$\text{Slope S [mA/mm]} = \frac{I_a \text{ max} - I_a \text{ min}}{s_a \text{ max} - s_a \text{ min}}$$

SYNC mode

Procedure for determining and transmitting the absolute positioning information of the position measurement system, e.g. an axis controller or regulating controller. This takes place synchronously with the processing electronics. It ensures that the time offset for the measurement is minimal. SYNC mode is meaningful for sensors which operate synchronously.

System accuracy

Deviation of the system measured value from the actual value for the object. It includes the position deviations within any given meter of the measuring range for linear measurements or one rotation for rotary measurements. Indicates the linearity class of a distance measuring system. The accuracy of the sensor head depends largely on mechanical manufacturing tolerances and component tolerances; the accuracy of the tape is determined by the material quality and the magnetization grade.

Teach-in

Method for setting sensors by pressing a button. No potentiometers or slide switches are used. Because there are defined setting increments, the advantage is that the sensor cannot be set in an unreliable range. The microcontroller also assumes control of the contamination indicator and the contamination output.

Temperature coefficient

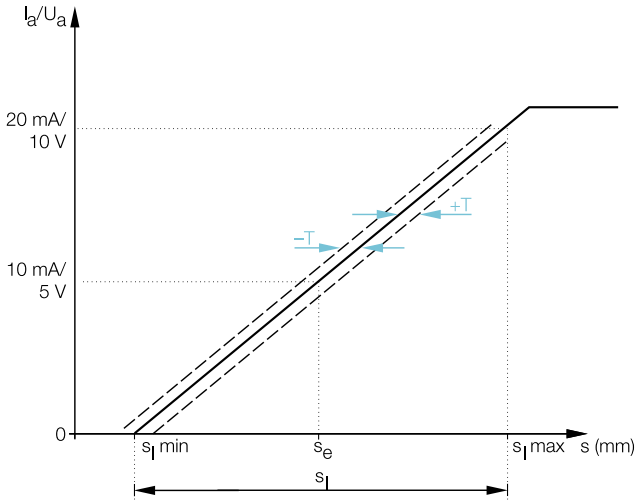
Describes the deviation of the sensor output signal under the effect of a temperature change, and thus represents a quality criterion for the sensor also.

Temperature drift

The temperature drift is the shift a point experiences on the actual output curve at different temperatures. The temperature drift is described by the temperature coefficient.

Tolerance T

A variable which defines the manufacturing tolerance band of the output curve, thereby determining the maximum sample deviation.



Ultrasonic function principle

Detection of objects using sound waves which are reflected directly back from a target.

Ambient temperature T_a

The maximum permissible temperature range at which a sensor may be operated while ensuring reliable functioning of the sensor.

Reverse polarity protection

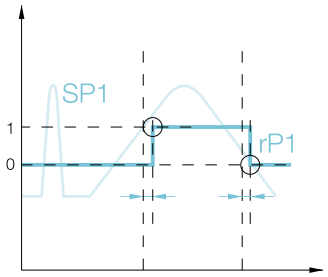
Also called polarity reversal protection. This sensor technology protects against reversal of the supply voltage (plus and minus) and reversal of the connection wires (brown and blue).

Contamination

Dirt and dust particles which collect on a sensor and reduce the range of photoelectric sensors and fiber objects compared with pure air. Deposits on the lens reduce its light transmission. The light is absorbed and scattered in the beam path. An oil-free source of compressed air can be used to prevent the effects of dirt and contamination due to impure air.

Delay time

Time until a sensor function is ready. This time function can be set. With a pressure sensor for example rapid pressure fluctuations can be reliably filtered out. When there is a pressure change in the medium the changed state is not compared with the set switching threshold until after the delay time has expired. If the switching event no longer exists by the time the delay has elapsed, the switching output does not change.



Displacement sensors with analog output

Displacement sensors with analog output are sensors that generate a continually varying output signal that depends on the distance between its sensing surface and the location of the position encoder relative to the sensor.

Repeat accuracy

Variance in the output values when approaching a mechanically prescribed position repeatedly from the same direction.

Ignition protection category "n" Designation "Ex n"

Feature of devices which are intended for use in areas where an explosive atmosphere is not expected. Even if the atmosphere were to become explosive, in all probability it would be infrequent and only for a short period of time. A manufacturer's declaration confirms that the product satisfies requirements for the use of electrical equipment in potentially explosive areas according to EN 60079-15. This designation combines multiple methods of ignition protection.

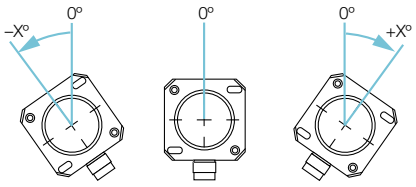
Reverse protected

The sensor electronics is protected against any possible reversal combination of all the leads.

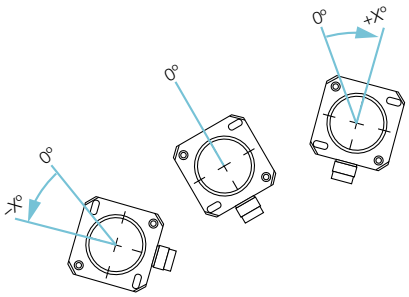
Centering function with MEMS-based inclination sensors

1- and 2-axis: factory calibrated – can be individually centered
Available are 1- and 2-axis versions which are factory calibrated to the perfect vertical or horizontal. The maximum deviation for each is 0.2°. If the current installation position deviates from these perfect vertical and horizontal alignments, the sensor can be centered. The single-axis version can be centered in a vertical position over 360° (see illustrations), whereas the dual axis version can only be set in a range of ±5° from the horizontal.

Starting position – working range (±x°) as factory set



New position – working range (±x°) after centering



Power Supplies

Reliable and efficient power supply

SWITCHING POWER SUPPLIES

Balluff offers high-performance power supplies to ensure that your systems run efficiently and without interference. Our power supplies for the control cabinet withstand overload and have especially long service life: up to 800,000 hours (91 years) to ensure the availability of your machines and equipment.

Our power supplies with the Heartbeat® function provide continuous function information about the internal device condition and indicate the current load situation and demand on the internal components. And the Lifetime display gives you warning for preventive maintenance. The diagnostics function can be applied anywhere in the system via IO-Link.

All the devices are available in several versions and output voltages. Heartbeat® versions for use directly in harsh environments are also available in IP67.

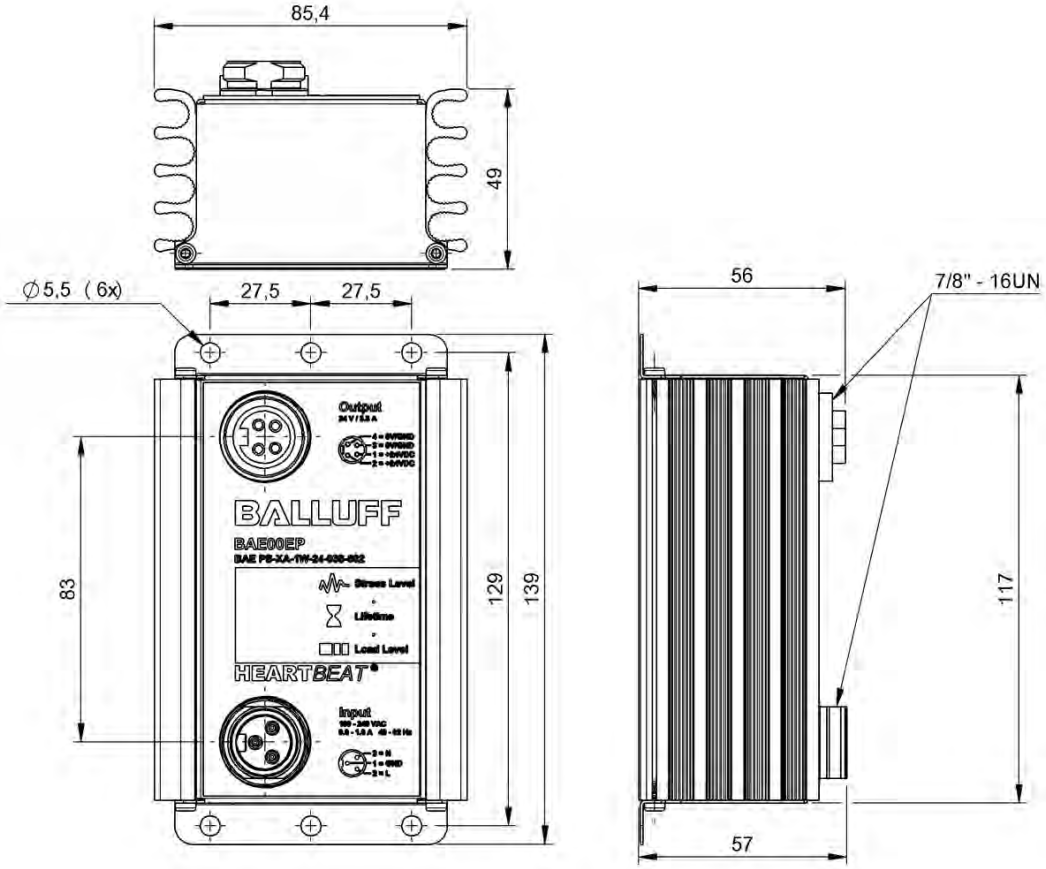
The most important benefits

- Complete line – everything from a single source
- Safety in case of short circuits and overloads in industrial environments
- Long service life for reliable operation
- High system availability of all equipment
- Comprehensive approval packages for global use

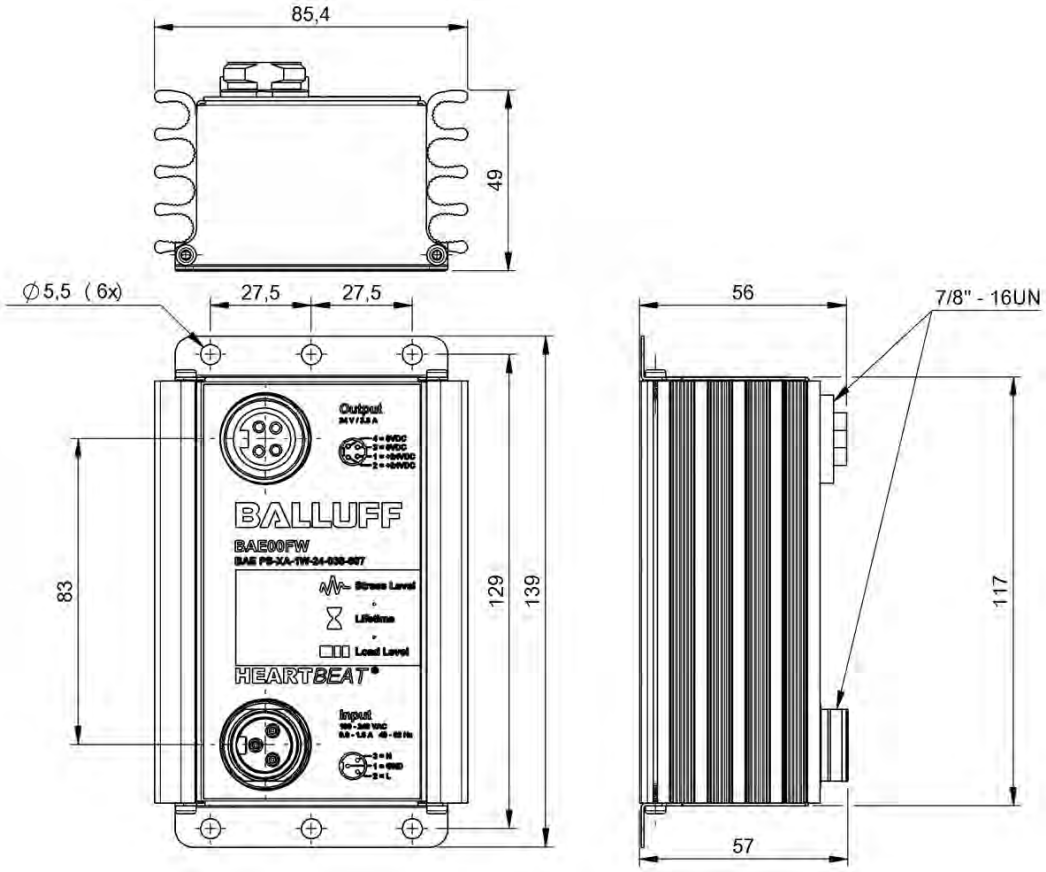
Heartbeat® Power Supply Units	226
Heartbeat® Power Supplies with IO-Link Interface	230
Power Supplies for the Control Cabinet	236
Basics and Glossary	242

	BAE00EP BAE PS-XA-1W-24-038-602	
Dimension	85.4 x 57 x 139 mm	
Version	IP67	
Mounting	Flange mounting	
Housing material	Aluminum	
Connection (supply voltage IN)	7/8“-Male	
Connection (supply voltage OUT)	7/8“-Female	
Input voltage	100…240 V AC, Single phase	
Rated output voltage DC	24 V	
Rated output current	3.8 A	
Output capacity max.	91.2 W	
Output current max.	6 A for max. 4s	
Protection degree	IP67 with connector	
Approval/Conformity	CE, cURus	
Ambient temperature	-25...70 °C	
Productview	Seite 228	

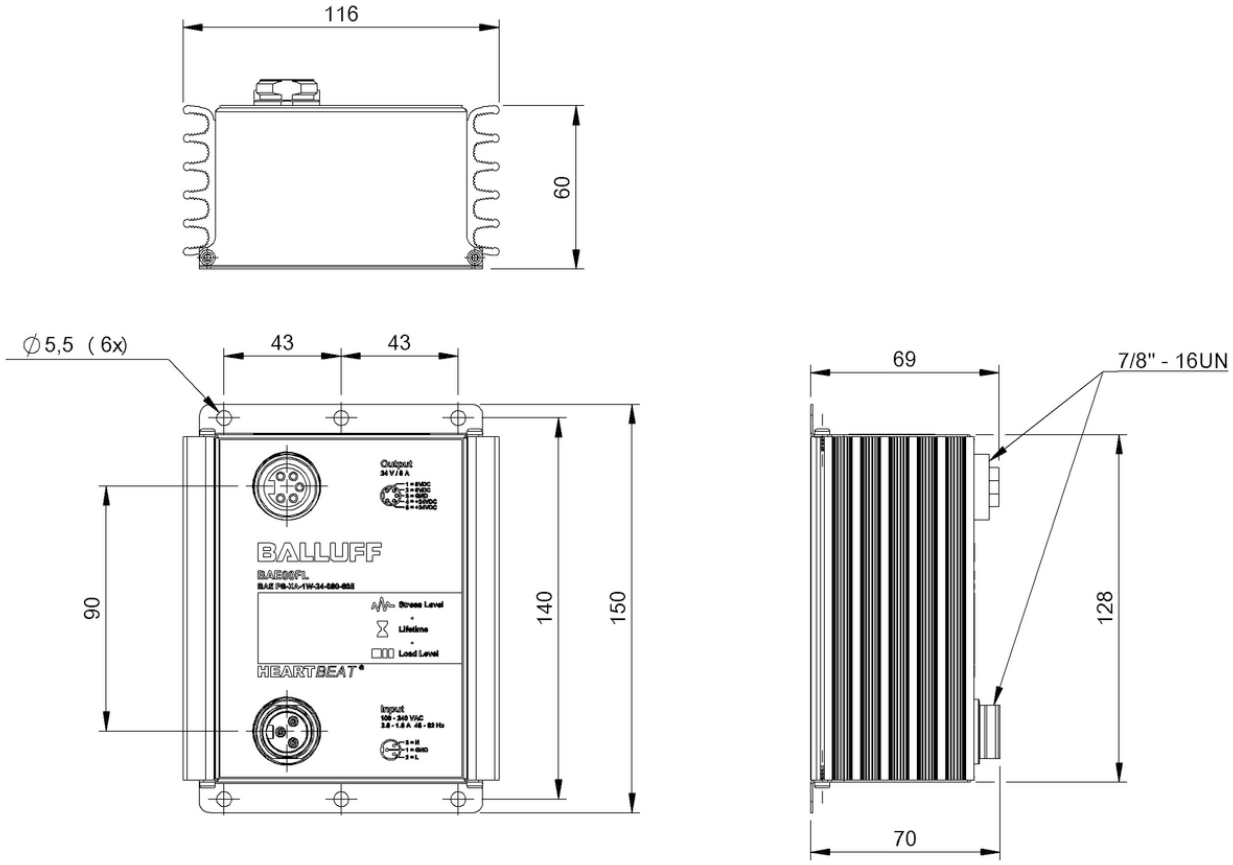
	BAE00FW BAE PS-XA-1W-24-038-607	BAE00FL BAE PS-XA-1W-24-080-605	BAE00FY BAE PS-XA-1W-24-080-606
	85.4 x 57 x 139 mm	116 x 70 x 150 mm	116 x 70 x 150 mm
	IP67	IP67	IP67
	Flange mounting	Flange mounting	Flange mounting
	Aluminum	Aluminum	Aluminum
	7/8“-Male	7/8“-Male	7/8“-Male
	7/8“-Female	7/8“-Female	7/8“-Female
	100…240 V AC, Single phase	100…240 V AC, Single phase	100…240 V AC, Single phase
	24 V	24 V	24 V
	3.8 A	8 A	8 A
	91.2 W	192 W	192 W
	6 A for max. 4s	12 A for max. 4s	12 A for max. 4s
	IP67 with connector	IP67 with connector	IP67 with connector
	CE, cURus	CE, cURus	CE, cURus
	-25...70 °C	-25...70 °C	-25...70 °C
	Seite 228	Seite 229	Seite 229



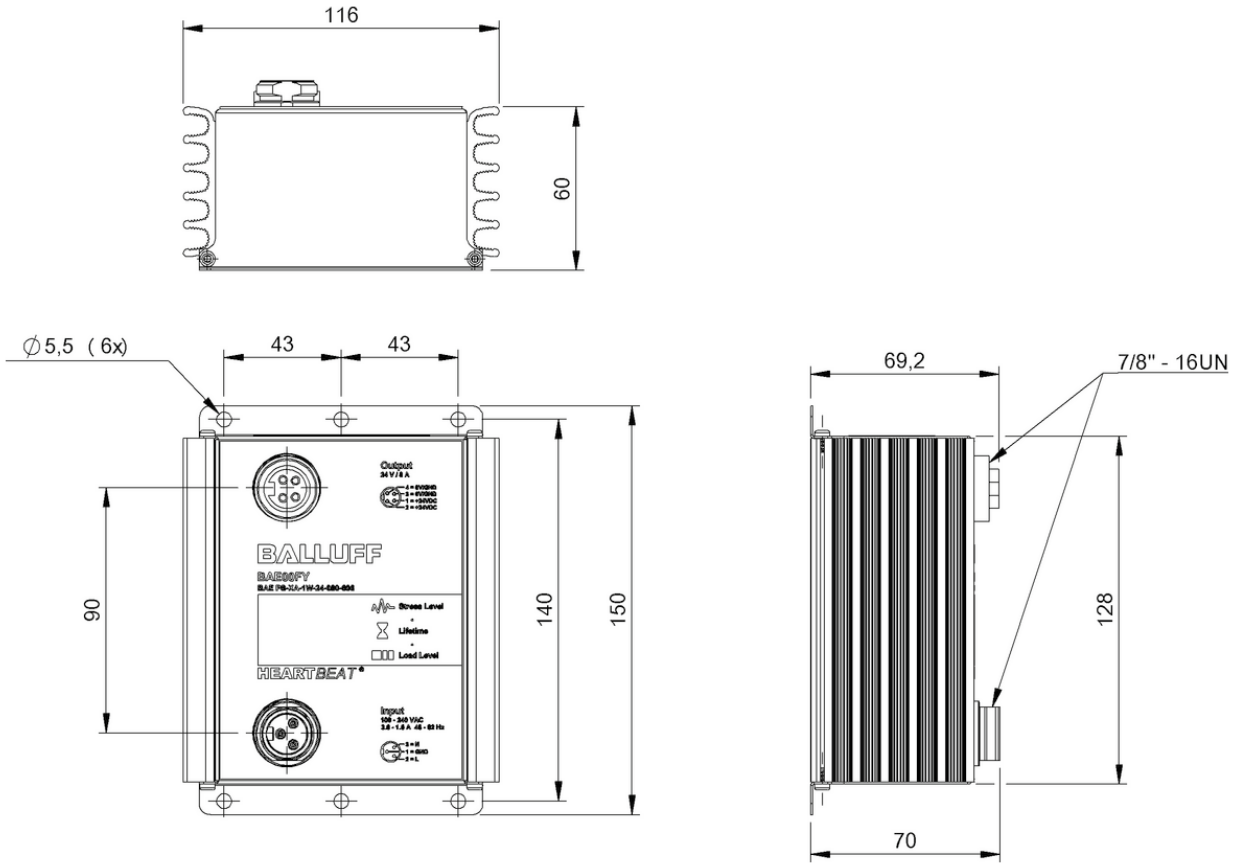
BAE00EP



BAE00FW



BAE00FL



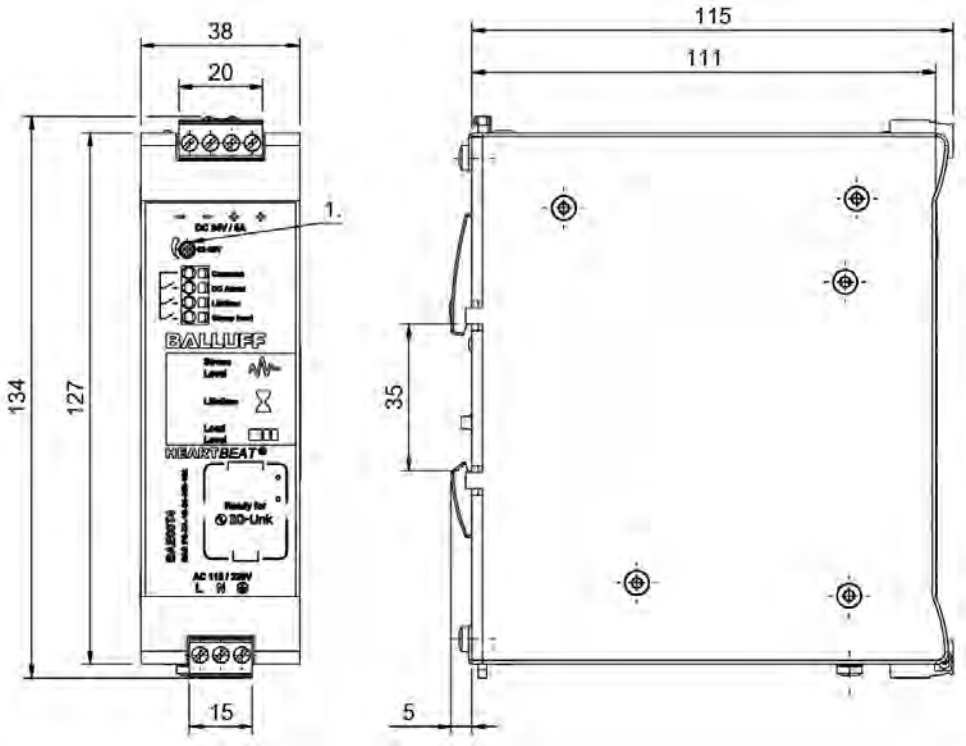
BAE00FY

	BAE00T4 BAE PS-XA-1S-24-050-102	**BAE00LJ** BAE PS-XA-1S-24-100-103	**BAE00M3** BAE PS-XA-1S-24-200-104	
Dimension	38 x 127 x 120 mm	60 x 127 x 127 mm	79 x 127 x 139 mm	
Version	DIN rail	DIN rail	DIN rail	
Mounting	DIN rail mount	DIN rail mount	DIN rail mount	
Housing material	Aluminum	Aluminum	Aluminum	
Connection (supply voltage IN)	Terminal strip	Terminal strip	Terminal strip	
Connection (supply voltage OUT)	Terminal strip	Terminal strip	Terminal strip	
Input voltage	115/230 V AC automatic selection, Single phase	115/230 V AC automatic selection, Single phase	115/230 V AC automatic selection, Single phase	
Rated output voltage DC	24 V	24 V	24 V	
Rated output current	5 A	10 A	20 A	
Output capacity max.	180 W	360 W	720 W	
Output current max.	7.5 A for max. 4s 1x/min.	15 A for max. 4s 1x/min.	30 A for max. 4s 1x/min.	
Protection degree	IP20	IP20	IP20	
Approval/Conformity	CE, CB, cURus, cULus	CE, CB, cURus, cULus	CE	
Ambient temperature	-25...70 °C	-25...70 °C	-25...60 °C	
Productview	Seite 232	Seite 232	Seite 233	



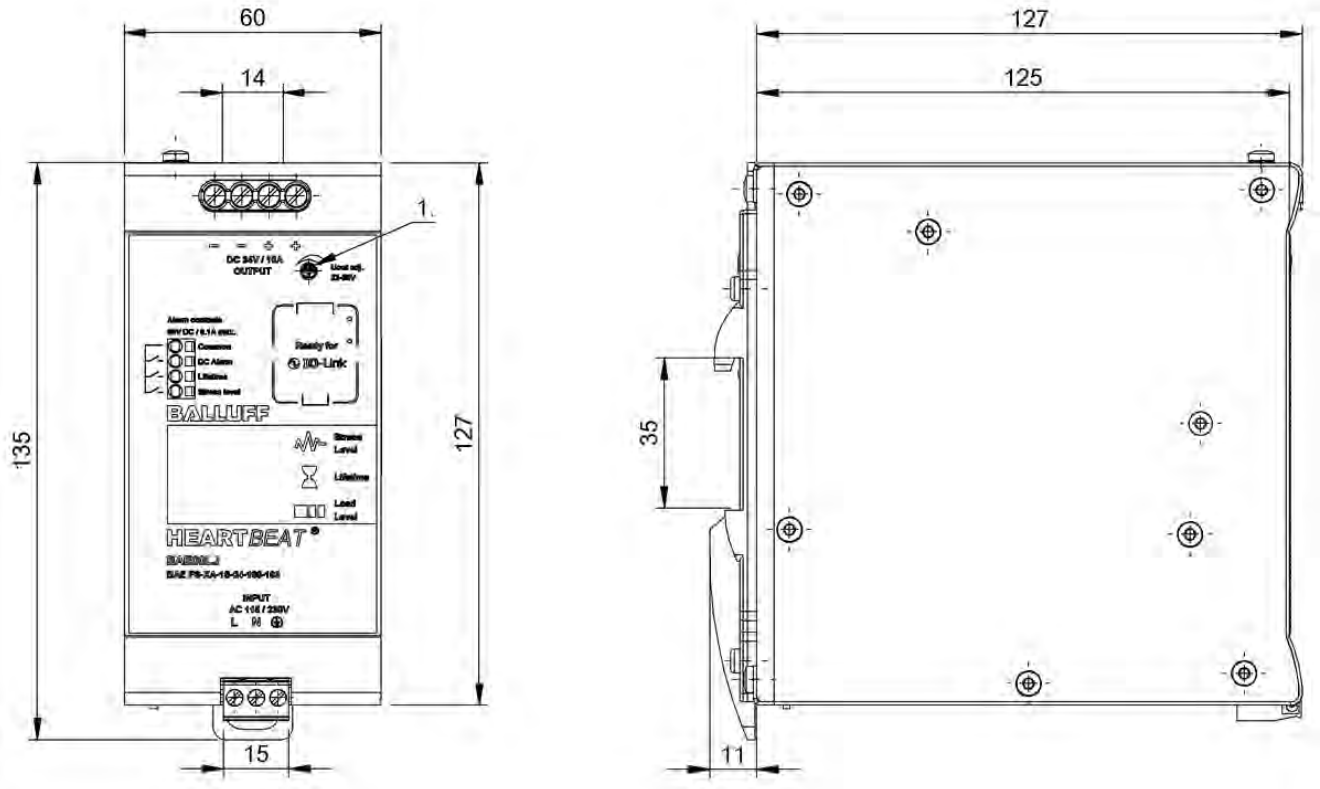


	BAE00TR BAE PS-XA-1W-24-025-101	BAE00TJ BAE PS-XA-1W-24-038-602-I	BAE00TK BAE PS-XA-1W-24-038-603-I	BAE00TL BAE PS-XA-1W-24-080-604-I	BAE00TM BAE PS-XA-1W-24-080-605-I
	24 x 127 x 92 mm	85.4 x 72.6 x 139 mm	85.4 x 72.6 x 139 mm	116 x 85 x 150 mm	116 x 85 x 150 mm
	DIN rail	IP67	IP67	IP67	IP67
	DIN rail mount	Flange mounting	Flange mounting	Flange mounting	Flange mounting
	Aluminum	Aluminum PC	Aluminum PC	Aluminum PC	Aluminum PC
	Terminal strip	7/8“-Male	7/8“-Male	7/8“-Male	7/8“-Male
	Terminal strip	7/8“-Female	7/8“-Female	7/8“-Female	7/8“-Female
	100…240 V AC, Single phase	100…240 V AC, Single phase	100…240 V AC, Single phase	100…240 V AC, Single phase	100…240 V AC, Single phase
	24 V	24 V	24 V	24 V	24 V
	2.5 A	3.8 A	3.8 A	8 A	8 A
	90 W	91.2 W	91.2 W	192 W	192 W
	3.75 A for max. 4s 1x/min.	6 A for max. 4s	6 A for max. 4s	12 A for max. 4s	12 A for max. 4s
	IP20	IP67 with connector	IP67 with connector	IP67 with connector	IP67 with connector
	CE, CB, cURus, cULus	CE, cURus, IO-Link	CE, cURus, IO-Link	CE, cURus, IO-Link	CE, cURus, IO-Link
	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
	Seite 233	Seite 234	Seite 234	Seite 235	Seite 235



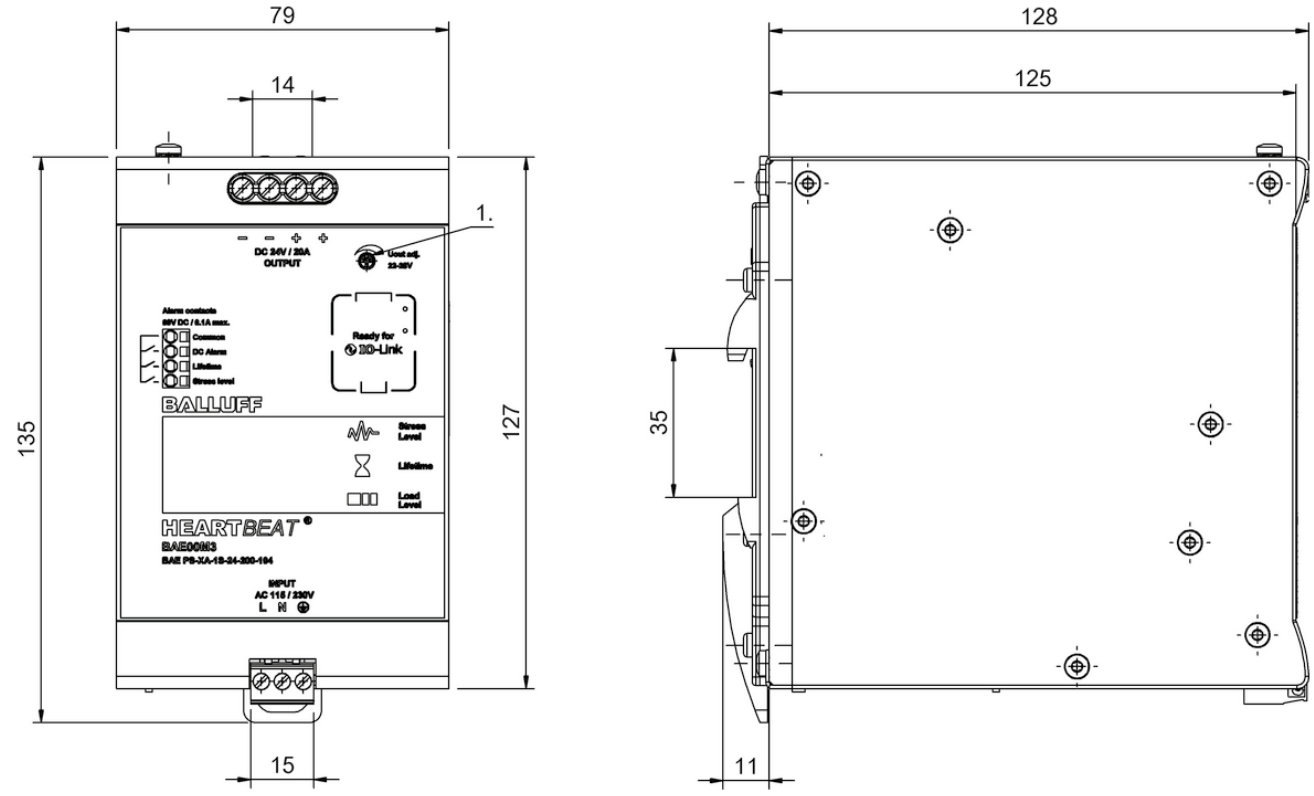
1) Potentiometer

BAE00T4



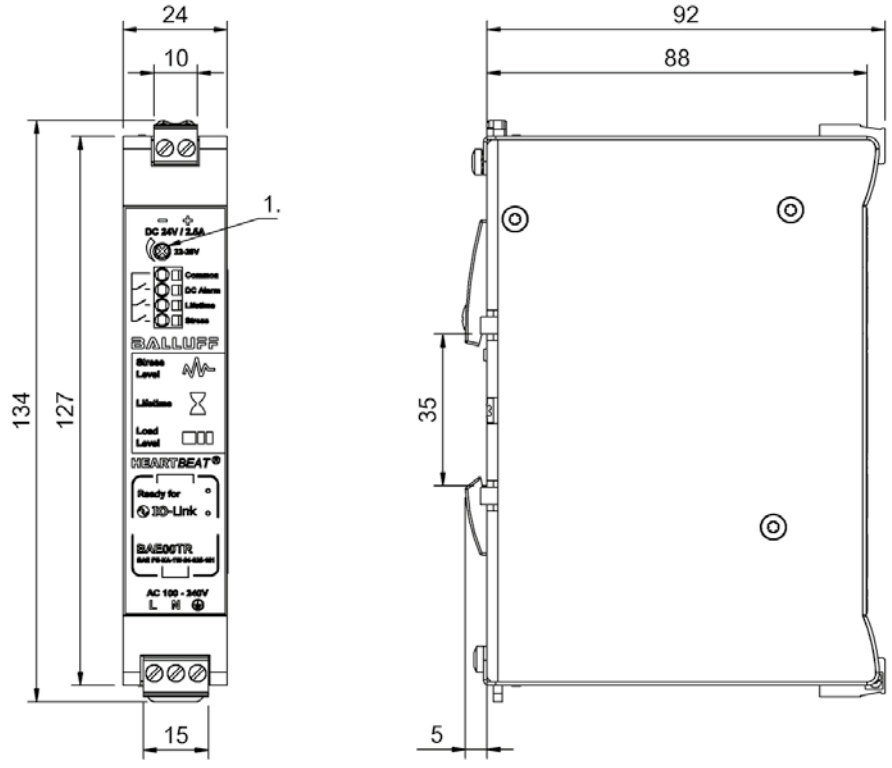
1) Potentiometer

BAE00LJ



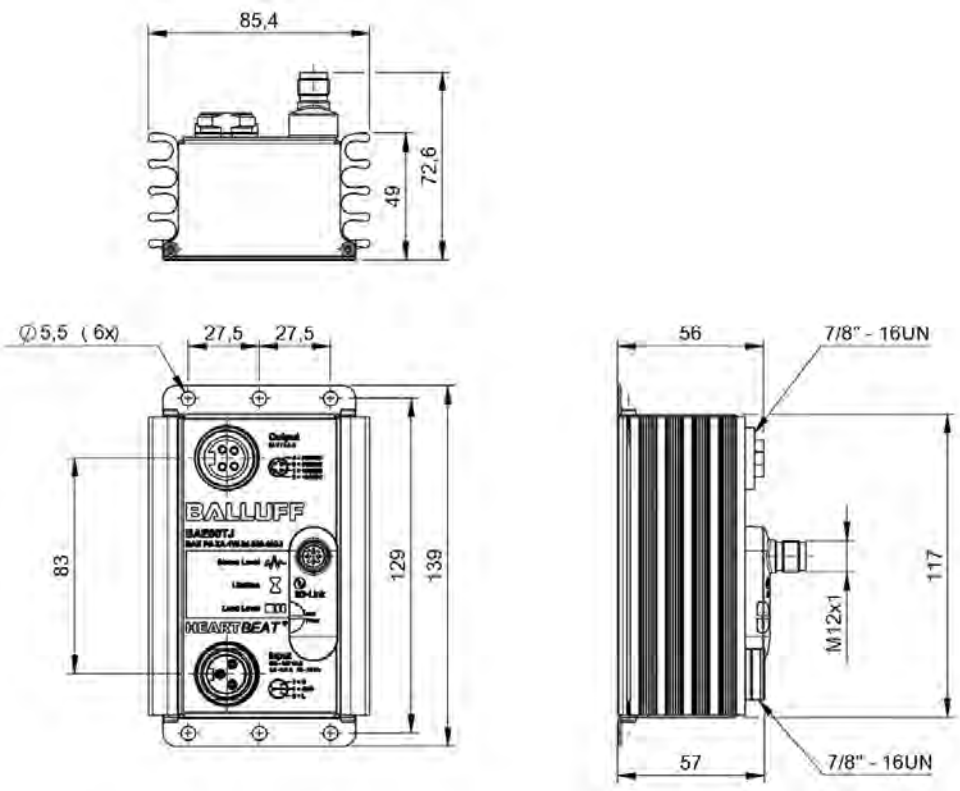
1) Potentiometer

BAE00M3

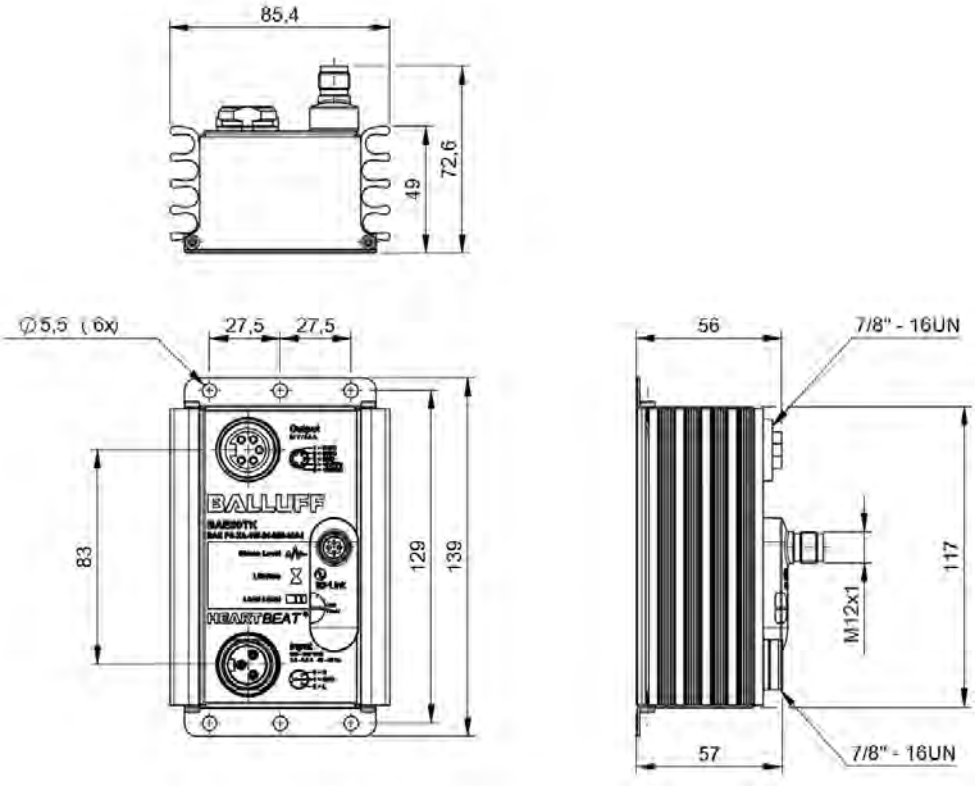


1) Potentiometer

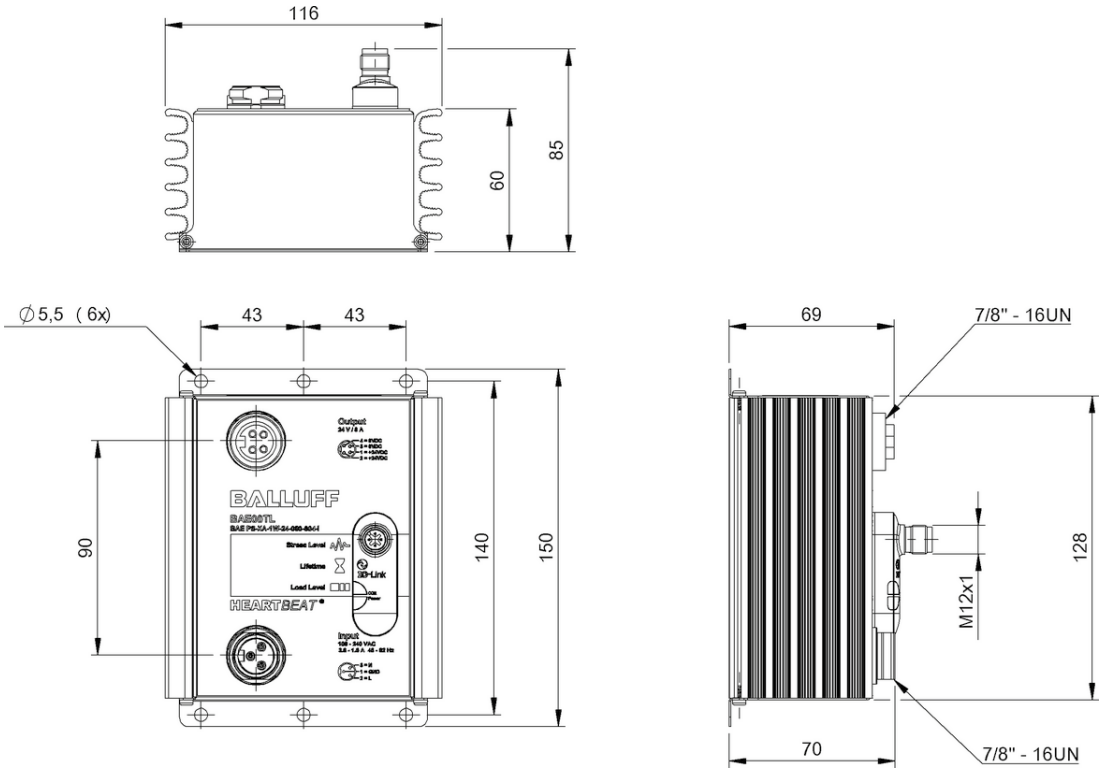
BAE00TR



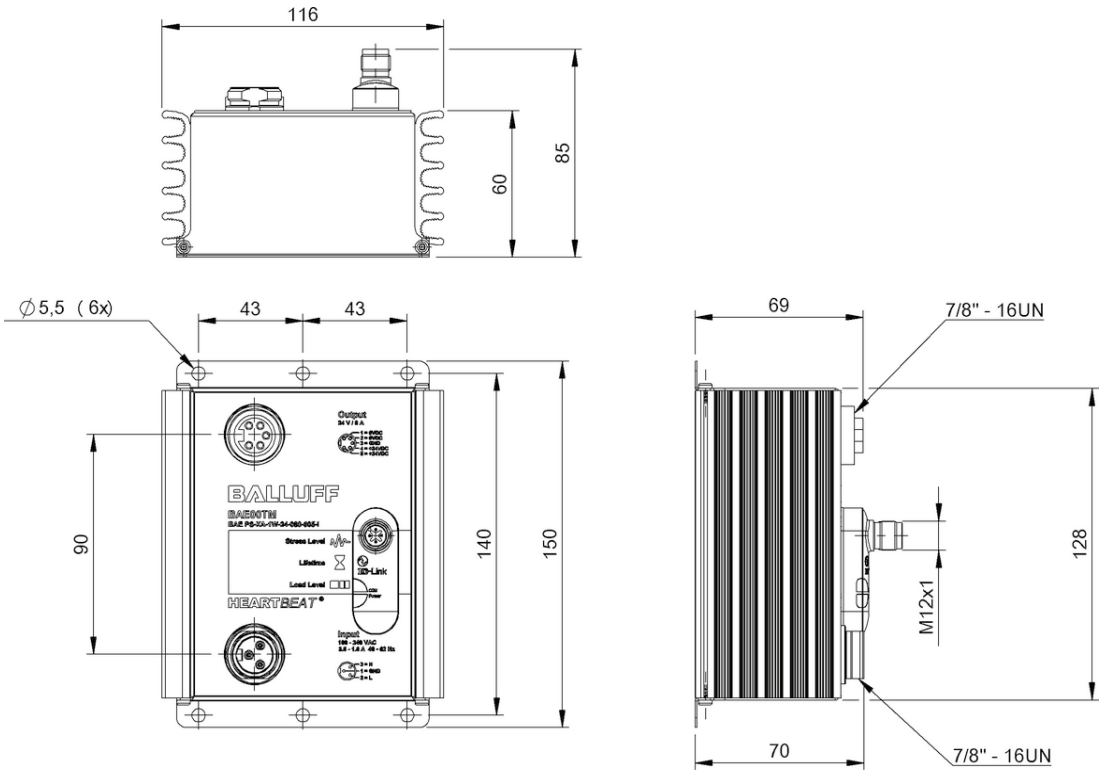
BAE00TJ



BAE00TK



BAE00TL



BAE00TM



	BAE0111 BAE PS-XA-1W-24-025-016	**BAE0112** BAE PS-XA-1W-24-050-017	**BAE0113** BAE PS-XA-1W-24-100-018	
Dimension	27 x 123.6 x 102 mm	40 x 123.6 x 117.6 mm	60 x 123.6 x 117.6 mm	
Version	DIN rail	DIN rail	DIN rail	
Mounting	DIN rail mount	DIN rail mount	DIN rail mount	
Housing material	Plastic	Metal	Metal	
Connection	Terminal, 0.25...2.5 mm²	Terminal, 0.25...4 mm²	Terminal, 0.25...4 mm²	
Input voltage	100…240 V AC, 1-phase	100…240 V AC, 1-phase	100…240 V AC, 1-phase	
Rated output voltage DC	24 V	24 V	24 V	
Rated output current	3.12 A	5 A	10 A	
IP rating	IP20	IP20	IP20	
Approval/Conformity	CE, EAC, cURus, cULus, WEEE	CE, EAC, cURus, cULus, WEEE	CE, EAC, cURus, cULus, WEEE	
Ambient temperature	-20...70 °C	-20...70 °C	-20...70 °C	
Productview	Seite 238	Seite 238	Seite 239	



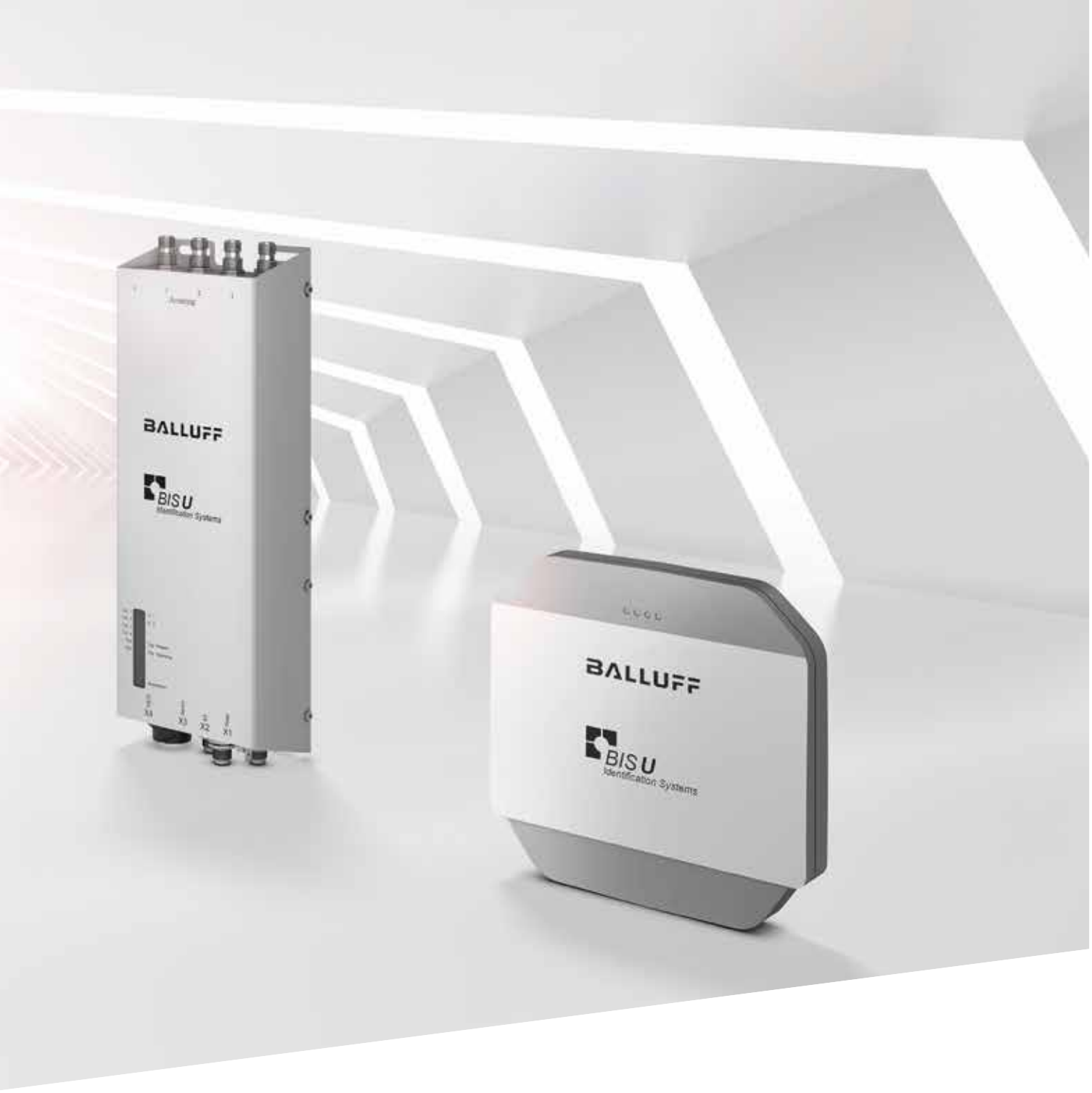


	BAE0114 BAE PS-XA-1W-24-200-019	BAE0115 BAE PS-XA-3Y-24-050-020	BAE0116 BAE PS-XA-3Y-24-100-021	BAE0117 BAE PS-XA-3Y-24-200-022	BAE0118 BAE PS-XA-3Y-24-400-023
	85.5 x 123.6 x 128.5 mm	50 x 121 x 117.3 mm	70 x 121 x 117.3 mm	140 x 121 x 117.3 mm	255 x 121 x 117.3 mm
	DIN rail	DIN rail	DIN rail	DIN rail	DIN rail
	DIN rail mount	DIN rail mount	DIN rail mount	DIN rail mount	DIN rail mount
	Metal	Metal	Metal	Metal	Metal
	Terminal, 0.25...4 mm²	Terminal, 0.25 mm²...4 mm², 0.5 mm²...10 mm²	Terminal, 0.25...4 mm²	Terminal, 0.25...4 mm²	Terminal, 0.25 mm²...4 mm², 0.5 mm²...10 mm²
	100…240 V AC, 1-phase	400…500 V AC 3-phase	400…500 V AC 3-phase	400…500 V AC 3-phase	400…500 V AC 3-phase
	24 V	24 V	24 V	24 V	24 V
	20 A	5 A	10 A	20 A	40 A
	IP20	IP20	IP20	IP20	IP20
	CE, EAC, cURus, cULus, WEEE	CE, EAC, cURus, cULus, WEEE	CE, EAC, cURus, cULus, WEEE	CE, EAC, cURus, cULus, WEEE	CE, EAC, cURus, cULus, WEEE
	-20...70 °C	-25...80 °C	-25...80 °C	-25...80 °C	-25...80 °C
	Seite 239	Seite 240	Seite 240	Seite 241	Seite 241

RFID

Continuous transmission security and data transparency

RFID SYSTEM UHF (860/960 MHZ) BIS U



The BIS U UHF systems from Balluff ensure data transparency and traceability of your automation processes. UHF is a standard technology for identification solutions covering all processes. They help to achieve fast detection of tag information and continuous transmission security. By querying decentrally stored product- and process-data, UHF is a central component of traceability applications. Our UHF BIS U systems provide permanent data transparency in your entire delivery chain.

Features

- Problem-free integration in applications via globally used standard interfaces
- Corresponds to the global standard ISO 18000-6C and EPC Gen2 Class1
- Flexible use due to a wide range of different combinations of data carriers and antennas
- Ranges up to 6 m and more
- Bulk capture for simultaneous scanning of many data carriers (tags)
- Suitable for attachment to traditional control systems via bus interfaces and higher level IT systems
- Complete tailored system solutions realizable
- Many accessories for integration into a variety of applications



Europe: 865-868 MHz		**BIS013P** BIS U-142-06/CA-M8-GY		
America/Asia: 902-928 MHz	**BIS0178** BIS U-142-A0/C1M-GY		**BIS013R** BIS U-142-07/CA-M8-GY	
Worldwide: 860-960 MHz				
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	902…928 MHz	865…868 MHz	902…928 MHz	
Dimension	Ø 17.2 x 14 mm	Ø 22 x 26 mm	Ø 22 x 26 mm	
Memory type	EEPROM	EEPROM	EEPROM	
User data, read/write	512 Bit	512 Bit	512 Bit	
EPC memory, read/write	96 Bit	96 Bit	96 Bit	
TID memory, read-only	64 Bit	96 Bit	96 Bit	
Antenna type	Dipole	Dipole	Dipole	
Installation	on metal	on metal	on metal	
Storage temperature	-25...95 °C	-25...95 °C	-25...95 °C	
Storage temperature temporary	—	—	—	
Ambient temperature	-25...85 °C	-25...85 °C	-25...85 °C	
Housing material	PA 12, GF30	Steel, Data carrier: PA 12-GF30 gray, coated	Steel, Data carrier: PA 12-GF30 gray, coated	
IP rating	IP68	IP68	IP68	
Approval/Conformity	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC	
Productview	Page 22	Page 22	Page 22	





		BIS00NL BIS U-100-01/CA			
			BIS00RC BIS U-100-02/CA		
	BIS00WH BIS U-101-04/CA			**BIS0174** BIS U-103-M2/CAM	**BIS0172** BIS U-108-M2/CAM
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	860…960 MHz	840…960 MHz	840…960 MHz	860…940 MHz	860…940 MHz
	51.5 x 6.4 x 51.5 mm	37.2 x 7 x 127 mm	37.2 x 7 x 127 mm	25 x 12.85 x 110 mm	15 x 12.5 x 80 mm
	EEPROM	EEPROM	EEPROM	EEPROM	EEPROM
	512 Bit	512 Bit	512 Bit	512 Bit	512 Bit
	240 Bit	96 Bit	96 Bit	128 Bit	128 Bit
	64 Bit	96 Bit	96 Bit	96 Bit	96 Bit
	Dipole	Dipole	Dipole	Dipole	Dipole
	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)	on metal	on metal
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	—	—	—	—	—
	-20...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	ABS	PA 12, GF30	PA 12, GF30	ABS	ABS
	IP68	IP67	IP67	IP68	IP68
	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC	CE, RoHS, EAC, WEEE	CE, RoHS, EAC, WEEE
	Page 22	Page 22	Page 22	Page 22	Page 22



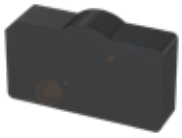
Europe: 865-868 MHz				
America/Asia: 902-928 MHz				
Worldwide: 860-960 MHz	**BIS0173** BIS U-109-M2/CAM	**BIS018F** BIS U-112-M4/CAA	**BIS018H** BIS U-113-M4/CAA	
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	860…930 MHz	860…960 MHz	860…960 MHz	
Dimension	48 x 12.6 x 51 mm	29.3 x 19.2 x 66.2 mm	38.1 x 19 x 51.3 mm	
Memory type	EEPROM	EEPROM	EEPROM	
User data, read/write	512 Bit	0 Bit	0 Bit	
EPC memory, read/write	128 Bit	96 Bit	96 Bit	
TID memory, read-only	96 Bit	48 Bit	48 Bit	
Antenna type	Dipole	Dipole	Dipole	
Installation	on metal	metal-free (clear zone)	metal-free (clear zone)	
Storage temperature	-40...85 °C	-40...85 °C	-40...85 °C	
Storage temperature temporary	—	—	—	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
Housing material	ABS	PVDF	PVDF	
IP rating	IP68	IP67	IP67	
Approval/Conformity	CE, RoHS, EAC, WEEE	CE, WEEE	CE, WEEE	
Productview	Page 22	Page 22	Page 23	



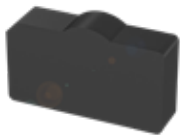


		BIS01CJ BIS U-180-A0/C0M-HT			
			BIS01CK BIS U-180-A0/C1M-HT		
	BIS016M BIS U-111-M2/CAA			**BIS00WF** BIS U-101-04/CA-HT	**BIS00WC** BIS U-102-05/CA-HT
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	860…960 MHz	866…868 MHz	902…928 MHz	860…960 MHz	860…960 MHz
	54 x 0.84 x 85.7 mm	5.95 x 1.3 x 57.1 mm	5.95 x 1.3 x 57.1 mm	51.5 x 6.4 x 51.5 mm	52 x 11.5 x 128 mm
	EEPROM	EEPROM	EEPROM	EEPROM	EEPROM
	512 Bit	512 Bit	512 Bit	512 Bit	512 Bit
	128 Bit	96 Bit	96 Bit	240 Bit	240 Bit
	96 Bit	96 Bit	96 Bit	64 Bit	64 Bit
	Dipole	Dipole	Dipole	Dipole	Dipole
	metal-free (clear zone)	on metal	on metal	metal-free (clear zone)	metal-free (clear zone)
	-25...50 °C	—	—	-40...85 °C	-40...85 °C
	—	-20...225 °C 1x12 h	-20...225 °C 1x12 h	220 °C 1x1000 h, 1500x30 min	220 °C 1x1000 h, 1500x30 min
	-25...50 °C	-20...85 °C	-20...85 °C	-40...85 °C	-40...85 °C
	PVC	Epoxy-resin/fiberglass, Flame-retarding	Epoxy-resin/fiberglass, Flame-retarding	PPS	PPS
	IP68	IP68	IP68	IP68	IP68
	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC
	Page 23	Page 23	Page 23	Page 22	Page 23





Europe: 865-868 MHz	**BIS01CF** BIS U-104-A0/C0M-HT		**BIS01CH** BIS U-105-A0/C0M-HT	
America/Asia: 902-928 MHz		**BIS01CM** BIS U-104-A0/C1M-HT		
Worldwide: 860-960 MHz				
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	866…868 MHz	902…928 MHz	866…868 MHz	
Dimension	7.8 x 2.7 x 6.8 mm	7.8 x 2.7 x 6.8 mm	7.8 x 3.1 x 13.1 mm	
Memory type	EEPROM	EEPROM	EEPROM	
User data, read/write	512 Bit	512 Bit	512 Bit	
EPC memory, read/write	96 Bit	96 Bit	96 Bit	
TID memory, read-only	96 Bit	96 Bit	96 Bit	
Antenna type	Dipole	Dipole	Dipole	
Installation	on metal	on metal	on metal	
Storage temperature	—	—	—	
Storage temperature temporary	-20...235 °C 1x700 h	-20...235 °C 1x700 h	-20...235 °C 1x700 h	
Ambient temperature	-20...85 °C	-20...85 °C	-20...85 °C	
Housing material	Ceramic	Ceramic	Ceramic	
IP rating	IP68	IP68	IP68	
Approval/Conformity	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC	
Productview	Page 23	Page 23	Page 23	





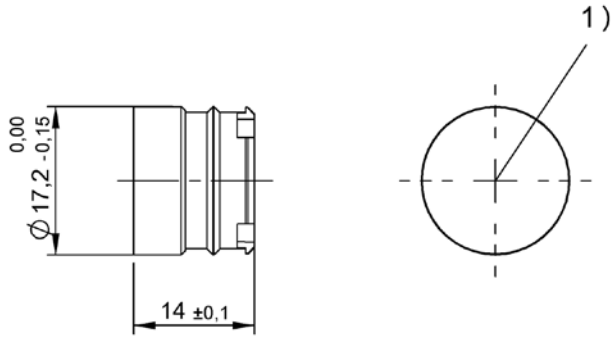
			BIS01AU BIS U-157-N9/C0M		
	BIS01CN BIS U-105-A0/C1M-HT			**BIS01AT** BIS U-157-N9/C1M	
		BIS0163 BIS U-150-N4/CAA			**BIS0166** BIS U-153-M0/CAA
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	902…928 MHz	860…960 MHz	865…868 MHz	902…928 MHz	860…960 MHz
	7.8 x 3.1 x 13.1 mm	20 × 44.45 mm	22.5 x 1.65 x 50 mm	22.5 x 1.65 x 50 mm	9 × 113 mm
	EEPROM	EEPROM	EEPROM	EEPROM	EEPROM
	512 Bit	0 Bit	1024 Bit	1024 Bit	32 Bit
	96 Bit	128 Bit	448 Bit	448 Bit	128 Bit
	96 Bit	64 Bit	96 Bit	96 Bit	96 Bit
	Dipole	Dipole	Dipole	Dipole	Dipole
	on metal	metal-free (clear zone)	on metal	on metal	metal-free (clear zone)
	—	-20...80 °C	-30...85 °C	-30...85 °C	-20...80 °C
	-20...235 °C 1x700 h	—	—	—	—
	-20...85 °C	-20...80 °C	-30...85 °C	-30...85 °C	-20...80 °C
	Ceramic	Paper	PET	PET	Paper
	IP68	—	—	—	—
	CE, WEEE, EAC	CE, WEEE, EAC	CE, REACH regulation (EU), RoHS	CE, REACH regulation (EU), RoHS	CE, WEEE, EAC
	Page 23	Page 23	Page 23	Page 23	Page 24



Europe: 865-868 MHz				
America/Asia: 902-928 MHz				
Worldwide: 860-960 MHz	**BIS0167** BIS U-154-M0/CAA	**BIS0169** BIS U-156-M0/CAA	**BIS0164** BIS U-151-M2/CAA	
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	860…960 MHz	860…960 MHz	860…960 MHz	
Dimension	15 × 97 mm	53 × 53 mm	54 × 34 mm	
Memory type	EEPROM	EEPROM	EEPROM	
User data, read/write	32 Bit	32 Bit	512 Bit	
EPC memory, read/write	128 Bit	128 Bit	128 Bit	
TID memory, read-only	96 Bit	96 Bit	96 Bit	
Antenna type	Dipole	Dipole	Dipole	
Installation	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)	
Storage temperature	-40...85 °C	-40...85 °C	-40...85 °C	
Storage temperature temporary	—	—	—	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
Housing material	Paper	Paper	Paper	
IP rating	—	—	—	
Approval/Conformity	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC	
Productview	Page 24	Page 24	Page 24	

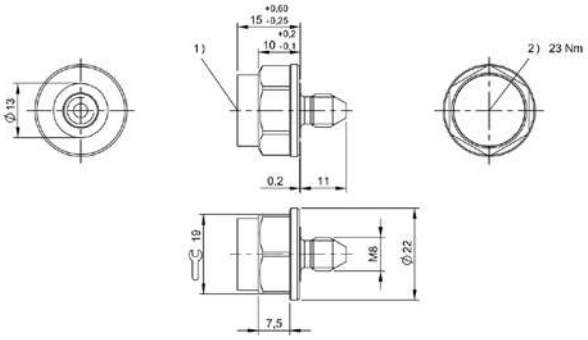



		BIS016E BIS U-158-A0/C0M-HT			
			BIS016F BIS U-158-A0/C1M-HT		
	BIS0168 BIS U-155-M2/CAA			**BIS016H** BIS U-159-M2/CAA	
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	
	860…960 MHz	865…868 MHz	902…928 MHz	850…960 MHz	
	27 × 97 mm	25 x 1.65 x 88 mm	25 x 1.65 x 88 mm	23 x 1 x 100 mm	
	EEPROM	EEPROM	EEPROM	EEPROM	
	512 Bit	512 Bit	512 Bit	512 Bit	
	128 Bit	96 Bit	96 Bit	128 Bit	
	96 Bit	96 Bit	96 Bit	96 Bit	
	Dipole	Dipole	Dipole	Dipole	
	metal-free (clear zone)	on metal	on metal	metal-free (clear zone)	
	-40...85 °C	-25...95 °C	-25...95 °C	-40...85 °C	
	—	160 °C 3x30 min	160 °C 3x30 min	—	
	-40...85 °C	-30...70 °C	-30...70 °C	-25...70 °C	
	Paper	PEN	PEN	PET	
	—	IP67	IP67	IP68	
	CE, WEEE, EAC	CE, REACH regulation (EU), RoHS, WEEE	CE, REACH regulation (EU), RoHS, WEEE	CE, REACH regulation (EU), RoHS, WEEE	
	Page 24	Page 24	Page 24	Page 24	



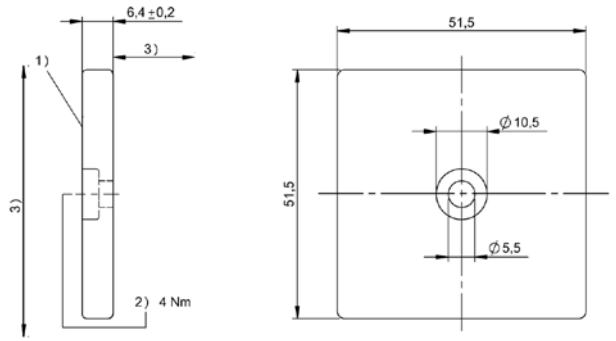
1) Sensing surface

BIS0178



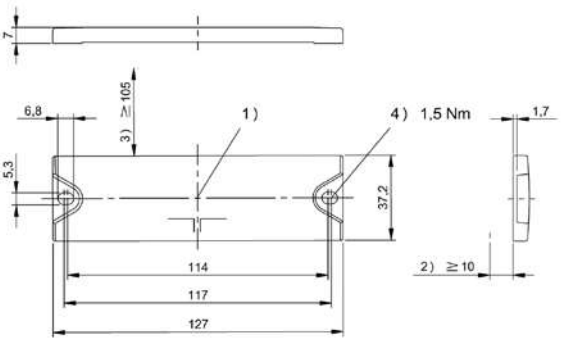
1) Sensing surface, 2) Tightening torque

BIS013P, BIS013R



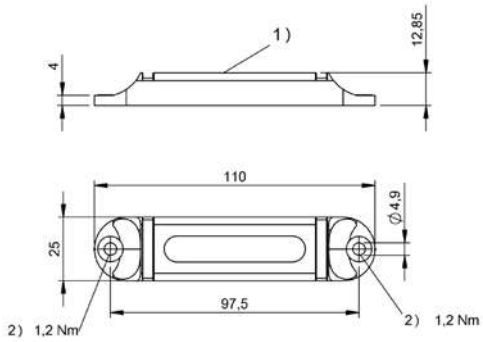
1) Sensing surface, 2) Tightening torque, 3) see R/W head table

BIS00WH, BIS00WF



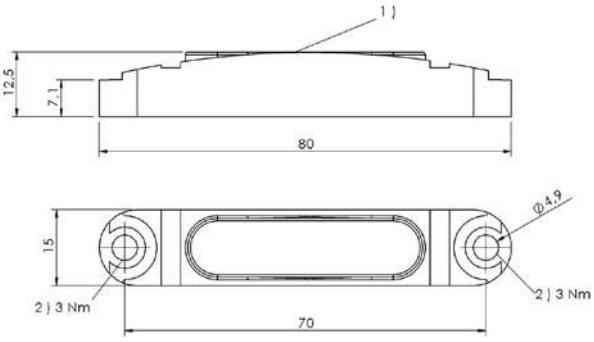
1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding, 4) Tightening torque

BIS00NL, BIS00RC



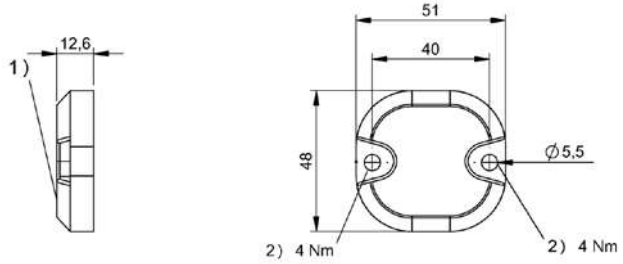
1) Sensing surface, 2) Tightening torque

BIS0174



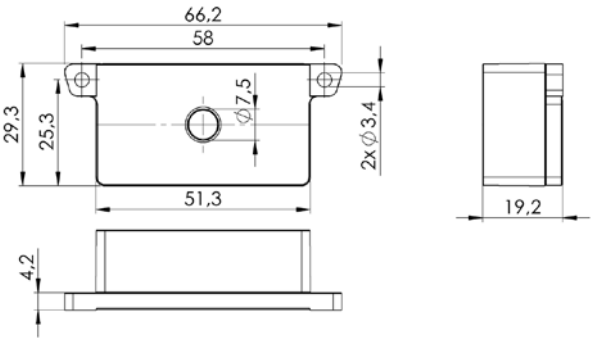
1) Sensing surface, 2) Tightening torque

BIS0172

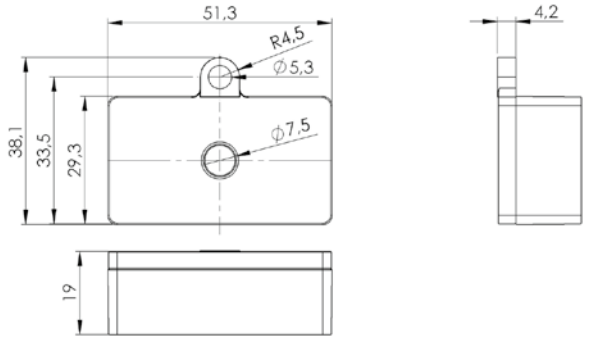


1) Sensing surface, 2) Tightening torque

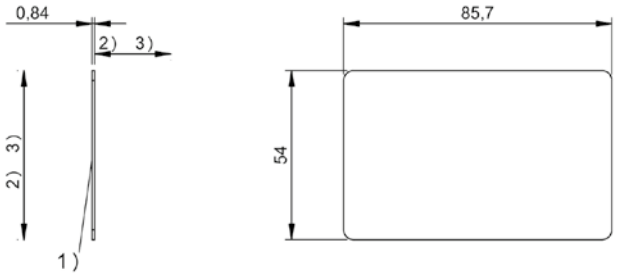
BIS0173



BIS018F

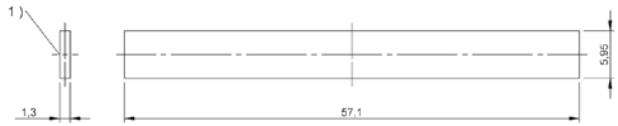


BIS018H



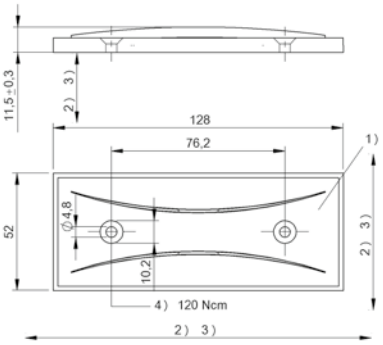
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS016M



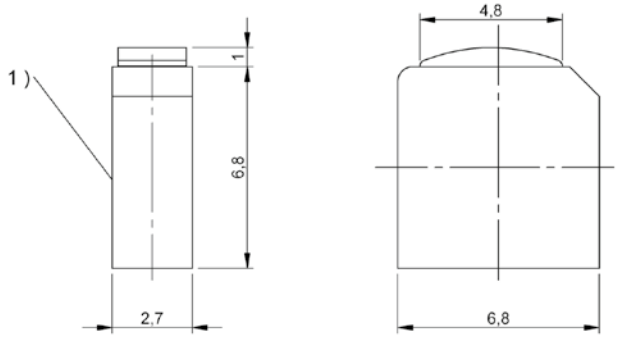
1) Sensing surface

BIS01CJ, BIS01CK



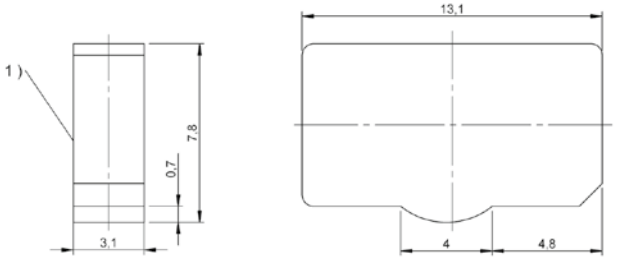
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BIS00WC



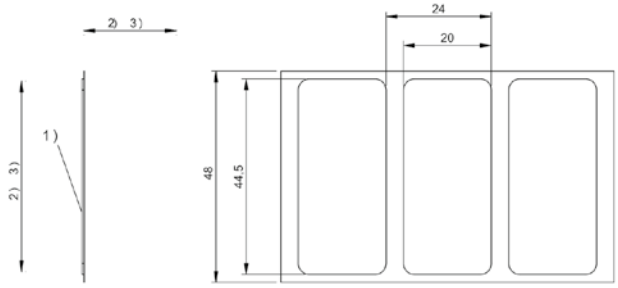
1) Sensing surface

BIS01CF, BIS01CM



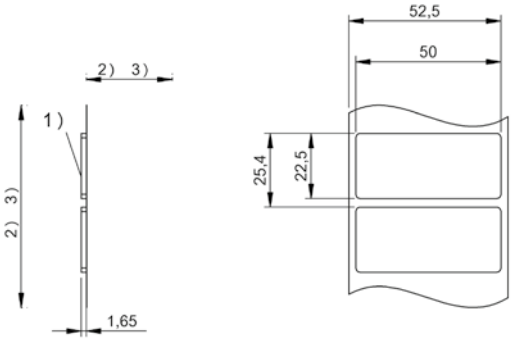
1) Sensing surface

BIS01CH, BIS01CN



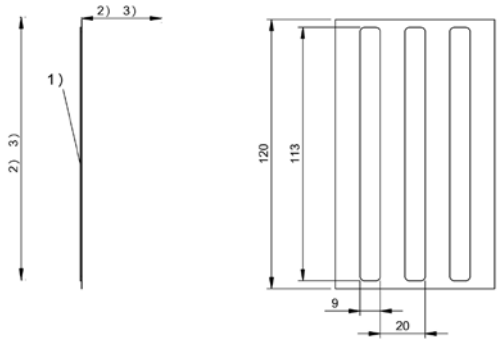
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS0163



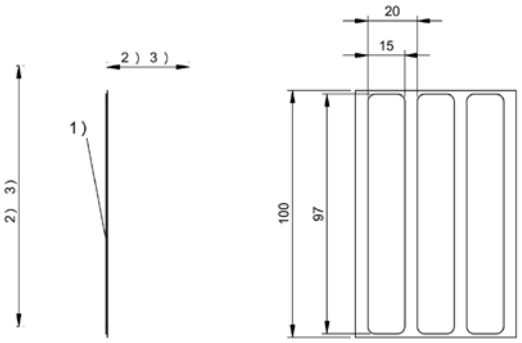
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS01AU, BIS01AT



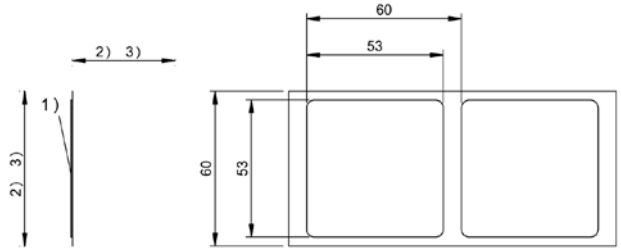
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS0166



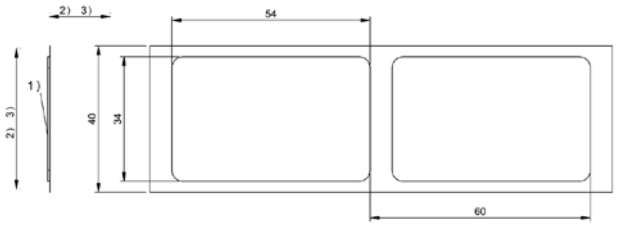
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS0167



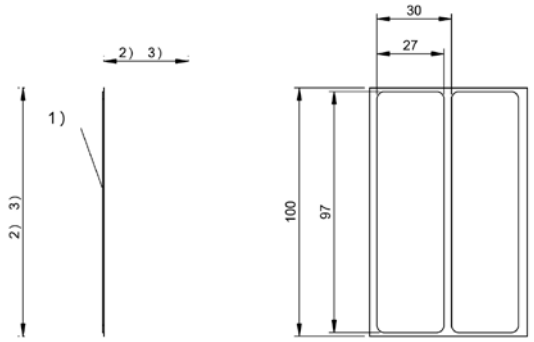
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS0169



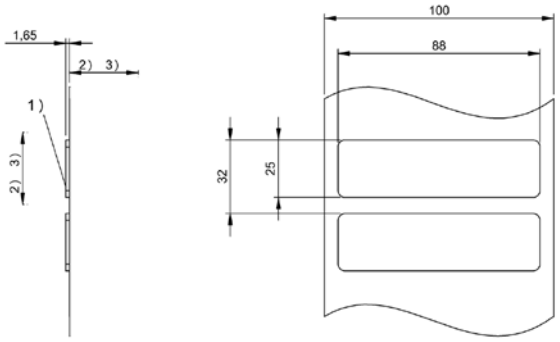
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS0164



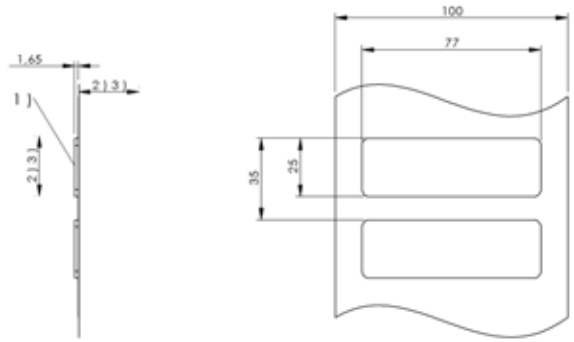
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS0168



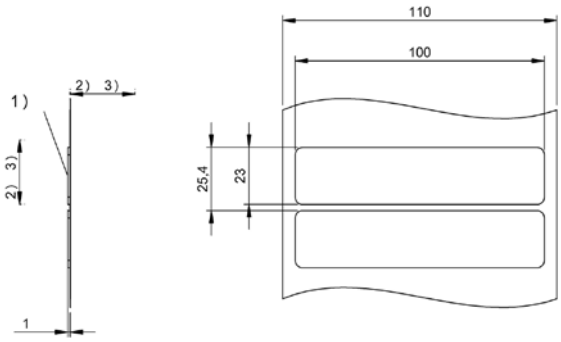
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS016E



1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS016F



1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS016H

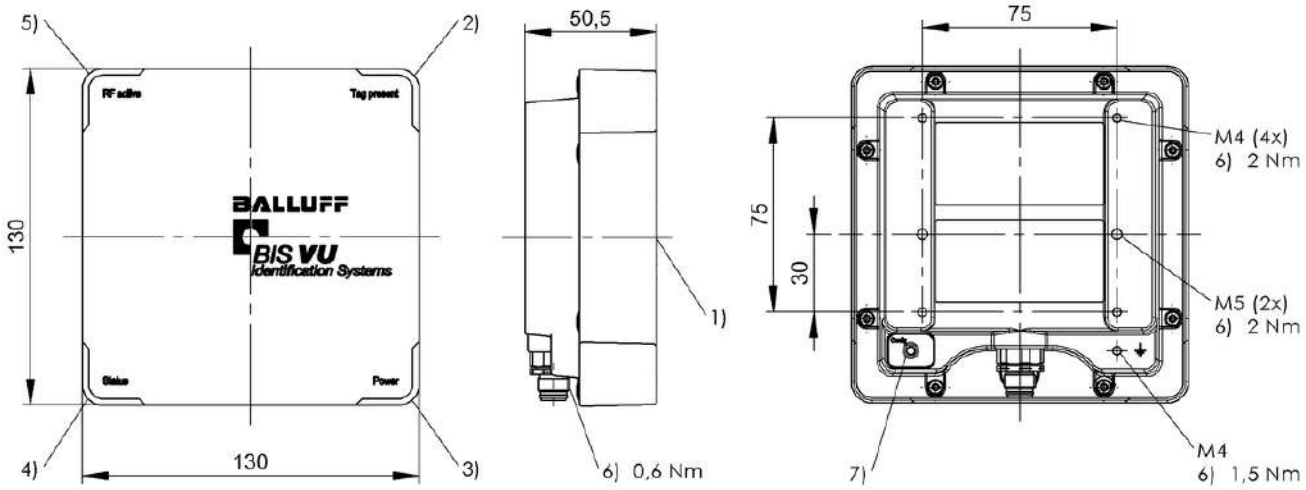
Europe: 865...868 MHz	**BIS015Z** BIS VU-320-C0-S4		
USA/Canada/Mexico: 902...928 MHz		**BIS015Y** BIS VU-320-C1-S4	
China: 920.5...924.5 MHz			
South Korea: 917...921 MHz			
Japan: 916.8...92.4 MHz			
Australia: 920.25...925.75 MHz			
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	
Radio license	Europe	USA, Canada, Mexico	
Dimension	130 x 50.5 x 130 mm	130 x 50.5 x 130 mm	
Antenna type	Patch	Patch	
Polarization	circular	circular	
Output power adjustable	5 dBm…24 dBm (3.2 mW…250 mW)	7 dBm…26 dBm (5 mW…400 mW)	
Connection	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Housing material	PC ABS, zinc, die-cast, (connector)	PC ABS, zinc, die-cast, (connector)	
Interface	RS485	RS485	
Operating voltage Ub	24 V DC LPS Class 2	24 V DC LPS Class 2	
Ambient temperature	-20...55 °C	-20...55 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE, ETSI EN 302 208, UL Listed	FCC Part 15, IC RSS-210, UL Listed	
Productview	Page 30	Page 30	




	BIS018Z BIS VU-320-C2-S4			
		BIS0190 BIS VU-320-C4-S4		
			BIS0191 BIS VU-320-C5-S4	
				BIS0192 BIS VU-320-C7-S4
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	China	South Korea	Japan	Australia
	130 x 50.5 x 130 mm	130 x 50.5 x 130 mm	130 x 50.5 x 130 mm	130 x 50.5 x 130 mm
	Patch	Patch	Patch	Patch
	circular	circular	circular	circular
	5 dBm…24 dBm (3.2 mW…250 mW)	7 dBm…26 dBm (5 mW…400 mW)	7 dBm…25 dBm (5 mW…320 mW)	7 dBm…26 dBm (5 mW…400 mW)
	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded
	PC ABS, zinc, die-cast, (connector)	PC ABS, zinc, die-cast, (connector)	PC ABS, zinc, die-cast, (connector)	PC ABS, zinc, die-cast, (connector)
	RS485	RS485	RS485	RS485
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	-20...55 °C	-20...55 °C	-20...55 °C	-20...55 °C
	IP67	IP67	IP67	IP67
	CMIIT-Radio Transmiss. Equipm., UL Listed	KC, UL Listed	ARIB T106, MIC Specified Radio Equipment, UL Listed	AS/NZS 4268, UL Listed
	Page 30	Page 30	Page 30	Page 30

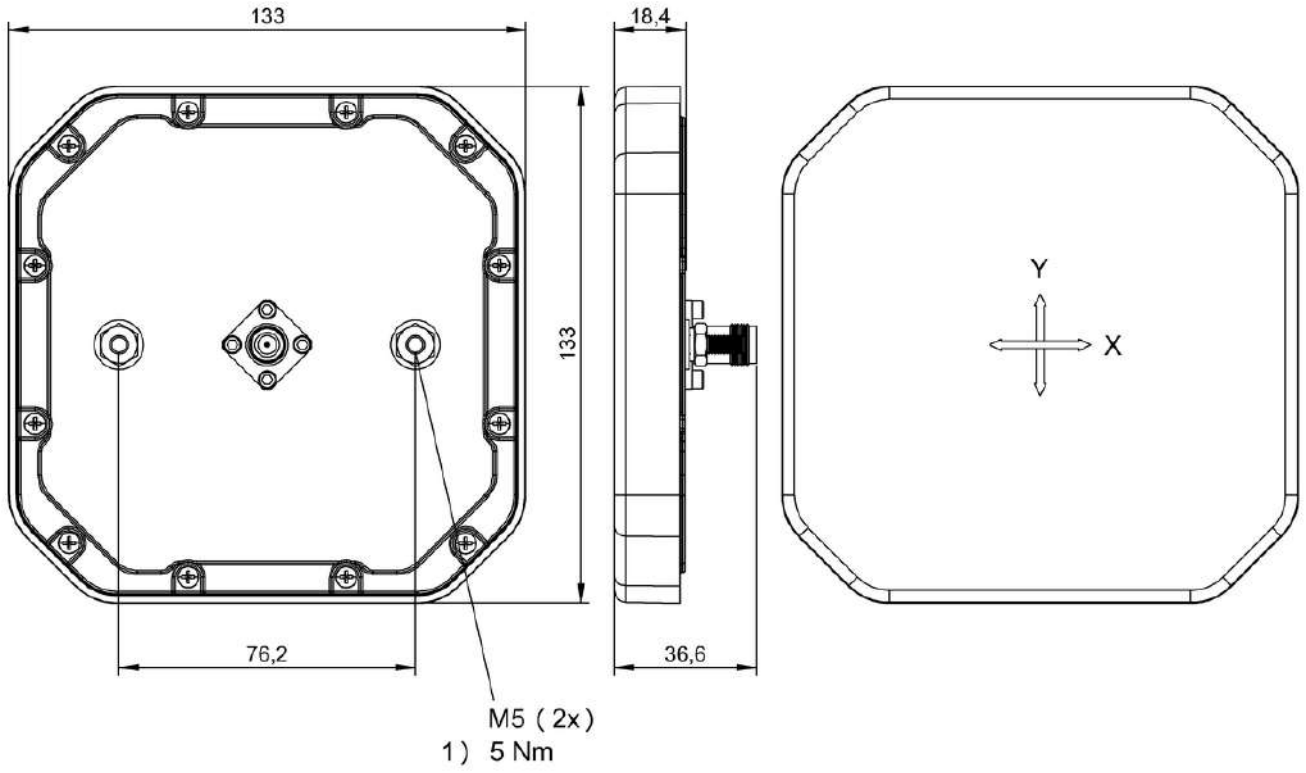
Europe: 865...868 MHz	**BIS00P0** BIS U-301-C0-TNCB		
America/Asia: 902...928 MHz		**BIS00TY** BIS U-301-C1-TNCB	
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	865…868 MHz	902…928 MHz	
Dimension	133 x 18.4 x 133 mm	133 x 18.4 x 133 mm	
Antenna type	Patch	Patch	
Polarization	circular	circular	
Connection	—	—	
Housing material	PC	PC	
Ambient temperature	-30...70 °C	-30...70 °C	
Protection degree	IP67	IP67	
Approval/Conformity	—	—	
Productview	Page 30	Page 30	

	BIS01AW BIS U-303-C0-TNCB			
		BIS01AY BIS U-303-C1-TNCB		
	UHF (860...960 MHz)	UHF (860...960 MHz)		
	865…868 MHz	902…928 MHz		
	300 x 49 x 300 mm	300 x 49 x 300 mm		
	Patch	—		
	right hand circular	right hand circular		
	TNC-Female	TNC-Female		
	Aluminum, Antenna hood: Polymer blend	Aluminum, Antenna hood: Polymer blend		
	-20...55 °C	-20...55 °C		
	IP67	IP67		
	CE, WEEE	FCC, WEEE		
	Page 31	Page 31		



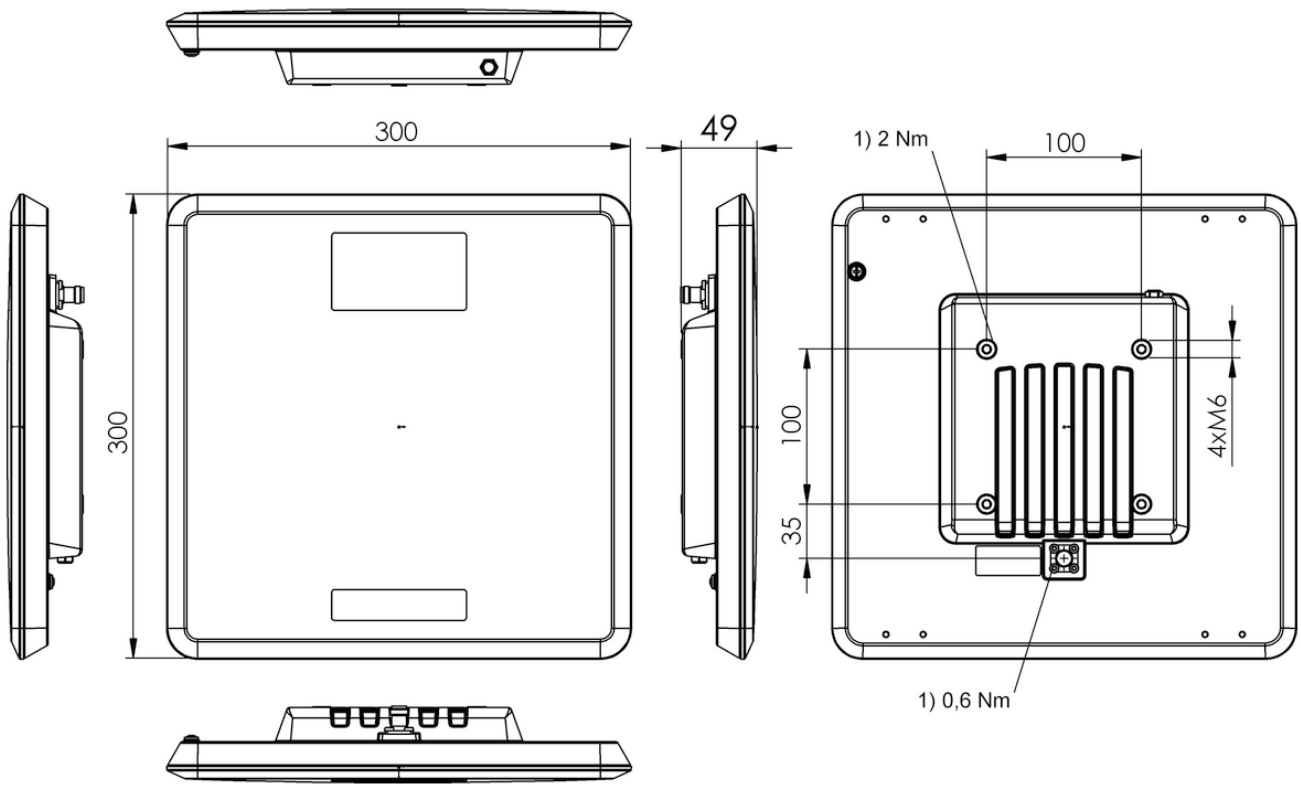
1) Sensing surface, 2) LED (Tag present), 3) LED (Power), 4) LED (Status), 5) LED (RF active), 6) Tightening torque, 7) Button (Config)

BIS015Z, BIS015Y, BIS018Z, BIS0190, BIS0191, BIS0192



1) Tightening torque

BIS00P0, BIS00TY



1) Tightening torque

BIS01AW, BIS01AY

Profibus DP Slave galvanically isolated	**BIS00T3** BIS V-6102-019-C001	
Ethernet/IP		
Product Group	Multi-Frequency Processor	
Working frequency	865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz	
Interface	Profibus DP Slave galvanically isolated	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	—	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Productview	Page 50	

	BIS012E BIS V-6102-019-C101		
		BIS012F BIS V-6106-034-C002	BIS0122 BIS V-6106-034-C004
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz	865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz	865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz
	Profibus DP Slave galvanically isolated	Ethernet/IP	Ethernet/IP
	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
	4	4	4
	—	—	—
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	Page 50	Page 50	Page 51

Ethernet/IP	**BIS014C** BIS V-6106-034-C102	
Product Group	Multi-Frequency Processor	
Working frequency	865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz	
Interface	Ethernet/IP	
Supported RFID technologies	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	—	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Productview	Page 50	

	BIS0146 BIS V-6106-034-C104	BIS0186 BIS V-6107-039-C005	BIS018J BIS V-6107-039-C006
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz	865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz	865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz
	Ethernet/IP	Ethernet TCP/IP, USB	Ethernet TCP/IP, USB
	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
	4	4	4
	—	—	—
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	Page 51	Page 51	Page 52

TCP/IP, USB	**BIS01AA** BIS V-6107-039-C007	
Product Group	Multi-Frequency Processor	
Working frequency	865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz	
Interface	TCP/IP, USB	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	—	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Productview	Page 52	

	BIS0187 BIS V-6107-039-C105	BIS018K BIS V-6107-039-C106	BIS01AC BIS V-6107-039-C107
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz	865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz	865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz
	Ethernet TCP/IP, USB	Ethernet TCP/IP, USB	TCP/IP, USB
	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
	4	4	4
	—	—	—
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	Page 51	Page 52	Page 52

Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	**BIS013U** BIS V-6108-048-C002	
Product Group	Multi-Frequency Processor	
Working frequency	865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz	
Interface	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	—	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Productview	Page 53	

	BIS01AE BIS V-6108-048-C007	BIS013W BIS V-6108-048-C102	BIS01AF BIS V-6108-048-C107
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz	865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz	865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz
	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch
	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
	4	4	4
	—	—	—
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	Page 53	Page 53	Page 53

EtherCAT	**BIS00U9** BIS V-6110-063-C002	
Product Group	Multi-Frequency Processor	
Working frequency	865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz	
Interface	EtherCAT	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	—	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Productview	Page 54	

BIS0147 BIS V-6110-063-C102		
Multi-Frequency Processor		
865…868 MHz, 902…928 MHz, 920.5…924.5 MHz, 917…921 MHz, 916.8…920.4 MHz, 920.25…925.75 MHz		
EtherCAT		
LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)		
4		
—		
24 V DC LPS Class 2		
Zinc, Die casting		
0...60 °C		
IP65, with connector		
CE, EAC, cULus, WEEE		
Page 54		

Europe: 865...868 MHz	**BIS00M7** BIS U-6020-053-104-00-ST26	
USA/Canada/Mexico: 902...928 MHz		
China: 920.5...924.5 MHz		
Product Group	UHF (860...960 MHz)	
Working frequency	865…868 MHz	
Interface	RS232	
Supported RFID technologies	UHF 860/960 MHz (BIS U)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	17 dBm…33 dBm (50 mW…2 W)	
Operating voltage Ub	19.2...28.8 VDC	
Housing material	Steel, Aluminum, coated	
Ambient temperature	-20...55 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, ETSI EN 302 208, EAC, WEEE	
Productview	Page 55	

	BIS013J BIS U-6026-034-114-06-ST35		
		BIS018N BIS U-6026-034-124-06-ST35	**BIS012R** BIS U-6027-060-124-06-ST27
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	902…928 MHz	920.5…924.5 MHz	920.5…924.5 MHz
	EtherNet/IP galvanically isolated	EtherNet/IP galvanically isolated	Ethernet TCP/IP
	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)
	4	4	4
	17 dBm…30 dBm (50 mW…1 W)	17 dBm...31.5 dBm (50 mW...1.4 W)	17 dBm...31.5 dBm (50 mW...1.4 W)
	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	Steel, Aluminum, coated	Steel, Aluminum, coated	Steel, Aluminum, coated
	-20...55 °C	-20...55 °C	-20...55 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	FCC Part 15, IC RSS-247, WEEE, cULus, EAC	CMIIT-Radio Transmiss. Equipm., WEEE, cULus	CMIIT-Radio Transmiss. Equipm., WEEE, cULus
	Page 55	Page 55	Page 56

Europe: 865...868 MHz		
USA/Canada: 902...928 MHz		
South Korea: 917...921 MHz	**BIS00UR** BIS U-6027-060-144-06-ST27	
Australia: 920.25...925.75 MHz		
Product Group	UHF (860...960 MHz)	
Working frequency	917…921 MHz	
Interface	Ethernet TCP/IP	
Supported RFID technologies	UHF 860/960 MHz (BIS U)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	17 dBm…30 dBm (50 mW…1 W)	
Operating voltage Ub	19.2...28.8 VDC	
Housing material	Steel, Aluminum, coated	
Ambient temperature	-20...55 °C	
IP rating	IP65, with connector	
Approval/Conformity	KC, WEEE, EAC	
Productview	Page 56	

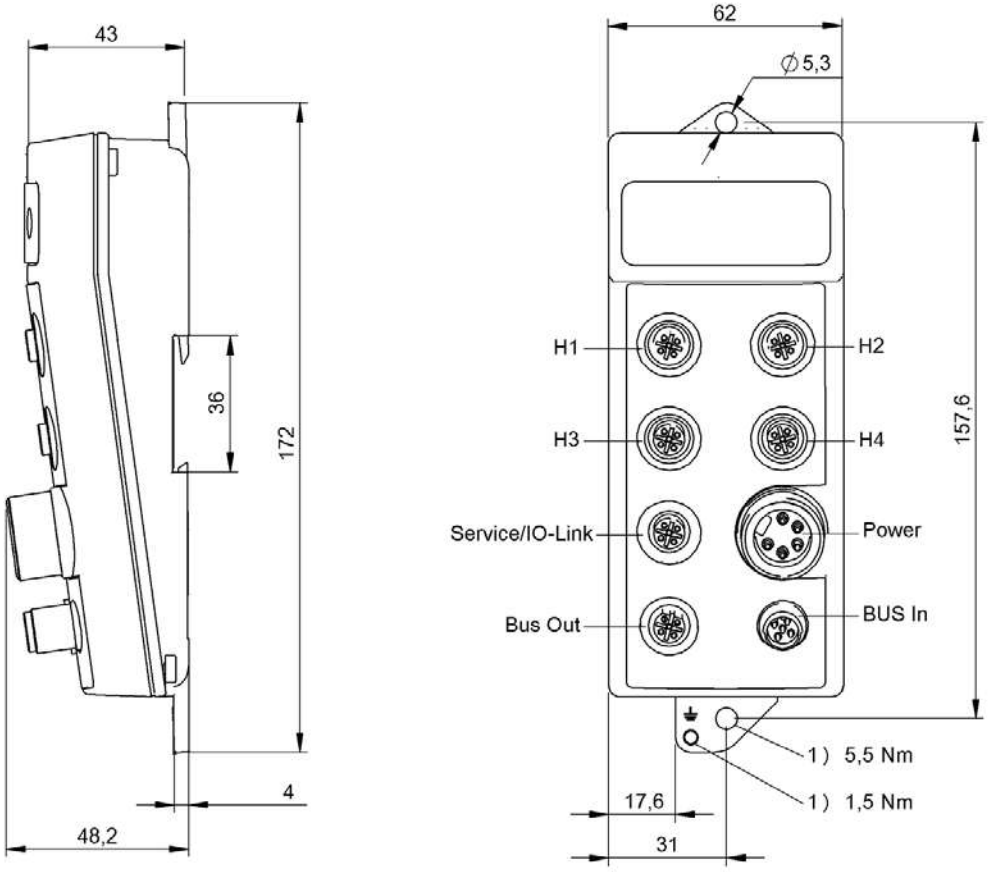
		BIS00ZU BIS U-6028-048-104-06-ST28	
			BIS00ZW BIS U-6028-048-114-06-ST28
	BIS014H BIS U-6027-060-174-06-ST27		
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	920.25…925.75 MHz	865…868 MHz	902…928 MHz
	Ethernet TCP/IP	Profinet galvanically isolated	Profinet galvanically isolated
	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)
	4	4	4
	17 dBm…30 dBm (50 mW…1 W)	17 dBm...31.5 dBm (50 mW...1.4 W)	17 dBm…30 dBm (50 mW…1 W)
	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	Steel, Aluminum, coated	Steel, Aluminum, coated	Steel, Aluminum, coated
	-20...55 °C	-20...55 °C	-20...55 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	AS/NZS 4268, WEEE	CE, ETSI EN 302 208, WEEE, EAC, cULus	FCC Part 15, IC RSS-247, WEEE, cULus, EAC
	Page 56	Page 57	Page 57

Europe: 865...868 MHz		
USA/Canada: 902...928 MHz		
Brazil: 915...928 MHz		
China: 920.5...924.5 MHz	**BIS017J** BIS U-6028-048-124-06-ST28	
Product Group	UHF (860...960 MHz)	
Working frequency	920.5…924.5 MHz	
Interface	Profinet galvanically isolated	
Supported RFID technologies	UHF 860/960 MHz (BIS U)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	17 dBm...31.5 dBm (50 mW...1.4 W)	
Operating voltage Ub	19.2...28.8 VDC	
Housing material	Steel, Aluminum, coated	
Ambient temperature	-20...55 °C	
IP rating	IP65, with connector	
Approval/Conformity	CMIIT-Radio Transmiss. Equipm., cULus, WEEE, EAC	
Productview	Page 57	

		BIS0193 BIS U-6127-081-104-06-ST36	
			BIS0194 BIS U-6127-081-114-06-ST36
	BIS0152 BIS U-6028-048-134-06-ST28		
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	915.25…927.75 MHz	865…868 MHz	902…928 MHz
	Profinet galvanically isolated	Ethernet TCP/IP	Ethernet TCP/IP
	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)
	4	4	4
	17 dBm…30 dBm (50 mW…1 W)	7 dBm…30 dBm (5 mW…1 W)	7 dBm…30 dBm (5 mW…1 W)
	19.2...28.8 VDC	19.2...28.8 VDC LPS Class 2	19.2...28.8 VDC LPS Class 2
	Steel, Aluminum, coated	Stainless steel, Aluminum, coated	Stainless steel, Aluminum, coated
	-20...55 °C	-20...55 °C	-20...55 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	Anatel 442/2006, Anatel 506/2008, WEEE	CE, ETSI EN 302 208, UL Listed, EAC, WEEE	FCC Part 15, IC RSS-210, UL Listed, WEEE, EAC
	Page 57	Page 58	Page 58

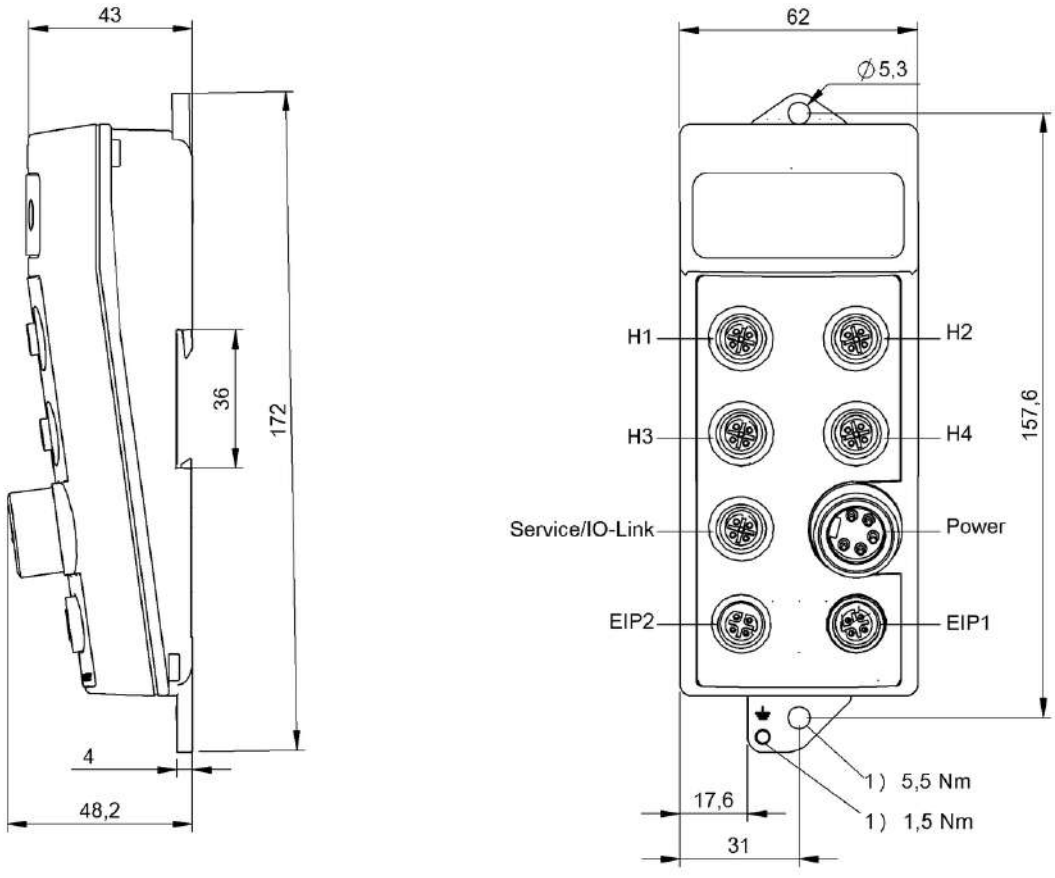
Europe: 865...868 MHz		
USA: 902...928 MHz	**BIS00Z3** BIS U-620-068-111-00-S115	
Product Group	UHF (860...960 MHz)	
Working frequency	902…928 MHz	
Interface	RS232	
Supported RFID technologies	UHF 860/960 MHz (BIS U)	
Number of connectable R/W heads / antennas	1	
Output power adjustable	10 dBm…27 dBm (10 mW…500 mW)	
Operating voltage Ub	19.2...28.8 VDC	
Housing material	Aluminum	
Ambient temperature	-20...50 °C	
IP rating	IP65, with connector	
Approval/Conformity	FCC Part 15, WEEE, EAC	
Productview	Page 58	

	BIS00Z0 BIS U-626-069-101-06-ST32		
		BIS00YZ BIS U-626-069-111-06-ST31	BIS00YY BIS U-626-069-111-06-ST32
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	865…868 MHz	902…928 MHz	902…928 MHz
	Industrial Ethernet / Ethernet TCP/IP / MOD-BUS TCP	Industrial Ethernet / Ethernet TCP/IP / MOD-BUS TCP	Industrial Ethernet / Ethernet TCP/IP / MOD-BUS TCP
	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)
	1	1	1
	10 dBm…27 dBm (10 mW…500 mW)	10 dBm…27 dBm (10 mW…500 mW)	10 dBm…27 dBm (10 mW…500 mW)
	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	Aluminum	Aluminum	Aluminum
	-20...50 °C	-20...50 °C	-20...50 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, ETSI EN 302 208, EAC, WEEE	FCC Part 15, WEEE, EAC	FCC Part 15, WEEE, EAC
	Page 59	Page 59	Page 59



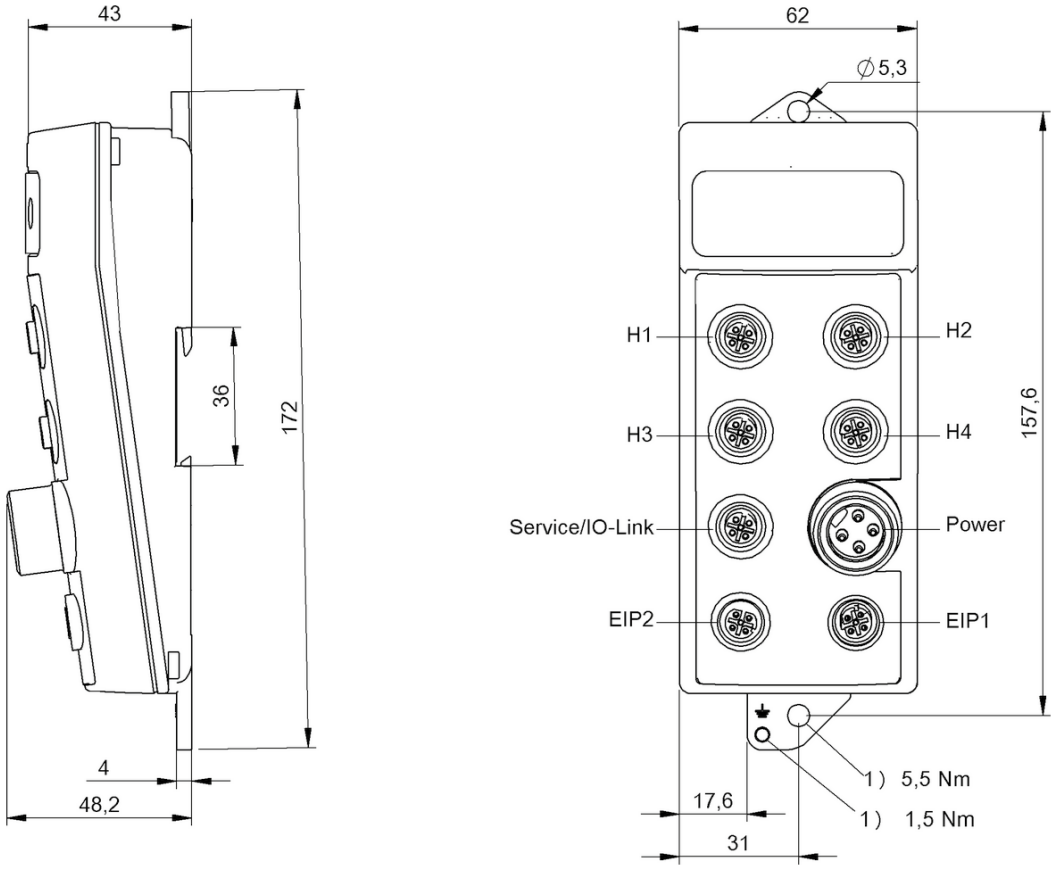
1) Tightening torque

BIS00T3, BIS012E



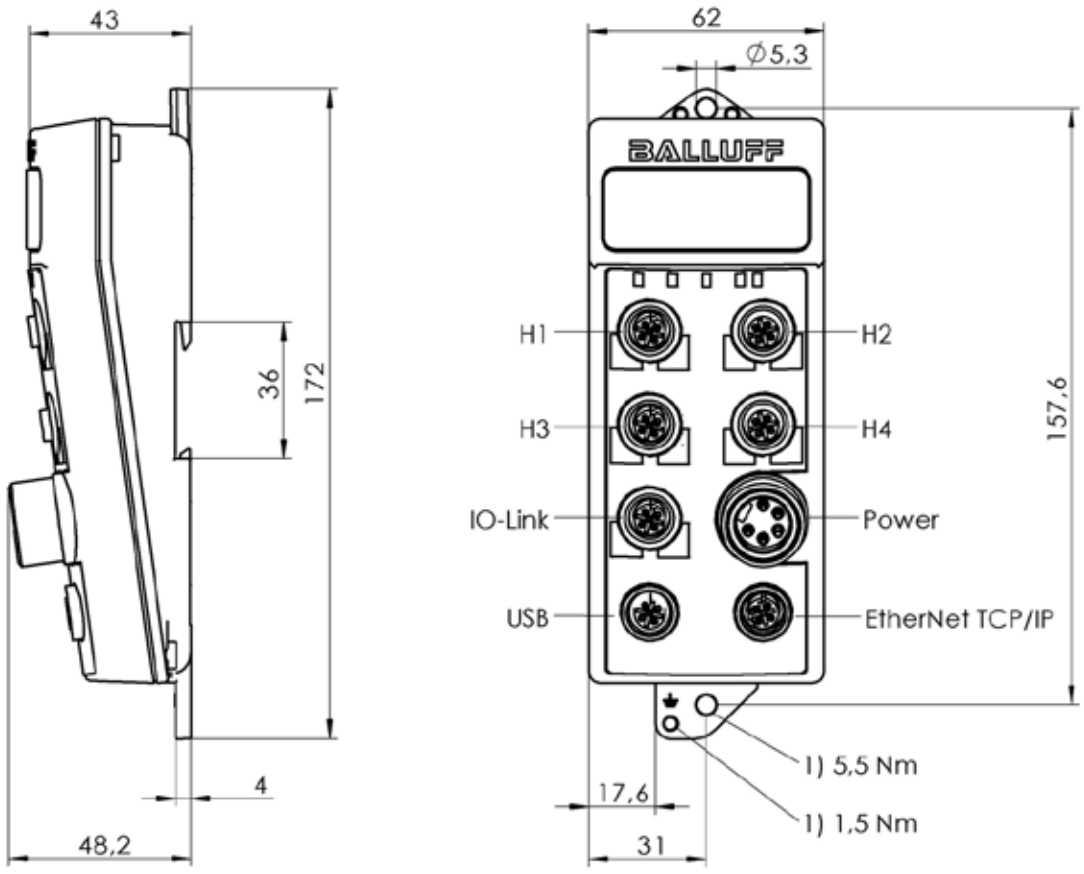
1) Tightening torque

BIS012F, BIS014C



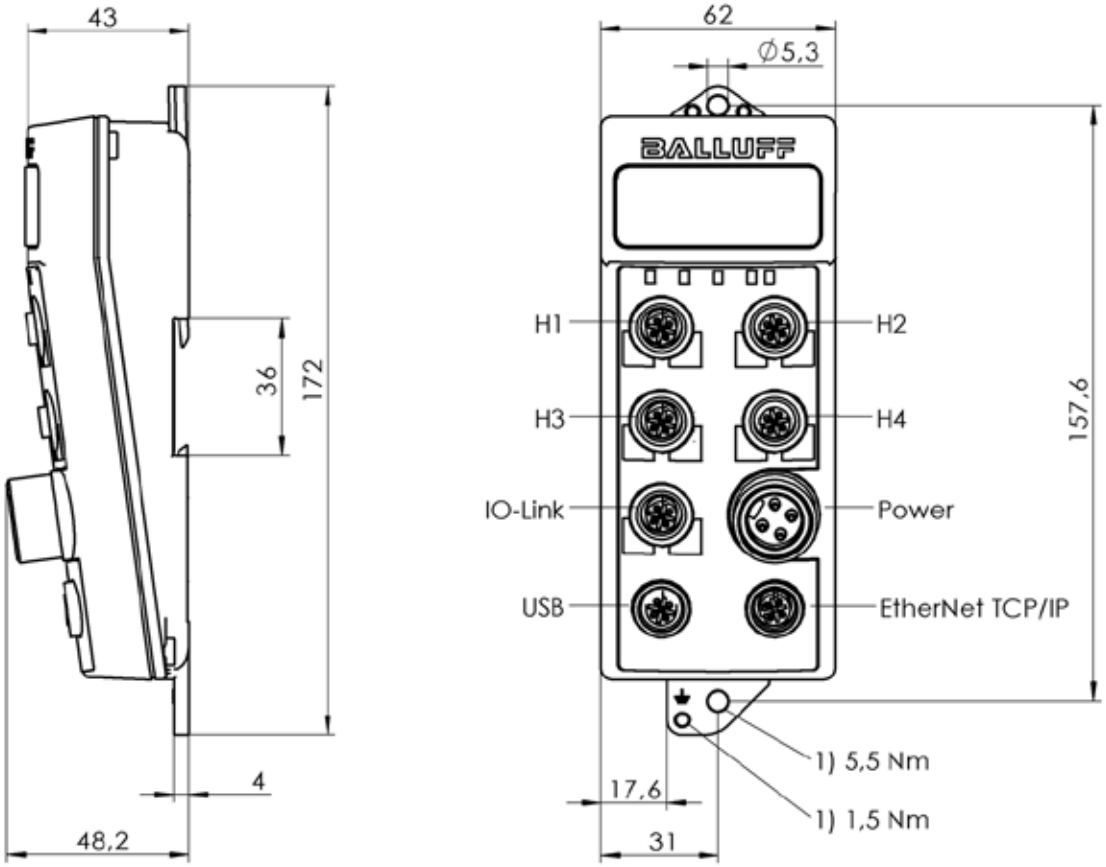
1) Tightening torque

BIS0122, BIS0146



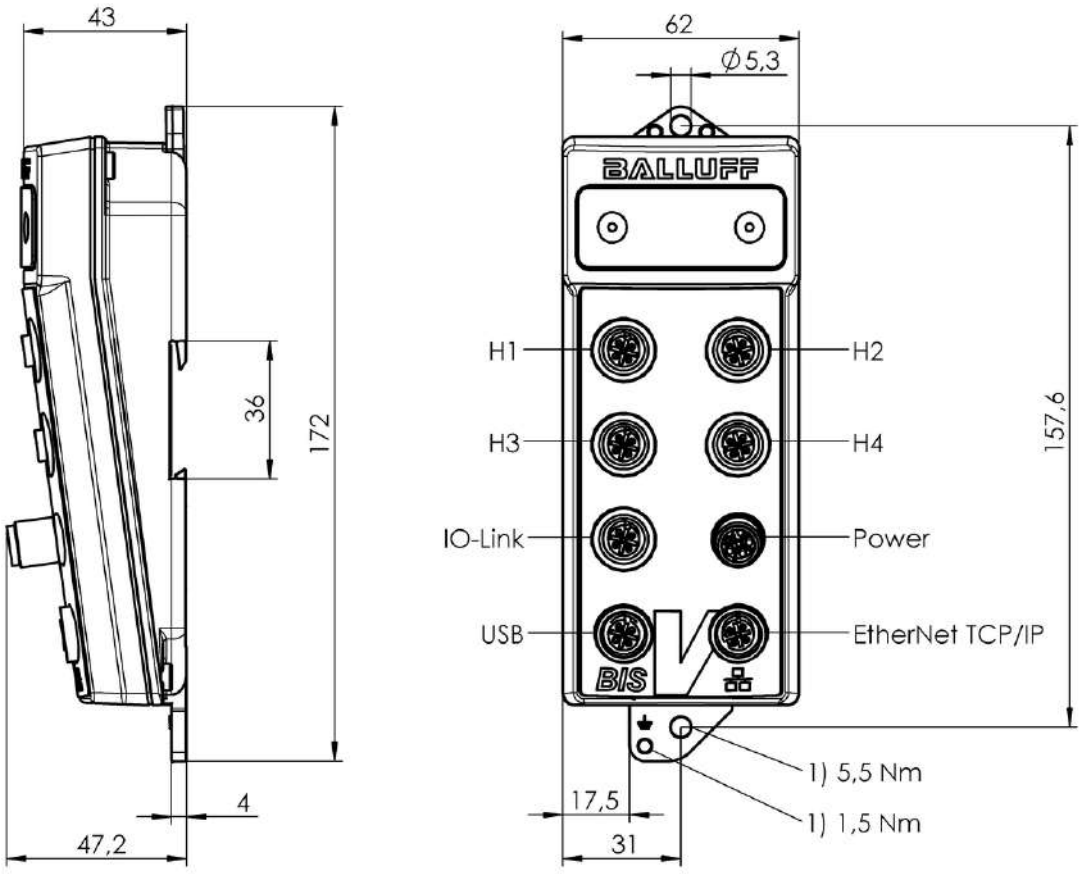
1) Tightening torque

BIS0186, BIS0187



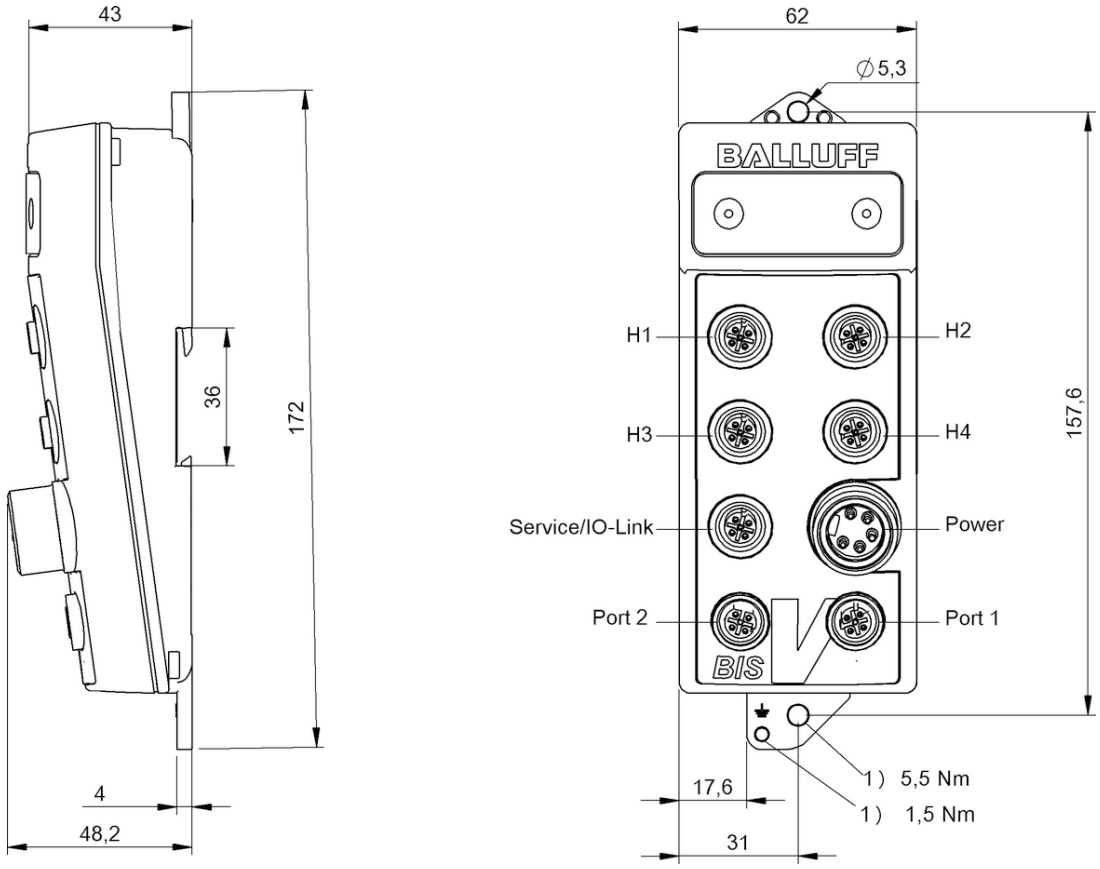
1) Tightening torque

BIS018J, BIS018K



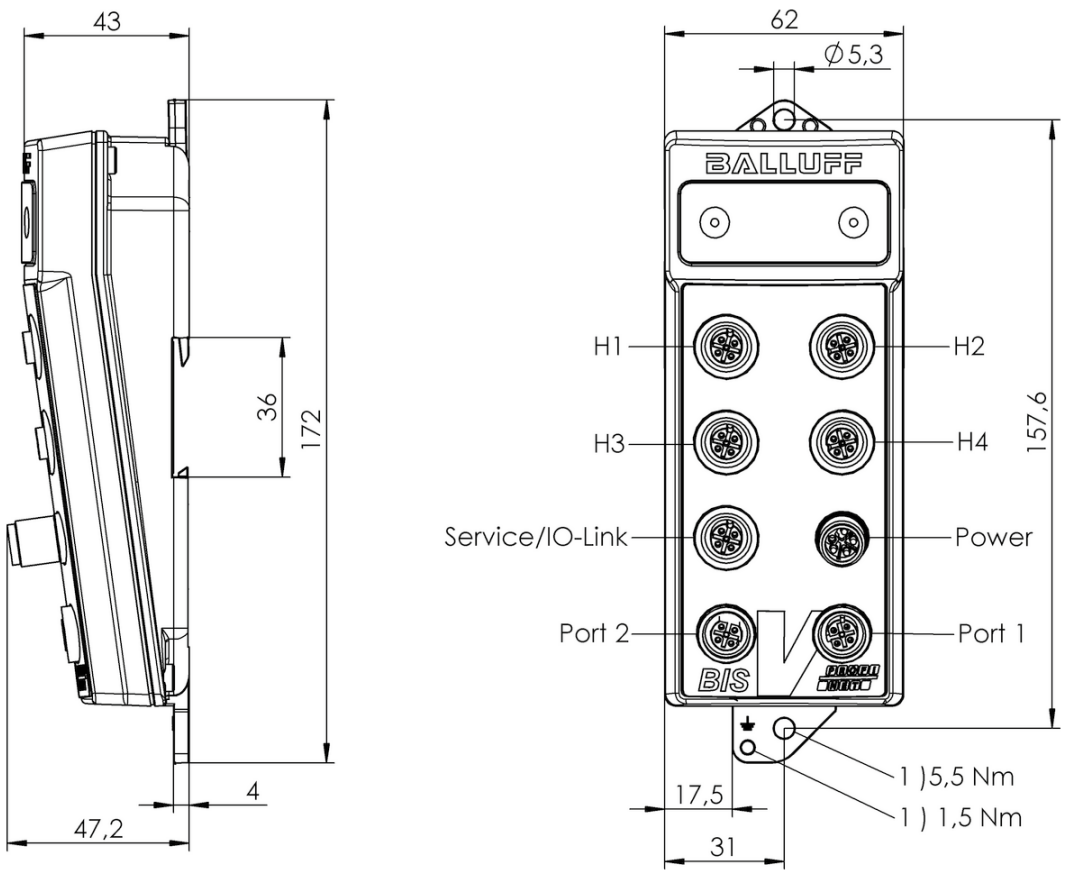
1) Tightening torque

BIS01AA, BIS01AC



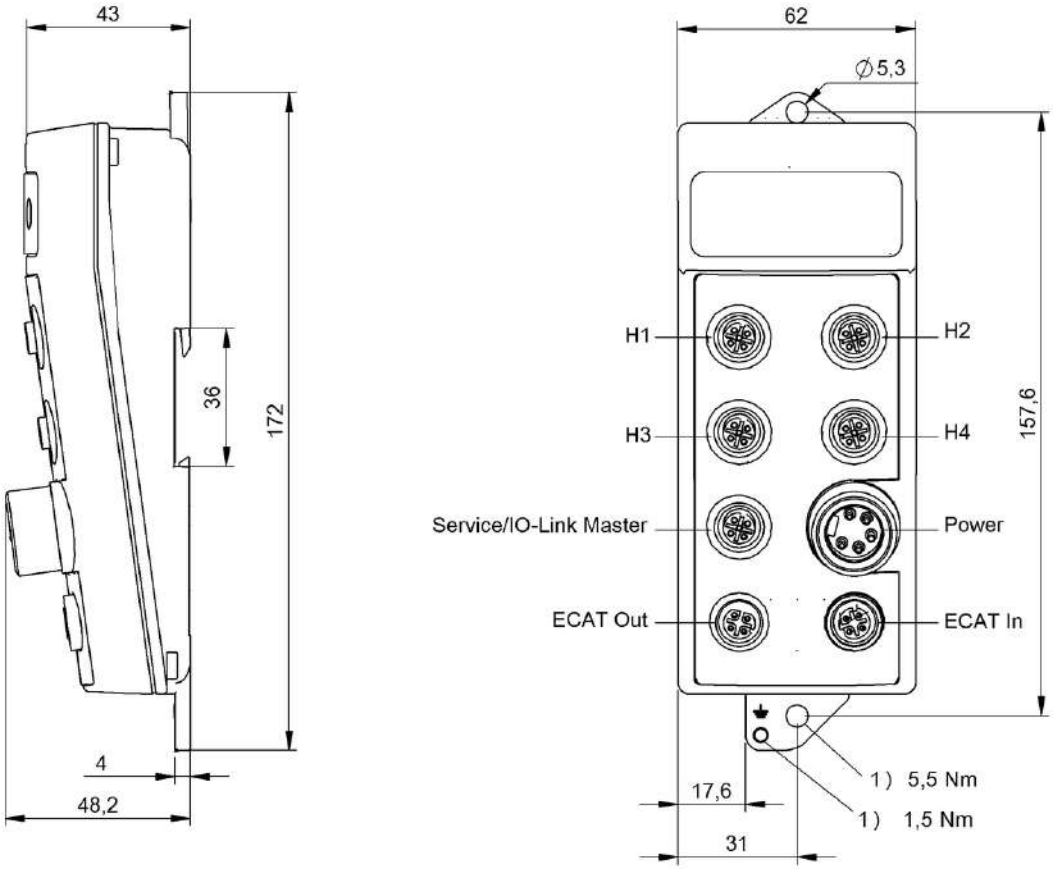
1) Tightening torque

BIS013U, BIS013W



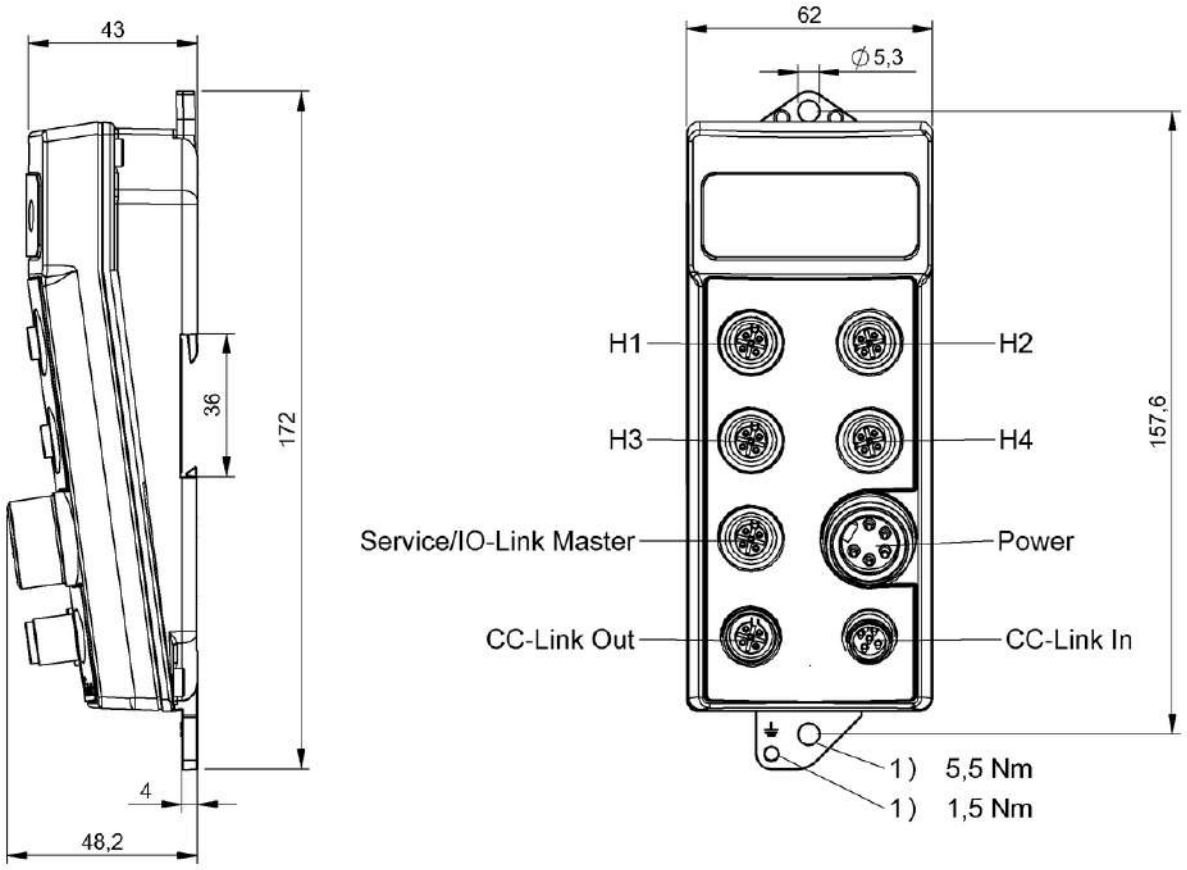
1) Tightening torque

BIS01AE, BIS01AF



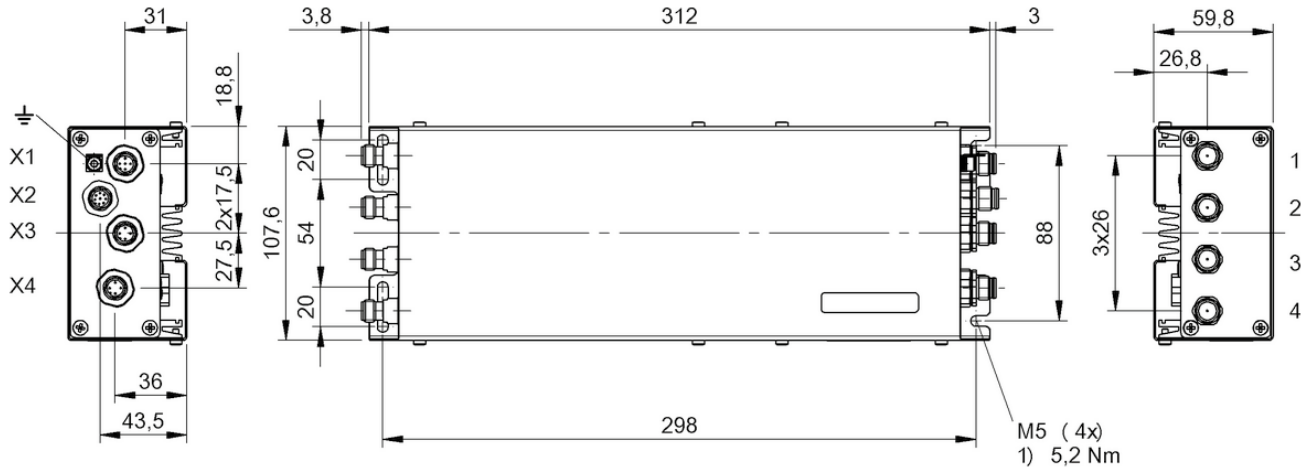
1) Tightening torque

BIS00U9, BIS0147

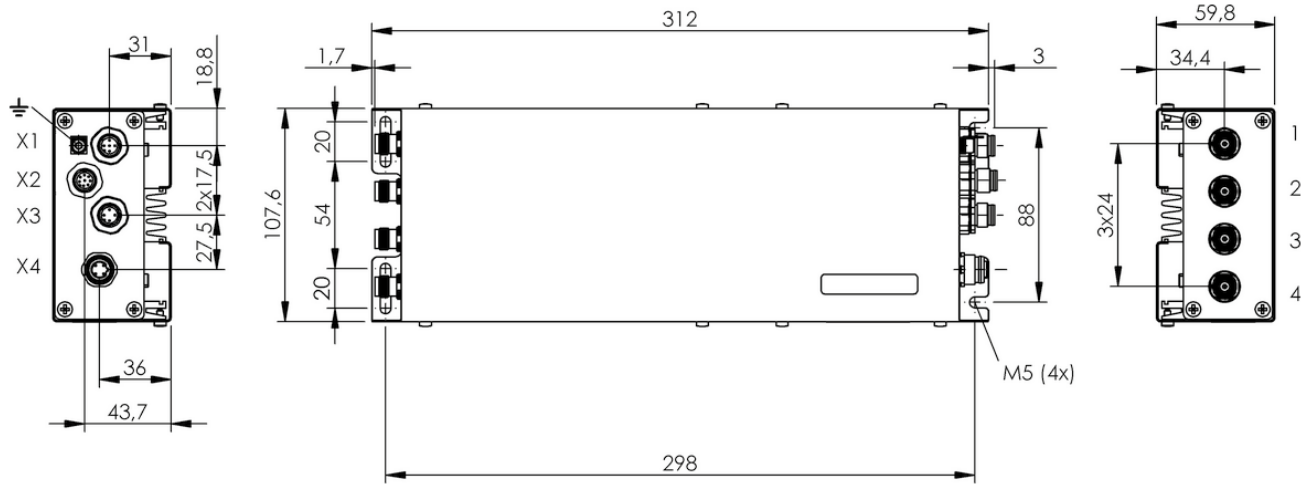


1) Tightening torque

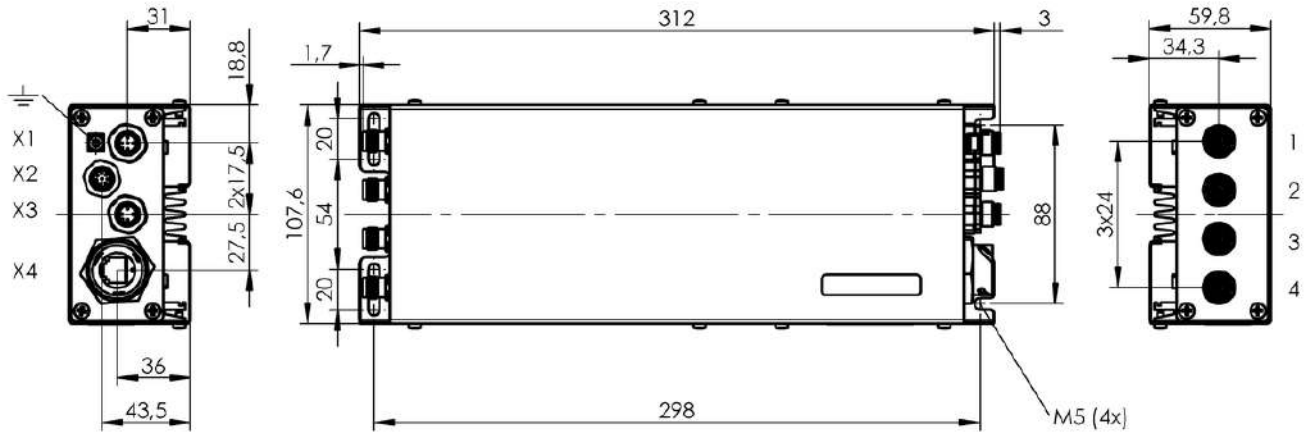
BIS010P, BIS014E



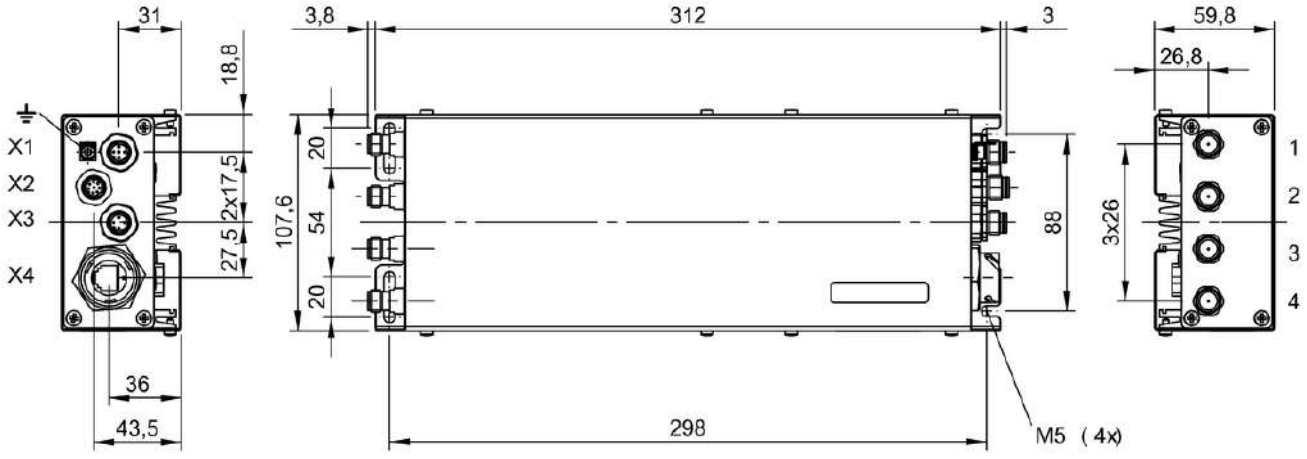
BIS00M7



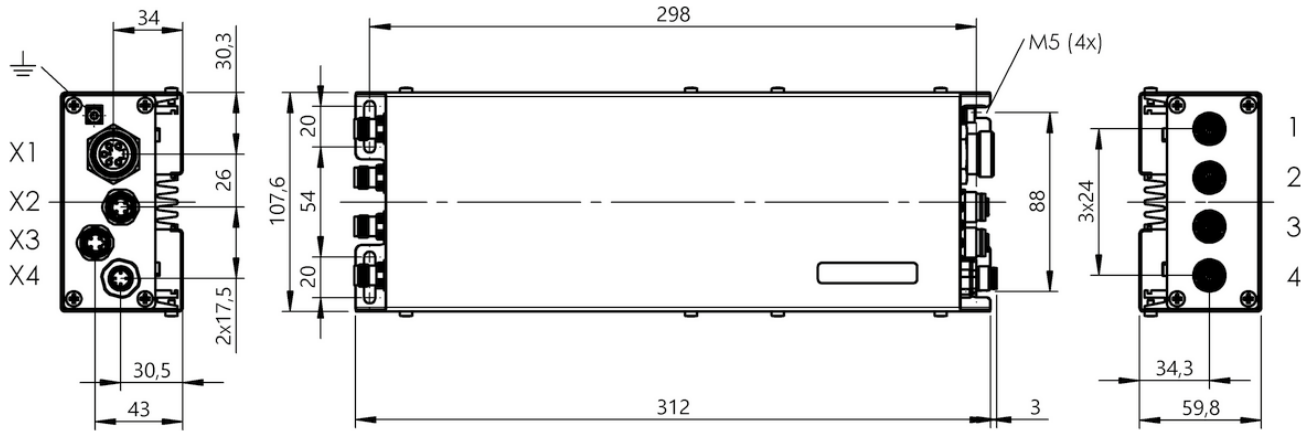
BIS013J, BIS018N



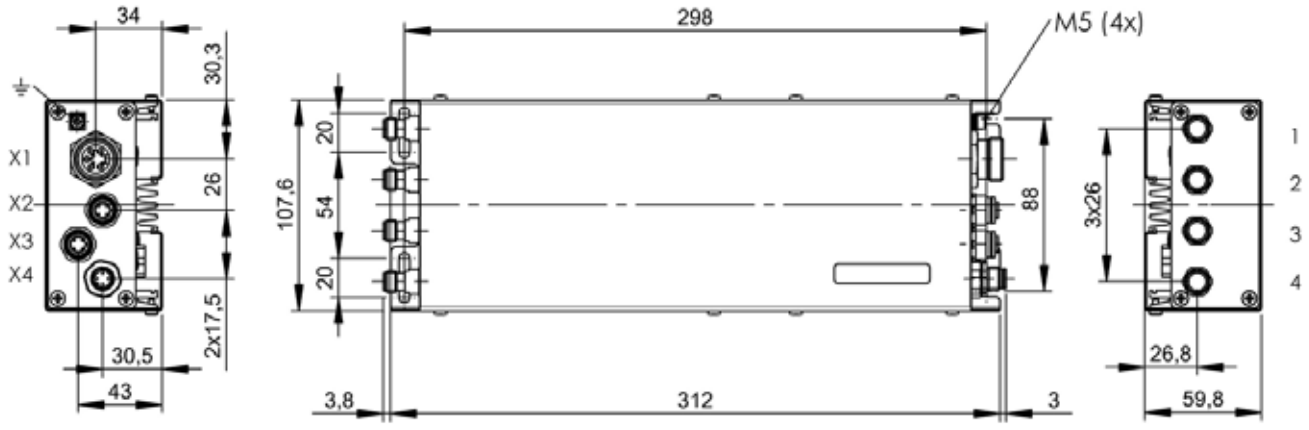
BIS012R



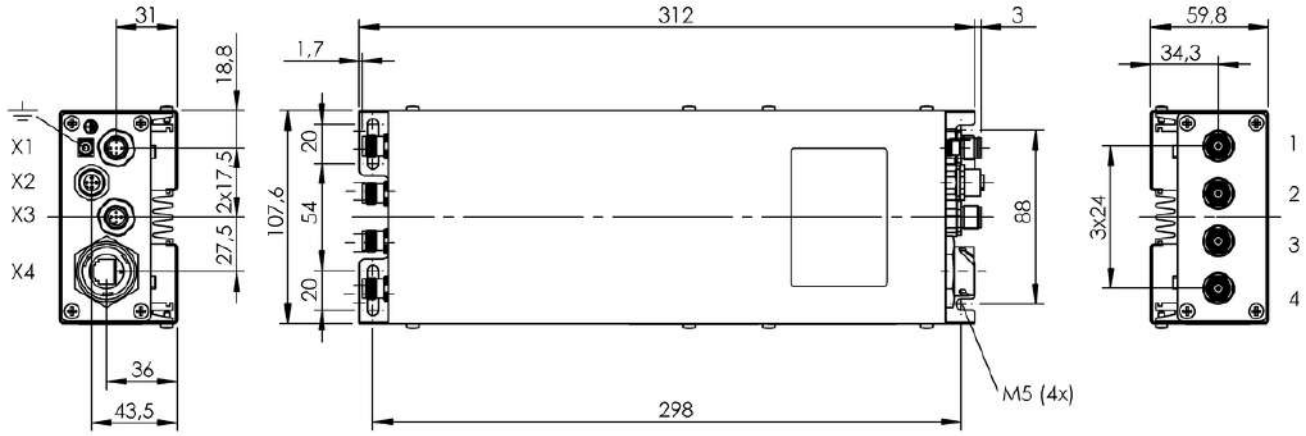
BIS00UR, BIS014H



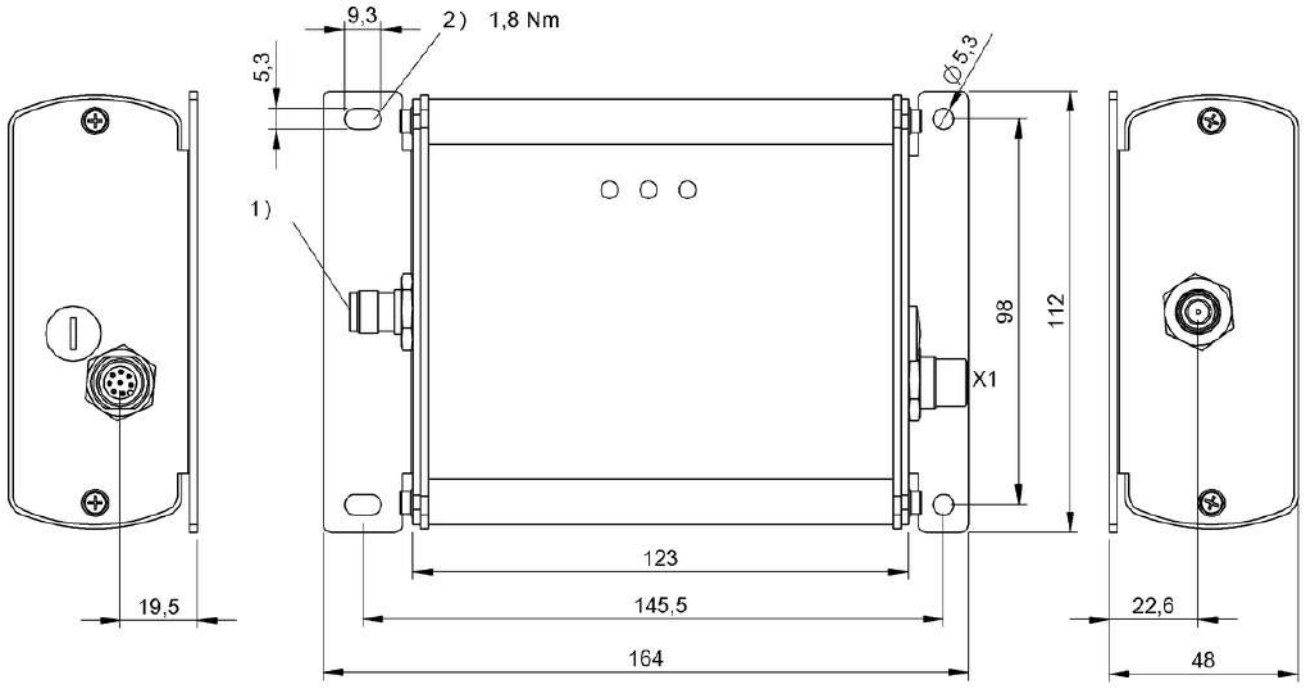
BIS00ZU, BIS00ZW, BIS017J



BIS0152

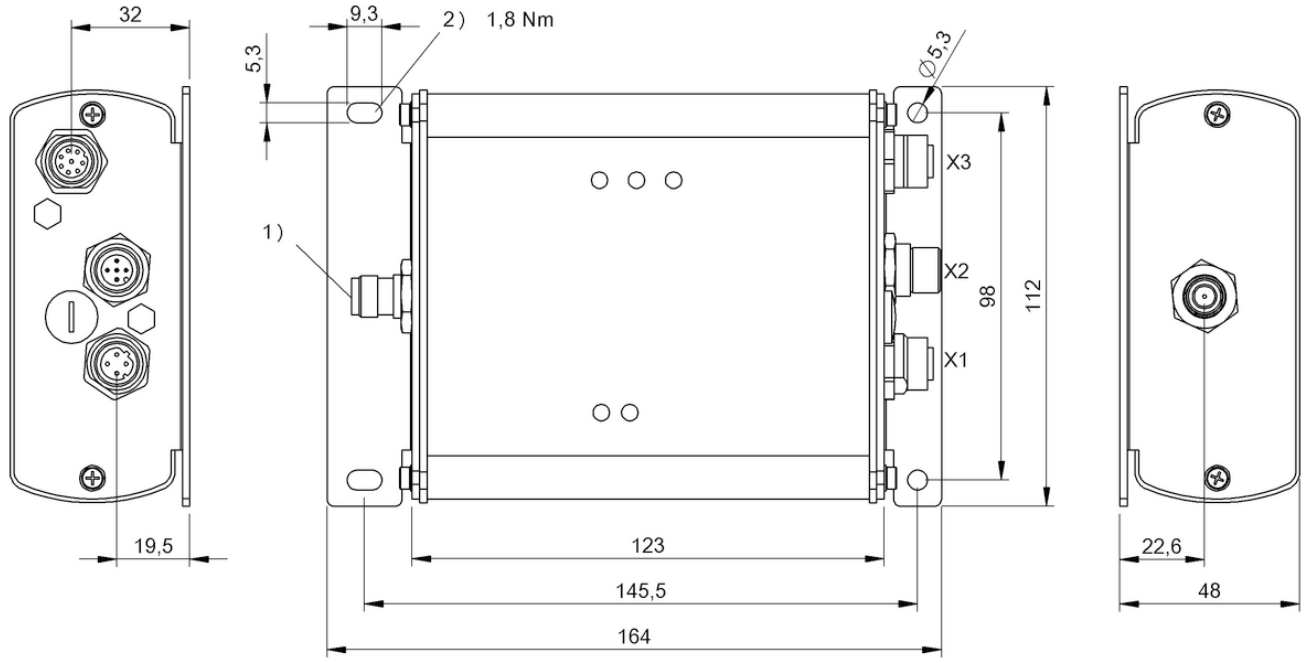


BIS0193, BIS0194



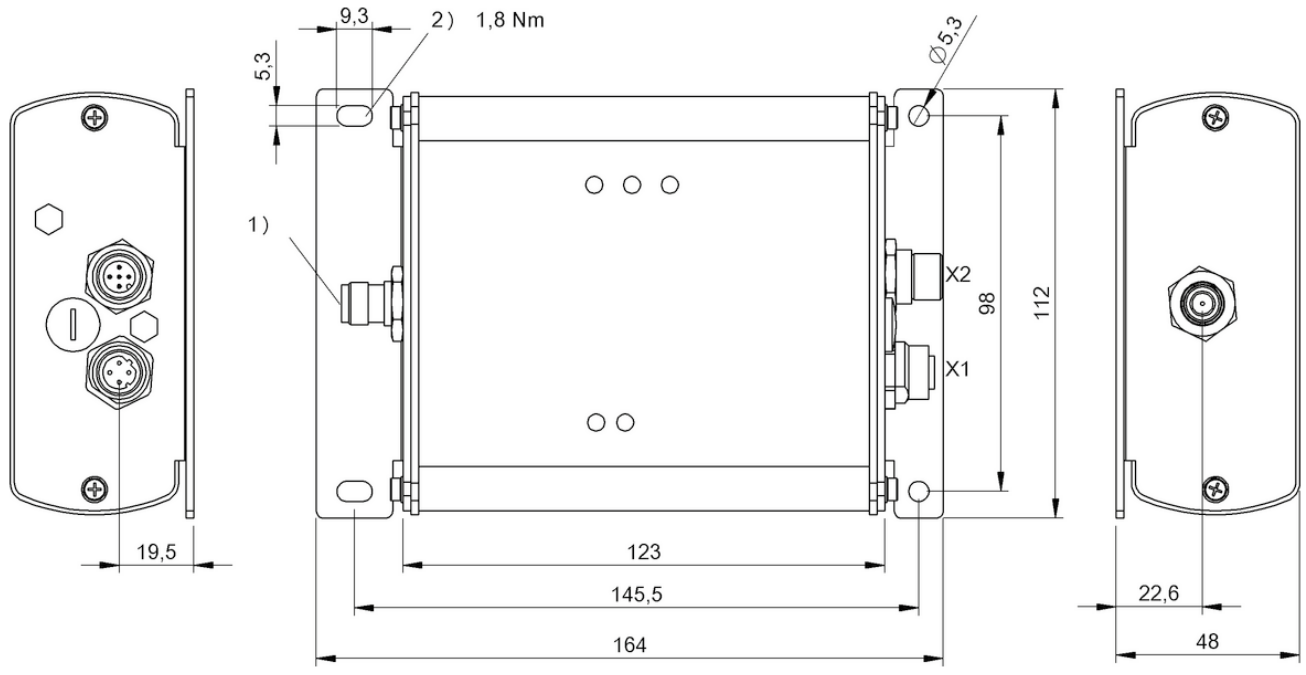
1) Antenna, 2) Tightening torque

BIS00Z3



1) Antenna, 2) Tightening torque

BIS00Z0, BIS00YY

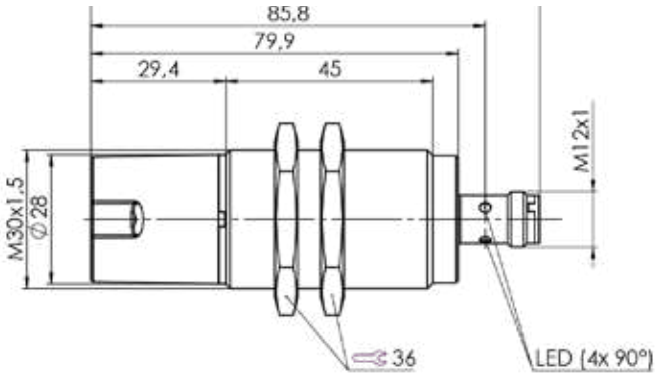


1) Antenna, 2) Tightening torque

BIS00YZ

Europa: 865,6-867,6 MHz	**BIS01E4** BIS U-4A7-082-01C-07-S4		
USA/Kanada: 902...928 MHz		**BIS01E8** BIS U-4A7-082-11C-07-S4	
China 920,5...924,5 MHz			
Product Group	UHF (860…960 MHz)	UHF (860…960 MHz)	
Radio license	Europa	USA	
Dimension	Ø 30 x 98 mm	Ø 30 x 98 mm	
Antenna type	Patch	Patch	
Polarization	zirkular	Zirkular	
Output power adjustable	-9.25…+13.75 dBmERP	-7…+16 dBmEIRP	
Connection	Built-in connector M12, 4-pole, A-coded	Built-in connector M12, 4-pole, A-coded	
Housing material PC	Stainless steel, PBT	Stainless steel,, PBT	
Interface	IO-Link 1.1, COM 3	IO-Link 1.1, COM 3	
Prozessdaten IN	32 Byte	32 Byte	
Process data OUT	32 Byte	32 Byte	
Process data	24 V DC LPS Class 2	24 V DC LPS Class 2	
Ambient temperature	0°…+70°C	0°…+70°C	
Protection degree	IP68 / IP69K	IP68 / IP69K	
Approval/Conformity	CE, ETSI EN 302 208, cULus, EAC, WEEE	FCC Part 15, IC RSS-210, cULus, WEEE, EAC	

	BIS01E9 BIS U-4A7-082-21C-07-S4
	UHF (860…960 MHz)
	China
	Ø 30 x 98 mm
	Patch
	zirkular
	-9.25…+13.75 dBmERP
	Built-in connector M12, 4-pole, A-coded
	Stainless steel,, PBT
	IO-Link 1.1, COM 3
	32 Byte
	32 Byte
	24 V DC LPS Class 2
	0°…+70°C
	IP68 / IP69K
	CMIIT-Radio Transmiss. Equipm., cULus, WEEE



BIS01E4, BIS01E8, BIS01E9


BALLUFF
BIS0045
BIS M-111-02/L
BALLUFF
BIS VM
BALLUFF
BIS M
Identification Systems
EtherNet/IP

High transmission speed for large volumes of data

RFID SYSTEM HF (13.56 MHZ) BIS M

The RFID system BIS M supports global ISO standards and scores with a high transmission speed for large volumes of data. Through various combination options of data carriers and read/write heads, the system can be used for a variety of applications. The system is ideal, for example, in close-range parts tracking or for applications in production control such as palletizing or recording data on the workpiece.

Features

- 4-pin standard wiring and IO-Link components
- In combination with passive data carriers of average ranges up to a max. of 400 mm
- Seamless integration in applications through global RFID standards ISO 15693 and ISO 14443A
- All bus systems commonly used on a global basis available
- Easy, fast commissioning
- Balluff high-speed components (up to eight times faster than ISO 15693)
- Customer-specific developments
- A variety of accessories for an easy integration available at all places of use

	BIS018Y BIS M-113-03/L	
Product Group	HF (13.56 MHz)	
Dimension	Ø 4.35 x 3.6 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	112 Byte	
Storage temperature	-40...85 °C	
Storage temperature temporary	—	
Ambient temperature	-40...85 °C	
Housing material	Epoxy-resin/fiberglass PVC	
Protection degree	IPx8	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 106	

Suitable read/write head with max. read/write working distance

Installation	flush in metal*	on metal	metal-free (clear zone)	
BIS M-302				
BIS M-305				
BIS M-402-xxx-002				
BIS M-402-xxx-007				
BIS M-410				
BIS M-411				
BIS M-449		0-5.5	0-6	
BIS M-451				
BIS VM-330				
BIS VM-343-401				
BIS VM-346-401				
BIS VM-348-401				
BIS VM-349-401		0-5.5	0-6	

Dimensions in mm
* Installation on request

	BIS00UC BIS M-116-03/A	BIS00UE BIS M-116-08/A	BIS00YL BIS M-130-03/L
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	Ø 6 x 1 mm	Ø 6 x 1 mm	Ø 7.9 x 4.9 mm
	round	round	round
	8 Byte	8 Byte	8 Byte
	EEPROM	EEPROM	EEPROM
	DIN ISO 15693	DIN ISO 14443	DIN ISO 15693
	112 Byte	160 Byte	112 Byte
	-20...90 °C	-20...90 °C	-40...85 °C
	—	—	—
	0...50 °C	0...50 °C	-20...85 °C
	Epoxy-resin/fiberglass	Epoxy-resin/fiberglass	ABS, black
	IP67	IP67	IP68
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal	metal-free (clear zone) on metal flush in metal
	CE	CE	CE
	Page 106	Page 106	Page 106

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
			0-7			0-7			
		0-4	0-7.5						
									0-9
			0-3			0-3			
									0-17
									0-20
	0-2	0-3	0-4.5				0-2	0-5.5	0-6
	1.3-2.5	0-4	0-6.5						
	0-2	0-3	0-4.5				0-2	0-5.5	0-6
			0-3.5			0-3.5	0-3	0-6	0-6.5
			0-3.5			0-3.5	0-3	0-6	0-6.5
	0-2	0-3	0-5						
	1.3-2.5	0-4	0-6.5						

	BIS00YJ BIS M-130-10/L	
Product Group	HF (13.56 MHz)	
Dimension	Ø 7.9 x 4.9 mm	
Antenna type	round	
UID serial number, read-only	4 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 14443	
User data, read/write	736 Byte	
Storage temperature	-40...85 °C	
Storage temperature temporary	—	
Ambient temperature	-20...85 °C	
Housing material	ABS, black	
Protection degree	IP68	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 106	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-302				
BIS M-304				
BIS M-305				
BIS M-307		0-7	0-5	
BIS M-400-xxx-001				
BIS M-400-xxx-002				
BIS M-400-xxx-401				
BIS M-402-xxx-002			0-4.5	
BIS M-402-xxx-004				
BIS M-404-xxx-401				
BIS M-408-045-001			0-6.5	
BIS M-410			0-6	
BIS M-411			0-6.5	
BIS M-414	0-1	0-3	0-2	
BIS M-449				
BIS VM-305				
BIS VM-306				
BIS VM-307	0-7		0-5	
BIS VM-330	0-1	0-3	0-2	
BIS VM-332				
BIS VM-333				
BIS VM-343-401	0-1.5	0-4	0-2.5	
BIS VM-344-401				
BIS VM-345-401				
BIS VM-346-401	0-1.5	0-4	0-2.5	
BIS VM-348-401				
BIS VM-349-401				

Dimensions in mm

	BIS00YK BIS M-130-07/L	BIS01A1 BIS M-103-03/L-SA1	BIS01A0 BIS M-122-21/A
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	Ø 7.9 x 4.9 mm	Ø 8.1 x 4.9 mm	Ø 10 x 4.5 mm
	round	round	round
	8 Byte	8 Byte	8 Byte
	EEPROM	EEPROM	EEPROM
	DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
	992 Byte	112 Byte	32 Byte
	-40...85 °C	-40...85 °C	-25...85 °C
	—	—	—
	-20...85 °C	-20...85 °C	-25...70 °C
	ABS, black	PEEK, Natural	PA 12, PU potting
	IP68	IP68	IP67
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone)	metal-free (clear zone) on metal flush in metal
	CE	CE, WEEE, EAC	CE
	Page 106	Page 106	Page 106

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
							0-5.5		0-7.5
							0-3.5		0-5.5
							0-3.5		0-5.5
		0-8	0-10				0-3.5		0-5.5
							0-5.5		0-11.5
							0-3.5		0-4.5
									0-7.5
			0-9				0-3.5		0-6.5
							0-3.5		0-6.5
							0-2	0-4	0-4.5
			0-13					0-7.5	0-9.5
			0-12						
			0-13						
	0-2	0-4	0-4.5				0-2	0-3.5	0-4
							0-4.5	0-6.5	0-6.5
							0-3.5		0-5.5
							0-3.5		
	0-8		0-10				0-3.5		0-5.5
	0-2	0-4	0-4.5				0-2	0-3.5	0-4
							0-3	0-5	0-5.5
									0-8.5
	0-2.5	0-5	0-5				0-2	0-3	0-3.5
								0-7.5	
	0-2.5	0-5	0-5				0-2	0-3	0-3.5
							0-3.5		0-5.5
							0-4.5	0-6.5	0-6.5

	BIS0048 BIS M-122-01/A	
Product Group	HF (13.56 MHz)	
Dimension	Ø 10 x 4.5 mm	
Antenna type	round	
UID serial number, read-only	4 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 14443	
User data, read/write	752 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	PA 12, PU potting	
Protection degree	IP67	
Installation	metal-free (clear zone) flush in metal	
Approval/Conformity	CE	
Productview	Page 106	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-300				
BIS M-302			0-7	
BIS M-304			0-5	
BIS M-305			0-5	
BIS M-307			0-5	
BIS M-400-xxx-001			0-9.5	
BIS M-400-xxx-002			0-5	
BIS M-400-xxx-401				
BIS M-402-xxx-002			0-5	
BIS M-402-xxx-004			0-5	
BIS M-404-xxx-401				
BIS M-405-xxx-001				
BIS M-408-045-001				
BIS M-414				
BIS M-449				
BIS VM-300				
BIS M-302				
BIS M-304				
BIS VM-305			0-5	
BIS VM-306				
BIS VM-307			0-5	
BIS VM-330				
BIS VM-332				
BIS VM-333				
BIS VM-343-401				
BIS VM-344-401				
BIS VM-345-401				
BIS VM-346-401				
BIS VM-348-401				
BIS VM-349-401				

Dimensions in mm
* Installation on request

	BIS004A BIS M-122-02/A	BIS019C BIS M-1R1-02/L	BIS0040 BIS M-105-01/A
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	Ø 10 x 4.5 mm	Ø 10.1 x 4.5 mm	Ø 11.98 x 6 mm
	round	round	round
	8 Byte	8 Byte	4 Byte
	FRAM	FRAM	EEPROM
	DIN ISO 15693	DIN ISO 15693	DIN ISO 14443
	2000 Byte	2000 Byte	752 Byte
	-25...85 °C	-25...85 °C	-25...85 °C
	—	—	—
	-25...70 °C	-25...85 °C	-25...70 °C
	PA 12, PU potting	PEEK, GF30	Epoxy resin-glass fiber, GF
	IP67	IP68	IP67
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	CE	CE	CE
	Page 106	Page 106	Page 106

	flush in metal	on metal	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)
									0-9
	0-6		0-9	0-7	0-8		0-5		0-7
	0-5		0-7	0-6.5	0-7		0-5		0-5
	0-5		0-7				0-4		0-6
	0-5		0-7				0-4		0-6
	0-7		0-13						0-7
	0-5		0-6				0-5		0-6
			0-9						
	0-5		0-8				0-4		0-6
	0-5		0-8				0-4		0-6
	0-3.5	0-5.5	0-6						
									0-7
		0-9	0-11						
	0-3.5	0-5	0-5.5						
	0-6	0-8	0-8						
									0-9
				0-7	0-8				
				0-6.5	0-7				
	0-5		0-7				0-4		0-6
	0-5						0-5		
	0-5		0-7				0-4		0-6
	0-3.5	0-5	0-5.5						
	0-4.5	0-6.5	0-7						
			0-10						
	0-3.5	0-4.5	0-5						
		0-9	0-1						
	0-3.5	0-4.5	0-5						
	0-5		0-7						
	0-6	0-8	0-8						

	BIS0042 BIS M-105-02/A	
Product Group	HF (13.56 MHz)	
Dimension	Ø 11.98 x 6 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	2000 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	Epoxy resin-glass fiber, GF	
Protection degree	IP67	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 106	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-300			0-11	
BIS M-302	0-6		0-9	
BIS M-304	0-6		0-7	
BIS M-305	0-4		0-8	
BIS M-307	0-6		0-8	
BIS M-400-xxx-001			0-11	
BIS M-400-xxx-002			0-9	
BIS M-400-xxx-401			0-13	
BIS M-402-xxx-002	0-4		0-6	
BIS M-402-xxx-004	0-6		0-8	
BIS M-404-xxx-401	0-6	0-8	0-8.5	
BIS M-405-xxx-001			0-11	
BIS M-408-045-001		0-11	0-13	
BIS M-410				
BIS M-411				
BIS M-414	0-5	0-6	0-6.5	
BIS M-449	0-7	0-9.5	0-10	
BIS M-451				
BIS VM-300			0-11	
BIS VM-301				
BIS M-302				
BIS M-304				
BIS VM-305	0-6		0-8	
BIS VM-306	0-6			
BIS VM-307	0-6		0-8	
BIS VM-330	0-5	0-6	0-6.5	
BIS VM-332	0-6	0-8	0-8.5	
BIS VM-333			0-13	
BIS VM-343-401	0-4	0-5	0-5.5	
BIS VM-344-401			0-11	
BIS VM-345-401				
BIS VM-346-401	0-4	0-5	0-5.5	
BIS VM-348-401	0-5		0-7	
BIS VM-349-401	0-7	0-9.5	0-10	
BIS M-410				

Dimensions in mm

* Installation on request

	BIS00YH BIS M-131-10/L	BIS019E BIS M-1R2-02/L	BIS01CE BIS M-107-03/L
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	Ø 12 x 6.4 mm	Ø 15.3 x 4.5 mm	Ø 16 x 3 mm
	round	round	round
	4 Byte	8 Byte	8 Byte
	EEPROM	FRAM	EEPROM
	DIN ISO 14443	DIN ISO 15693	DIN ISO 15693
	736 Byte	2000 Byte	112 Byte
	-40...85 °C	-25...85 °C	–
	–	–	-40...85 °C 1x1000 h
	-20...85 °C	-25...85 °C	-25...85 °C
	ABS	PEEK, GF30	PPS
	IP68	IP68	IP68
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone)
	CE	CE	CE, WEEE, EAC
	Page 107	Page 107	Page 107

	flush in metal	on metal	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)
				0-11	0-12				0-28
				0-10	0-10				
		0-8	0-10						
									0-17
			0-9						
			0-13						
			0-12						
			0-13						
									0-11
	0-2	0-4	0-4.5						
									0-25
				0-11	0-12				
				0-10	0-10				
									0-18
									0-16
									0-30
									0-15
			0-5						

	BIS0044 BIS M-110-02/L	
Product Group	HF (13.56 MHz)	
Dimension	Ø 20 x 2.8 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	2000 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...85 °C	
Housing material	PA 6	
Protection degree	IP68	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 107	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-300			0-22	
BIS M-301			0-32	
BIS M-302			0-16	
BIS M-304			0-14	
BIS M-305			0-13	
BIS M-307			0-13	
BIS M-340			0-90	
BIS M-371-000-A01			0-70	
BIS M-372-000-A01			0-115	
BIS M-373-000-A01				
BIS M-400-xxx-001			0-20	
BIS M-400-xxx-002			0-15	
BIS M-400-xxx-401			0-18	
BIS M-401			0-30	
BIS M-402-xxx-002			0-15	
BIS M-402-xxx-004			0-15	
BIS M-404-xxx-401			0-10	
BIS M-405-xxx-001			0-20	
BIS M-408-045-001			0-23	
BIS M-410				
BIS M-411			0-45	
BIS M-451		0-5	0-12	
BIS VM-300		0-22		
BIS VM-301		0-32		
BIS M-302				
BIS M-304				
BIS VM-305		0-13		
BIS VM-307		0-13		
BIS VM-332		0-10		
BIS VM-333		0-18		
BIS VM-344-401		0-22		
BIS VM-345-401	0-5	0-22		
BIS VM-348-401		0-12		
BIS VM-349-401	0-5	0-12		
BIS M-371-000-A01				
BIS M-372-000-A01				
BIS M-373-000-A01				
BIS M-410				
BIS M-411				

Dimensions in mm, * Installation on request

	BIS00YF BIS M-132-03/L	BIS00YC BIS M-132-10/L	BIS0143 BIS M-128-03/L
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	Ø 24.9 x 4.8 mm	Ø 24.9 x 4.8 mm	Ø 26 x 6 mm
	round	round	round
	8 Byte	4 Byte	8 Byte
	EEPROM	EEPROM	EEPROM
	DIN ISO 15693	DIN ISO 14443	DIN ISO 15693
	112 Byte	736 Byte	112 Byte
	-40...85 °C	-40...85 °C	-25...85 °C
	—	—	—
	-20...85 °C	-20...85 °C	-25...70 °C
	ABS, black	ABS, black	Epoxy-resin/fiberglass
	IP68	IP68	IP67
	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
	CE	CE	CE
	Page 107	Page 107	Page 107

	flush in metal	on metal	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
			0-100						
			0-160						
			0-160						
									0-27
									0-21
									0-13
			0-48			0-15			
			0-80			0-26			
									0-13
									0-21
			0-100						
			0-160						
			0-160						
			0-48			0-15			
			0-80			0-26			

	BIS003Y BIS M-101-01/L	
Product Group	HF (13.56 MHz)	
Dimension	Ø 30 x 1 mm	
Antenna type	round	
UID serial number, read-only	4 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 14443	
User data, read/write	752 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	Epoxy resin-glass fiber, GF	
Protection degree	IP67	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 107	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-300			0-22	
BIS M-301			0-34	
BIS M-302			0-16	
BIS M-304			0-14	
BIS M-340				
BIS M-371-000-A01				
BIS M-372-000-A01				
BIS M-400-xxx-001			0-20	
BIS M-400-xxx-002			0-15	
BIS M-400-xxx-401				
BIS M-401			0-28	
BIS M-402-xxx-002			0-14	
BIS M-402-xxx-004			0-15	
BIS M-404-xxx-401				
BIS M-405-xxx-001			0-12	
BIS M-406-045-001				
BIS M-408-045-001				
BIS M-410				
BIS M-411				
BIS M-449				
BIS M-4006-001				
BIS M-4008-001				
BIS VM-300			0-15	
BIS VM-301			0-15	
BIS VM-332				
BIS VM-333				
BIS VM-344-401				
BIS VM-345-401				
BIS VM-349-401				
BIS M-410				
BIS M-411				

Dimensions in mm
* Installation on request

	BIS0045 BIS M-111-02/L	BIS00Y8 BIS M-134-10/L	BIS003Z BIS M-102-01/L
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	Ø 30 x 2.8 mm	Ø 49.8 x 5.3 mm	Ø 50 x 1 mm
	round	round	round
	8 Byte	4 Byte	4 Byte
	FRAM	EEPROM	FRAM
	DIN ISO 15693	DIN ISO 14443	DIN ISO 14443
	2000 Byte	736 Byte	752 Byte
	-25...85 °C	-40...85 °C	-25...85 °C
	—	—	—
	-25...85 °C	-20...85 °C	-25...70 °C
	PA 6	ABS, black	Epoxy resin-glass fiber, GF
	IP68	IP68	IP67
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone)	metal-free (clear zone)
	CE	CE	CE
	Page 107	Page 108	Page 108

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
			0-28						0-32
			0-45						0-45
			0-20						0-20
									0-18
			0-140						
			0-120						
			0-175						
			0-28						0-28
			0-20						0-18
			0-21						
			0-40						0-45
			0-18						
			0-28						0-28
			0-28						
						0-32			
			0-67			0-56			
			3-13						
			0-52						
			0-52						
	0-28	0-18	0-10						0-32
	0-45	0-30							0-45
	0-21								
	0-28	0-18	0-10						
	0-28								
	3-13								

	BIS0046 BIS M-112-02/L	
Product Group	HF (13.56 MHz)	
Dimension	Ø 50 x 3.3 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	2000 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	140 °C 1x100 h, -40 °C...90 °C 1x1000 h	
Ambient temperature	-25...85 °C	
Housing material	PA 6	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 108	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-300			0-44	
BIS M-301			0-70	
BIS M-302			0-30	
BIS M-304				
BIS M-305				
BIS M-307				
BIS M-340			0-170	
BIS M-341			35-90	
BIS M-371-000-A01			0-150	
BIS M-372-000-A01			0-235	
BIS M-373-000-A01			0-270	
BIS M-400-xxx-001			0-38	
BIS M-400-xxx-002			0-28	
BIS M-400-xxx-401			0-30	
BIS M-401			0-60	
BIS M-402-xxx-002				
BIS M-402-xxx-004				
BIS M-404-xxx-401				
BIS M-405-xxx-001			0-38	
BIS M-406-045-001			0-38	
BIS M-408-045-001			0-40	
BIS M-414				
BIS M-449				
BIS M-4006-001			0-80	
BIS M-4008-001			0-80	
BIS VM-300			0-44	
BIS VM-301			0-70	
BIS VM-305				
BIS VM-307				
BIS VM-330				
BIS VM-332				
BIS VM-333			0-30	
BIS VM-341-001			35-90	
BIS VM-341-401			0-100	
BIS VM-343-401				
BIS VM-344-401			0-44	
BIS VM-345-401			0-45	
BIS VM-346-401				
BIS VM-349-401				

Dimensions in mm

	BIS00NW BIS M-143-02/A-M8	BIS0100 BIS M-143-02/A-M8-SA2	BIS00NU BIS M-143-02/A-M6
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	Ø 22 x 21 mm	Ø 21 x 21 mm	Ø 21 x 21 mm
	round	round	round
	8 Byte	8 Byte	8 Byte
	FRAM	FRAM	FRAM
	DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
	2000 Byte	2000 Byte	2000 Byte
	-25...95 °C	-25...95 °C	-25...95 °C
	—	—	—
	-25...70 °C	-25...70 °C	-25...70 °C
	Steel, data carrier: PA 12-GF30	Steel, data carrier: PA 12-GF30	Steel, data carrier: PA 12-GF30
	IP68, IPx9K	IP68, IPx9K	IP68, IPx9K
	on metal	on metal	on metal
	CE	CE	CE
	Page 108	Page 108	Page 108

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
		0-13			0-13			0-13	
		0-13			0-13			0-13	
		0-12			0-12			0-12	
		0-12			0-12			0-12	
		0-23			0-23			0-23	
		0-13			0-13			0-13	
		0-12			0-12			0-12	
		0-13			0-13			0-13	
		0-16			0-16			0-16	
		0-9			0-9			0-9	
		0-9			0-9			0-9	
		0-9,5			0-9.5			0-9.5	
		0-13			0-13			0-13	
		0-13			0-13			0-13	
		0-7			0-7			0-7	
		0-10			0-10			0-10	
		0-18			0-18			0-18	
		0-18			0-18			0-18	
		0-13			0-13			0-13	
		0-12			0-12			0-12	
		0-12			0-12			0-12	
		0-7			0-7			0-7	
		0-9,5			0-9.5			0-9.5	
		0-13			0-13			0-13	
		0-23			0-23			0-23	
		0-7,5			0-7.5			0-7.5	
		0-13			0-13			0-13	
		0-16			0-16			0-16	
		0-7,5			0-7.5			0-7.5	
		0-10			0-10			0-10	

	BIS00M8 BIS M-140-02/A-M8	
Product Group	HF (13.56 MHz)	
Dimension	Ø 22 x 31 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	2000 Byte	
Storage temperature	-25...95 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	Steel, data carrier: PA 12-GF30	
Protection degree	IP68, IPx9K	
Installation	on metal	
Approval/Conformity	CE	
Productview	Page 108	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-300		0-22		
BIS M-302		0-17		
BIS M-305		0-17		
BIS M-307		0-16		
BIS M-341		0-46		
BIS M-371-000-A01				
BIS M-372-000-A01				
BIS M-373-000-A01				
BIS M-400-xxx-001		0-22		
BIS M-400-xxx-002				
BIS M-400-xxx-401				
BIS M-401		0-32		
BIS M-402-xxx-002				
BIS M-402-xxx-004				
BIS M-404-xxx-401				
BIS M-405-xxx-001		0-22		
BIS M-408-045-001		0-22		
BIS M-414		0-9		
BIS M-449		0-13		
BIS M-4006-001				
BIS M-4008-001				
BIS VM-300		0-22		
BIS VM-305		0-17		
BIS VM-307		0-16		
BIS VM-330				
BIS VM-332				
BIS VM-333				
BIS VM-341-001		0-46		
BIS VM-341-401				
BIS VM-343-401				
BIS VM-344-401		0-22		
BIS VM-345-401				
BIS VM-346-401				

Dimensions in mm

	BIS00M9 BIS M-140-02/A-M6	BIS0119 BIS M-142-20/A-M8-GY	
	HF (13.56 MHz)	HF (13.56 MHz)	
	Ø 22 x 31 mm	Ø 22 x 26 mm	
	round	round	
	8 Byte	8 Byte	
	FRAM	FRAM	
	DIN ISO 15693	DIN ISO 15693	
	2000 Byte	8192 Byte	
	-25...95 °C	-25...95 °C	
	—	—	
	-25...70 °C	-25...70 °C	
	Steel, data carrier: PA 12-GF30	Steel, data carrier: PA 12-GF30 gray	
	IP68, IPx9K	IP68, IPx9K	
	on metal	on metal	
	CE	CE	
	Page 108	Page 109	

	flush in metal	on metal*	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
		0-22							
		0-17							
		0-17							
		0-16							
		0-46							
					0-50				
					0-65				
					0-65				
		0-22							
		0-32							
		0-22							
		0-22							
		0-9							
		0-13							
					0-38				
					0-38				
		0-22							
		0-17							
		0-16							
		0-46							
					0-40				
					0-7.5				
		0-22							
					0-22				
					0-7.5				

	BIS004E BIS M-125-01/L	
Product Group	HF (13.56 MHz)	
Dimension	30 x 6 x 30 mm	
Antenna type	round	
UID serial number, read-only	4 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 14443	
User data, read/write	752 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	PBT	
Protection degree	IP67	
Installation	metal-free (clear zone) on metal	
Approval/Conformity	CE	
Productview	Page 109	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)*	
BIS M-300				
BIS M-301				
BIS M-302				
BIS M-304				
BIS M-305				
BIS M-341				
BIS M-371-000-A01				
BIS M-372-000-A01				
BIS M-373-000-A01				
BIS M-400-xxx-001				
BIS M-400-xxx-002				
BIS M-400-xxx-401				
BIS M-401				
BIS M-404-xxx-401				
BIS M-405-xxx-001				
BIS M-410				
BIS M-449				
BIS M-458-045-001				
BIS M-4006-001				
BIS M-4006-002				
BIS M-4008-001				
BIS VM-300				
BIS VM-301				
BIS VM-305				
BIS VM-332				
BIS VM-333				
BIS VM-341-001				
BIS VM-341-401				
BIS VM-343-401				
BIS VM-344-401				
BIS VM-345-401				
BIS VM-349-401				

Dimensions in mm, * Installation on request

	BIS0043 BIS M-108-02/L	BIS011F BIS M-108-11/A	
	HF (13.56 MHz)	HF (13.56 MHz)	
	32 x 11 x 52 mm	32 x 11 x 52 mm	
	round	round	
	8 Byte	8 Byte	
	FRAM	FRAM	
	DIN ISO 15693	DIN ISO 15693 (High Memory)	
	2000 Byte	8192 Byte	
	-25...85 °C	-25...85 °C	
	—	—	
	-25...70 °C	-25...70 °C	
	PBT, GF	PBT, GF	
	IP67	IP67	
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal	
	CE	CE	
	Page 109	Page 109	

	flush in metal	on metal*	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
	0-16		0-30						
			0-45						
	0-12		0-20						
	0-10		0-18						
	0-11		0-17						
	0-50		20-60						
			0-110						
			0-160						
			0-185						
	0-16		0-28						
	0-12		0-20						
	0-13	0-15	0-21						
			0-40						
	0-6	0-8	0-11	0-5	0-6	0-6.5			
	0-16		0-28						
			0-40						
	0-7	0-9.5	0-13						
				11-18	0-28	0-36			
	10-19	0-32	0-52						
				11-18	0-28	0-36			
	10-19	0-32	0-52						
	0-16		0-30						
			0-45						
	0-11		0-17						
	0-6	0-8	0-11	0-5	0-6	0-6.5			
	0-13	0-15	0-21						
	14-25		20-60						
	14-20	0-36	0-64	11-20	0-30	0-42			
	0-16		0-30		0-15	0-18			
			0-28			0-18			
	0-7	0-9.5	0-13						

	BIS0111 BIS M-108-20/A	
Product Group	HF (13.56 MHz)	
Dimension	32 x 11 x 52 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	8192 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	PBT, GF	
Protection degree	IP67	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 109	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-301			0-45	
BIS M-371-000-A01			0-100	
BIS M-372-000-A01			0-150	
BIS M-373-000-A01			0-150	
BIS M-400-xxx-401	0-13	0-15	0-21	
BIS M-404-xxx-401				
BIS M-4006-001				
BIS M-4008-001	11-18	0-28	0-36	
BIS VM-301			0-50	
BIS VM-332				
BIS VM-333	0-13	0-15	0-21	
BIS VM-341-401				
BIS VM-344-401	0-16		0-30	
BIS VM-345-401			0-28	

Dimensions in mm

	BIS011E BIS M-108-13/A	**BIS011A** BIS M-108-14/A	
	HF (13.56 MHz)	HF (13.56 MHz)	
	32 x 11 x 52 mm	32 x 11 x 52 mm	
	round	round	
	8 Byte	8 Byte	
	FRAM	FRAM	
	DIN ISO 15693 (High Memory)	DIN ISO 15693 (High Memory)	
	32768 Byte	65536 Byte	
	-25...85 °C	-25...85 °C	
	—	—	
	-25...70 °C	-25...70 °C	
	PBT, GF	PBT, GF	
	IP67	IP67	
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	
	CE	CE	
	Page 109	Page 109	

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)			
	0-5	0-6	0-6.5	0-5	0-6	0-6.5			
	11-18	0-28	0-36	11-18	0-28	0-36			
	11-18	0-28	0-36	11-18	0-28	0-36			
	0-5	0-6	0-6.5	0-5	0-6	0-6.5			
						0-15			
	11-20	0-30	0-42	11-20	0-30	0-42			
		0-15	0-18		0-15	0-18			
			0-18			0-18			

	BIS00Y5 BIS M-135-03/L	
Product Group	HF (13.56 MHz)	
Dimension	51.5 x 6.4 x 51.5 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	112 Byte	
Storage temperature	-40...85 °C	
Storage temperature temporary	—	
Ambient temperature	-20...85 °C	
Housing material	ABS, black	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 109	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-371-000-A01			10-205	
BIS M-372-000-A01			0-300	
BIS M-373-000-A01			0-340	
BIS M-400-xxx-001			0-50	
BIS M-408-045-001			0-48	
BIS M-410			0-68	
BIS M-411			0-110	
BIS M-371-000-A01			10-205	
BIS M-372-000-A01			0-300	
BIS M-373-000-A01			0-340	
BIS M-400-xxx-001			0-50	
BIS M-408-045-001			0-48	
BIS M-410			0-68	
BIS M-411			0-110	

Dimensions in mm

	BIS00Y3 BIS M-135-07/L	BIS00Y6 BIS M-135-02/L	BIS00W9 BIS M-136-03/L
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	51.5 x 6.4 x 51.5 mm	51.5 x 6.4 x 51.5 mm	52 x 11.5 x 128 mm
	round	round	round
	8 Byte	8 Byte	8 Byte
	EEPROM	FRAM	EEPROM
	DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
	992 Byte	2000 Byte	112 Byte
	-40...85 °C	-40...85 °C	-40...85 °C
	—	—	—
	-20...85 °C	-20...85 °C	-20...85 °C
	ABS, black	ABS, black	ABS, black
	IP68	IP68	IP68
	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
	CE	CE	CE
	Page 109	Page 109	Page 109

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
						25-140			15-210
						0-230			0-350
						0-230			0-370
			23-46			0-60			
			11-75			0-100			
						25-140			15-210
						0-230			0-350
						0-230			0-370
			23-46			0-60			
			11-75			0-100			

	BIS00Y9 BIS M-133-02/A	
Product Group	HF (13.56 MHz)	
Dimension	Ø 30 x 9.7 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	2000 Byte	
Storage temperature	-40...130 °C	
Storage temperature temporary	—	
Ambient temperature	-40...85 °C	
Housing material	PA, black	
Protection degree	IP67	
Installation	metal-free (clear zone) on metal	
Approval/Conformity	CE	
Productview	Page 109	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-300				
BIS M-340				
BIS M-351				
BIS M-371-000-A01			0-70	
BIS M-372				
BIS M-400-xxx-001				
BIS M-408-045-001				
BIS M-410			0-32	
BIS M-411			38-52	
BIS M-451				
BIS M-458-045-001				
BIS M-4006-001			0-55	
BIS M-4006-002				
BIS M-4008-001		0-45	0-55	
BIS M-4008-002				
BIS VM-300				
BIS VM-343-401				
BIS VM-344-401				
BIS VM-346-401				
BIS VM-351-001				
BIS VM-351-401				
BIS M-410			0-32	
BIS M-411			38-52	
BIS M-4006-001			0-55	
BIS M-4008-001		0-45	0-55	

Dimensions in mm

** Combined with metal mounting plate BAM012M

	BIS00LC BIS M-107-03/L-H200	BIS004F BIS M-150-02/A	BIS004H BIS M-151-02/A
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	22 x 6.5 x 40 mm	22 x 6.5 x 40 mm	22 x 6.5 x 40 mm
	round	Rod	Rod
	8 Byte	8 Byte	8 Byte
	EEPROM	FRAM	FRAM
	DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
	112 Byte	2000 Byte	2000 Byte
	-25...85 °C	-25...85 °C	-25...85 °C
	200 °C 1x1000 h	-25...130 °C 1x1000 h	-25...130 °C 1x1000 h
	-25...70 °C	-25...70 °C	-25...70 °C
	PPS, GF40, with EP potting	PPS, GF40, with EP potting	PPS, GF40, with EP potting
	IP67	IP67	IP67
	metal-free (clear zone) on metal	metal-free (clear zone) on metal	metal-free (clear zone) on metal
	CE	CE	CE
	Page 109	Page 109	Page 110

	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**
		0-13	0-27						
			0-100						
					0-65	0-65		0-65	0-65
		0-13	0-27						
		0-12	0-25						
					0-65	0-65		0-65	0-65
					0-42	0-42		0-38	0-38
					0-60	0-60		0-65	0-65
					0-60	0-60		0-65	0-65
		0-13	0-13		0-27	0-27			
					0-7	0-7			
		0-13	0-13		0-27	0-27			
					0-7	0-7			
					0-65	0-65		0-65	0-65
					0-52	0-52		0-52	0-52

	BIS011M BIS M-155-11/A	
Produktgruppe	HF (13.56 MHz)	
Abmessung	22 x 9.7 x 40 mm	
Antennenform	Rod	
UID Seriennummer, nur lesbar	8 Byte	
Speichertyp	FRAM	
Unterstützte Datenträgertypen	DIN ISO 15693 (High Memory)	
Nutzerdaten, lesen/schreiben	8192 Byte	
Lagertemperatur	-25...85 °C	
Lagertemperatur temporär	-25...130 °C 1x1000 h	
Umgebungstemperatur	-25...70 °C	
Gehäusematerial	PPS, GF40, with EP potting	
Schutzart	–	
Einbau	metal-free (clear zone) on metal	
Zulassung/Konformität	CE	
Zeichnung	Page 110	

Suitable read/write head with max. read/write working distance

Montage	flush in metal	on metal	metal-free (clear zone)**	
BIS M-4006-002		0-42	0-42	
BIS M-4008-002		0-42	0-42	
BIS VM-351-401		0-50	0-50	
BIS VM-355-401		0-34	0-34	

Dimensions in mm

** Combined with metal mounting plate BAM012M

	BIS012J BIS M-156-11/A	BIS0112 BIS M-156-20/A	
	HF (13.56 MHz)	HF (13.56 MHz)	
	22 x 9.7 x 40 mm	22 x 9.7 x 40 mm	
	Rod	Rod	
	8 Byte	8 Byte	
	FRAM	FRAM	
	DIN ISO 15693 (High Memory)	DIN ISO 15693	
	8192 Byte	8192 Byte	
	-25...85 °C	-25...85 °C	
	-25...130 °C 1x1000 h	-25...130 °C 1x1000 h	
	-25...70 °C	-25...70 °C	
	PPS, GF40, with EP potting	PPS, GF40, with PU potting	
	—	—	
	metal-free (clear zone) on metal	metal-free (clear zone) on metal	
	CE	CE	
	Page 110	Page 110	

	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**
		0-42	0-42		0-68	0-68			
		0-42	0-42		0-68	0-68			
		0-42	0-42		0-70	0-70			
		0-30	0-30		0-45	0-45			

	BIS011Z BIS M-155-13/A	
Product Group	HF (13.56 MHz)	
Dimension	22 x 9.7 x 40 mm	
Antenna type	Rod	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693 (High Memory)	
User data, read/write	32768 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	-25...130 °C 1x1000 h	
Ambient temperature	-25...70 °C	
Housing material	PPS, GF40, with EP potting	
Protection degree	–	
Installation	metal-free (clear zone) on metal	
Approval/Conformity	CE	
Productview	Page 110	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)**	
BIS M-4006-002		0-42	0-42	
BIS M-4008-002		0-42	0-42	
BIS VM-351-401		0-50	0-50	
BIS VM-355-401		0-34	0-34	

Dimensions in mm

** Combined with metal mounting plate BAM012M

	BIS012K BIS M-156-13/A	BIS011N BIS M-155-14/A	BIS012L BIS M-156-14/A
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	22 x 9.7 x 40 mm	22 x 9.7 x 40 mm	22 x 9.7 x 40 mm
	Rod	Rod	Rod
	8 Byte	8 Byte	8 Byte
	FRAM	FRAM	FRAM
	DIN ISO 15693 (High Memory)	DIN ISO 15693 (High Memory)	DIN ISO 15693 (High Memory)
	32768 Byte	65536 Byte	65536 Byte
	-25...85 °C	-25...85 °C	-25...85 °C
	-25...130 °C 1x1000 h	-25...130 °C 1x1000 h	-25...130 °C 1x1000 h
	-25...70 °C	-25...70 °C	-25...70 °C
	PPS, GF40, with EP potting	PPS, GF40, with EP potting	PPS, GF40, with EP potting
	—	—	—
	metal-free (clear zone) on metal	metal-free (clear zone) on metal	metal-free (clear zone) on metal
	CE	CE	CE
	Page 110	Page 110	Page 110

	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**
		0-42	0-42		0-42	0-42		0-42	0-42
		0-42	0-42		0-42	0-42		0-42	0-42
		0-42	0-42		0-50	0-50		0-42	0-42
		0-30	0-30		0-34	0-34		0-30	0-30

	BIS00P3 BIS M-153-02/A	
Product Group	HF (13.56 MHz)	
Dimension	40 x 22 x 80 mm	
Antenna type	Rod	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	2000 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...85 °C	
Housing material	POM	
Protection degree	—	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 110	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)**	
BIS M-351			0-100	
BIS M-451			0-100	
BIS M-458-045-001			0-54	
BIS M-4006-002			0-100	
BIS M-4008-002			0-100	
BIS VM-351-001	0-100			
BIS VM-351-401	0-100	0-100		
BIS VM-355-401	0-60	0-60		

Dimensions in mm

** Combined with metal mounting plate BAM012M

	BIS011W BIS M-153-11/A	BIS011Y BIS M-153-13/A	BIS011U BIS M-153-14/A
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	40 x 22 x 80 mm	40 x 22 x 80 mm	40 x 22 x 80 mm
	Rod	Rod	Rod
	8 Byte	8 Byte	8 Byte
	FRAM	FRAM	FRAM
	DIN ISO 15693 (High Memory)	DIN ISO 15693 (High Memory)	DIN ISO 15693 (High Memory)
	8192 Byte	32768 Byte	65536 Byte
	-25...85 °C	-25...85 °C	-25...85 °C
	—	—	—
	-25...85 °C	-25...85 °C	-25...85 °C
	POM	POM	POM
	—	—	—
	metal-free (clear zone) on metal	metal-free (clear zone) on metal	metal-free (clear zone) on metal
	CE	CE	CE
	Page 110	Page 110	Page 110

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
			0-55			0-55			0-55
			0-55			0-55			0-55
		0-60							
					0-60			0-60	
		0-36			0-36			0-36	

	BIS00YE BIS M-132-03/L-HT	
Product Group	HF (13.56 MHz)	
Dimension	Ø 24.9 x 4.8 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	112 Byte	
Storage temperature	-40...220 °C	
Storage temperature temporary	—	
Ambient temperature	-40...85 °C	
Housing material	PPS	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE, Ecolab	
Productview	Page 107	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-300			0-30	
BIS M-371-000-A01			0-100	
BIS M-372-000-A01			0-145	
BIS M-373-000-A01			0-155	
BIS M-400-xxx-001			0-30	
BIS M-400-xxx-002			0-24	
BIS M-401			0-50	
BIS M-402-xxx-002			0-20	
BIS M-406-045-001				
BIS M-408-045-001				
BIS M-410				
BIS M-411			0-70	
BIS M-4006-001			0-60	
BIS M-4008-001			0-60	
BIS VM-300			0-30	
BIS VM-341-401				
BIS VM-344-401			0-30	
BIS VM-345-401			0-34	
BIS M-371-000-A01				
BIS M-372-000-A01				
BIS M-400-xxx-001				
BIS M-406-045-001				
BIS M-410				
BIS M-411				

Dimensions in mm

	BIS00YA BIS M-132-10/L-HT	BIS00Y7 BIS M-134-10/L-HT	BIS018P BIS M-137-10/L-HT
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	Ø 24.9 x 4.8 mm	Ø 49.8 x 5.3 mm	Ø 49.8 x 5.3 mm
	round	round	round
	4 Byte	4 Byte	4 Byte
	EEPROM	EEPROM	EEPROM
	DIN ISO 14443	DIN ISO 14443	DIN ISO 14443
	736 Byte	736 Byte	736 Byte
	-40...220 °C	-40...220 °C	-40...220 °C
	—	—	—
	-40...85 °C	-40...85 °C	-40...85 °C
	PPS	PPS	PPS
	IP68	IP68	IP68
	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
	CE, Ecolab	CE, Ecolab	CE
	Page 107	Page 108	Page 110

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
			0-40						
			0-30						
						0-24			0-24
						0-24			0-24
			0-15			0-36			0-36
			0-22			0-60			0-60
			0-40						
			0-30						
						0-24			0-24
						0-24			0-24
			0-15			0-36			0-36
			0-22			0-60			0-60

	BIS00Y4 BIS M-135-03/L-HT	
Product Group	HF (13.56 MHz)	
Dimension	51.5 x 6.4 x 51.5 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	112 Byte	
Storage temperature	-40...220 °C	
Storage temperature temporary	—	
Ambient temperature	-40...85 °C	
Housing material	PPS	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE, Ecolab	
Productview	Page 109	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-300			0-42	
BIS M-371-000-A01			10-205	
BIS M-372-000-A01			0-300	
BIS M-373-000-A01			0-340	
BIS M-400-xxx-001			0-42	
BIS M-401			0-75	
BIS M-406-045-001			0-42	
BIS M-408-045-001			0-48	
BIS M-410			0-70	
BIS M-411			0-125	
BIS M-4006-001			0-90	
BIS M-4008-001			0-90	
BIS VM-300			0-42	
BIS VM-341-401			0-120	
BIS VM-344-401			0-42	
BIS VM-345-401			0-52	

Dimensions in mm

	BIS018R BIS M-138-03/L-HT	BIS00Y2 BIS M-135-07/L-HT	BIS018T BIS M-138-07/L-HT
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	51.5 x 6.4 x 51.5 mm	51.5 x 6.4 x 51.5 mm	51.5 x 6.4 x 51.5 mm
	round	round	round
	8 Byte	8 Byte	8 Byte
	EEPROM	EEPROM	EEPROM
	DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
	112 Byte	992 Byte	992 Byte
	-40...220 °C	-40...220 °C	-40...220 °C
	—	—	—
	-40...85 °C	-40...85 °C	-40...85 °C
	PPS	PPS	PPS
	IP68	IP68	IP68
	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
	CE	CE, Ecolab	CE
	Page 110	Page 109	Page 110

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
			0-42						
			10-205			10-135			10-135
			0-300			0-190			0-190
			0-340			0-215			0-215
			0-42						
			0-75						
			0-42						
			0-48						
			0-70			23-46			23-46
			0-125			11-75			11-75
			0-90			0-65			0-65
			0-90			0-65			0-65
			0-42						
			0-120						
			0-42						
			0-52						

	BIS00Y1 BIS M-136-03/L-HT	
Product Group	HF (13.56 MHz)	
Dimension	52 x 11.5 x 128 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	112 Byte	
Storage temperature	-40...220 °C	
Storage temperature temporary	—	
Ambient temperature	-40...85 °C	
Housing material	PPS	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE, Ecolab	
Productview	Page 109	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-300				
BIS M-352				
BIS M-458-045-001				
BIS M-4006-001			0-95	
BIS M-4006-002				
BIS M-4008-001			0-95	
BIS M-4008-002				
BIS VM-351-401				
BIS VM-352				
BIS VM-355-401				

Dimensions in mm

	BIS0198 BIS M-157-17/A-SA1	BIS00NZ BIS M-191-02/A	BIS0180 BIS M-127-02/A-SA1
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	9 x 5.3 x 39 mm	24 x 21 x 24 mm	40 x 23 x 28 mm
	Rod	Rod	round
	8 Byte	8 Byte	8 Byte
	EEPROM	FRAM	FRAM
	DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
	208 Byte	2000 Byte	2000 Byte
	-25...85 °C	-25...85 °C	-25...85 °C
	120 °C 1x100 h, -40 °C...90 °C 1x1000 h, 140 °C 1x10 h	—	—
	-25...85 °C	-25...70 °C	-25...70 °C
	PEEK	PBT, PU potted	PA 12 Cast aluminum
	IP68	IP67	IP67
	—	metal-free (clear zone)	metal-free (clear zone) on metal flush in metal
	CE, WEEE, EAC	CE	CE
	Page 110	Page 110	Page 111

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	Combined with BIS018E		
						0-22			
						0-25			
						0-55			
						0-55			
						0-25			
						0-17			
						0-15			

	BIS0176 BIS M-127-02/A	
Product Group	HF (13.56 MHz)	
Dimension	93 x 43.3 x 57.2 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	2000 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	PA 12 Cast aluminum	
Protection degree	IP67	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 111	

Passender Schreib-/Lesekopf mit max. Arbeitsabstand Lesen/Schreiben

Montage	Combined with BIS0189			
BIS M-300				
BIS M-351				
BIS M-352				
BIS M-451				
BIS M-458-045-001				
BIS M-4006-002				
BIS M-4008-002				
BIS VM-301				

Dimensions in mm

	BIS017F BIS M-157-17/A	BIS00M2 BIS M-152-03/A	BIS00L8 BIS M-106-03/L
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	Ø 2.12 x 12 mm	Ø 4 x 22.2 mm	Ø 18 x 15 mm
	Rod	Rod	round
	8 Byte	8 Byte	8 Byte
	EEPROM	EEPROM	EEPROM
	DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
	208 Byte	112 Byte	112 Byte
	-25...85 °C	-25...85 °C	10...126 °C
	120 °C 1x100 h, -40 °C...90 °C 1x1000 h, 140 °C 1x10 h	120 °C 1x100 h, -40 °C...90 °C 1x1000 h	—
	-25...85 °C	-25...85 °C	10...70 °C
	Glass, transparent	Glass, transparent	Glass
	IP68	IP68	IP68
	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
	CE	CE	CE
	Page 111	Page 111	Page 111

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
									0-32
						0-30			
			0-17			0-17			
						0-30			
						0-18			
						0-35			
						0-35			
									0-32

	BIS00KM BIS M-115-03/A	
Product Group	HF (13.56 MHz)	
Dimension	25 x 3 x 65 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	112 Byte	
Storage temperature	-30...60 °C	
Storage temperature temporary	—	
Ambient temperature	-25...50 °C	
Housing material	Epoxy-resin/fiberglass PVC	
Protection degree	IP65	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 111	

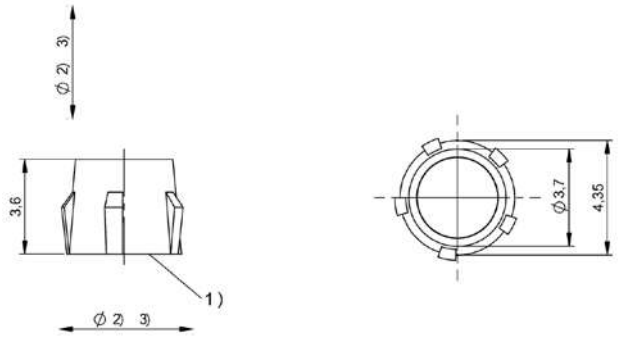
Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-300			0-18	
BIS M-301			0-38	
BIS M-371-000-A01			0-85	
BIS M-400-xxx-001			0-24	
BIS M-400-xxx-002			0-17	
BIS M-401			0-44	
BIS M-402-xxx-002			0-14	
BIS M-405				
BIS M-406-045-001			0-18	
BIS VM-300			0-18	
BIS VM-344-401			0-18	

Dimensions in mm
* Installation on request

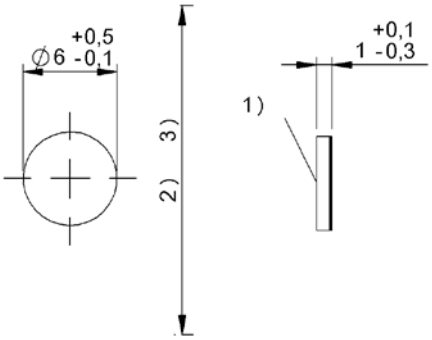
	BIS00N5 BIS M-115-07/A-SA1	BIS01CA BIS M-1L4-03/L-D015	BIS012H BIS M-1L4-03/L-D018
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	25 x 3 x 65 mm	—	1 x 20 x 20 mm
	round	round	round
	8 Byte	8 Byte	8 Byte
	EEPROM	EEPROM	EEPROM
	DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
	992 Byte	112 Byte	112 Byte
	-30...60 °C	-25...85 °C	-20...80 °C
	—	—	—
	-25...50 °C	-25...85 °C	0...50 °C
	Epoxy-resin/fiberglass PVC	PET	PET, transparent
	IP65	IP20	IP20
	metal-free (clear zone)	metal-free (clear zone) on metal	metal-free (clear zone) on metal
	CE	CE, WEEE, EAC	CE
	Page 111	Page 111	Page 111

	flush in metal	on metal	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)
									0-18



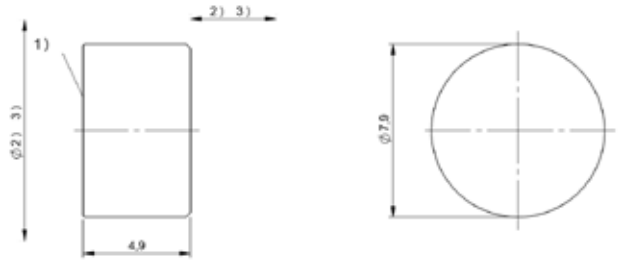
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS018Y



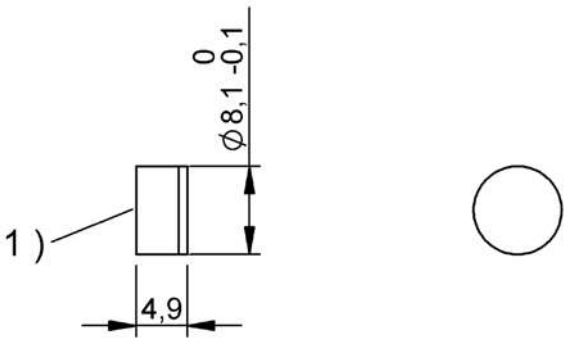
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS00UC, BIS00UE



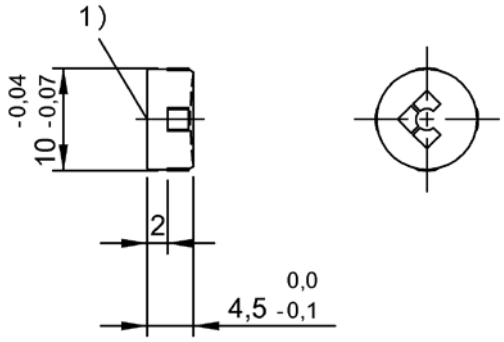
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS00YL, BIS00YJ, BIS00YK



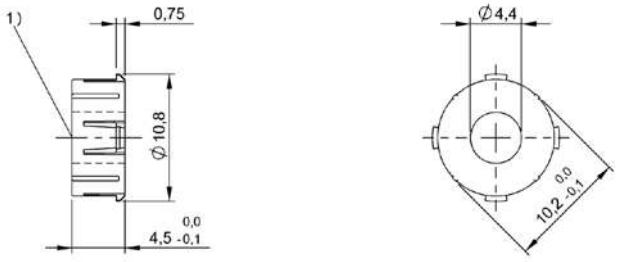
1) Sensing surface

BIS01A1



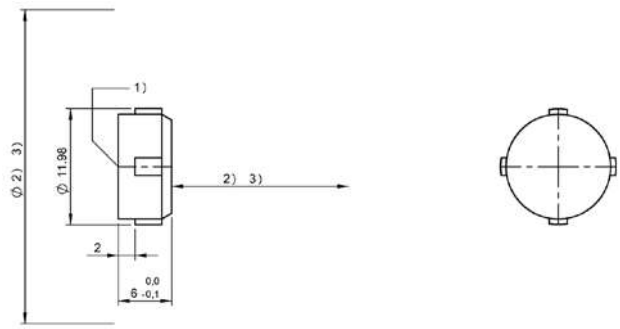
1) Sensing surface

BIS01A0, BIS0048, BIS004A



1) Sensing surface

BIS019C

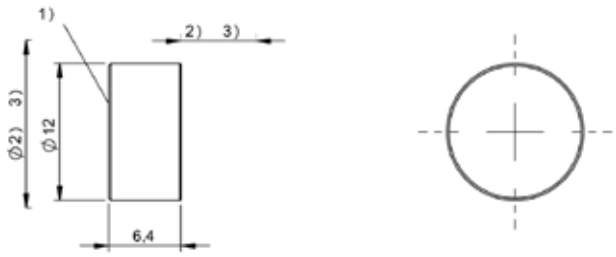


1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS0040

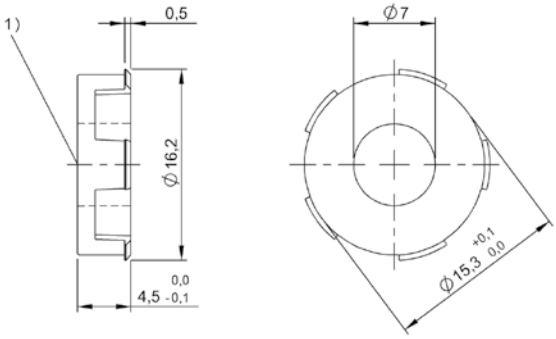
1) Sensing surface

BIS0042



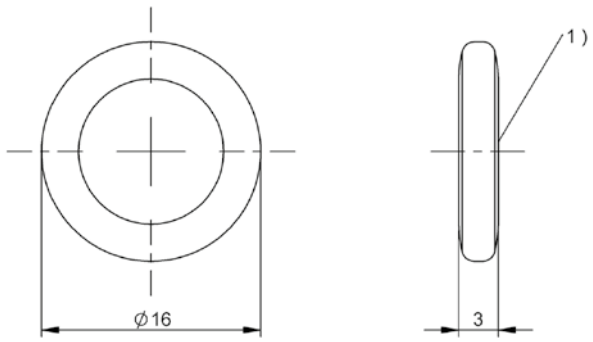
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS00YH



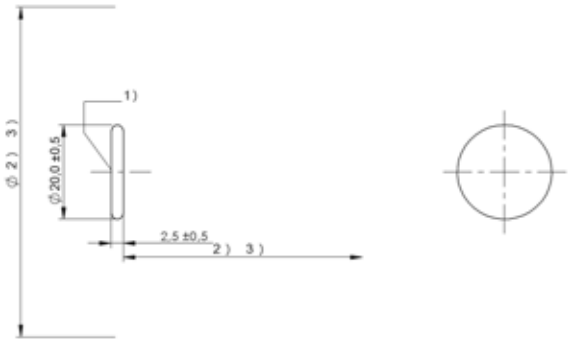
1) Sensing surface

BIS019E



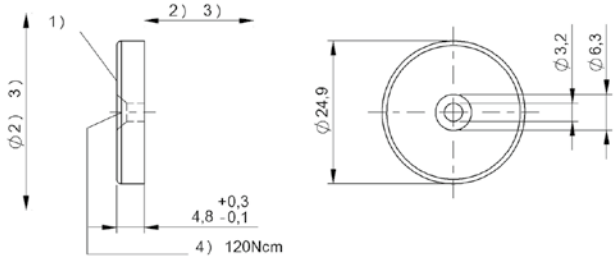
1) Sensing surface

BIS01CE



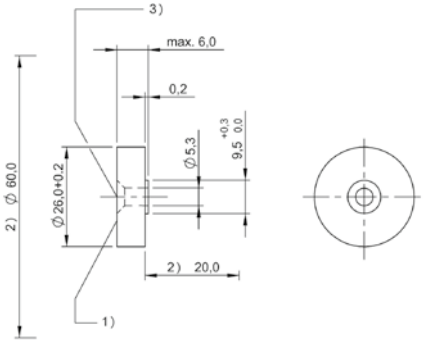
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS0044



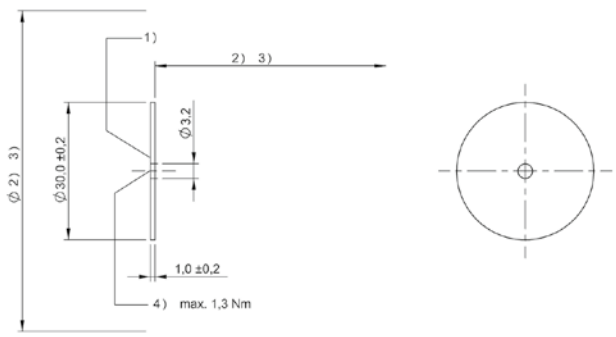
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BIS00YF, BIS00YC, BIS00YE, BIS00YA



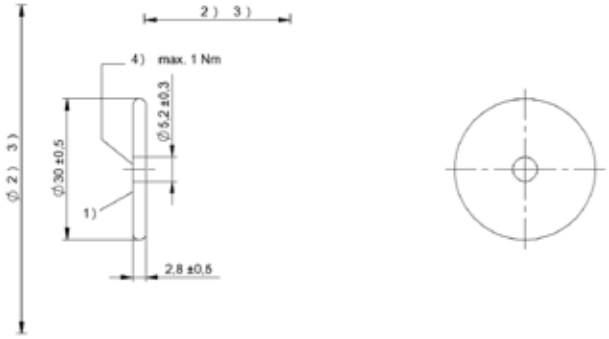
1) Sensing surface, 2) Clear zone, 3) Tightening torque max. 2.5 Nm

BIS0143



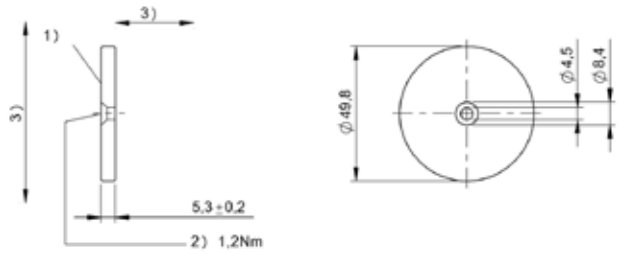
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BIS003Y



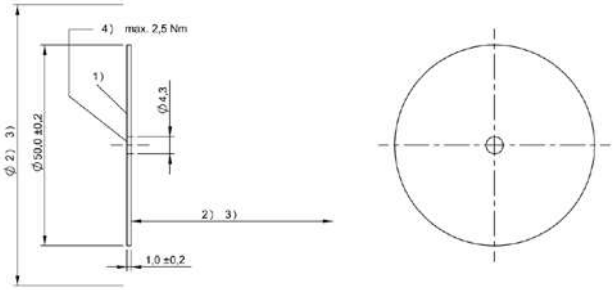
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BIS0045



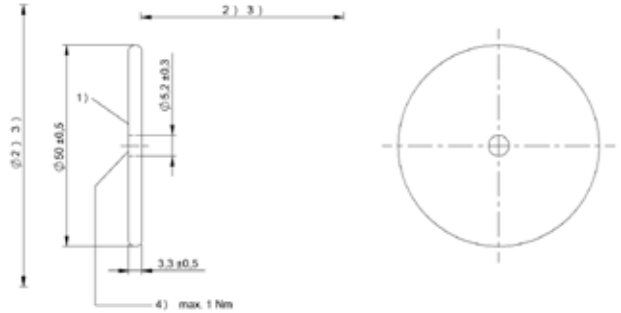
1) Sensing surface, 2) Tightening torque, 3) see R/W head table

BIS00Y8, BIS00Y7



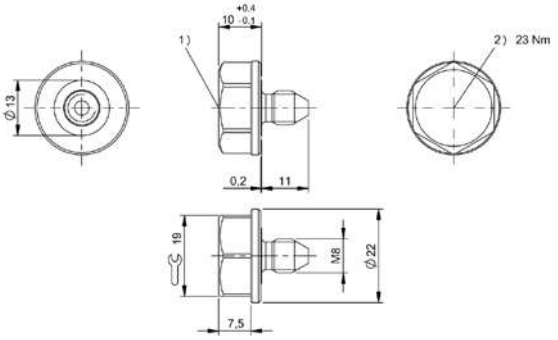
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BIS003Z



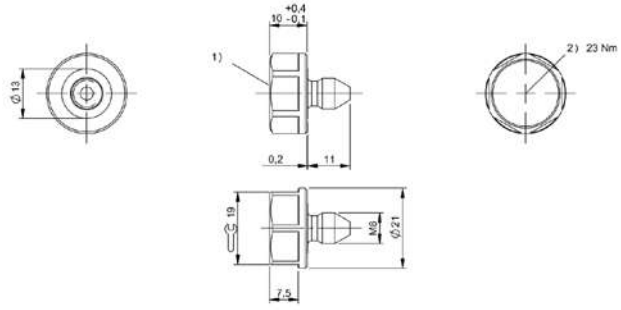
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BIS0046



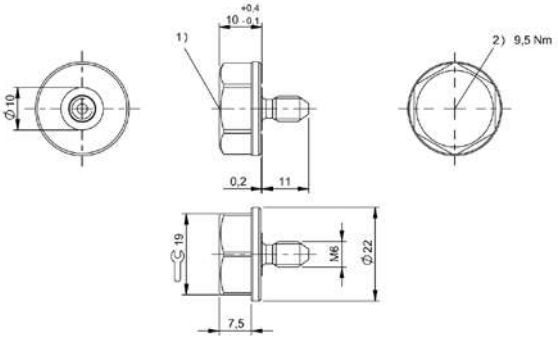
1) Sensing surface, 2) Tightening torque

BIS00NW



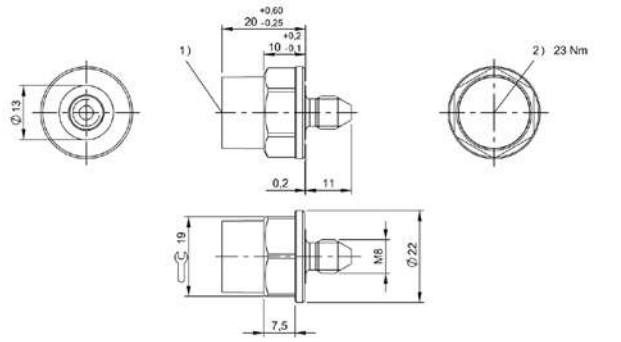
1) Sensing surface, 2) Tightening torque

BIS0100



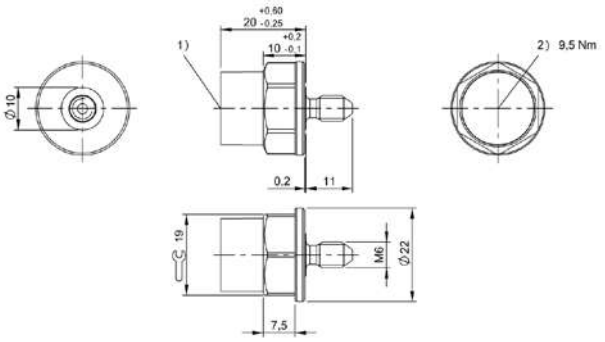
1) Sensing surface, 2) Tightening torque

BIS00NU



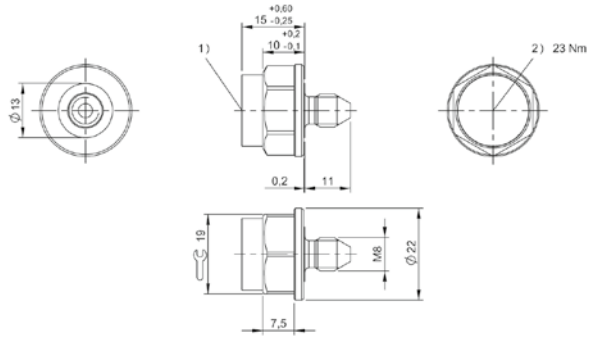
1) Sensing surface, 2) Tightening torque

BIS00M8



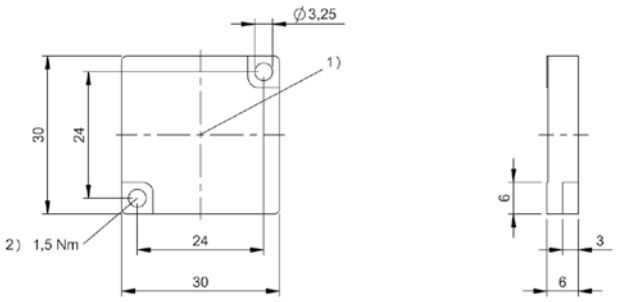
1) Sensing surface, 2) Tightening torque

BIS00M9



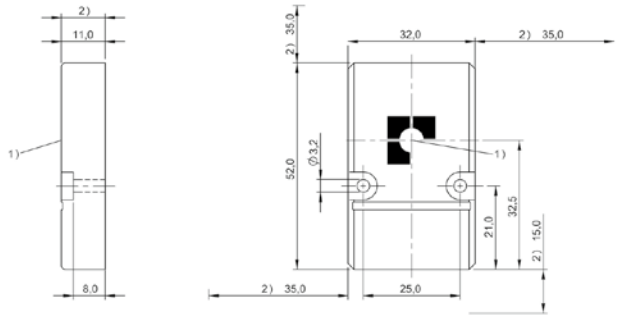
1) Sensing surface, 2) Tightening torque

BIS0119



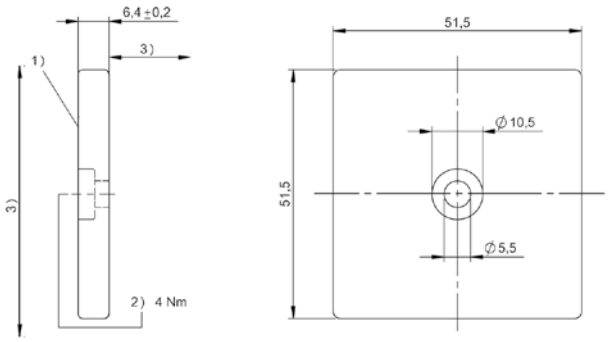
1) Sensing surface, 2) Tightening torque

BIS004E



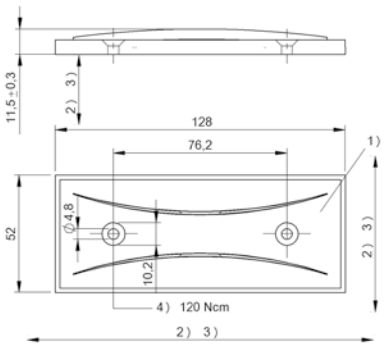
1) Sensing surface, 2) Clear zone

BIS0043, BIS011F, BIS0111, BIS011E, BIS011A



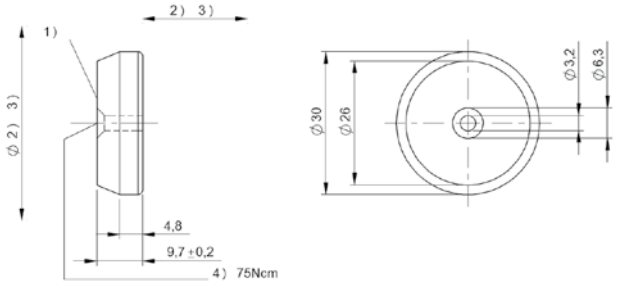
1) Sensing surface, 2) Tightening torque, 3) see R/W head table

BIS00Y5, BIS00Y3, BIS00Y6, BIS00Y4, BIS00Y2



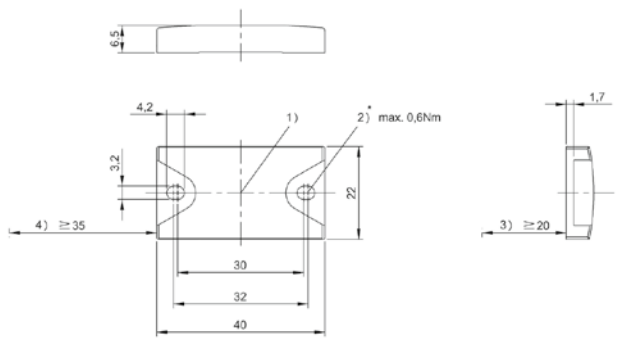
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BIS00W9, BIS00Y1



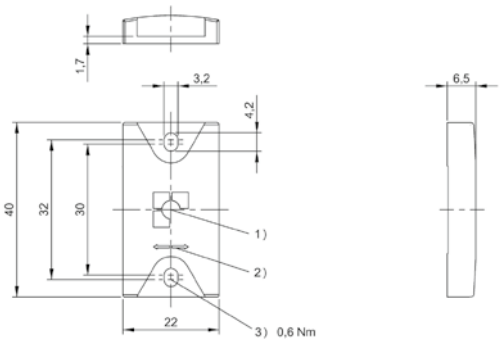
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BIS00Y9



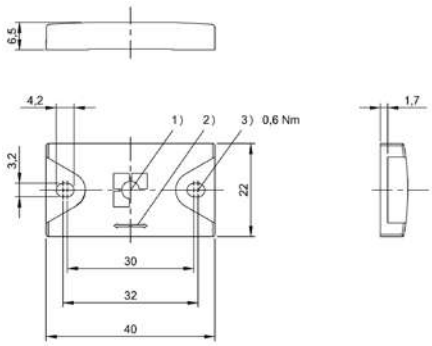
1) Sensing surface, 2) Tightening torque, 3) Clear zone, 4) Clear zone surrounding

BIS00LC



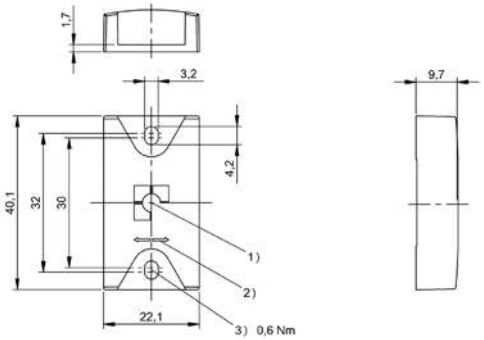
1) Sensing surface, 2) Read/write axis, 3) Tightening torque

BIS004F



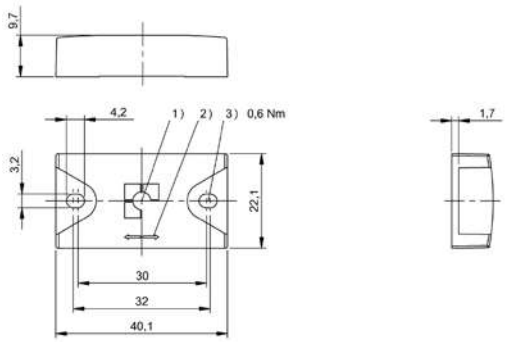
1) Sensing surface, 2) Read/write axis, 3) Tightening torque

BIS004H



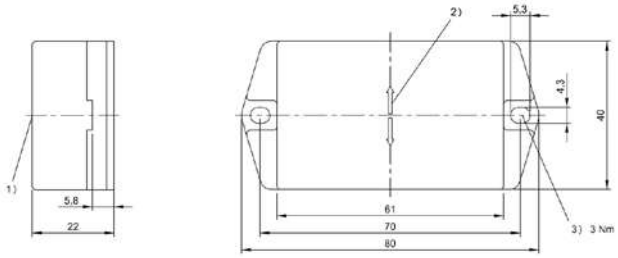
1) Sensing surface, 2) Read/write axis, 3) Tightening torque

BIS011M, BIS011Z, BIS011N



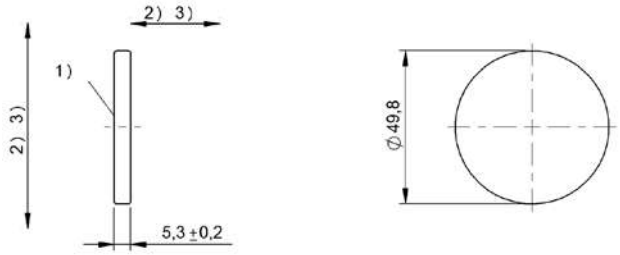
1) Sensing surface, 2) Read/write axis, 3) Tightening torque

BIS012J, BIS0112, BIS012K, BIS012L



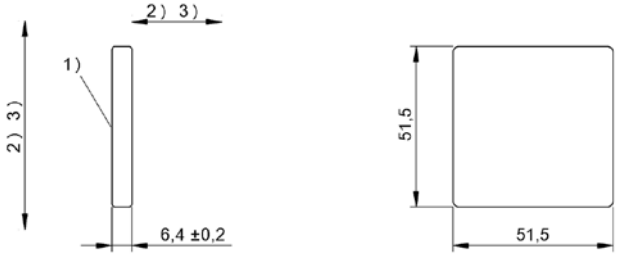
1) Sensing surface, 2) Read/write axis, 3) Tightening torque

BIS00P3, BIS011W, BIS011Y, BIS011U



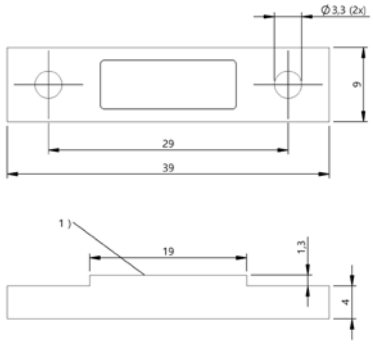
1) Sensing surface, 2) Clear zone, 3) see R/W head table

BIS018P



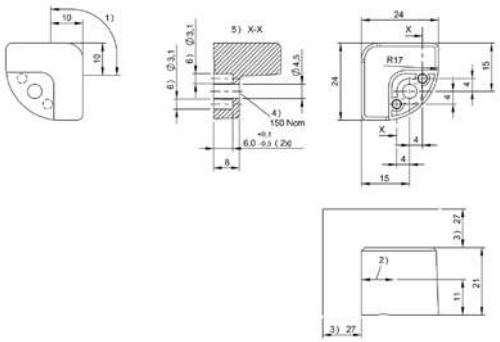
1) Sensing surface, 2) Clear zone, 3) see R/W head table

BIS018R, BIS018T



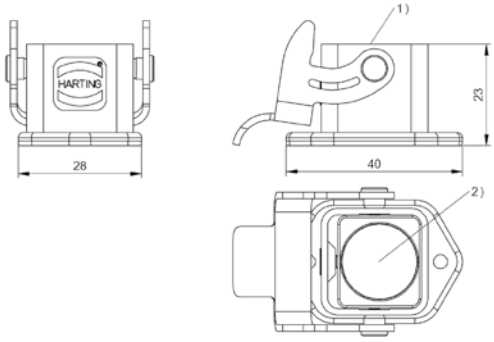
1) Sensing surface

BIS0198



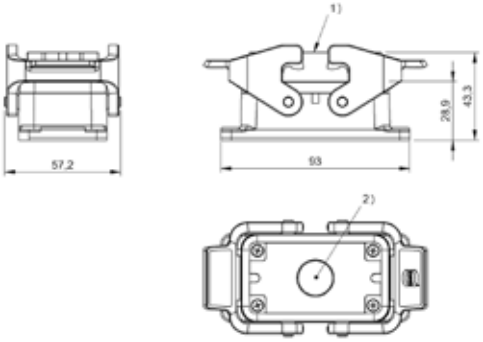
1) Read/write range, 2) Read/write axis, 3) Clear zone, 4) Tightening torque, 5) Cut-out, 6) see remarks

BIS00NZ



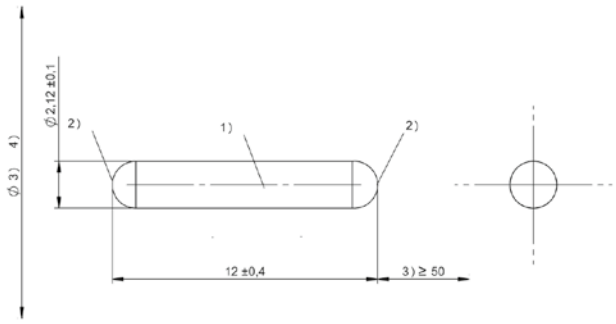
1) Sensing surface, 2) Data carrier

BIS0180



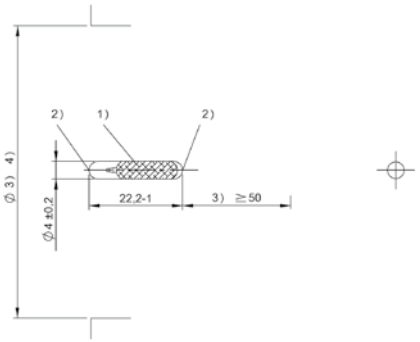
1) Sensing surface, 2) Data carrier

BIS0176



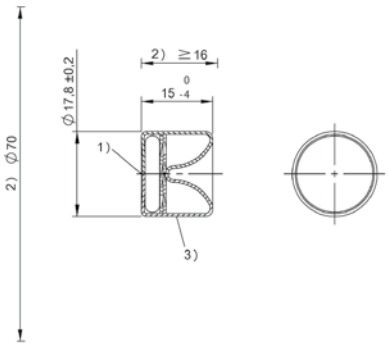
1) Sensing surface parallel, 2) Sensing surface axial, 3) Clear zone, 4) see corresponding R/W head

BIS017F



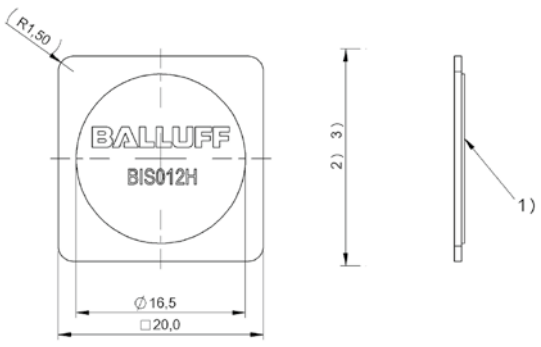
1) Sensing surface parallel, 2) Sensing surface axial, 3) Clear zone, 4) see corresponding R/W head

BIS00M2



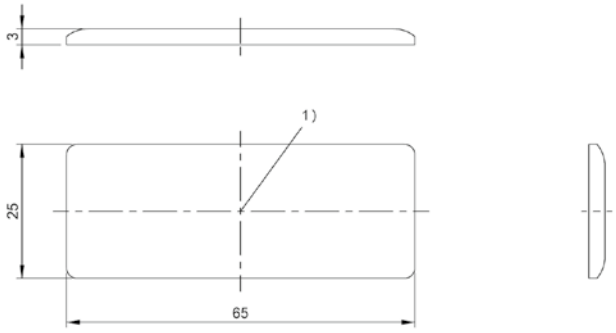
1) Sensing surface, 2) Clear zone, 3) Glass

BIS00L8



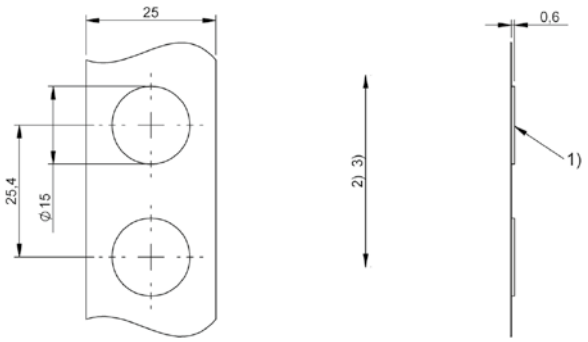
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS012H



1) Sensing surface

BIS00KM, BIS00N5



1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

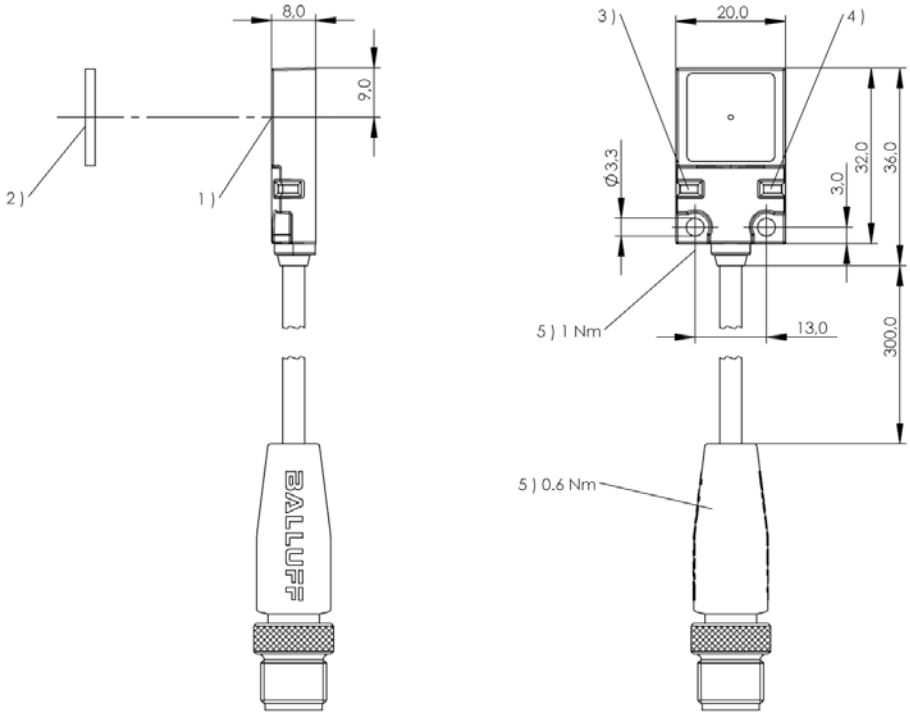
BIS01CA

For processor units BIS V-6...	**BIS0197** BIS VM-349-401-S4
Product Group	HF (13.56 MHz)
Dimension	20 x 8 x 32 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Zinc, die-cast
Ambient temperature	0...80 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL Listed

Appropriate data carrier

	BIS0042			BIS0043			BIS0044		BIS0045			BIS018Y	
Data carrier distance to metal	>20	>0	>0	>20	>0	>0	>25	>0	>25			>20	>0
Data carrier clear zone	>100	>100	>0	>100	>100	>0	>100	>100	>100			>100	>100
Working distance for writing	0-10	0-9.5	0-7	0-13	0-9.5	0-7	0-12	0-5	3-13			0-6	0-5.5
Working distance for reading	0-10	0-9.5	0-7	0-13	0-9.5	0-7	0-12	0-5	3-13			0-6	0-5.5
Offset at distance													
0	±5	±5	±5	±9	±8	±7	±7	±5			0	±5	±4
2	±5	±5	±5	±9	±8	±7	±7	±5			2	±5	±4
4	±5	±5	±4.5	±9	±8	±6	±7	±4	±9		2.5	±4	±3.5
5	±4.5	±4	±4	±9	±7	±5	±7	±2	±9		3	±4	±3.5
6	±4.5	±4	±4	±8	±7	±5	±6		±8		4	±4	±3.5
7	±4.5	±4	±2	±8	±7	±1.5	±6		±8		5	±4	±2
8	±4.5	±4		±8	±7		±6		±8		5.5	±2	±2
9	±2	±2		±8	±4		±6		±8		6	±2	
9.5	±2	±2		±8	±4		±6		±8		6.5		
10	±1			±8			±6		±8		7		
12				±3			±3		±3		8		
13				±3					±3		9		
15											9.5		
20											10		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) LED (Power), 4) LED (CP), 5) Tightening torque

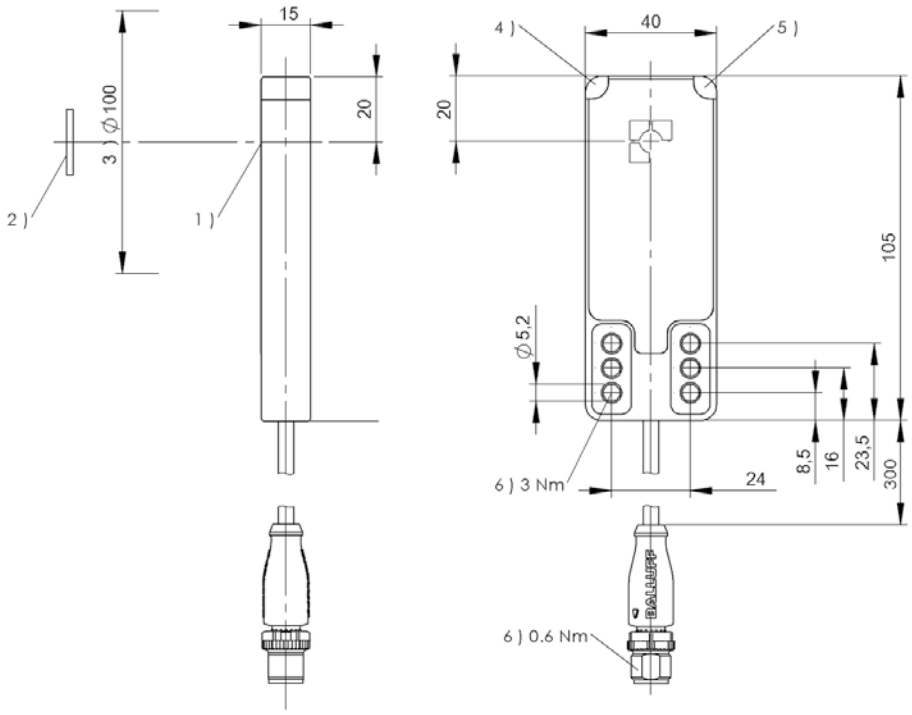
	BIS00UC			BIS004A			BIS00NU BIS00NW BIS0100	
	>20	>0	>0	>20	>0	>0	>0	
	>100	>100	>0	>100	>100	>0	>100	
	0-6.5	0-4	1.3-2.5	0-8	0-8	0-6	0-10	
	0-6.5	0-4	1.3-2.5	0-8	0-8	0-6	0-10	
	±4	±4		±5	±4.5	±4	±6	
	±4	±4	±2	±5	±4.5	±4	±6	
	±3	±3	±0.5	±5	±4.5	±3	±6	
	±3	±3		±5	±4.5	±3	±6	
	±3	±2		±5	±4.5	±3	±6	
	±3			±4	±4	±3	±5	
	±2			±4	±4	±2	±5	
	±2			±4	±4	±2	±5	
	±2			±4	±4		±5	
				±4	±4		±5	
				±2	±2		±5	
							±3	
							±3	
							±3	

For processor units BIS V-6...	**BIS0133** BIS VM-345-401-S4
Product Group	HF (13.56 MHz)
Dimension	40 x 15 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Zinc, die-cast
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0043 BIS0111	BIS011F BIS011E BIS011A BIS0139	BIS004A		BIS00YE	BIS00Y4		BIS0044		BIS0045	BIS0046		BIS0119	BIS00NU BIS00NW BIS0100
Data carrier distance to metal	>50	>50	>10	>0	>25	>50		>50	>0	>50	>50		>0	>0
Data carrier clear zone	>200	>200	>60	>60	>100	>200		>200	>200	>200	>200		>100	>100
Working distance for writing	0-28	0-18	0-11	0-9	0-34	0-52		0-22	0-5	0-28	0-45		0-22	0-16
Working distance for reading	0-28	0-18	0-11	0-9	0-34	0-52		0-22	0-5	0-28	0-45		0-22	0-16
Offset at distance														
0	±16	±14	±8	±8	±20	±30	0	±14	±7	±16	±26	0	±13	±10
4	±16	±14	±8	±8	±20	±30	4	±14	±6	±16	±26	5	±13	±10
8	±16	±14	±7	±6	±20	±30	5	±14	±3	±16	±26	10	±13	±9
9	±16	±14	±7	±4	±20	±30	10	±14		±16	±26	13	±10	±8
10	±16	±14	±7		±20	±30	15	±12		±14	±26	16	±10	±4
11	±14	±11	±4		±18	±30	18	±10		±14	±26	18	±10	
15	±14	±11			±18	±30	20	±10		±14	±26	20	±10	
18	±14	±5			±18	±30	22	±6		±12	±24	22	±6	
22	±12				±15	±28	24			±12	±24	24		
25	±12				±15	±28	28			±9	±24	28		
28	±9				±15	±28	30				±24	30		
32					±8	±28	31				±24	31		
35						±28	35				±24	35		
40						±28	40				±24	40		
42						±24	43				±15	43		
45						±24	45				±15	45		
48						±24	48					48		
50						±24	52					52		
52						±10	60					60		

Dimensions in mm



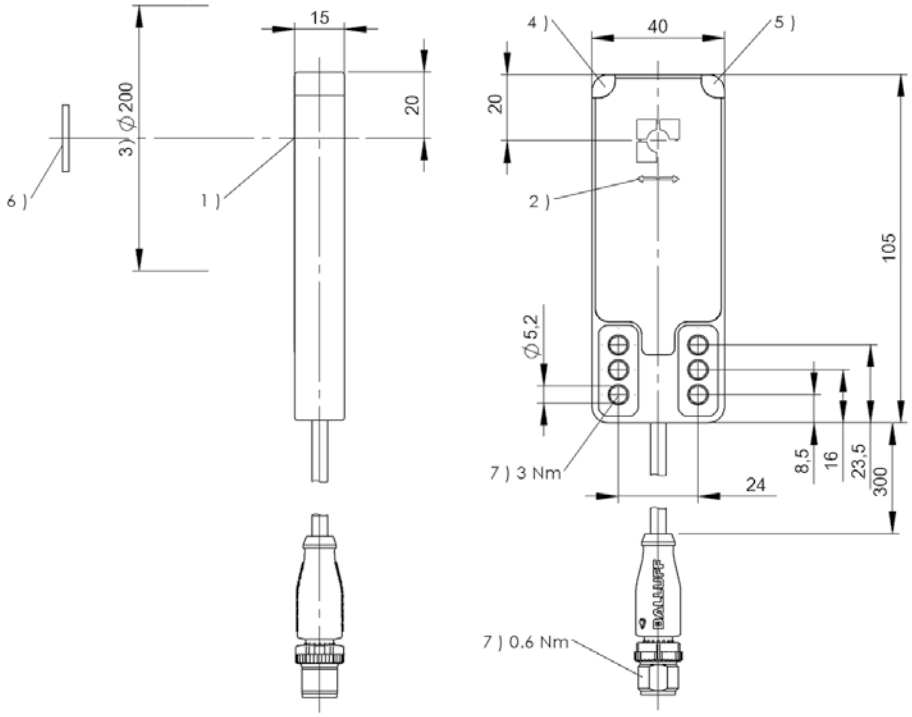
1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

For processor units BIS V-6...	**BIS0131** BIS VM-355-401-S4
Product Group	HF (13.56 MHz)
Dimension	40 x 15 x 105 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Zinc, die-cast
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS004F				BIS004H					BIS00M2		BIS00P3			
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>240	>240	>240	>240
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>480	>480	>480	>480
Data carrier clear zone C										>50	>50	>50	>50	>0	>0
Metallic mounting surface 40 × 22 mm	0-45	0-45			0-45	0-45									
Metallic mounting surface > 200 × 200 mm			0-45	0-45			0-45	0-45							
Working distance for writing	0-45	0-45	0-45	0-45	0-45	0-45	0-45	0-45		0-25	0-25	0-60	0-60	0-60	0-60
Working distance for reading	0-45	0-45	0-45	0-45	0-45	0-45	0-45	0-45		0-25	0-25	0-60	0-60	0-60	0-60
Offset at distance	X	Y	X	Y	X	Y	X	Y		X	Y	X	Y	X	Y
0	±50	±24	±50	±24	±24	±50	±24	±50	0	±32	±16	±80	±36	±80	±36
5	±50	±24	±50	±24	±24	±50	±24	±50	5	±32	±16	±80	±36	±80	±36
12	±50	±24	±50	±24	±24	±50	±24	±50	10	±32	±16	±80	±36	±80	±36
15	±50	±24	±50	±24	±24	±50	±24	±50	13	±30	±14	±80	±36	±80	±36
18	±50	±24	±50	±24	±24	±50	±24	±50	15	±30	±14	±80	±36	±80	±36
20	±50	±24	±50	±24	±24	±50	±24	±50	20	±30	±14	±80	±36	±80	±36
22	±40	±20	±40	±20	±20	±40	±20	±40	25	±15	±8	±75	±30	±75	±30
25	±40	±20	±40	±20	±20	±40	±20	±40	30			±75	±30	±75	±30
30	±40	±20	±40	±20	±20	±40	±20	±40	36			±75	±30	±75	±30
32	±40	±20	±40	±20	±20	±40	±20	±40	40			±75	±30	±75	±30
35	±40	±20	±40	±20	±20	±40	±20	±40	42			±75	±30	±75	±30
40	±38	±18	±38	±18	±18	±38	±18	±38	50			±75	±30	±75	±30
45	±20	±10	±20	±10	±10	±20	±10	±20	52			±55	±25	±55	±25
50									60			±20	±10	±20	±10
52									75						
60									83						
65									100						

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Data carrier, 7) Tightening torque

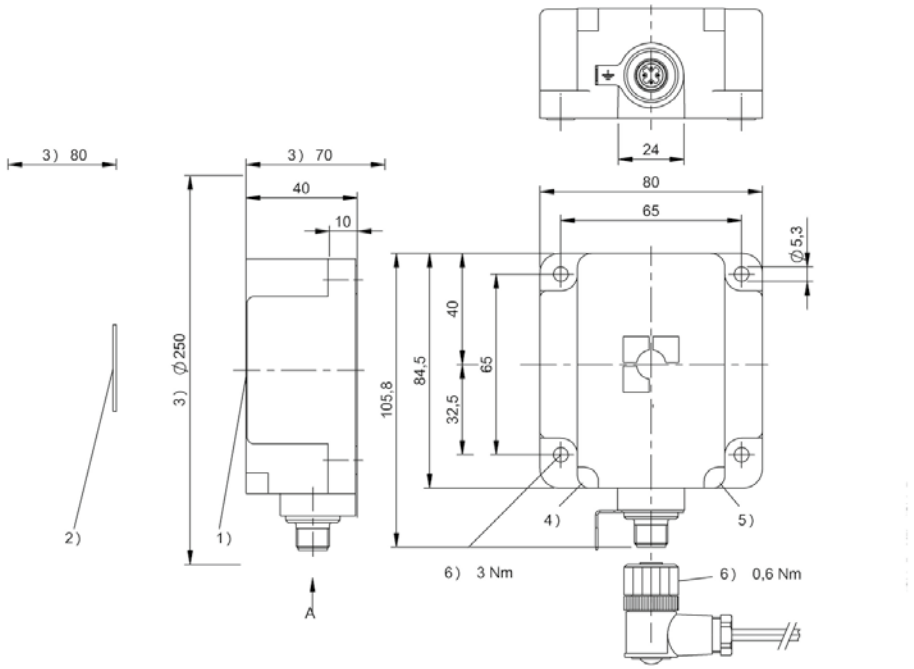
BIS011W BIS011Y BIS011U		BIS017F			BIS011M BIS011Z BIS011N				BIS012J BIS012K BIS012L					BIS0112					BIS00NZ	
>240	>240	>200	>200		>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>200	>200		>27	>27
>480	>480	>200	>200		>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>200	>200		>27	>27
>50	>50	>50	>50																	
					0-34	0-34			0-30	0-30				0-45	0-45					
							0-34	0-34			0-30	0-30				0-45	0-45			
0-36	0-36	0-15	0-15		0-34	0-34	0-34	0-34	0-30	0-30	0-30	0-30		0-45	0-45	0-45	0-45		0-25	0-25
0-36	0-36	0-15	0-15		0-34	0-34	0-34	0-34	0-30	0-30	0-30	0-30		0-45	0-45	0-45	0-45		0-25	0-25
X	Y	X	Y		X	Y	X	Y	X	Y	X	Y		X	Y	X	Y		X	Y
±50	±26	±20	±11	0	±38	±18	±40	±18	±20	±40	±20	±40	0	±24	±55	±20	±48	0	±30	±20
±50	±26	±20	±11	5	±38	±18	±40	±18	±20	±40	±20	±40	5	±24	±55	±20	±48	5	±30	±20
±50	±26	±17	±9	10	±38	±18	±40	±18	±20	±40	±20	±40	10	±24	±55	±20	±48	10	±30	±20
±50	±26	±14	±7	15	±38	±18	±40	±18	±17	±38	±17	±38	15	±24	±55	±20	±48	15	±25	±15
±50	±26	±8	±3	18	±35	±15	±40	±18	±17	±38	±17	±38	20	±24	±55	±20	±48	20	±15	±10
±50	±26			20	±35	±15	±40	±18	±17	±38	±17	±38	25	±20	±50	±16	±38	25	±5	±5
±40	±20			22	±35	±15	±35	±16	±15	±30	±15	±30	30	±20	±50	±16	±38	27		
±35	±17			25	±35	±15	±35	±16	±7	±16	±7	±16	35	±20	±50	±16	±38	35		
±20	±10			30	±27	±12	±35	±16	±7	±16	±7	±16	40	±18	±40	±16	±38	40		
				34	±15	±8	±15	±8					45	±10	±20	±10	±20	42		
				36									50					50		
				39									54					57		
				42									56					60		
				50									60					65		
				52									70					70		
				60									75					75		
				65									80							

For processor units BIS V-6...	**BIS00T0** BIS VM-301-001-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 4-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0043		BIS0044		BIS0045		BIS0046		BIS0047		BIS00L8		BIS0111	
Data carrier distance to metal	>50	>10	>5	>50	>25	>10	>50	>20	>50	>30	>50	>30	>50	>30	>80		>1	0	>50	
Data carrier clear zone	>200	>60	>50	>200	>150	>150	>200	>60	>200	>100	>200	>100	>200	>100	>250		>70	>70	>200	
Working distance for writing	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50		0-32	0-32	0-50	
Working distance for reading	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50		0-32	0-32	0-50	
Offset at distance																				
0	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30		±30	±25	±30	
5	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30		±30	±25	±30	
9	±22	±18	±14	±30	±24	±18	±32	±20	±28	±18	±32	±22	±40	±25	±30		±30	±25	±30	
12	±22	±18	±10	±30	±24	±18	±32	±18	±24	±18	±32	±22	±40	±25	±30		±25	±25	±30	
15	±22	±18	±10	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30		±25	±25	±30	
16	±22	±16	±8	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30		±25	±25	±30	
18	±22	±16	±6	±30	±24	±18	±32	±16	±24	±12	±32	±18	±40	±25	±30		±25	±22	±30	
20	±22	±16	±4	±30	±24	±18	±32	±16	±24	±8	±32	±16	±40	±25	±30		±25	±22	±30	
22	±20	±10		±30	±24	±15	±25	±14	±20		±25	±14	±40	±22	±30		±25	±22	±25	
25	±15	±10		±30	±24	±15	±25		±20		±25	±12	±40	±22	±30		±25	±22	±25	
30	±15	±4		±30	±20	±12	±25		±12		±25	±10	±40	±22	±28		±20	±17	±25	
32	±8			±30	±18	±8	±20		±12		±20		±40	±22	±24		±20	±17	±25	
35	±4			±30	±16	±4	±20				±20		±40	±20	±22				±25	
40				±24	±10		±20				±20		±40	±20	±18				±25	
43				±20	±4		±12				±12		±35	±15	±14				±25	
45				±16			±12				±12		±35	±12	±12				±25	
50				±4									±35		±4				±5	
52													±35							
60													±30							
65													±30							
70													±20							

Dimensions in mm



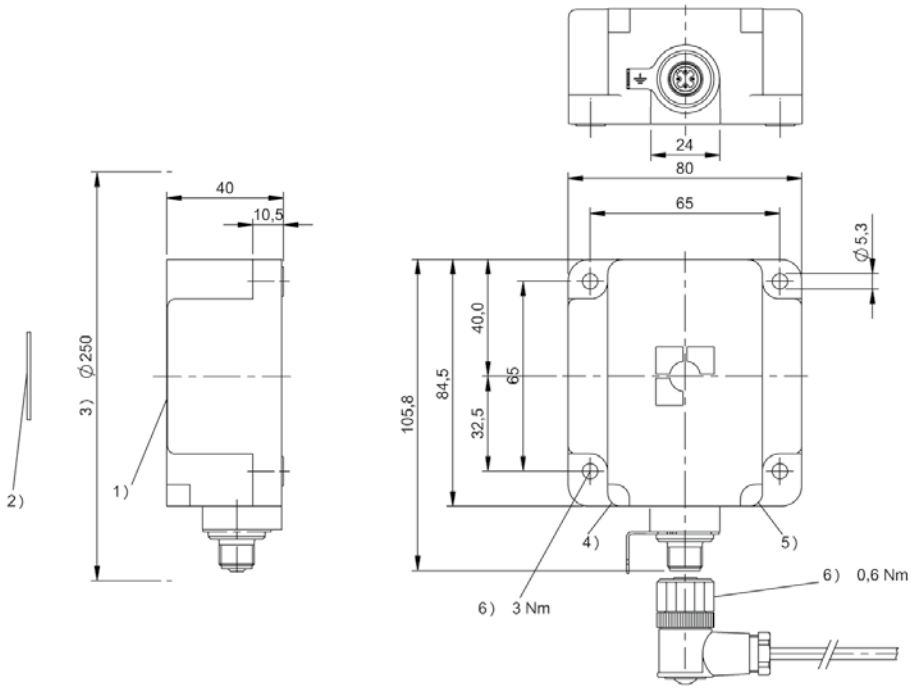
1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

For processor units BIS V-6...	**BIS0130** BIS VM-341-401-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0043			**BIS011F BIS011E BIS011A BIS0139**			**BIS0046**		**BIS00Y4**			**BIS0119**	
Data carrier distance to metal	>50	>0	>0	>50	>0	>0	>50		>50			>0	
Data carrier clear zone	>200	>200	>0	>200	>200	>0	>200		>200			>100	
Working distance for writing	0-64	0-36	14-20	0-42	0-30	11-20	0-100		0-120			0-40	
Working distance for reading	0-64	0-36	14-20	0-42	0-30	11-20	0-100		0-120			0-40	
Offset at distance													
0	±40	±25		±30	±24		±50		±60		0	±30	
8	±40	±25		±30	±24		±50		±60		5	±30	
11	±40	±25		±30	±24	±25	±50		±60		10	±30	
14	±40	±25	±20	±30	±24	±25	±50		±60		12	±25	
16	±40	±25	±20	±30	±24	±9	±50		±60		15	±25	
18	±40	±25	±10	±30	±24	±9	±50		±60		16	±25	
20	±40	±25	±10	±30	±24	±9	±50		±60		18	±25	
25	±36	±22		±25	±20		±50		±60		20	±25	
30	±36	±22		±25	±10		±50		±60		22	±25	
36	±36	±10		±25			±50		±60		25	±25	
40	±36			±25			±50		±60		30	±25	
42	±30			±5			±50		±60		32	±20	
50	±30						±50		±60		36	±20	
60	±30						±45		±55		40	±15	
64	±15						±45		±55		43		
80							±45		±55		45		
90							±45		±55		50		
100							±20		±55		52		
110									±40		60		
120									±40		65		

Dimensions in mm



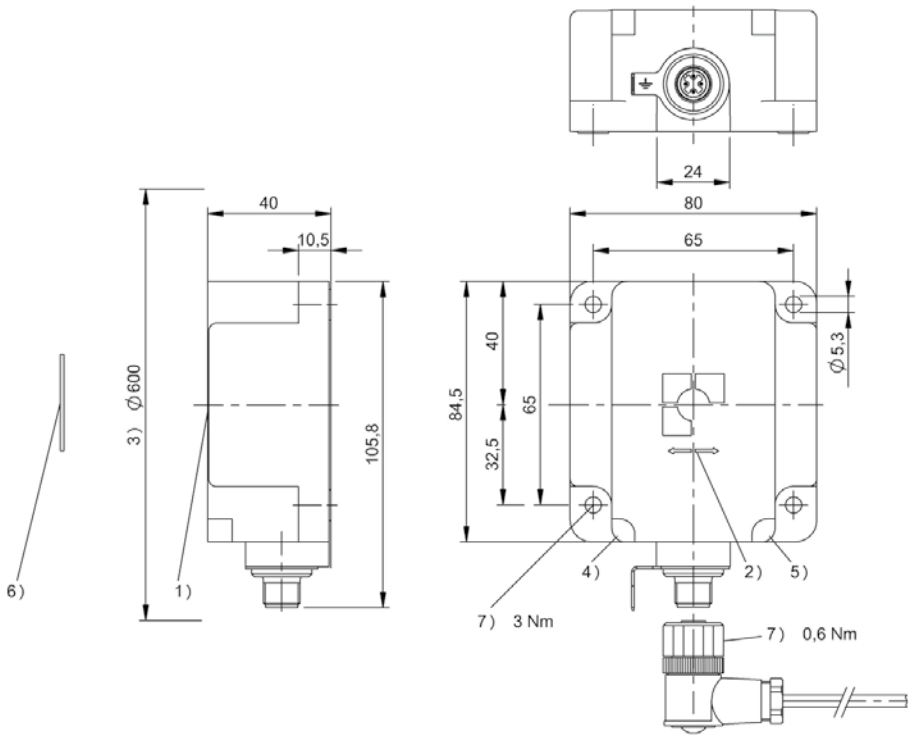
1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

For processor units BIS V-6...	**BIS012Z** BIS VM-351-401-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS004F				BIS004H					BIS00M2		BIS00P3			
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>240	>240	>240	>240
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>480	>480	>480	>480
Data carrier clear zone C										>50	>50	>50	>50	>0	>0
Metallic mounting surface 40 × 22 mm	0-52	0-52			0-52	0-52									
Metallic mounting surface > 200 × 200 mm			0-52	0-52			0-52	0-52							
Working distance for writing	0-52	0-52	0-52	0-52	0-52	0-52	0-52	0-52		0-36	0-36	0-100	0-100	0-100	0-100
Working distance for reading	0-52	0-52	0-52	0-52	0-52	0-52	0-52	0-52		0-36	0-36	0-100	0-100	0-100	0-100
Offset at distance	X	Y	X	Y	X	Y	X	Y		X	Y	X	Y	X	Y
0	±60	±25	±60	±25	±25	±60	±25	±60	0	±45	±23	±110	±50	±120	±50
5	±60	±25	±60	±25	±25	±60	±25	±60	5	±45	±23	±110	±50	±120	±50
12	±60	±25	±60	±25	±25	±60	±25	±60	10	±45	±23	±110	±50	±120	±50
15	±60	±25	±60	±25	±25	±60	±25	±60	15	±45	±23	±110	±50	±120	±50
18	±60	±25	±60	±25	±25	±60	±25	±60	20	±40	±20	±110	±50	±120	±50
20	±60	±25	±60	±25	±25	±60	±25	±60	25	±40	±20	±100	±50	±100	±50
22	±60	±25	±60	±25	±25	±60	±25	±60	30	±36	±18	±100	±50	±100	±50
25	±60	±25	±60	±25	±25	±60	±25	±60	36	±20	±10	±100	±50	±100	±50
30	±60	±25	±60	±25	±25	±60	±25	±60	40			±100	±50	±100	±50
32	±50	±25	±50	±25	±25	±50	±25	±50	45			±100	±50	±100	±50
35	±50	±25	±50	±25	±25	±50	±25	±50	50			±100	±50	±100	±50
40	±50	±20	±50	±20	±20	±50	±20	±50	60			±80	±35	±80	±35
45	±25	±20	±25	±20	±20	±25	±20	±25	70			±80	±35	±80	±35
50	±25	±20	±25	±20	±20	±25	±20	±25	80			±80	±35	±80	±35
52	±25	±8	±25	±8	±8	±25	±8	±25	90			±80	±35	±80	±35
60									100			±35	±15	±80	±35
65									110					±25	±15

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Data carrier, 7) Tightening torque

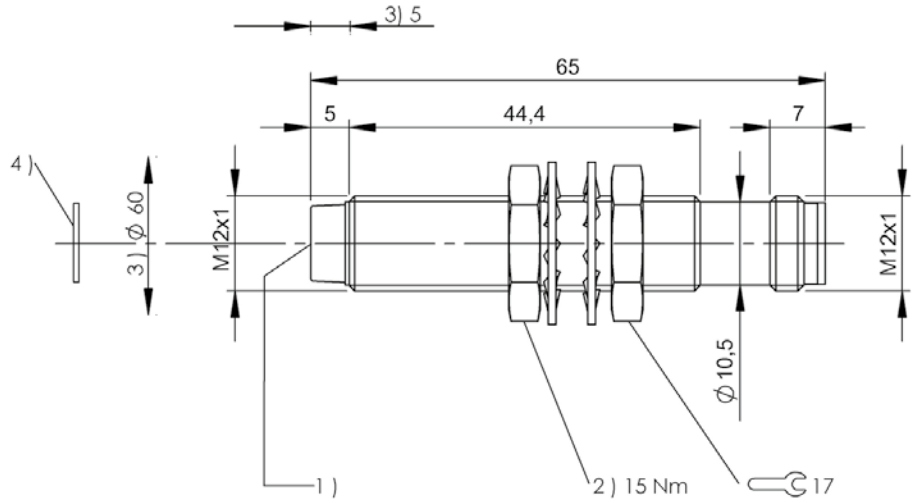
	BIS011W BIS011Y BIS011U		BIS017F			BIS011M BIS011Z BIS011N				BIS012J BIS012K BIS012L					BIS0112					BIS00NZ			
	>240	>240	>200	>200		>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>200	>200		>27	>27	>27	>27
	>480	>480	>200	>200		>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>200	>200		>27	>27	>27	>27
	>50	>50	>50	>50																			
						0-40	0-40			0-42	0-42				0-70	0-70							
								0-50	0-50			0-42	0-42				0-54	0-54					
0-60	0-60	0-25	0-25		0-40	0-40	0-50	0-50	0-42	0-42	0-42	0-42		0-70	0-70	0-54	0-54		0-57	0-57	0-27	0-27
0-60	0-60	0-25	0-25		0-40	0-40	0-50	0-50	0-42	0-42	0-42	0-42		0-70	0-70	0-54	0-54		0-57	0-57	0-27	0-27
X	Y	X	Y		X	Y	X	Y	X	Y	X	Y		X	Y	X	Y		X	Y	X	Y
±70	±30	±35	±21	0	±50	±24	±55	±28	±25	±50	±25	±50	0	±34	±80	±30	±60	0	±70	±35	±40	±20
±70	±30	±35	±21	5	±50	±24	±55	±28	±25	±50	±25	±50	5	±34	±80	±30	±60	5	±70	±35	±40	±20
±70	±30	±35	±21	12	±50	±24	±55	±28	±25	±50	±25	±50	10	±34	±80	±30	±60	10	±70	±35	±40	±20
±70	±30	±33	±19	15	±50	±24	±55	±28	±25	±45	±25	±45	15	±34	±80	±30	±60	15	±70	±35	±30	±18
±70	±30	±23	±13	18	±50	±24	±55	±28	±22	±45	±22	±45	20	±34	±80	±30	±60	20	±70	±35	±30	±18
±60	±30	±7	±5	20	±50	±24	±55	±28	±22	±45	±22	±45	25	±30	±75	±25	±52	25	±60	±30	±25	±15
±60	±30			22	±40	±22	±50	±25	±22	±45	±22	±45	30	±30	±75	±25	±52	27	±60	±30		±5
±60	±30			25	±40	±22	±50	±25	±22	±45	±22	±45	35	±30	±75	±25	±52	35	±60	±30		
±60	±30			30	±40	±22	±50	±25	±19	±36	±19	±36	40	±30	±75	±25	±52	40	±60	±30		
±50	±25			32	±40	±22	±40	±20	±19	±36	±19	±36	45	±27	±65	±20	±45	45	±50	±25		
±50	±25			35	±40	±22	±40	±20	±19	±36	±19	±36	50	±27	±65	±20	±45	50	±50	±25		
±15	±10			40	±20	±10	±40	±20	±10	±18	±10	±18	54	±27	±65	±12	±22	57	±30	±15		
				42			±40	±20	±10	±18	±10	±18	60	±27	±65			60				
				50			±20	±10					65	±20	±40			65				
				52									70	±20	±40			70				
				60									75					75				
				65									80									

For processor units BIS V-6...	**BIS013H** BIS VM-348-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 12 x 65 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0042		BIS004A		BIS0044		BIS00UC		
Data carrier distance to metal	>50	>0	>50	>0	>50		>50	>0	>0
Data carrier clear zone	>200	>0	>200	>0	>200		>200	>200	>0
Working distance for writing	0-7	0-5	0-7	0-5	0-12		0-5	0-3	0-2
Working distance for reading	0-7	0-5	0-7	0-5	0-12		0-5	0-3	0-2
Offset at distance									
0	±5	±3	±4.5	±3	±7		±4	±2.5	±2
1	±5	±3	±4.5	±3	±7		±4	±2.5	±1
2	±5	±3	±4.5	±3	±7		±4	±2	
3	±4.5	±2.5	±4	±2.5	±7		±3	±1	
4	±4.5	±2.5	±4	±2.5	±7		±3		
5	±4.5	±1	±4	±1	±6		±1.5		
6	±4.5		±4		±6				
7	±2.5		±2		±6				
8					±6				
10					±3				
12					±3				
18									

Dimensions in mm



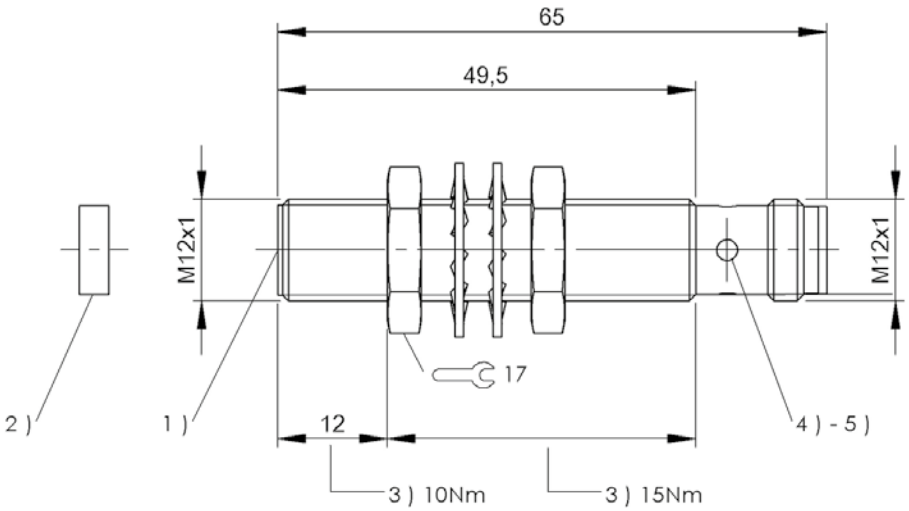
1) Sensing surface, 2) Tightening torque, 3) Clear zone, 4) Data carrier

For processor units BIS V-6...	**BIS015M** BIS VM-330-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 12 x 65 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Brass, nuts brass with white bronze
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0042			BIS00UC			BIS004A			BIS00YL			BIS00YK				BIS00NU BIS00NW BIS0100
Data carrier distance to metal	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0		>0
Data carrier clear zone	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0		>100
Working distance for writing	0-6.5	0-6	0-5	0-4.5	0-3	0-2	0-5.5	0-5	0-3.5	0-6	0-5.5	0-2	0-4.5	0-4	0-2		0-7
Working distance for reading	0-6.5	0-6	0-5	0-4.5	0-3	0-2	0-5.5	0-5	0-3.5	0-6	0-5.5	0-2	0-4.5	0-4	0-2		0-7
Offset at distance																	
0	±4	±3.5	±3.5	±2.5	±2.5	±2	±3	±3	±2.5	±3.5	±3.5	±2	±3.5	±3	±2	0	±4.5
1	±4	±3.5	±3.5	±2.5	±2.5	±2	±3	±3	±2.5	±3.5	±3.5	±2	±3.5	±3	±2	2	±4.5
2	±4	±3.5	±3.5	±2.5	±2	±1	±3	±3	±2.5	±3.5	±3.5	±1	±3.5	±3	±1	3	±4
3	±3	±3	±2.5	±2	±1		±2	±2	±2	±3	±3		±3	±2		4	±4
3.5	±3	±3	±2.5	±2			±2	±2	±1	±3	±3		±2	±1		5	±4
4	±3	±3	±2.5	±2			±2	±2		±3	±3		±2	±1		7	±1.5
4.5	±3	±3	±1.5	±1			±1	±1		±2	±2		±2			9	
5	±3	±3	±1.5				±1	±1		±2	±2					10	
5.5	±2	±2					±1			±2	±2					15	
6	±2	±2								±2						20	
6.5	±2															25	

Dimensions in mm



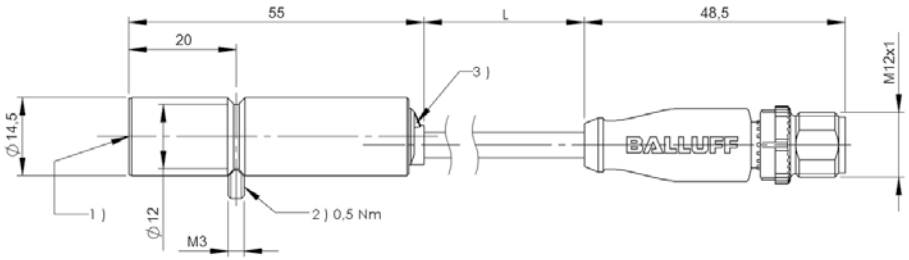
1) Sensing surface, 2) Data carrier, 3) Tightening torque, 4) LED (CP), 5) LED (Power)

For processor units BIS V-6...	**BIS013Z** BIS VM-343-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 14.5 x 55 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pole, 0.30 m, PU
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0042			**BIS00UC BIS00UE**		**BIS004A**			**BIS00YL**			**BIS00YK**		
Data carrier distance to metal	>50	>0	>0	>50		>50	>0	>0	>50	>0	>0	>50	>0	>0
Data carrier clear zone	>200	>200	>0	>200		>200	>200	>0	>200	>200	>0	>200	>200	>0
Working distance for writing	0-5.5	0-5	0-4	0-3.5		0-5	0-4.5	0-3.5	0-6.5	0-6	0-3	0-5	0-5	0-2.5
Working distance for reading	0-5.5	0-5	0-4	0-3.5		0-5	0-4.5	0-3.5	0-6.5	0-6	0-3	0-5	0-5	0-2.5
Offset at distance														
0	±3.5	±3	±2.5	±3		±3.5	±3	±2.5	±4	±3.5	±3	±3	±3	±2.5
1	±3.5	±3	±2.5	±3		±3.5	±3	±2.5	±4	±3.5	±3	±3	±3	±2.5
2	±3.5	±3	±2.5	±3		±3.5	±3	±2.5	±4	±3.5	±2	±3	±3	±2
2.5	±3	±2.5	±2	±2		±3	±2.5	±2	±3	±3	±1	±2.5	±2.5	±1
3	±3	±2.5	±2	±2		±3	±2.5	±1	±3	±3	±1	±2.5	±2.5	
3.5	±3	±2.5	±1	±1		±3	±2.5	±1	±3	±3		±2.5	±2.5	
4	±3	±2.5	±1			±3	±1.5		±3	±3		±2	±2	
4.5	±2	±1.5				±2	±1.5		±3	±3		±1	±1	
5	±2	±1.5				±2			±3	±3		±1	±1	
5.5	±2								±2	±2				
6									±2	±2				
6.5									±2					

Dimensions in mm

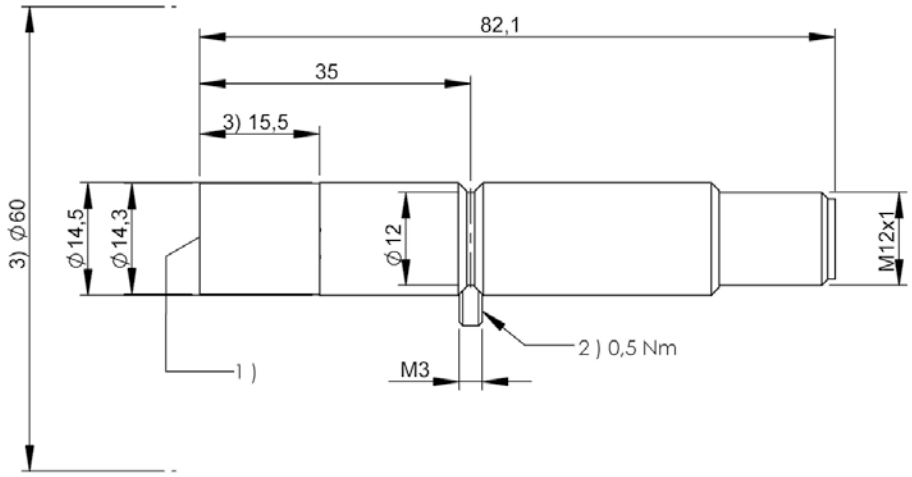


1) Sensing surface, 2) Tightening torque, 3) Function indicator

		BIS00LC		BIS0119		BIS00NU BIS00NW BIS0100	
		>25		>0		>0	
		>100		>100		>100	
		0-7		0-7.5		0-7.5	
		0-7		0-7.5		0-7.5	
	0	±4		±5		±5	
	2	±4		±5		±5	
	4	±3.5		±5		±4.5	
	5	±3.5		±4		±4	
	6	±2		±4		±4	
	7	±2		±2.5		±2	
	7.5			±2.5		±2	
	10						
	14						
	16						
	18						
	20						

For processor units BIS V-6...	**BIS019U** BIS VM-343-501/05-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 14.5 x 82.1 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory), LF 70/455 kHz
Connection	Male, 8-pin
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

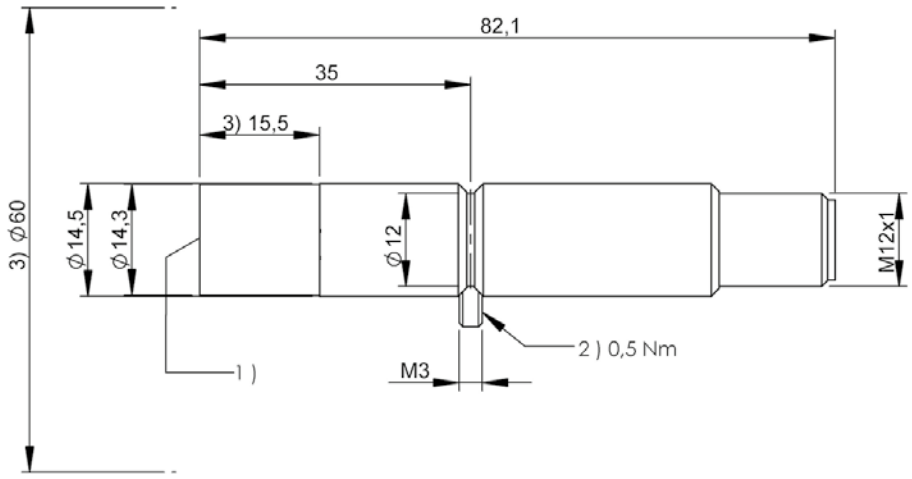
Appropriate data carriers on request



1) Sensing surface, 2) Tightening torque

For processor units BIS V-6...	**BIS019W** BIS VM-343-501/10-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 14.5 x 82.1 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory), LF 70/455 kHz
Connection	Male, 8-pin
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carriers on request



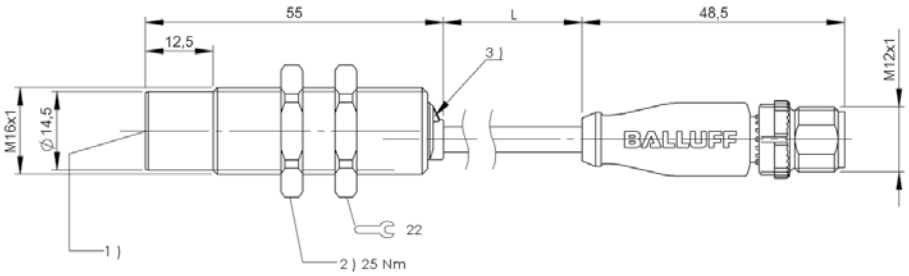
1) Sensing surface, 2) Tightening torque

For processor units BIS V-6...	**BIS0140** BIS VM-346-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 16 x 55 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	0.30 m, PU
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0042			BIS00UC BIS00UE		BIS004A			BIS00YL			BIS00YK			
Data carrier distance to metal	>50	>0	>0	>50		>50	>0	>0	>50	>0	>0	>50	>0	>0	
Data carrier clear zone	>200	>200	>0	>200		>200	>200	>0	>200	>200	>0	>200	>200	>0	
Working distance for writing	0-5.5	0-5	0-4	0-3.5		0-5	0-4.5	0-3.5	0-6.5	0-6	0-3	0-5	0-5	0-2.5	
Working distance for reading	0-5.5	0-5	0-4	0-3.5		0-5	0-4.5	0-3.5	0-6.5	0-6	0-3	0-5	0-5	0-2.5	
Offset at distance															
0	±3.5	±3	±2.5	±3		±3.5	±3	±2.5	±4	±3.5	±3	±3	±3	±2.5	
1	±3.5	±3	±2.5	±3		±3.5	±3	±2.5	±4	±3.5	±3	±3	±3	±2.5	
2	±3.5	±3	±2.5	±3		±3.5	±3	±2.5	±4	±3.5	±2	±3	±3	±2	
2.5	±3	±2.5	±2	±2		±3	±2.5	±2	±3	±3	±1	±2.5	±2.5	±1	
3	±3	±2.5	±2	±2		±3	±2.5	±1	±3	±3	±1	±2.5	±2.5		
3.5	±3	±2.5	±1	±1		±3	±2.5	±1	±3	±3		±2.5	±2.5		
4	±3	±2.5	±1			±3	±1.5		±3	±3		±2	±2		
4.5	±2	±1.5				±2	±1.5		±3	±3		±1	±1		
5	±2	±1.5				±2			±3	±3		±1	±1		
5.5	±2								±2	±2					
6									±2	±2					
6.5									±2						

Dimensions in mm

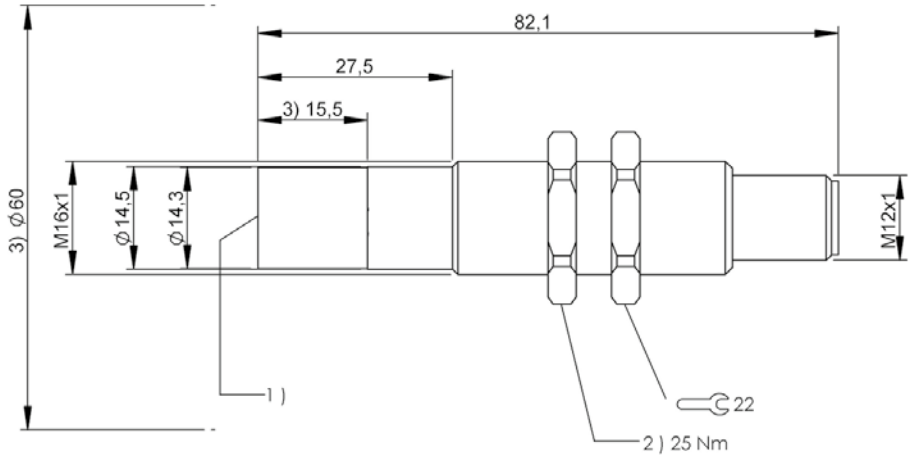


1) Sensing surface, 2) Tightening torque, 3) Function indicator

		BIS00LC		BIS0119		BIS00NU BIS00NW BIS0100	
		>25		>0		>0	
		>100		>100		>100	
		0-7		0-7.5		0-7.5	
		0-7		0-7.5		0-7.5	
	0	±4		±5		±5	
	2	±4		±5		±5	
	4	±3.5		±5		±4.5	
	5	±3.5		±4		±4	
	6	±2		±4		±4	
	7	±2		±2.5		±2	
	7.5			±2.5		±2	
	10						
	14						
	16						
	18						
	20						

For processor units BIS V-6...	**BIS019Y** BIS VM-346-501/05-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 16 x 82.1 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory), LF 70/455 kHz
Connection	Male, 8-pin
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

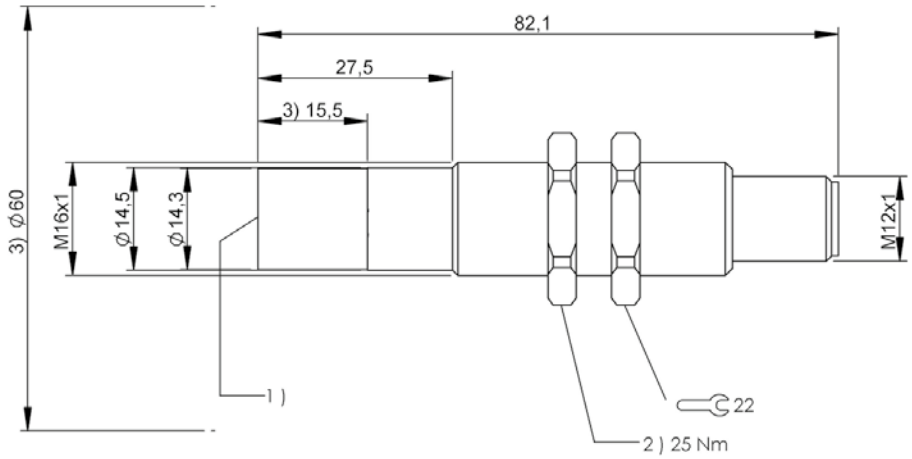
Appropriate data carriers on request



1) Sensing surface, 2) Tightening torque

For processor units BIS V-6...	**BIS019Z** BIS VM-346-501/10-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 16 x 82.1 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory), LF 70/455 kHz
Connection	Male, 8-pin
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carriers on request



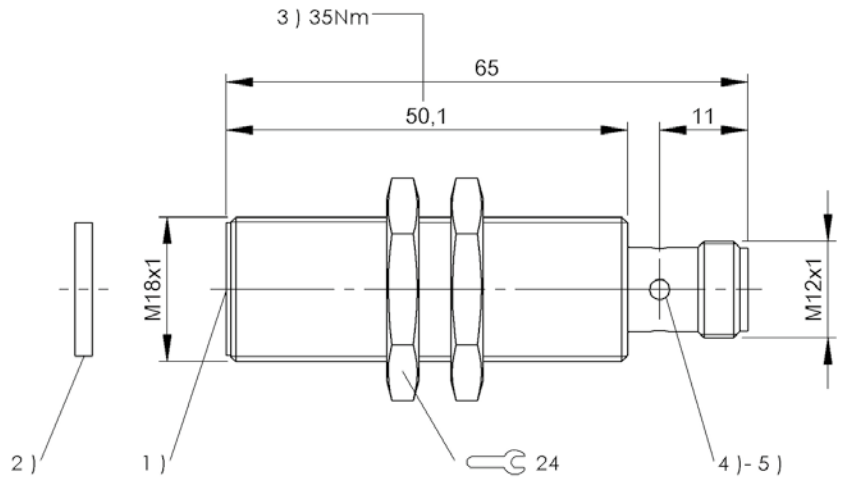
1) Sensing surface, 2) Tightening torque

For processor units BIS V-6...	**BIS015P** BIS VM-332-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 65 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Brass, nuts brass with white bronze
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0042			**BIS0043**			**BIS011F** **BIS011E** **BIS011A** **BIS0139**			**BIS004A**			**BIS0143**	
Data carrier distance to metal	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	
Data carrier clear zone	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	
Working distance for writing	0-8.5	0-8	0-6	0-11	0-8	0-6	0-6.5	0-6	0-5	0-7	0-6.5	0-4.5	0-13	
Working distance for reading	0-8.5	0-8	0-6	0-11	0-8	0-6	0-6.5	0-6	0-5	0-7	0-6.5	0-4.5	0-13	
Offset at distance														
0	±5	±5	±4	±8	±8	±7	±8	±8	±7	±4.5	±4	±3.5	±8	
2	±5	±5	±4	±8	±8	±7	±8	±8	±7	±4.5	±4	±3.5	±8	
4	±4.5	±4	±3	±8	±7	±6	±7	±7	±6	±4	±3	±2.5	±8	
4.5	±4.5	±4	±3	±8	±7	±4	±7	±6	±3	±3.5	±3	±1.5	±8	
5	±4.5	±4	±3	±8	±7	±4	±7	±6	±3	±3.5	±3		±8	
6	±4	±3	±2	±7	±5	±1	±4	±3		±3.5	±2		±7	
6.5	±4	±3		±7	±5		±4			±2	±2		±7	
7	±4	±3		±7	±5					±2			±7	
8	±2	±2		±7	±4								±7	
8.5	±2			±7									±7	
10				±7									±7	
11				±4									±4	
13													±4	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Tightening torque, 4) LED (CP), 5) LED (Power)

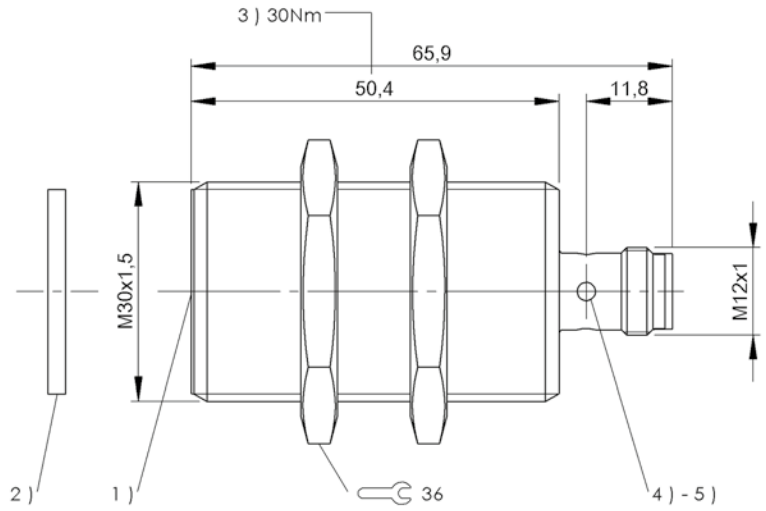
		BIS0044		BIS00NU BIS00NW BIS0100	
		>25		>0	
		>100		>100	
		0-10		0-9.5	
		0-10		0-9.5	
	0	±6		±5	
	2	±6		±5	
	4	±6		±5	
	5	±6		±5	
	6	±5		±4	
	7	±5		±4	
	8	±5		±4	
	9.5	±3		±2	
	10	±3			
	12				
	15				
	20				
	25				

For processor units BIS V-6...	**BIS015K** BIS VM-333-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 65.9 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Brass, nuts brass with white bronze
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0042	BIS0043 BIS0111			BIS004A	BIS0143		BIS0044	BIS0045	
Data carrier distance to metal	>20	>25	>0	>0	>20	>20		>25	>25	
Data carrier clear zone	>100	>100	>100	>0	>100	>100		>100	>100	
Working distance for writing	0-13	0-21	0-15	0-13	0-10	0-21		0-18	0-21	
Working distance for reading	0-13	0-21	0-15	0-13	0-10	0-21		0-18	0-21	
Offset at distance										
0	±8	±13	±10	±10	±7	±12	0	±9	±13	
5	±8	±13	±10	±10	±7	±12	5	±9	±13	
8	±8	±13	±10	±9	±6	±12	10	±9	±13	
10	±7	±13	±8	±8	±4	±12	13	±8	±12	
13	±4	±12	±8	±3		±11	15	±8	±12	
15		±12	±3			±11	16	±4	±11	
18		±11				±10	18	±4	±11	
20		±5				±5	20		±5	
21		±5				±5	21		±5	
25							25			
30							30			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Tightening torque, 4) LED (CP), 5) LED (Power)

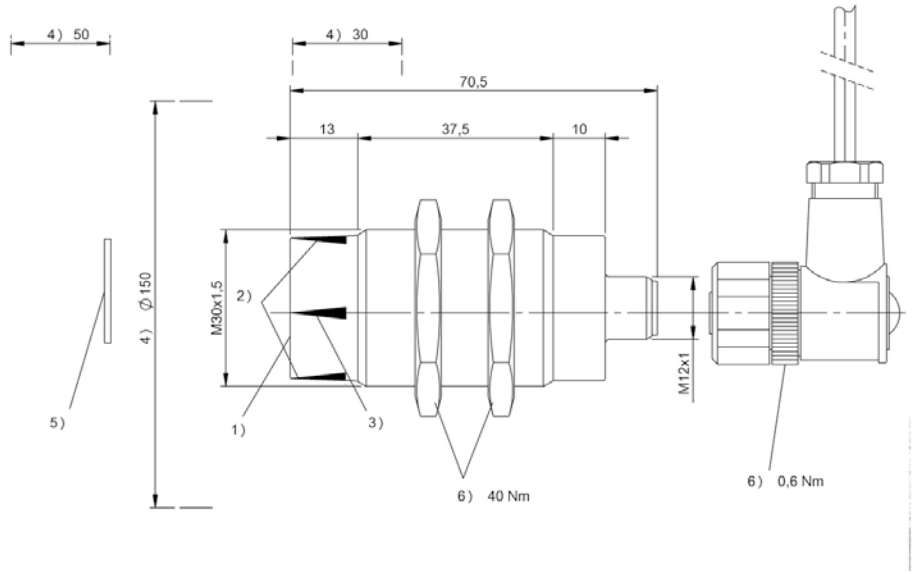
	BIS0046	BIS00NU BIS00NW BIS0100		BIS011A	
	>50	>0		>20	
	>150	>100		>100	
	0-30	0-13		0-15	
	0-30	0-13		0-15	
	±20	±9	0	±11	
	±20	±9	5	±11	
	±20	±7	10	±10	
	±18	±3	12	±8	
	±18		13	±8	
	±18		15	±4	
	±18		18		
	±18		20		
	±16		21		
	±16		25		
	±8		30		

For processor units BIS V-6...	**BIS00RF** BIS VM-300-001-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 70.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 4-pin
Housing material	Brass, nuts brass with white bronze
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0043			BIS0044		
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0		>25	>10	>5
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0		>100	>60	>50
Working distance for writing	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16		0-22	0-16	0-10
Working distance for reading	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16		0-22	0-16	0-10
Offset at distance																
0	±15	±12	±8	±20	±15	±6	±7	±6	±10	±7	±18	±10	0	±14	±8	±7
5	±15	±12	±8	±20	±15	±6	±7	±6	±8	±7	±18	±10	5	±14	±8	±7
9	±15	±10	±6	±20	±15	±5	±2	±1	±5	±3	±18	±8	8	±12	±6	±2
12	±15	±8	±4	±20	±15	±4					±16	±6	10	±12	±6	±2
15	±15	±8	±4	±20	±12						±16	±6	12	±12	±5	
16	±12	±6		±20	±10						±16	±4	15	±12	±4	
18	±12	±6		±20	±8						±16		16	±10	±2	
20	±12	±4		±20	±6						±16		18	±10		
22	±4			±18	±4						±14		20	±10		
25				±14							±14		22	±6		
30				±10							±10		25			
32				±4									30			
35													32			
40													35			
43													40			
45													42			
50													44			

Dimensions in mm



1) Sensing surface, 2) LED (CP), 3) LED (Power), 4) Clear zone, 5) Data carrier, 6) Tightening torque

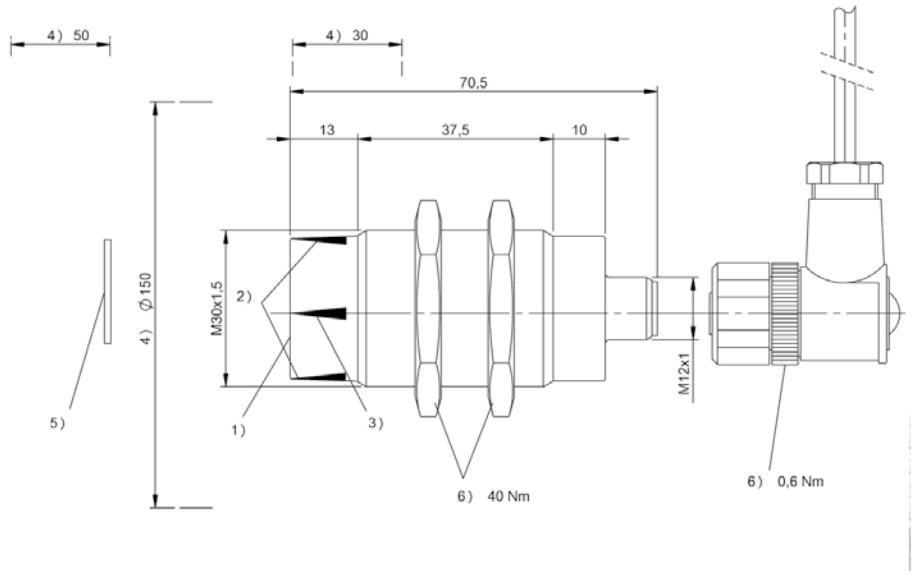
BIS0045			BIS0046			BIS00YE		BIS00Y4		BIS00LC		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
>25	>10	>5	>50	>15	>10	>25	>0	>50		>25	>0	>0		>0	
>100	>60	>50	>150	>90	>70	>100	>100	>150		>100	>100	>100		>100	
0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42		0-27	0-13	0-22		0-13	
0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42		0-27	0-13	0-22		0-13	
±16	±10	±7	±25	±18	±15	±18	±8	±30	0	±16	±10	±13		±10	
±16	±10	±7	±25	±18	±15	±18	±6	±30	5	±16	±10	±13		±10	
±14	±8	±2	±25	±16	±12	±18	±3	±30	10	±16	±7	±13		±9	
±14	±8	±2	±25	±16	±12	±18		±30	13	±14	±5	±11		±5	
±14	±7		±24	±15	±10	±16		±28	15	±14		±11			
±14	±6		±24	±14	±8	±16		±28	18	±14		±11			
±14	±3		±24	±12		±16		±28	20	±14		±7			
±14	±2		±24	±12		±16		±28	22	±12		±7			
±14			±24	±10		±16		±28	25	±12					
±12			±22	±8		±16		±24	27	±5					
±12			±22	±6		±16		±24	30						
			±22			±10		±24	32						
			±16					±24	35						
			±16					±24	40						
			±16					±5	43						
			±10					±5	45						
			±5						50						

For processor units BIS V-6...	**BIS0132** BIS VM-344-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 70.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Brass, nuts nickel plated brass, nuts brass with white bronze
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0042		BIS00LC		BIS0043 BIS0111		BIS011F BIS011E BIS011A BIS0139			BIS0044			BIS0045		
Data carrier distance to metal	>20	>5	>25	>0	>25	>0	>25	>0		>25	>10	>5	>25	>10	>5
Data carrier clear zone	>100	>100	>100	>100	>100	>0	>100	>100		>100	>60	>50	>100	>60	>50
Working distance for writing	0-11	0-11	0-27	0-13	0-30	0-16	0-18	0-15		0-22	0-16	0-10	0-28	0-18	0-10
Working distance for reading	0-11	0-11	0-27	0-13	0-30	0-16	0-18	0-15		0-22	0-16	0-10	0-28	0-18	0-10
Offset at distance															
0	±10	±7	±16	±10	±18	±10	±12	±11	0	±14	±8	±7	±16	±10	±7
5	±8	±7	±16	±10	±18	±10	±12	±11	5	±14	±8	±7	±16	±10	±7
9	±5	±3	±16	±7	±18	±8	±11	±10	8	±12	±6	±2	±14	±8	±2
13			±14	±5	±16	±6	±10	±9	10	±12	±6	±2	±14	±8	±2
15			±14		±16	±6	±10	±5	12	±12	±5		±14	±7	
16			±14		±16	±4	±5		15	±12	±4		±14	±6	
18			±14		±16		±5		16	±10	±2		±14	±3	
20			±14		±16				18	±10			±14	±2	
22			±12		±14				20	±10			±14		
25			±12		±14				22	±6			±12		
27			±5		±10				25				±12		
32									30						
35									32						
40									35						
43									40						
45									42						
50									44						

Dimensions in mm



1) Sensing surface, 2) LED (CP), 3) LED (Power), 4) Clear zone, 5) Data carrier, 6) Tightening torque

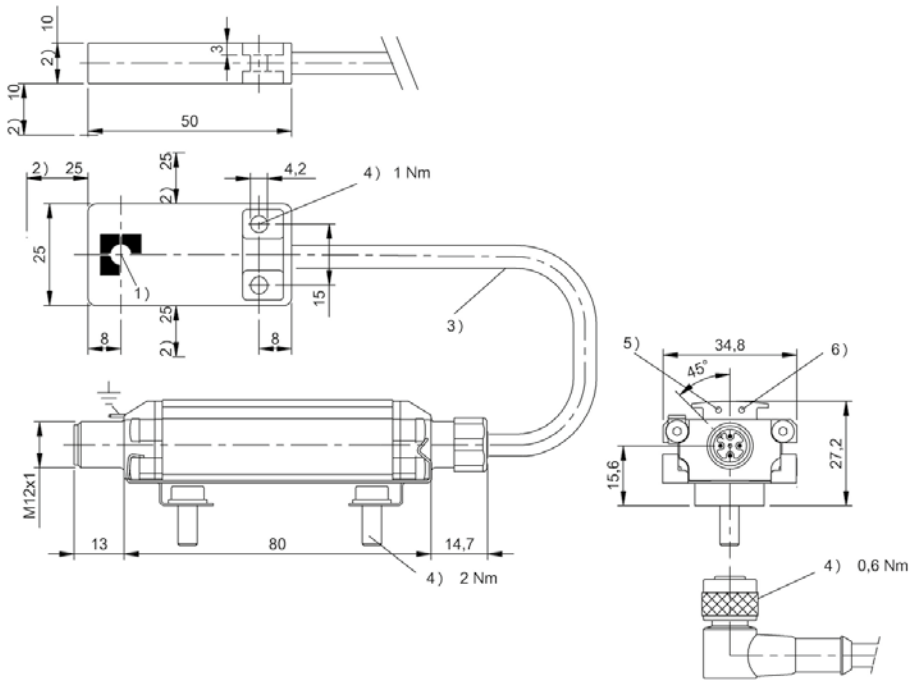
	BIS0046			BIS00YE		BIS00Y4			BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
	>50	>15	>10	>25	>0	>50			>0		>0	
	>150	>90	>70	>100	>100	>150			>100		>100	
	0-44	0-25	0-15	0-30	0-8	0-42			0-22		0-13	
	0-44	0-25	0-15	0-30	0-8	0-42			0-22		0-13	
	±25	±18	±15	±18	±8	±30		0	±13		±10	
	±25	±18	±15	±18	±6	±30		5	±13		±10	
	±25	±16	±12	±18	±3	±30		10	±13		±9	
	±25	±16	±12	±18		±30		12	±11		±5	
	±24	±15	±10	±16		±28		13	±11		±5	
	±24	±14	±8	±16		±28		15	±11			
	±24	±12		±16		±28		18	±11			
	±24	±12		±16		±28		20	±7			
	±24	±10		±16		±28		22	±7			
	±22	±8		±16		±24		28				
	±22	±6		±16		±24		30				
	±22			±10		±24		32				
	±16					±24		35				
	±16					±24		40				
	±16					±5		43				
	±10					±5		45				
	±5							50				

For processor units BIS V-6...	**BIS00T9** BIS VM-305-001-S4
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, 4-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A			BIS0043		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>25	>0	>0		>0	
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>100	>0	>100		>100	
Working distance for writing	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-17	0-11	0-17		0-12	
Working distance for reading	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-17	0-11	0-17		0-12	
Offset at distance																	
0	±3	±3	±4	±4	±6		±3	±3	±4	±3	0	±12	±8	±10		±7	
5	±2		±4	±2	±6		±2		±3	±2	5	±12	±8	±10		±7	
9					±4						8	±12	±6	±10		±6	
12					±2						10	±12	±6	±9		±6	
15											11	±8	±4	±9		±3	
16											12	±8		±9		±3	
18											15	±8		±4			
20											17	±4		±4			

Dimensions in mm



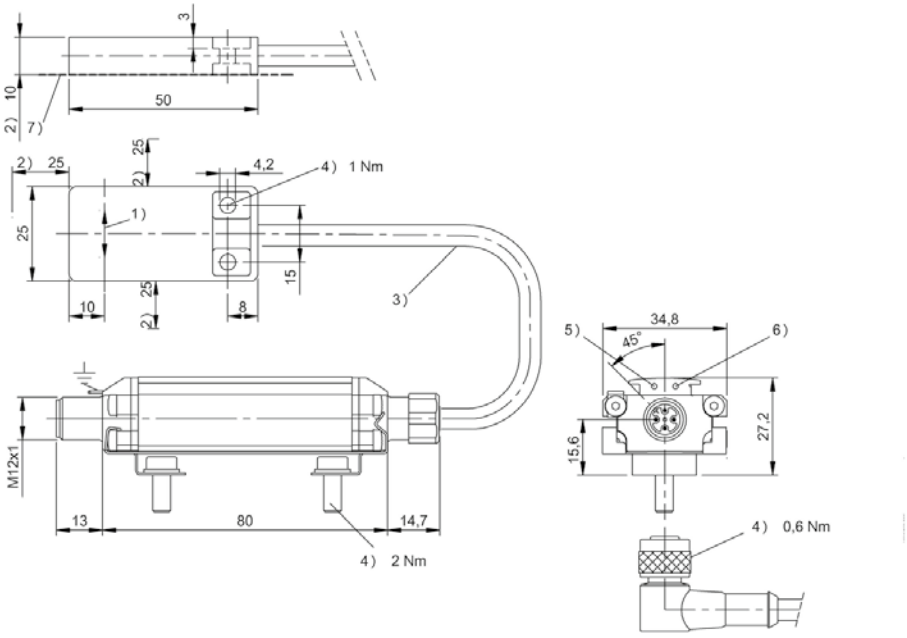
1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) Tightening torque, 5) LED (Power), 6) LED (CP)

For processor units BIS V-6...	**BIS00T6** BIS VM-352-001-S4
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 15693
Connection	Connector, 4-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00NZ			BIS017F	
Data carrier clear zone A	>27	>27		>200	>200
Data carrier clear zone B	>27	>27		>200	>200
Data carrier clear zone C				>50	>50
Metallic mounting surface 40 × 22 mm					
Metallic mounting surface > 200 × 200 mm					
Working distance for writing	0-22	0-22		0-17	0-17
Working distance for reading	0-22	0-22		0-17	0-17
Offset at distance	X	Y		X	Y
0	±25	±5	0	±22	±9
5	±25	±5	5	±22	±9
10	±25	±5	10	±19	±8
15	±25	±5	15	±12	±6
20	±15	±5	17	±3	±2
22	±15	±5	20		

Dimensions in mm



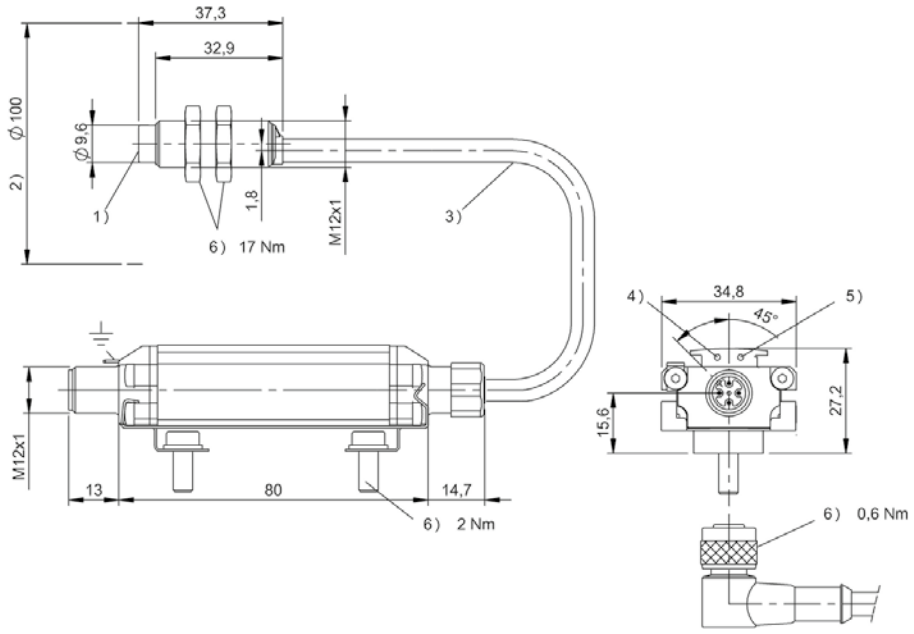
1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) Tightening torque, 5) LED (Power), 6) LED (CP), 7) Mounting on steel

For processor units BIS V-6...	**BIS00T7** BIS VM-306-001-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 12 x 37.3 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 4-pin, 0.50 m, PU
Housing material	Brass, Interface aluminum, nickel plate
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

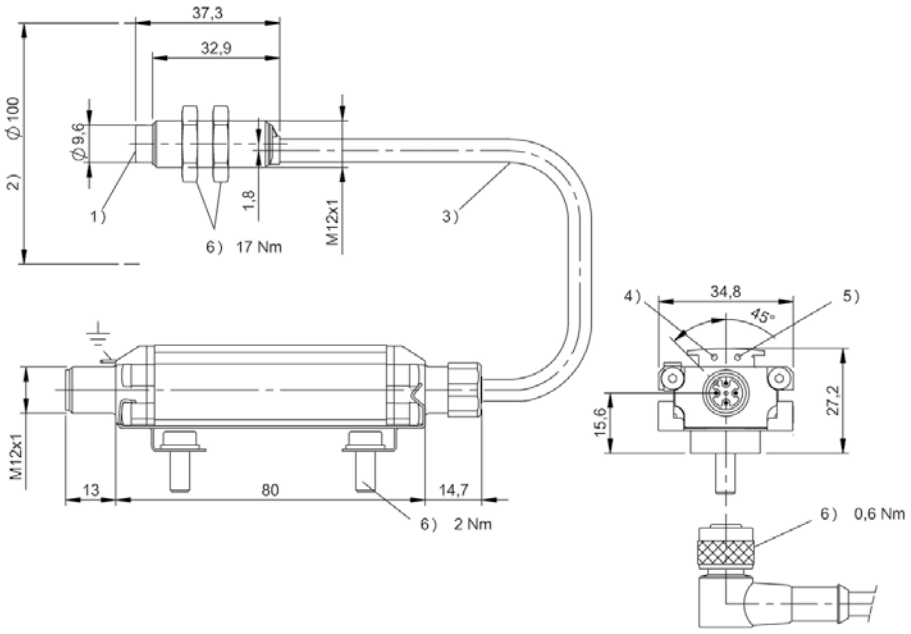
	BIS0040	BIS0042	BIS0048	BIS004A
Data carrier distance to metal	>10	>10	>10	>10
Data carrier clear zone	>60	>60	>60	>60
Working distance for writing	0-5	0-6	0-4	0-5
Working distance for reading	0-5	0-6	0-4	0-5
Offset at distance				
0	±2	±2	±2	±2
2	±2	±2	±2	±2
4	±1	±1	±1	±1
5	±1	±1		±1
6		±1		

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED (Power), 5) LED (CP), 6) Tightening torque

For processor units BIS V-6...	**BIS01CU** BIS VM-309-001-S4
Product Group	HF (13.56 MHz)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Protection degree	IP67
Approval/Conformity	CE, cULus, EAC, WEEE



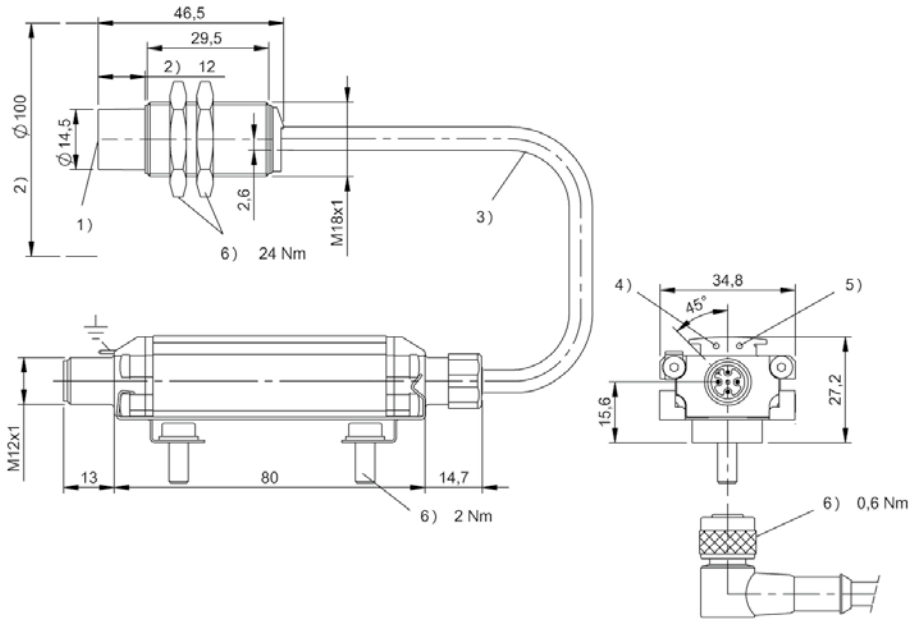
1) Active area, 2) Free zone, 3) Cable length see text, 4) LED (Power), 5) LED (CP), 6) Tightening torque

For processor units BIS V-6...	**BIS00T8** BIS VM-307-001-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 12 x 37.3 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, 4-pin, 0.50 m, PU
Housing material	Brass, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A			BIS00YK		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>10	>0	>0		>0	
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>60	>60	>100		>100	
Working distance for writing	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-10	0-8	0-16		0-12	
Working distance for reading	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-10	0-8	0-16		0-12	
Offset at distance																	
0	±3	±3	±4	±4	±6		±3	±3	±4	±3	0	±7	±5	±9		±7	
5	±2		±4	±2	±6		±2		±3	±2	5	±7	±5	±9		±7	
9					±4						7	±6	±4	±9		±6	
12					±2						8	±6	±2	±9		±6	
15											10	±3		±8		±6	
16											12			±8		±3	
18											14			±8			
20											16			±3			

Dimensions in mm



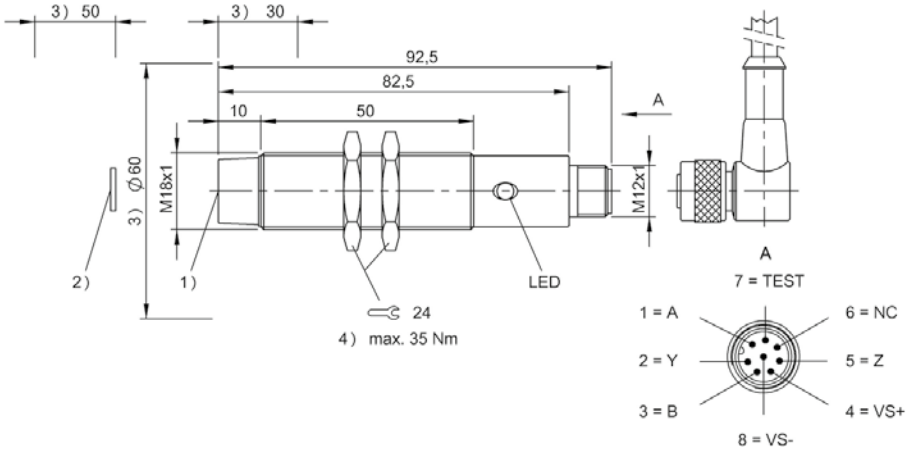
1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED (Power), 5) LED (CP), 6) Tightening torque

For processor units BIS M-60...	**BIS0057** BIS M-302-001-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 92.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043	
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0
Working distance for writing	0-16	0-15	0-10	0-20	0-18	0-10	0-7	0-5	0-9	0-6	0-7	0-5	0-9	0-6	0-20	0-12
Working distance for reading	0-16	0-15	0-10	0-20	0-18	0-10	0-7	0-5	0-9	0-6	0-7	0-5	0-9	0-6	0-20	0-12
Offset at distance																
0	±10	±8	±4	±18	±14	±8	±5	±4	±5	±5	±4	±3	±4	±3	±14	±10
5	±10	±8	±4	±18	±14	±6	±4	±3	±5	±3.5	±3	±2	±3	±2	±12	±8
9	±10	±7	±2	±16	±12	±4			±3.5						±12	±6
12	±8	±6		±14	±8										±10	±4
15	±7	±4		±12	±6										±10	
16	±4			±10	±4										±7	
18				±8	±4										±7	
20				±4											±5	
22																
25																
30																

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

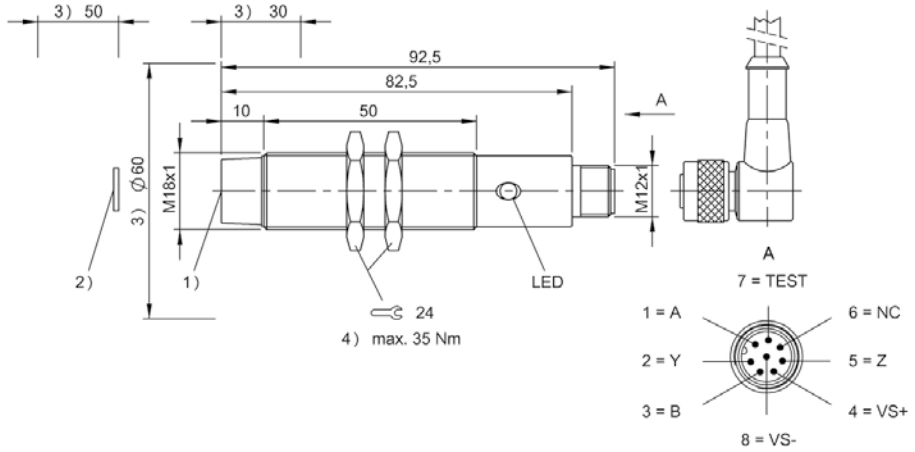
	BIS0044			BIS0045			BIS0046				BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS00UC BIS00UE		BIS019C		BIS019E	
	>25	>10	>5	>25	>10	>5	>50	>25	>20		>0		>0		>10		>0	>0	>0	>0
	>80	>50	>50	>80	>50	>50	>150	>90	>70		>100		>100		>60		>100	>0	>100	>0
	0-16	0-12	0-8	0-20	0-12	0-5	0-30	0-22	0-12		0-17		0-13		0-7		0-8	0-7	0-12	0-11
	0-16	0-12	0-8	0-20	0-12	0-5	0-30	0-22	0-12		0-17		0-13		0-7		0-8	0-7	0-12	0-11
	±8	±6	±4	±12	±8	±7	±20	±16	±14	0	±10		±8		±4		±6	±4.5	±7	±6
	±8	±6	±4	±12	±8	±4	±20	±16	±14	5	±10		±8		±4		±6	±4.5	±7	±6
	±6	±5		±10	±6		±18	±16	±10	7	±10		±7		±4		±5.5	±4	±7	±6
	±4	±3		±10	±4		±18	±14	±6	8	±10		±7				±3	±2	±6.5	±5.5
	±4			±10			±18	±14		10	±9		±7				±3		±6.5	±5.5
	±3			±5			±16	±12		13	±9		±4						±6.5	±5.5
				±5			±16	±12		14	±9								±6.5	±3
				±5			±16	±12		17	±4								±3	±3
							±12	±8		22									±3	
							±12			25										
							±8			30										

For processor unit BIS00EP	**BIS0059** BIS M-302-003-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 92.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043	
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0
Working distance for writing	0-16	0-15	0-10	0-20	0-18	0-10	0-7	0-5	0-9	0-6	0-7	0-5	0-9	0-6	0-20	0-12
Working distance for reading	0-16	0-15	0-10	0-20	0-18	0-10	0-7	0-5	0-9	0-6	0-7	0-5	0-9	0-6	0-20	0-12
Offset at distance																
0	±10	±8	±4	±18	±14	±8	±5	±4	±5	±5	±4	±3	±4	±3	±14	±10
5	±10	±8	±4	±18	±14	±6	±4	±3	±5	±3.5	±3	±2	±3	±2	±12	±8
9	±10	±7	±2	±16	±12	±4			±3.5						±12	±6
12	±8	±6		±14	±8										±10	±4
15	±7	±4		±12	±6										±10	
16	±4			±10	±4										±7	
18				±8	±4										±7	
20				±4											±5	
22																
25																
30																

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

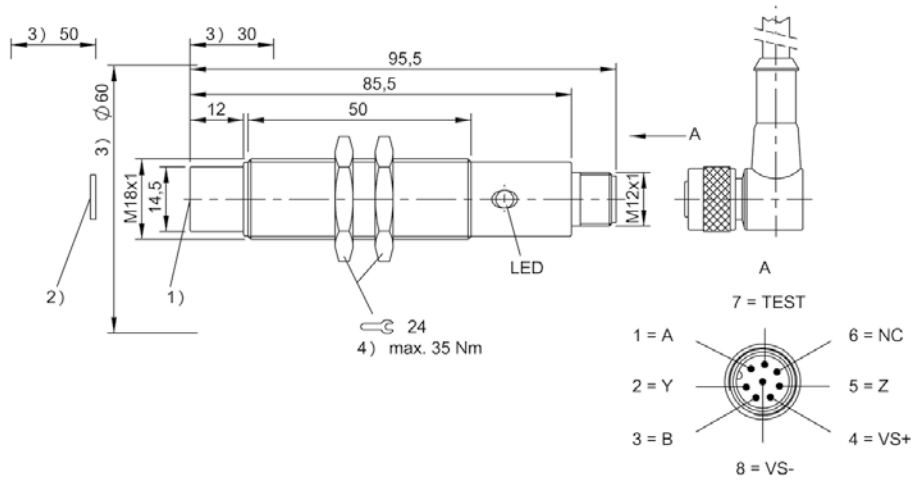
BIS0044			BIS0045			BIS0046				BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS00UC BIS00UE		BIS019C		BIS019E	
>25	>10	>5	>25	>10	>5	>50	>25	>20		>0		>0		>10		>0	>0	>0	>0
>80	>50	>50	>80	>50	>50	>150	>90	>70		>100		>100		>60		>100	>0	>100	>0
0-16	0-12	0-8	0-20	0-12	0-5	0-30	0-22	0-12		0-17		0-13		0-7		0-8	0-7	0-12	0-11
0-16	0-12	0-8	0-20	0-12	0-5	0-30	0-22	0-12		0-17		0-13		0-7		0-8	0-7	0-12	0-11
±8	±6	±4	±12	±8	±7	±20	±16	±14	0	±10		±8		±4		±6	±4.5	±7	±6
±8	±6	±4	±12	±8	±4	±20	±16	±14	5	±10		±8		±4		±6	±4.5	±7	±6
±6	±5		±10	±6		±18	±16	±10	7	±10		±7		±4		±5.5	±4	±7	±6
±4	±3		±10	±4		±18	±14	±6	8	±10		±7				±3	±2	±6.5	±5.5
±4			±10			±18	±14		10	±9		±7				±3		±6.5	±5.5
±3			±5			±16	±12		13	±9		±4						±6.5	±5.5
			±5			±16	±12		14	±9								±6.5	±3
			±5			±16	±12		17	±4								±3	±3
						±12	±8		22									±3	
						±12			25										
						±8			30										

For processor units BIS M-60...	**BIS005A** BIS M-304-001-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 95.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043	
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0
Working distance for writing	0-14	0-10	0-8	0-18	0-15	0-10	0-5	0-5	0-7	0-6	0-5	0-4	0-7	0-5	0-18	0-10
Working distance for reading	0-14	0-10	0-8	0-18	0-15	0-10	0-5	0-5	0-7	0-6	0-5	0-4	0-7	0-5	0-18	0-10
Offset at distance																
0	±10	±8	±4	±18	±14	±8	±5	±4	±5	±5	±4	±2	±4	±3	±14	±10
5	±10	±8	±4	±18	±14	±6	±4	±3	±5	±3.5	±3		±3	±2	±12	±8
9	±10	±7		±16	±12	±4			±3						±12	±6
12	±8			±14	±8										±10	
15				±12	±6										±10	
16				±10											±7	
18				±8											±5	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

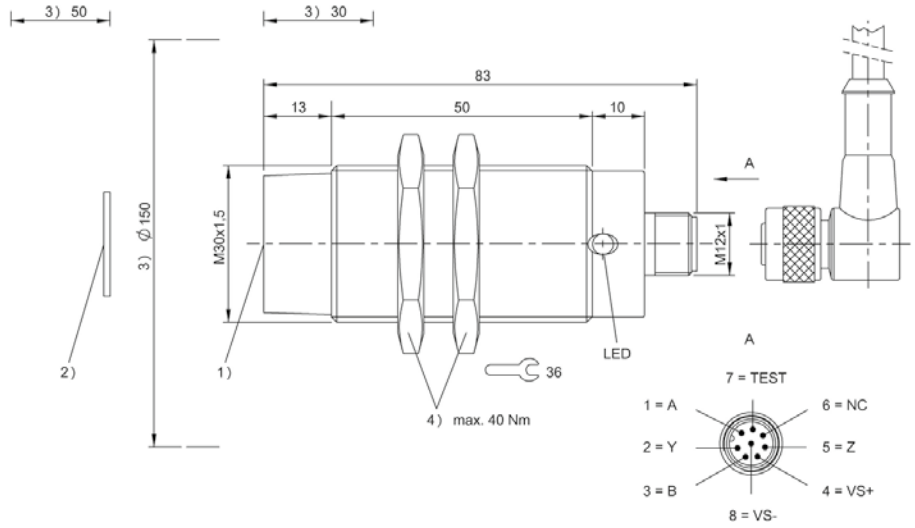
BIS0044				BIS019C		BIS019E	
>25	>10	>5		>0	>0	>0	>0
>80	>50	>50		>100	>0	>100	>0
0-14	0-10	0-8		0-7	0-6.5	0-10	0-10
0-14	0-10	0-8		0-7	0-6.5	0-10	0-10
±8	±6	±4	0	±5	±5	±6.5	±6.5
±8	±6	±4	2	±5	±5	±6.5	±6.5
±6	±5		5	±4	±4	±6.5	±6.5
±4			6	±2	±2	±6	±6
			7	±2		±6	±6
			8			±6	±6
			10			±2	±2

For processor units BIS M-60...	**BIS0053** BIS M-300-001-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 83 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0043			BIS0044		
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0		>25	>10	>5
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0		>100	>60	>50
Working distance for writing	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16		0-22	0-16	0-10
Working distance for reading	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16		0-22	0-16	0-10
Offset at distance																
0	±15	±12	±8	±20	±15	±6	±7	±6	±10	±7	±18	±10	0	±14	±8	±7
5	±15	±12	±8	±20	±15	±6	±7	±6	±8	±7	±18	±10	5	±14	±8	±7
9	±15	±10	±6	±20	±15	±5	±2	±1	±5	±3	±18	±8	8	±12	±6	±2
12	±15	±8	±4	±20	±15	±4					±16	±6	10	±12	±6	±2
15	±15	±8	±4	±20	±12						±16	±6	12	±12	±5	
16	±12	±6		±20	±10						±16	±4	15	±12	±4	
18	±12	±6		±20	±8						±16		16	±10	±2	
20	±12	±4		±20	±6						±16		18	±10		
22	±4			±18	±4						±14		20	±10		
25				±14							±14		22	±6		
30				±10							±10		25			
32				±4									30			
													32			
													35			
													40			
													42			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

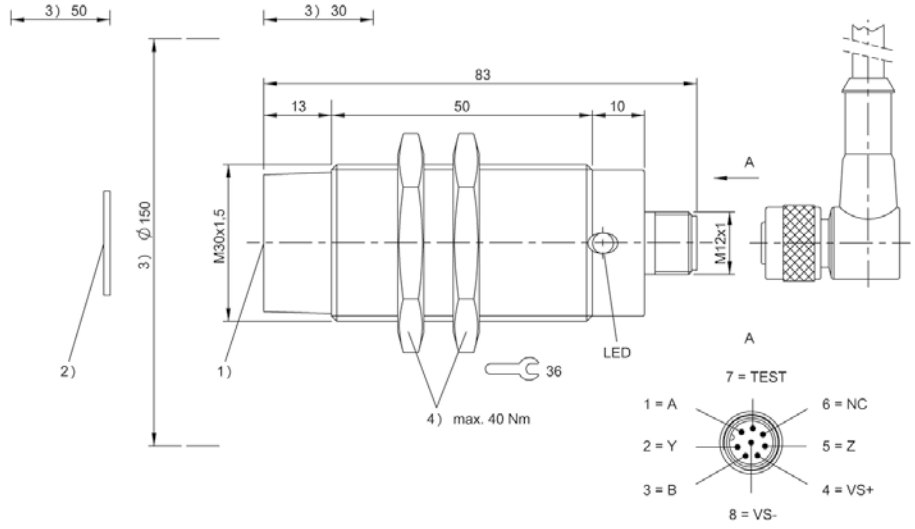
	BIS0045			BIS0046			BIS00YE		BIS00Y4		BIS00LC		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
	>25	>10	>5	>50	>15	>10	>25	>0	>50			>25	>0	>0		>0	>0
	>100	>60	>50	>150	>90	>70	>100	>100	>150			>100	>100	>100		>100	>100
	0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42			0-27	0-13	0-22		0-22	0-13
	0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42			0-27	0-13	0-22		0-22	0-13
	±16	±10	±7	±25	±18	±15	±18	±8	±30		0	±16	±10	±13		±13	±10
	±16	±10	±7	±25	±18	±15	±18	±6	±30		5	±16	±10	±13		±13	±10
	±14	±8	±2	±25	±16	±12	±18	±3	±30		10	±16	±7	±13		±13	±9
	±14	±8	±2	±25	±16	±12	±18		±30		13	±14	±5	±11		±11	±5
	±14	±7		±24	±15	±10	±16		±28		15	±14		±11		±11	
	±14	±6		±24	±14	±8	±16		±28		18	±14		±11		±11	
	±14	±3		±24	±12		±16		±28		20	±14		±7		±7	
	±14	±2		±24	±12		±16		±28		22	±12		±7		±7	
	±14			±24	±10		±16		±28		25	±12					
	±12			±22	±8		±16		±24		27	±5					
	±12			±22	±6		±16		±24								
				±22			±10		±24								
				±16					±24								
				±16					±24								
				±16					±5								
				±10					±5								

For processor unit BIS00EP	**BIS0054** BIS M-300-003-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 83 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0043			BIS0044			
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0		>25	>10	>5	
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0		>100	>60	>50	
Working distance for writing	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16		0-22	0-16	0-10	
Working distance for reading	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16		0-22	0-16	0-10	
Offset at distance																	
0	±15	±12	±8	±20	±15	±6	±7	±6	±10	±7	±18	±10	0	±14	±8	±7	
5	±15	±12	±8	±20	±15	±6	±7	±6	±8	±7	±18	±10	5	±14	±8	±7	
9	±15	±10	±6	±20	±15	±5	±2	±1	±5	±3	±18	±8	8	±12	±6	±2	
12	±15	±8	±4	±20	±15	±4					±16	±6	10	±12	±6	±2	
15	±15	±8	±4	±20	±12						±16	±6	12	±12	±5		
16	±12	±6		±20	±10						±16	±4	15	±12	±4		
18	±12	±6		±20	±8						±16		16	±10	±2		
20	±12	±4		±20	±6						±16		18	±10			
22	±4			±18	±4						±14		20	±10			
25				±14							±14		22	±6			
30				±10							±10		25				
32				±4									30				

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

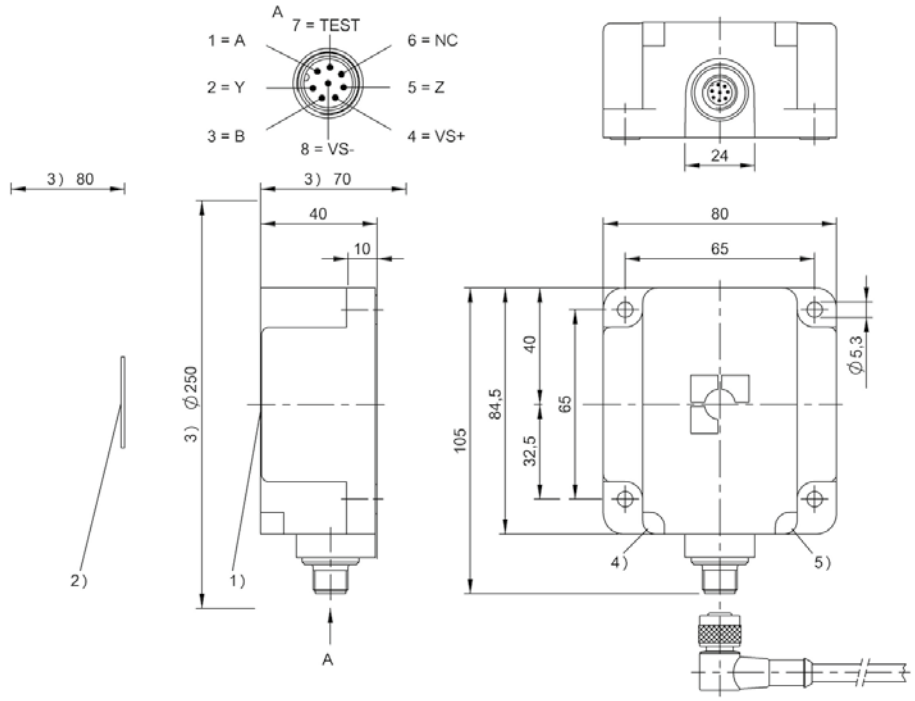
	BIS0045			BIS0046			BIS00YE		BIS00Y4		BIS00LC		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
	>25	>10	>5	>50	>15	>10	>25	>0	>50		>25	>0	>0		>0	>0
	>100	>60	>50	>150	>90	>70	>100	>100	>150		>100	>100	>100		>100	>100
	0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42		0-27	0-13	0-22		0-22	0-13
	0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42		0-27	0-13	0-22		0-22	0-13
	±16	±10	±7	±25	±18	±15	±18	±8	±30	0	±16	±10	±13		±13	±10
	±16	±10	±7	±25	±18	±15	±18	±6	±30	5	±16	±10	±13		±13	±10
	±14	±8	±2	±25	±16	±12	±18	±3	±30	10	±16	±7	±13		±13	±9
	±14	±8	±2	±25	±16	±12	±18		±30	13	±14	±5	±11		±11	±5
	±14	±7		±24	±15	±10	±16		±28	15	±14		±11		±11	
	±14	±6		±24	±14	±8	±16		±28	18	±14		±11		±11	
	±14	±3		±24	±12		±16		±28	20	±14		±7		±7	
	±14	±2		±24	±12		±16		±28	22	±12		±7		±7	
	±14			±24	±10		±16		±28	25	±12					
	±12			±22	±8		±16		±24	27	±5					
	±12			±22	±6		±16		±24							
				±22			±10		±24							

For processor units BIS M-60...	**BIS0055** BIS M-301-001-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0043 BIS0111		BIS0044		BIS0045		BIS0046		BIS0047		BIS00L8	
Data carrier distance to metal	>50	>10	>5	>50	>25	>10	>50	>20	>50	>30	>50	>30	>50	>30	>80		>1	0
Data carrier clear zone	>200	>60	>50	>200	>150	>150	>200	>60	>200	>100	>200	>100	>200	>100	>250		>70	>70
Working distance for writing	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50		0-32	0-32
Working distance for reading	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50		0-32	0-32
Offset at distance																		
0	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30		±30	±25
5	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30		±30	±25
9	±22	±18	±14	±30	±24	±18	±32	±20	±28	±18	±32	±22	±40	±25	±30		±30	±25
12	±22	±18	±10	±30	±24	±18	±32	±18	±24	±18	±32	±22	±40	±25	±30		±25	±25
15	±22	±18	±10	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30		±25	±25
16	±22	±16	±8	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30		±25	±25
18	±22	±16	±6	±30	±24	±18	±32	±16	±24	±12	±32	±18	±40	±25	±30		±25	±22
20	±22	±16	±4	±30	±24	±18	±32	±16	±24	±8	±32	±16	±40	±25	±30		±25	±22
22	±20	±10		±30	±24	±15	±25	±14	±20		±25	±14	±40	±22	±30		±25	±22
25	±15	±10		±30	±24	±15	±25		±20		±25	±12	±40	±22	±30		±25	±22
30	±15	±4		±30	±20	±12	±25		±12		±25	±10	±40	±22	±28		±20	±17
32	±8			±30	±18	±8	±20		±12		±20		±40	±22	±24		±20	±17
35	±4			±30	±16	±4	±20				±20		±40	±20	±22			
40				±24	±10		±20				±20		±40	±20	±18			
43				±20	±4		±12				±12		±35	±15	±14			
45				±16			±12				±12		±35	±12	±12			
50				±4									±35		±4			

Dimensions in mm



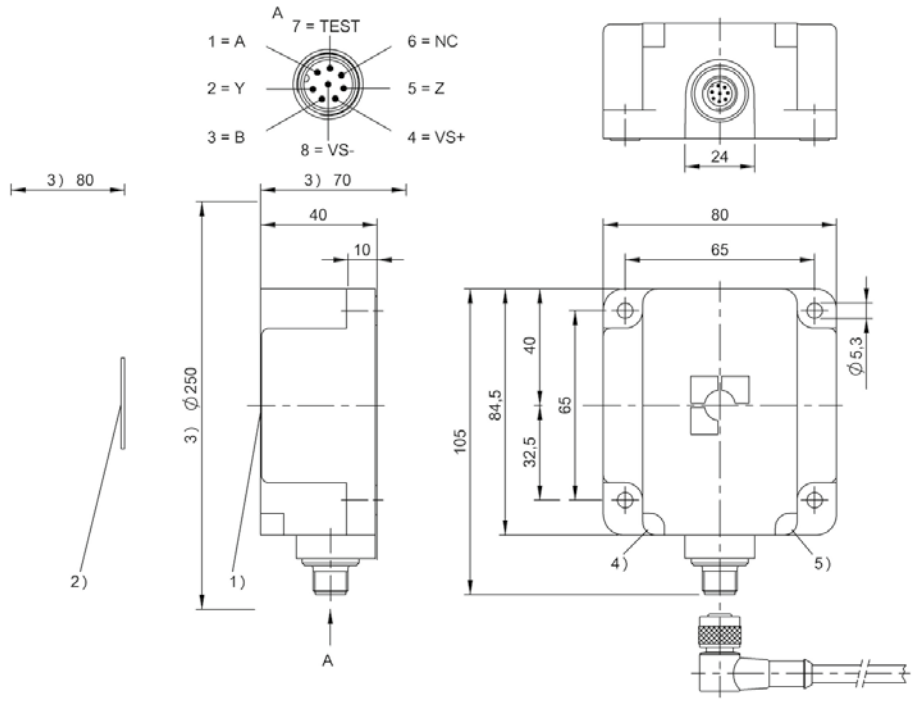
1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP)

For processor unit BIS00EP	**BIS0056** BIS M-301-003-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0043 BIS0111		BIS0044		BIS0045		BIS0046		BIS0047		BIS00L8	
Data carrier distance to metal	>50	>10	>5	>50	>25	>10	>50	>20	>50	>30	>50	>30	>50	>30	>80		>1	0
Data carrier clear zone	>200	>60	>50	>200	>150	>150	>200	>60	>200	>100	>200	>100	>200	>100	>250		>70	>70
Working distance for writing	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50		0-32	0-32
Working distance for reading	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50		0-32	0-32
Offset at distance																		
0	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30		±30	±25
5	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30		±30	±25
9	±22	±18	±14	±30	±24	±18	±32	±20	±28	±18	±32	±22	±40	±25	±30		±30	±25
12	±22	±18	±10	±30	±24	±18	±32	±18	±24	±18	±32	±22	±40	±25	±30		±25	±25
15	±22	±18	±10	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30		±25	±25
16	±22	±16	±8	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30		±25	±25
18	±22	±16	±6	±30	±24	±18	±32	±16	±24	±12	±32	±18	±40	±25	±30		±25	±22
20	±22	±16	±4	±30	±24	±18	±32	±16	±24	±8	±32	±16	±40	±25	±30		±25	±22
22	±20	±10		±30	±24	±15	±25	±14	±20		±25	±14	±40	±22	±30		±25	±22
25	±15	±10		±30	±24	±15	±25		±20		±25	±12	±40	±22	±30		±25	±22
30	±15	±4		±30	±20	±12	±25		±12		±25	±10	±40	±22	±28		±20	±17
32	±8			±30	±18	±8	±20		±12		±20		±40	±22	±24		±20	±17
35	±4			±30	±16	±4	±20				±20		±40	±20	±22			
40				±24	±10		±20				±20		±40	±20	±18			
43				±20	±4		±12				±12		±35	±15	±14			
45				±16			±12				±12		±35	±12	±12			
50				±4									±35		±4			

Dimensions in mm



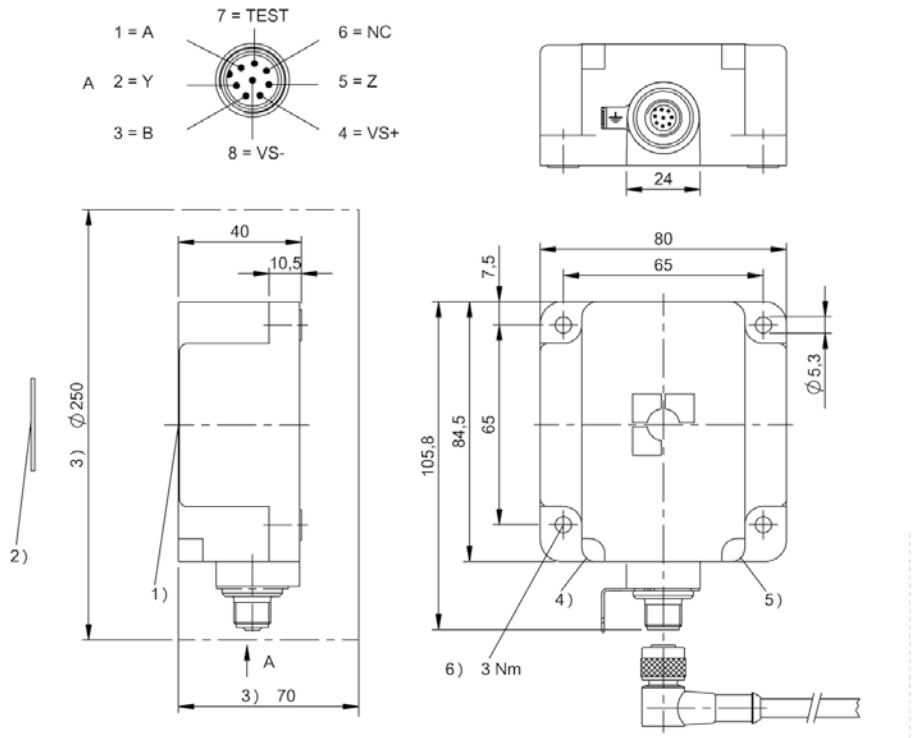
1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP)

For processor units BIS M-60...	**BIS00M6** BIS M-341-001-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0046		BIS0043			BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>50		>50	>0		>0		>0	
Data carrier clear zone	>200		>200	>0		>100		>100	
Working distance for writing	35-90		20-60	0-50		0-46		0-23	
Working distance for reading	35-90		20-60	0-50		0-46		0-23	
Offset at distance									
0				±30	0	±33		±25	
5				±30	5	±33		±25	
9				±30	10	±33		±25	
12				±30	12	±33		±20	
15				±30	16	±33		±20	
16				±30	20	±30		±20	
18				±30	23	±30		±10	
20			±35	±30	25	±30			
22			±35	±30	30	±30			
25			±35	±30	35	±24			
30			±35	±30	40	±24			
35	±55		±30	±20	46	±8			
40	±55		±30	±20	50				
45	±55		±30	±20	55				
50	±55		±30	±20	60				
60	±55		±30		65				
70	±40				70				
80	±40				80				
90	±20				90				

Dimensions in mm



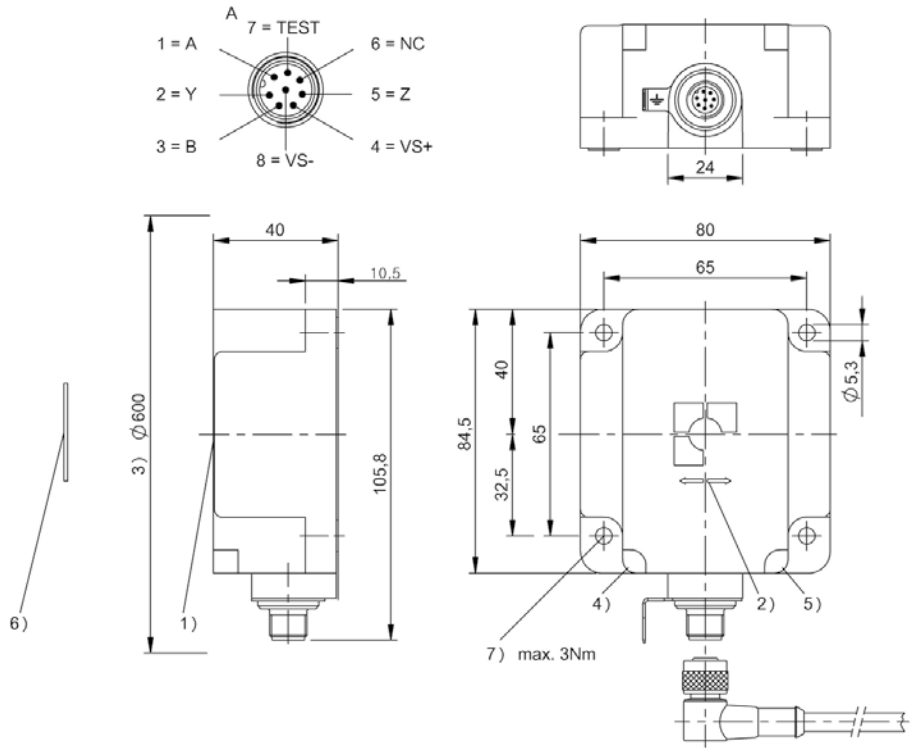
1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP)

For processor units BIS M-60...	**BIS005C** BIS M-351-001-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS004F				BIS004H				BIS00M2				BIS00P3			
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>10	>10	>240	>240	>240	>240
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>50	>50	>480	>480	>480	>480
Data carrier clear zone C									>50	>50	>2	>2	>50	>50	0	0
Metallic mounting surface 40 × 22 mm	0-52	0-52			0-52	0-52										
Metallic mounting surface > 200 × 200 mm			0-65	0-65			0-65	0-65								
Working distance for writing	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65	0-30	0-30	15-30	15-30	0-100	0-100	0-90	0-90
Working distance for reading	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65	0-30	0-30	15-30	15-30	0-100	0-100	0-90	0-90
Offset at distance	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
0	±60	±25	±65	±26	±25	±60	±26	±65	±35	±20			±100	±20	±100	±20
5	±60	±25	±65	±26	±25	±60	±26	±65	±35	±20			±100	±20	±100	±20
12	±60	±25	±65	±25	±25	±60	±25	±65	±35	±20			±100	±20	±100	±20
15	±60	±25	±65	±25	±25	±60	±25	±65	±35	±20	±35	±15	±100	±20	±100	±20
18	±60	±25	±65	±25	±25	±60	±25	±65	±35	±20	±35	±15	±100	±20	±100	±20
20	±60	±25	±65	±25	±25	±60	±25	±65	±20	±12	±28	±15	±80	±20	±80	±20
22	±60	±25	±65	±25	±25	±60	±25	±65	±20	±12	±28	±15	±80	±20	±80	±20
25	±60	±25	±65	±25	±25	±60	±25	±65					±80	±20	±80	±20
30	±60	±25	±65	±25	±25	±60	±25	±65					±80	±20	±80	±20
32	±50	±25	±65	±25	±25	±50	±25	±65					±80	±20	±80	±20
35	±50	±25	±65	±25	±25	±50	±25	±65					±80	±20	±80	±20
40	±50	±20	±50	±25	±20	±50	±25	±50					±65	±20	±65	±20
45	±25	±20	±50	±25	±20	±25	±25	±50					±65	±20	±65	±20
50	±25	±20	±50	±25	±20	±25	±25	±50					±65	±20	±65	±20
52	±25	±8	±25	±25	±8	±25	±25	±25					±50	±20	±50	±20
60			±25	±10			±10	±25					±40	±20		
65			±25	±10			±10	±25								

Dimensions in mm



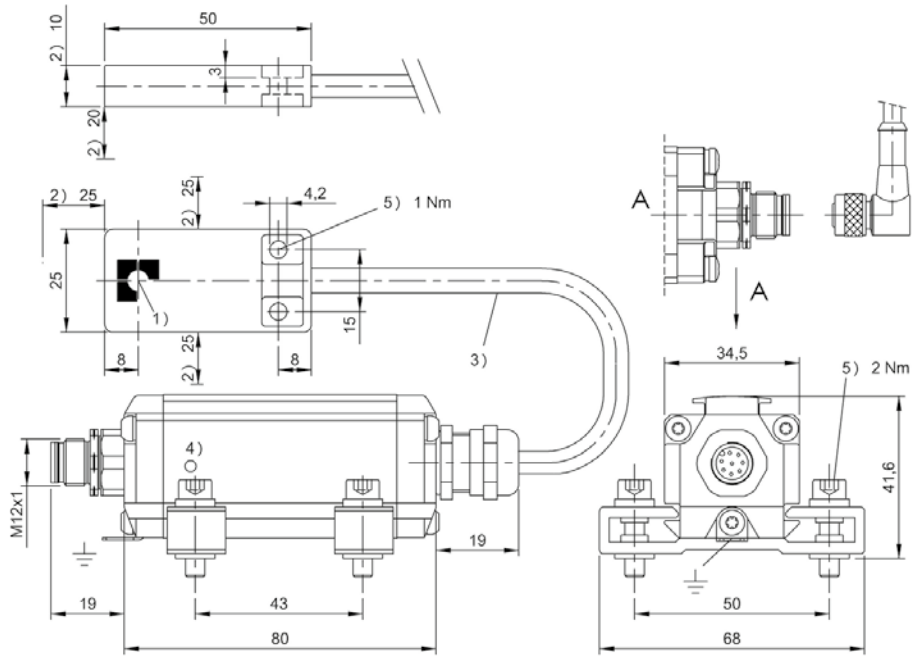
1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Data carrier on steel, 7) Tightening torque

For processor units BIS M-60...	**BIS00NK** BIS M-305-001-S115
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Plug, 8-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A			BIS0043		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100			BIS00UC	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>25	>0	>0		>0			>10	>0
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>100	>0	>100		>100			>60	>60
Working distance for writing	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-17	0-11	0-17		0-12			0-7.5	0-4
Working distance for reading	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-17	0-11	0-17		0-12			0-7.5	0-4
Offset at distance																				
0	±3	±3	±4	±4	±6		±3	±3	±4	±3	0	±12	±8	±10		±7		0	±5	±3.5
5	±2		±4	±2	±6		±2		±3	±2	5	±12	±8	±10		±7		2	±5	±3.5
9					±4						8	±12	±6	±10		±6		3	±4	±3
12					±2						10	±12	±6	±9		±6		4	±4	±1
15											11	±8	±4	±9		±3		5	±4	
16											12	±8		±9		±3		6	±4	
18											15	±8		±4				7.5	±1.5	
20											17	±4		±4				10		

Dimensions in mm



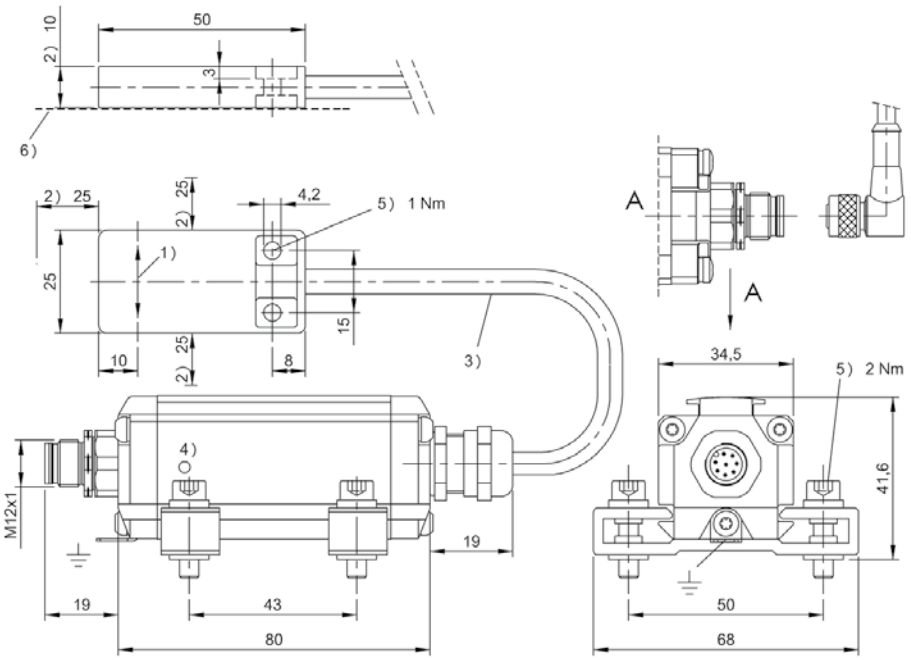
1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque

For processor units BIS M-60...	**BIS00NY** BIS M-352-001-S115
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Plug, 8-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS00NZ			**BIS017F**		**BIS00M2**			
Data carrier clear zone A	>27	>27		>200	>200	>200	>200	>200	>200
Data carrier clear zone B	>27	>27		>200	>200	>200	>200	>200	>200
Data carrier clear zone C				>50	>50	>50	>50	>0	>0
Metallic mounting surface 40 × 22 mm									
Metallic mounting surface > 200 × 200 mm									
Working distance for writing	0-22	0-22		0-17	0-17	0-17	0-17	0-20	0-20
Working distance for reading	0-22	0-22		0-17	0-17	0-17	0-17	0-20	0-20
Offset at distance	X	Y		X	Y	X	Y	X	Y
0	±25	±5	0	±22	±9	±22	±10	±25	±12
5	±25	±5	5	±22	±9	±22	±10	±25	±12
10	±25	±5	10	±19	±8	±20	±9	±25	±12
15	±25	±5	15	±12	±6	±16	±7	±22	±10
20	±15	±5	17	±3	±2	±5	±3	±18	±8
22	±15	±5	20					±8	±4

Dimensions in mm



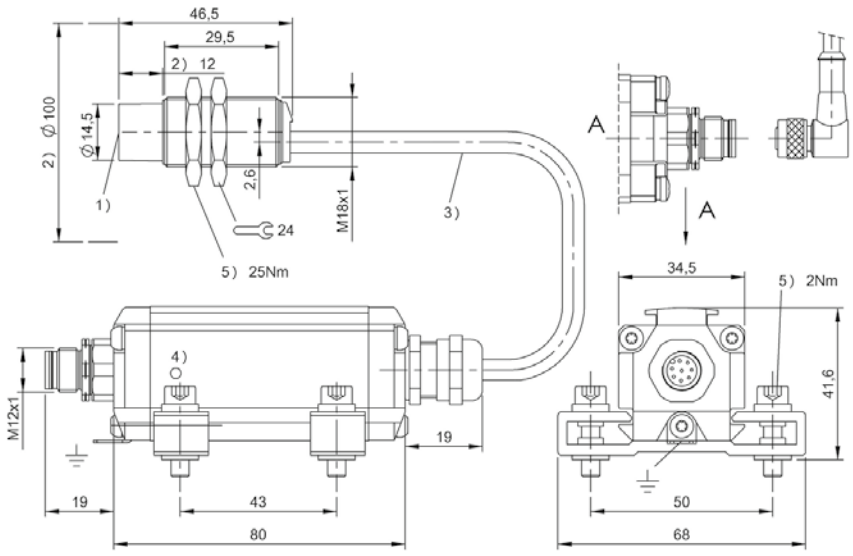
1) Read/write axis, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque, 6) Mounting on steel

For processor units BIS M-60...	**BIS00P2** BIS M-307-001-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 46.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Plug, 8-pin, 0.50 m, PU
Housing material	Brass, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A			BIS00YK		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>10	>0	>0		>0	
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>60	>60	>100		>100	
Working distance for writing	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-10	0-8	0-16		0-12	
Working distance for reading	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-10	0-8	0-16		0-12	
Offset at distance																	
0	±3	±3	±4	±4	±6		±3	±3	±4	±3	0	±7	±5	±9		±7	
5	±2		±4	±2	±6		±2		±4	±2	5	±7	±5	±9		±7	
9					±4						7	±6	±4	±9		±6	
12					±2						8	±6	±2	±9		±6	
15											10	±3		±8		±6	
16											12			±8		±3	
18											14			±8			
20											16			±3			

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque

For processor units BIS M-62... For processor units BIS V-6... with BIS014N	**BIS00WM** BIS M-371-000-A01
Product Group	HF (13.56 MHz)
Dimension	113.4 x 42.4 x 118 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, RCA
Housing material	PA
Ambient temperature	-20...50 °C
Protection degree	IP65
Approval/Conformity	CE

Appropriate data carrier

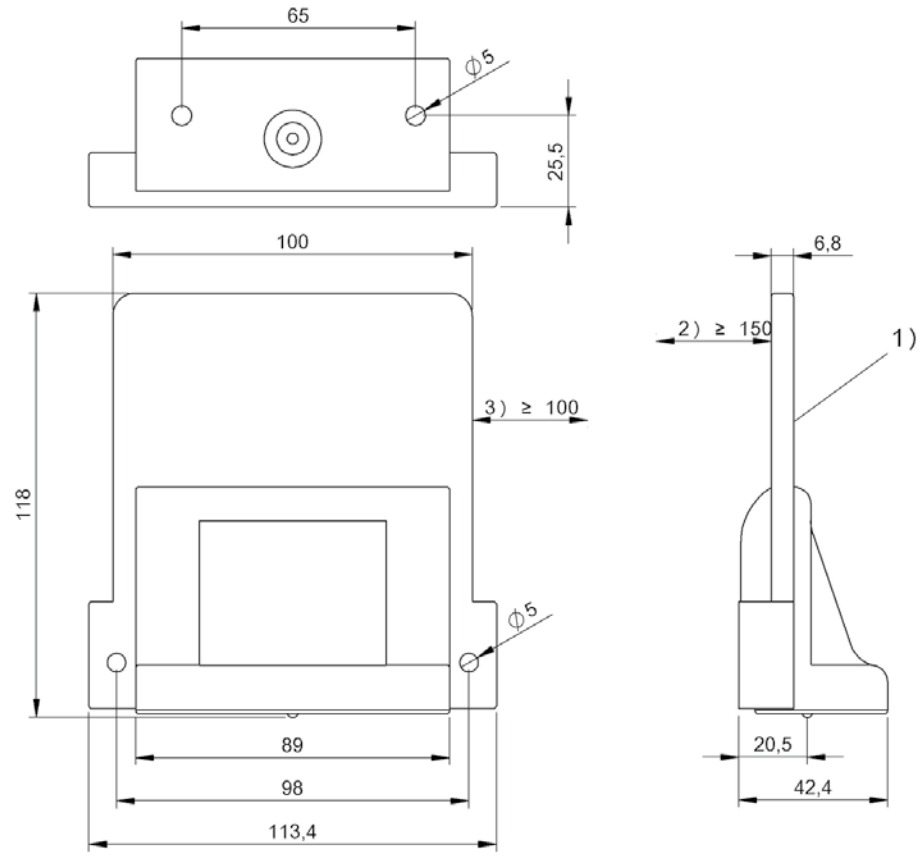
	BIS0043	BIS0111	BIS0044	BIS0045	BIS0046		BIS0119		BIS00YF
Data carrier distance to metal	>40	>40	>40	>40	>40		>0		>25
Data carrier clear zone	>230	>230	>220	>230	>250		>120		>230
Working distance for writing	0-110	0-100	0-70	0-120	0-150		0-50		0-100
Working distance for reading	0-110	0-100	0-70	0-120	0-150		0-50		0-100
Offset at distance									
0	±40	±40	±40	±40	±40	0	±30	0	±75
20	±40	±40	±40	±40	±40	5	±30	20	±75
40	±40	±40	±40	±40	±40	15	±30	30	±75
60	±40	±40	±40	±40	±40	28	±30	40	±75
70	±40	±40	±25	±40	±40	35	±30	50	±70
100	±40	±25		±40	±40	50	±20	70	±70
110	±25			±40	±40			100	±25
120				±25	±40				
150					±25				

Dimensions in mm

Appropriate data carrier

	BIS00YE	BIS00YA	BIS00Y9		BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y2
Data carrier distance to metal	>25	>25	>40		>40	>40	>40	>40
Data carrier clear zone	>230	>230	>230		>250	>250	>250	>250
Working distance for writing	0-100	0-40	0-70		25-140	10-205	10-205	10-135
Working distance for reading	0-100	0-40	0-70		25-140	10-205	10-205	10-135
Offset at distance								
0	±75	±30	±40	50	±75	±75	±75	±75
20	±75	±30	±40	75	±75	±75	±75	±75
30	±75	±30	±40	100	±75	±75	±75	±75
40	±75	±20	±40	120	±75	±75	±75	±75
50	±70		±40	135	±75	±75	±75	±25
70	±70		±25	140	±25	±75	±75	
100	±25			190		±75	±75	
				205		±25	±25	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding

For processor units BIS M-62... For processor units BIS V-6... with BIS014N	**BIS00WL** BIS M-372-000-A01
Product Group	HF (13.56 MHz)
Dimension	200 x 42.4 x 218 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, RCA
Housing material	PA
Ambient temperature	-20...50 °C
Protection degree	IP65
Approval/Conformity	CE

Appropriate data carrier

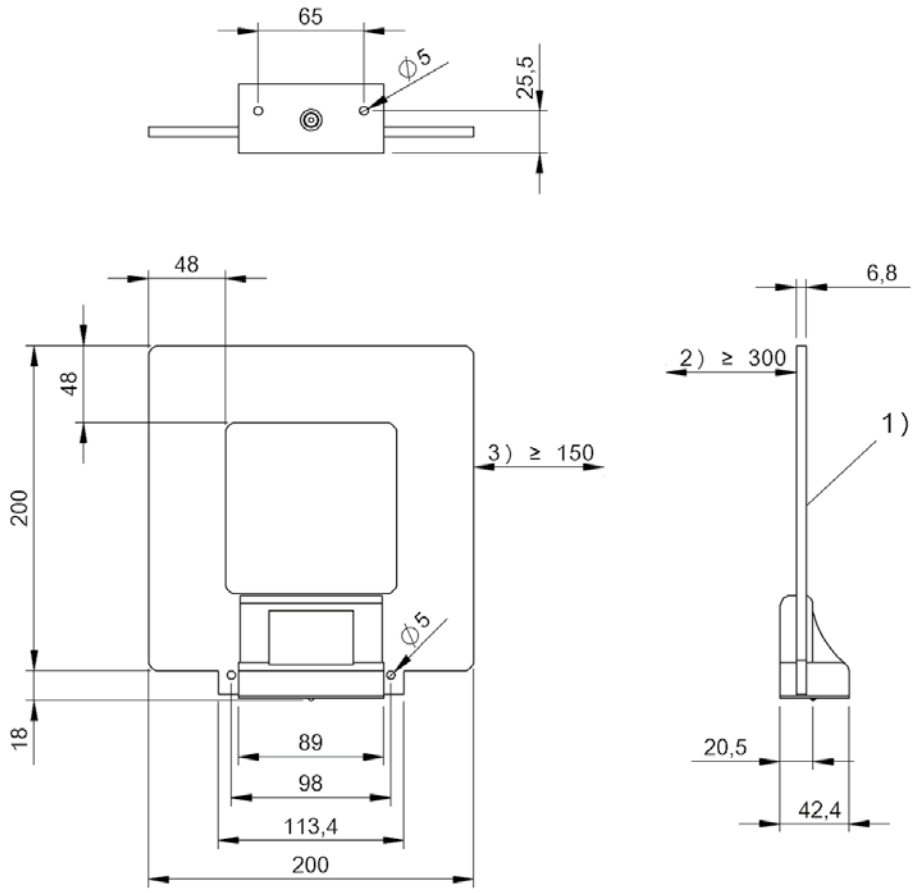
	BIS0043	BIS0111	BIS0044	BIS0045	BIS0046		BIS0119		BIS00YF
Data carrier distance to metal	>45	>45	>45	>45	>45		>0		>45
Data carrier clear zone	>430	>430	>420	>430	>450		>420		>430
Working distance for writing	0-160	0-150	0-115	0-175	0-235		0-65		0-160
Working distance for reading	0-160	0-150	0-115	0-175	0-235		0-65		0-160
Offset at distance									
0	±75	±75	±50	±75	±75	0	±50	0	±100
25	±75	±75	±50	±75	±75	20	±50	20	±100
50	±75	±75	±50	±75	±75	37	±50	30	±100
80	±75	±75	±50	±75	±75	65	±30	40	±100
100	±75	±75	±50	±75	±75	80		60	±100
115	±75	±75	±30	±75	±75	100		90	±100
135	±75	±75		±75	±75	115		115	±50
150	±75	±50		±75	±75			130	±50
160	±50			±75	±75			145	±50
175				±50	±75			160	±25

Dimensions in mm

Appropriate data carrier

	BIS00YE	BIS00YA	BIS00Y9		BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y2
Data carrier distance to metal	>45	>45	>45		>45	>45	>45	>45
Data carrier clear zone	>430	>430	>430		>450	>450	>450	>450
Working distance for writing	0-145	0-30	0-115		0-230	0-300	0-300	0-190
Working distance for reading	0-145	0-30	0-115		0-230	0-300	0-300	0-190
Offset at distance								
0	±100	±50	±75	0	±100	±100	±100	±100
20	±100	±50	±75	50	±100	±100	±100	±100
30	±100	±30	±75	100	±100	±100	±100	±100
40	±100		±75	150	±100	±100	±100	±100
60	±100		±75	190	±100	±100	±100	±50
90	±100		±75	230	±50	±100	±100	
115	±50		±50	250		±100	±100	
130	±50			300		±50	±50	
145	±25							
160								

Dimensions in mm



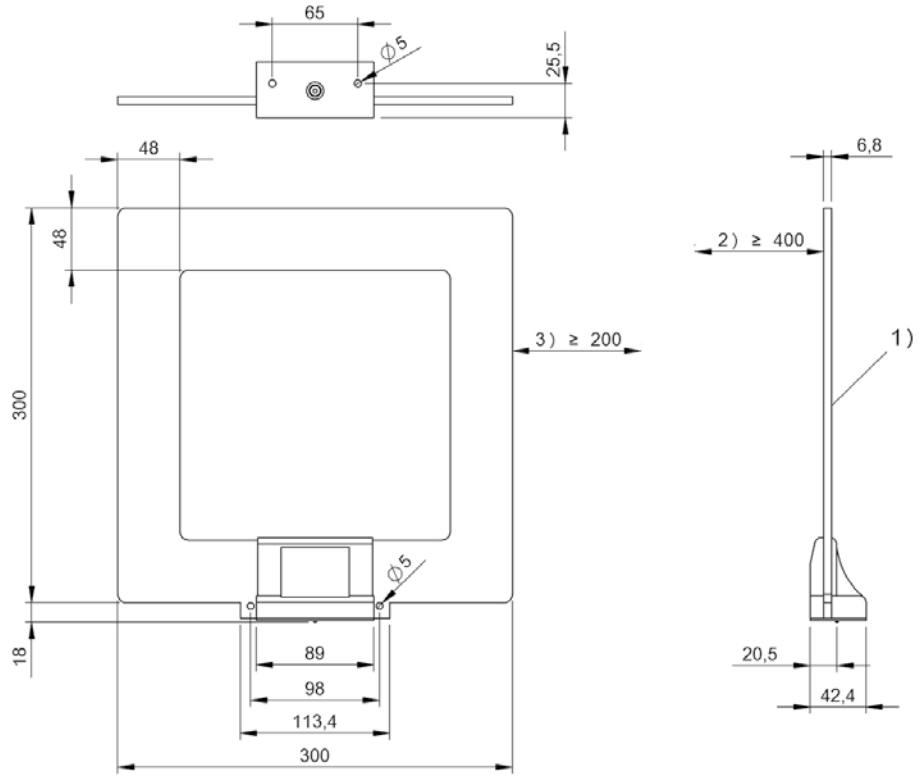
1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding

For processor units BIS M-62... For processor units BIS V-6... with BIS014N	**BIS00WK** BIS M-373-000-A01
Product Group	HF (13.56 MHz)
Dimension	300 x 42.4 x 318 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, RCA
Housing material	PA
Ambient temperature	-20...50 °C
Protection degree	IP65
Approval/Conformity	CE

Appropriate data carrier

	BIS00YF	BIS00YE	BIS00Y5	BIS00Y4	BIS00W9
Working distance for writing	0-195	0-185	0-320	0-355	0-360
Working distance for reading	0-195	0-185	0-320	0-355	0-360

Dimensions in mm



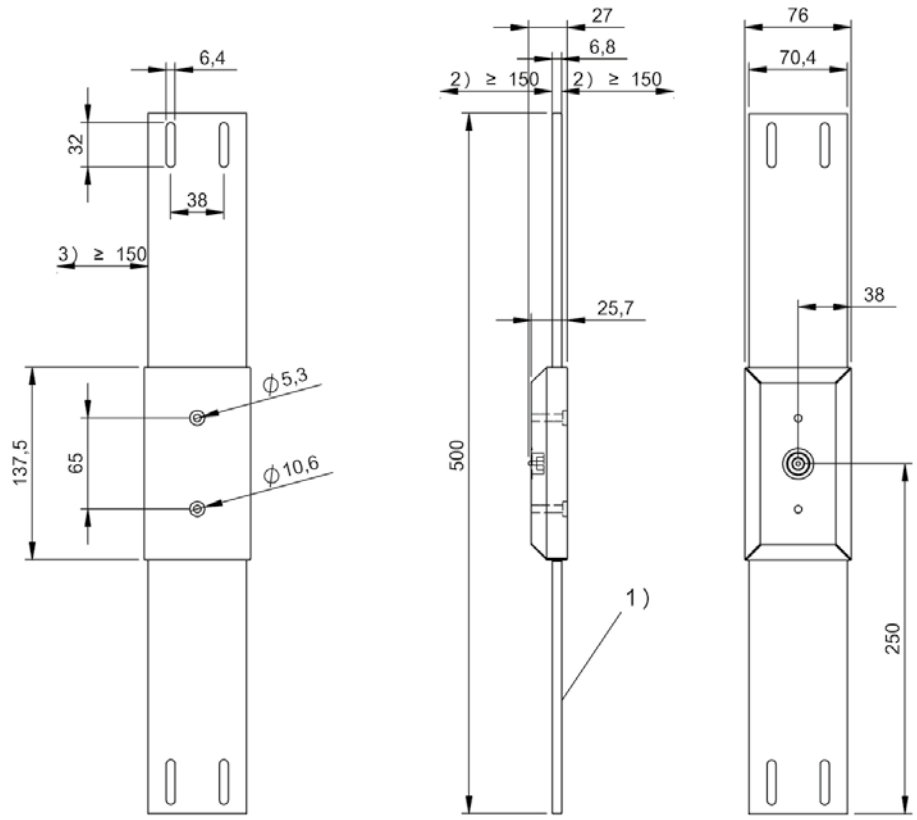
1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding

For processor units BIS M-62... For processor units BIS V-6... with BIS014N	**BIS00WN** BIS M-370-000-A02
Product Group	HF (13.56 MHz)
Dimension	500 x 27 x 76 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, RCA
Housing material	PA
Ambient temperature	-20...50 °C
Protection degree	IP65
Approval/Conformity	CE

Appropriate data carrier

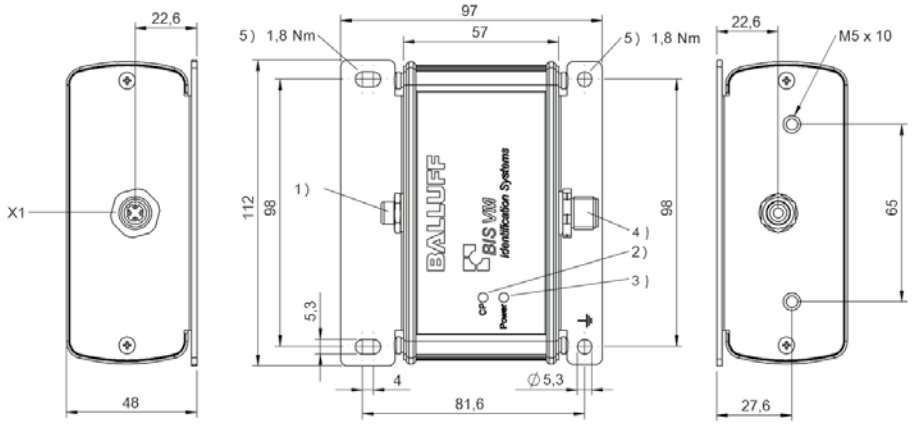
	BIS00Y7	BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y2	BIS00Y1
Working distance for writing	0-48	10-95	0-135	0-130	15-95	0-100
Working distance for reading	0-48	10-95	0-135	0-130	15-95	0-100

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding

For antennas BIS M-37...	**BIS014N** BIS VM-920
Product Group	HF (13.56 MHz)
Dimension	112 x 48 x 97 mm
Connection	Male, 4-pin
Housing material	Aluminum
Ambient temperature	-20...50 °C
Protection degree	IP65
Approval/Conformity	CE



1) Antenna connection, 2) LED (CP), 3) LED (Power), 4) Read head connection X1, 5) Tightening torque

For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	**BIS013U** BIS V-6108-048-C002	
Product Group	Multi-Frequency Processor	
Interface	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	
IO-Link-Master-Port	max. 500 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 5-pin	
Productview	Page 211	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz).**

	BIS01AE BIS V-6108-048-C007	BIS013W * BIS V-6108-048-C102	BIS01AF * BIS V-6108-048-C107
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch
	max. 500 mA	max. 500 mA	max. 500 mA
	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	2x M12x1-Female, 4-pin, D-coded M12x1-Male, 5-pin	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 5-pin	2x M12x1-Female, 4-pin, D-coded M12x1-Male, 5-pin
	Page 211	Page 211	Page 211

For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	**BIS00T3** BIS V-6102-019-C001	
Product Group	Multi-Frequency Processor	
Interface	Profibus DP Slave galvanically isolated	
IO-Link-Master-Port	max. 500 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	M12x1-Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded 7/8“-Male, 5-pin	
Productview	Page 212	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz).**

	BIS012E * BIS V-6102-019-C101	**BIS01AA** BIS V-6107-039-C007	**BIS01AC** * BIS V-6107-039-C107
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	Profibus DP Slave galvanically isolated	TCP/IP, USB	TCP/IP, USB
	max. 500 mA	max. 1.700 mA	max. 1.700 mA
	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	M12x1-Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded 7/8“-Male, 5-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded M12x1-Male, 5-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded M12x1-Male, 5-pin
	Page 212	Page 210	Page 210

For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	**BIS0186** BIS V-6107-039-C005	
Product Group	Multi-Frequency Processor	
Interface	Ethernet TCP/IP, USB	
IO-Link-Master-Port	max. 1.700 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8“-Male, 5-pin	
Productview	Page 212	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz).**

	BIS018J BIS V-6107-039-C006	BIS0187 * BIS V-6107-039-C105	BIS018K * BIS V-6107-039-C106
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	Ethernet TCP/IP, USB	Ethernet TCP/IP, USB	Ethernet TCP/IP, USB
	max. 1.700 mA	max. 1.700 mA	max. 1.700 mA
	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8“-Male, 4-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8“-Male, 5-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8“-Male, 4-pin
	Page 213	Page 212	Page 213

For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	**BIS012F** BIS V-6106-034-C002	
Product Group	Multi-Frequency Processor	
Interface	Ethernet/IP	
IO-Link-Master-Port	max. 500 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 5-pin	
Productview	Page 213	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz).**

	BIS0122 BIS V-6106-034-C004	BIS014C * BIS V-6106-034-C102	BIS0146 BIS V-6106-034-C104
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	Ethernet/IP	Ethernet/IP	Ethernet/IP
	max. 500 mA	max. 500 mA	max. 500 mA
	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 4-pin	2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 5-pin	2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 4-pin
	Page 214	Page 213	Page 214

For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	**BIS00U9** BIS V-6110-063-C002	
Product Group	Multi-Frequency Processor	
Interface	EtherCAT	
IO-Link-Master-Port	max. 500 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 5-pin	
Productview	Page 214	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz).**

	BIS0147 BIS V-6110-063-C102	BIS010P BIS V-6111-073-C003	BIS014E * BIS V-6111-073-C103
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	EtherCAT	CC-Link	CC-Link
	max. 500 mA	max. 500 mA	max. 500 mA
	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 5-pin	M12x1-Male, 5-pin, A-coded M12x1-Female, 5-pin, A-coded 7/8“-Male, 5-pin	M12x1-Male, 5-pin, A-coded M12x1-Female, 5-pin, A-coded 7/8“-Male, 5-pin
	Page 214	Page 215	Page 215

For read/write heads BIS M-3xx-001...	**BIS00N1** BIS M-6000-007-050-00-ST15	
Product Group	HF (13.56 MHz)	
Interface	RS232	
Supported RFID technologies	HF 13.56 MHz (BIS M)	
Number of connectable R/W heads / antennas	2	
Operating voltage Ub	19.2...28.8 VDC	
Housing material	ABS	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, cULus	
Connection	Male, 4-pole Male, 5-pole	
Productview	Page 215	

	BIS00J0 BIS M-6000-007-050-00-ST24	BIS00L7 BIS M-6008-048-050-06-ST23	BIS00EW BIS M-6002-019-050-03-ST11
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	RS232	Profinet I/O (IRT), Profinet I/O (IRT) 2 port Switch	Profibus DP Slave galvanically isolated
	HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)
	2	2	2
	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	ABS	ABS	ABS
	0...60 °C	0...60 °C	0...60 °C
	IP65 with connector	IP65 with connector	IP65 with connector
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
	Male, 5-pole, B-coded Male, 5-pole	Female, 4-pole, D-coded M12x1-Female, 4-pole, D-coded Male, 5-pole	Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded Male, 5-pole
	Page 216	Page 216	Page 217

For read/write heads BIS M-3xx-001...	**BIS00F0** BIS M-6022-019-050-03-ST14	
For read/write heads BIS M-3xx-003...		
Product Group	HF (13.56 MHz)	
Interface	Profibus DP Slave galvanically isolated	
Supported RFID technologies	HF 13.56 MHz (BIS M)	
Number of connectable R/W heads / antennas	2	
Operating voltage Ub	19.2...28.8 VDC	
Housing material	Aluminum, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Connection	Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded Male, 5-pole	
Productview	Page 217	

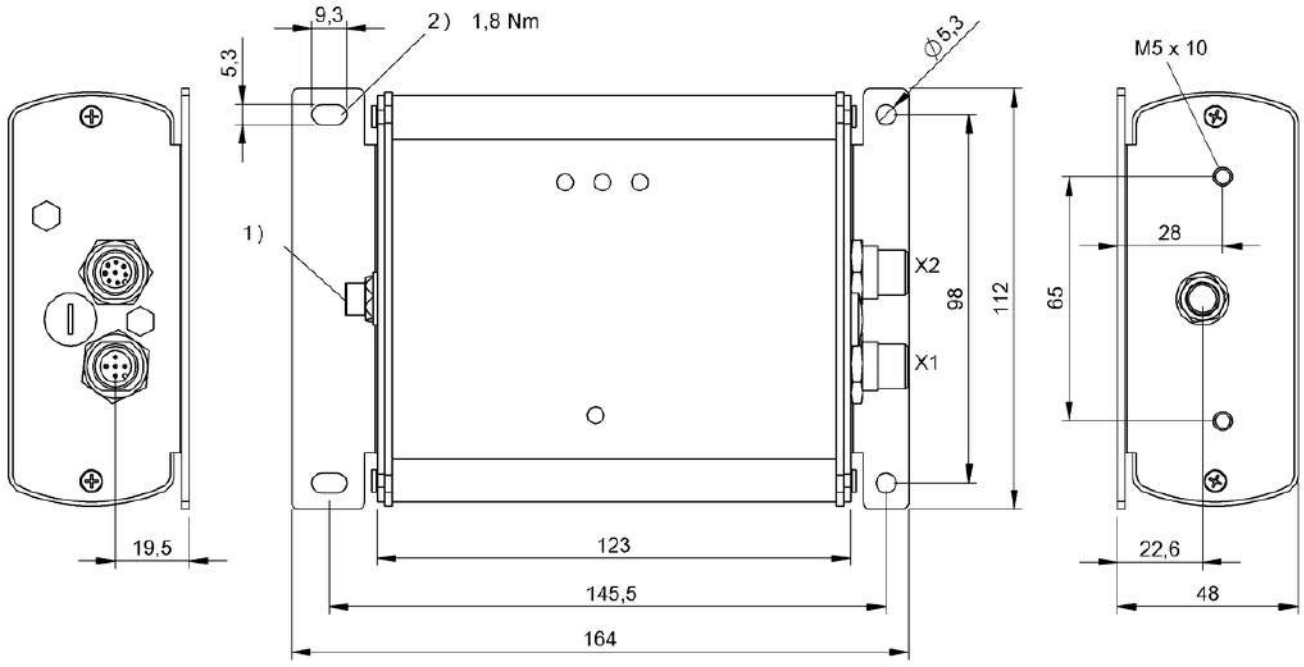
		BIS00F2 BIS M-6026-034-050-06-ST19	**BIS00LY** BIS M-699-052-050-03-ST11
	BIS00EP BIS M-407-039-003-06-S115		
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	Ethernet TCP/IP	Ethernet/IP	CC-Link
	HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)
	1	2	2
	19.2...28.8 VDC	19.2...28.8 VDC	21.6...26.4 VDC Supports only LPS/Class 2
	Aluminum	Aluminum, die-cast	Aluminum, die-cast
	0...60 °C	0...60 °C	0...55 °C
	IP67 with connector	IP65 with connector	IP65 with connector
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, CLPA, UL-FILE E227256, Vol.X1, BIS
	Female, 4-pole, D-coded Male, 5-pole	Female, 4-pole, D-coded Male, 5-pole	Male, 5-pole Female, 5-pole Male, 5-pole
	Page 218	Page 218	Page 219

For read/write heads BIS M-37x-000...	**BIS00ZJ** BIS M-620-068-A01-00-S115	
Product Group	HF (13.56 MHz)	
Interface	RS232	
Supported RFID technologies	HF 13.56 MHz (BIS M)	
Number of connectable R/W heads / antennas	1	
Operating voltage Ub	19.2...28.8 VDC	
Housing material	Aluminum	
Ambient temperature	-20...50 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Connection	M12x1 connector, 8-pin	
Productview	Page 219	

	BIS00ZH BIS M-620-068-A01-00-ST29	BIS011P BIS M-628-075-A01-03-ST34	BIS00ZF BIS M-622-070-A01-03-ST33
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	RS232	Profinet galvanically isolated	Profibus DP Slave galvanically isolated
	HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)
	1	1	1
	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	Aluminum	Aluminum	Aluminum
	-20...50 °C	-20...50 °C	-20...50 °C
	IP65 with connector	IP65 with connector	IP65 with connector
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
	M12x1 connector, 8-pin	2x M12x1-Female, 4-pole, D-coded M12x1-Male, 5-pole	M12x1-Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded M12x1-Male, 5-pole
	Page 220	Page 237	Page 220

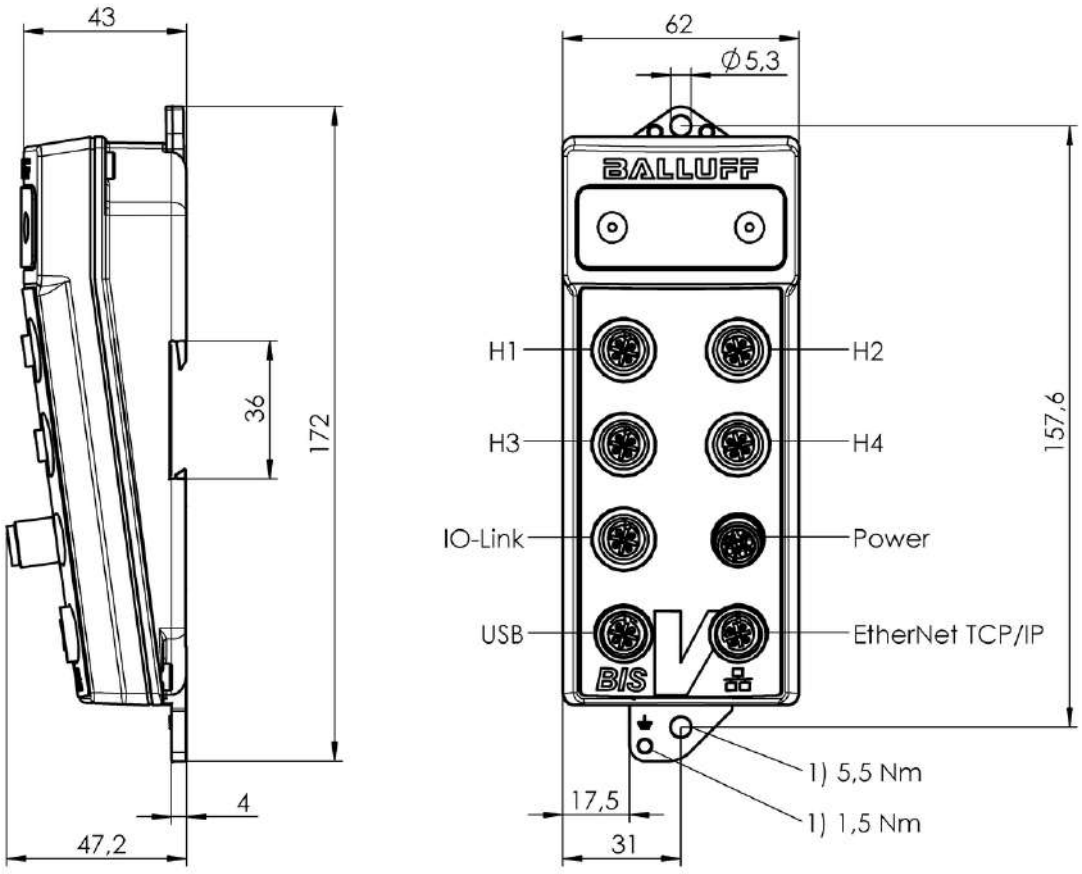
For read/write heads BIS M-37x-000...	**BIS00ZC** BIS M-626-069-A01-06-ST31	
Product Group	HF (13.56 MHz)	
Interface	Industrial Ethernet/Ethernet TCP/IP/MODBUS TCP	
Supported RFID technologies	HF 13.56 MHz (BIS M)	
Number of connectable R/W heads / antennas	1	
Operating voltage Ub	19.2...28.8 VDC	
Housing material	Aluminum	
Ambient temperature	-20...50 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Connection	M12x1-Female, 4-pole, D-coded M12x1-Male, 5-pole	
Productview	Page 221	

	BIS00ZA BIS M-626-069-A01-06-ST32	BIS00ZE BIS M-623-071-A01-03-ST30	
	HF (13.56 MHz)	HF (13.56 MHz)	
	Industrial Ethernet/Ethernet TCP/IP/MODBUS TCP	DeviceNet galvanically isolated	
	HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)	
	1	1	
	19.2...28.8 VDC	19.2...28.8 VDC	
	Aluminum	Aluminum	
	-20...50 °C	-20...50 °C	
	IP65 with connector	IP65 with connector	
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	
	M12x1-Female, 4-pole, D-coded M12x1-Male, 5-pole	M12x1-Male, 5-pole M12x1-Male, 8-pole	
	Page 222	Page 210	



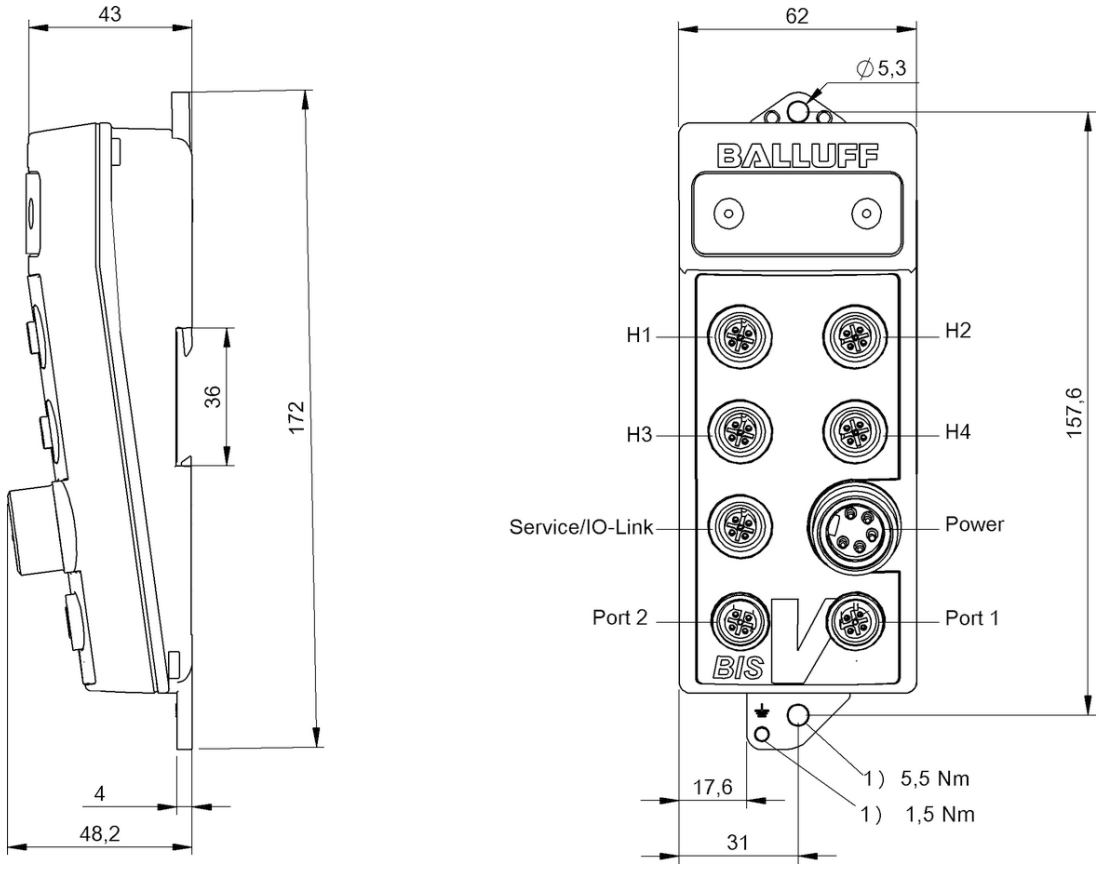
1) Antenna, 2) Tightening torque

BIS00ZE



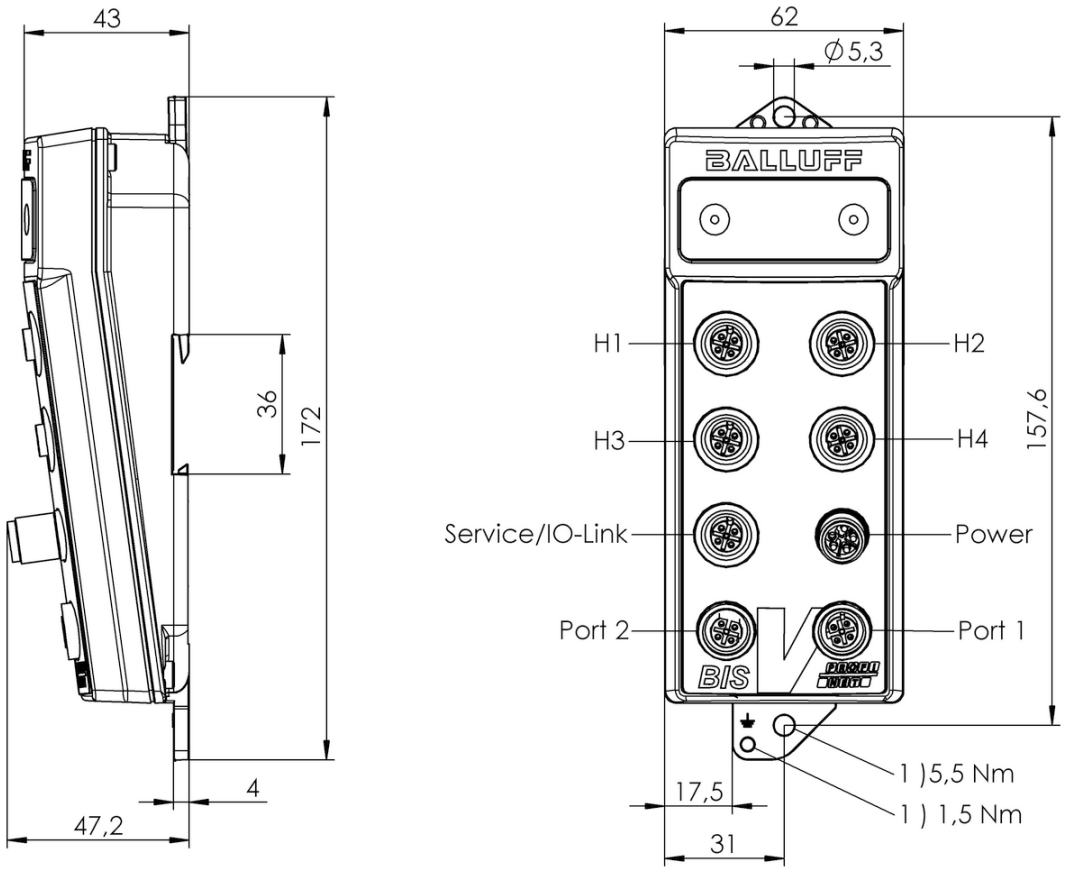
1) Tightening torque

BIS01AA, BIS01AC



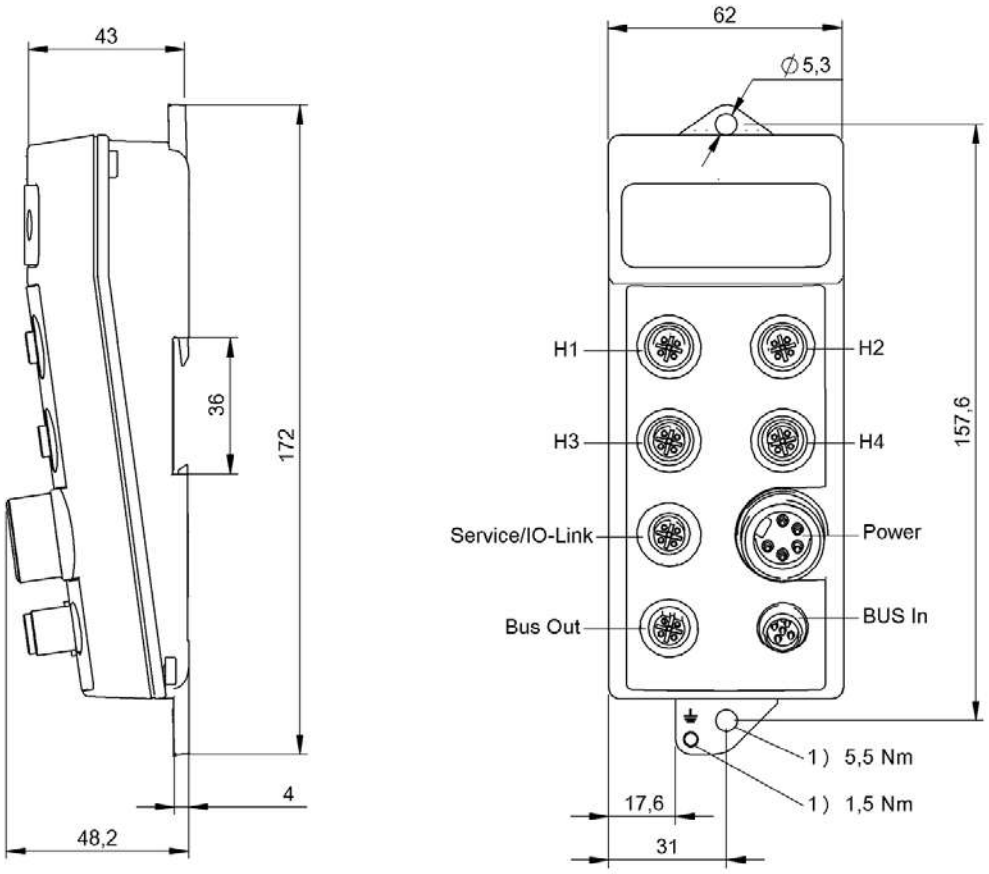
1) Tightening torque

BIS013U, BIS013W



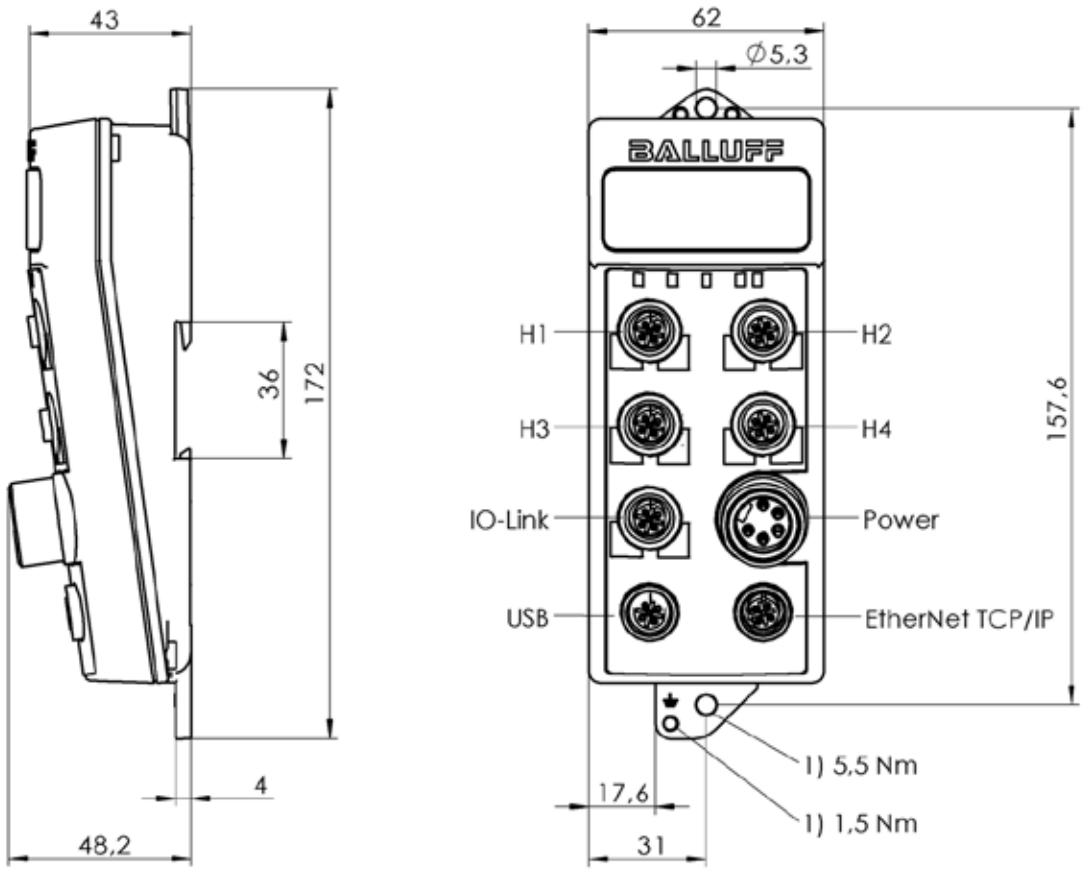
1) Tightening torque

BIS01AE, BIS01AF



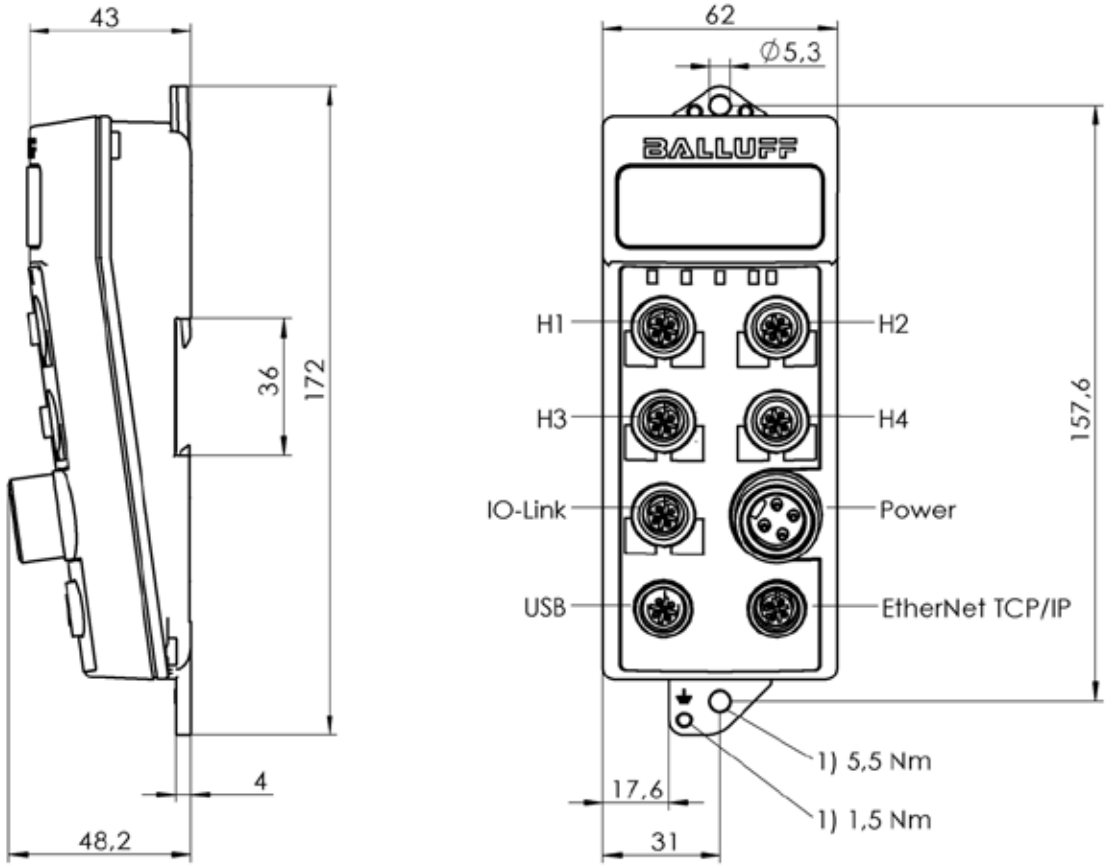
1) Tightening torque

BIS00T3, BIS012E



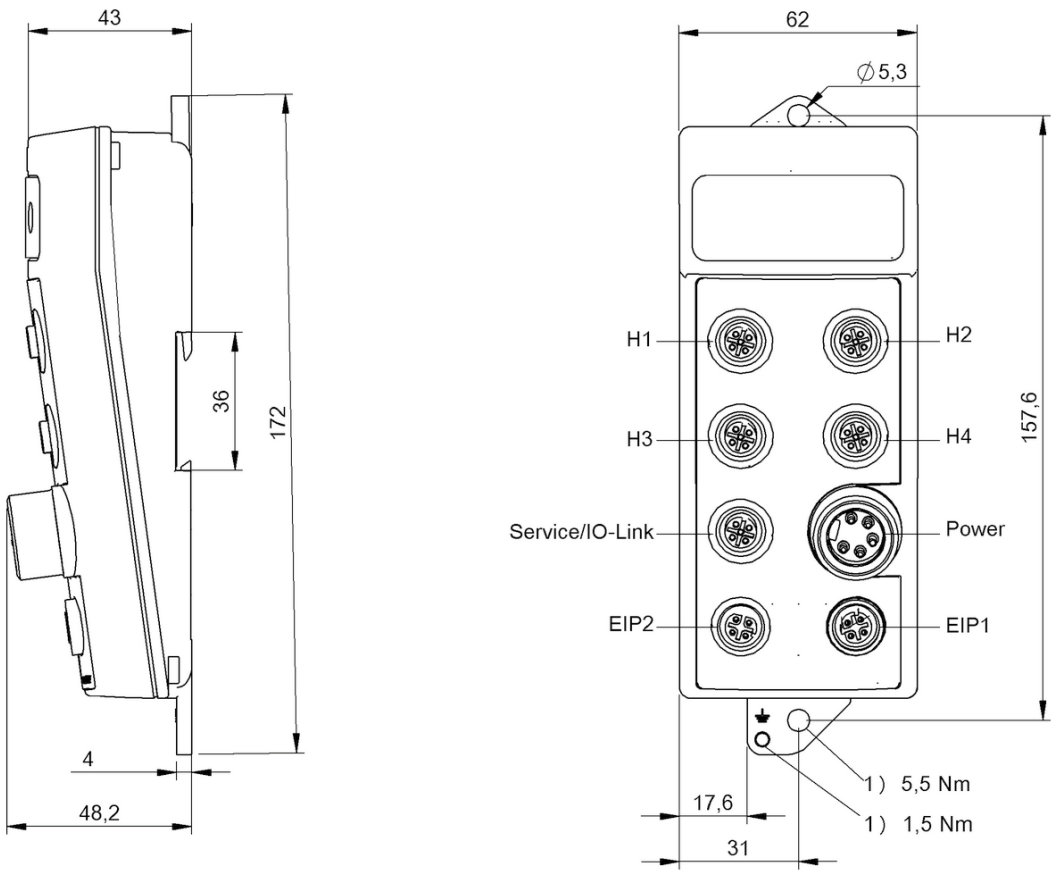
1) Tightening torque

BIS0186, BIS0187



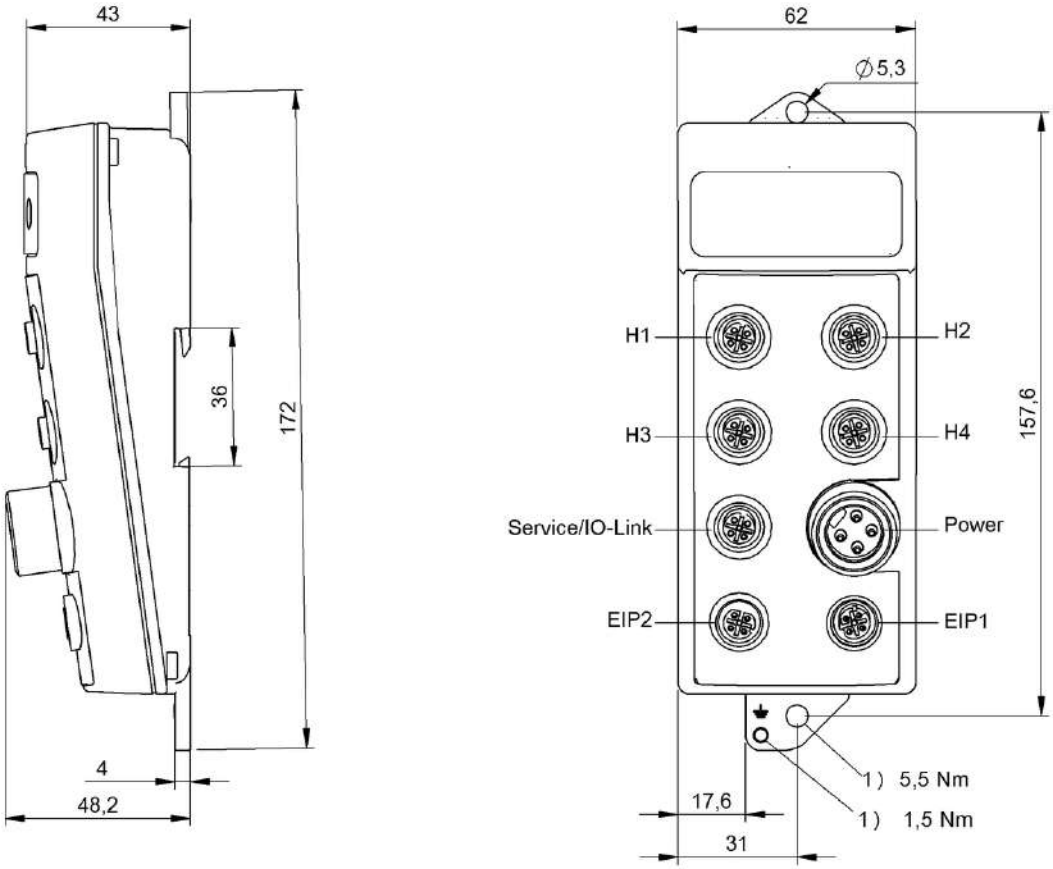
1) Tightening torque

BIS018J, BIS018K



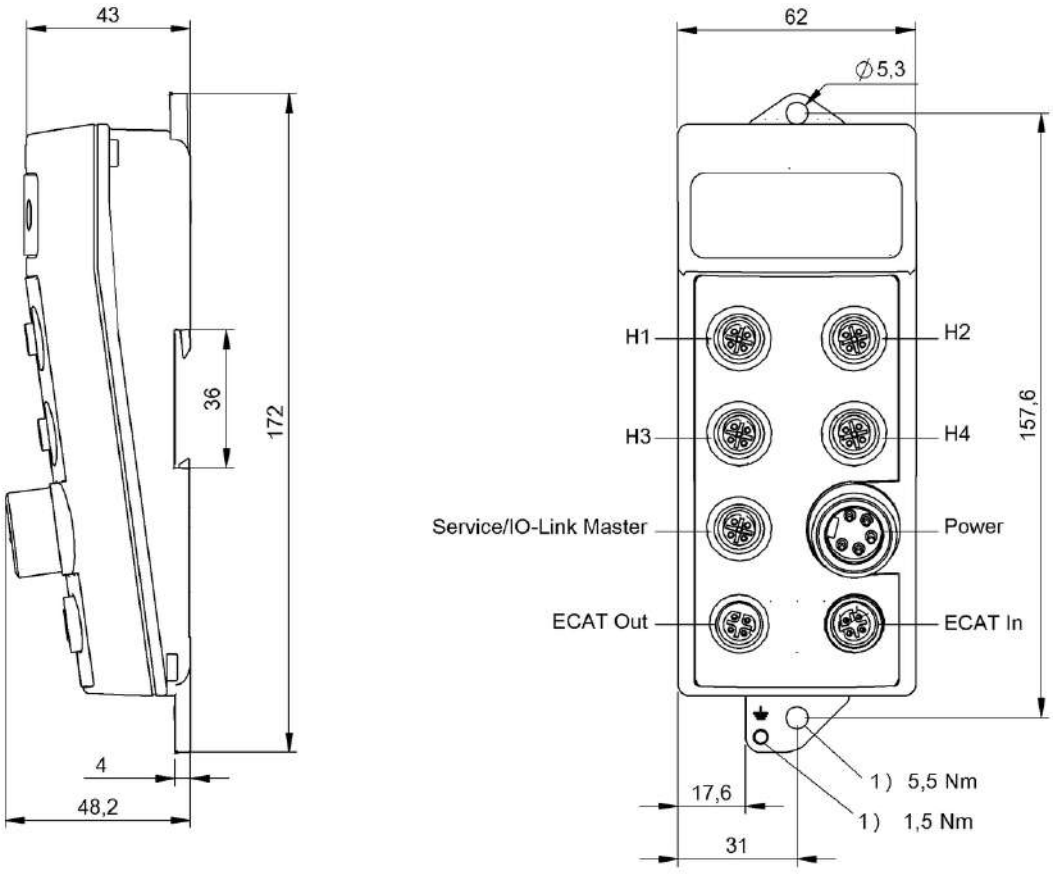
1) Tightening torque

BIS012F, BIS014C



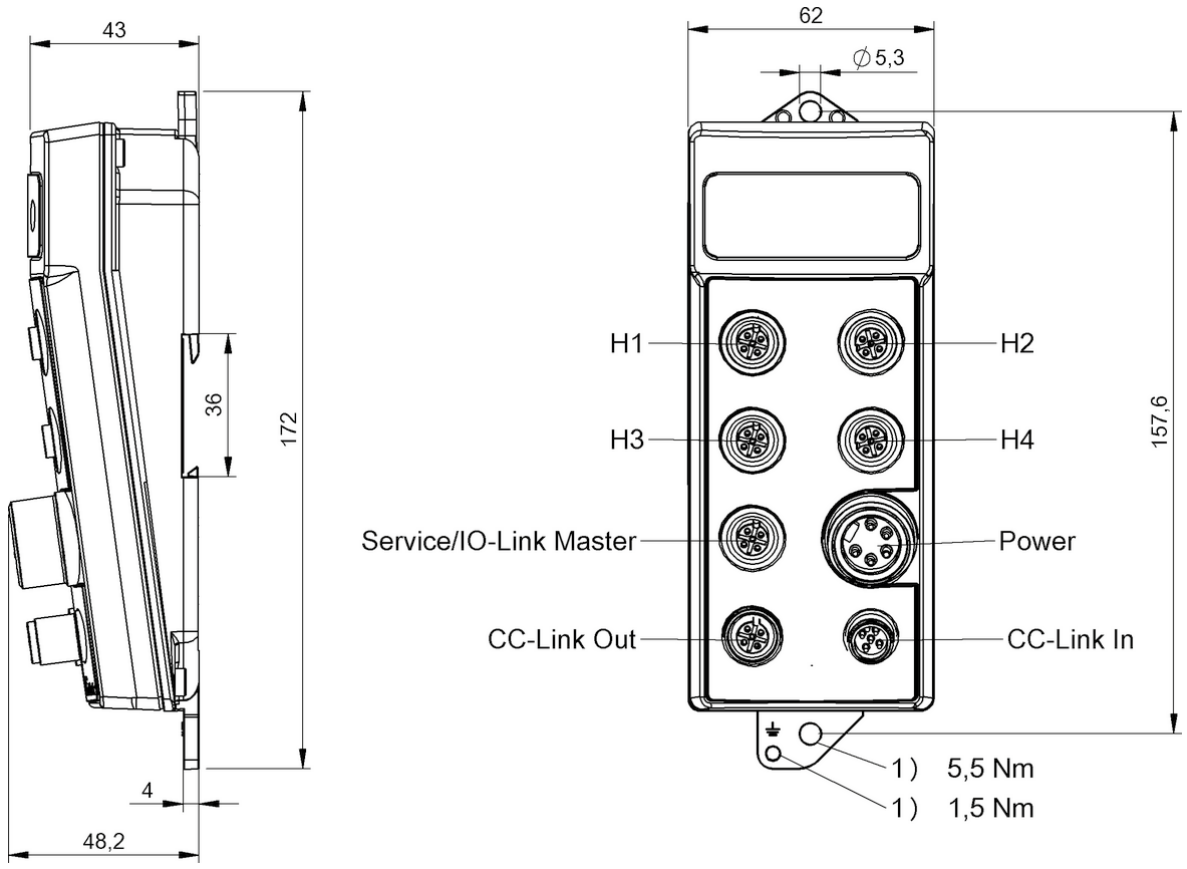
1) Tightening torque

BIS0122, BIS0146



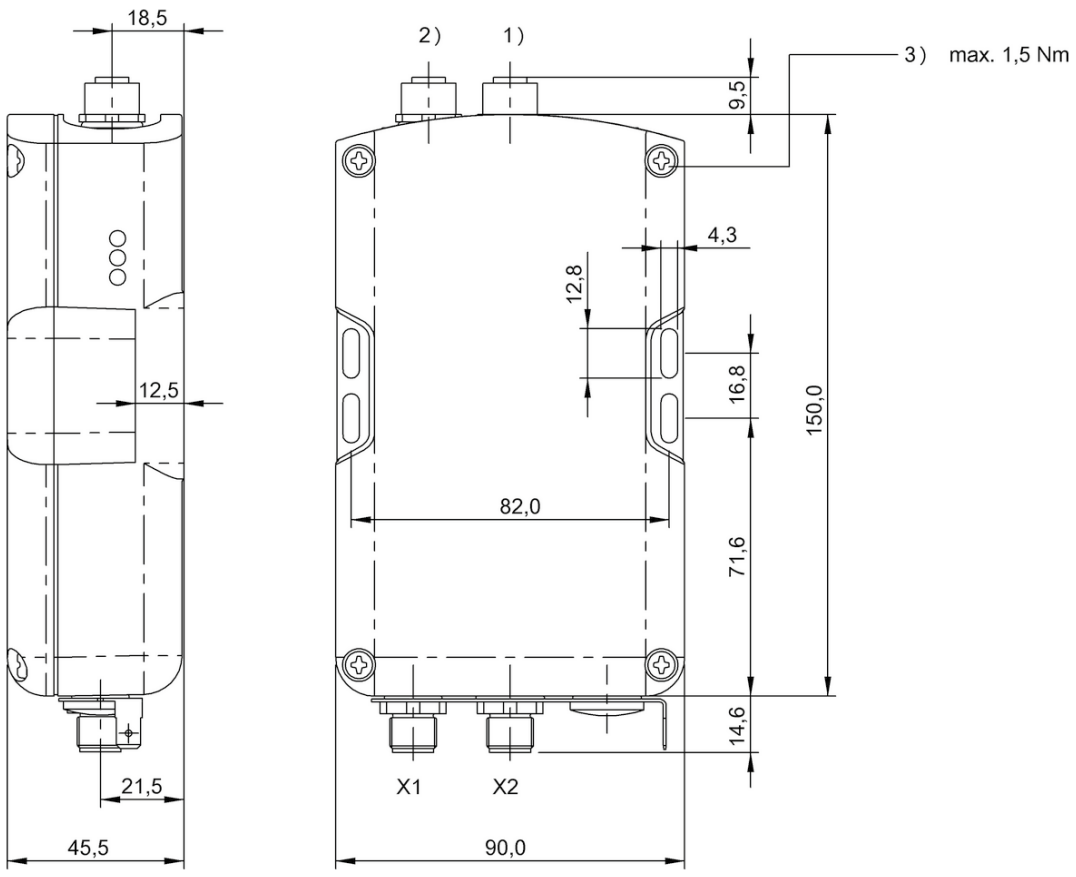
1) Tightening torque

BIS00U9, BIS0147



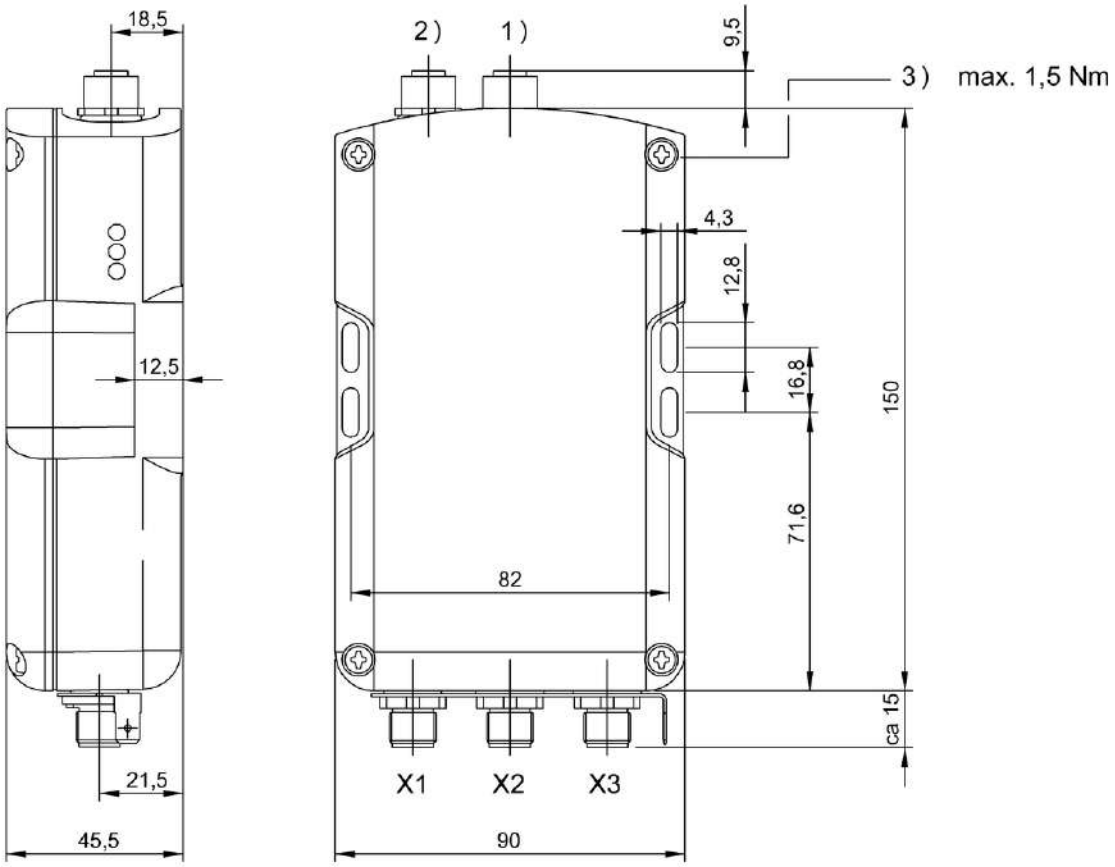
1) Tightening torque

BIS010P, BIS014E



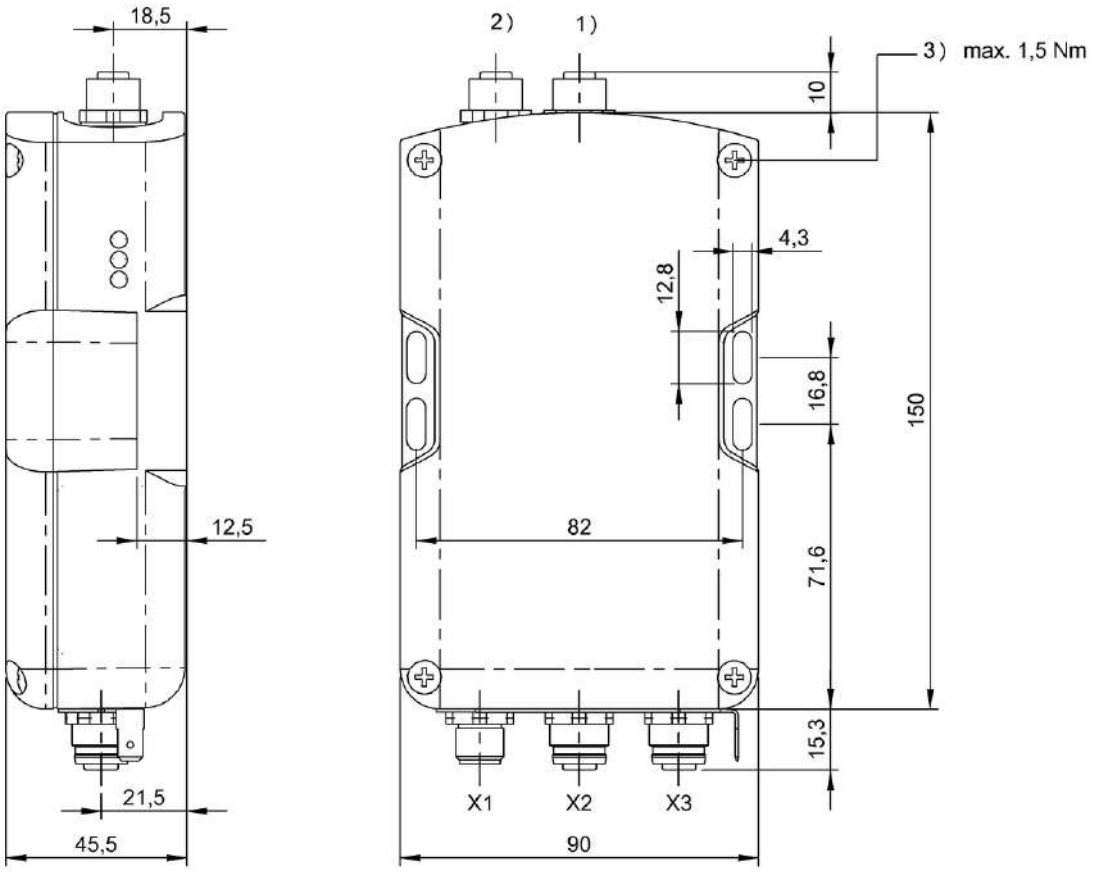
1) Head 1, 2) Head 2, 3) Tightening torque

BIS00N1



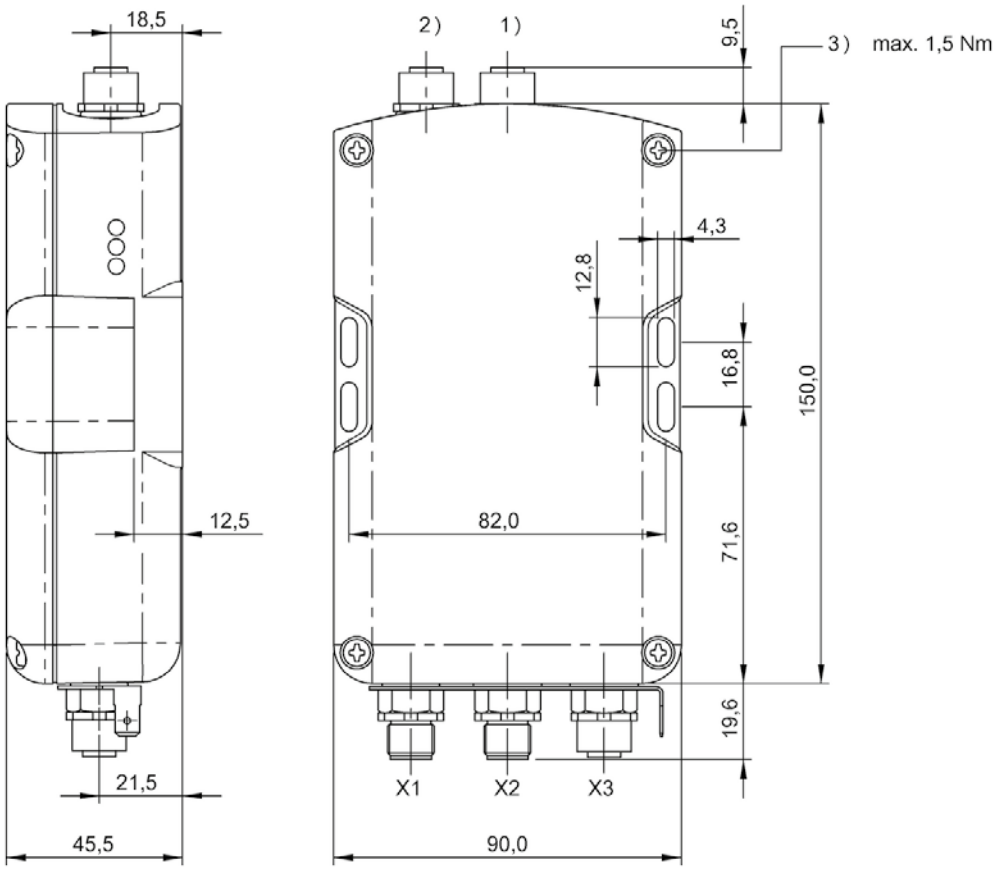
1) Head 1, 2) Head 2, 3) Tightening torque

BIS00J0



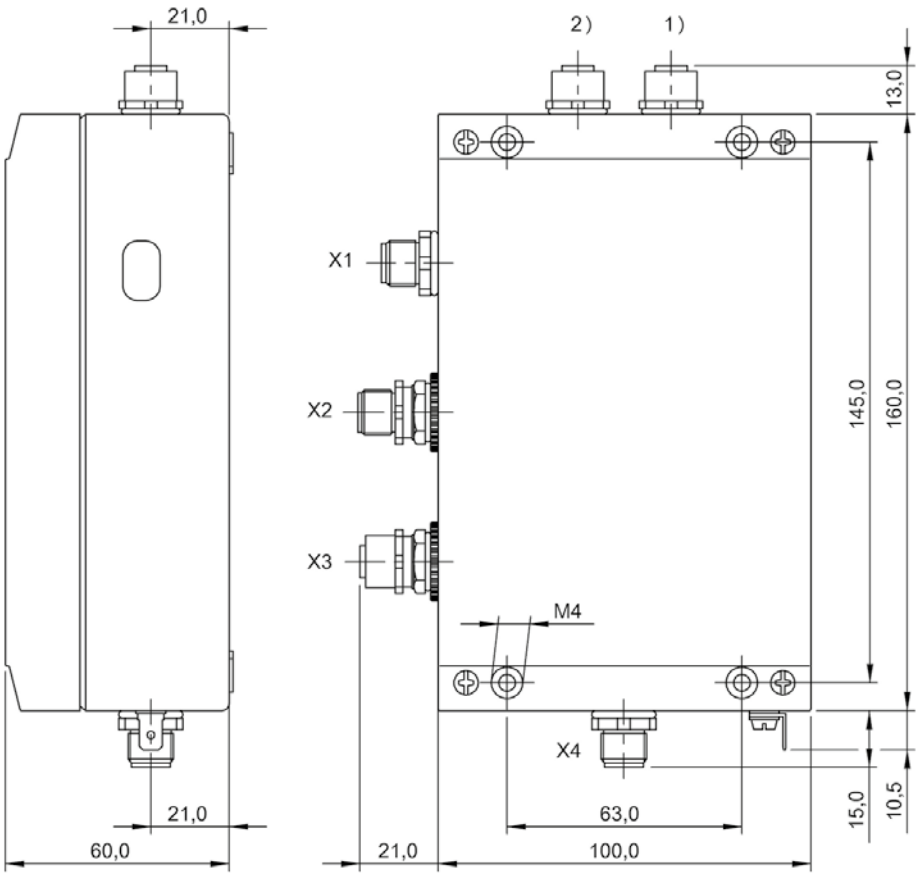
1) Head 1, 2) Head 2, 3) Tightening torque

BIS00L7



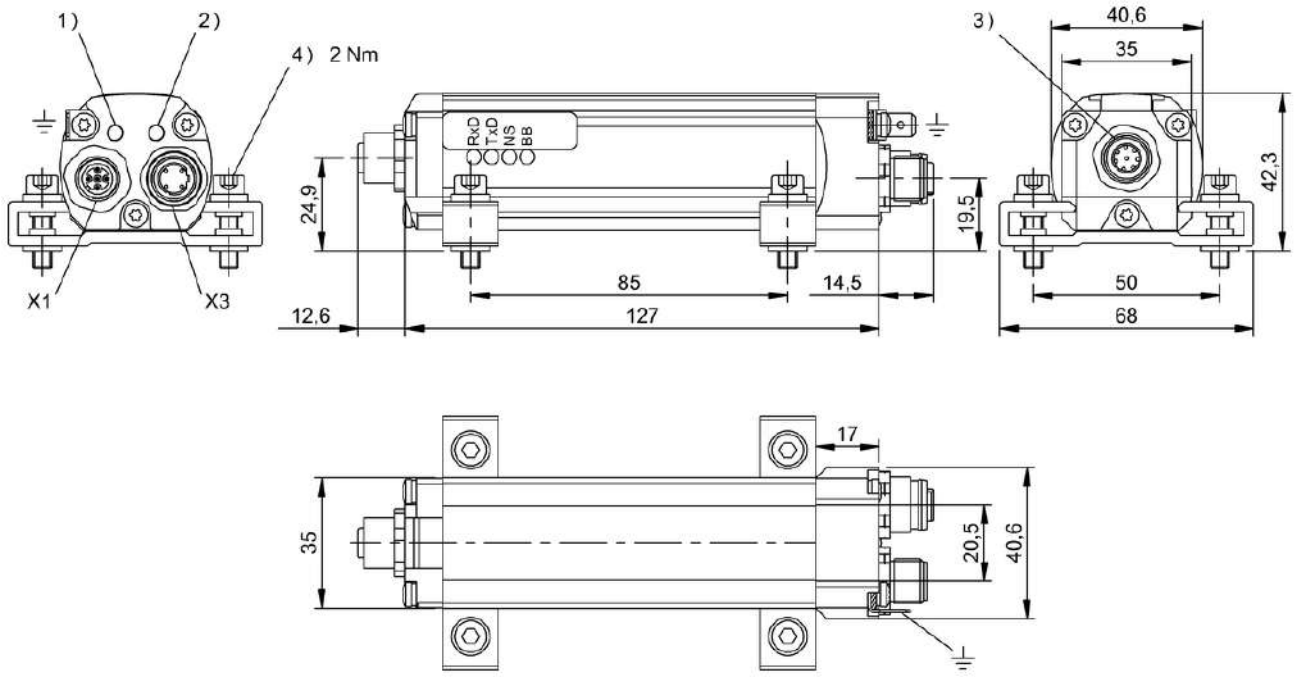
1) Head 1, 2) Head 2, 3) Tightening torque

BIS00EW



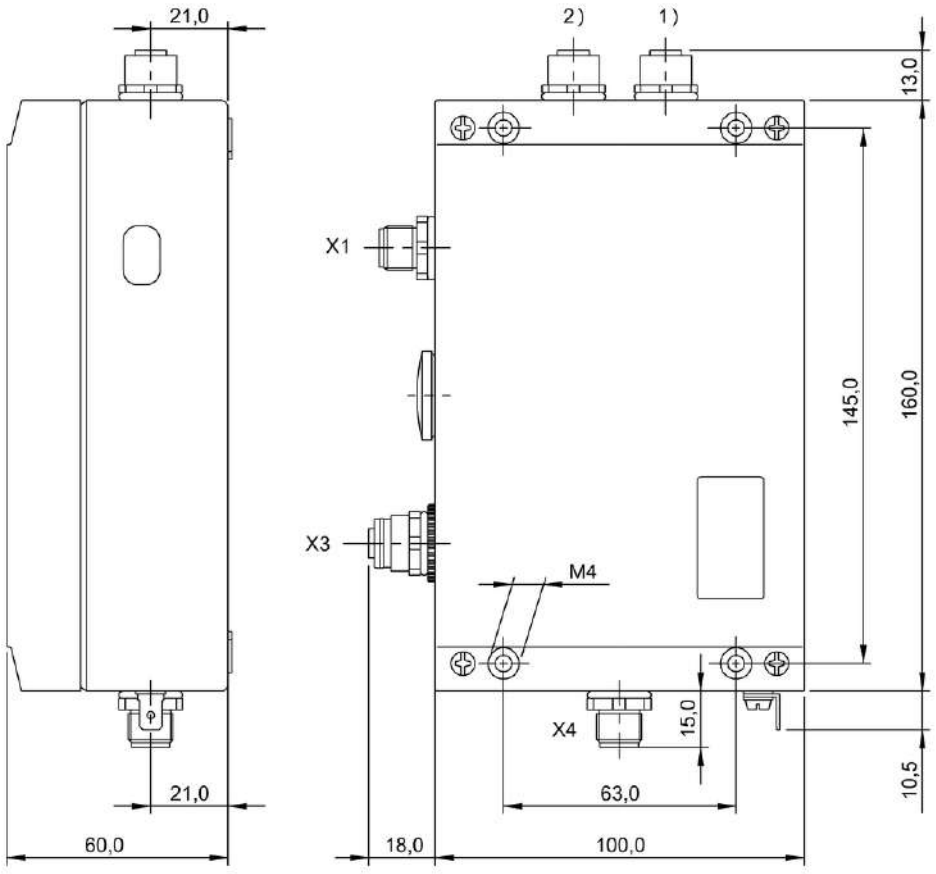
1) Head 1, 2) Head 2

BIS00F0



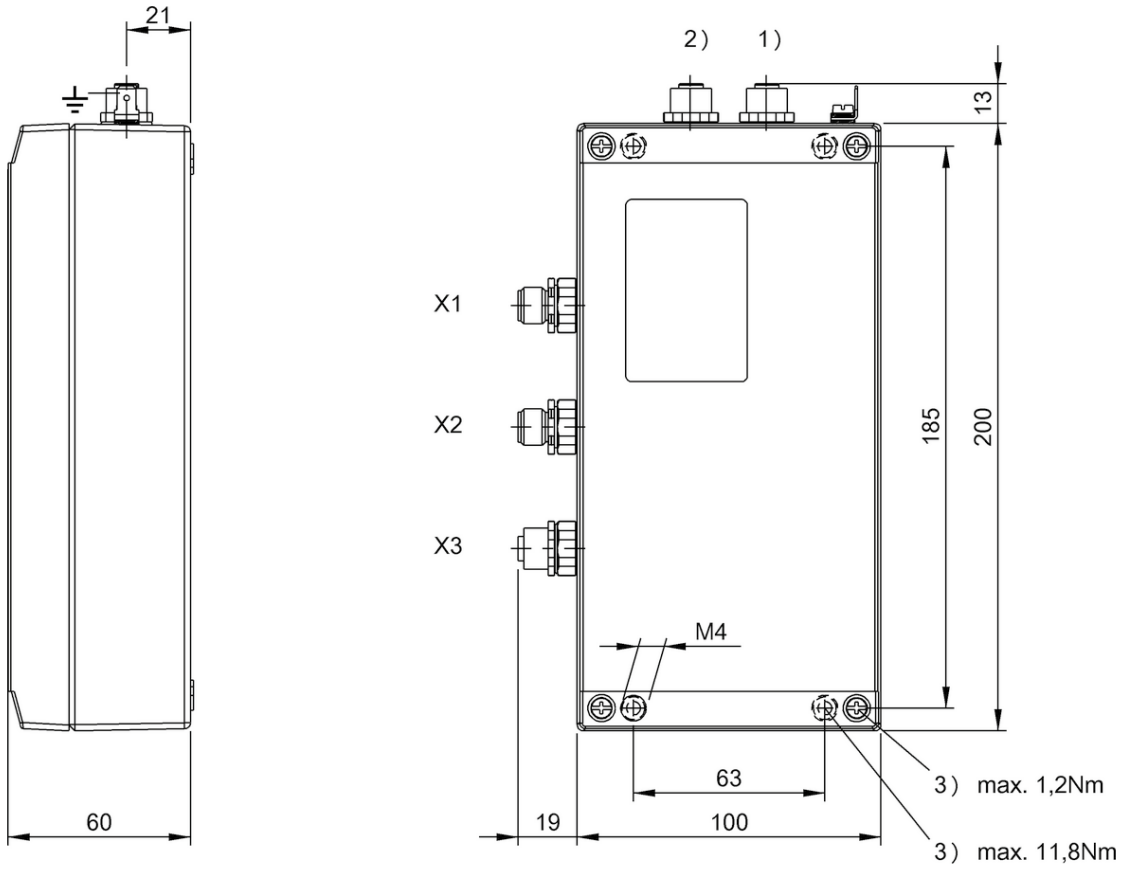
1) LED1 Ethernet Status, 2) LED2 Ethernet Status, 3) Head, 4) Tightening torque

BIS00EP



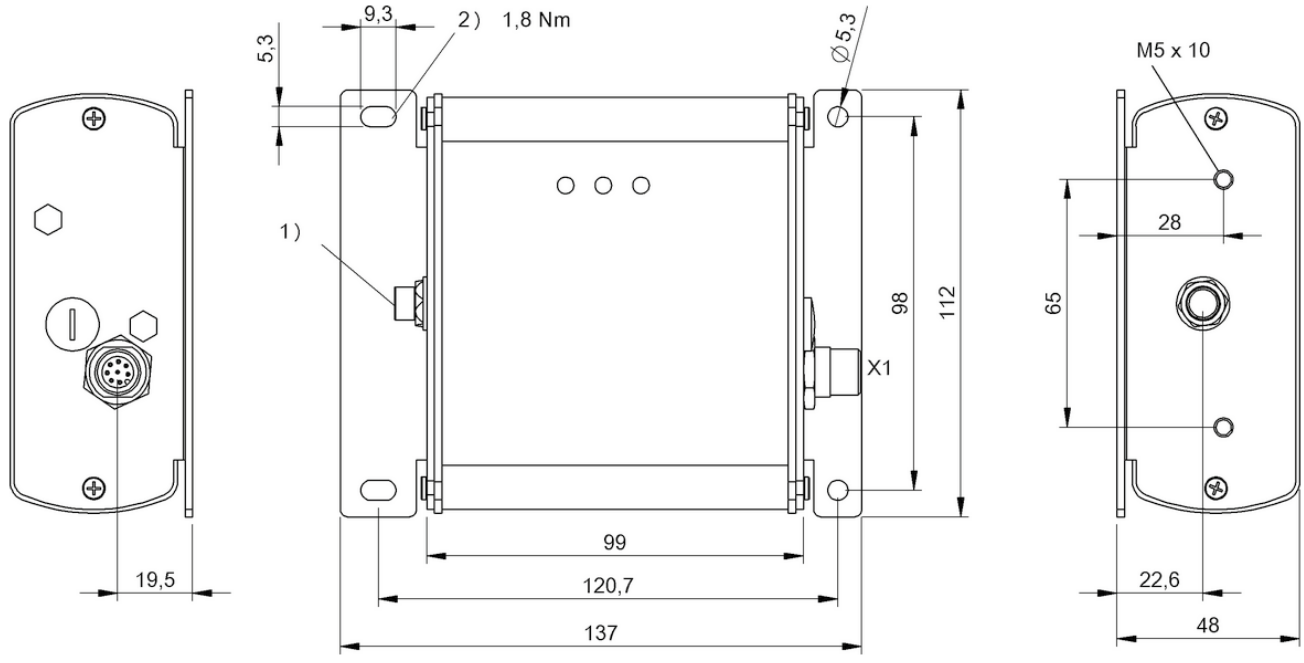
1) Head 1, 2) Head 2

BIS00F2



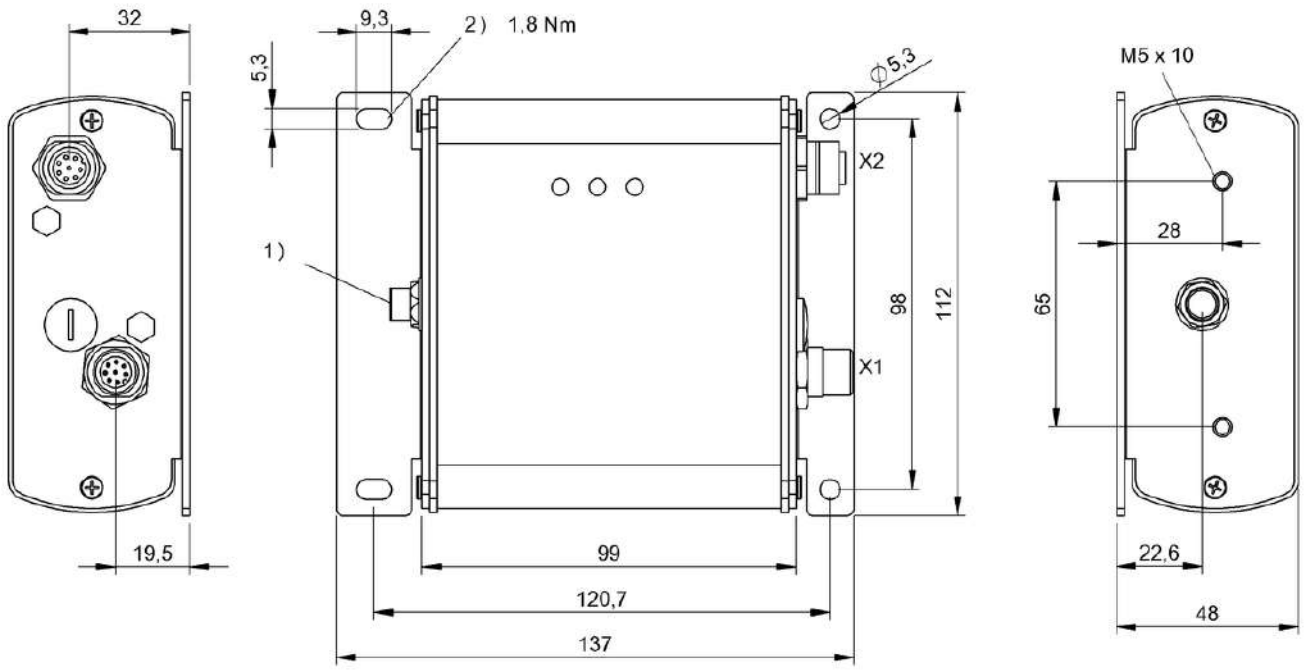
1) Head 1, 2) Head 2, 3) Tightening torque

BIS00LY



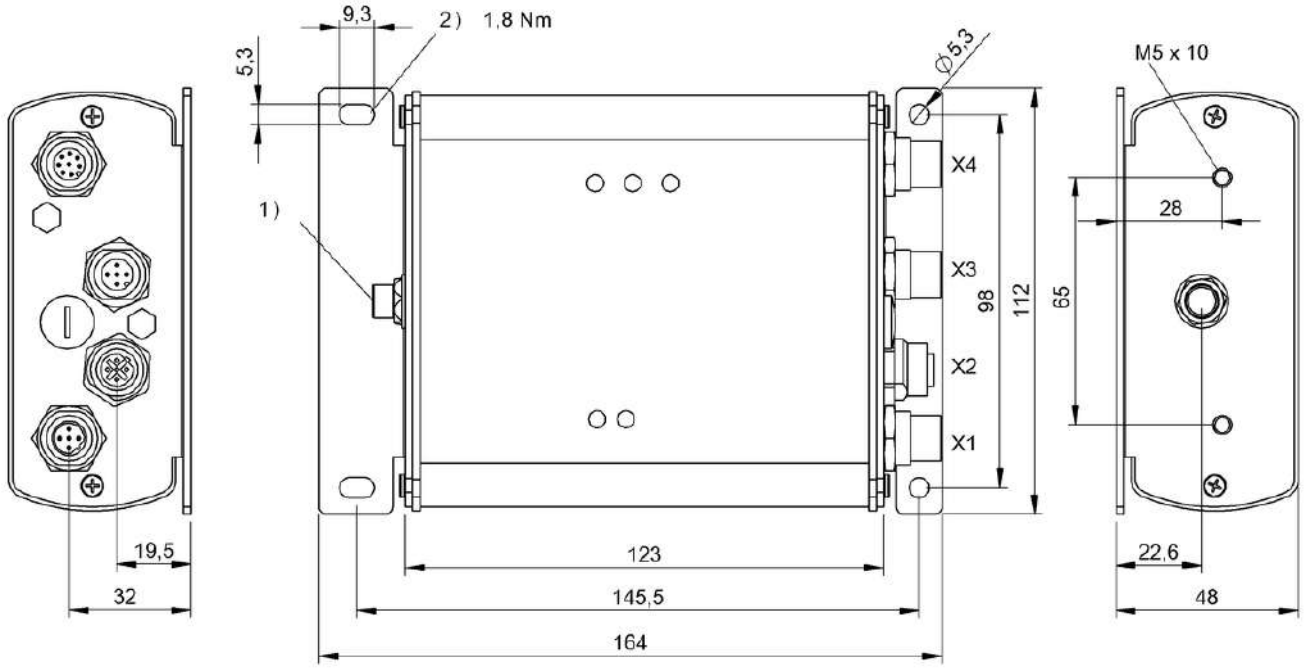
1) Antenna, 2) Tightening torque

BIS00ZJ



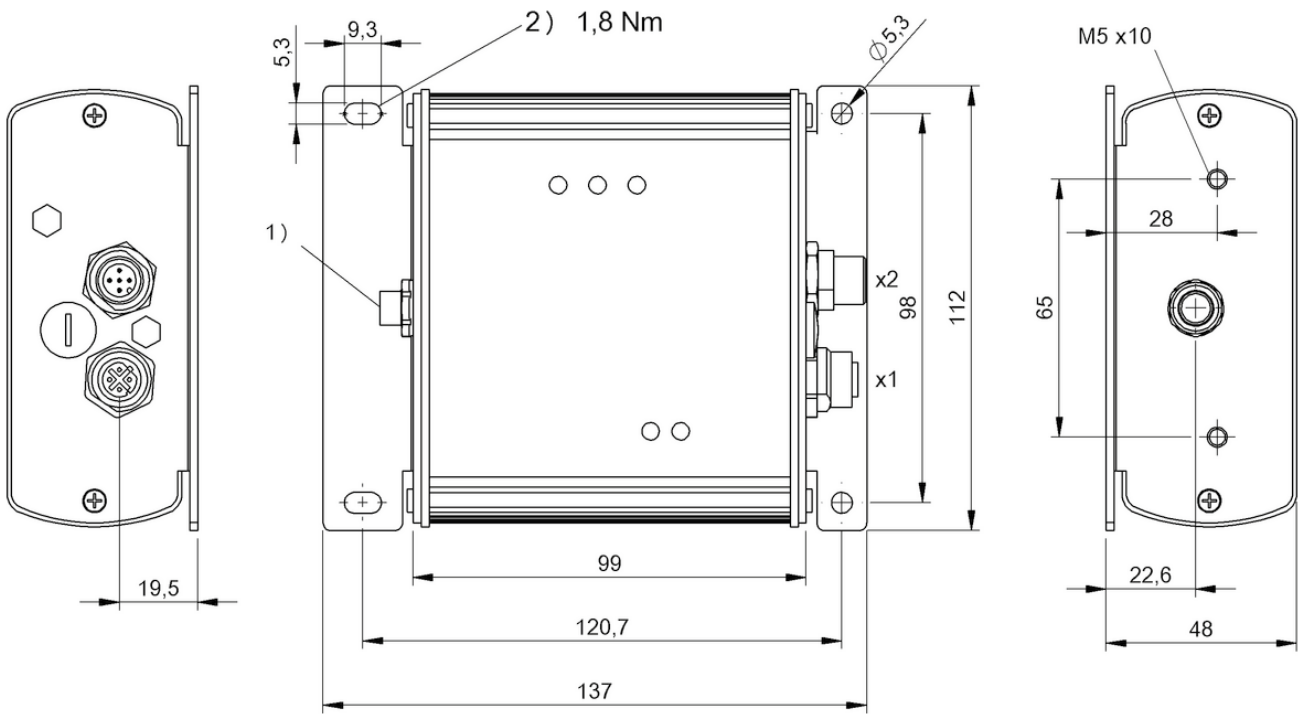
1) Antenna, 2) Tightening torque

BIS00ZH



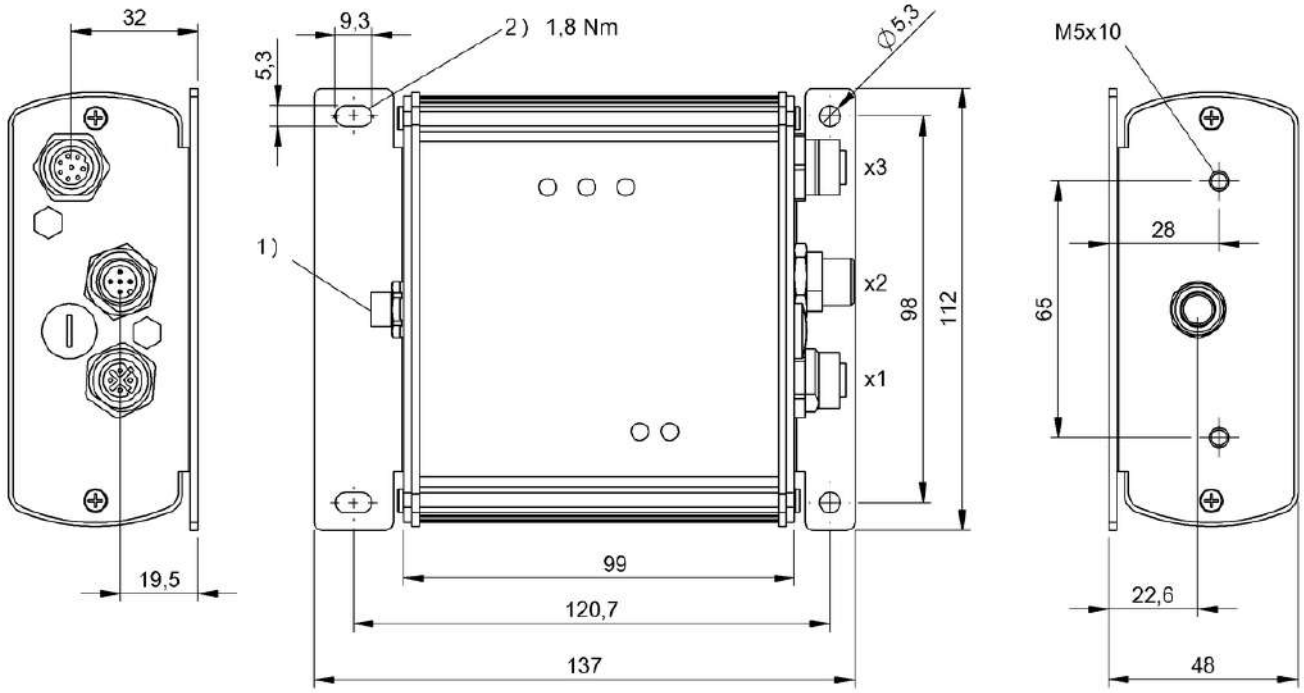
1) Antenna, 2) Tightening torque

BIS00ZF



1) Antenna, 2) Tightening torque

BIS00ZC



1) Antenna, 2) Tightening torque

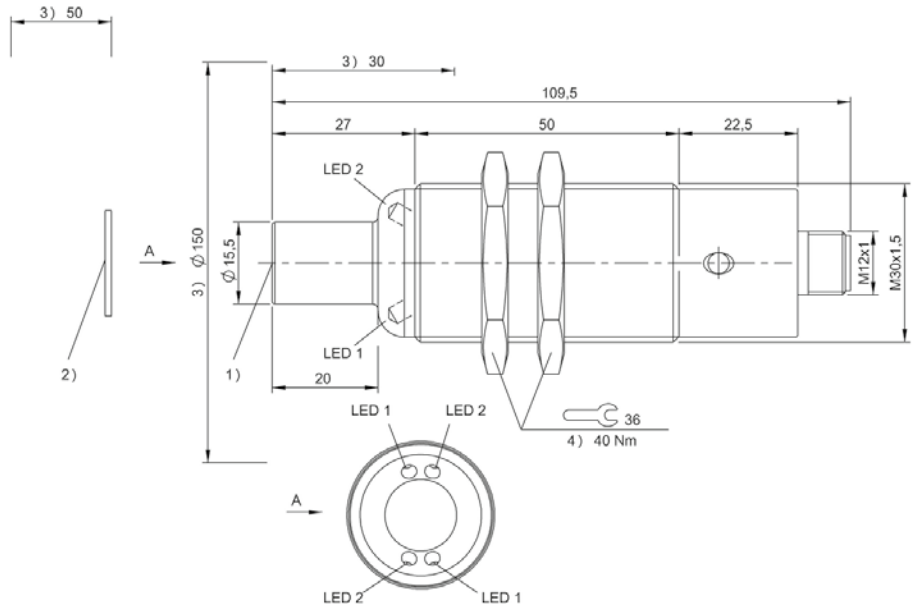
BIS00ZA

	BIS00EK BIS M-400-007-002-00-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 109.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	Brass, nuts nickel plated brass
Interface	RS232
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043	
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0
Working distance for writing	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12
Working distance for reading	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12
Offset at distance																
0	±9	±6	±4	±16	±12	±4	±5	±4	±6	±4	±4	±3	±4	±3	±14	±10
5	±9	±6	±4	±16	±12	±4	±4	±2	±6	±2	±3		±3	±2	±14	±8
9	±8	±4	±2	±12	±10	±2			±2						±12	±6
12	±6	±2		±8	±5										±10	±4
15	±4			±8	±5										±10	
16				±7	±3										±7	
18				±6	±2										±7	
20															±7	
22																
25																

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

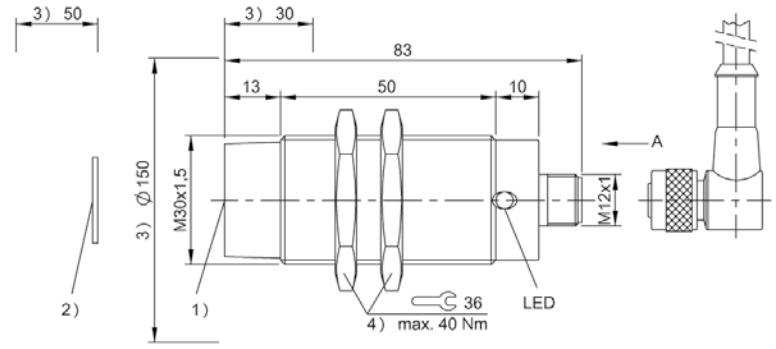
	BIS0044			BIS0045			BIS0046				BIS00YE		BIS00NU BIS00NW BIS0100	
	>25	>15	>5	>25	>10	>5	>50	>25	>20		>25		>0	
	>80	>50	>50	>80	>50	>50	>150	>90	>70		>100		>100	
	0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10		0-24		0-12	
	0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10		0-24		0-12	
	±8	±6	±4	±12	±8	±7	±20	±14	±14	0	±14		±7	
	±8	±6	±4	±12	±8	±4	±20	±14	±14	5	±14		±7	
	±6	±5		±10	±6		±18	±14	±10	10	±14		±6	
	±4			±10	±4		±18	±12	±6	12	±12		±2	
	±4			±10			±18	±12		15	±12			
				±7			±16	±10		20	±12			
				±7			±16	±8		24	±6			
				±7			±16			30				
							±12			35				
							±12			40				

	BIS00EJ BIS M-400-007-001-00-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 83 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	Brass, nuts nickel plated brass
Interface	RS232
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0043			BIS0044			BIS0045		
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0		>25	>10	>5	>25	>10	>5
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0		>100	>60	>50	>100	>60	>50
Working distance for writing	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16		0-20	0-15	0-8	0-28	0-18	0-10
Working distance for reading	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16		0-20	0-15	0-8	0-28	0-18	0-10
Offset at distance																			
0																			
5	±14	±10	±6	±20	±15	±6	±7	±6	±9	±6	±16	±10	0	±12	±8	±6	±16	±10	±7
9	±14	±10	±6	±20	±15	±6	±7	±6	±8	±6	±16	±10	2	±12	±8	±5	±16	±10	±7
12	±14	±8	±4	±20	±15	±3			±5		±14	±8	5	±12	±8	±5	±16	±10	±7
15	±10	±4	±2	±20	±13	±2					±14	±6	7	±10	±6	±4	±14	±8	±2
16	±10	±2		±20	±10						±14	±6	8	±10	±6	±2	±14	±8	±2
18	±8			±18	±3						±14	±4	9	±10	±6		±14	±8	±2
20	±6			±16							±14		10	±8	±4		±14	±7	±1
22	±5			±15							±14		12	±8	±4		±14	±7	
25				±15							±12		13	±8	±2		±14	±6	
30				±10							±12		15	±8	±2		±14	±6	
32													16	±5			±14	±3	
35													18	±5			±14	±2	
40													20	±5			±14		
43													22				±12		
45													25				±12		
50													27				±6		
52													28				±6		
60													30						
65													35						
70													38						
													45						

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

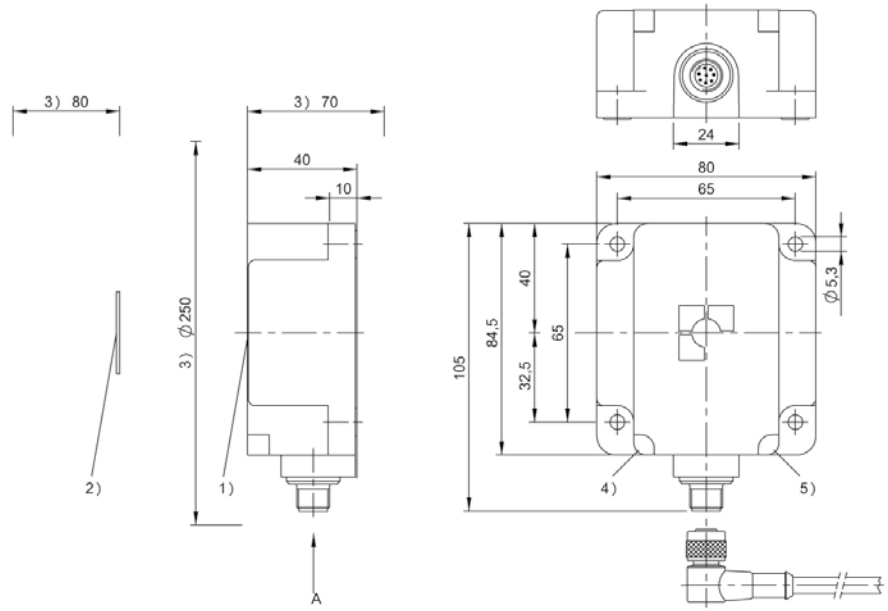
	BIS0046			BIS0048	BIS004A			BIS00LC		BIS00M9 BIS00M8	BIS00NU BIS00NW BIS0100		BIS0143		BIS00YE		BIS00Y7	BIS00Y5	BIS00Y4
	>50	>15	>10	>20	>20	>0		>25	>0	>0	>0		>25		>25	>0	>25	>50	>50
	>150	>90	>70	>100	>100	>0		>100	>100	>100	>100		>100		>100	>100	>100	>150	>150
	0-38	0-25	0-15	0-9.5	0-13	0-7		0-27	0-13	0-22	0-13		0-27		0-30	0-8	0-24	0-50	0-42
	0-38	0-25	0-15	0-9.5	0-13	0-7		0-27	0-13	0-22	0-13		0-27		0-30	0-8	0-24	0-50	0-42
	±22	±16	±13	±9	±10	±7	0	±16	±10	±13	±10	0	±18		±18	±8	±18	±30	±30
	±22	±16	±13	±9	±10	±7	5	±16	±10	±13	±10	5	±18		±18	±8	±18	±30	±30
	±22	±16	±13	±8	±10	±6	10	±16	±7	±13	±9	7	±18		±18	±6	±18	±30	±30
	±22	±14	±10	±7	±8	±1	13	±14	±5	±11	±5	8	±18		±18	±3	±18	±30	±30
	±22	±14	±10	±1	±8		15	±14		±11		10	±18		±18		±18	±30	±30
	±22	±14	±10	±1	±8		18	±14		±11		15	±16		±18		±16	±30	±28
	±20	±13	±8		±8		20	±14		±7		20	±16		±18		±16	±30	±28
	±20	±13	±8		±3		22	±12		±7		24	±10		±16		±5	±25	±24
	±20	±12	±6		±3		25	±12				25	±10		±16			±25	±24
	±20	±12	±6				27	±5				27	±5		±5			±25	±24
	±20	±10					30					30			±5			±25	±24
	±20	±10					32					35						±25	±24
	±20	±8					35					40						±25	±5
	±20	±6					40					42						±5	±5
	±20	±4					43					45						±5	
	±16						45					50						±5	
	±16						50					40							
	±16						52					42							
	±10						60					45							
	±5						65					50							
							70					55							

	BIS00EM BIS M-401-007-001-00-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PBT
Interface	RS232
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0047		BIS0043		BIS0044		BIS0045		BIS0046	
Data carrier distance to metal	>50	>25	>10	>50	>25	>10	>80		>50	>20	>50	>30	>50	>30	>50	>30
Data carrier clear zone	>200	>150	>150	>200	>150	>150	>250		>200	>60	>200	>100	>200	>100	>200	>100
Working distance for writing	0-28	0-25	0-20	0-45	0-40	0-34	0-50		0-40	0-18	0-30	0-18	0-40	0-25	0-60	0-35
Working distance for reading	0-28	0-25	0-20	0-45	0-40	0-34	0-50		0-40	0-18	0-30	0-18	0-40	0-25	0-60	0-35
Offset at distance																
0	±22	±18	±12	±30	±24	±16	±30		±30	±16	±25	±18	±30	±20	±35	±25
5	±22	±18	±12	±30	±24	±16	±30		±30	±16	±25	±18	±30	±20	±35	±25
9	±22	±18	±10	±30	±24	±16	±30		±30	±16	±25	±15	±30	±20	±35	±25
12	±22	±16	±8	±30	±24	±14	±30		±25	±16	±20	±15	±25	±20	±35	±25
15	±22	±16	±8	±30	±24	±14	±30		±25	±16	±20	±12	±25	±18	±35	±25
16	±20	±15	±6	±30	±20	±12	±30		±25	±16	±20	±12	±25	±18	±35	±25
18	±20	±13	±4	±30	±20	±10	±30		±25	±14	±20	±8	±25	±16	±35	±25
20	±20	±12	±2	±30	±20	±10	±30		±25		±20		±25	±14	±35	±25
22	±16	±8		±24	±18	±8	±30		±20		±15		±20	±12	±35	±22
25	±12	±4		±24	±18	±8	±30		±20		±15		±20	±10	±35	±22
30				±24	±15	±6	±28		±20		±10		±20		±35	±22
32				±20	±12	±4	±24		±15		±10		±15		±35	±22
35				±20	±10		±22		±15				±15		±35	±20
40				±15	±5		±18		±15				±15		±35	
43				±8			±14								±25	
45				±5			±12								±25	
50							±4								±25	
52															±25	
60															±25	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP)

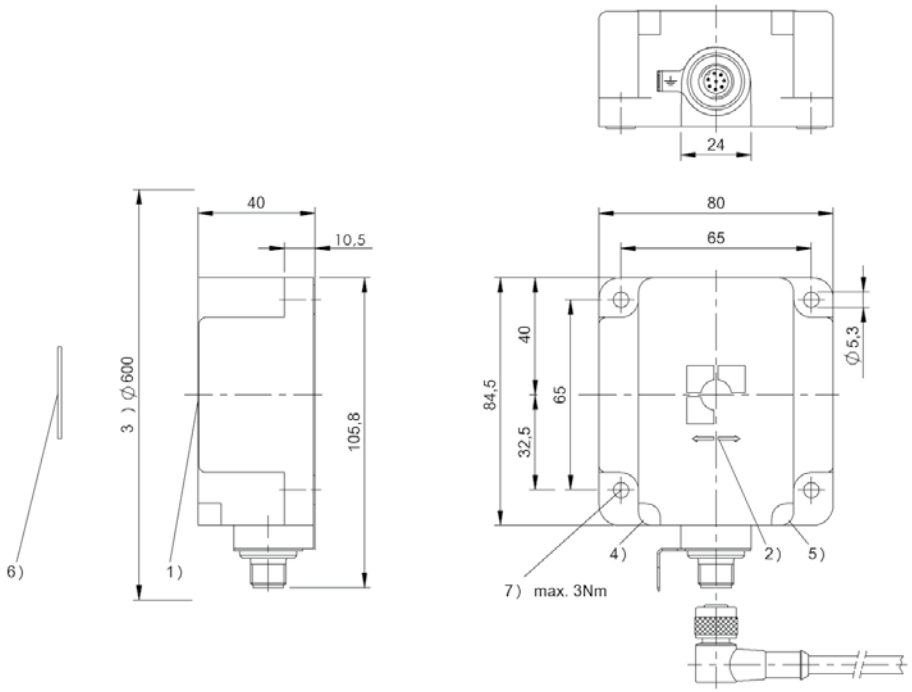
BIS00M9 BIS00M8	BIS00NU BIS00NW BIS0100		BIS00YE	BIS00Y4
>0	>0		>50	>50
>100	>100		>200	>200
0-32	0-16		0-50	0-75
0-32	0-16		0-50	0-75
±25	±24	0	±30	±50
±25	±24	5	±30	±50
±25	±20	10	±30	±50
±25	±14	15	±30	±50
±25	±4	20	±30	±50
±25	±4	25	±28	±50
±25		30	±28	±50
±25		35	±28	±50
±20		40	±28	±50
±20		45	±10	±45
±15		50	±10	±45
±15		55		±45
		60		±45
		65		±35
		70		±35
		75		±35
		80		
		85		
		90		

	BIS00ER BIS M-451-007-001-00-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PBT
Interface	RS232
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS004F				BIS004H					BIS00M2				BIS00P3	
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>10	>10	>240	>240
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>50	>50	>480	>480
Data carrier clear zone C										>50	>50	>2	>2	>50	>50
Metallic mounting surface 40 × 22 mm	0-52	0-52			0-52	0-52									
Metallic mounting surface > 200 × 200 mm			0-65	0-65			0-65	0-65							
Working distance for writing	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65		0-30	0-30	15-30	15-30	0-100	0-100
Working distance for reading	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65		0-30	0-30	15-30	15-30	0-100	0-100
Offset at distance	X	Y	X	Y	X	Y	X	Y		X	Y	X	Y	X	Y
0	±60	±25	±65	±26	±25	±60	±26	±65	0	±35	±20			±60	±20
5	±60	±25	±65	±26	±25	±60	±26	±65	5	±35	±20			±60	±20
12	±60	±25	±65	±25	±25	±60	±25	±65	10	±35	±20			±60	±20
15	±60	±25	±65	±25	±25	±60	±25	±65	15	±35	±20	±35	±15	±60	±20
18	±60	±25	±65	±25	±25	±60	±25	±65	20	±35	±20	±35	±15	±60	±20
20	±60	±25	±65	±25	±25	±60	±25	±65	25	±20	±12	±28	±15	±60	±20
22	±60	±25	±65	±25	±25	±60	±25	±65	30	±20	±12	±28	±15	±60	±20
25	±60	±25	±65	±25	±25	±60	±25	±65	35					±60	±20
30	±60	±25	±65	±25	±25	±60	±25	±65	40					±60	±20
32	±50	±25	±65	±25	±25	±50	±25	±65	45					±60	±20
35	±50	±25	±65	±25	±25	±50	±25	±65	50					±60	±20
40	±50	±20	±50	±25	±20	±50	±25	±50	60					±60	±20
45	±25	±20	±50	±25	±20	±25	±25	±50	70					±60	±20
50	±25	±20	±50	±25	±20	±25	±25	±50	80					±60	±20
52	±25	±8	±25	±25	±8	±25	±25	±25	90					±40	±20
60			±25	±10			±10	±25	100					±40	±20
65			±25	±10			±10	±25							

Dimensions in mm



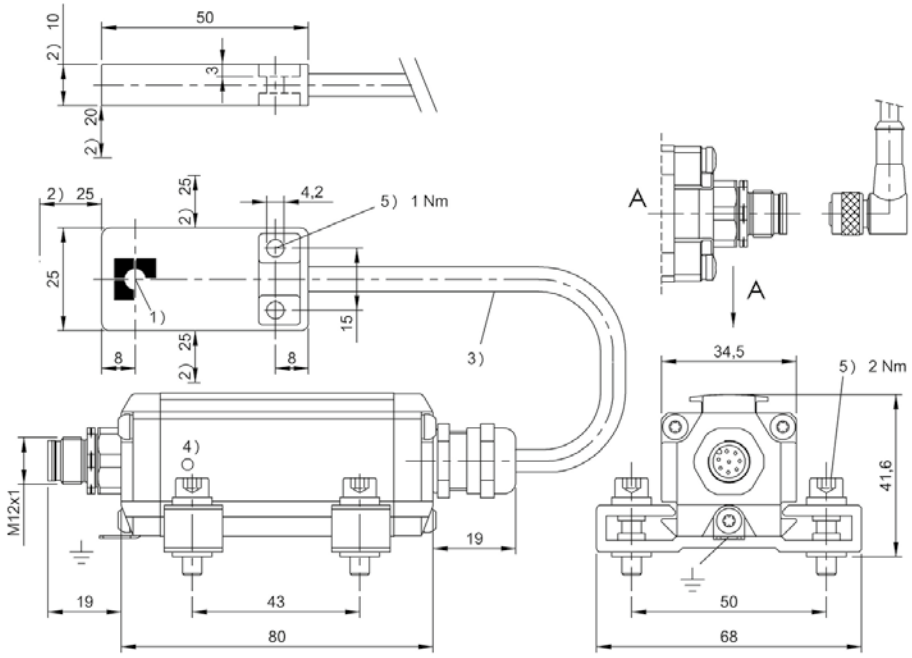
1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Data carrier on steel, 7) Tightening torque

	BIS00RU BIS M-402-007-004-00-S115
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Interface	RS232
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A			BIS00NU BIS00NW BIS0100		BIS003Y	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>0		>25	
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>100		>100	
Working distance for writing	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15	
Working distance for reading	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15	
Offset at distance															
0	±4	±3	±5	±4	±8		±4	±3	±4	±4	0	±6		±11	
5	±2		±5	±2	±8		±2		±4	±2	5	±6		±11	
9					±6						7	±6		±9	
12					±4						9	±4		±9	
15					±4						12			±9	
16											15			±5	

Dimensions in mm



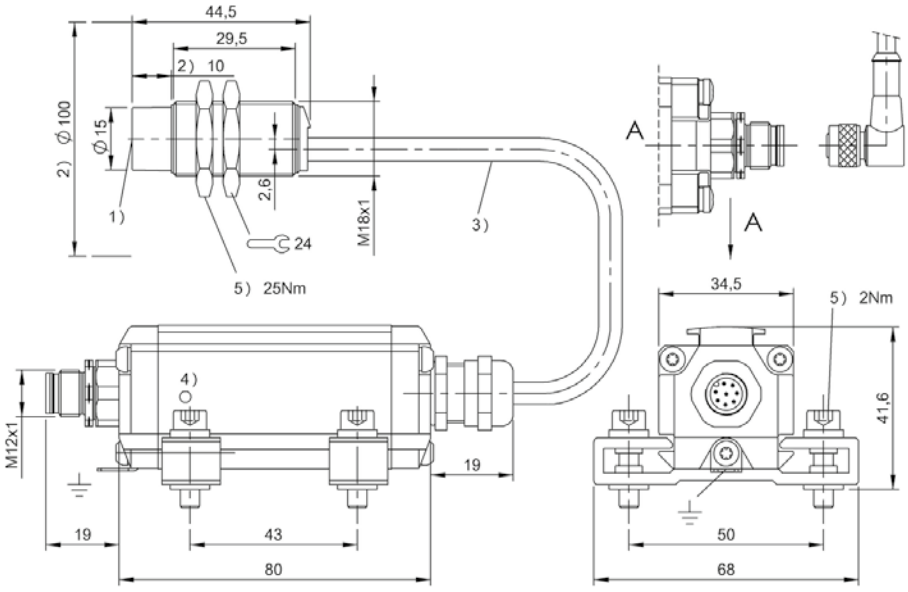
1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque

	BIS00EN BIS M-402-007-002-00-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 44.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	Brass, interface aluminum
Interface	RS232
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0040		BIS0042		BIS0048		BIS004A		BIS0044			BIS003Y		BIS0045		
Data carrier distance to metal	>10	>0	>10	>0	>10	>0	>10	>0	>25			>25		>25		
Data carrier clear zone	>60	>0	>60	>0	>60	>0	>60	>0	>80			>100		>100		
Working distance for writing	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15			0-14		0-18		
Working distance for reading	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15			0-14		0-18		
Offset at distance																
0	±3	±3	±4	±3	±3	±2	±4	±3	±7		0	±10		±12		
5	±2		±3	±2	±2		±3	±2	±7		5	±10		±12		
9									±5		10	±9		±11		
12									±3		14	±5		±10		
15									±3		15			±10		
16											18			±5		

Dimensions in mm

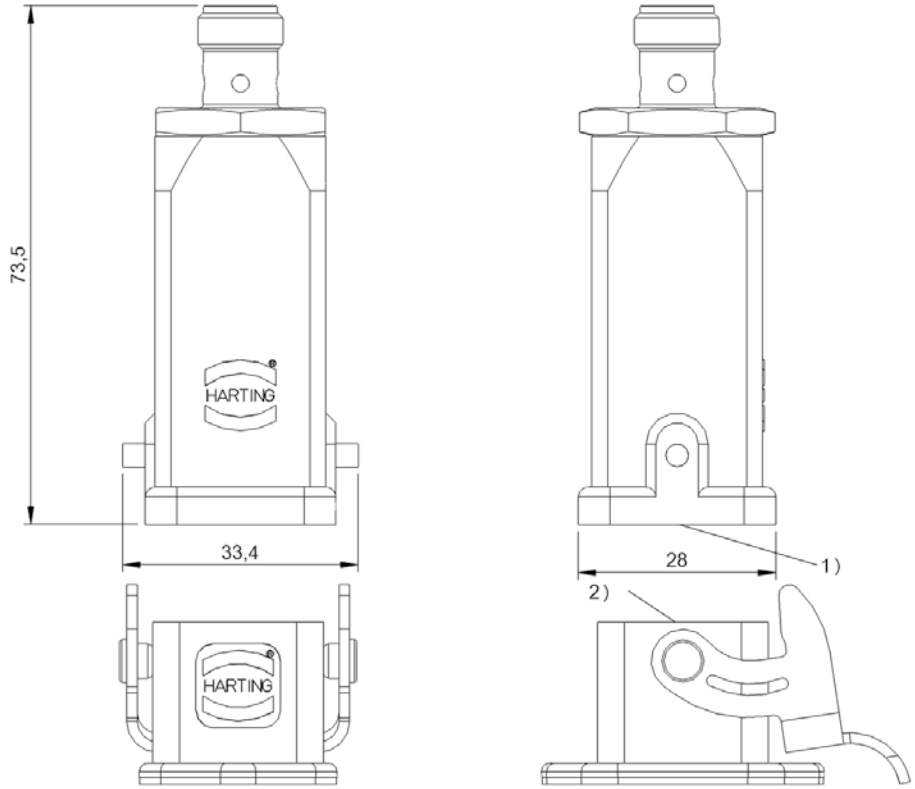


1) Sensing surface, 2) Clear zone, 3) Cable length, 4) LED function indicator, 5) Tightening torque

	BIS00YL	BIS00YK	BIS00YE	BIS00NU BIS00NW BIS0100
	>25	>25	>25	>0
	>100	>100	>100	>100
	0-9	0-9	0-20	0-9
	0-9	0-9	0-20	0-9
	±6	±6	±12	±6
	±6	±6	±12	±6
	±5	±5	±12	±6
	±1	±1	±12	±4
			±12	
			±10	

IO-Link, 10 bytes process data length	**BIS018E** BIS M-404-045-401-07-S4-SA1
Product Group	HF (13.56 MHz)
Dimension	28 x 60 x 33.4 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Connector, M12x1 connector, 4-pin
Housing material	Die casting Brass nickel plated, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210

Use with data carrier **BIS0180** only



1) Sensing surface, 2) Data carrier

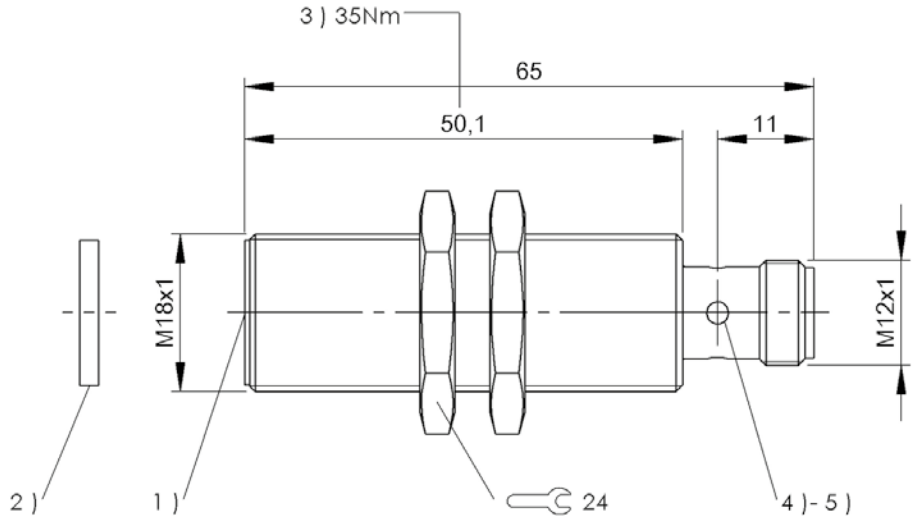
IO-Link, 10 bytes process data length	**BIS015R** BIS M-404-045-401-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 65 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210

Use with **IO-Link master** only

Appropriate data carrier

	BIS0042			BIS0043			BIS011F BIS011E BIS011A BIS0139			BIS004A			BIS0143		
Data carrier distance to metal	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20		
Data carrier clear zone	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100		
Working distance for writing	0-8.5	0-8	0-6	0-11	0-8	0-6	0-6.5	0-6	0-5	0-6	0-5.5	0-3.5	0-13		
Working distance for reading	0-8.5	0-8	0-6	0-11	0-8	0-6	0-6.5	0-6	0-5	0-6	0-5.5	0-3.5	0-13		
Offset at distance															
0	±5	±5	±4	±8	±8	±7	±8	±8	±7	±4.5	±4	±3.5	±8		
2	±5	±5	±4	±8	±8	±7	±8	±8	±7	±4.5	±4	±3	±8		
3.5	±4.5	±4	±3	±8	±7	±6	±7	±7	±6	±4	±3	±1.5	±8		
4	±4.5	±4	±3	±8	±7	±6	±7	±7	±6	±4	±3		±8		
4.5	±4.5	±4	±3	±8	±7	±4	±7	±6	±3	±3.5	±3		±8		
5	±4.5	±4	±3	±8	±7	±4	±7	±6	±3	±3.5	±2		±8		
5.5	±4	±3	±2	±7	±5	±1	±4	±3		±2	±2		±7		
6	±4	±3	±2	±7	±5	±1	±4	±3		±2			±7		
6.5	±4	±3		±7	±5		±4						±7		
7	±4	±3		±7	±5								±7		
8	±2	±2		±7	±4								±7		
8.5	±2			±7									±7		
10				±7									±7		
11				±4									±4		
13													±4		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Tightening torque, 4) LED (CP), 5) LED (Power)

		BIS0044		BIS00NU BIS00NW BIS0100	
		>25		>0	
		>100		>100	
		0-10		0-9.5	
		0-10		0-9.5	
	0	±6		±5	
	2	±6		±5	
	4	±6		±5	
	5	±6		±5	
	6	±5		±4	
	7	±5		±4	
	8	±5		±4	
	9.5	±3		±2	
	10	±3			
	12				
	15				
	20				
	25				
	30				
	35				

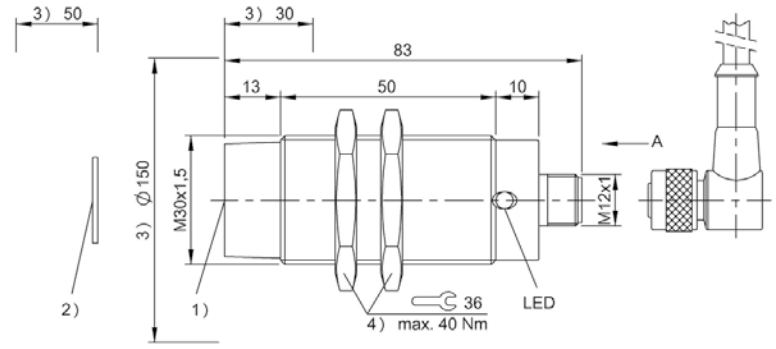
IO-Link, 10 bytes process data length	**BIS00LH** BIS M-400-045-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 83 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Use with **IO-Link master** only

Appropriate data carrier

	BIS003Y			**BIS003Z**			**BIS0040**		**BIS0042**		**BIS0043**			**BIS0044**			**BIS0045**		
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0		>25	>10	>5	>25	>10	>5
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0		>100	>60	>50	>100	>60	>50
Working distance for writing	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16		0-20	0-15	0-8	0-28	0-18	0-10
Working distance for reading	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16		0-20	0-15	0-8	0-28	0-18	0-10
Offset at distance																			
0																			
5	±14	±10	±6	±20	±15	±6	±7	±6	±9	±6	±16	±10	0	±12	±8	±6	±16	±10	±7
9	±14	±10	±6	±20	±15	±6	±7	±6	±8	±6	±16	±10	2	±12	±8	±5	±16	±10	±7
12	±14	±8	±4	±20	±15	±3			±5		±14	±8	5	±12	±8	±5	±16	±10	±7
15	±10	±4	±2	±20	±13	±2					±14	±6	7	±10	±6	±4	±14	±8	±2
16	±10	±2		±20	±10						±14	±6	8	±10	±6	±2	±14	±8	±2
18	±8			±18	±3						±14	±4	9	±10	±6		±14	±8	±2
20	±6			±16							±14		10	±8	±4		±14	±7	±1
22	±5			±15							±14		12	±8	±4		±14	±7	
25				±15							±12		13	±8	±2		±14	±6	
30				±10							±12		15	±8	±2		±14	±6	
32													16	±5			±14	±3	
35													18	±5			±14	±2	
40													20	±5			±14		
43													22				±12		
45													25				±12		
50													27				±6		
52													28				±6		
60													30						
65													35						
70													38						
													45						

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

	BIS0046			BIS0048		BIS004A			BIS00LC		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100			BIS0143		BIS00YE		BIS00Y7		BIS00Y5		BIS00Y4	
	>50	>15	>10	>20		>20	>0		>25	>0	>0		>0			>25		>25	>0	>25		>50		>50	
	>150	>90	>70	>100		>100	>0		>100	>100	>100		>100			>100		>100	>100	>100		>150		>150	
	0-38	0-25	0-15	0-9.5		0-13	0-7		0-27	0-13	0-22		0-13			0-27		0-30	0-8	0-24		0-50		0-42	
	0-38	0-25	0-15	0-9.5		0-13	0-7		0-27	0-13	0-22		0-13			0-27		0-30	0-8	0-24		0-50		0-42	
	±22	±16	±13	±9		±10	±7	0	±16	±10	±13		±10		0	±18		±18	±8	±18		±30		±30	
	±22	±16	±13	±9		±10	±7	5	±16	±10	±13		±10		5	±18		±18	±8	±18		±30		±30	
	±22	±16	±13	±8		±10	±6	10	±16	±7	±13		±9		7	±18		±18	±6	±18		±30		±30	
	±22	±14	±10	±7		±8	±1	13	±14	±5	±11		±5		8	±18		±18	±3	±18		±30		±30	
	±22	±14	±10	±1		±8		15	±14		±11				10	±18		±18		±18		±30		±30	
	±22	±14	±10	±1		±8		18	±14		±11				15	±16		±18		±16		±30		±28	
	±20	±13	±8			±8		20	±14		±7				20	±16		±18		±16		±30		±28	
	±20	±13	±8			±3		22	±12		±7				24	±10		±16		±5		±25		±24	
	±20	±12	±6			±3		25	±12						25	±10		±16				±25		±24	
	±20	±12	±6					27	±5						27	±5		±5				±25		±24	
	±20	±10						30							30			±5				±25		±24	
	±20	±10						32							35							±25		±24	
	±20	±8						35							40							±25		±5	
	±20	±6						40							42							±5		±5	
	±20	±4						43							45							±5			
	±16							45							50							±5			
	±16							50							40										
	±16							52							42										
	±10							60							45										
	±5							65							50										
								70							55										

IO-Link, 10 bytes process data length	**BIS015T** BIS M-400-045-401-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 65.9 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210

Use with **IO-Link master** only

Appropriate data carrier

	BIS0042	BIS0043 BIS0111			BIS004A	BIS0143		BIS0044		BIS0045	BIS0046	
Data carrier distance to metal	>20	>25	>0	>0	>20	>20		>25		>25	>50	
Data carrier clear zone	>100	>100	>100	>0	>100	>100		>100		>100	>150	
Working distance for writing	0-13	0-21	0-15	0-13	0-9	0-21		0-18		0-21	0-30	
Working distance for reading	0-13	0-21	0-15	0-13	0-9	0-21		0-18		0-21	0-30	
Offset at distance												
0	±8	±13	±10	±10	±7	±12	0	±9		±13	±20	
5	±8	±13	±10	±10	±7	±12	5	±9		±13	±20	
8	±8	±13	±10	±9	±6	±12	10	±9		±13	±20	
9	±7	±13	±8	±8	±4	±12	13	±8		±12	±18	
10	±7	±13	±8	±8		±12	15	±8		±12	±18	
13	±4	±12	±8	±3		±11	16	±4		±11	±18	
15		±12	±3			±11	18	±4		±11	±18	
18		±11				±10	20			±5	±18	
20		±5				±5	21			±5	±16	
21		±5				±5	25				±16	
30							30				±8	

Dimensions in mm

	BIS00NU BIS00NW BIS0100	
	>0	
	>100	
	0-13	
	0-13	
	±9	
	±9	
	±7	
	±3	

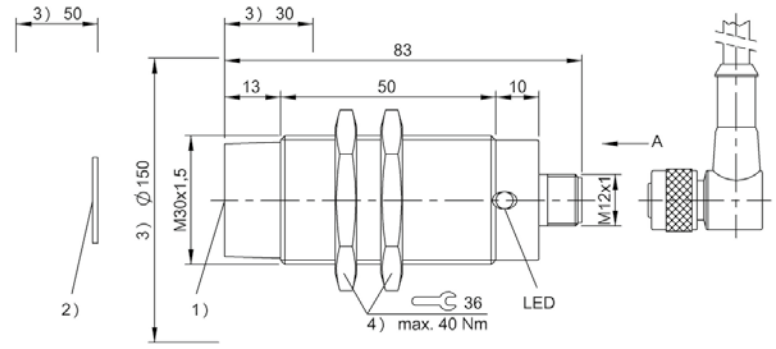
IO-Link, 32 bytes process data length	**BIS0108** BIS M-400-072-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 83 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Use with **IO-Link master** only

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0043			BIS0044			BIS0045		
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0		>25	>10	>5	>25	>10	>5
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0		>100	>60	>50	>100	>60	>50
Working distance for writing	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16		0-20	0-15	0-8	0-28	0-18	0-10
Working distance for reading	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16		0-20	0-15	0-8	0-28	0-18	0-10
Offset at distance																			
0																			
5	±14	±10	±6	±20	±15	±6	±7	±6	±9	±6	±16	±10	0	±12	±8	±6	±16	±10	±7
9	±14	±10	±6	±20	±15	±6	±7	±6	±8	±6	±16	±10	2	±12	±8	±5	±16	±10	±7
12	±14	±8	±4	±20	±15	±3			±5		±14	±8	5	±12	±8	±5	±16	±10	±7
15	±10	±4	±2	±20	±13	±2					±14	±6	7	±10	±6	±4	±14	±8	±2
16	±10	±2		±20	±10						±14	±6	8	±10	±6	±2	±14	±8	±2
18	±8			±18	±3						±14	±4	9	±10	±6		±14	±8	±2
20	±6			±16							±14		10	±8	±4		±14	±7	±1
22	±5			±15							±14		12	±8	±4		±14	±7	
25				±15							±12		13	±8	±2		±14	±6	
30				±10							±12		15	±8	±2		±14	±6	
32													16	±5			±14	±3	
35													18	±5			±14	±2	
40													20	±5			±14		
43													22				±12		
45													25				±12		
50													27				±6		
52													28				±6		
60													30						
65													35						
70													38						
													45						

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0046			BIS0048	BIS004A		BIS00LC		BIS00M9 BIS00M8	BIS00NU BIS00NW BIS0100		BIS0143		BIS00YE		BIS00Y7	BIS00Y5	BIS00Y4
>50	>15	>10	>20	>20	>0	>25	>0	>0	>0		>25		>25	>0	>25	>50	>50
>150	>90	>70	>100	>100	>0	>100	>100	>100	>100		>100		>100	>100	>100	>150	>150
0-38	0-25	0-15	0-9.5	0-13	0-7	0-27	0-13	0-22	0-13		0-27		0-30	0-8	0-24	0-50	0-42
0-38	0-25	0-15	0-9.5	0-13	0-7	0-27	0-13	0-22	0-13		0-27		0-30	0-8	0-24	0-50	0-42
±22	±16	±13	±9	±10	±7	0 ±16	±10	±13	±10		0 ±18		±18	±8	±18	±30	±30
±22	±16	±13	±9	±10	±7	5 ±16	±10	±13	±10		5 ±18		±18	±8	±18	±30	±30
±22	±16	±13	±8	±10	±6	10 ±16	±7	±13	±9		7 ±18		±18	±6	±18	±30	±30
±22	±14	±10	±7	±8	±1	13 ±14	±5	±11	±5		8 ±18		±18	±3	±18	±30	±30
±22	±14	±10	±1	±8		15 ±14		±11			10 ±18		±18		±18	±30	±30
±22	±14	±10	±1	±8		18 ±14		±11			15 ±16		±18		±16	±30	±28
±20	±13	±8		±8		20 ±14		±7			20 ±16		±18		±16	±30	±28
±20	±13	±8		±3		22 ±12		±7			24 ±10		±16		±5	±25	±24
±20	±12	±6		±3		25 ±12					25 ±10		±16			±25	±24
±20	±12	±6				27 ±5					27 ±5		±5			±25	±24
±20	±10					30					30		±5			±25	±24
±20	±10					32					35					±25	±24
±20	±8					35					40					±25	±5
±20	±6					40					42					±5	±5
±20	±4					43					45					±5	
±16						45					50					±5	
±16						50					40						
±16						52					42						
±10						60					45						
±5						65					50						
						70					55						

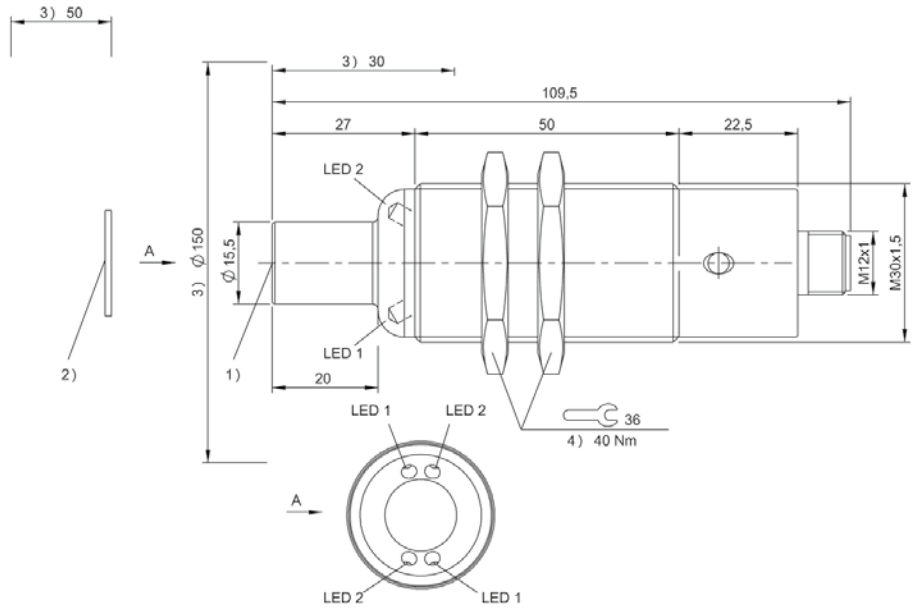
IO-Link, 10 bytes process data length	**BIS00LJ** BIS M-400-045-002-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 109.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043	
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0
Working distance for writing	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12
Working distance for reading	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12
Offset at distance																
0	±9	±6	±4	±16	±12	±4	±5	±4	±6	±4	±4	±3	±4	±3	±14	±10
5	±9	±6	±4	±16	±12	±4	±4	±2	±6	±2	±3		±3	±2	±14	±8
9	±8	±4	±2	±12	±10	±2			±2						±12	±6
12	±6	±2		±8	±5										±10	±4
15	±4			±8	±5										±10	
16				±7	±3										±7	
18				±6	±2										±7	
20															±7	
22																
25																

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

	BIS0044			BIS0045			BIS0046				BIS00YE		BIS00NU BIS00NW BIS0100	
	>25	>15	>5	>25	>10	>5	>50	>25	>20		>25		>0	
	>80	>50	>50	>80	>50	>50	>150	>90	>70		>100		>100	
	0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10		0-24		0-12	
	0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10		0-24		0-12	
	±8	±6	±4	±12	±8	±7	±20	±14	±14	0	±14		±7	
	±8	±6	±4	±12	±8	±4	±20	±14	±14	5	±14		±7	
	±6	±5		±10	±6		±18	±14	±10	10	±14		±6	
	±4			±10	±4		±18	±12	±6	12	±12		±2	
	±4			±10			±18	±12		15	±12			
				±7			±16	±10		20	±12			
				±7			±16	±8		24	±6			
				±7			±16			30				
							±12			35				
							±12			40				

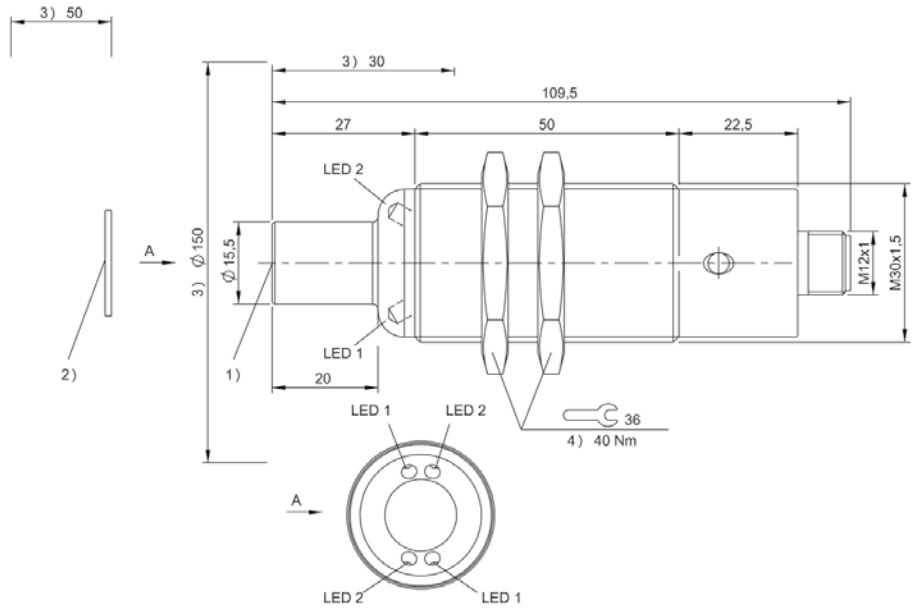
IO-Link, 32 bytes process data length	**BIS0104** BIS M-400-072-002-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 109.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043	
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0
Working distance for writing	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12
Working distance for reading	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12
Offset at distance																
0	±9	±6	±4	±16	±12	±4	±5	±4	±6	±4	±4	±3	±4	±3	±14	±10
5	±9	±6	±4	±16	±12	±4	±4	±2	±6	±2	±3		±3	±2	±14	±8
9	±8	±4	±2	±12	±10	±2			±2						±12	±6
12	±6	±2		±8	±5										±10	±4
15	±4			±8	±5										±10	
16				±7	±3										±7	
18				±6	±2										±7	
20															±7	
22																
25																

Dimensions in mm



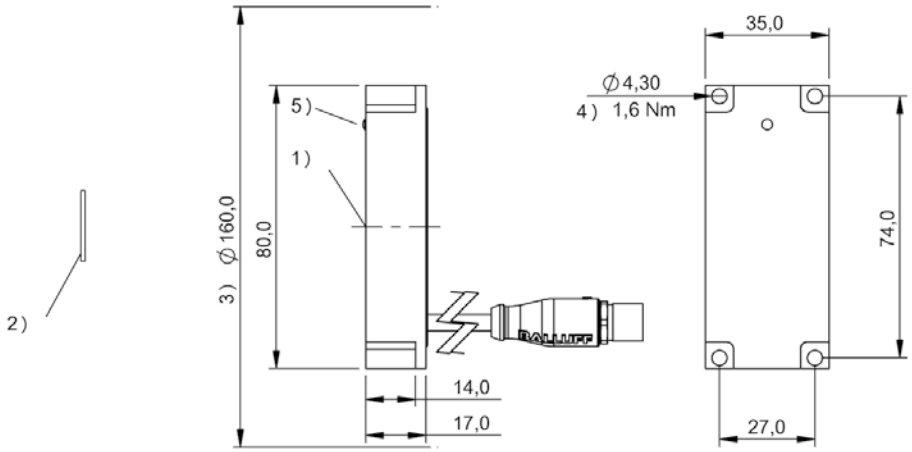
1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

	BIS0044			BIS0045			BIS0046				BIS00YE		BIS00NU BIS00NW BIS0100	
	>25	>15	>5	>25	>10	>5	>50	>25	>20		>25		>0	
	>80	>50	>50	>80	>50	>50	>150	>90	>70		>100		>100	
	0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10		0-24		0-12	
	0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10		0-24		0-12	
	±8	±6	±4	±12	±8	±7	±20	±14	±14	0	±14		±7	
	±8	±6	±4	±12	±8	±4	±20	±14	±14	5	±14		±7	
	±6	±5		±10	±6		±18	±14	±10	10	±14		±6	
	±4			±10	±4		±18	±12	±6	12	±12		±2	
	±4			±10			±18	±12		15	±12			
				±7			±16	±10		20	±12			
				±7			±16	±8		24	±6			
				±7			±16			30				
							±12			35				
							±12			40				

IO-Link, 10 bytes process data length	**BIS0155** BIS M-405-045-008-07-S4
Product Group	HF (13.56 MHz)
Dimension	35 x 17 x 80 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.30 m
Housing material	ABS
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier on request



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque, 5) LED Power

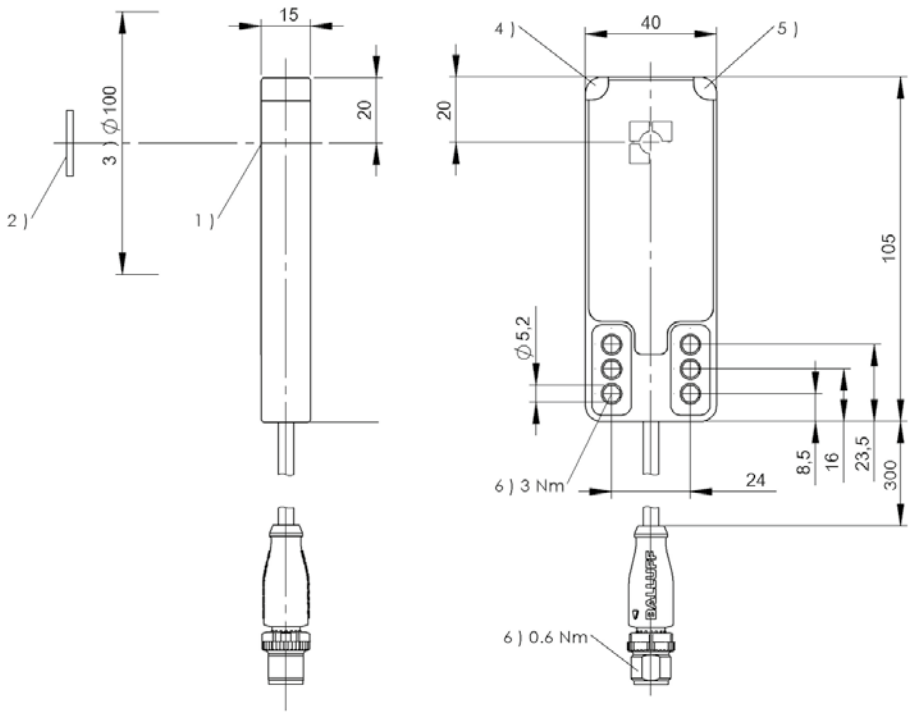
IO-Link, 10 bytes process data length	**BIS014J** BIS M-408-045-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	40 x 15 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Zinc, die-cast
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210

Use with **IO-Link master** only

Appropriate data carrier

	BIS0042		BIS004A		BIS0044		BIS0045		BIS0143			BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>10	>0	>10	>0	>25		>25		>25			>0		>0	
Data carrier clear zone	>60	>60	>60	>60	>100		>100		>100			>100		>100	
Working distance for writing	0-13	0-11	0-11	0-9	0-23		0-28		0-26			0-22		0-13	
Working distance for reading	0-13	0-11	0-11	0-9	0-23		0-28		0-26			0-22		0-13	
Offset at distance															
0	±10	±8	±8	±8	±15		±16		±15		0	±13		±10	
4	±10	±8	±8	±8	±15		±16		±15		5	±13		±10	
5	±10	±8	±8	±7	±15		±16		±15		10	±13		±9	
6	±9	±7	±7	±7	±15		±16		±15		13	±11		±5	
7	±9	±7	±7	±6	±15		±16		±15		15	±11			
8	±9	±7	±7	±6	±15		±16		±15		18	±11			
9	±9	±7	±7	±3	±15		±16		±15		20	±7			
10	±7	±4	±4		±15		±16		±15		22	±7			
11	±7	±4	±4		±12		±15		±13		25				
13	±4				±12		±15		±13		28				
15					±12		±15		±13		30				
20					±12		±15		±13		32				
23					±5		±10		±5		35				
25							±10		±5		40				
26							±5		±5		43				
28							±5				45				

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

		BIS00YK		BIS0046		BIS00Y5		BIS00Y4		BIS00LC	
		>10		>25		>50		>50		>25	>0
		>60		>100		>200		>200		>100	>100
		0-13		0-40		0-48		0-48		0-25	0-12
		0-13		0-40		0-48		0-48		0-25	0-12
	0	±9		±25		±26		±30		±15	±10
	5	±9		±25		±26		±30		±15	±10
	10	±8		±25		±26		±30		±15	±8
	12	±4		±25		±26		±30		±13	±2
	13	±4		±25		±26		±30		±13	
	15			±25		±26		±30		±13	
	18			±25		±26		±30		±13	
	20			±25		±26		±30		±13	
	25			±23		±24		±25		±5	
	30			±20		±24		±25			
	36			±20		±24		±25			
	40			±10		±24		±25			
	45					±5		±10			
	48					±5		±10			
	55										
	60										

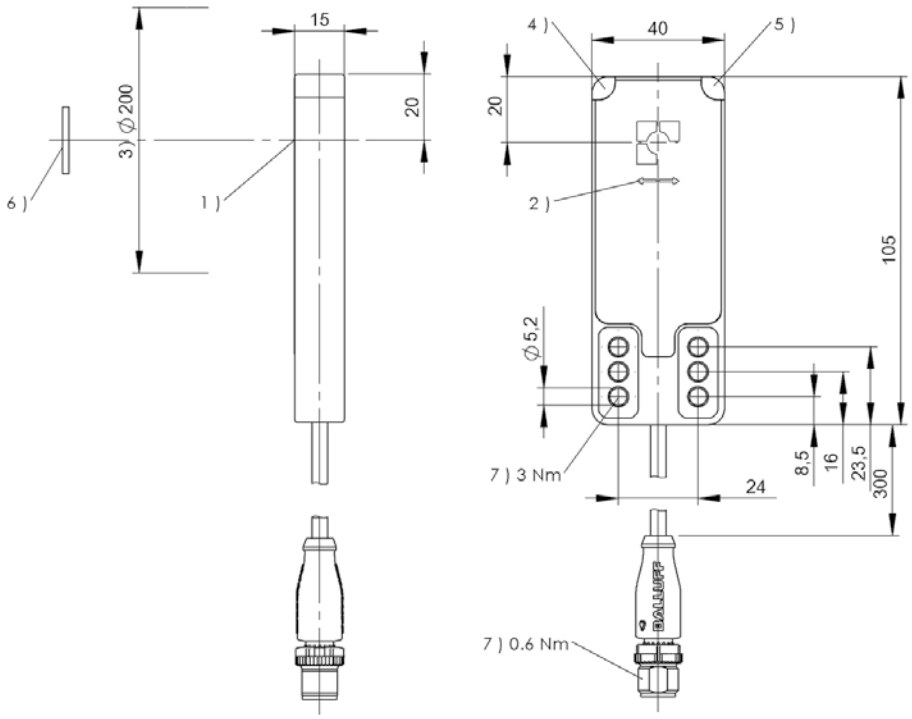
IO-Link, 10 bytes process data length	**BIS014K** BIS M-458-045-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	40 x 15 x 105 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Zinc, die-cast
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210

Use with **IO-Link master** only

Appropriate data carrier

	BIS004F				BIS004H					BIS00M2		BIS00P3				BIS00NZ	
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>240	>240	>240	>240	>27	>27
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>480	>480	>480	>480	>27	>27
Data carrier clear zone C										>50	>50	>50	>50	>0	>0		
Metallic mounting surface 40 × 22 mm	0-38	0-38			0-38	0-38											
Metallic mounting surface > 200 × 200 mm			0-42	0-42			0-34	0-34									
Working distance for writing	0-38	0-38	0-42	0-42	0-38	0-38	0-34	0-34		0-18	0-18	0-54	0-54	0-54	0-54	0-25	0-25
Working distance for reading	0-38	0-38	0-42	0-42	0-38	0-38	0-34	0-34		0-18	0-18	0-54	0-54	0-54	0-54	0-25	0-25
Offset at distance	X	Y	X	Y	X	Y	X	Y		X	Y	X	Y	X	Y	X	Y
0	±43	±18	±45	±21	±20	±40	±17	±35	0	±22	±12	±60	±30	±60	±30	±30	±20
5	±43	±18	±45	±21	±20	±40	±17	±35	5	±22	±12	±60	±30	±60	±30	±30	±20
10	±43	±18	±45	±21	±20	±40	±17	±35	10	±21	±10	±60	±30	±60	±30	±30	±20
15	±40	±17	±43	±20	±18	±35	±15	±33	15	±16	±8	±55	±27	±55	±27	±25	±15
20	±40	±17	±43	±20	±18	±35	±15	±33	16	±5	±2	±55	±27	±55	±27	±15	±10
30	±35	±15	±40	±18	±15	±30	±13	±28	18	±5	±2	±55	±27	±55	±27	±5	±5
34	±18	±5	±24	±12	±5	±10	±5	±10	30			±55	±27	±55	±27		
38	±18	±5	±24	±12	±5	±10			35			±50	±25	±50	±25		
40			±24	±12					40			±50	±25	±50	±25		
42			±15	±8					45			±35	±17	±35	±17		
50									50			±35	±17	±35	±17		
60									54			±15	±7	±15	±7		

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Data carrier, 7) Tightening torque

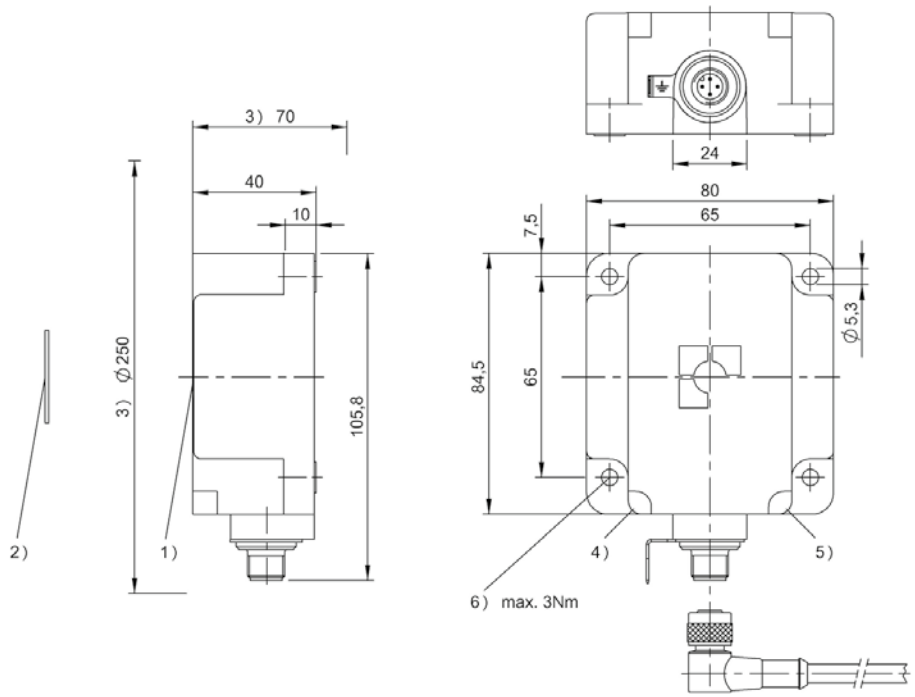
IO-Link, 10 bytes process data length	**BIS00LK** BIS M-401-045-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	PBT
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0047		BIS0043		BIS0044		BIS0045		BIS0046	
Data carrier distance to metal	>50	>25	>10	>50	>25	>10	>80		>50	>20	>50	>30	>50	>30	>50	>30
Data carrier clear zone	>200	>150	>150	>200	>150	>150	>250		>200	>60	>200	>100	>200	>100	>200	>100
Working distance for writing	0-28	0-25	0-20	0-45	0-40	0-34	0-50		0-40	0-18	0-30	0-18	0-40	0-25	0-60	0-35
Working distance for reading	0-28	0-25	0-20	0-45	0-40	0-34	0-50		0-40	0-18	0-30	0-18	0-40	0-25	0-60	0-35
Offset at distance																
0	±22	±18	±12	±30	±24	±16	±30		±30	±16	±25	±18	±30	±20	±35	±25
5	±22	±18	±12	±30	±24	±16	±30		±30	±16	±25	±18	±30	±20	±35	±25
9	±22	±18	±10	±30	±24	±16	±30		±30	±16	±25	±15	±30	±20	±35	±25
12	±22	±16	±8	±30	±24	±14	±30		±25	±16	±20	±15	±25	±20	±35	±25
15	±22	±16	±8	±30	±24	±14	±30		±25	±16	±20	±12	±25	±18	±35	±25
16	±20	±15	±6	±30	±20	±12	±30		±25	±16	±20	±12	±25	±18	±35	±25
18	±20	±13	±4	±30	±20	±10	±30		±25	±14	±20	±8	±25	±16	±35	±25
20	±20	±12	±2	±30	±20	±10	±30		±25		±20		±25	±14	±35	±25
22	±16	±8		±24	±18	±8	±30		±20		±15		±20	±12	±35	±22
25	±12	±4		±24	±18	±8	±30		±20		±15		±20	±10	±35	±22
30				±24	±15	±6	±28		±20		±10		±20		±35	±22
32				±20	±12	±4	±24		±15		±10		±15		±35	±22
35				±20	±10		±22		±15				±15		±35	±20
40				±15	±5		±18		±15				±15		±35	
43				±8			±14								±25	
45				±5			±12								±25	
50							±4								±25	
52															±25	
60															±25	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Tightening torque

	BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100			BIS00YE		BIS00Y4	
	>0		>0			>50		>50	
	>100		>100			>200		>200	
	0-32		0-16			0-50		0-75	
	0-32		0-16			0-50		0-75	
	±25		±24		0	±30		±50	
	±25		±24		5	±30		±50	
	±25		±20		10	±30		±50	
	±25		±14		15	±30		±50	
	±25		±4		20	±30		±50	
	±25		±4		25	±28		±50	
	±25				30	±28		±50	
	±25				35	±28		±50	
	±20				40	±28		±50	
	±20				45	±10		±45	
	±15				50	±10		±45	
	±15				55			±45	
					60			±45	
					65			±35	
					70			±35	
					75			±35	
					80				
					85				
					90				

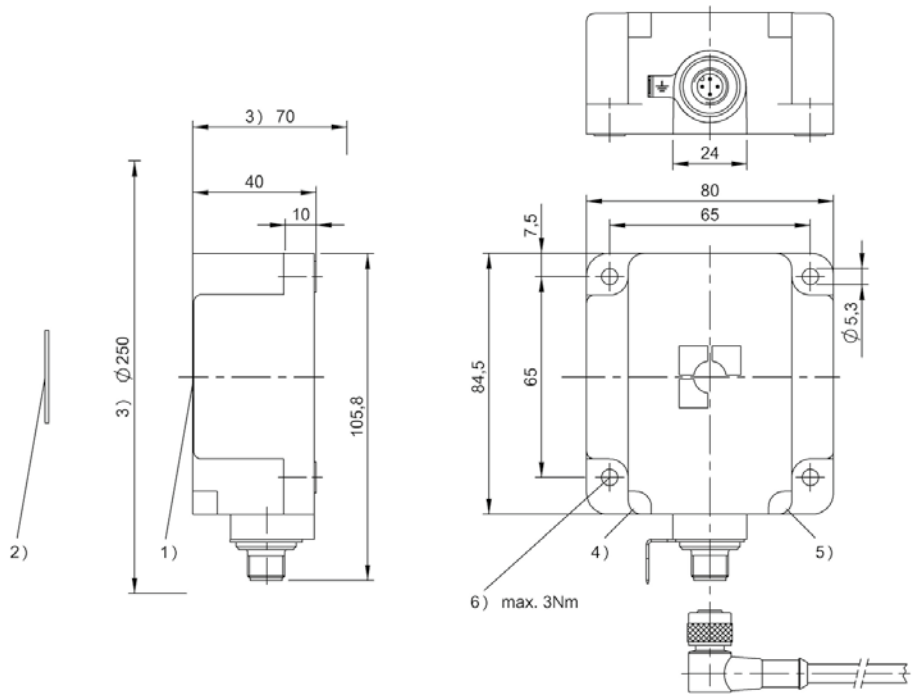
IO-Link, 32 bytes process data length	**BIS0102** BIS M-401-072-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	PBT
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0047		BIS0043		BIS0044		BIS0045		BIS0046	
Data carrier distance to metal	>50	>25	>10	>50	>25	>10	>80		>50	>20	>50	>30	>50	>30	>50	>30
Data carrier clear zone	>200	>150	>150	>200	>150	>150	>250		>200	>60	>200	>100	>200	>100	>200	>100
Working distance for writing	0-28	0-25	0-20	0-45	0-40	0-34	0-50		0-40	0-18	0-30	0-18	0-40	0-25	0-60	0-35
Working distance for reading	0-28	0-25	0-20	0-45	0-40	0-34	0-50		0-40	0-18	0-30	0-18	0-40	0-25	0-60	0-35
Offset at distance																
0	±22	±18	±12	±30	±24	±16	±30		±30	±16	±25	±18	±30	±20	±35	±25
5	±22	±18	±12	±30	±24	±16	±30		±30	±16	±25	±18	±30	±20	±35	±25
9	±22	±18	±10	±30	±24	±16	±30		±30	±16	±25	±15	±30	±20	±35	±25
12	±22	±16	±8	±30	±24	±14	±30		±25	±16	±20	±15	±25	±20	±35	±25
15	±22	±16	±8	±30	±24	±14	±30		±25	±16	±20	±12	±25	±18	±35	±25
16	±20	±15	±6	±30	±20	±12	±30		±25	±16	±20	±12	±25	±18	±35	±25
18	±20	±13	±4	±30	±20	±10	±30		±25	±14	±20	±8	±25	±16	±35	±25
20	±20	±12	±2	±30	±20	±10	±30		±25		±20		±25	±14	±35	±25
22	±16	±8		±24	±18	±8	±30		±20		±15		±20	±12	±35	±22
25	±12	±4		±24	±18	±8	±30		±20		±15		±20	±10	±35	±22
30				±24	±15	±6	±28		±20		±10		±20		±35	±22
32				±20	±12	±4	±24		±15		±10		±15		±35	±22
35				±20	±10		±22		±15				±15		±35	±20
40				±15	±5		±18		±15				±15		±35	
43				±8			±14								±25	
45				±5			±12								±25	
50							±4								±25	
52															±25	
60															±25	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Tightening torque

	BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100			BIS00YE		BIS00Y4	
	>0		>0			>50		>50	
	>100		>100			>200		>200	
	0-32		0-16			0-50		0-75	
	0-32		0-16			0-50		0-75	
	±25		±24		0	±30		±50	
	±25		±24		5	±30		±50	
	±25		±20		10	±30		±50	
	±25		±14		15	±30		±50	
	±25		±4		20	±30		±50	
	±25		±4		25	±28		±50	
	±25				30	±28		±50	
	±25				35	±28		±50	
	±20				40	±28		±50	
	±20				45	±10		±45	
	±15				50	±10		±45	
	±15				55			±45	
					60			±45	
					65			±35	
					70			±35	
					75			±35	
					80				
					85				
					90				

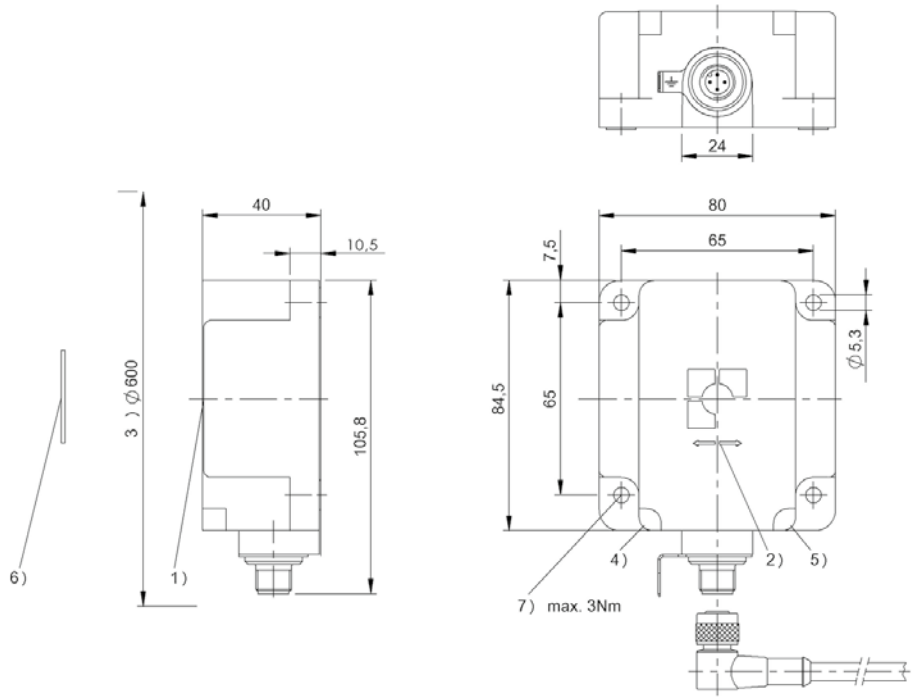
IO-Link, 10 bytes process data length	**BIS00LM** BIS M-451-045-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	PBT
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS004F				BIS004H					BIS00M2				BIS00P3	
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>10	>10	>240	>240
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>50	>50	>480	>480
Data carrier clear zone C										>50	>50	>2	>2	>50	>50
Metallic mounting surface 40 × 22 mm	0-52	0-52			0-52	0-52									
Metallic mounting surface > 200 × 200 mm			0-65	0-65			0-65	0-65							
Working distance for writing	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65		0-30	0-30	15-30	15-30	0-100	0-100
Working distance for reading	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65		0-30	0-30	15-30	15-30	0-100	0-100
Offset at distance	X	Y	X	Y	X	Y	X	Y		X	Y	X	Y	X	Y
0	±60	±25	±65	±26	±25	±60	±26	±65	0	±35	±20			±60	±20
5	±60	±25	±65	±26	±25	±60	±26	±65	5	±35	±20			±60	±20
12	±60	±25	±65	±25	±25	±60	±25	±65	10	±35	±20			±60	±20
15	±60	±25	±65	±25	±25	±60	±25	±65	15	±35	±20	±35	±15	±60	±20
18	±60	±25	±65	±25	±25	±60	±25	±65	20	±35	±20	±35	±15	±60	±20
20	±60	±25	±65	±25	±25	±60	±25	±65	25	±20	±12	±28	±15	±60	±20
22	±60	±25	±65	±25	±25	±60	±25	±65	30	±20	±12	±28	±15	±60	±20
25	±60	±25	±65	±25	±25	±60	±25	±65	35					±60	±20
30	±60	±25	±65	±25	±25	±60	±25	±65	40					±60	±20
32	±50	±25	±65	±25	±25	±50	±25	±65	45					±60	±20
35	±50	±25	±65	±25	±25	±50	±25	±65	50					±60	±20
40	±50	±20	±50	±25	±20	±50	±25	±50	60					±60	±20
45	±25	±20	±50	±25	±20	±25	±25	±50	70					±60	±20
50	±25	±20	±50	±25	±20	±25	±25	±50	80					±60	±20
52	±25	±8	±25	±25	±8	±25	±25	±25	90					±40	±20
60			±25	±10			±10	±25	100					±40	±20
65			±25	±10			±10	±25							

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Data carrier on steel, 7) Tightening torque

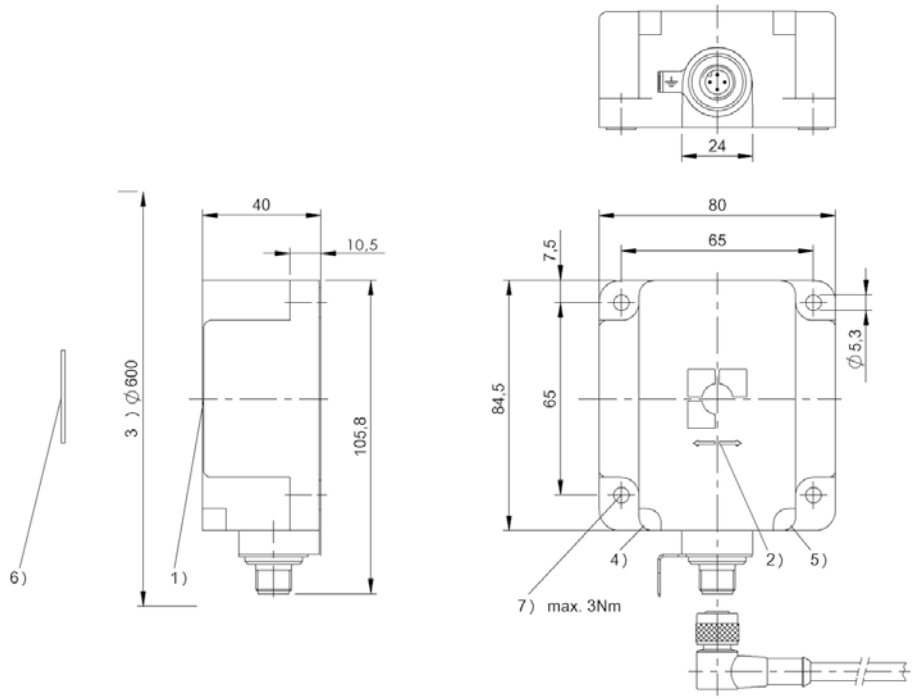
IO-Link, 32 bytes process data length	**BIS0103** BIS M-451-072-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	PBT
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS004F				BIS004H					BIS00M2				BIS00P3	
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>10	>10	>240	>240
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>50	>50	>480	>480
Data carrier clear zone C										>50	>50	>2	>2	>50	>50
Metallic mounting surface 40 × 22 mm	0-52	0-52			0-52	0-52									
Metallic mounting surface > 200 × 200 mm			0-65	0-65			0-65	0-65							
Working distance for writing	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65		0-30	0-30	15-30	15-30	0-100	0-100
Working distance for reading	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65		0-30	0-30	15-30	15-30	0-100	0-100
Offset at distance	X	Y	X	Y	X	Y	X	Y		X	Y	X	Y	X	Y
0	±60	±25	±65	±26	±25	±60	±26	±65	0	±35	±20			±60	±20
5	±60	±25	±65	±26	±25	±60	±26	±65	5	±35	±20			±60	±20
12	±60	±25	±65	±25	±25	±60	±25	±65	10	±35	±20			±60	±20
15	±60	±25	±65	±25	±25	±60	±25	±65	15	±35	±20	±35	±15	±60	±20
18	±60	±25	±65	±25	±25	±60	±25	±65	20	±35	±20	±35	±15	±60	±20
20	±60	±25	±65	±25	±25	±60	±25	±65	25	±20	±12	±28	±15	±60	±20
22	±60	±25	±65	±25	±25	±60	±25	±65	30	±20	±12	±28	±15	±60	±20
25	±60	±25	±65	±25	±25	±60	±25	±65	35					±60	±20
30	±60	±25	±65	±25	±25	±60	±25	±65	40					±60	±20
32	±50	±25	±65	±25	±25	±50	±25	±65	45					±60	±20
35	±50	±25	±65	±25	±25	±50	±25	±65	50					±60	±20
40	±50	±20	±50	±25	±20	±50	±25	±50	60					±60	±20
45	±25	±20	±50	±25	±20	±25	±25	±50	70					±60	±20
50	±25	±20	±50	±25	±20	±25	±25	±50	80					±60	±20
52	±25	±8	±25	±25	±8	±25	±25	±25	90					±40	±20
60			±25	±10			±10	±25	100					±40	±20
65			±25	±10			±10	±25							

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Data carrier on steel, 7) Tightening torque

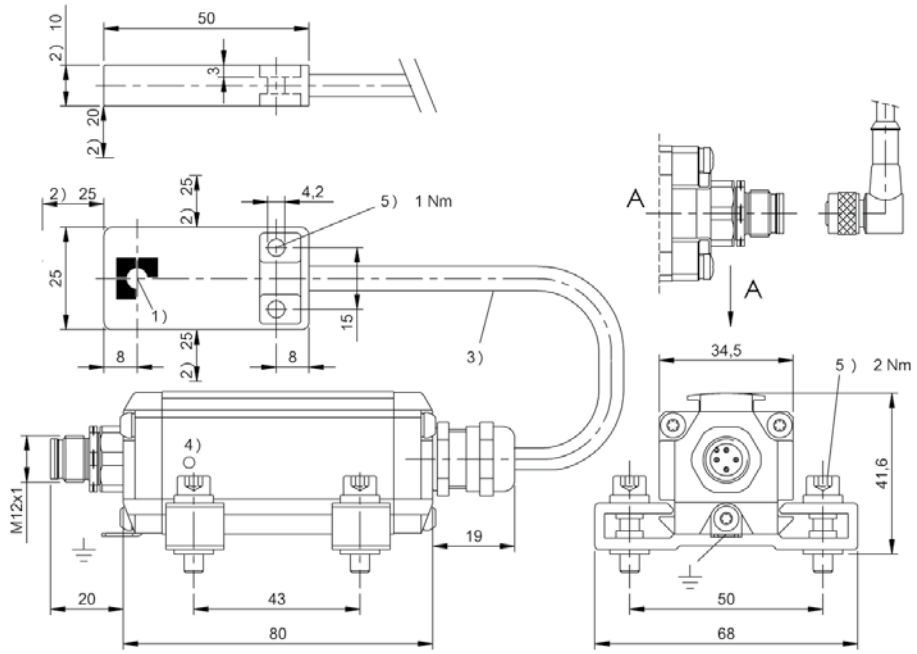
IO-Link, 10 bytes process data length	**BIS00M1** BIS M-402-045-004-07-S4
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A			BIS00NU BIS00NW BIS0100		BIS003Y	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>0		>25	
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>100		>100	
Working distance for writing	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15	
Working distance for reading	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15	
Offset at distance															
0	±4	±3	±5	±4	±8		±4	±3	±4	±4	0	±6		±11	
5	±2		±5	±2	±8		±2		±4	±2	5	±6		±11	
9					±6						7	±6		±9	
12					±4						9	±4		±9	
15					±4						12			±9	
16											15			±5	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque

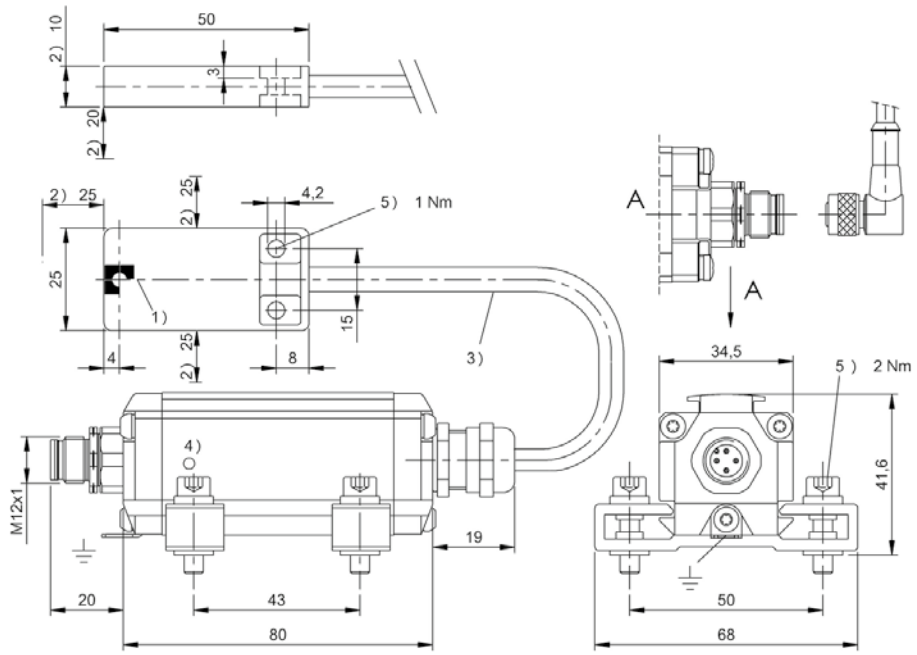
IO-Link, 10 bytes process data length	**BIS0126** BIS M-402-045-007-07-S4
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS00UC BIS00UE	
Data carrier distance to metal	>10	
Data carrier clear zone	>60	
Working distance for writing	0-3	
Working distance for reading	0-3	
Offset at distance		
0	±5	
1	±5	
2	±5	
3	±2	
15		
16		

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque

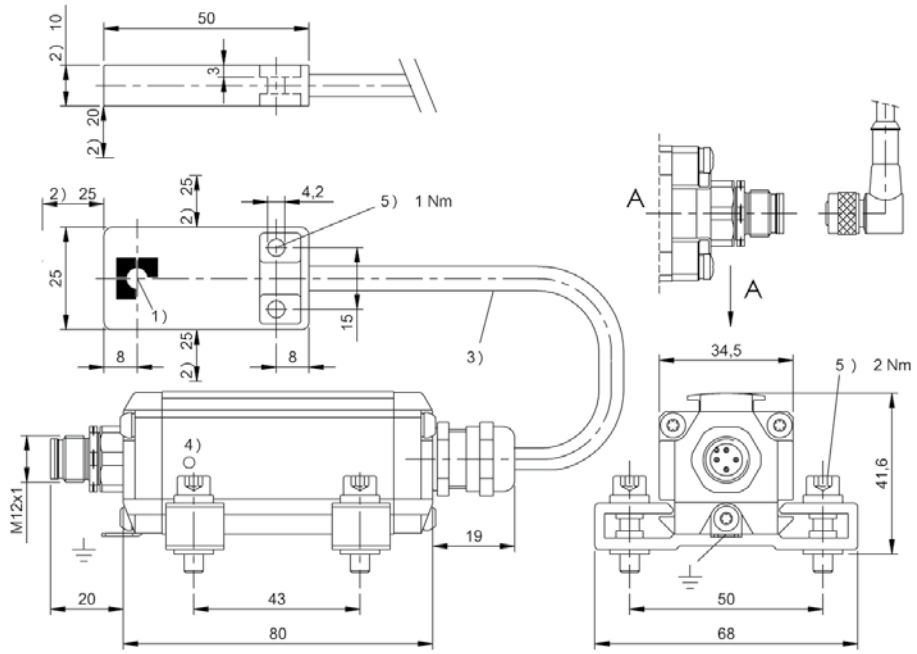
IO-Link, 32 bytes process data length	**BIS0106** BIS M-402-072-004-07-S4
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Interface	IO-Link
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A			BIS00NU BIS00NW BIS0100		BIS003Y	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>0		>25	
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>100		>100	
Working distance for writing	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15	
Working distance for reading	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15	
Offset at distance															
0	±4	±3	±5	±4	±8		±4	±3	±4	±4	0	±6		±11	
5	±2		±5	±2	±8		±2		±4	±2	5	±6		±11	
9					±6						7	±6		±9	
12					±4						9	±4		±9	
15					±4						12			±9	
16											15			±5	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque

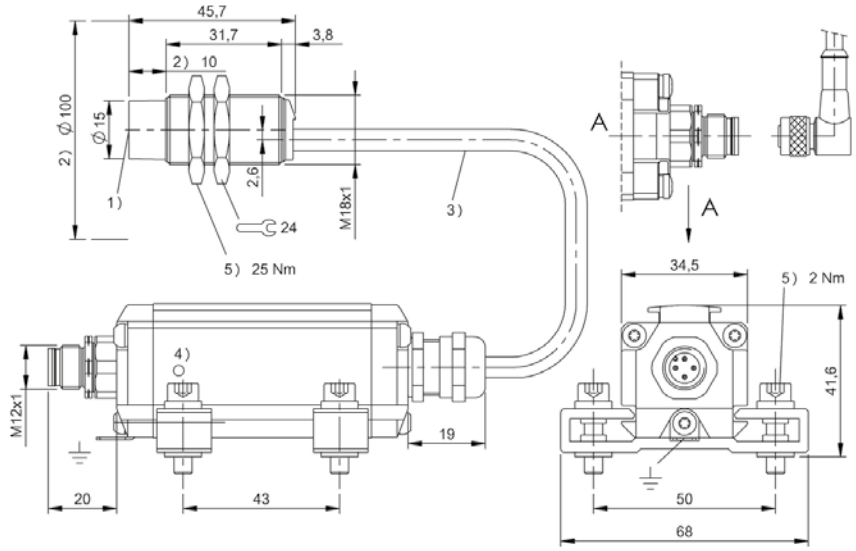
IO-Link, 10 bytes process data length	**BIS00LW** BIS M-402-045-002-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 45.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	Brass, interface aluminum
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS0040		BIS0042		BIS0048		BIS004A		BIS0044			BIS003Y		BIS0045	
Data carrier distance to metal	>10	>0	>10	>0	>10	>0	>10	>0	>25			>25		>25	
Data carrier clear zone	>60	>0	>60	>0	>60	>0	>60	>0	>80			>100		>100	
Working distance for writing	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15			0-14		0-18	
Working distance for reading	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15			0-14		0-18	
Offset at distance															
0	±3	±3	±4	±3	±3	±2	±4	±3	±7		0	±10		±12	
5	±2		±3	±2	±2		±3	±2	±7		5	±10		±12	
9									±5		10	±9		±11	
12									±3		14	±5		±10	
15									±3		15			±10	
16											18			±5	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque

	BIS00YL	BIS00YK	BIS00YE	BIS00NU BIS00NW BIS0100
	>25	>25	>25	>0
	>100	>100	>100	>100
	0-9	0-9	0-20	0-9
	0-9	0-9	0-20	0-9
	±6	±6	±12	±6
	±6	±6	±12	±6
	±5	±5	±12	±6
	±1	±1	±12	±4
			±12	
			±10	

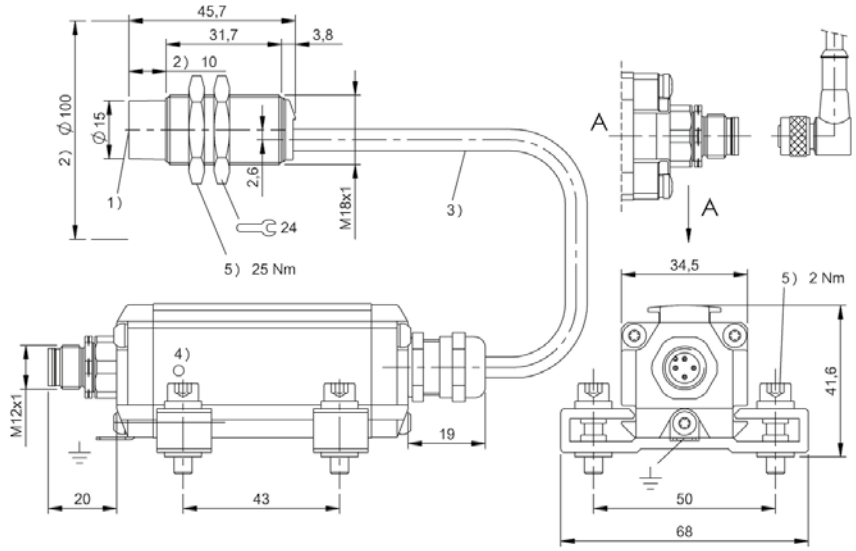
IO-Link, 32 bytes process data length	**BIS0105** BIS M-402-072-002-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 45.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	Brass, interface aluminum
Interface	IO-Link
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS0040		BIS0042		BIS0048		BIS004A		BIS0044			BIS003Y		BIS0045	
Data carrier distance to metal	>10	>0	>10	>0	>10	>0	>10	>0	>25			>25		>25	
Data carrier clear zone	>60	>0	>60	>0	>60	>0	>60	>0	>80			>100		>100	
Working distance for writing	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15			0-14		0-18	
Working distance for reading	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15			0-14		0-18	
Offset at distance															
0	±3	±3	±4	±3	±3	±2	±4	±3	±7		0	±10		±12	
5	±2		±3	±2	±2		±3	±2	±7		5	±10		±12	
9									±5		10	±9		±11	
12									±3		14	±5		±10	
15									±3		15			±10	
16											18			±5	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque

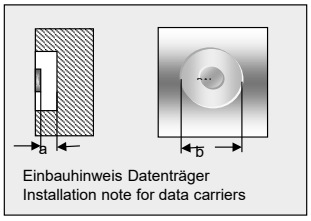
	BIS00YL	BIS00YK	BIS00YE	BIS00NU BIS00NW BIS0100
	>25	>25	>25	>0
	>100	>100	>100	>100
	0-9	0-9	0-20	0-9
	0-9	0-9	0-20	0-9
	±6	±6	±12	±6
	±6	±6	±12	±6
	±5	±5	±12	±6
	±1	±1	±12	±4
			±12	
			±10	

IO-Link, 10 Byte process data length	**BIS01E5** BIS M-4A3-082-401-07-S4
Product Group	HF (13.56 MHz)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Process data IN	10 bytes
Process data OUT	10 bytes
IP rating	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, WEEE, EAC, cULus

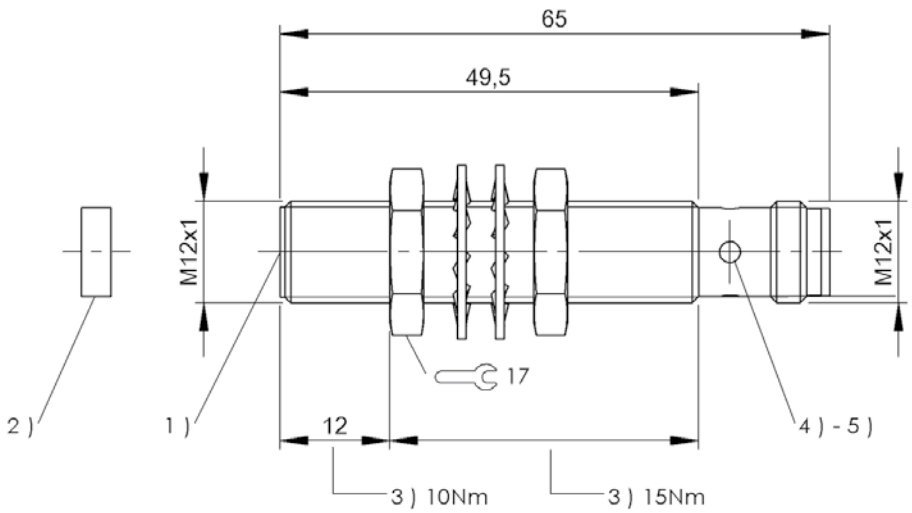
Appropriate data carrier

		BIS00UC			BIS018Y			BIS01A1		
Data carrier distance to metal		>20	>0	>0	>20	>0	>0	>20	>0	>0
Data carrier clear zone		>100	>100	>0	>100	>100	>0	>100	>100	>0
Working distance for writing		0-5,5	0-3,5	0-2,5	0-4	0-3,5	0-2	0-5	0-4	
Working distance for reading		0-5,5	0-3,5	0-2,5	0-4	0-3,5	0-2	0-5	0-4	
Offset at distance										
	0	±3,5	±2,5	±2	±2,5	±2,5	±2	±3	±3	
	2	±3,5	±2,5	±2	±2,5	±2,5	±1,5	±3	±3	
	3	±3,5	±2,5	±1,5	±2	±2		±3	±2,5	
	3,5	±3,5	±2,5		±2	±2		±3	±2,5	
	4	±3	±2		±1,5			±3	±2	
	4,5	±3						±2		
	5,5	±2,5								

Dimensions in mm



Einbauhinweis Datenträger
Installation note for data carriers



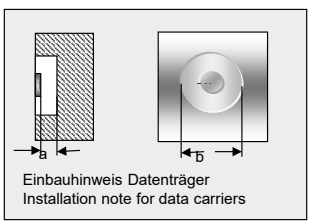
1) LED 4x on circumference, 2) Power/Status, 3) Tightening torque, 4) Sensing surface

IO-Link, 10 Byte process data length	**BIS01E6** BIS M-4A6-082-401-07-S4
Product Group	HF (13.56 MHz)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Process data IN	10 bytes
Process data OUT	10 bytes
IP rating	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, WEEE, EAC, cULus

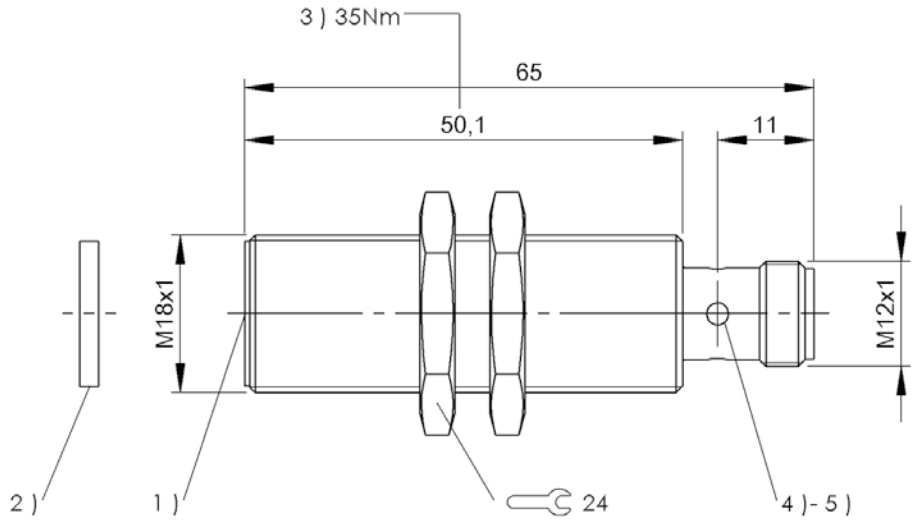
Appropriate data carrier

		BIS01A1			BIS00YE			BIS0044			BIS00UC		
Data carrier distance to metal		>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0
Data carrier clear zone		>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0
Working distance for writing		0-7	0-7,5		0-16			0-17			0-9	0-5,5	0-4
Working distance for reading		0-7	0-7,5		0-16			0-17			0-9	0-5,5	0-4
Offset at distance													
	0	±5	±5		±10			±9			±5	±3	±3,5
	2	±5	±5		±10			±9			±5	±3	±3,5
	3	±5	±5		±10			±9			±5	±3	±3
	4	±5	±5		±10			±9			±5	±2,5	±2,5
	4,5	±5	±5		±10			±9			±5	±2,5	
	5	±4,5	±4,5		±10			±9			±4,5	±2,5	
	5,5	±4,5	±4,5		±10			±9			±4,5	±2	
	6	±4	±4,5		±10			±9			±4,5		
	6,5	±3,5	±4,5		±10			±9			±4,5		
	7		±4		±10			±9			±4,5		
	7,5		±3,5		±10			±9			±4,5		
	9				±10			±9			±3,5		
	10				±9,5			±8,5					
	16				±7,5			±7					

Dimensions in mm



Einbauhinweis Datenträger
Installation note for data carriers



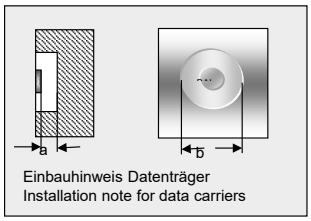
1) LED 4x on circumference, 2) Power/Status, 3) Tightening torque, 4) Sensing surface

IO-Link, 10 Byte process data length	**BIS01E7** BIS M-4A7-082-401-07-S4
Product Group	HF (13.56 MHz)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Process data IN	10 bytes
Process data OUT	10 bytes
IP rating	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, WEEE, EAC, cULus

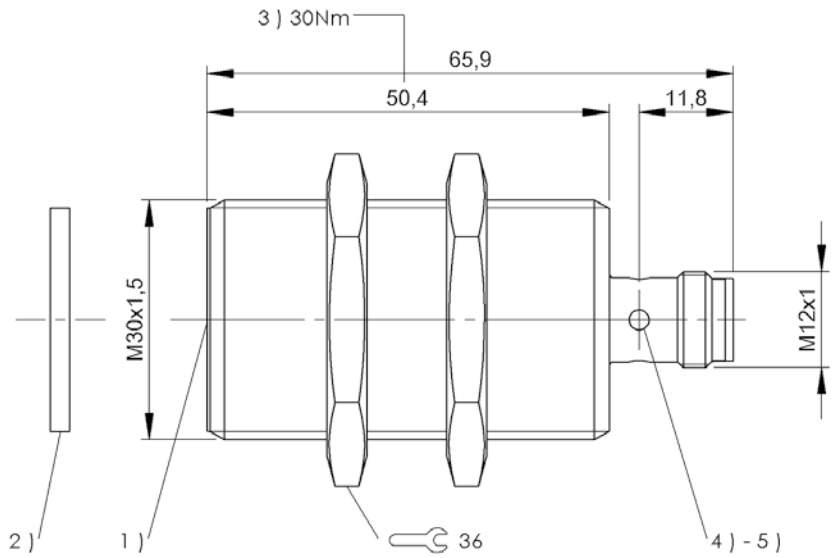
Appropriate data carrier

		BIS01CA			BIS00YE			BIS0044			BIS0045		
Data carrier distance to metal		>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0
Data carrier clear zone		>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0
Working distance for writing		0-11,5	0-10		0-30			0-28			0-36		
Working distance for reading		0-11,5	0-10		0-30			0-28			0-36		
Offset at distance													
	0	±8	±7		±16						±18		
	2	±8	±7		±16			±15			±18		
	3,5	±8	±7		±16			±15			±18		
	4	±8	±7		±16			±15			±18		
	4,5	±8	±7		±16			±15			±18		
	5	±8	±7		±16			±15			±18		
	5,5	±8	±7		±16			±15			±18		
	6	±8	±7		±16			±15			±18		
	6,5	±8	±7		±16			±15			±18		
	7	±8	±7		±16			±15			±18		
	8	±7,5	±6,5		±16			±15			±18		
	9	±7,5	±6,5		±16			±15			±18		
	10	±7,5	±5,5		±16			±15			±18		
	11	±6			±16			±15			±18		
	20				±15			±14			±18		
	28				±15			±11,5			±18		
	30				±13						±16		
											±14		

Dimensions in mm



Einbauhinweis Datenträger
Installation note for data carriers



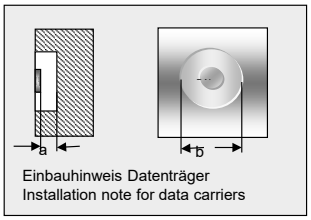
1) LED 4x on circumference, 2) Power/Status, 3) Tightening torque, 4) Sensing surface

IO-Link, 10 Byte process data length	**BIS01E2** BIS M-4A9-082-401-07-PU1-0,3
Product Group	HF (13.56 MHz)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Process data IN	10 bytes
Process data OUT	10 bytes
IP rating	IP68, IP69K
Approval/Conformity	CE, FCC Part 15, IC RSS-210, WEEE, Ecolab

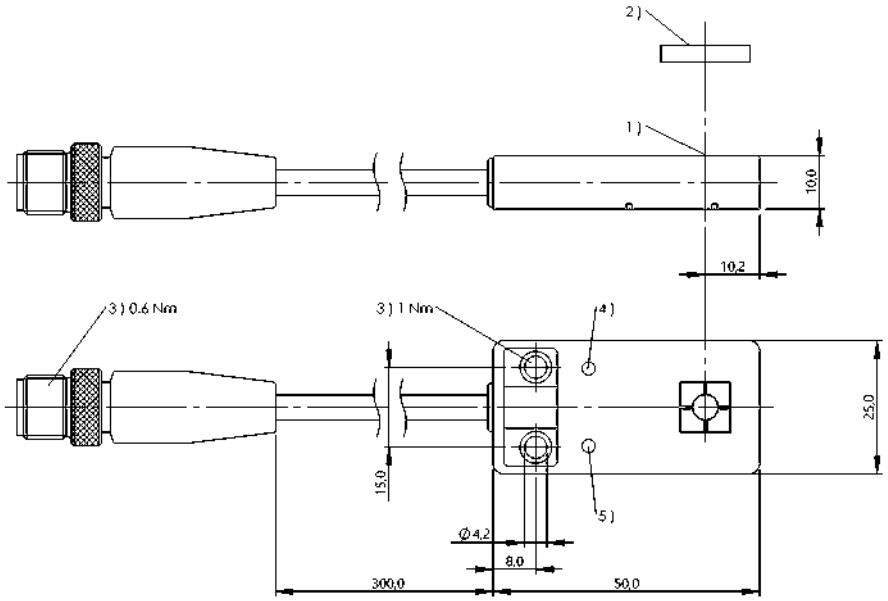
Appropriate data carrier

		BIS01CA			BIS00YE			BIS0044			BIS0045		
Data carrier distance to metal		>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0
Data carrier clear zone		>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0
Working distance for writing		0-9	0-8,5		0-20			0-20			0-26		
Working distance for reading		0-9	0-8,5		0-20			0-20			0-26		
Offset at distance													
	0	±6,5	±6,5		±12			±11			±13		
	2	±6,5	±6,5		±12			±11			±13		
	3,5	±5,5	±5,5		±12			±11			±13		
	4	±5,5	±5,5		±12			±11			±13		
	4,5	±5,5	±5,5		±12			±11			±13		
	5	±5,5	±5,5		±12			±11			±13		
	5,5	±4	±4		±9			±11			±13		
	6	±4	±4		±9			±11			±13		
	6,5	±4	±4		±9			±11			±13		
	7	±4	±4		±9			±11			±13		
	8,5	±4	±3		±9			±11			±13		
	9	±3			±9			±11			±13		
	10				±9			±11			±13		
	11				±9			±9			±12		
	20				±9			±9			±12		
	26										±10		

Dimensions in mm



Einbauhinweis Datenträger
Installation note for data carriers



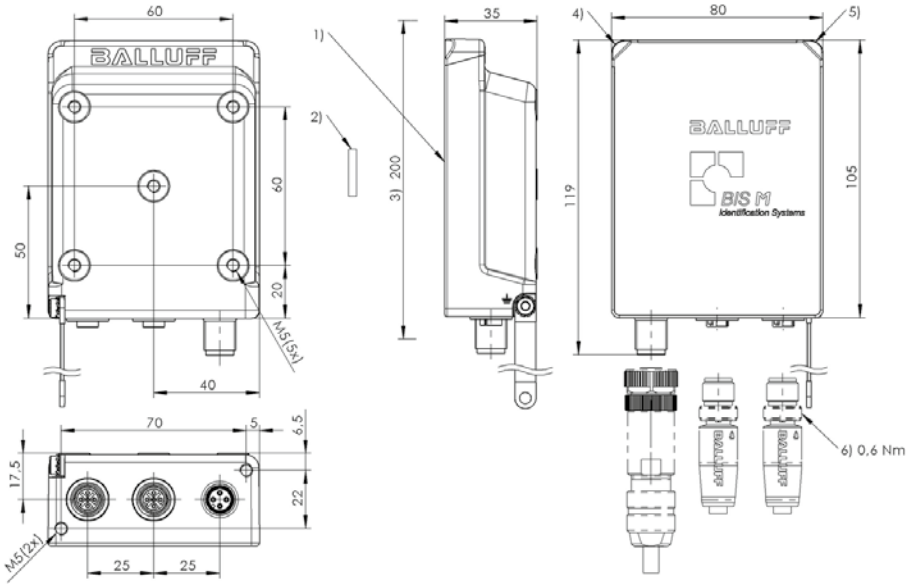
1) Sensing surface, 2) Data carrier, 3) Tightening torque, 4) LED function indicator, 5) LED function indicator

Profinet	**BIS0179** BIS M-4008-048-001-ST4
Product Group	HF (13.56 MHz)
Dimension	80 x 35 x 119 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	2x M12x1-Female, 4-pole, D-coded M12x1-Male, 4-pole, A-coded
Housing material	Zinc, die-cast
Interface	Profinet I/O (IRT), Profinet I/O (IRT) 2 port Switch
Operating voltage Ub	24 V DC LPS Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0043			BIS011F BIS011E BIS011A BIS0139			BIS0045	BIS0046		BIS0119	BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>50	>0	>0	>50	>0	>0	>50	>50		>0	>0	
Data carrier clear zone	>200	>200	>0	>200	>200	>0	>200	>200		>100	>100	
Working distance for writing	0-52	0-32	10-19	0-36	0-28	11-18	0-52	0-80		0-38	0-18	
Working distance for reading	0-52	0-32	10-19	0-36	0-28	11-18	0-52	0-80		0-38	0-18	
Offset at distance												
0	±32	±25		±27	±22		±32	±42	0	±27	±22	
5	±32	±25		±27	±22		±32	±42	5	±27	±22	
10	±32	±25	±20	±27	±22		±32	±42	10	±27	±20	
11	±32	±22	±20	±25	±20	±18	±32	±42	15	±25	±18	
12	±32	±22	±20	±25	±20	±18	±32	±42	18	±25	±10	
16	±32	±22	±15	±25	±20	±15	±32	±42	20	±25		
17	±32	±22	±15	±25	±20	±2	±32	±42	25	±22		
18	±32	±22	±8	±25	±20	±2	±32	±42	30	±22		
19	±32	±22	±8	±25	±20		±32	±42	35	±10		
20	±32	±22		±25	±20		±32	±42	38	±10		
25	±28	±15		±22	±15		±28	±42	40			
28	±28	±15		±22	±1		±28	±42	45			
30	±28	±15		±22			±28	±42	50			
32	±28	±10		±5			±28	±38	55			
36	±28			±5			±28	±38	60			
40	±28						±28	±38	65			
50	±12						±12	±38	70			
52	±6						±6	±38	75			
65								±38	80			
75								±20	85			
80								±5	90			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

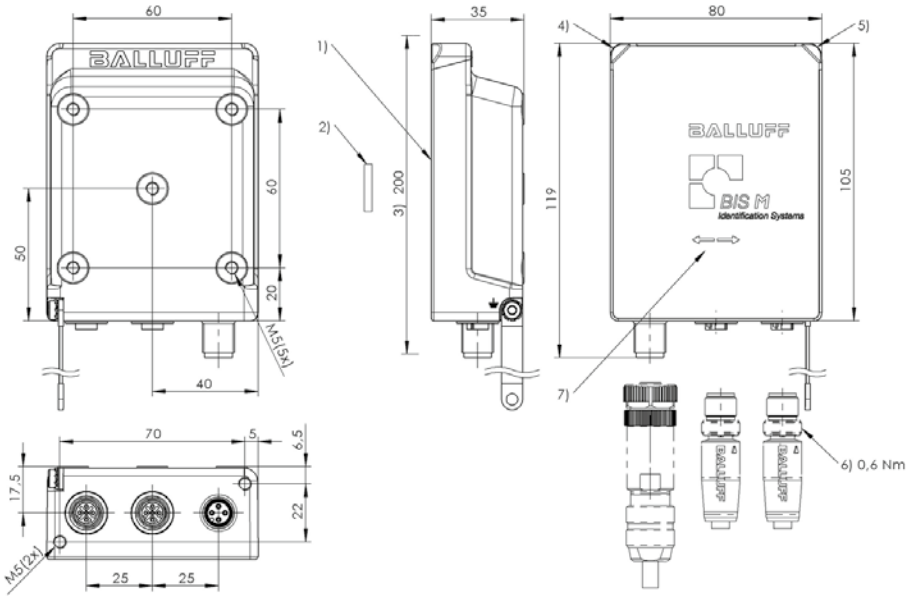
		BIS00YE	BIS00Y9		BIS00Y4	BIS00Y2
		>50	>50	>0	>50	>50
		>200	>200	>200	>200	>200
		0-60	0-55	0-45	0-90	0-65
		0-60	0-55	0-45	0-90	0-65
	0	±35	±32	±27	±50	±36
	10	±35	±32	±27	±50	±36
	20	±35	±32	±27	±50	±36
	30	±30	±30	±25	±50	±33
	40	±30	±30	±20	±45	±33
	45	±20	±24	±5	±45	±25
	50	±20	±24		±45	±25
	55	±20	±10		±45	±25
	60	±10			±45	±25
	65				±30	±10
	70				±30	
	75				±30	
	80				±30	
	85				±20	
	90				±20	
	100					
	110					
	120					
	130					
	140					
	150					

Profinet	**BIS017A** BIS M-4008-048-002-ST4
Product Group	HF (13.56 MHz)
Dimension	80 x 35 x 119 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	Rod
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	2x M12x1-Female, 4-pole, D-coded M12x1-Male, 4-pole, A-coded
Housing material	Zinc, die-cast
Interface	Profinet I/O (IRT), Profinet I/O (IRT) 2 port Switch
Operating voltage Ub	24 V DC LPS Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS004F				BIS004H					BIS00M2			BIS00P3				BIS011W BIS011Y BIS011U BIS013E	
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200		>240	>240	>240	>240	>240	>240
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200		>480	>480	>480	>480	>480	>480
Data carrier clear zone C										>50	>50		>50	>50	>0	>0	>50	>50
Metallic mounting surface 40 × 22 mm	0-65	0-65			0-65	0-65												
Metallic mounting surface > 200 × 200 mm			0-60	0-60			0-45	0-45										
Working distance for writing	0-65	0-65	0-60	0-60	0-65	0-65	0-45	0-45		0-35	0-35		0-100	0-100	0-100	0-100	0-55	0-55
Working distance for reading	0-65	0-65	0-60	0-60	0-65	0-65	0-45	0-45		0-35	0-35		0-100	0-100	0-100	0-100	0-55	0-55
Offset at distance																		
Offset at distance	X	Y	X	Y	X	Y	X	Y		X	Y		X	Y	X	Y	X	Y
0	±70	±30	±65	±30	±30	±70	±25	±50	0	±44	±22	0	±100	±40	±100	±40	±65	±30
5	±70	±30	±65	±30	±30	±70	±25	±50	5	±44	±22	5	±100	±40	±100	±40	±65	±30
10	±70	±30	±65	±30	±30	±70	±25	±50	10	±44	±22	10	±100	±40	±100	±40	±65	±30
15	±70	±30	±65	±30	±30	±70	±25	±50	15	±40	±20	20	±100	±40	±100	±40	±65	±30
20	±70	±30	±65	±30	±30	±70	±25	±50	20	±40	±20	25	±100	±40	±100	±40	±60	±25
25	±65	±25	±60	±25	±25	±65	±20	±40	25	±32	±18	30	±100	±40	±100	±40	±60	±25
30	±65	±25	±60	±25	±25	±65	±20	±40	30	±32	±18	40	±100	±40	±100	±40	±60	±25
35	±65	±25	±60	±25	±25	±65	±20	±40	35	±10	±3	50	±80	±35	±80	±35	±30	±20
40	±65	±25	±60	±25	±25	±65	±15	±30	40			55	±80	±35	±80	±35	±20	±10
45	±40	±20	±40	±20	±20	±40	±5	±5	45			60	±80	±35	±80	±35		
50	±40	±20	±40	±20	±20	±40			50			70	±80	±35	±80	±35		
55	±40	±20	±40	±20	±20	±40			55			75	±80	±35	±80	±35		
60	±40	±20	±20	±10	±20	±40			60			80	±80	±35	±80	±35		
65	±20	±10			±10	±20			80			95	±55	±25	±55	±25		
70									95			100	±30	±10	±30	±10		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque, 7) Read/write axis

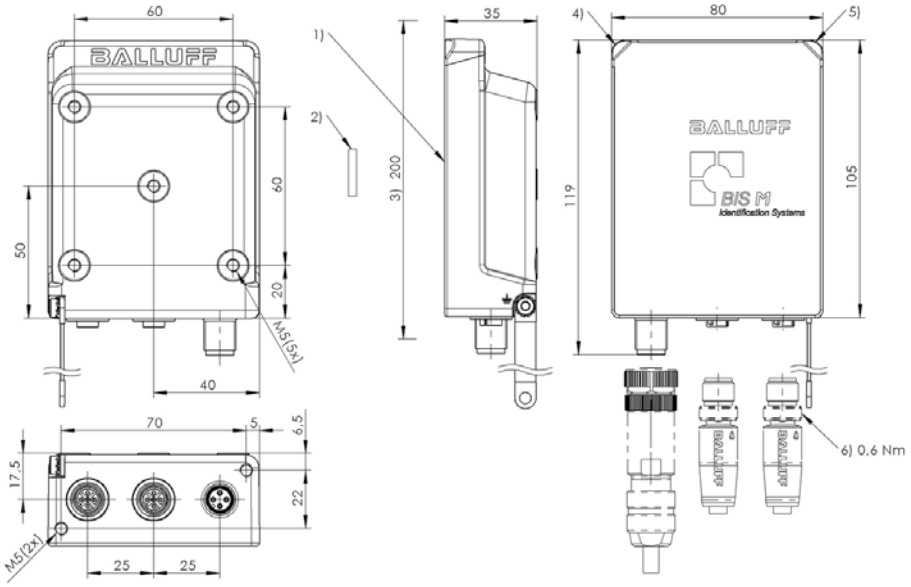
	BIS011M BIS011Z BIS011N BIS013C				BIS012J BIS012K BIS012L BIS013F					BIS0117				BIS0112					BIS00NZ			
	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>200	>200	>200	>200	>200	>200		>27	>27	>27	>27
	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>200	>200	>200	>200	>200	>200		>27	>27	>27	>27
	0-42	0-42			0-42	0-42				0-68	0-68			0-68	0-68						0-30	0-30
			0-42	0-42			0-42	0-42				0-68	0-68			0-58	0-58		0-55	0-55		
	0-42	0-42	0-42	0-42	0-42	0-42	0-42	0-42		0-68	0-68	0-68	0-68	0-68	0-68	0-58	0-58		0-55	0-55	0-30	0-30
	0-42	0-42	0-42	0-42	0-42	0-42	0-42	0-42		0-68	0-68	0-68	0-68	0-68	0-68	0-58	0-58		0-55	0-55	0-30	0-30
	X	Y	X	Y	X	Y	X	Y		X	Y	X	Y	X	Y	X	Y		X	Y	X	Y
0	±45	±25	±45	±25	±25	±45	±45	±25	0	±75	±32	±75	±32	±75	±32	±60	±28	0	±65	±28	±44	±24
5	±45	±25	±45	±25	±25	±45	±45	±25	5	±75	±32	±75	±32	±75	±32	±60	±28	5	±65	±28	±44	±24
10	±45	±25	±45	±25	±25	±45	±45	±25	10	±75	±32	±75	±32	±75	±32	±60	±28	10	±65	±28	±44	±24
15	±45	±25	±45	±25	±25	±45	±45	±25	15	±75	±32	±75	±32	±75	±32	±60	±28	15	±65	±28	±38	±21
20	±45	±25	±45	±25	±25	±45	±45	±25	20	±75	±32	±75	±32	±75	±32	±60	±28	20	±65	±28	±38	±21
25	±30	±18	±30	±18	±18	±30	±30	±18	25	±70	±28	±70	±28	±70	±28	±55	±25	25	±55	±25	±25	±15
30	±30	±18	±30	±18	±18	±30	±30	±18	30	±70	±28	±70	±28	±70	±28	±55	±25	30	±55	±25	±8	±5
35	±30	±18	±30	±18	±18	±30	±30	±18	35	±70	±28	±70	±28	±70	±28	±55	±25	35	±55	±25		
40	±20	±10	±20	±10	±10	±20	±20	±10	40	±70	±28	±70	±28	±70	±28	±55	±25	40	±55	±25		
42	±10	±5	±10	±5	±5	±10	±10	±5	45	±50	±25	±50	±25	±50	±25	±35	±18	45	±40	±20		
45									50	±50	±25	±50	±25	±50	±25	±35	±18	50	±40	±20		
50									55	±50	±25	±50	±25	±50	±25	±35	±18	55	±5	±5		
55									58	±50	±25	±50	±25	±50	±25	±15	±5	60				
60									65	±50	±25	±50	±25	±50	±25			65				
65									68	±20	±10	±20	±10	±20	±10			70				

Ethernet/IP	**BIS018A** BIS M-4006-034-001-ST4
Product Group	HF (13.56 MHz)
Dimension	80 x 35 x 119 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	2x M12x1-Female, 4-pole, D-coded M12x1-Male, 4-pole
Housing material	Zinc, die-cast
Interface	Ethernet/IP, Ethernet/IP 2 port Switch
Operating voltage Ub	24 V DC LPS Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0043			BIS011F BIS011E BIS011A BIS0139			BIS0045	BIS0046		BIS0119	BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>50	>0	>0	>50	>0	>0	>50	>50		>0	>0	
Data carrier clear zone	>200	>200	>0	>200	>200	>0	>200	>200		>100	>100	
Working distance for writing	0-52	0-32	10-19	0-36	0-28	11-18	0-52	0-80		0-38	0-18	
Working distance for reading	0-52	0-32	10-19	0-36	0-28	11-18	0-52	0-80		0-38	0-18	
Offset at distance												
0	±32	±25		±27	±22		±32	±42	0	±27	±22	
5	±32	±25		±27	±22		±32	±42	5	±27	±22	
10	±32	±25	±20	±27	±22		±32	±42	10	±27	±20	
11	±32	±22	±20	±25	±20	±18	±32	±42	15	±25	±18	
12	±32	±22	±20	±25	±20	±18	±32	±42	18	±25	±10	
16	±32	±22	±15	±25	±20	±15	±32	±42	20	±25		
17	±32	±22	±15	±25	±20	±2	±32	±42	25	±22		
18	±32	±22	±8	±25	±20	±2	±32	±42	30	±22		
19	±32	±22	±8	±25	±20		±32	±42	35	±10		
20	±32	±22		±25	±20		±32	±42	38	±10		
25	±28	±15		±22	±15		±28	±42	40			
28	±28	±15		±22	±1		±28	±42	45			
30	±28	±15		±22			±28	±42	50			
32	±28	±10		±5			±28	±38	55			
36	±28			±5			±28	±38	60			
40	±28						±28	±38	65			
50	±12						±12	±38	70			
52	±6						±6	±38	75			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

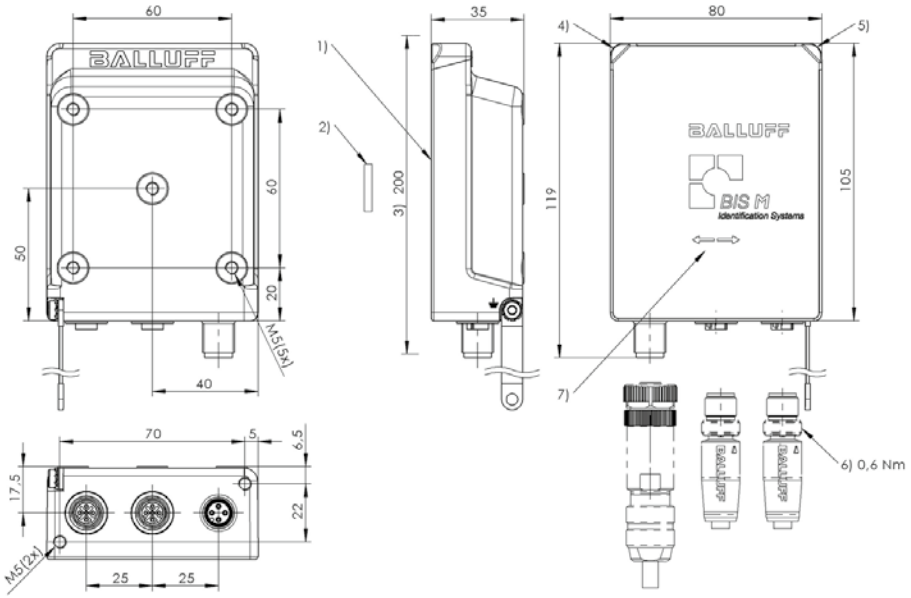
		BIS00YE		BIS00Y9		BIS00Y4		BIS00Y2	
		>50		>50	>0	>50		>50	
		>200		>200	>200	>200		>200	
		0-60		0-55	0-45	0-90		0-65	
		0-60		0-55	0-45	0-90		0-65	
	0	±35		±32	±27	±50		±36	
	10	±35		±32	±27	±50		±36	
	20	±35		±32	±27	±50		±36	
	30	±30		±30	±25	±50		±33	
	40	±30		±30	±20	±45		±33	
	45	±20		±24	±5	±45		±25	
	50	±20		±24		±45		±25	
	55	±20		±10		±45		±25	
	60	±10				±45		±25	
	65					±30		±10	
	70					±30			
	75					±30			
	80					±30			
	85					±20			
	90					±20			
	100								
	110								
	120								

Ethernet/IP	**BIS018C** BIS M-4006-034-002-ST4
Product Group	HF (13.56 MHz)
Dimension	80 x 35 x 119 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	Rod
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	2x M12x1-Female, 4-pole, D-coded M12x1-Male, 4-pole
Housing material	Zinc, die-cast
Interface	Ethernet/IP, Ethernet/IP 2 port Switch
Operating voltage Ub	24 V DC LPS Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

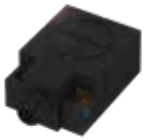
	BIS004F				BIS004H					BIS00M2			BIS00P3				BIS011W BIS011Y BIS011U BIS013E	
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200		>240	>240	>240	>240	>240	>240
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200		>480	>480	>480	>480	>480	>480
Data carrier clear zone C										>50	>50		>50	>50	>0	>0	>50	>50
Metallic mounting surface 40 × 22 mm	0-65	0-65			0-65	0-65												
Metallic mounting surface > 200 × 200 mm			0-60	0-60			0-45	0-45										
Working distance for writing	0-65	0-65	0-60	0-60	0-65	0-65	0-45	0-45		0-35	0-35		0-100	0-100	0-100	0-100	0-55	0-55
Working distance for reading	0-65	0-65	0-60	0-60	0-65	0-65	0-45	0-45		0-35	0-35		0-100	0-100	0-100	0-100	0-55	0-55
Offset at distance	X	Y	X	Y	X	Y	X	Y		X	Y		X	Y	X	Y	X	Y
0	±70	±30	±65	±30	±30	±70	±25	±50	0	±44	±22	0	±100	±40	±100	±40	±65	±30
5	±70	±30	±65	±30	±30	±70	±25	±50	5	±44	±22	5	±100	±40	±100	±40	±65	±30
10	±70	±30	±65	±30	±30	±70	±25	±50	10	±44	±22	10	±100	±40	±100	±40	±65	±30
15	±70	±30	±65	±30	±30	±70	±25	±50	15	±40	±20	20	±100	±40	±100	±40	±65	±30
20	±70	±30	±65	±30	±30	±70	±25	±50	20	±40	±20	25	±100	±40	±100	±40	±60	±25
25	±65	±25	±60	±25	±25	±65	±20	±40	25	±32	±18	30	±100	±40	±100	±40	±60	±25
30	±65	±25	±60	±25	±25	±65	±20	±40	30	±32	±18	40	±100	±40	±100	±40	±60	±25
35	±65	±25	±60	±25	±25	±65	±20	±40	35	±10	±3	50	±80	±35	±80	±35	±30	±20
40	±65	±25	±60	±25	±25	±65	±15	±30	40			55	±80	±35	±80	±35	±20	±10
45	±40	±20	±40	±20	±20	±40	±5	±5	45			60	±80	±35	±80	±35		
50	±40	±20	±40	±20	±20	±40			50			70	±80	±35	±80	±35		
55	±40	±20	±40	±20	±20	±40			55			75	±80	±35	±80	±35		
60	±40	±20	±20	±10	±20	±40			60			80	±80	±35	±80	±35		
65	±20	±10			±10	±20			80			95	±55	±25	±55	±25		
70									95			100	±30	±10	±30	±10		
75									100			110						
80									110			120						

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque, 7) Read/write axis

	BIS011M BIS011Z BIS011N BIS013C				BIS012J BIS012K BIS012L BIS013F					BIS0117				BIS0112					BIS00NZ			
	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>200	>200	>200	>200	>200	>200		>27	>27	>27	>27
	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>200	>200	>200	>200	>200	>200		>27	>27	>27	>27
	0-42	0-42			0-42	0-42				0-68	0-68			0-68	0-68						0-30	0-30
			0-42	0-42			0-42	0-42				0-68	0-68			0-58	0-58		0-55	0-55		
	0-42	0-42	0-42	0-42	0-42	0-42	0-42	0-42		0-68	0-68	0-68	0-68	0-68	0-68	0-58	0-58		0-55	0-55	0-30	0-30
	0-42	0-42	0-42	0-42	0-42	0-42	0-42	0-42		0-68	0-68	0-68	0-68	0-68	0-68	0-58	0-58		0-55	0-55	0-30	0-30
	X	Y	X	Y	X	Y	X	Y		X	Y	X	Y	X	Y	X	Y		X	Y	X	Y
0	±45	±25	±45	±25	±25	±45	±45	±25	0	±75	±32	±75	±32	±75	±32	±60	±28	0	±65	±28	±44	±24
5	±45	±25	±45	±25	±25	±45	±45	±25	5	±75	±32	±75	±32	±75	±32	±60	±28	5	±65	±28	±44	±24
10	±45	±25	±45	±25	±25	±45	±45	±25	10	±75	±32	±75	±32	±75	±32	±60	±28	10	±65	±28	±44	±24
15	±45	±25	±45	±25	±25	±45	±45	±25	15	±75	±32	±75	±32	±75	±32	±60	±28	15	±65	±28	±38	±21
20	±45	±25	±45	±25	±25	±45	±45	±25	20	±75	±32	±75	±32	±75	±32	±60	±28	20	±65	±28	±38	±21
25	±30	±18	±30	±18	±18	±30	±30	±18	25	±70	±28	±70	±28	±70	±28	±55	±25	25	±55	±25	±25	±15
30	±30	±18	±30	±18	±18	±30	±30	±18	30	±70	±28	±70	±28	±70	±28	±55	±25	30	±55	±25	±8	±5
35	±30	±18	±30	±18	±18	±30	±30	±18	35	±70	±28	±70	±28	±70	±28	±55	±25	35	±55	±25		
40	±20	±10	±20	±10	±10	±20	±20	±10	40	±70	±28	±70	±28	±70	±28	±55	±25	40	±55	±25		
42	±10	±5	±10	±5	±5	±10	±10	±5	45	±50	±25	±50	±25	±50	±25	±35	±18	45	±40	±20		
45									50	±50	±25	±50	±25	±50	±25	±35	±18	50	±40	±20		
50									55	±50	±25	±50	±25	±50	±25	±35	±18	55	±5	±5		
55									58	±50	±25	±50	±25	±50	±25	±15	±5	60				
60									65	±50	±25	±50	±25	±50	±25			65				
65									68	±20	±10	±20	±10	±20	±10			70				
70									75									75				
75									80													

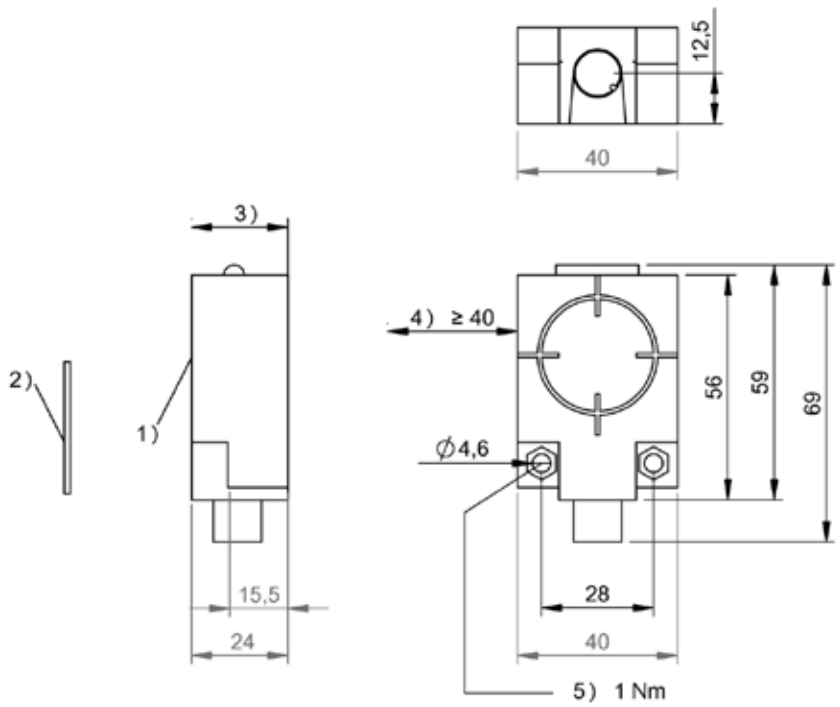


USB	**BIS00W4** BIS M-410-068-001-09-S72
Product Group	HF (13.56 MHz)
Dimension	40 x 24 x 56 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 5-pin
Housing material	PC, with PU potting
Interface	USB 2.0
Operating voltage Ub	5 V DC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

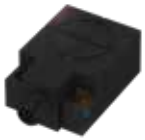
	BIS00YL	BIS00YK	BIS00YH	BIS00YF	BIS00YE		BIS00YC	BIS00YA
Data carrier distance to metal	>10	>10	>10	>25	>25		>25	>25
Data carrier clear zone	>60	>60	>60	>100	>100		>100	>100
Working distance for writing	0-17	0-12	0-5	0-48	0-40		0-15	0-15
Working distance for reading	0-17	0-12	0-5	0-48	0-40		0-15	0-15
Offset at distance								
0	±15	±12	±10	±30	±25	0	±15	±15
2	±15	±12	±10	±30	±25	5	±15	±15
4	±15	±12	±7.5	±30	±25	10	±12	±12
5	±15	±12	±5	±30	±25	15	±8	±8
10	±14	±10		±30	±25	20		
12	±12	±5		±25	±20	25		
15	±12			±25	±20	30		
17	±7			±25	±20	32		
20				±25	±20	36		
25				±25	±20	40		
30				±25	±20	45		
35				±20	±12	50		
40				±20	±12	55		
45				±12		60		
48				±12		65		
75						68		
80						75		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

BIS00Y9	BIS00Y8	BIS00Y7		BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y3	BIS00Y2		BIS0043
>25	>50	>50		>50	>50	>50	>50	>50		>25
>100	>150	>150		>150	>150	>150	>150	>150		>120
0-32	0-32	0-36		0-60	0-68	0-70	23-46	23-46		0-40
0-32	0-32	0-36		0-60	0-68	0-70	23-46	23-46		0-40
±20	±22	±25	0	±35	±40	±44			0	±22
±20	±22	±25	5	±35	±40	±44			5	±22
±20	±22	±25	10	±35	±40	±44			10	±22
±16	±20	±25	15	±35	±40	±44			15	±22
±16	±20	±25	20	±35	±40	±44			20	±22
±10	±12	±20	23	±30	±32	±32	±24	±24	25	±20
±10	±12	±20	30	±30	±32	±32	±24	±24	30	±20
±8	±8	±12	32	±30	±32	±32	±18	±18	35	±20
		±12	35	±30	±32	±32	±18	±18	40	±10
			40	±30	±32	±32	±18	±18		
			46	±24	±32	±32	±10	±10		
			50	±24	±32	±32				
			55	±16	±24	±25				
			60	±16	±24	±25				
			65		±15	±15				
			68		±15	±15				
			70			±15				



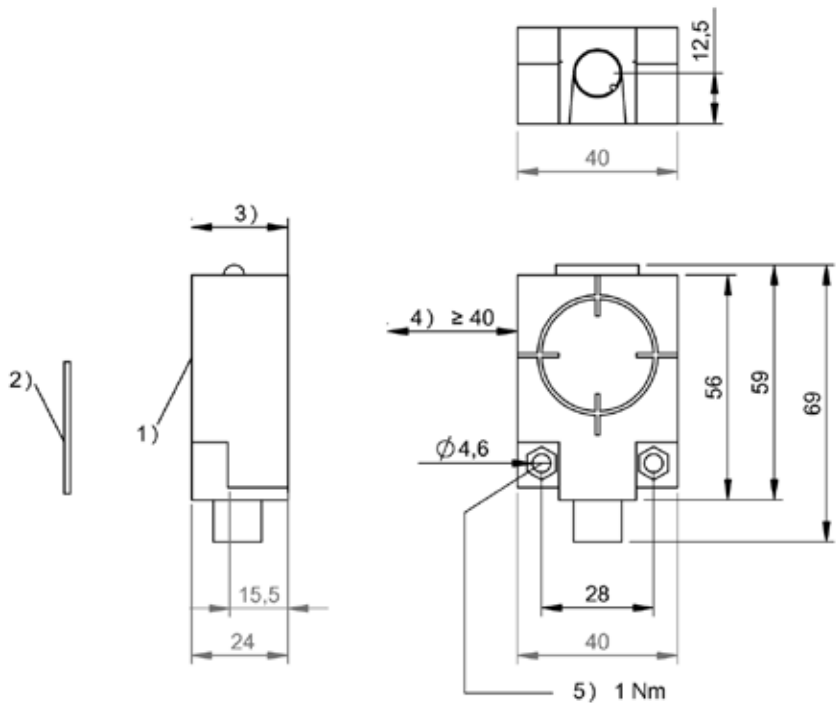
Subnet 16 (RS485)	**BIS00W1** BIS M-410-067-001-04-S92
Product Group	HF (13.56 MHz)
Dimension	40 x 24 x 56 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 5-pin
Housing material	PC, with PU potting
Interface	Subnet 16 (RS485)
Operating voltage Ub	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

* Use with **BIS Z-GW-001...** only

Appropriate data carrier

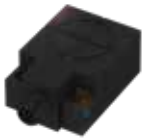
	BIS00YL	BIS00YK	BIS00YH	BIS00YF	BIS00YE		BIS00YC	BIS00YA
Data carrier distance to metal	>10	>10	>10	>25	>25		>25	>25
Data carrier clear zone	>60	>60	>60	>100	>100		>100	>100
Working distance for writing	0-17	0-12	0-5	0-48	0-40		0-15	0-15
Working distance for reading	0-17	0-12	0-5	0-48	0-40		0-15	0-15
Offset at distance								
0	±15	±12	±10	±30	±25	0	±15	±15
2	±15	±12	±10	±30	±25	5	±15	±15
4	±15	±12	±7,5	±30	±25	10	±12	±12
5	±15	±12	±5	±30	±25	15	±8	±8
10	±14	±10		±30	±25	20		
12	±12	±5		±25	±20	25		
15	±12			±25	±20	30		
17	±7			±25	±20	32		
20				±25	±20	36		
25				±25	±20	40		
30				±25	±20	45		
35				±20	±12	50		
40				±20	±12	55		
45				±12		60		
48				±12		65		
75						68		
80						75		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

	BIS00Y9	BIS00Y8	BIS00Y7		BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y3	BIS00Y2		BIS0043
	>25	>50	>50		>50	>50	>50	>50	>50		>25
	>100	>150	>150		>150	>150	>150	>150	>150		>120
	0-32	0-32	0-36		0-60	0-68	0-70	23-46	23-46		0-40
	0-32	0-32	0-36		0-60	0-68	0-70	23-46	23-46		0-40
	±20	±22	±25	0	±35	±40	±44			0	±22
	±20	±22	±25	5	±35	±40	±44			5	±22
	±20	±22	±25	10	±35	±40	±44			10	±22
	±16	±20	±25	15	±35	±40	±44			15	±22
	±16	±20	±25	20	±35	±40	±44			20	±22
	±10	±12	±20	23	±30	±32	±32	±24	±24	25	±20
	±10	±12	±20	30	±30	±32	±32	±24	±24	30	±20
	±8	±8	±12	32	±30	±32	±32	±18	±18	35	±20
			±12	35	±30	±32	±32	±18	±18	40	±10
				40	±30	±32	±32	±18	±18		
				46	±24	±32	±32	±10	±10		
				50	±24	±32	±32				
				55	±16	±24	±25				
				60	±16	±24	±25				
				65		±15	±15				
				68		±15	±15				
				70			±15				

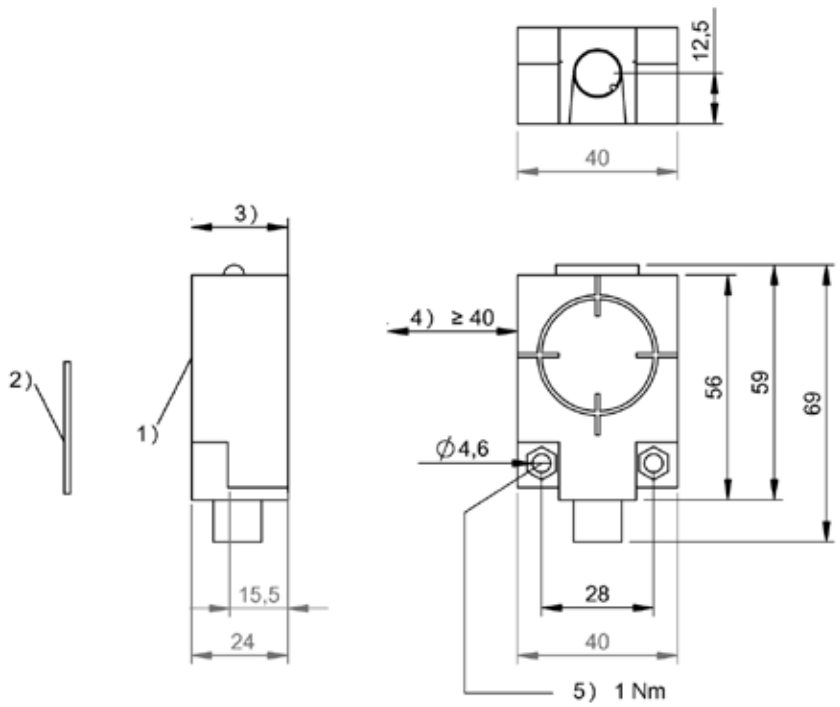


RS422	**BIS00W3** BIS M-410-068-001-02-S115
Product Group	HF (13.56 MHz)
Dimension	40 x 24 x 56 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PC, with PU potting
Interface	RS422
Operating voltage Ub	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

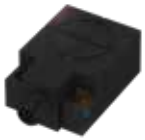
	BIS00YL	BIS00YK	BIS00YH	BIS00YF	BIS00YE		BIS00YC	BIS00YA
Data carrier distance to metal	>10	>10	>10	>25	>25		>25	>25
Data carrier clear zone	>60	>60	>60	>100	>100		>100	>100
Working distance for writing	0-17	0-12	0-5	0-48	0-40		0-15	0-15
Working distance for reading	0-17	0-12	0-5	0-48	0-40		0-15	0-15
Offset at distance								
0	±15	±12	±10	±30	±25	0	±15	±15
2	±15	±12	±10	±30	±25	5	±15	±15
4	±15	±12	±7.5	±30	±25	10	±12	±12
5	±15	±12	±5	±30	±25	15	±8	±8
10	±14	±10		±30	±25	20		
12	±12	±5		±25	±20	25		
15	±12			±25	±20	30		
17	±7			±25	±20	32		
20				±25	±20	36		
25				±25	±20	40		
30				±25	±20	45		
35				±20	±12	50		
40				±20	±12	55		
45				±12		60		
48				±12		65		
75						68		
80						75		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

	BIS00Y9	BIS00Y8	BIS00Y7		BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y3	BIS00Y2		BIS0043
	>25	>50	>50		>50	>50	>50	>50	>50		>25
	>100	>150	>150		>150	>150	>150	>150	>150		>120
	0-32	0-32	0-36		0-60	0-68	0-70	23-46	23-46		0-40
	0-32	0-32	0-36		0-60	0-68	0-70	23-46	23-46		0-40
	±20	±22	±25	0	±35	±40	±44			0	±22
	±20	±22	±25	5	±35	±40	±44			5	±22
	±20	±22	±25	10	±35	±40	±44			10	±22
	±16	±20	±25	15	±35	±40	±44			15	±22
	±16	±20	±25	20	±35	±40	±44			20	±22
	±10	±12	±20	23	±30	±32	±32	±24	±24	25	±20
	±10	±12	±20	30	±30	±32	±32	±24	±24	30	±20
	±8	±8	±12	32	±30	±32	±32	±18	±18	35	±20
			±12	35	±30	±32	±32	±18	±18	40	±10
				40	±30	±32	±32	±18	±18		
				46	±24	±32	±32	±10	±10		
				50	±24	±32	±32				
				55	±16	±24	±25				
				60	±16	±24	±25				
				65		±15	±15				
				68		±15	±15				
				70			±15				

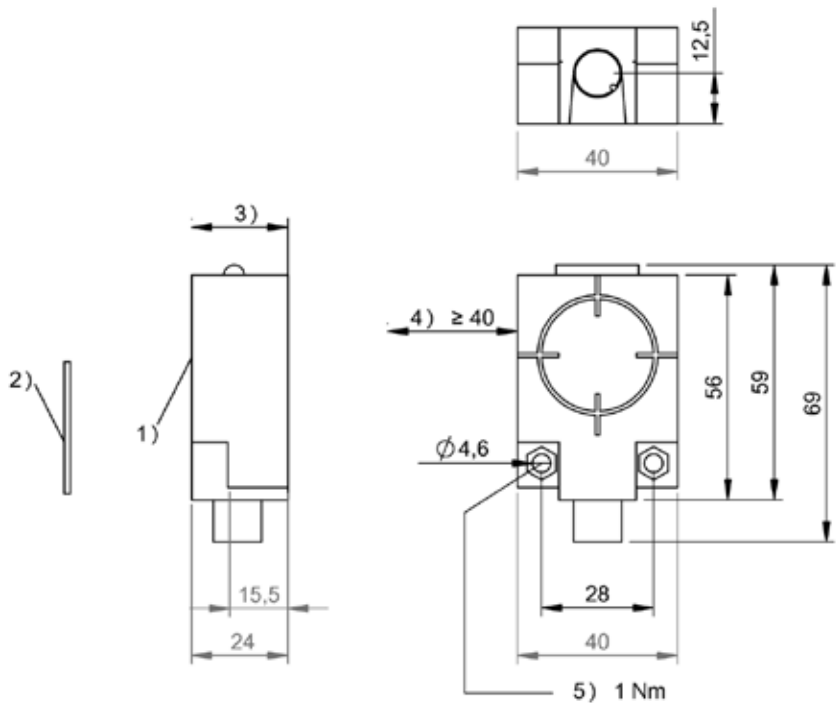


RS232	**BIS00W2** BIS M-410-068-001-00-S115
Product Group	HF (13.56 MHz)
Dimension	40 x 24 x 56 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PC, with PU potting
Interface	RS232
Operating voltage Ub	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YH	BIS00YF	BIS00YE		BIS00YC	BIS00YA
Data carrier distance to metal	>10	>10	>10	>25	>25		>25	>25
Data carrier clear zone	>60	>60	>60	>100	>100		>100	>100
Working distance for writing	0-17	0-12	0-5	0-48	0-40		0-15	0-15
Working distance for reading	0-17	0-12	0-5	0-48	0-40		0-15	0-15
Offset at distance								
0	±15	±12	±10	±30	±25	0	±15	±15
2	±15	±12	±10	±30	±25	5	±15	±15
4	±15	±12	±7.5	±30	±25	10	±12	±12
5	±15	±12	±5	±30	±25	15	±8	±8
10	±14	±10		±30	±25	20		
12	±12	±5		±25	±20	25		
15	±12			±25	±20	30		
17	±7			±25	±20	32		
20				±25	±20	36		
25				±25	±20	40		
30				±25	±20	45		
35				±20	±12	50		
40				±20	±12	55		
45				±12		60		
48				±12		65		
75						68		
80						75		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

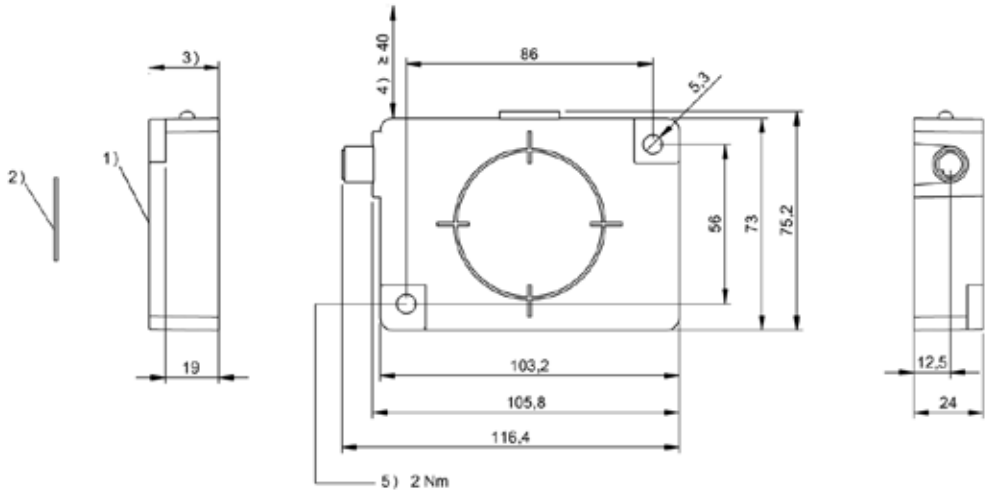
BIS00Y9	BIS00Y8	BIS00Y7		BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y3	BIS00Y2		BIS0043
>25	>50	>50		>50	>50	>50	>50	>50		>25
>100	>150	>150		>150	>150	>150	>150	>150		>120
0-32	0-32	0-36		0-60	0-68	0-70	23-46	23-46		0-40
0-32	0-32	0-36		0-60	0-68	0-70	23-46	23-46		0-40
±20	±22	±25	0	±35	±40	±44			0	±22
±20	±22	±25	5	±35	±40	±44			5	±22
±20	±22	±25	10	±35	±40	±44			10	±22
±16	±20	±25	15	±35	±40	±44			15	±22
±16	±20	±25	20	±35	±40	±44			20	±22
±10	±12	±20	23	±30	±32	±32	±24	±24	25	±20
±10	±12	±20	30	±30	±32	±32	±24	±24	30	±20
±8	±8	±12	32	±30	±32	±32	±18	±18	35	±20
		±12	35	±30	±32	±32	±18	±18	40	±10
			40	±30	±32	±32	±18	±18		
			46	±24	±32	±32	±10	±10		
			50	±24	±32	±32				
			55	±16	±24	±25				
			60	±16	±24	±25				
			65		±15	±15				
			68		±15	±15				
			70			±15				

USB	**BIS00W8** BIS M-411-068-001-09-S72
Product Group	HF (13.56 MHz)
Dimension	75 x 24 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 5-pin
Housing material	PC, with PU potting
Interface	USB 2.0
Operating voltage Ub	5 V DC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YF	BIS00YE		BIS00YC	BIS00YA	BIS00Y9
Data carrier distance to metal	>10	>10	>25	>25		>25	>25	>25
Data carrier clear zone	>60	>60	>100	>100		>100	>100	>100
Working distance for writing	0-20	0-13	0-80	0-70		0-26	0-22	38-52
Working distance for reading	0-20	0-13	0-80	0-70		0-26	0-22	38-52
Offset at distance								
0	±22	±22	±50	±42	0	±20	±20	
5	±22	±22	±50	±42	5	±20	±20	
9	±19	±20	±50	±42	10	±20	±20	
12	±19	±12	±50	±42	15	±20	±20	
13	±19	±5	±50	±42	20	±15	±15	
15	±19		±50	±42	22	±15	±10	
20	±14		±50	±42	26	±15		
22			±40	±39	30			
26			±40	±39	38			±25
30			±40	±39	40			±25
35			±40	±39	45			±25
40			±40	±39	50			±25
45			±35	±36	52			±25
50			±35	±36	56			
60			±35	±36	60			
65			±30	±28	70			
70			±30	±28	80			
75			±30		90			
80			±30		100			
90					110			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

BIS00Y8	BIS00Y7		BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y3	BIS00Y2		BIS0044	BIS0045
>50	>50		>50	>50	>50	>50	>50		>25	>25
>150	>150		>150	>150	>150	>150	>150		>100	>100
0-56	0-60		0-100	0-110	0-125	11-95	11-75		0-45	0-67
0-56	0-60		0-100	0-110	0-125	11-95	11-75		0-45	0-67
±35	±32	0	±50	±62	±65			0	±30	±40
±35	±32	5	±50	±62	±65			5	±30	±40
±35	±32	11	±50	±62	±65	±52	±50	10	±30	±40
±35	±32	15	±50	±62	±65	±52	±50	15	±28	±40
±35	±32	20	±50	±62	±65	±52	±50	20	±28	±40
±30	±30	25	±50	±62	±65	±52	±50	25	±28	±38
±30	±30	30	±50	±62	±65	±52	±50	30	±28	±38
±30	±30	35	±50	±58	±65	±48	±42	35	±25	±38
±30	±30	40	±50	±58	±65	±48	±42	40	±25	±38
±30	±30	45	±50	±58	±62	±48	±42	45	±10	±35
±30	±25	50	±50	±58	±62	±48	±42	50		±35
±25	±25	55	±50	±58	±62	±48	±42	55		±35
±25	±20	60	±50	±58	±62	±48	±35	60		±35
±25	±20	75	±45	±52	±62	±44	±35	67		±10
	±20	85	±45	±52	±58	±44		70		
		95	±45	±52	±58	±40		75		
		100	±45	±52	±58			80		
		110		±48	±58			85		
		120			±58			90		
		125			±50			95		

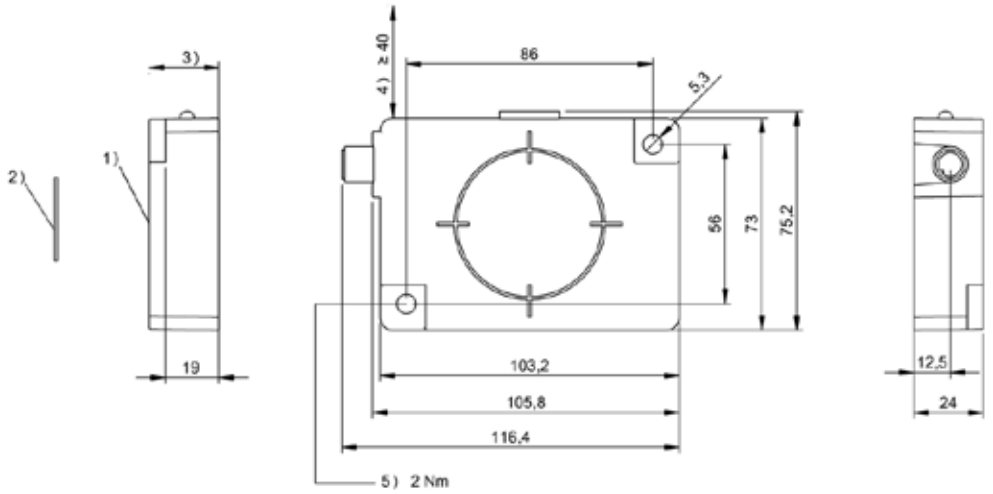
Subnet 16 (RS485)	**BIS00W5** BIS M-411-067-001-04-S92
Product Group	HF (13.56 MHz)
Dimension	75 x 24 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 5-pin
Housing material	PC, with PU potting
Interface	Subnet 16 (RS485)
Operating voltage Ub	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

* Use with **BIS Z-GW-001...** only

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YF	BIS00YE		BIS00YC	BIS00YA	BIS00Y9
Data carrier distance to metal	>10	>10	>25	>25		>25	>25	>25
Data carrier clear zone	>60	>60	>100	>100		>100	>100	>100
Working distance for writing	0-20	0-13	0-80	0-70		0-26	0-22	38-52
Working distance for reading	0-20	0-13	0-80	0-70		0-26	0-22	38-52
Offset at distance								
0	±22	±22	±50	±42	0	±20	±20	
5	±22	±22	±50	±42	5	±20	±20	
9	±19	±20	±50	±42	10	±20	±20	
12	±19	±12	±50	±42	15	±20	±20	
13	±19	±5	±50	±42	20	±15	±15	
15	±19		±50	±42	22	±15	±10	
20	±14		±50	±42	26	±15		
22			±40	±39	30			
26			±40	±39	38			±25
30			±40	±39	40			±25
35			±40	±39	45			±25
40			±40	±39	50			±25
45			±35	±36	52			±25
50			±35	±36	56			
60			±35	±36	60			
65			±30	±28	70			
70			±30	±28	80			
75			±30		90			
80			±30		100			
90					110			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

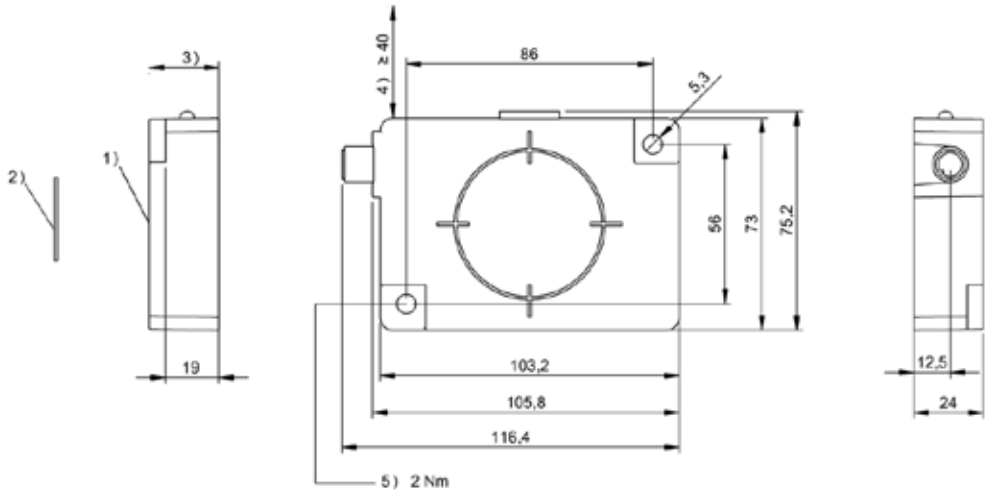
BIS00Y8	BIS00Y7		BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y3	BIS00Y2		BIS0044	BIS0045
>50	>50		>50	>50	>50	>50	>50		>25	>25
>150	>150		>150	>150	>150	>150	>150		>100	>100
0-56	0-60		0-100	0-110	0-125	11-95	11-75		0-45	0-67
0-56	0-60		0-100	0-110	0-125	11-95	11-75		0-45	0-67
±35	±32	0	±50	±62	±65			0	±30	±40
±35	±32	5	±50	±62	±65			5	±30	±40
±35	±32	11	±50	±62	±65	±52	±50	10	±30	±40
±35	±32	15	±50	±62	±65	±52	±50	15	±28	±40
±35	±32	20	±50	±62	±65	±52	±50	20	±28	±40
±30	±30	25	±50	±62	±65	±52	±50	25	±28	±38
±30	±30	30	±50	±62	±65	±52	±50	30	±28	±38
±30	±30	35	±50	±58	±65	±48	±42	35	±25	±38
±30	±30	40	±50	±58	±65	±48	±42	40	±25	±38
±30	±30	45	±50	±58	±62	±48	±42	45	±10	±35
±30	±25	50	±50	±58	±62	±48	±42	50		±35
±25	±25	55	±50	±58	±62	±48	±42	55		±35
±25	±20	60	±50	±58	±62	±48	±35	60		±35
±25	±20	75	±45	±52	±62	±44	±35	67		±10
	±20	85	±45	±52	±58	±44		70		
		95	±45	±52	±58	±40		75		
		100	±45	±52	±58			80		
		110		±48	±58			85		
		120			±58			90		
		125			±50			95		

RS422	**BIS00W7** BIS M-411-068-001-02-S115
Product Group	HF (13.56 MHz)
Dimension	75 x 24 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PC, with PU potting
Interface	RS422
Operating voltage Ub	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YF	BIS00YE		BIS00YC	BIS00YA	BIS00Y9
Data carrier distance to metal	>10	>10	>25	>25		>25	>25	>25
Data carrier clear zone	>60	>60	>100	>100		>100	>100	>100
Working distance for writing	0-20	0-13	0-80	0-70		0-26	0-22	38-52
Working distance for reading	0-20	0-13	0-80	0-70		0-26	0-22	38-52
Offset at distance								
0	±22	±22	±50	±42	0	±20	±20	
5	±22	±22	±50	±42	5	±20	±20	
9	±19	±20	±50	±42	10	±20	±20	
12	±19	±12	±50	±42	15	±20	±20	
13	±19	±5	±50	±42	20	±15	±15	
15	±19		±50	±42	22	±15	±10	
20	±14		±50	±42	26	±15		
22			±40	±39	30			
26			±40	±39	38			±25
30			±40	±39	40			±25
35			±40	±39	45			±25
40			±40	±39	50			±25
45			±35	±36	52			±25
50			±35	±36	56			
60			±35	±36	60			
65			±30	±28	70			
70			±30	±28	80			
75			±30		90			
80			±30		100			
90					110			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

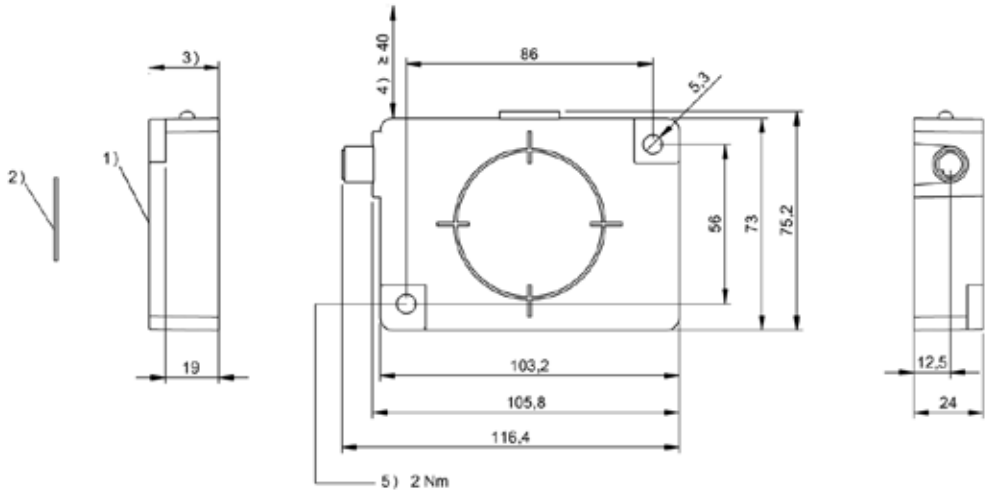
BIS00Y8	BIS00Y7		BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y3	BIS00Y2		BIS0044	BIS0045
>50	>50		>50	>50	>50	>50	>50		>25	>25
>150	>150		>150	>150	>150	>150	>150		>100	>100
0-56	0-60		0-100	0-110	0-125	11-95	11-75		0-45	0-67
0-56	0-60		0-100	0-110	0-125	11-95	11-75		0-45	0-67
±35	±32	0	±50	±62	±65			0	±30	±40
±35	±32	5	±50	±62	±65			5	±30	±40
±35	±32	11	±50	±62	±65	±52	±50	10	±30	±40
±35	±32	15	±50	±62	±65	±52	±50	15	±28	±40
±35	±32	20	±50	±62	±65	±52	±50	20	±28	±40
±30	±30	25	±50	±62	±65	±52	±50	25	±28	±38
±30	±30	30	±50	±62	±65	±52	±50	30	±28	±38
±30	±30	35	±50	±58	±65	±48	±42	35	±25	±38
±30	±30	40	±50	±58	±65	±48	±42	40	±25	±38
±30	±30	45	±50	±58	±62	±48	±42	45	±10	±35
±30	±25	50	±50	±58	±62	±48	±42	50		±35
±25	±25	55	±50	±58	±62	±48	±42	55		±35
±25	±20	60	±50	±58	±62	±48	±35	60		±35
±25	±20	75	±45	±52	±62	±44	±35	67		±10
	±20	85	±45	±52	±58	±44		70		
		95	±45	±52	±58	±40		75		
		100	±45	±52	±58			80		
		110		±48	±58			85		
		120			±58			90		
		125			±50			95		

RS232	**BIS00W6** BIS M-411-068-001-00-S115
Product Group	HF (13.56 MHz)
Dimension	75 x 24 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PC, with PU potting
Interface	RS232
Operating voltage Ub	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YF	BIS00YE		BIS00YC	BIS00YA	BIS00Y9
Data carrier distance to metal	>10	>10	>25	>25		>25	>25	>25
Data carrier clear zone	>60	>60	>100	>100		>100	>100	>100
Working distance for writing	0-20	0-13	0-80	0-70		0-26	0-22	38-52
Working distance for reading	0-20	0-13	0-80	0-70		0-26	0-22	38-52
Offset at distance								
0	±22	±22	±50	±42	0	±20	±20	
5	±22	±22	±50	±42	5	±20	±20	
9	±19	±20	±50	±42	10	±20	±20	
12	±19	±12	±50	±42	15	±20	±20	
13	±19	±5	±50	±42	20	±15	±15	
15	±19		±50	±42	22	±15	±10	
20	±14		±50	±42	26	±15		
22			±40	±39	30			
26			±40	±39	38			±25
30			±40	±39	40			±25
35			±40	±39	45			±25
40			±40	±39	50			±25
45			±35	±36	52			±25
50			±35	±36	56			
60			±35	±36	60			
65			±30	±28	70			
70			±30	±28	80			
75			±30		90			
80			±30		100			
90					110			

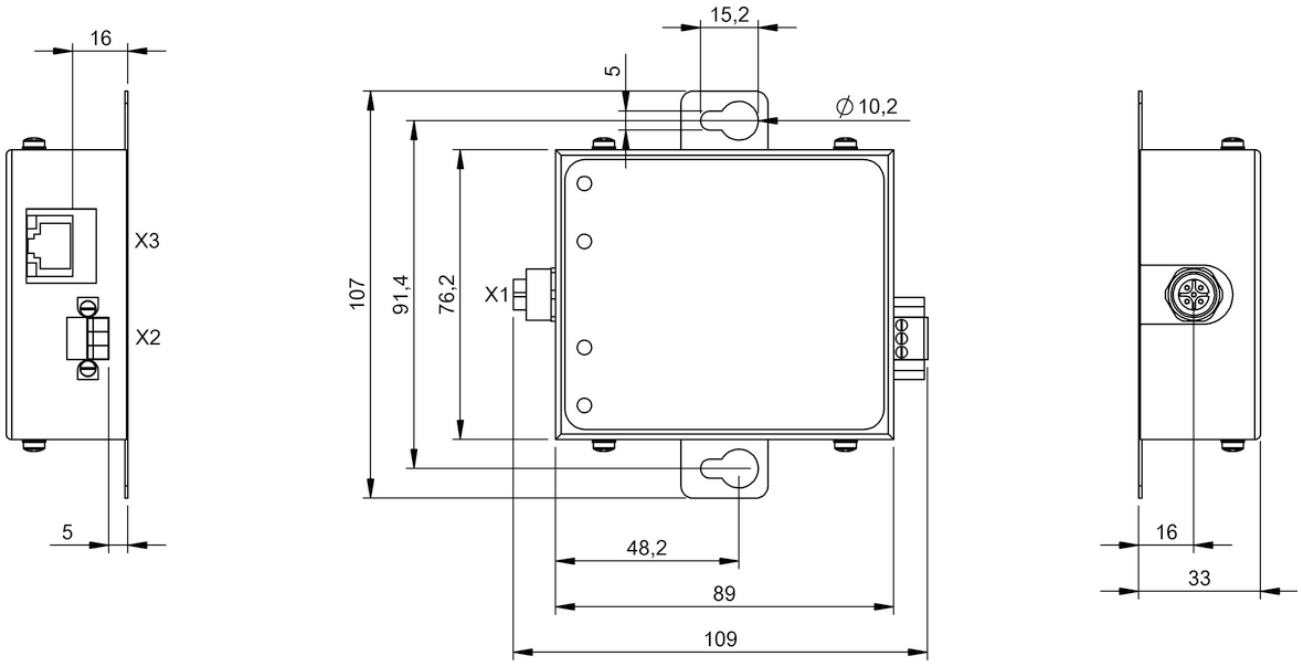
Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

BIS00Y8	BIS00Y7		BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y3	BIS00Y2		BIS0044	BIS0045
>50	>50		>50	>50	>50	>50	>50		>25	>25
>150	>150		>150	>150	>150	>150	>150		>100	>100
0-56	0-60		0-100	0-110	0-125	11-95	11-75		0-45	0-67
0-56	0-60		0-100	0-110	0-125	11-95	11-75		0-45	0-67
±35	±32	0	±50	±62	±65			0	±30	±40
±35	±32	5	±50	±62	±65			5	±30	±40
±35	±32	11	±50	±62	±65	±52	±50	10	±30	±40
±35	±32	15	±50	±62	±65	±52	±50	15	±28	±40
±35	±32	20	±50	±62	±65	±52	±50	20	±28	±40
±30	±30	25	±50	±62	±65	±52	±50	25	±28	±38
±30	±30	30	±50	±62	±65	±52	±50	30	±28	±38
±30	±30	35	±50	±58	±65	±48	±42	35	±25	±38
±30	±30	40	±50	±58	±65	±48	±42	40	±25	±38
±30	±30	45	±50	±58	±62	±48	±42	45	±10	±35
±30	±25	50	±50	±58	±62	±48	±42	50		±35
±25	±25	55	±50	±58	±62	±48	±42	55		±35
±25	±20	60	±50	±58	±62	±48	±35	60		±35
±25	±20	75	±45	±52	±62	±44	±35	67		±10
	±20	85	±45	±52	±58	±44		70		
		95	±45	±52	±58	±40		75		
		100	±45	±52	±58			80		
		110		±48	±58			85		
		120			±58			90		
		125			±50			95		

	BAE00JJ BIS Z-GW-001-IND
Dimension	107 x 33 x 109 mm
Interface	Industrial Ethernet / MODBUS TCP
Auxiliary interfaces	Subnet 16 (RS485)
Housing material	Aluminum, die-cast
Ambient temperature	-20...50 °C
Protection degree	IP30
Approval/Conformity	CE, FCC Part 15
Productview	Page 307


16
X3
X2
5
15,2
5
∅ 10,2
107
91,4
76,2
X1
48,2
89
109
16
33


BALLUFF
BALLUFF

Tool identification even at short ranges

RFID SYSTEM LF (70/455 KHZ) BIS C

Especially high-performing and flexible are the BIS C low-frequency RFID systems with reliable tool identification in coolant- and lubricant-heavy machining centers. Exact positioning is not always necessary: Many data carriers can be dynamically read and described in passing.

The LF RFID system (70/455 kHz) is also the first choice for tool identification over short ranges. Other areas of use are tool transport with conveyor systems, FTS and pallet transport systems as well as assembly technology and resource organization.

Features

- Great variety of data carriers and read/write heads for very diverse applications and difficult operating conditions
- Wear-free, maintenance-free and insensitive to dirt
- High noise immunity and assured data transfer with special checking software in the processor units
- All bus systems commonly used on a global basis available
- Memory capacity up to 8 kB

	BIS000T BIS C-121-04/L	
Product Group	LF (70/455 kHz)	
Dimension	Ø 9 x 4.5 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	511 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	0...70 °C	
Housing material	Epoxy-resin/fiberglass	
Protection degree	IP68	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 330	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)	
BIS C-300	0-2		0-3	
BIS C-302	0-1.5		0-2.5	
BIS C-305	0-2		0-3	
BIS C-306	0-2		0-3	
BIS C-322	0-2		0-3	
BIS C-325	0-2		0-3	

Dimensions in mm

* Installation on request

	BIS0011 BIS C-122-04/L	BIS015W BIS C-122-05/L	BIS0015 BIS C-122-11/L
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	Ø 10 x 4.5 mm	Ø 10 x 4.5 mm	Ø 10 x 4.5 mm
	round	round	round
	EEPROM	EEPROM	EEPROM
	511 Byte	1023 Byte	2047 Byte
	-30...85 °C	-30...85 °C	-30...85 °C
	—	—	120 °C
	0...70 °C	0...70 °C	-30...70 °C
	Epoxy-resin/fiberglass	Epoxy-resin/fiberglass	Epoxy-resin/fiberglass
	IP68	IP68	IP68
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
	Page 330	Page 330	Page 330

	flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)
	0-2.5		0-3	0-2.5		0-3	0-2.5		0-3
	0-2		0-2.5	0-2		0-2.5	0-2		0-2.5
	0-2.5		0-3	0-2.5		0-3	0-2.5		0-3
	0-2.5		0-3	0-2.5		0-3	0-2.5		0-3
	0-2.5		0-3	0-2.5		0-3	0-2.5		0-3
	0-4.5		0-5	0-4.5		0-5	0-4.5		0-5

	BIS0004 BIS C-103-05/A	
Product Group	LF (70/455 kHz)	
Dimension	Ø 12 x 8 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	1023 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	120 °C	
Ambient temperature	-30...70 °C	
Housing material	Epoxy-resin/fiberglass	
Protection degree	IP68	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 330	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)	
BIS C-300	0-3.5		0-4	
BIS C-302	0-3		0-3.5	
BIS C-305	0-5		0-6	
BIS C-306	0-3.5		0-4	
BIS C-310				
BIS C-315				
BIS C-319				
BIS C-322	0-5		0-6	
BIS C-323				
BIS C-324				
BIS C-325	0-4.5		0-5	
BIS C-326				

Dimensions in mm

* Installation on request

	BIS0009 BIS C-105-05/A	BIS001E BIS C-130-05/L	BIS0002 BIS C-100-05/A
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	Ø 12 x 6 mm	Ø 15.98 x 7 mm	Ø 16 x 10.5 mm
	round	round	round
	EEPROM	EEPROM	EEPROM
	1023 Byte	1023 Byte	1023 Byte
	-30...85 °C	-30...85 °C	-20...85 °C
	120 °C	—	—
	-30...70 °C	-30...70 °C	0...70 °C
	Epoxy-resin/fiberglass	Epoxy-resin/fiberglass	PA 6.6
	IP68	IP68	IP68
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone)	metal-free (clear zone) on metal flush in metal
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
	Page 330	Page 330	Page 330

	flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)
	0-3.5		0-4	0-4		0-4	0-4		0-4
	0-3		0-3.5	0-3.5		0-4	0-4		0-4
	0-5		0-6			0-7	0-4		0-4
	0-3.5		0-4	0-4		0-4	0-4		0-4
						0-11			
						0-18			
				0-6		0-13			
	0-5		0-6			0-7	0-4		0-4
						0-11			
						0-11			
	0-5		0-6	0-4		0-4	0-4		0-4
						0-13			

	BIS0019 BIS C-128-05/L	
Product Group	LF (70/455 kHz)	
Dimension	Ø 26 x 6 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	1023 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	120 °C	
Ambient temperature	-30...70 °C	
Housing material	Epoxy-resin/fiberglass	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 330	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)	
BIS C-305			0-6	
BIS C-310	0-8		0-13	
BIS C-315			0-18	
BIS C-322			0-6	
BIS C-323	0-8		0-13	
BIS C-324	0-8		0-13	
BIS C-326			0-15	

Dimensions in mm

* Installation on request

	BIS001C BIS C-128-11/L	BIS0006 BIS C-104-11/A	BIS0007 BIS C-104-32/A
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	Ø 26 x 6 mm	Ø 30 x 35 mm	Ø 30 x 35 mm
	round	round	round
	EEPROM	EEPROM	EEPROM
	2047 Byte	2047 Byte	8192 Byte
	-30...85 °C	-30...85 °C	-30...85 °C
	120 °C	—	—
	-30...70 °C	-30...70 °C	-30...70 °C
	Epoxy-resin/fiberglass	Brass	Brass
	IP68	IP67	IP67
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
	Page 330	Page 330	Page 330

	flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)*
			0-6						
	0-8		0-13	1-11	0-12		1-11	0-12	
			0-18	1-13	0-14		1-13	0-14	
			0-6						
	0-8		0-13	1-11	0-12		1-11	0-12	
	0-8		0-13	1-11	0-12		1-11	0-12	
			0-15						

	BIS000M BIS C-117-05/A	
Product Group	LF (70/455 kHz)	
Dimension	Ø 30 x 16 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	1023 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	-30...70 °C	
Housing material	PBT	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 331	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)	
BIS C-300				
BIS C-305	1-8		0-10	
BIS C-306				
BIS C-310	1-12		0-13	
BIS C-315	0-15		0-22	
BIS C-319	0-13		0-16	
BIS C-322	1-8		0-10	
BIS C-323	1-12		0-13	
BIS C-324			0-13	
BIS C-325				
BIS C-326				

Dimensions in mm

* Installation on request

Use in vacuum

Use in vacuum

	BIS000N BIS C-117-05/L	BIS00J4 BIS C-140-05/L-M6	BIS00J2 BIS C-140-05/L-M8
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	Ø 30 x 16 mm	Ø 22 x 21 mm	Ø 22 x 21 mm
	round	round	round
	EEPROM	EEPROM	EEPROM
	1023 Byte	1023 Byte	1023 Byte
	-30...85 °C	-25...95 °C	-25...95 °C
	—	—	—
	-30...70 °C	-25...70 °C	-25...70 °C
	PBT	Steel, PA 12, GF30	Steel, PA 12, GF30
	IP68	—	—
	metal-free (clear zone)	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
	Page 331	Page 331	Page 331

	flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)*	flush in metal	on metal*	metal-free (clear zone)*
				0-3			0-3		
			0-7	0-4.5			0-4.5		
				0-3			0-3		
			0-13	0-7			0-7		
			0-18						
	0-8		0-15						
			0-7						
			0-13	0-7			0-7		
			0-13	0-7			0-7		
				0-5			0-5		
			0-18						

Use in vacuum

	BIS00L9 BIS C-140-11/L-M10	
Product Group	LF (70/455 kHz)	
Dimension	Ø 22 x 21 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	2047 Byte	
Storage temperature	-25...95 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	Steel, PA 12, GF30	
Protection degree	—	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 331	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)*	
BIS C-300	0-3			
BIS C-305	0-4.5			
BIS C-306	0-3			
BIS C-310	0-7			
BIS C-315				
BIS C-319				
BIS C-322				
BIS C-323	0-7			
BIS C-324	0-7			
BIS C-325	0-5			
BIS C-327				

Dimensions in mm

* Installation on request

Use in vacuum

	BIS00J1 BIS C-140-11/L-M8	BIS000C BIS C-108-05/L	BIS000H BIS C-108-11/L
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	Ø 22 x 21 mm	32 x 11 x 52 mm	32 x 11 x 52 mm
	round	round	round
	EEPROM	EEPROM	EEPROM
	2047 Byte	1023 Byte	2047 Byte
	-25...95 °C	-30...85 °C	-30...85 °C
	—	—	—
	-25...70 °C	-30...70 °C	-30...70 °C
	Steel, PA 12, GF30	PBT	PBT
	—	IP68	IP68
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
	Page 331	Page 331	Page 331

	flush in metal	on metal*	metal-free (clear zone)*	flush in metal	on metal*	metal-free (clear zone)			
	0-3								
	0-4.5					0-6			0-6
	0-3								
	0-7			0-5		0-12	0-5		0-12
				0-10		2-16	0-10		2-16
				0-11		0-14	0-11		0-14
						0-6			0-6
	0-7					0-12			0-12
	0-7					0-12			0-12
	0-5								
						0-8			0-8

	BIS000K BIS C-108-32/L	
Product Group	LF (70/455 kHz)	
Dimension	32 x 11 x 52 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	8192 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	-30...70 °C	
Housing material	PBT	
Protection degree	IP68	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 331	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)	
BIS C-305			0-6	
BIS C-310	0-5		0-12	
BIS C-315	0-10		2-16	
BIS C-319	0-11		0-14	
BIS C-322			0-6	
BIS C-323			0-12	
BIS C-324			0-12	
BIS C-327			0-8	

Dimensions in mm

* Installation on request

	BIS0017 BIS C-127-05/L		
	LF (70/455 kHz)		
	53 x 4.8 x 85 mm		
	round		
	EEPROM		
	1023 Byte		
	-20...60 °C		
	—		
	0...60 °C		
	ABS		
	IP65		
	metal-free (clear zone)		
	CE, UL-FILE E227256, Vol.X1, BIS		
	Page 331		

	flush in metal*	on metal*	metal-free (clear zone)						
			10-30						

	BIS0028 BIS C-150-05/A	
Product Group	LF (70/455 kHz)	
Dimension	40 x 22 x 80 mm	
Antenna type	Rod	
Memory type	EEPROM	
User data, read/write	1023 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	-30...70 °C	
Housing material	POM	
Protection degree	IP68	
Installation	on metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 331	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS C-300				
BIS C-305				
BIS C-306				
BIS C-310				
BIS C-315				
BIS C-319				
BIS C-322				
BIS C-323				
BIS C-324				
BIS C-325				
BIS C-326				
BIS C-351		0-45		

Dimensions in mm

* Installation on request

	BIS002A BIS C-150-11/A	BIS002E BIS C-150-32/A	BIS0021 BIS C-134-11/L
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	40 x 22 x 80 mm	40 x 22 x 80 mm	25 x 11 x 25 mm
	Rod	Rod	round
	EEPROM	EEPROM	EEPROM
	2047 Byte	8192 Byte	2047 Byte
	-30...85 °C	-30...85 °C	-30...85 °C
	—	—	—
	-30...70 °C	-30...70 °C	-30...70 °C
	POM	POM	PA 6.6, GF30, PU potting
	IP68	IP68	IP68
	on metal	on metal	metal-free (clear zone) flush in metal
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
	Page 331	Page 331	Page 332

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
							0-3		
									0-6
							0-3		
									0-10
									0-16
									0-12
									0-6
									0-10
									0-10
									0-4
									0-12
		0-45			0-45				

	BIS002K BIS C-190-05/L	
Product Group	LF (70/455 kHz)	
Dimension	34 x 35 x 34 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	1023 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	-30...70 °C	
Housing material	PBT	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 354	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS C-300				
BIS C-302				
BIS C-306				
BIS C-310			0-11	
BIS C-315			0-20	
BIS C-319				
BIS C-323			0-11	
BIS C-324			0-11	
BIS C-325				
BIS C-326			0-18	
BIS C-327				

Dimensions in mm

* Installation on request

	BIS002N BIS C-190-32/L	BIS002P BIS C-191-05/L	
	LF (70/455 kHz)	LF (70/455 kHz)	
	34 x 35 x 34 mm	24 x 21 x 24 mm	
	round	round	
	EEPROM	EEPROM	
	8192 Byte	1023 Byte	
	-30...85 °C	-30...85 °C	
	—	—	
	-30...70 °C	-30...70 °C	
	PBT	PBT	
	IP68	IP68	
	metal-free (clear zone)	metal-free (clear zone)	
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	
	Page 354	Page 354	

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
						0-3.5			
						0-3			
						0-3.5			
			0-11			0-10			
			0-20						
						0-11			
			0-11			0-9			
			0-11			0-10			
						0-3.5			
			0-18						
			0-8						

	BIS002Y BIS C-122-04/L-ZC1	
Product Group	LF (70/455 kHz)	
Dimension	Ø 15 x 50 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	511 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	0...70 °C	
Housing material	POM, EP	
Protection degree	IP68	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 354	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)*	
BIS C-300				
BIS C-302				
BIS C-305				
BIS C-306				
BIS C-310				
BIS C-315				
BIS C-319				
BIS C-322	0-2.5			
BIS C-323				
BIS C-324				
BIS C-325	0-2.5			
BIS C-326				

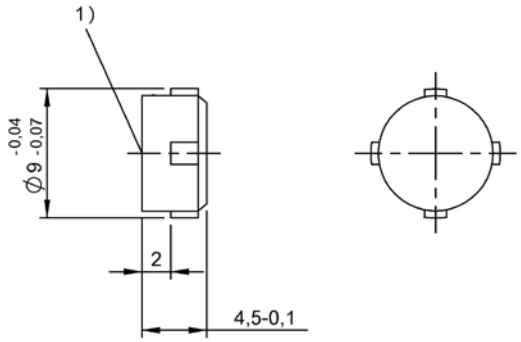
Dimensions in mm

* Installation on request

Use in vacuum

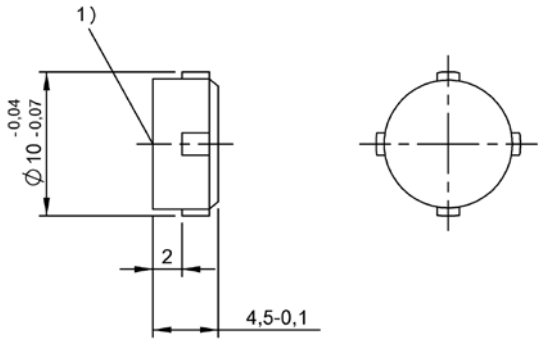
	BIS001H BIS C-130-05/L-SA1	BIS001Y BIS C-131-05/L	
	LF (70/455 kHz)	LF (70/455 kHz)	
	Ø 15.5 x 7 mm	Ø 125 x 7 mm	
	round	round	
	EEPROM	EEPROM	
	1023 Byte	1023 Byte	
	-30...85 °C	-30...85 °C	
	—	—	
	-30...70 °C	-30...70 °C	
	PBT	POM	
	IP68	IP67	
	metal-free (clear zone)	metal-free (clear zone)	
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	
	Page 354	Page 354	

	flush in metal	on metal*	metal-free (clear zone)*	flush in metal	on metal*	metal-free (clear zone)	flush in metal*	on metal*	metal-free (clear zone)*
	0-4		0-4						
			0-4						
	0-6		0-7						
	0-4		0-4						
	0-8		0-8						
			0-8						
	0-7		0-13						
			0-7						
	0-8								
	0-8								
	0-4		0-8						
			0-12						



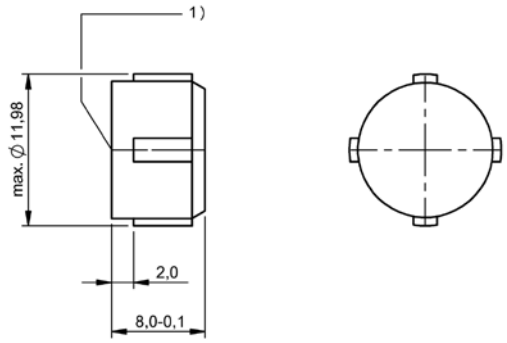
1) Sensing surface

BIS000T



1) Sensing surface

BIS0011, BIS015W, BIS0015

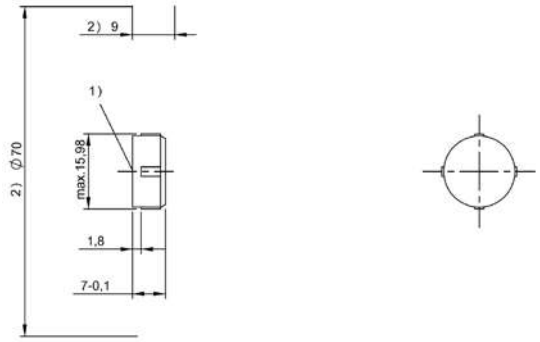


1) Sensing surface

BIS0004

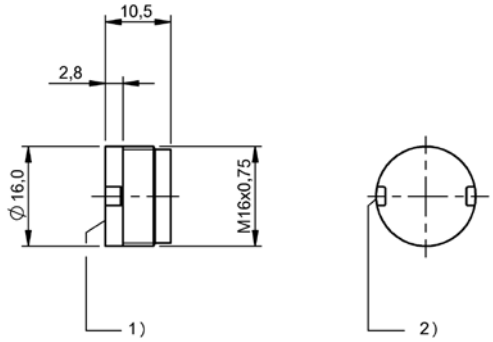
1) Sensing surface

BIS0009



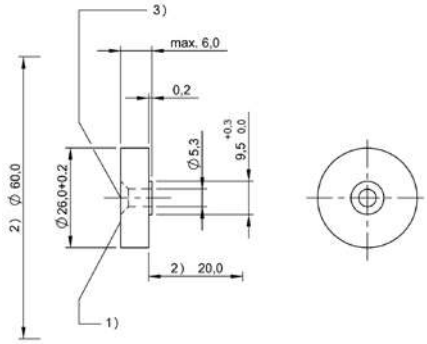
1) Sensing surface, 2) Clear zone

BIS001E



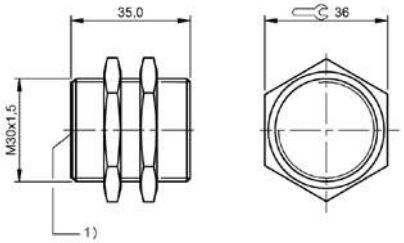
1) Sensing surface, 2) For mounting key 710691

BIS0002



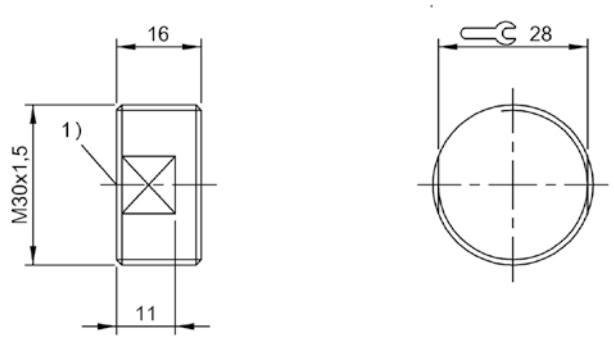
1) Sensing surface, 2) Clear zone, 3) Tightening torque max. 2.5 Nm

BIS0019, BIS001C



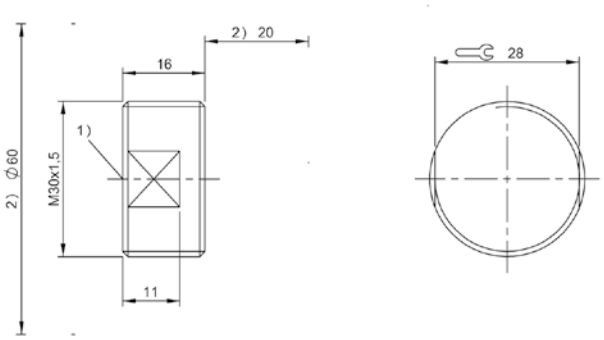
1) Sensing surface

BIS0006, BIS0007



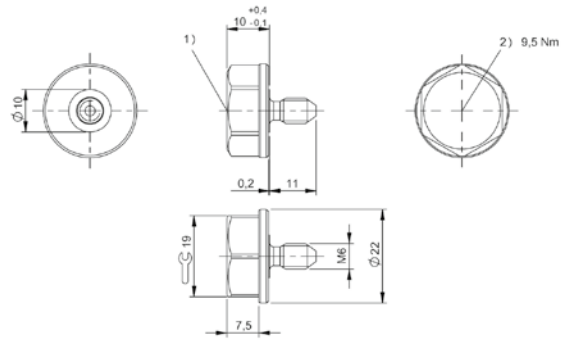
1) Sensing surface

BIS000M



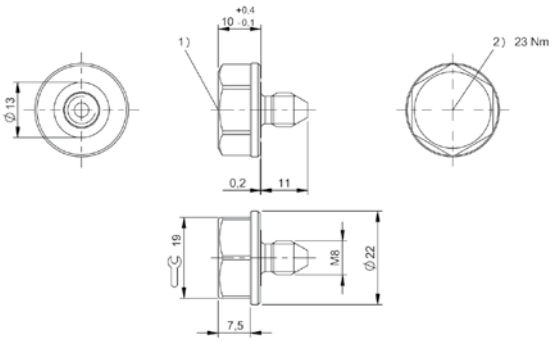
1) Sensing surface, 2) Clear zone

BIS000N



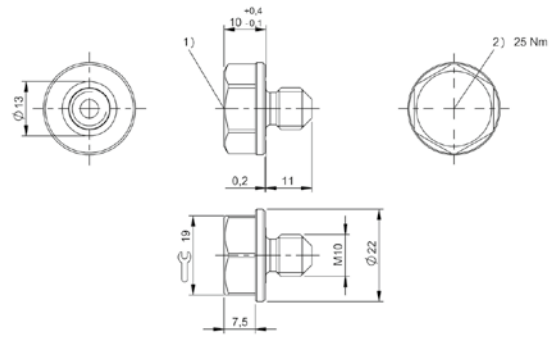
1) Sensing surface, 2) Tightening torque

BIS00J4



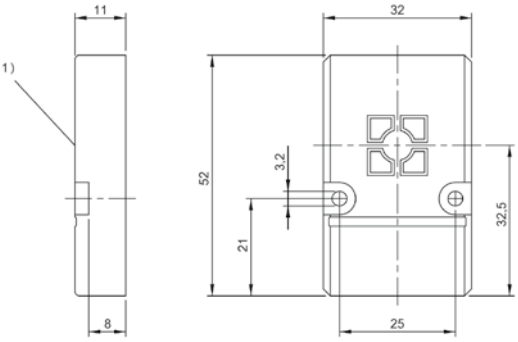
1) Sensing surface, 2) Tightening torque

BIS00J2, BIS00J1



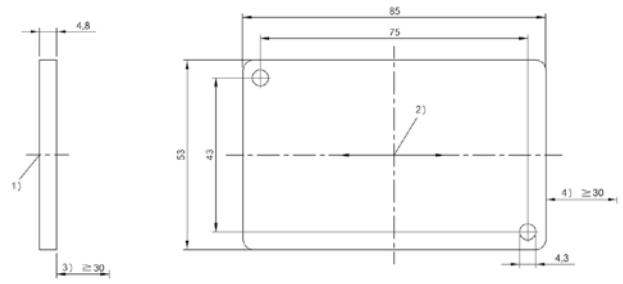
1) Sensing surface, 2) Tightening torque

BIS00L9



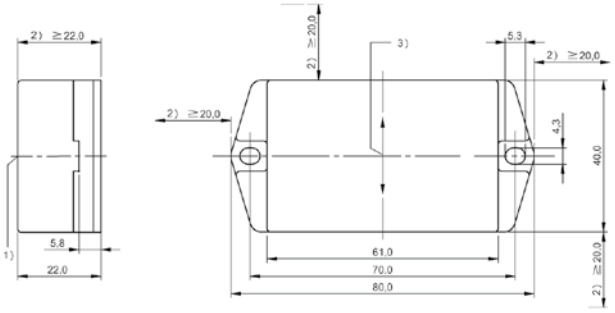
1) Sensing surface

BIS000C, BIS000H, BIS000K



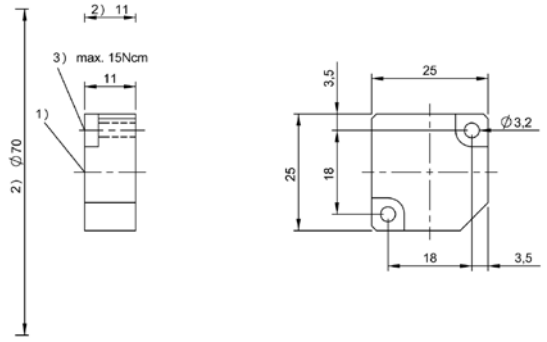
1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) Clear zone surrounding

BIS0017



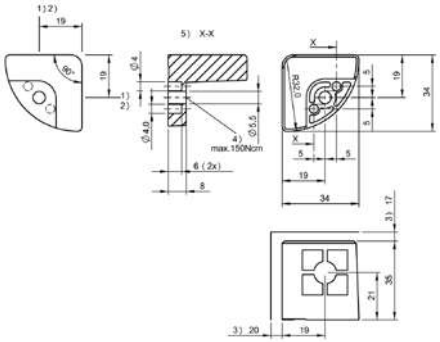
1) Sensing surface, 2) Clear zone, 3) Read/write axis

BIS0028, BIS002A, BIS002E



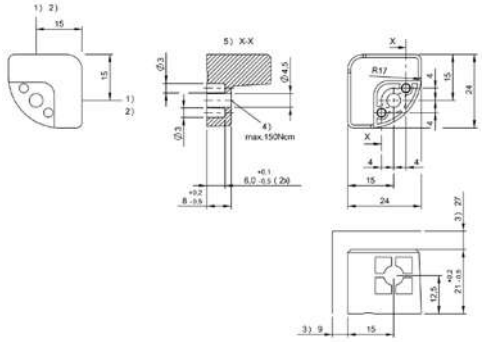
1) Sensing surface, 2) Clear zone, 3) Tightening torque

BIS0021



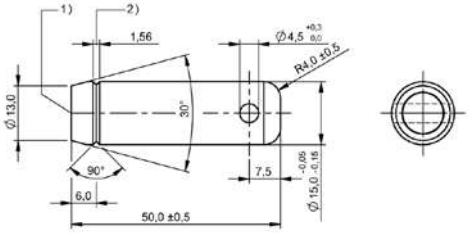
1) Sensing surface, 2) Do not use at same time, 3) Clear zone, 4) Tightening torque, 5) Cut-out

BIS002K, BIS002N



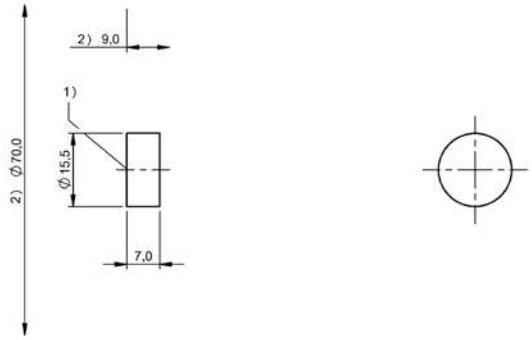
1) Sensing surface, 2) Do not use at same time, 3) Clear zone, 4) Tightening torque, 5) Cut-out

BIS002P



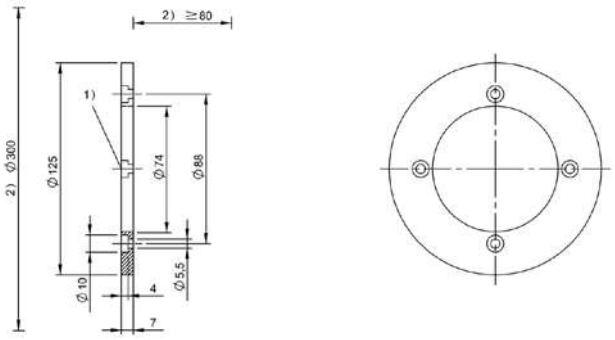
1) Sensing surface, 2) Notch

BIS002Y



1) Sensing surface, 2) Clear zone

BIS001H



1) Sensing surface, 2) Clear zone

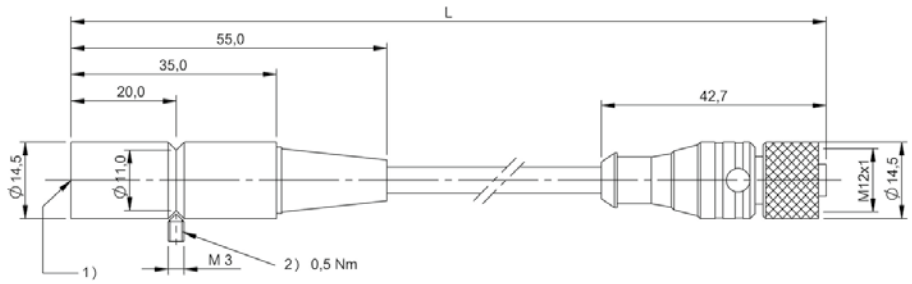
BIS001Y

1 m cable PU	**BIS00P5** BIS C-300-PU1-01
2 m cable PU	**BIS0138** BIS C-300-PU1-02
5 m cable PU	**BIS005Z** BIS C-300-PU1-05
10 m cable PU	**BIS00P6** BIS C-300-PU1-10
Product Group	LF (70/455 kHz)
Dimension	Ø 14.5 x 35 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	Brass
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0002	BIS0004	BIS0009	BIS000T	BIS0011	BIS001E		BIS0021	BIS001H	BIS002P
Data carrier distance to metal	flush	flush	flush	flush	flush	flush	metal-free	flush	metal-free	metal-free
Working distance for writing	0-4	0-3.5	0-3.5	0-2	0-2.5	0-4	0-4	0-3	0-4	0-3.5
Working distance for reading	0-4	0-3.5	0-3.5	0-2	0-2.5	0-4	0-4	0-3	0-4	0-3.5
Offset at distance										
1	±3	±3	±3	±2	±2.5	±3.5	±5	±4	±5	±4
3	±2	±2	±2			±3	±4		±4	±3

Dimensions in mm



1) Sensing surface, 2) Tightening torque

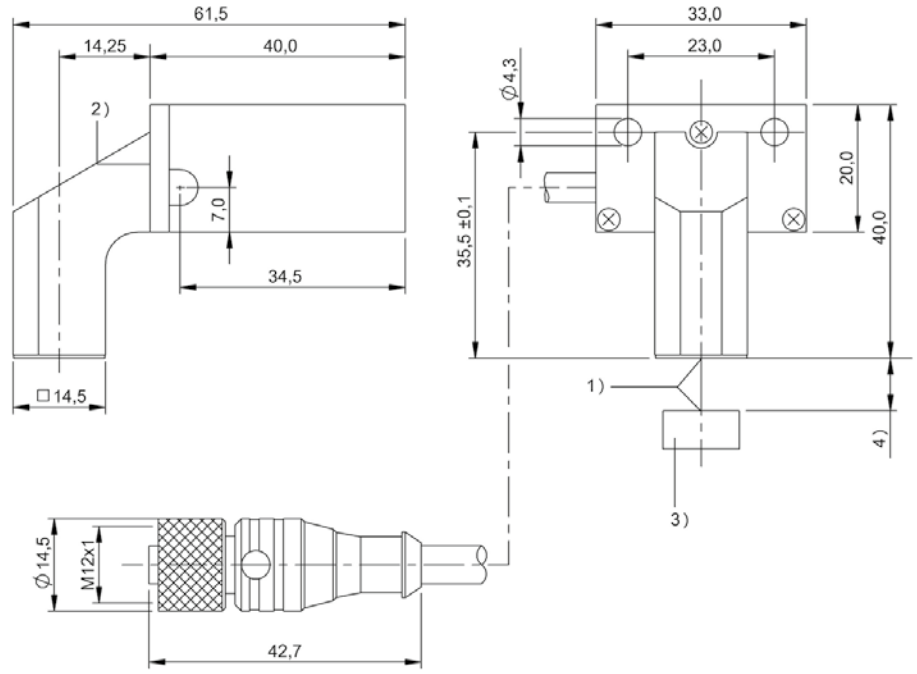
	BIS00J4	BIS00J2	BIS00L9	BIS00J1
	metal-free	metal-free	metal-free	metal-free
	0-3	0-3	0-3	0-3
	0-3	0-3	0-3	0-3
	±3.5	±3.5	±3.5	±3.5
	±2	±2	±2	±2

5 m cable PU	**BIS00PA** BIS C-302-PU1-05
10 m cable PU	**BIS00P9** BIS C-302-PU1-10
Product Group	LF (70/455 kHz)
Dimension	40 x 33 x 61.5 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	Aluminum, PA 6.6
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0002	BIS0004	BIS0009	BIS000T	BIS0011	BIS001E		BIS001H	BIS002P
Data carrier distance to metal	flush	flush	flush	flush	flush	flush	metal-free	metal-free	metal-free
Working distance for writing	0-4	0-3	0-3	0-1.5	0-2	0-3.5	0-4	0-4	0-3
Working distance for reading	0-4	0-3	0-3	0-1.5	0-2	0-3.5	0-4	0-4	0-3
Offset at distance									
1	±3	±3	±3	±1.5	±2	±3	±5	±5	±4
3	±2	±1.5	±1.5			±2	±3	±3	±2

Dimensions in mm



1) Sensing surface, 2) Mounting surface, 3) Data carrier, 4) Read range

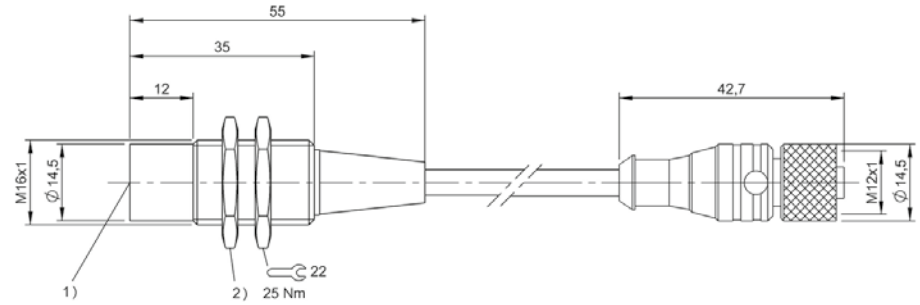
	BIS00J4	BIS00J2	BIS00L9	BIS00J1
	metal-free	metal-free	metal-free	metal-free
	0-3	0-3	0-3	0-3
	0-3	0-3	0-3	0-3
	±3.5	±3.5	±3.5	±3.5
	±2	±2	±2	±2

1 m cable PU	**BIS00PC** BIS C-306-PU1-01
10 m cable PU	**BIS00PE** BIS C-306-PU1-10
Product Group	LF (70/455 kHz)
Dimension	Ø 16 x 35 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	Brass
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0002	BIS0004	BIS0009	BIS000T	BIS0011	BIS001E		BIS0021	BIS001H	BIS002P
Data carrier distance to metal	flush	flush	flush	flush	flush	flush	metal-free	flush	metal-free	metal-free
Working distance for writing	0-4	0-3.5	0-3.5	0-2	0-2.5	0-4	0-4	0-3	0-4	0-3.5
Working distance for reading	0-4	0-3.5	0-3.5	0-2	0-2.5	0-4	0-4	0-3	0-4	0-3.5
Offset at distance										
1	±3	±3	±3	±2	±2.5	±3.5	±5	±4	±5	±4
3	±2	±2	±2			±3	±4		±4	±3

Dimensions in mm



1) Sensing surface, 2) Tightening torque

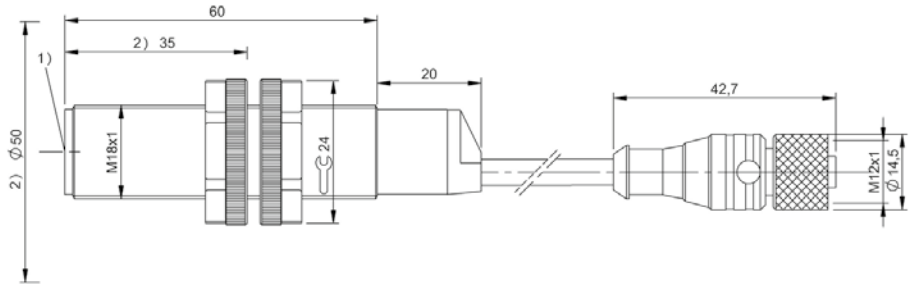
	BIS00J4	BIS00J2	BIS00L9	BIS00J1
	metal-free	metal-free	metal-free	metal-free
	0-3	0-3	0-3	0-3
	0-3	0-3	0-3	0-3
	±3.5	±3.5	±3.5	±3.5
	±2	±2	±2	±2

1 m cable PU	**BIS0077** BIS C-319-PU1-01
5 m cable PU	**BIS0078** BIS C-319-PU1-05
10 m cable PU	**BIS0079** BIS C-319-PU1-10
Product Group	LF (70/455 kHz)
Dimension	Ø 18 x 80 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1-Female
Housing material	PBT, blue, nuts PA 6.6 black
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS000C BIS000H BIS000K	BIS000N	BIS001E BIS001H	BIS0021	BIS002P
Data carrier distance to metal	metal-free	metal-free	metal-free	metal-free	metal-free
Working distance for writing	0-14	0-15	0-13	0-12	0-11
Working distance for reading	0-14	0-15	0-13	0-12	0-11
Offset at distance					
1	±12	±13	±9	±9	±9
3	±12	±12	±9	±9	±9
5	±11	±12	±9	±9	±9
7	±11	±11	±8.5	±8.5	±8
10	±9	±10	±7.5	±7.5	

Dimensions in mm



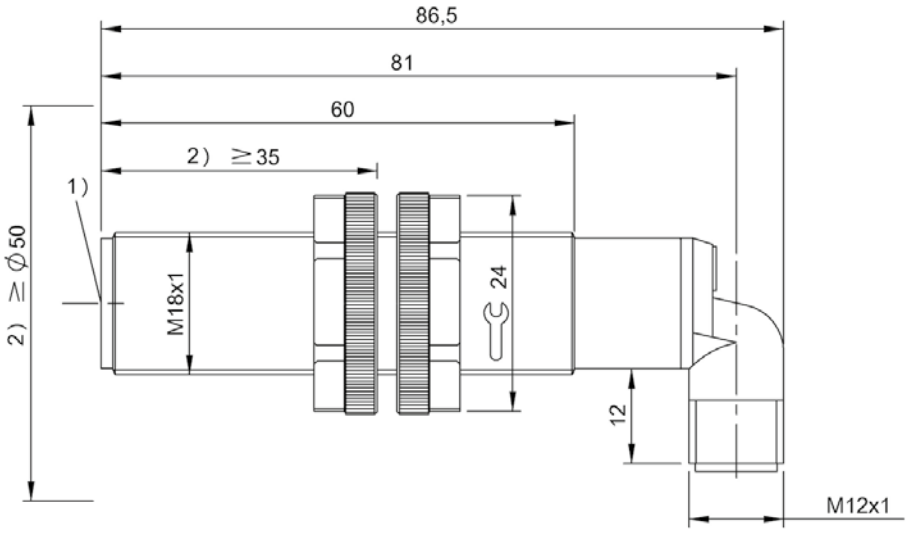
1) Sensing surface, 2) Clear zone

For 5 m cable	**BIS007A** BIS C-319/05-S4
For 10 m cable	**BIS007C** BIS C-319/10-S4
Product Group	LF (70/455 kHz)
Dimension	Ø 18 x 86.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1 male
Housing material	PBT, blue, nuts PA 6.6 black
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS000C BIS000H BIS000K	BIS000N	BIS001E BIS001H	BIS0021	BIS002P
Data carrier distance to metal	metal-free	metal-free	metal-free	metal-free	metal-free
Working distance for writing	0-14	0-15	0-13	0-12	0-11
Working distance for reading	0-14	0-15	0-13	0-12	0-11
Offset at distance					
1	±12	±13	±9	±9	±9
3	±12	±12	±9	±9	±9
5	±11	±12	±9	±9	±9
7	±11	±11	±8.5	±8.5	±8
10	±9	±10	±7.5	±7.5	

Dimensions in mm



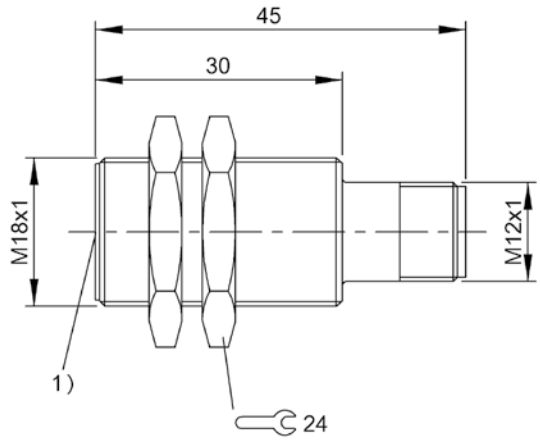
1) Sensing surface, 2) Clear zone

For 1 m cable	**BIS007P** BIS C-325/01-S4
For 5 m cable	**BIS007R** BIS C-325/05-S4
For 10 m cable	**BIS007T** BIS C-325/10-S4
Product Group	LF (70/455 kHz)
Dimension	Ø 18 x 45 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1 male
Housing material	Stainless steel (1.4571), stainless steel (1.4571)
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

		BIS0002	BIS0011 BIS002Y BIS015W BIS0015	BIS001E	BIS001H	BIS0021	BIS002P	BIS00J2
Data carrier distance to metal		flush	flush	metal-free	metal-free	metal-free	metal-free	auf Metall
Working distance for writing		0-4	0-2.5	0-4	0-3	0-4	0-3	0-5
Working distance for reading		0-4	0-2.5	0-4	0-8	0-4	0-3.5	0-5
Offset at distance								
	1	±3.5	±2.5	±4	±4	±4	±4	
	2							±3
	3	±3		±2	±2	±2	±2	
	4							±2

Dimensions in mm



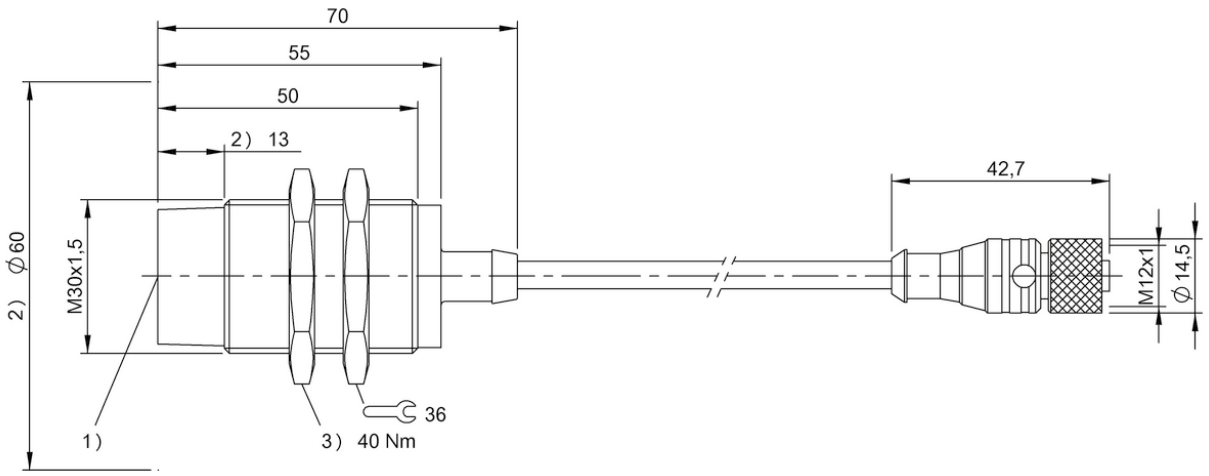
1) Sensing surface

1 m cable PU	**BIS00PF** BIS C-310-PU1-01
5 m cable PU	**BIS00PH** BIS C-310-PU1-05
10 m cable PU	**BIS00PJ** BIS C-310-PU1-10
Product Group	LF (70/455 kHz)
Dimension	Ø 30 x 70 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1-Female
Housing material	Brass
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0006		BIS0007		BIS000C BIS000H BIS000K	BIS000M	BIS000N	BIS0019		BIS001C		BIS001E	
Data carrier distance to metal	flush	metal-free	flush	metal-free	metal-free	flush	metal-free	flush	metal-free	flush	metal-free	metal-free	
Working distance for writing	1-11	0-12	1-11	0-12	0-12	1-12	0-13	0-8	0-13	0-8	0-13	0-11	
Working distance for reading	1-11	0-12	1-11	0-12	0-12	1-12	0-13	0-8	0-13	0-8	0-13	0-11	
Offset at distance													
1	±7.5	±7.5	±7.5	±7.5	±10	±7.5	±11	±8	±10	±8	±10	±9	
3	±7	±7	±7	±7	±9	±7.5	±10	±7	±10	±7	±10	±8	
5	±7	±7	±7	±7	±9	±7	±10	±6.5	±9	±6.5	±9	±7	
7	±7	±7	±7	±7	±8.5	±6.5	±9.5	±5.5	±9	±5.5	±9	±5	
10													

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Tightening torque

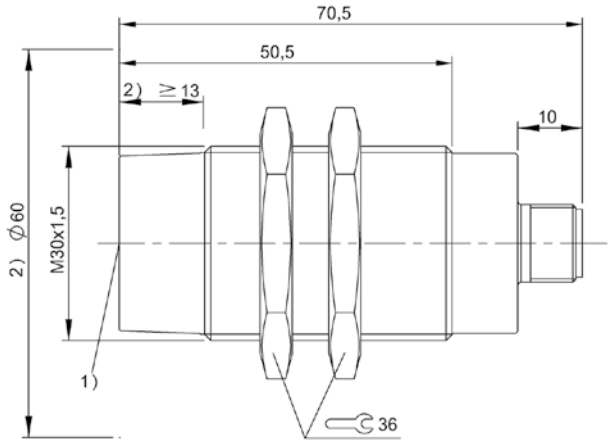
	BIS001H	BIS0021	BIS002K BIS002N	BIS002P
	metal-free	metal-free	metal-free	metal-free
	0-8	0-10	0-11	0-10
	0-8	0-10	0-11	0-10
	±6.5	±9	±10	±8
	±6	±8	±9	±7.5
	±5.5	±7	±9	±7
		±4	±8	±6.5
			±6.5	

For 1 m cable	**BIS007J** BIS C-323/01-S4
For 5 m cable	**BIS007K** BIS C-323/05-S4
For 10 m cable	**BIS007L** BIS C-323/10-S4
Product Group	LF (70/455 kHz)
Dimension	Ø 30 x 70.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1 male
Housing material	1.4305 stainless steel
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0006 BIS0007		BIS000C BIS000H BIS000K		BIS000M		BIS000N		BIS0019 BIS001C		BIS001E		BIS001H		BIS0021		
Data carrier distance to metal	flush	metal-free	metal-free		flush		metal-free		flush	metal-free	metal-free		flush		metal-free		
Working distance for writing	1-11	0-12	0-12		1-12		0-13		0-8	0-13	0-11		0-8		0-10		
Working distance for reading	1-11	0-12	0-12		1-12		0-13		0-8	0-13	0-11		0-8		0-10		
Offset at distance																	
1	±7.5	±7.5	±10		±7.5		±11		±8	±10	±9		±6.5		±9		
3	±7	±7	±9		±7.5		±10		±7	±10	±8		±6		±8		
5	±7	±7	±9		±7		±10		±6.5	±9	±7		±5.5		±7		
7	±7	±7	±8.5		±6.5		±9.5		±5.5	±9	±5				±4		
10																	

Dimensions in mm



1) Sensing surface, 2) Clear zone

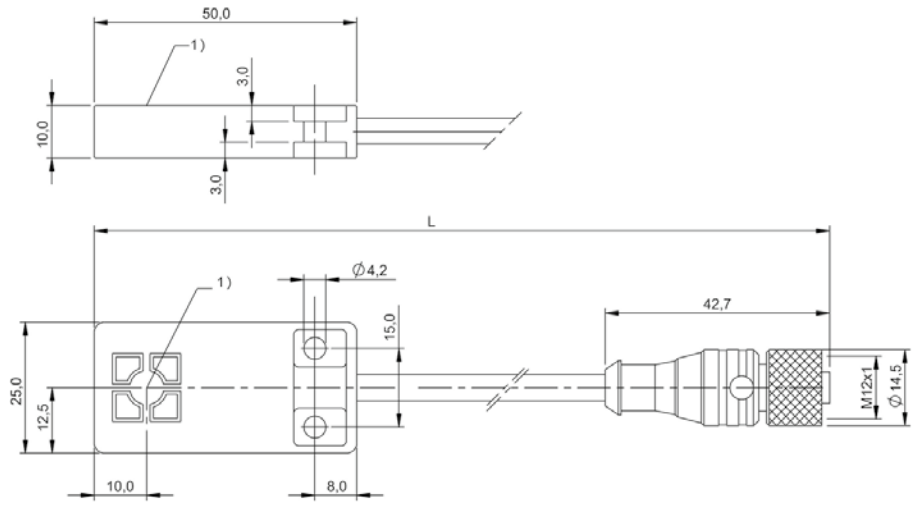
	BIS0026	BIS002K BIS002N	BIS002P
	metal-free	metal-free	metal-free
	0-9	0-11	0-9
	0-9	0-11	0-9
	±8	±10	±8
	±7	±9	±7.5
	±5	±9	±7
		±8	±6.5
		±6.5	

1 m cable PU	**BIS0066** BIS C-305-PU1-01
5 m cable PU	**BIS0067** BIS C-305-PU1-05
10 m cable PU	**BIS0068** BIS C-305-PU1-10
Product Group	LF (70/455 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	ABS, GF16
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0002	BIS0004 BIS0009	BIS000C BIS000H BIS000K	BIS000M		BIS000N	BIS000T	BIS0011	BIS0019	
Data carrier distance to metal	flush	flush	metal-free	flush	metal-free	metal-free	flush	flush	metal-free	
Freizone Datenträger										
Working distance for writing	0-4	0-5	0-6	1-8	0-10	0-7	0-2	0-2.5	0-6	
Working distance for reading	0-4	0-5	0-6	1-8	0-10	0-7	0-2	0-2.5	0-6	
Offset at distance										
1	±3	±4	±8	±5	±6	±8.5	±2	±3	±8	
3	±2	±3	±7	±4	±6	±7.5		±2	±7	
5			±5	±5	±6	±6			±5	
7				±2	±5	±4				
10					±3					

Dimensions in mm



1) Sensing surface

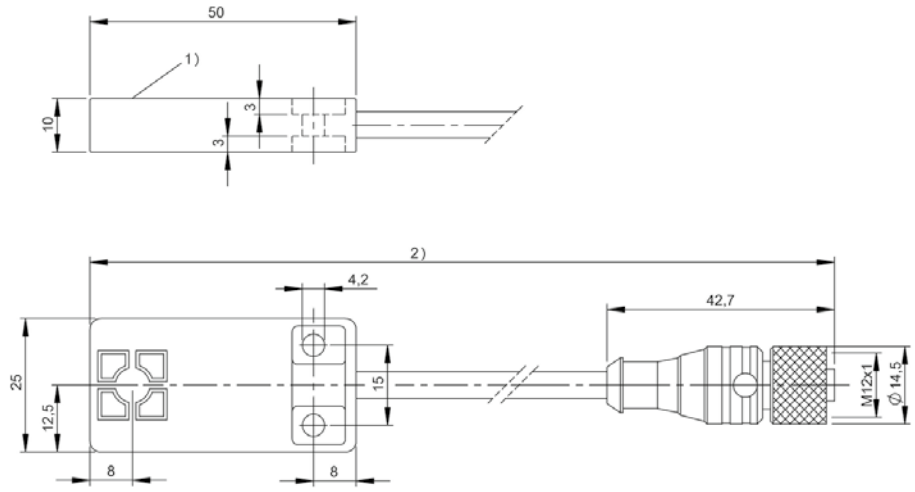
	BIS001E BIS001H		BIS0021		BIS00J4 BIS00J2	
	metal-free		metal-free		metal-free	
	0-7		0-6		0-4.5	
	0-7		0-6		0-4.5	
	±5		±5		±4.5	
	±5		±5		±3.5	
	±4		±4			
	±2					

5 m cable PU	**BIS007H** BIS C-322-PU1-05
Product Group	LF (70/455 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	ABS, GF16
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0002	BIS0004 BIS0009	BIS000C BIS000H BIS000J BIS000K	BIS000M		BIS000N	BIS000T	BIS0011	BIS002Y	
Data carrier distance to metal	flush	flush	metal-free	flush	metal-free	metal-free	flush	flush	flush	
Working distance for writing	0-4	0-5	0-6	1-8	0-10	0-7	0-2	0-2.5	0-2.5	
Working distance for reading	0-4	0-5	0-6	1-8	0-10	0-7	0-2	0-2.5	0-2.5	
Offset at distance										
0.7										
1	±3	±4	±8	±5	±6	±8.5	±2	±3	±3	
3	±2	±3	±7	±4	±6	±7.5		±2	±2	
4	±2									
5			±5	±3	±6	±6				
7					±5	±4				
10					±3					

Dimensions in mm



1) Sensing surface, 2) Cable length see text

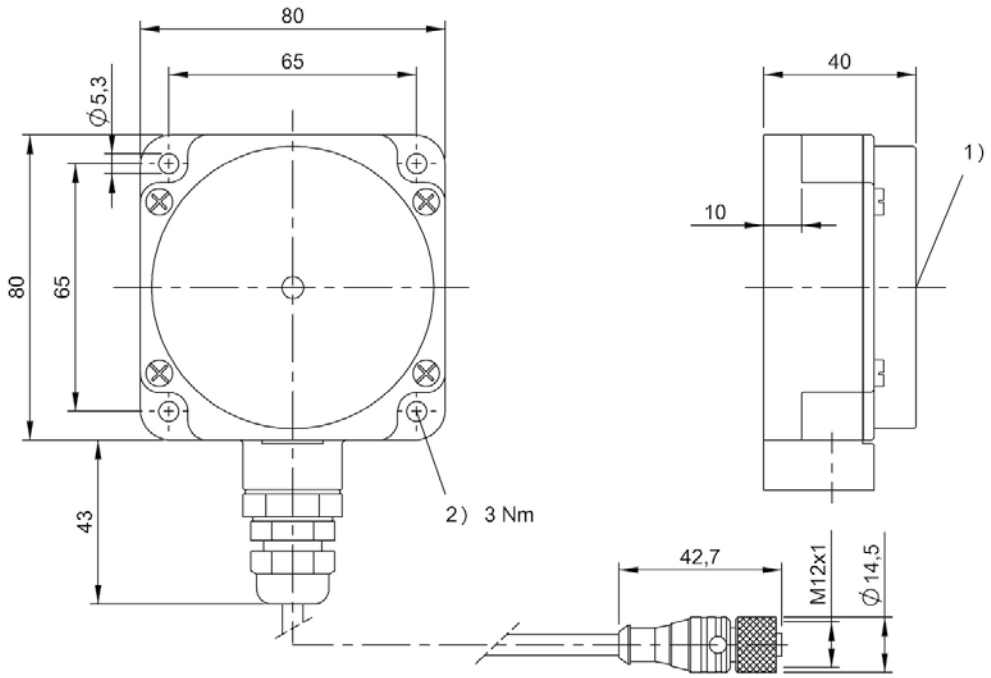
	BIS0019	BIS001E BIS001H	BIS0021
	metal-free	metal-free	metal-free
	0-6	0-7	0-6
	0-6	0-7	0-6
	±8	±5	±5
	±7	±5	±5
	±5	±4	±4
		±2	

1 m cable PU	**BIS00PK** BIS C-315-PU1-01
5 m cable PU	**BIS00PL** BIS C-315-PU1-05
10 m cable PU	**BIS00PM** BIS C-315-PU1-10
Product Group	LF (70/455 kHz)
Dimension	80 x 40 x 80 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	Brass
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0006 BIS0007	BIS000C BIS000H BIS000K	BIS000M	BIS000N	BIS0017	BIS0019 BIS001C	BIS001E	BIS001H
Data carrier distance to metal	flush	metal-free	flush	metal-free	metal-free	metal-free	metal-free	metal-free
Freizone Datenträger								
Working distance for writing	1-13	2-16	0-15	0-18	10-30	0-18	0-18	0-8
Working distance for reading	1-13	2-16	0-15	0-18	10-30	0-18	0-18	0-8
Offset at distance								
1	±15		±15	±17		±17	±16	±6.5
2		±15						
3	±14	±14	±15	±17		±17	±16	±6
5	±11	±12	±14	±17		±17	±16	±5.5
7	±10	±11	±12	±15		±15	±14	
10	±8	±8	±12	±15	±30	±15	±14	
15				±14	±27	±14	±11	
20					±20			

Dimensions in mm



1) Sensing surface, 2) Tightening torque

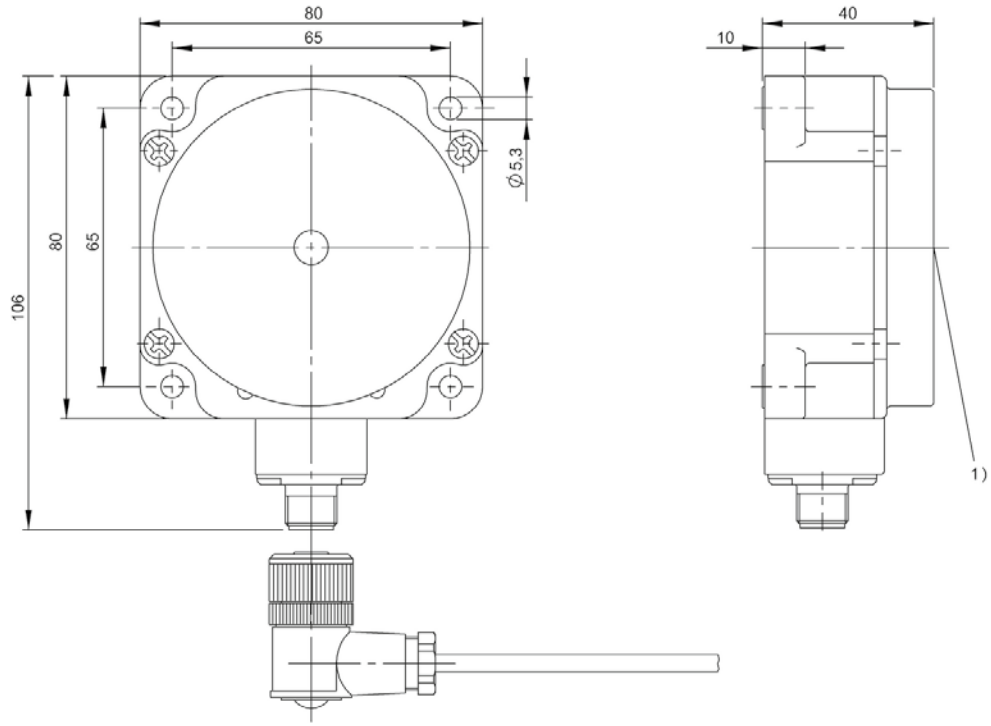
	BIS0021	BIS002K BIS002N
	metal-free	metal-free
	0-16	0-20
	0-16	0-20
	±16	±18
	±16	±18
	±16	±18
	±14	±18
	±12	±18
		±16

For 5 m cable	**BIS006Y** BIS C-315/05-S4
For 10 m cable	**BIS006Z** BIS C-315/10-S4
Product Group	LF (70/455 kHz)
Dimension	80 x 40 x 80 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1 male
Housing material	PBT
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0006 BIS0007	BIS000C BIS000H BIS000K	BIS000M	BIS000N	BIS0017	BIS0019 BIS001C	BIS001E	BIS001H
Data carrier distance to metal	flush	metal-free	flush	metal-free	metal-free	metal-free	metal-free	metal-free
Working distance for writing	1-13	2-16	0-15	0-18	10-30	0-18	0-18	0-8
Working distance for reading	1-13	2-16	0-15	0-18	10-30	0-18	0-18	0-8
Offset at distance								
1	±15		±15	±17		±17	±16	±6.5
2		±15						
3	±14	±14	±15	±17		±17	±16	±6
5	±11	±12	±14	±17		±17	±16	±5.5
7	±10	±11	±12	±15		±15	±14	
10	±8	±8	±12	±15	±30	±15	±14	
15				±14	±27	±14	±11	
20					±20			

Dimensions in mm



1) Sensing surface

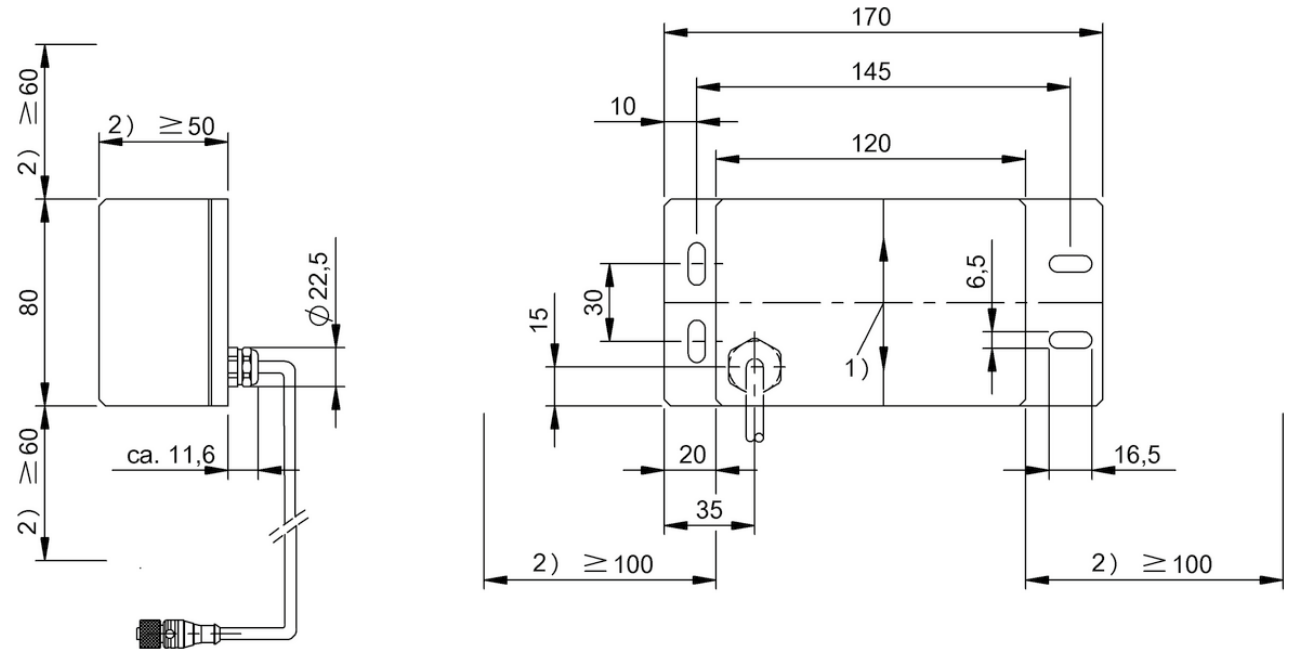
	BIS0021	BIS002K BIS002N
	metal-free	metal-free
	0-16	0-20
	0-16	0-20
	±16	±18
	±16	±18
	±16	±18
	±14	±18
	±12	±18
		±16

5 m cable PU	**BIS00PN** BIS C-351-PU1-05
10 m cable PU	**BIS00PP** BIS C-351-PU1-10
Product Group	LF (70/455 kHz)
Dimension	80 x 50 x 170 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Connection	M12x1-Female
Housing material	POM, mounting plate aluminum
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

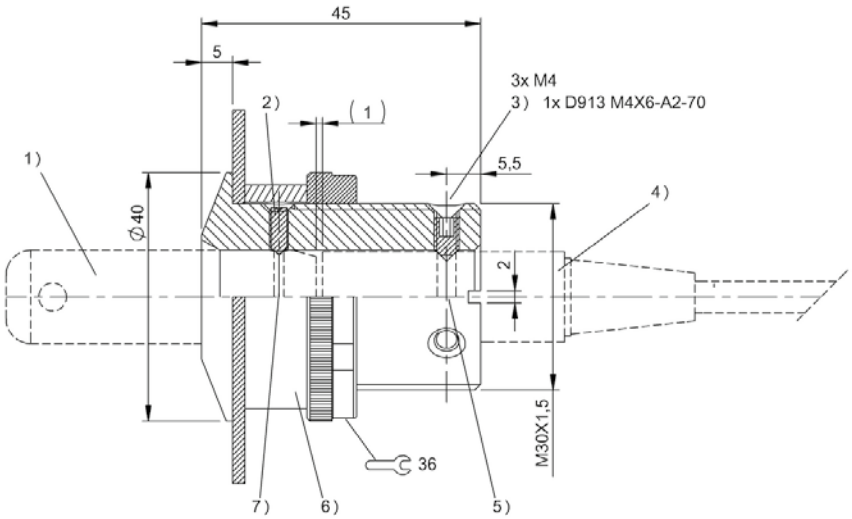
	BIS0028 BIS002A BIS002E
Data carrier distance to metal	metal-free
Working distance for writing	0-45
Working distance for reading	0-45
Offset at distance	
1	±15
2	±15
3	±15
4	±15
5	±15
6	±15
10	±15
20	±15

Dimensions in mm



1) Sensing surface, 2) Clear zone

	BAM012C BIS C-300-ZA1
Product Group	LF (70/455 kHz)
Dimension	Ø 40 x 45 mm
Installation	—
Antenna type	—
Connection	—
Housing material	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	—
Approval/Conformity	CE



1) Data carrier, 2) Spring-loaded compression piece, 3) Threaded pin, 4) Read/write head, 5) Notch in read/write head, 6) Spacer ring, 7) Notch in data carrier

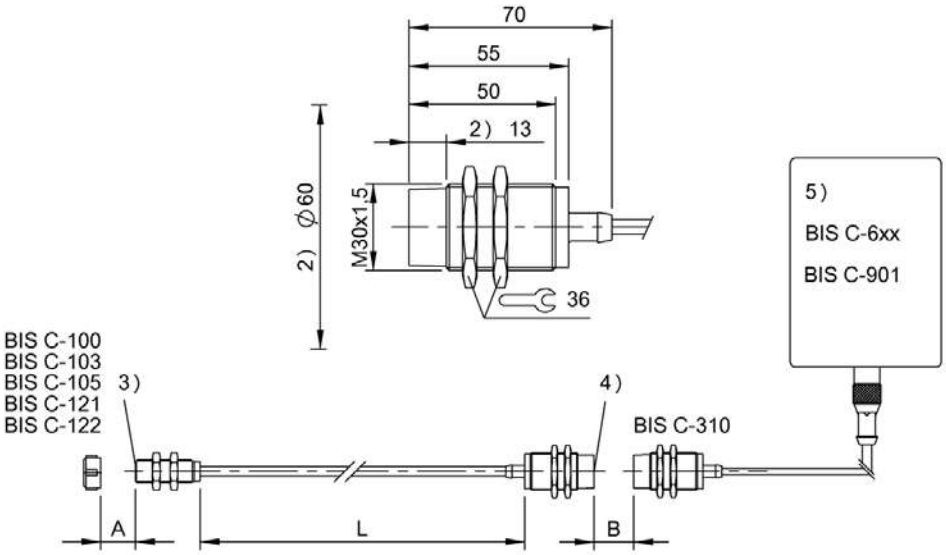
0.7 m cable	**BIS00JA** BIS C-380-01/10-00,7	
1 m cable		
1,5 m cable		
5 m cable		
Style 1	M12x1	
Style 2	M30x1.5	
Antenna type	round	
Storage temperature	-20...85 °C	
Ambient temperature	0...70 °C	
Housing material	Brass, nuts nickel plated brass	
Protection degree	IP67	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 364	

Appropriate data carrier

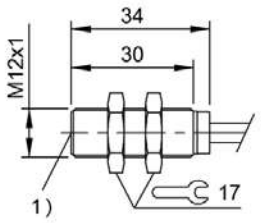
	BIS0002 **BIS0004** **BIS0009** **BIS000T** **BIS0011**	
Installation	flush	
Appropriate read/write head	BIS00P5	
	BIS005Z	
	BIS00P6	

	BIS00JJ BIS C-380-06/06-01	**BIS00JP** BIS C-380-10/10-01
	BIS00JK BIS C-380-06/06-01,5	
	BIS00N9 BIS C-380-06/06-05	**BIS00JR** BIS C-380-10/10-05
	M16x1	M30x1.5
	M16x1	M30x1.5
	round	round
	-20...85 °C	-20...85 °C
	0...70 °C	0...70 °C
	Brass, nuts nickel plated brass	Brass, nuts nickel plated brass
	IP67	IP67
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone)
	CE	CE
	Page 364	Page 365

	BIS0002 **BIS0004** **BIS0009** **BIS000T** **BIS0011**	**BIS000N** **BIS001E** **BIS C-104-xx/A** **BIS C-108-xx/L** **BIS C-128-xx/L**
	flush	metal-free
	BIS00P5	BIS00PF
	BIS005Z	BIS00PH
	BIS00P6	BIS00PJ

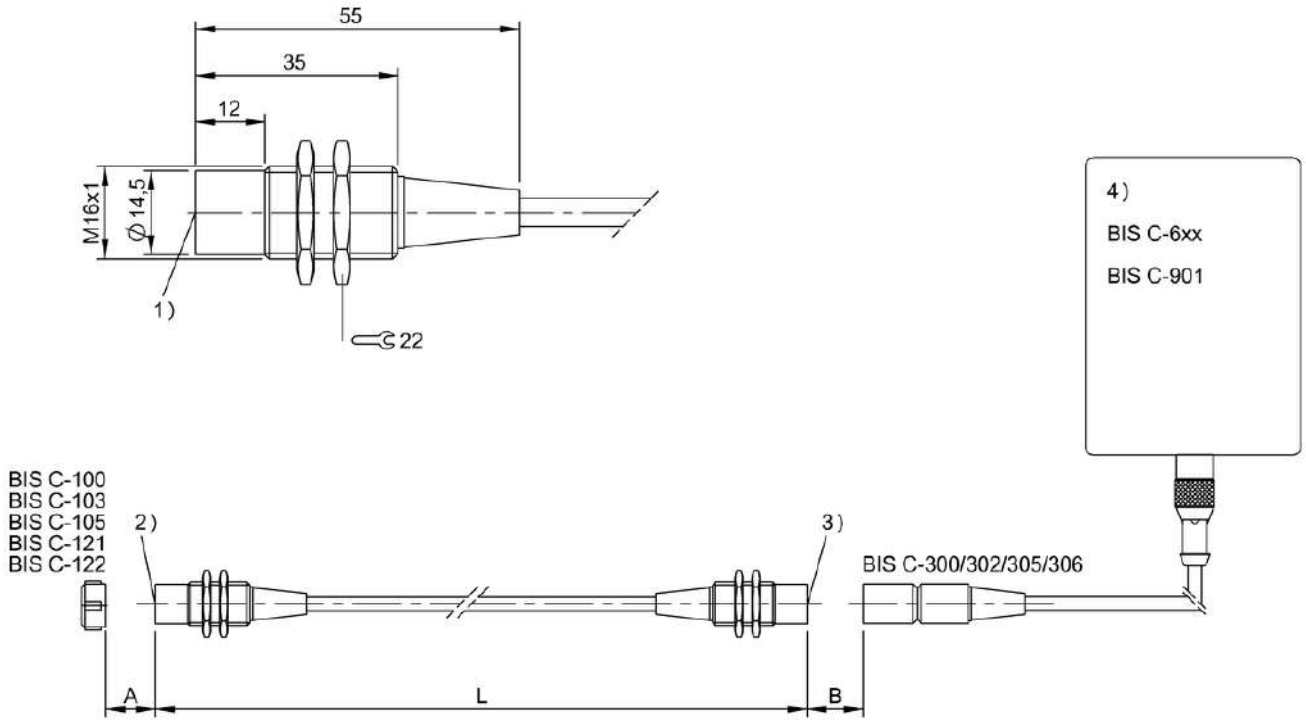


6)



1) Sensing surface, 2) Clear zone, 3) Active surface data carrier, 4) Active surface R/W head, 5) Processor or converter, 6) see remarks

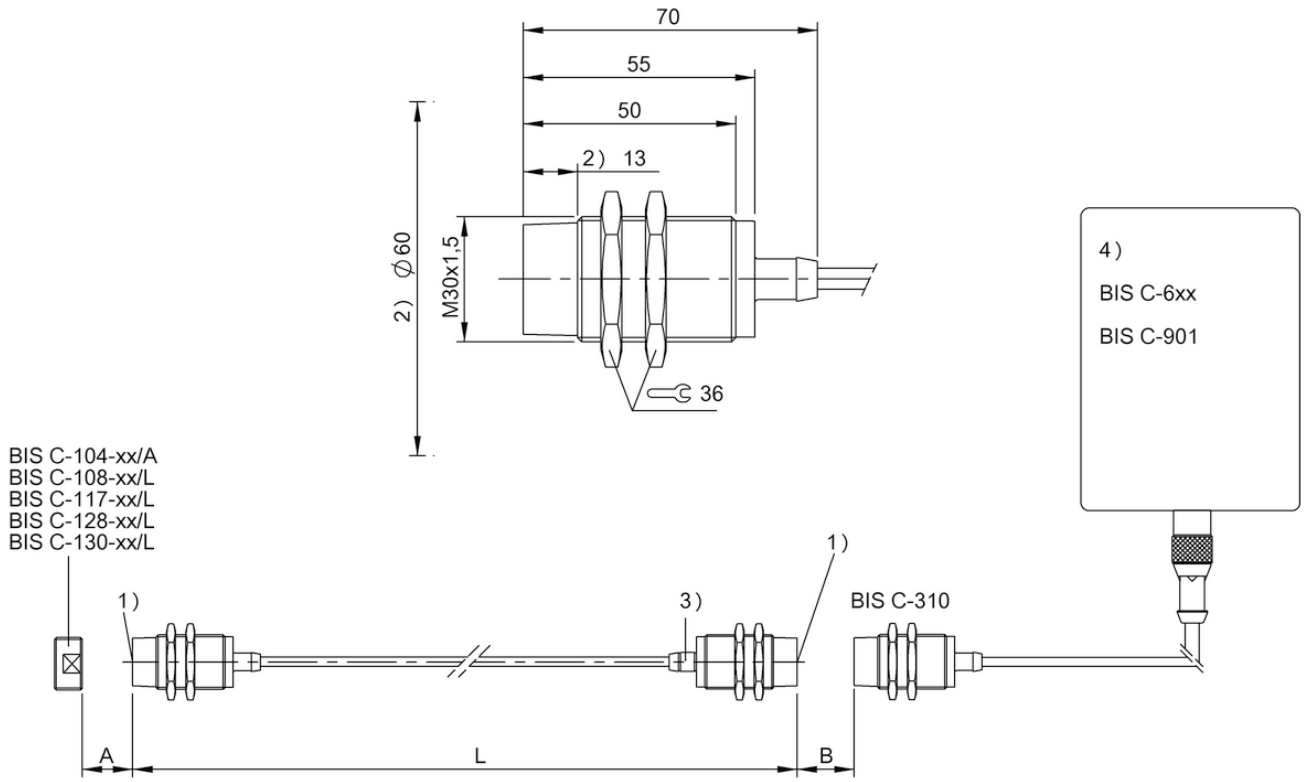
BIS00JA



5)

1) Sensing surface, 2) Active surface data carrier, 3) Active surface R/W head, 4) Processor or converter, 5) see remarks

BIS00JJ, BIS00JK, BIS00N9



1) Sensing surface, 2) Clear zone, 3) Yellow marking, 4) Processor or converter, 5) see remarks

BIS00JP, BIS00JR

	BIS013W BIS V-6108-048-C102	
Product Group	Multi-Frequency Processor	
Interface	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	
Supported RFID technologies	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 5-pin	
Productview	Page 378	

	BIS012E BIS V-6102-019-C101	BIS0187 BIS V-6107-039-C105	BIS018K BIS V-6107-039-C106
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	Profibus DP Slave galvanically isolated	Ethernet TCP/IP, USB	Ethernet TCP/IP, USB
	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	M12x1-Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded 7/8“-Male, 5-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8“-Male, 5-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8“-Male, 4-pin
	Page 378	Page 379	Page 379

	BIS014C BIS V-6106-034-C102	
Product Group	Multi-Frequency Processor	
Interface	Ethernet/IP	
Supported RFID technologies	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 5-pin	
Productview	Page 380	

BIS0146 BIS V-6106-034-C104	BIS0147 BIS V-6110-063-C102	BIS014E BIS V-6111-073-C103
Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
Ethernet/IP	EtherCAT	CC-Link
LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM)
4	4	4
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
0...60 °C	0...60 °C	0...60 °C
IP65, with connector	IP65, with connector	IP65, with connector
CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 4-pin	2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 5-pin	M12x1-Male, 5-pin, A-coded M12x1-Female, 5-pin, A-coded 7/8“-Male, 5-pin
Page 380	Page 381	Page 381

	BIS008U BIS C-600-007-650-00-KL1	
Product Group	LF (70/455 kHz)	
Interface	RS232	
Supported RFID technologies	LF 70/455 kHz (BIS C)	
Number of connectable R/W heads / antennas	2	
Operating voltage Ub	19.2...28.8 VDC	
Housing material	ABS	
Ambient temperature	0...60 °C	
IP rating	IP65 with read/write head	
Approval/Conformity	CE, cULus, EAC, WEEE	
Connection	Terminal strip, 19-pin	
Productview	Page 382	

	BIS00K3 BIS C-6008-048-650-06-ST23	BIS00K4 BIS C-6028-048-050-06-ST22	BIS00TU BIS C-6028-048-050-06-ST28
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	Profinet	Profinet
	LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)
	2	2	2
	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	ABS	Aluminum, Die casting	Aluminum, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Female, 4-pin, D-coded M12x1-Female, 4-pin, D-coded Male, 5-pin	2x RJ45-Female, 8-pin Male, 5-pin	Female, 4-pin, D-coded M12x1-Female, 4-pin, D-coded Male, 5-pin
	Page 382	Page 383	Page 383

	BIS009F BIS C-6002-019-654-03-ST11	
Product Group	LF (70/455 kHz)	
Interface	Profibus DP Slave galvanically isolated	
Supported RFID technologies	LF 70/455 kHz (BIS C)	
Number of connectable R/W heads / antennas	1	
Operating voltage Ub	19.2...28.8 VDC	
Housing material	ABS	
Ambient temperature	0...60 °C	
IP rating	IP65 with read/write head	
Approval/Conformity	CE, cULus, EAC, WEEE	
Connection	Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded Male, 5-pin	
Productview	Page 384	

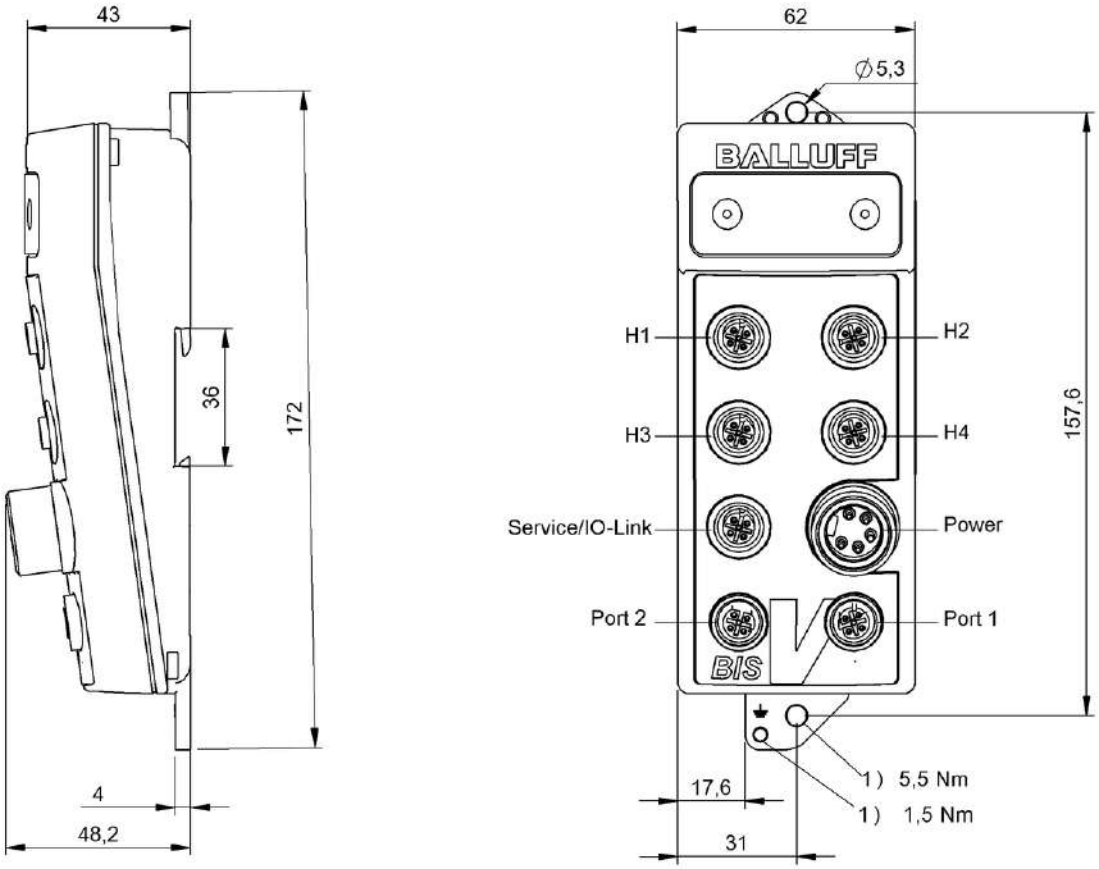
	BIS009L BIS C-6002-028-650-03-KL2	BIS0099 BIS C-6002-019-650-03-KL2	BIS009A BIS C-6002-019-650-03-ST11
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	Profibus DP Slave galvanically isolated	Profibus DP Slave galvanically isolated	Profibus DP Slave galvanically isolated
	LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)
	1	2	2
	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	ABS	ABS	ABS
	0...60 °C	0...60 °C	0...60 °C
	IP65 with read/write head	IP65 with read/write head	IP65 with read/write head
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Terminal strip, 19-pin	Terminal strip, 19-pin	Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded Male, 5-pin
	Page 384	Page 384	Page 385

	BIS009J BIS C-6002-019-655-03-ST11	
Product Group	LF (70/455 kHz)	
Interface	Profibus DP Slave galvanically isolated	
Supported RFID technologies	LF 70/455 kHz (BIS C)	
Number of connectable R/W heads / antennas	2	
Operating voltage Ub	19.2...28.8 VDC	
Housing material	ABS	
Ambient temperature	0...60 °C	
IP rating	IP65 with read/write head	
Approval/Conformity	CE, cULus, EAC, WEEE	
Connection	Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded Male, 5-pin	
Productview	Page 385	

	BIS009M BIS C-6002-028-650-03-ST11	BIS00A4 BIS C-602-019-650-03-KL2	BIS00AL BIS C-6022-019-050-03-ST10
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	Profibus DP Slave galvanically isolated	Profibus DP Slave galvanically isolated	Profibus DP Slave galvanically isolated
	LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)
	2	2	2
	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	ABS	ABS	Aluminum, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65 with read/write head	IP65 with read/write head	IP65, with connector
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded Male, 5-pin	Terminal strip, 19-pin	2x Female, 12-pin Male, 5-pin
	Page 385	Page 384	Page 386

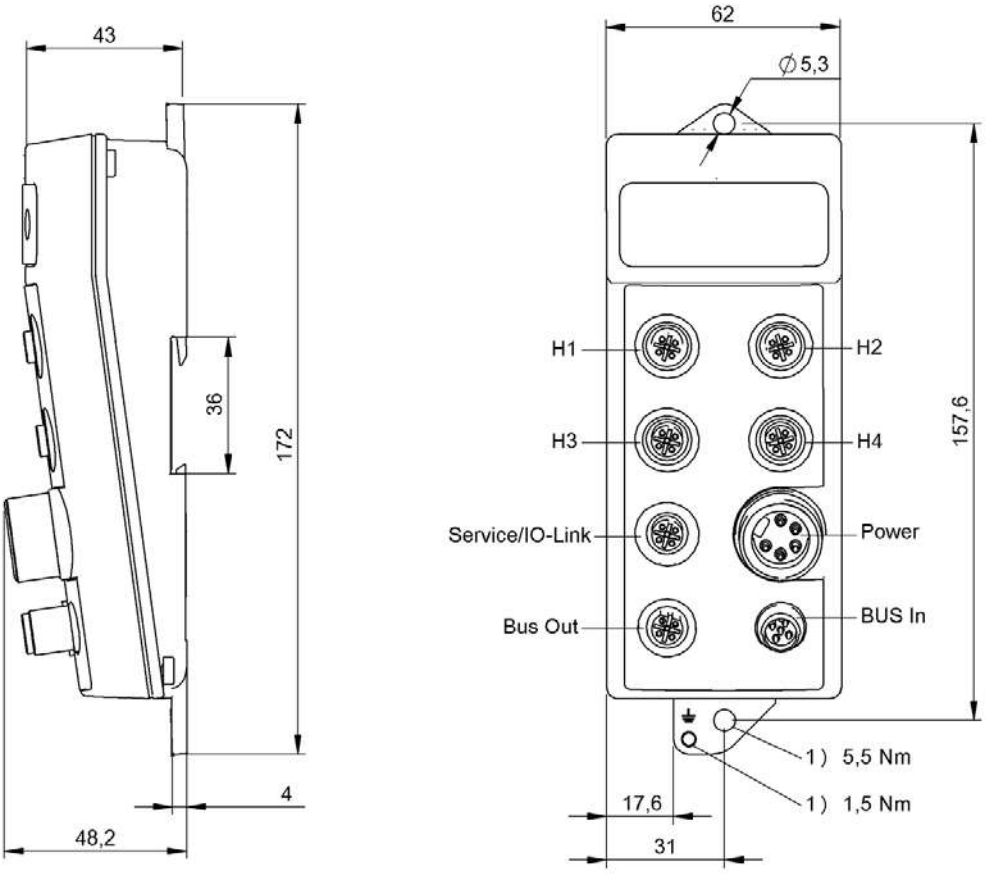
	BIS00AM BIS C-6022-019-050-03-ST14	
Product Group	LF (70/455 kHz)	
Interface	Profibus DP Slave galvanically isolated	
Supported RFID technologies	LF 70/455 kHz (BIS C)	
Number of connectable R/W heads / antennas	2	
Operating voltage Ub	19.2...28.8 VDC	
Housing material	Aluminum, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, cULus, EAC, WEEE	
Connection	Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded Male, 5-pin	
Productview	Page 386	

	BIS00AY BIS C-6027-039-050-06-ST19	BIS00AU BIS C-6026-034-050-06-ST19	
	LF (70/455 kHz)	LF (70/455 kHz)	
	Ethernet TCP/IP	Ethernet/IP	
	LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)	
	2	2	
	19.2...28.8 VDC	19.2...28.8 VDC	
	Aluminum, Die casting	Aluminum, Die casting	
	0...60 °C	0...60 °C	
	IP65, with connector	IP65, with connector	
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
	Female, 4-pin, D-coded Male, 5-pin	Female, 4-pin, D-coded Male, 5-pin	
	Page 387	Page 387	



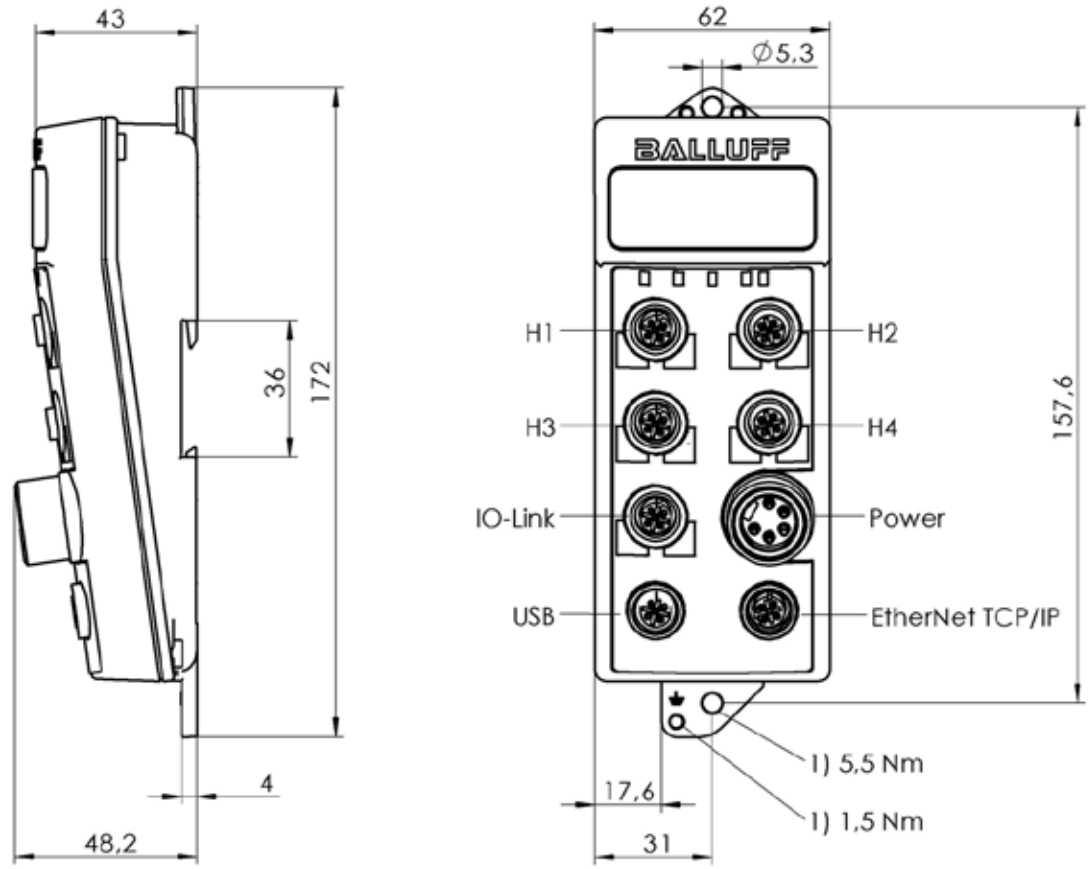
1) Tightening torque

BIS013W



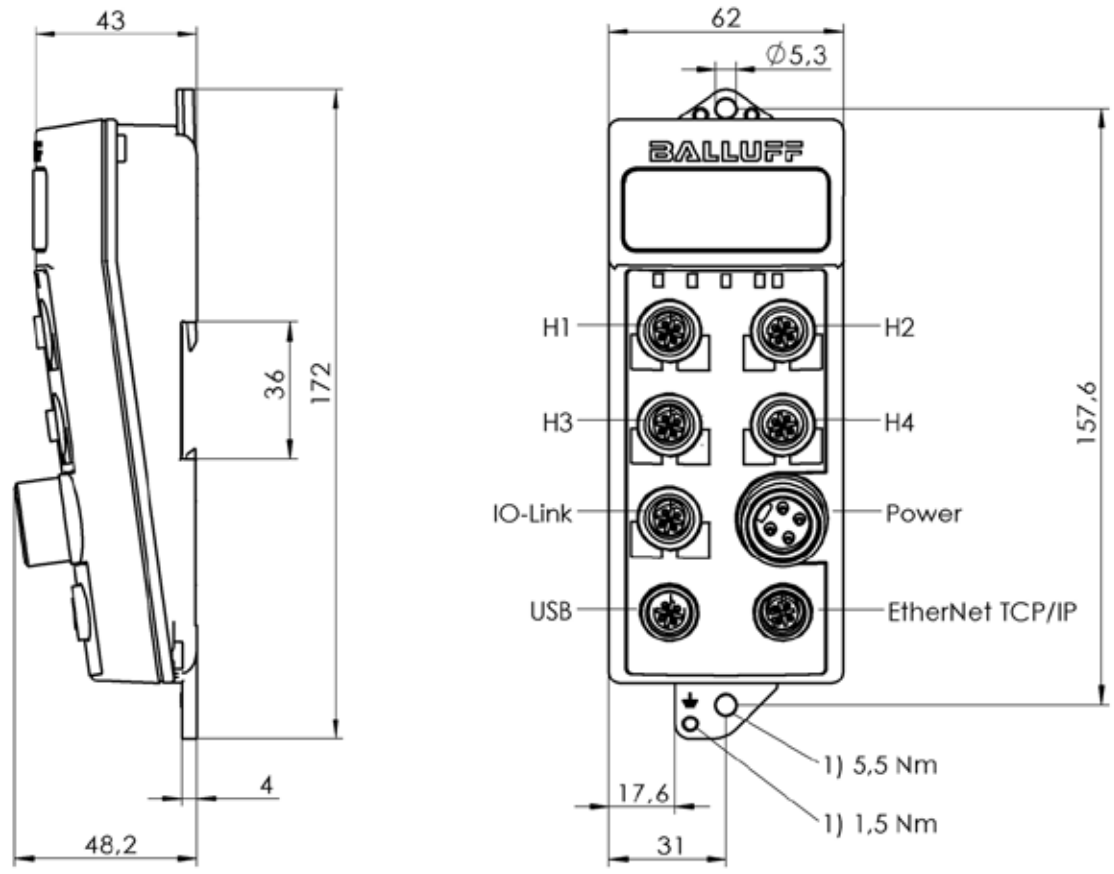
1) Tightening torque

BIS012E



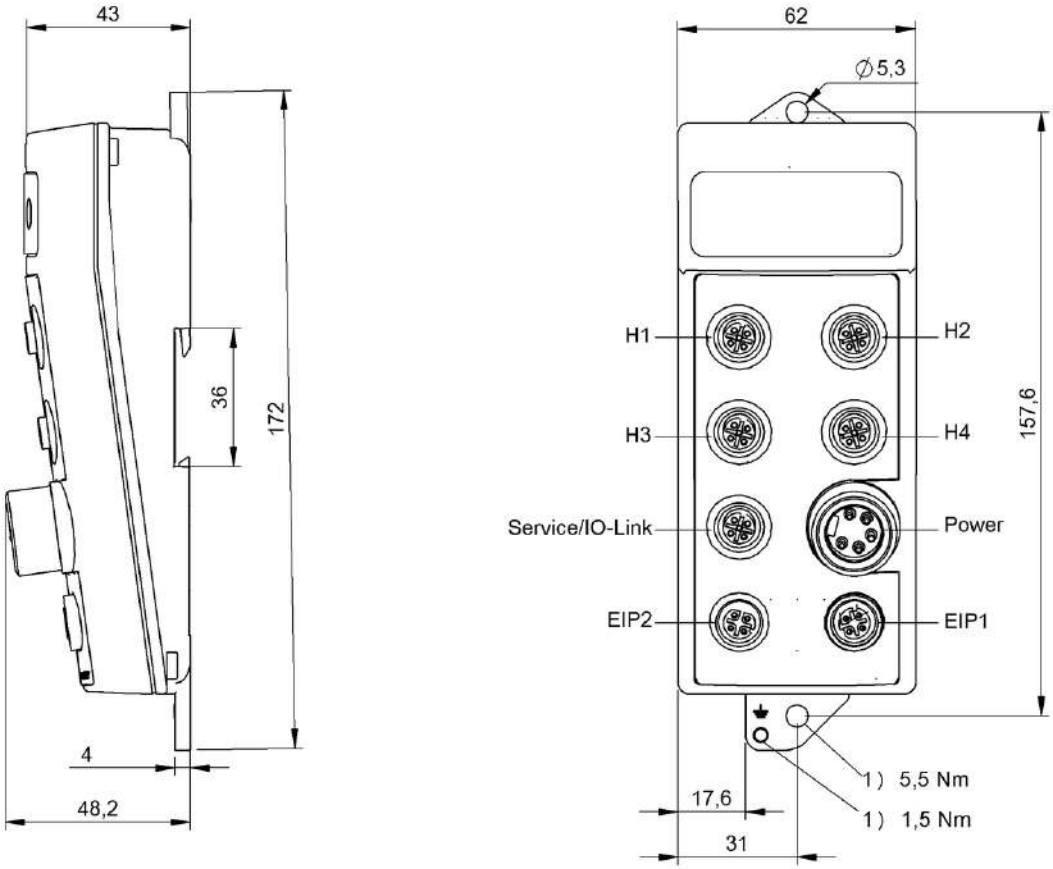
1) Tightening torque

BIS0187



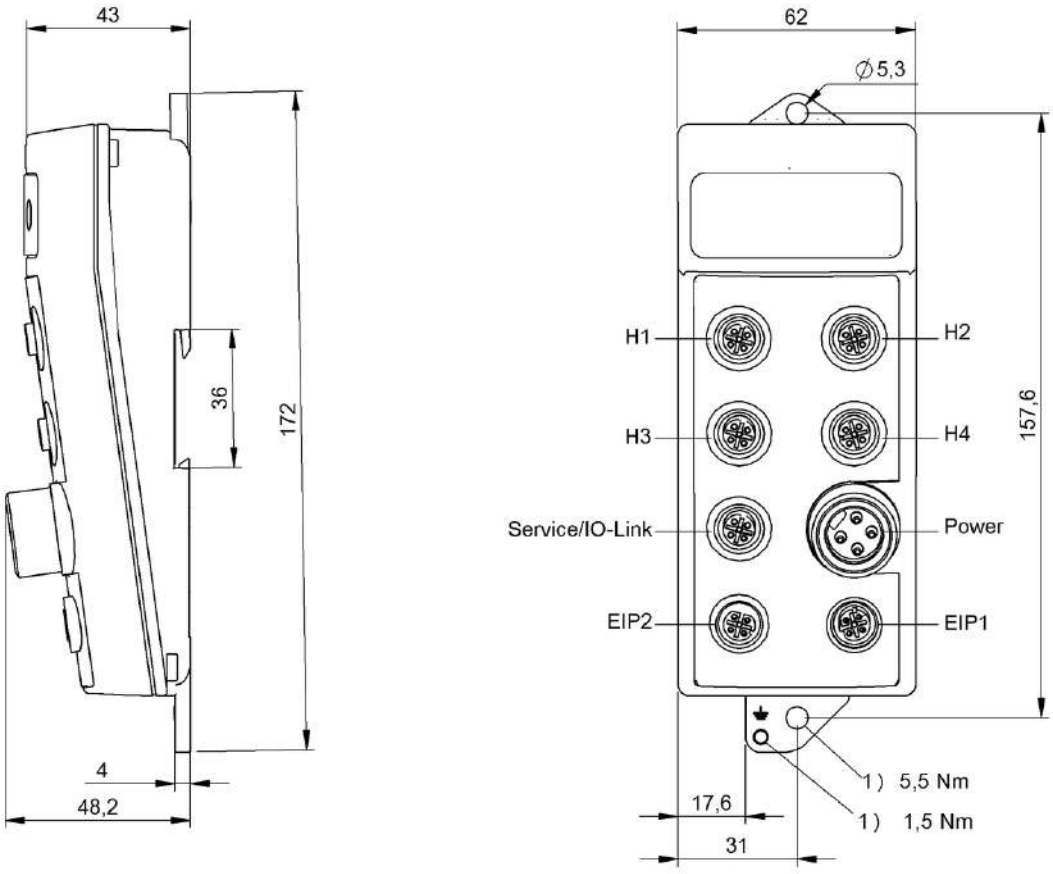
1) Tightening torque

BIS018K



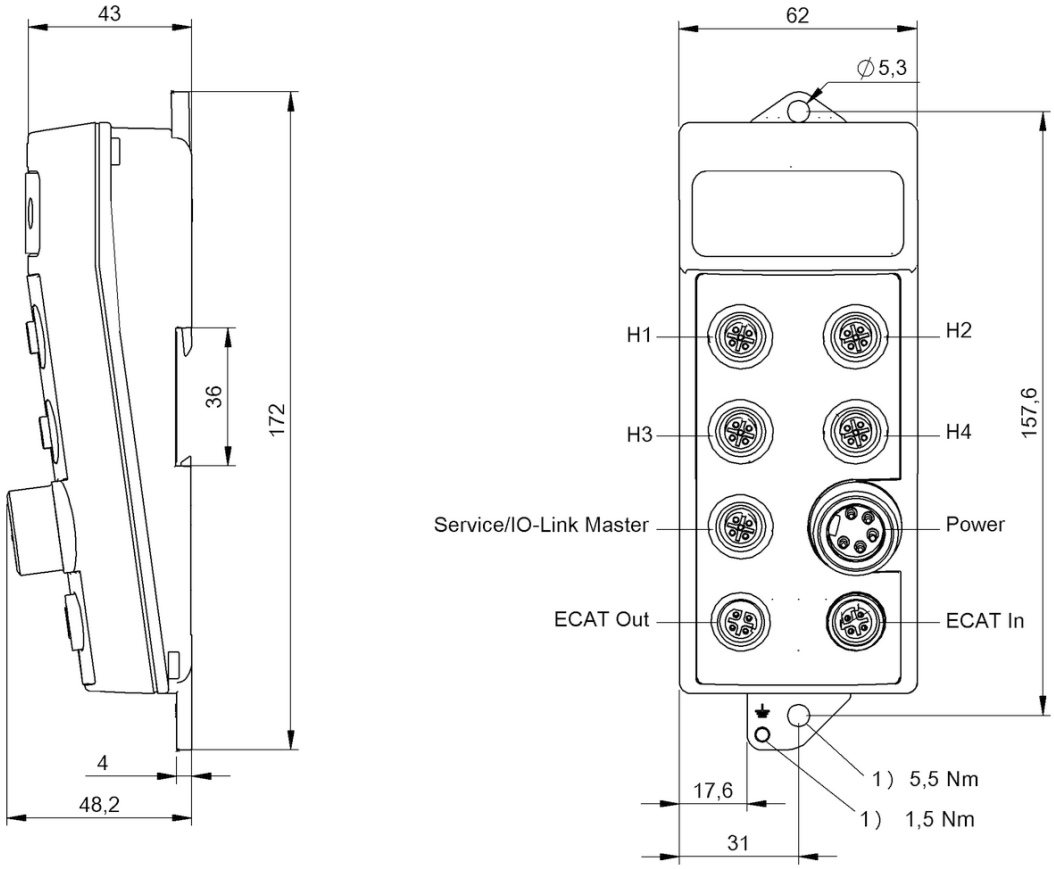
1) Tightening torque

BIS014C



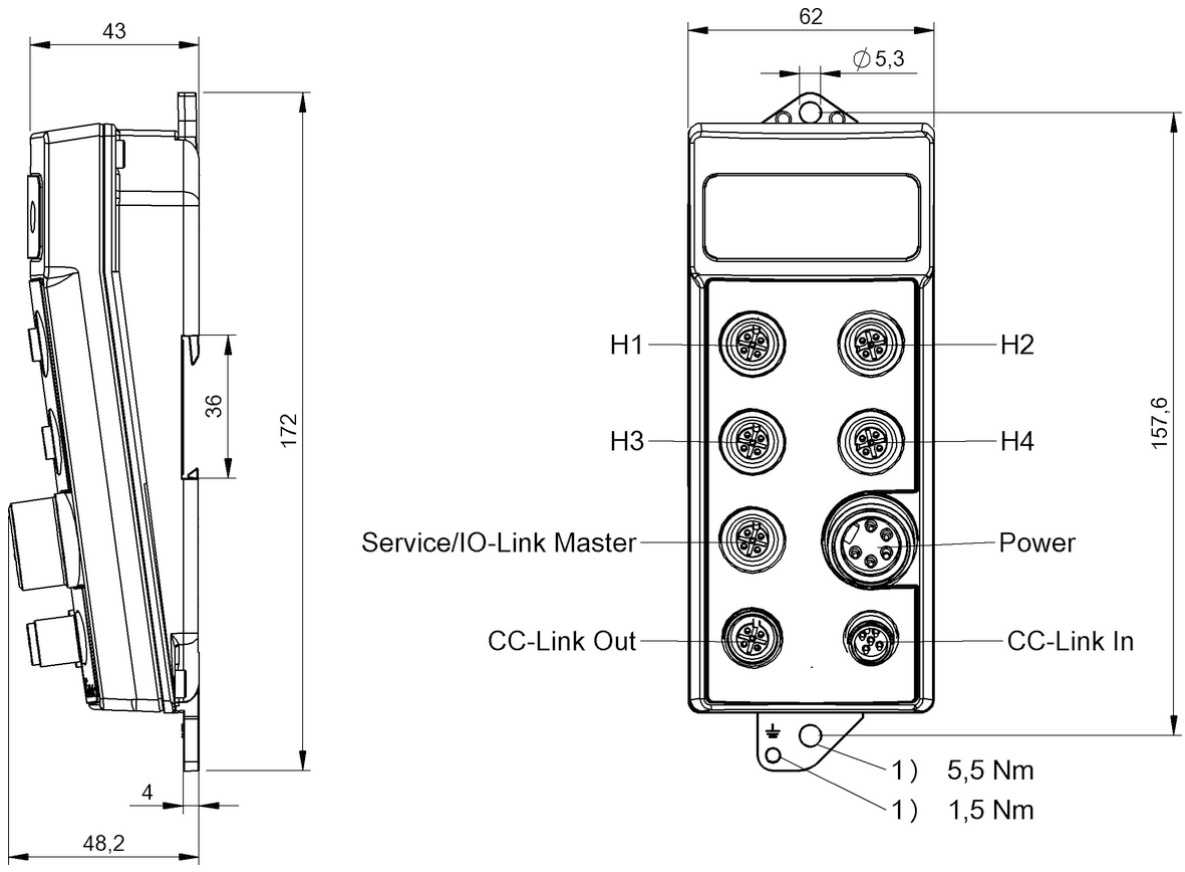
1) Tightening torque

BIS0146



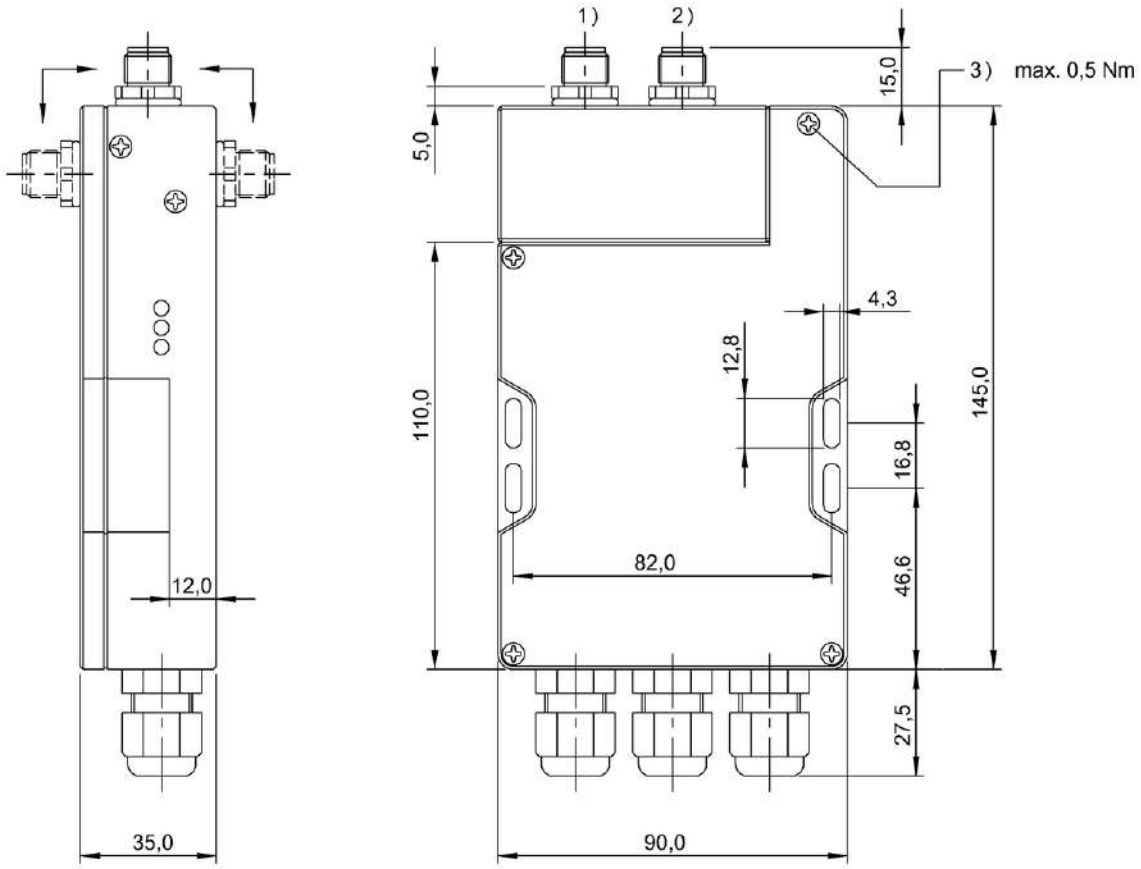
1) Tightening torque

BIS0147



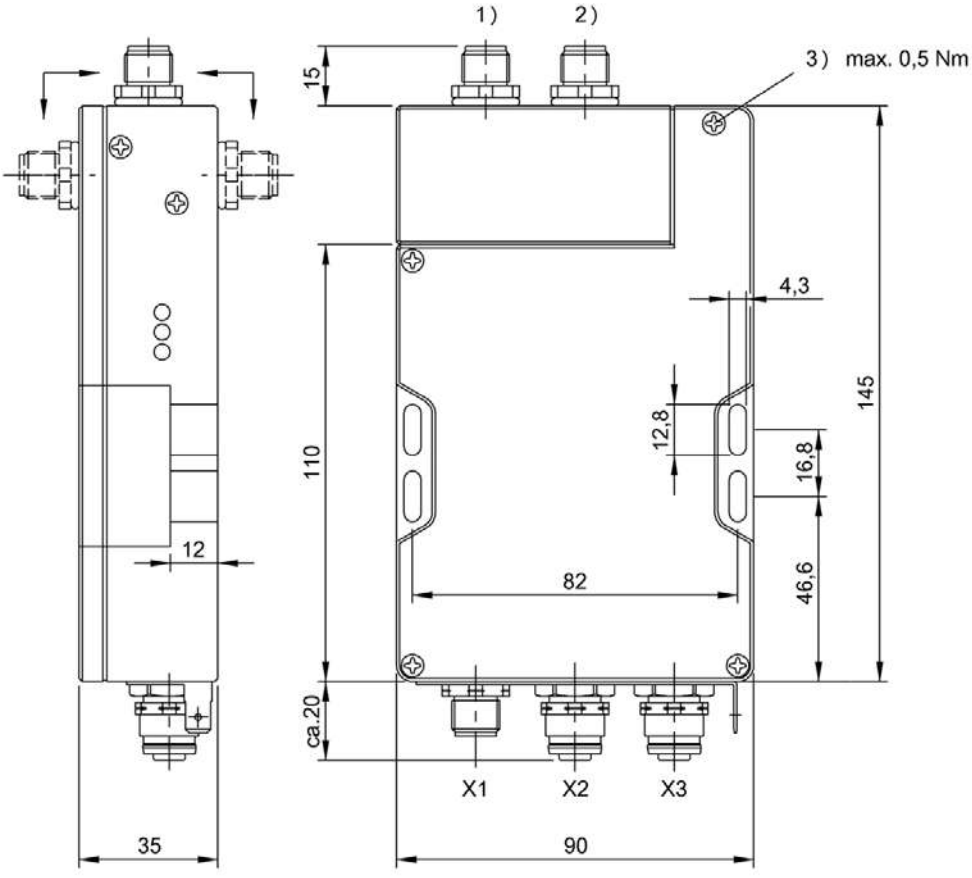
1) Tightening torque

BIS014E



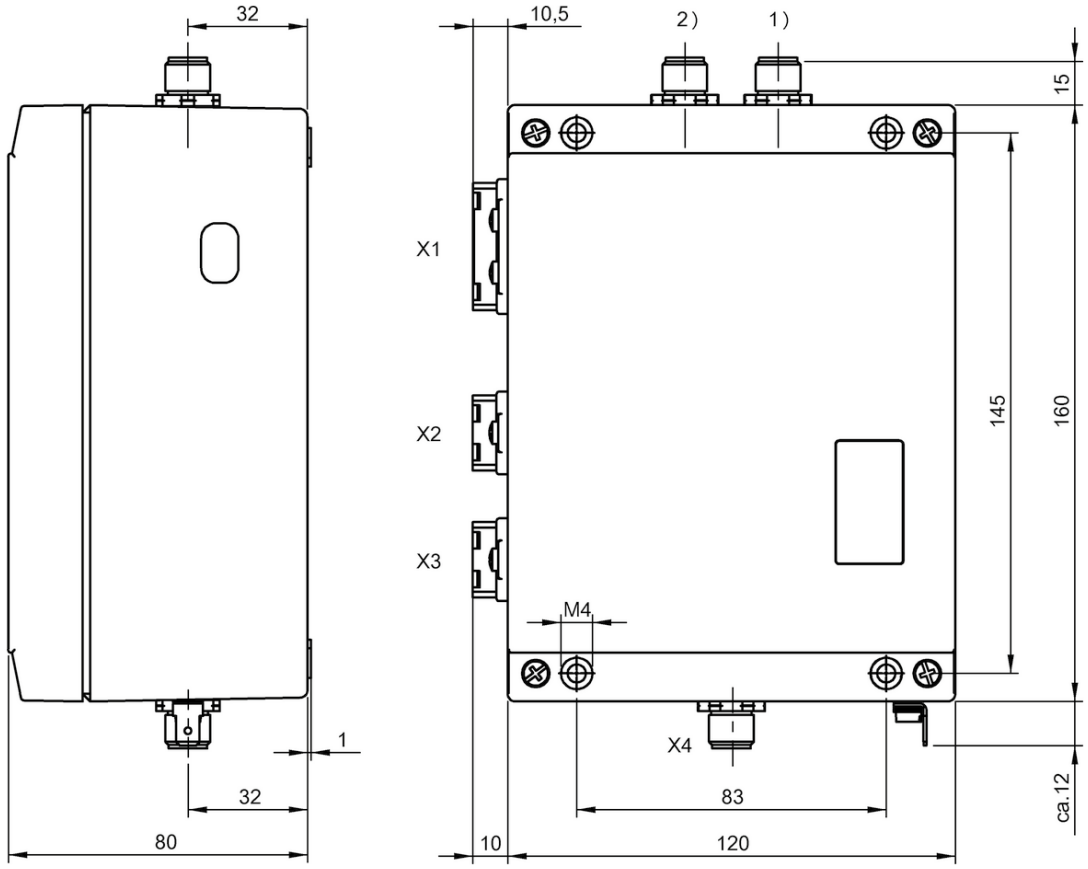
1) Head 1, 2) Head 2, 3) Tightening torque

BIS008U



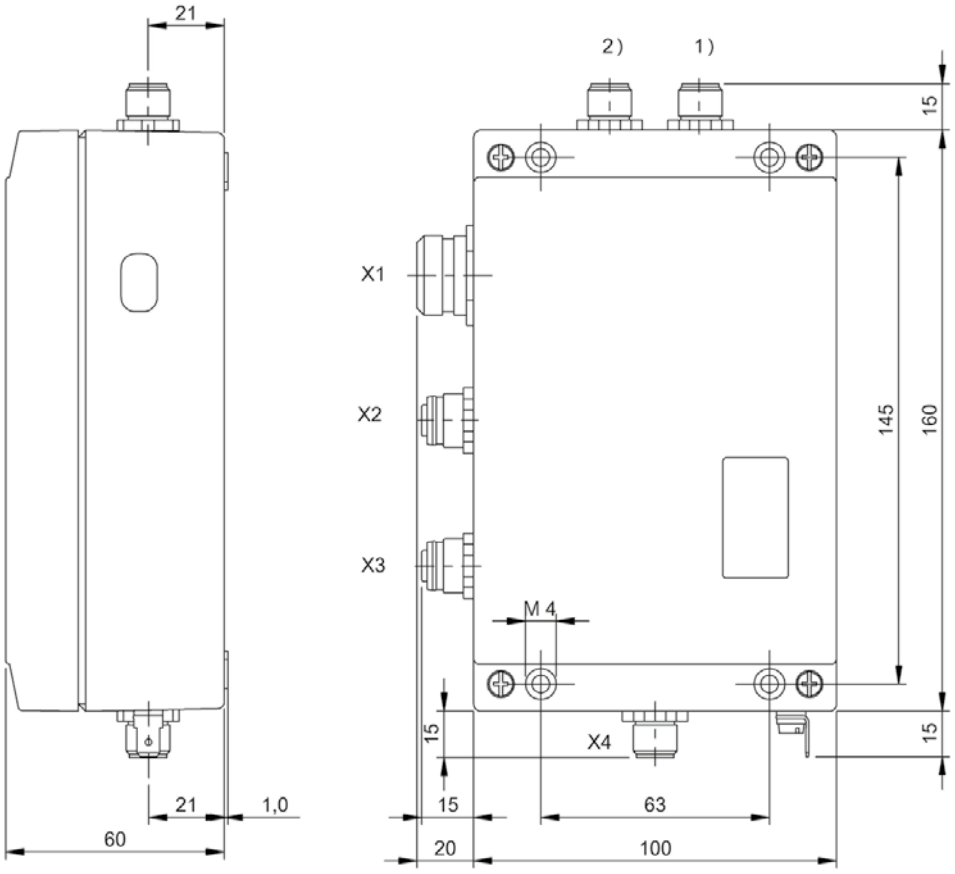
1) Head 1, 2) Head 2, 3) Tightening torque

BIS00K3



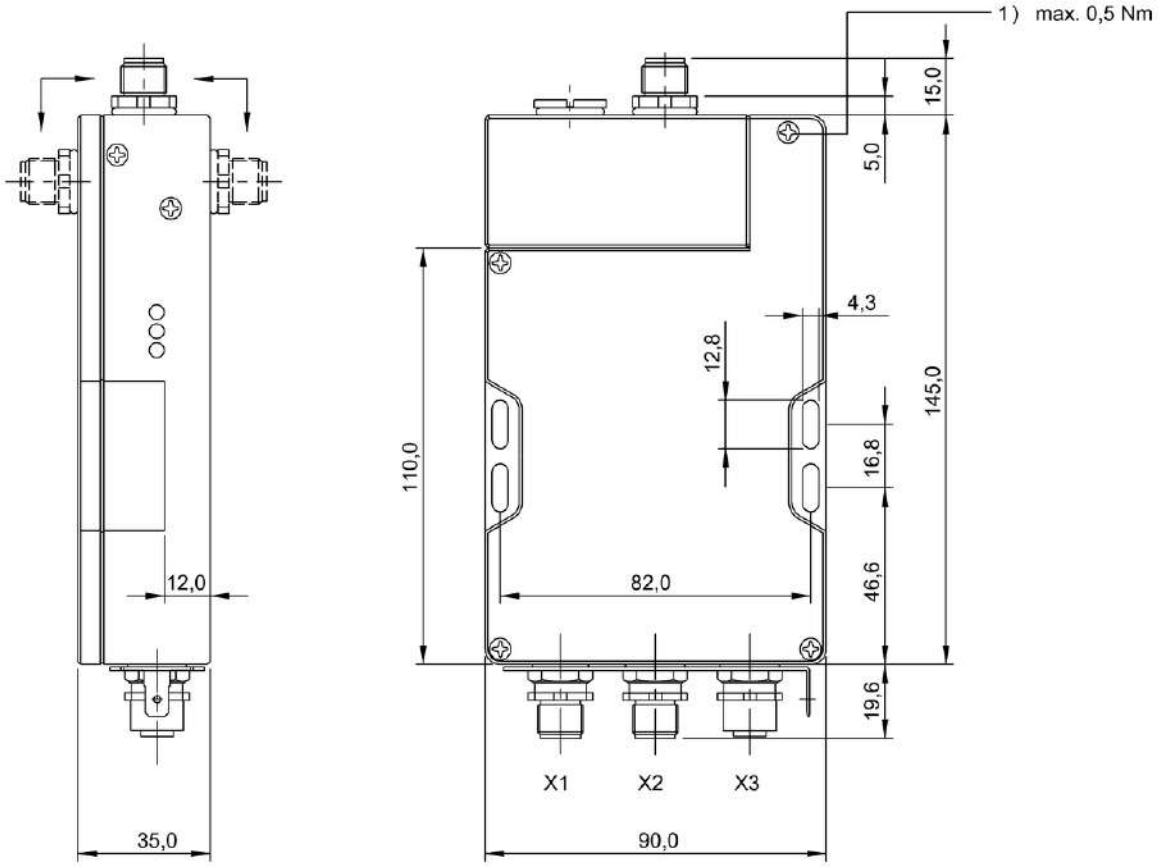
1) Head 1, 2) Head 2

BIS00K4



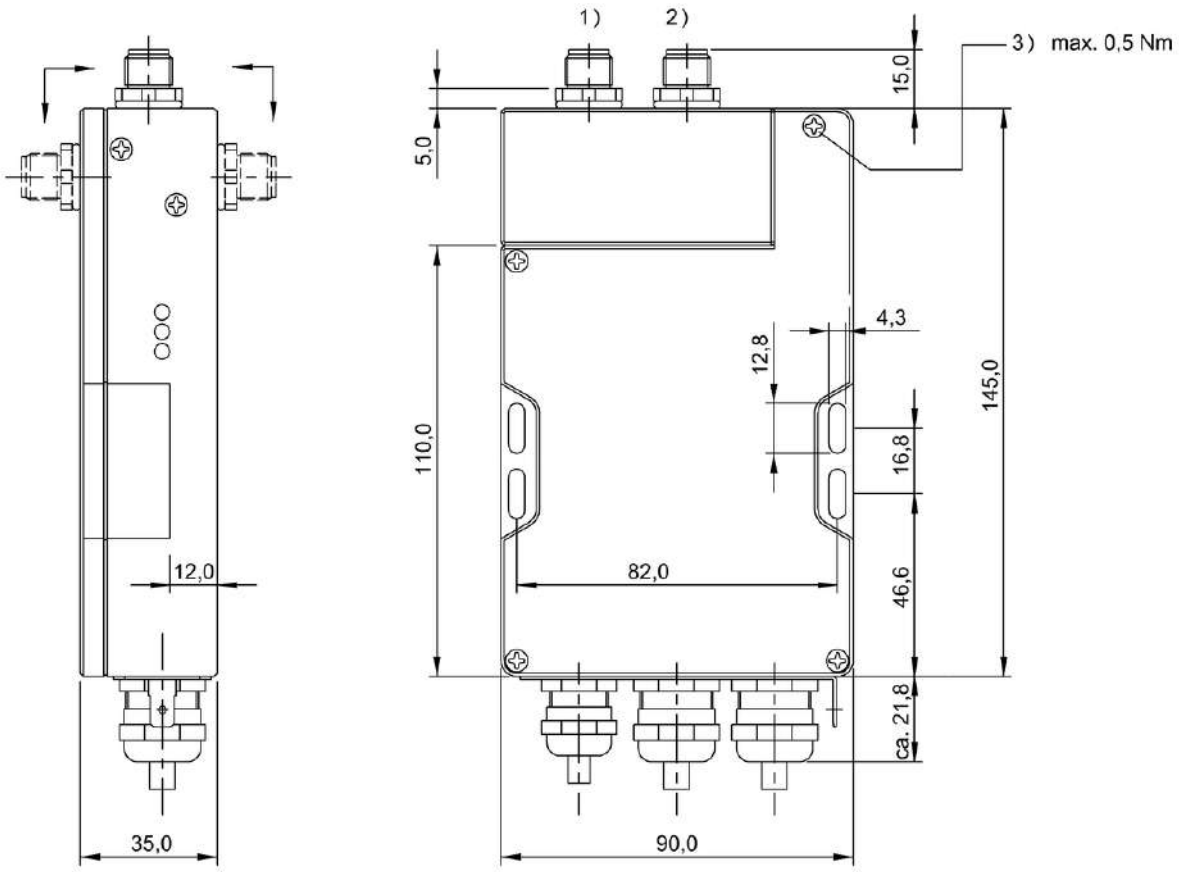
1) Head 1, 2) Head 2

BIS00TU



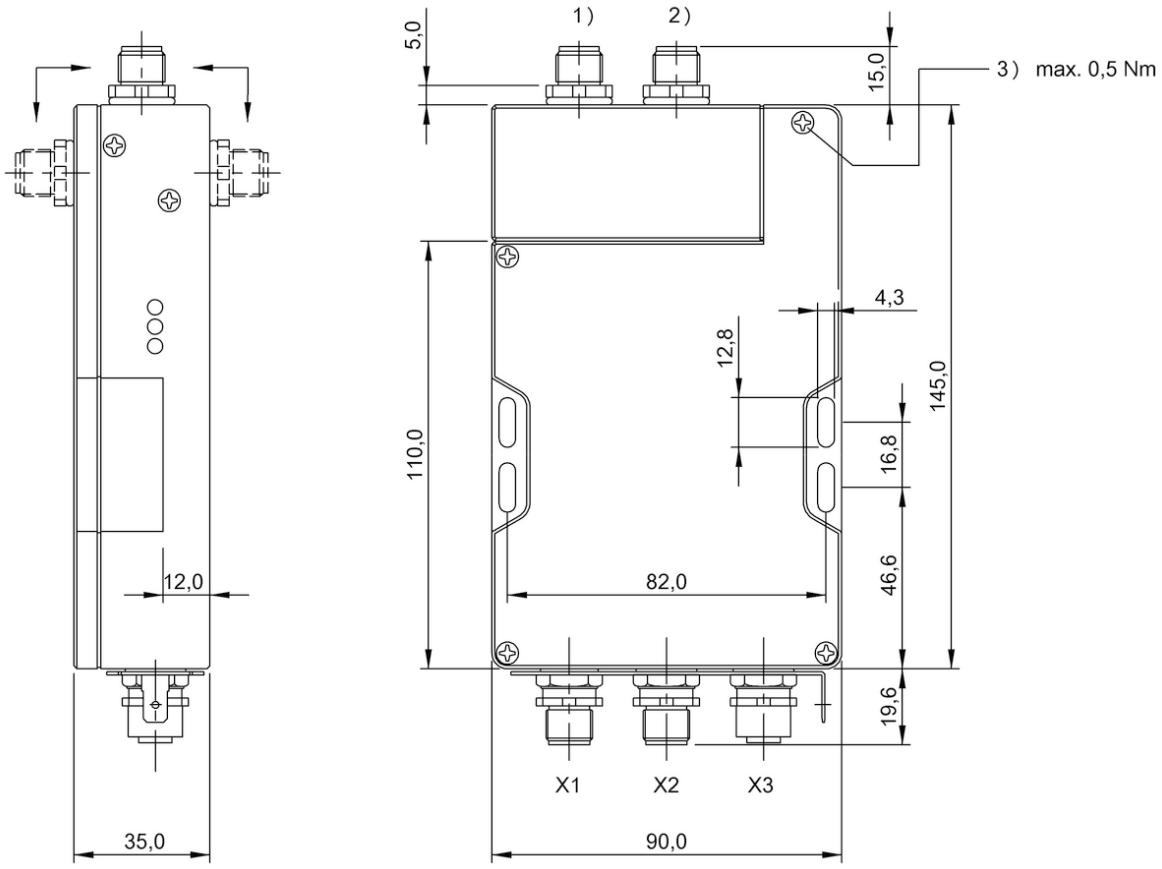
1) Tightening torque

BIS009F



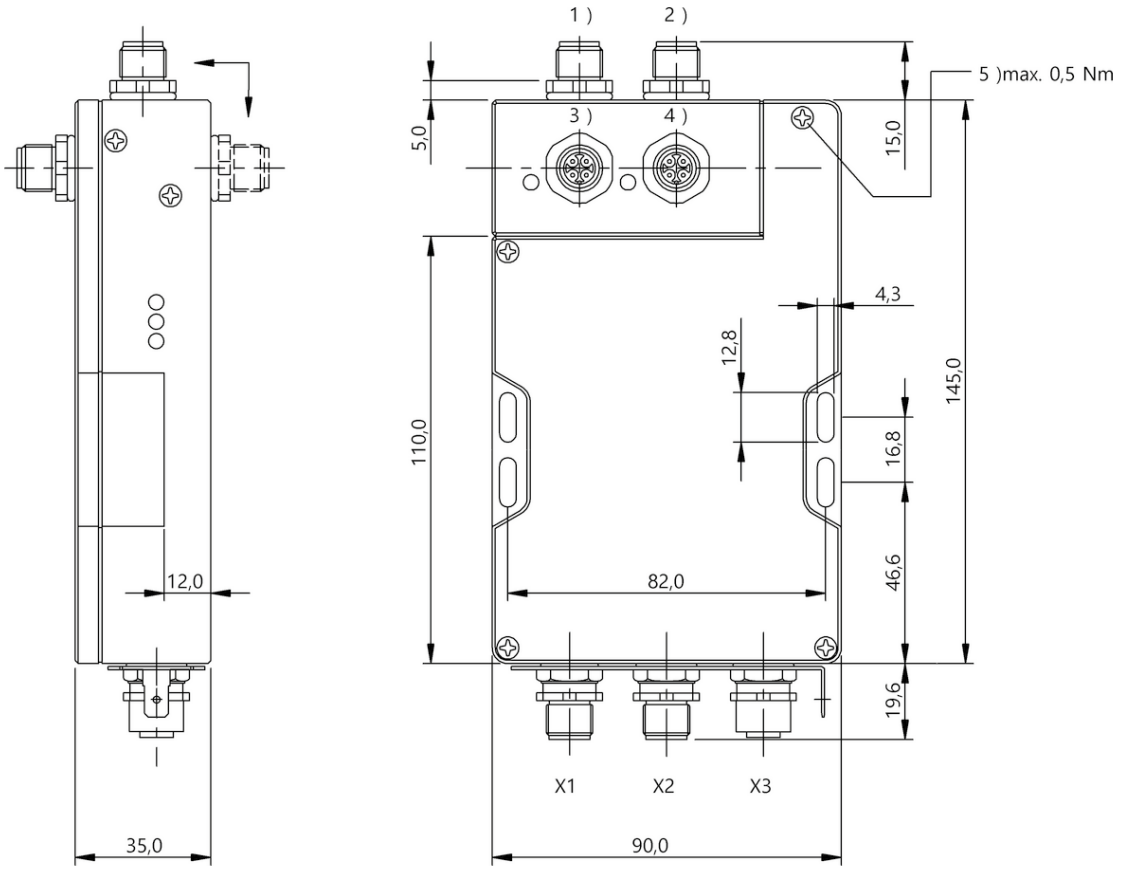
1) Head 1, 2) Head 2, 3) Tightening torque

BIS009L, BIS0099, BIS00A4



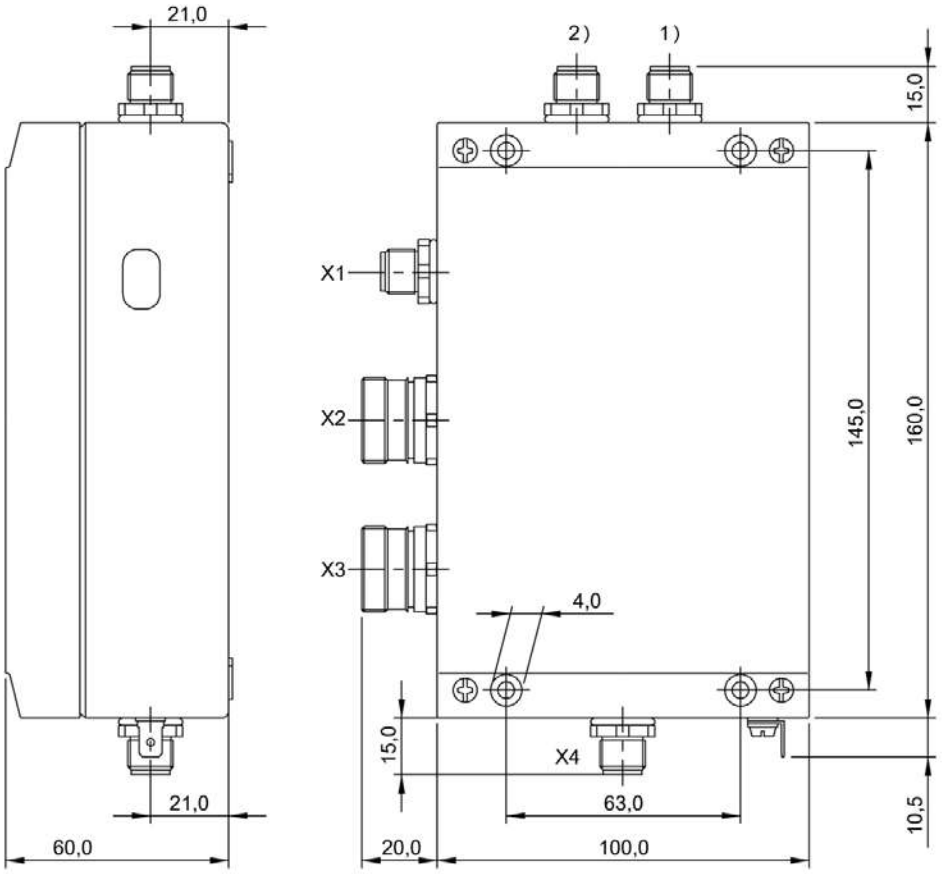
1) Head 1, 2) Head 2, 3) Tightening torque

BIS009A, BIS009M



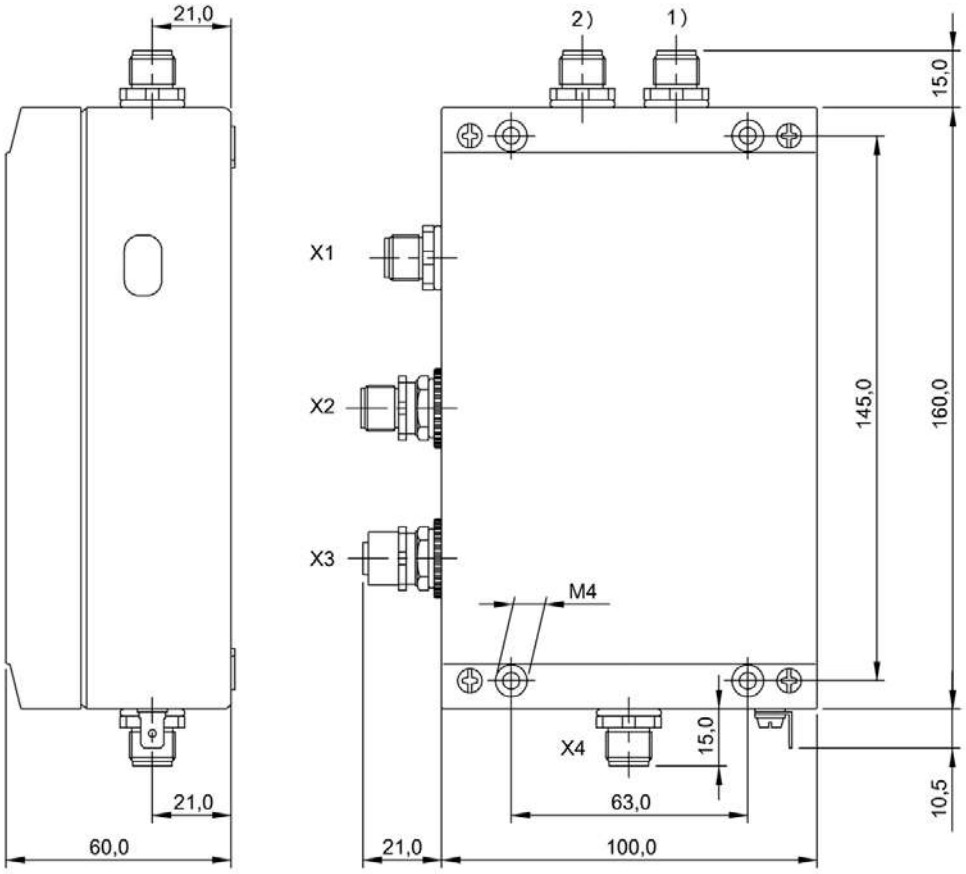
1) Head 1.1, 2) Head 2.1, 3) Head 1.2, 4) Head 2.2, 5) Tightening torque

BIS009J



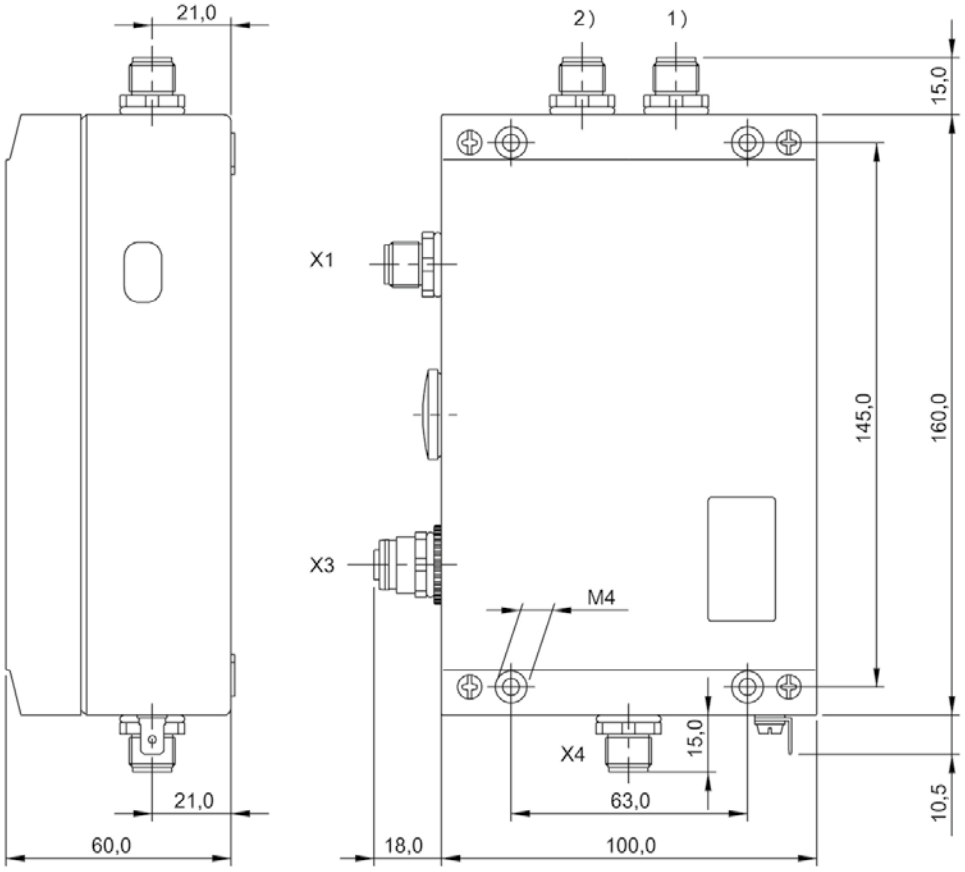
1) Head 1, 2) Head 2

BIS00AL



1) Head 1, 2) Head 2

BIS00AM



1) Head 1, 2) Head 2

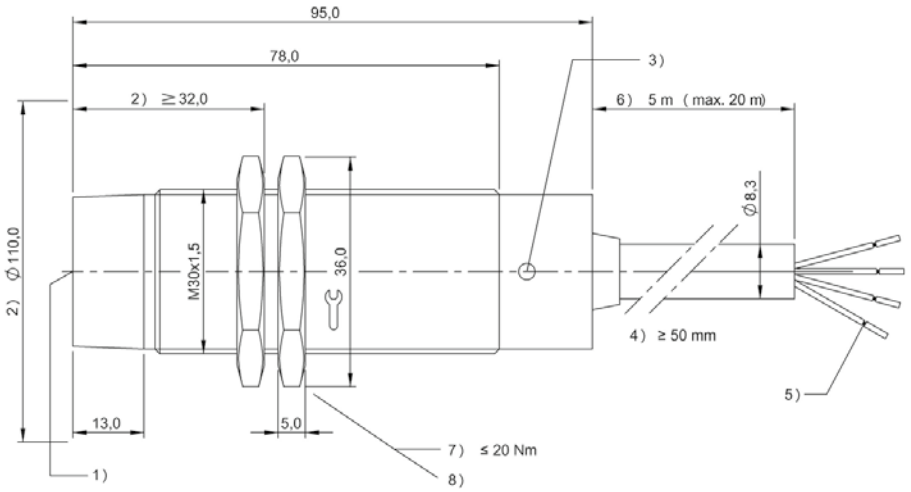
BIS00AY, BIS00AU

5 m cable PU	**BIS00H6** BIS C-60R-001-08P-PU-05
10 m cable PU	**BIS00H7** BIS C-60R-001-08P-PU-10
20 m cable PU	**BIS00H8** BIS C-60R-001-08P-PU-20
Product Group	LF (70/455 kHz)
Dimension	Ø 30 x 95 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Cable (shielded), 11-pin
Housing material	Brass
Interface	8 Bit parallel
Ambient temperature	0...50 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS000T		BIS0011		BIS0004		BIS001E		BIS0002		BIS0019		BIS000M		BIS000N	
Data carrier distance to metal	flush	metal-free	metal-free		flush	metal-free	flush	metal-free	flush	metal-free	metal-free		flush		metal-free	
Working distance for reading	0-3	0-5	1-5		0-4	1-5	0-5	1-8	0-5	1-6	3-12		1-8		1-8	
Offset at distance																
1	±2	±3	±3		±4	±2.5	±3	±4	±2.5	±3			±5		±7	
3	±2	±3	±3		±2.5	±2.5	±3	±5	±3	±3	±7		±5		±7	
5		±3	±3			±2.5	±3	±5	±3	±3	±6		±5		±7	
7								±5			±5		±5		±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) data valid, 4) Cable bending radius, 5) strip, 6) standard length, 7) Tightening torque, 8) see remarks

	BIS000C		BIS0006	
	flush	metal-free	flush	
	0-6	1-8	1-8	
	±7	±7	±4	
	±7	±7	±4	
	±6	±7	±4	
		±6	±4	

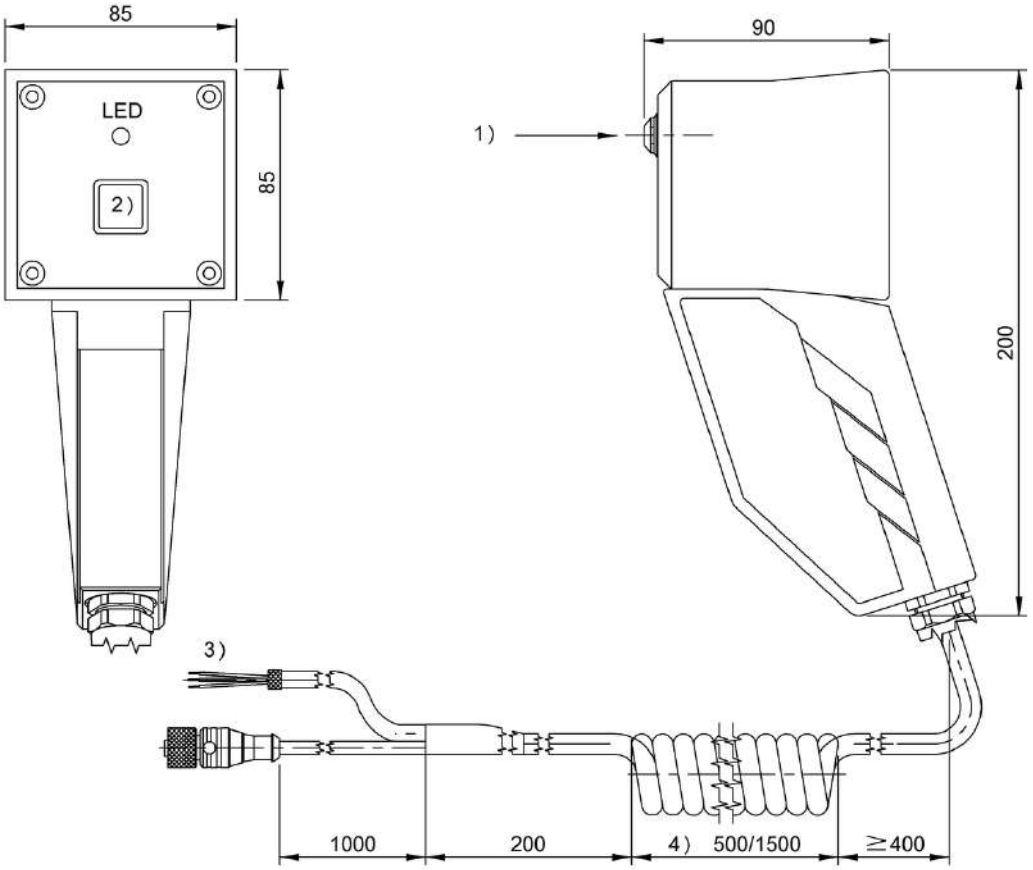
	BAE004C BIS C-720-01-03	BAE0088 BIS C-810-0-003	
Product Group	LF (70/455 kHz)	LF (70/455 kHz)	
Product name	Read / write gun	Standard	
Dimension	90 x 85 x 200 mm	97 x 55 x 232 mm	
Antenna type	—	—	
Use	for all C-85x with jack plug Ø6.3 mm	for all C-85x with jack plug Ø6.3 mm	
Display	—	LCD display 20 characters/4 lines	
Keypad	—	32 keys, alphanumeric (4x8)	
Operating voltage Ub	—	2.4 V DC rechargeable battery pack NiMH	
Storage temperature	-20...70 °C	—	
Ambient temperature	0...50 °C	0...50 °C	
Protection degree	IP40	IP40	
Approval/Conformity	CE	CE	
Productview	Page 394	Page 394	

	BAE0094 BIS C-850	BAE0095 BIS C-851	BAE0096 BIS C-852	BAE0097 BIS C-853
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	Read / write heads	Read / write heads	Read / write heads	Read / write heads
	—	Ø 14.5 x 94 mm	Ø 30 x 97 mm	27 x 27 x 72 mm
	—	round	round	Rod
	—	—	—	—
	—	—	—	—
	—	—	—	—
	—	—	—	—
	—	-20...85 °C	-20...85 °C	-20...60 °C
	—	0...70 °C	0...70 °C	0...60 °C
	IP67	IP67	IP67	IP67
	CE	CE	CE	CE
	Seite 395	Page 395	Page 395	Page 395

PORTABLE LF READ/WRITE UNITS (70/455KHZ)

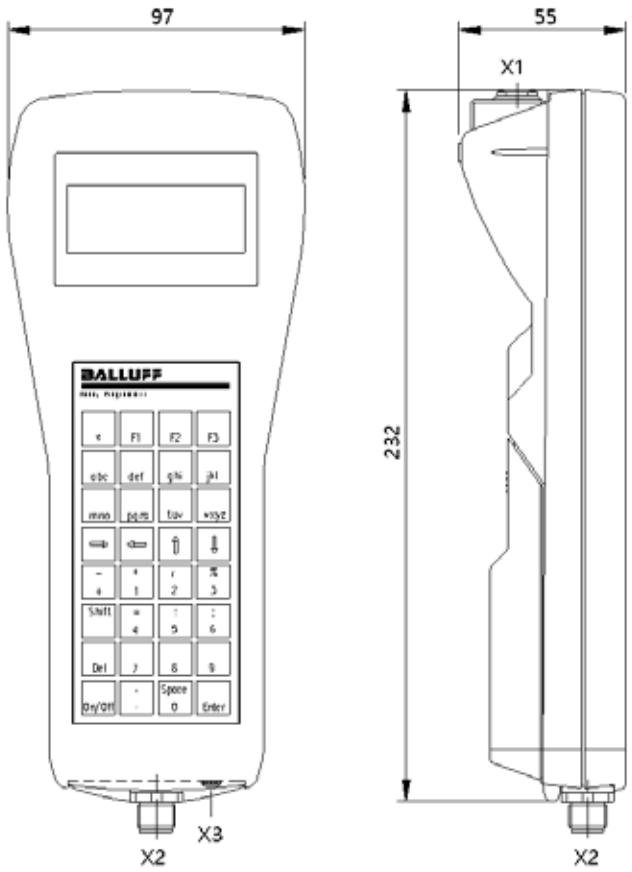
provides you with product-specific information,

including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.

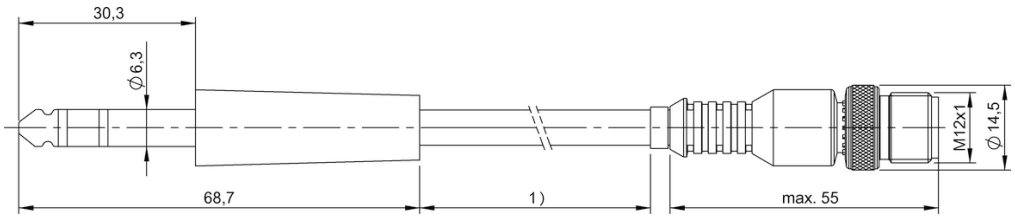


1) see remarks, 2) Button, 3) see connection diagram, 4) Spiral length retracted/extended

BAE004C

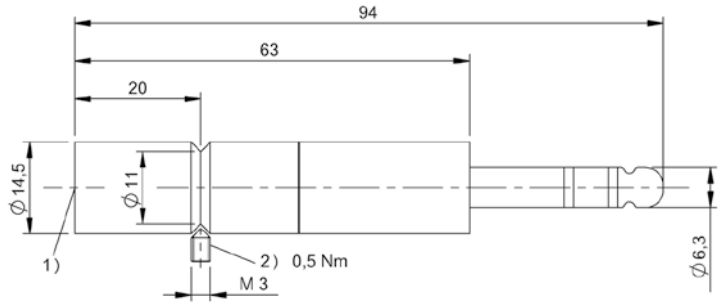


BAE0088



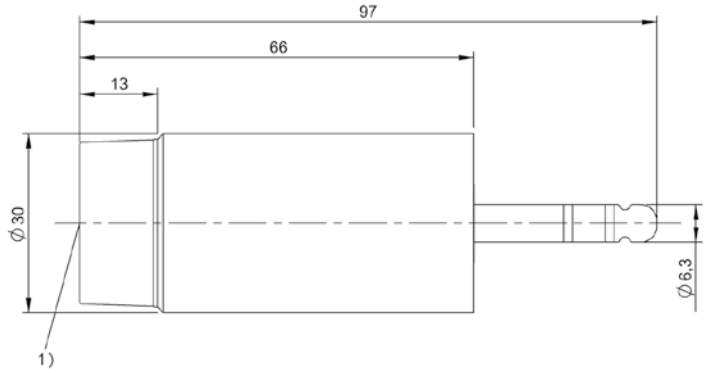
1) Cable length see text

BAE0094



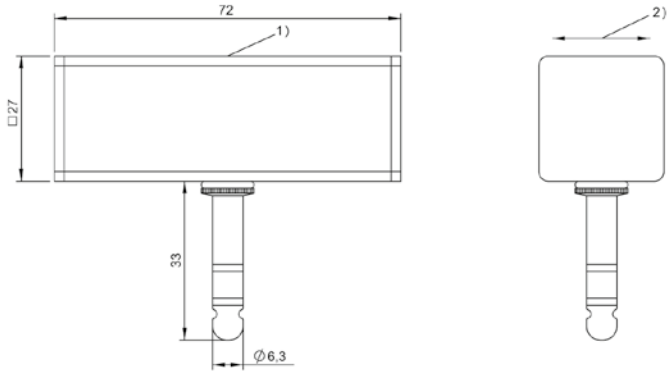
1) Sensing surface, 2) Tightening torque

BAE0095



1) Sensing surface

BAE0096



1) Sensing surface, 2) Read/write axis

BAE0097

Cost-effective solution
for simple identification tasks

RFID-SYSTEM LF (125 KHZ) BIS L

Our low-frequency RFID systems BIS L are suitable for applications that involve only the identification and require less data processing. For example, often only a (read-only) code is required for tracing. The 125-kHz systems function reliably up to ranges of 100 mm and are relatively neutral with respect to materials such as water, textiles, wood and aluminum.

Features

- Data carrier memory limited to 192 bytes
- For sending smaller quantities of data
- Wide range of data carriers
- Unique ID with 5 bytes, read-only
- Read-only data carriers available (protection against manipulation)

	BIS0038 BIS L-101-05/L-R0	
Product Group	LF (125 kHz)	
Dimension	Ø 30 x 1.6 mm	
UID serial number, read-only	5 Byte	
User data, read/write	—	
Memory type	EEPROM	
Antenna type	round	
Installation	metal-free (clear zone) on metal flush in metal	
Storage temperature	-40...95 °C	
Storage temperature temporary	—	
Ambient temperature	-25...85 °C	
Housing material	Epoxy resin-glass fiber, GF	
Protection degree	IP67	
Approval/Conformity	CE	
Productview	Page 407	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS L-40x-xxx-001	0-18	0-24	0-40	
BIS L-40x-xxx-002			0-27	
BIS L-40x-xxx-003				
BIS L-40x-xxx-004			0-27	
BIS VL-300	10-30	10-35	0-50	
BIS VL-301	20-40	20-45	0-70	
BIS VL-302	10-20	10-20	0-30	
BIS VL-304	10-20	10-20	0-30	
BIS VL-306				

Dimensions in mm
* Installation on request

	BIS003C BIS L-102-05/L-R0	**BIS003F** BIS L-103-05/L-R0	
	LF (125 kHz)	LF (125 kHz)	
	Ø 50 x 1.6 mm	Ø 12.4 x 2 mm	
	5 Byte	5 Byte	
	—	—	
	EEPROM	EEPROM	
	round	round	
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	
	-40...95 °C	—	
	—	-40...130 °C 1x1000 h	
	-25...85 °C	-25...85 °C	
	Epoxy resin-glass fiber, GF	PPS, EP	
	IP67	IP68	
	CE	CE	
	Page 407	Page 407	

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)			
	0-28	0-32	0-55			0-20			
						0-16			
						0-11			
						0-16			
	15-40	15-45	0-70	3-10	3-12	0-25			
	25-55	25-60	0-100						
	10-20	10-25	0-40	3-8	4-10	0-15			
	10-20	10-25	0-40	3-8	4-10	0-15			
						0-7			

	BIS003R BIS L-200-03/L	
Product Group	LF (125 kHz)	
Dimension	Ø 20 x 1.6 mm	
UID serial number, read-only	5 Byte	
User data, read/write	—	
Memory type	PROM	
Antenna type	round	
Installation	metal-free (clear zone) on metal flush in metal	
Storage temperature	-40...95 °C	
Storage temperature temporary	—	
Ambient temperature	-40...85 °C	
Housing material	Epoxy resin-glass fiber, GF	
Protection degree	IP67	
Approval/Conformity	CE	
Supported data carrier types	EM4_02	
Productview	Page 407	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS L-40x-xxx-001	5-12	0-15	0-30	
BIS L-40x-xxx-002			0-23	
BIS L-40x-xxx-003				
BIS L-40x-xxx-004			0-23	
BIS VL-300	10-20	10-25	0-40	
BIS VL-301	20-50	20-50	0-70	
BIS VL-302	8-15	8-15	0-25	
BIS VL-304	8-15	8-15	0-25	
BIS VL-306				

Dimensions in mm
* Installation on request

	BIS003T BIS L-201-03/L	BIS003U BIS L-202-03/L	BIS003W BIS L-203-03/L
	LF (125 kHz)	LF (125 kHz)	LF (125 kHz)
	Ø 30 x 1.6 mm	Ø 50 x 1.6 mm	Ø 12.4 x 2 mm
	5 Byte	5 Byte	5 Byte
	—	—	—
	PROM	PROM	PROM
	round	round	round
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	-40...95 °C	-40...95 °C	—
	—	—	-40...130 °C 1x1000 h
	-40...85 °C	-40...85 °C	-25...85 °C
	Epoxy resin-glass fiber, GF	Epoxy resin-glass fiber, GF	PPS, EP
	IP67	IP67	IP68
	CE	CE	CE
	EM4_02	EM4_02	EM4_02
	Page 407	Page 407	Page 407

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
	0-18	0-24	0-40	0-28	0-32	0-55			0-20
			0-23						0-16
									0-11
			0-27						0-16
	10-30	10-35	0-50	15-40	15-45	0-70	3-10	3-12	0-25
	20-40	20-45	0-70	25-55	25-60	0-100			
	10-20	10-20	0-30	10-20	10-25	0-40	3-8	4-10	0-15
	10-20	10-20	0-30	10-20	10-25	0-40	3-8	4-10	0-15
									0-7

	BIS0033 BIS L-100-01/L	
Product Group	LF (125 kHz)	
Dimension	Ø 20 x 1.6 mm	
UID serial number, read-only	4 Byte	
User data, read/write	192 Byte	
Memory type	EEPROM	
Antenna type	round	
Installation	metal-free (clear zone) on metal flush in metal	
Storage temperature	-40...95 °C	
Storage temperature temporary	—	
Ambient temperature	-25...85 °C	
Housing material	Epoxy resin-glass fiber, GF	
Protection degree	IP67	
Approval/Conformity	CE	
Supported data carrier types	Hitag1	
Productview	Page 407	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS VL-300	10-20	10-20	0-30	
BIS VL-301	15-25	15-30	0-40	
BIS VL-302	8-15	8-15	0-20	
BIS VL-304	8-15	8-15	0-20	
BIS VL-306				

Dimensions in mm
* Installation on request

	BIS0034 BIS L-100-05/L	BIS0036 BIS L-101-01/L	BIS0037 BIS L-101-05/L
	LF (125 kHz)	LF (125 kHz)	LF (125 kHz)
	Ø 20 x 1.6 mm	Ø 30 x 1.6 mm	Ø 30 x 1.6 mm
	4 Byte	4 Byte	4 Byte
	192 Byte	192 Byte	192 Byte
	EEPROM	EEPROM	EEPROM
	round	round	round
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	-40...95 °C	-40...95 °C	-40...95 °C
	—	—	—
	-25...85 °C	-25...85 °C	-25...85 °C
	Epoxy resin-glass fiber, GF	Epoxy resin-glass fiber, GF	Epoxy resin-glass fiber, GF
	IP67	IP67	IP67
	CE	CE	CE
	HitagS	Hitag1	HitagS
	Page 407	Page 407	Page 407

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal*	on metal*	metal-free (clear zone)*
				10-30	10-30	0-40			
				15-35	15-40	0-55			
				10-20	10-20	0-25			
				10-20	10-20	0-25			
			0-12						

	BIS0039 BIS L-102-01/L	
Product Group	LF (125 kHz)	
Dimension	Ø 50 x 1.6 mm	
UID serial number, read-only	4 Byte	
User data, read/write	192 Byte	
Memory type	EEPROM	
Antenna type	round	
Installation	metal-free (clear zone) on metal flush in metal	
Storage temperature	-40...95 °C	
Storage temperature temporary	—	
Ambient temperature	-25...85 °C	
Housing material	Epoxy resin-glass fiber, GF	
Protection degree	IP67	
Approval/Conformity	CE	
Supported data carrier types	Hitag1	
Productview	Page 407	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS VL-300	15-40	15-40	0-55	
BIS VL-301	20-50	20-50	0-70	
BIS VL-302	10-20	10-25	0-30	
BIS VL-304	10-20	10-25	0-30	
BIS VL-306				

Dimensions in mm
* Installation on request

	BIS003A BIS L-102-05/L	BIS003E BIS L-103-05/L	BIS00KR BIS L-140-05/L-M8
	LF (125 kHz)	LF (125 kHz)	LF (125 kHz)
	Ø 50 x 1.6 mm	Ø 12.4 x 2 mm	Ø 22 x 21 mm
	4 Byte	4 Byte	4 Byte
	192 Byte	192 Byte	192 Byte
	EEPROM	EEPROM	PROM
	round	round	round
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	-40...95 °C	—	-25...95 °C
	—	-40...130 °C 1x1000 h	—
	-25...85 °C	-25...85 °C	-25...85 °C
	Epoxy resin-glass fiber, GF	PPS, EP	Steel, PA 12, GF30
	IP67	IP68	—
	CE	CE	CE
	HitagS	HitagS	HitagS
	Page 407	Page 407	Page 407

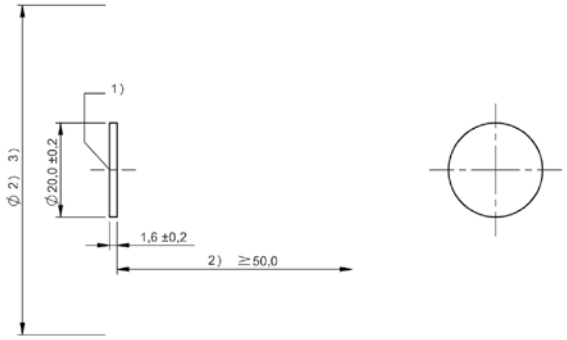
	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal*	on metal*	metal-free (clear zone)*
	15-40	15-45	0-70						
	25-55	25-60	0-100						
	10-20	10-25	0-40						
	10-20	10-25	0-40						
						0-7			

	BIS003N BIS L-150-05/A
Product Group	LF (125 kHz)
Dimension	Ø 3.15 x 13.3 mm
UID serial number, read-only	4 Byte
User data, read/write	192 Byte
Memory type	EEPROM
Antenna type	Rod
Installation	metal-free (clear zone) on metal flush in metal
Storage temperature	—
Storage temperature temporary	-40...90 °C 1x1000 h
Ambient temperature	-40...85 °C
Housing material	Glass, transparent
Protection degree	IP68
Approval/Conformity	CE
Supported data carrier types	HitagS
Productview	Page 407

Suitable read/write head with max. read/write working distance

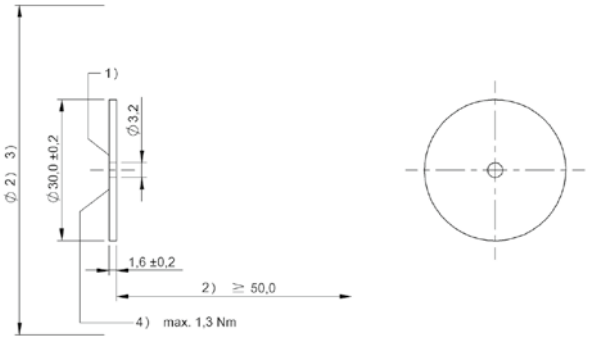
Installation	flush in metal	on metal	metal-free (clear zone)
BIS VL-301			0-32
BIS VL-350	0-24	0-24	0-17

Dimensions in mm



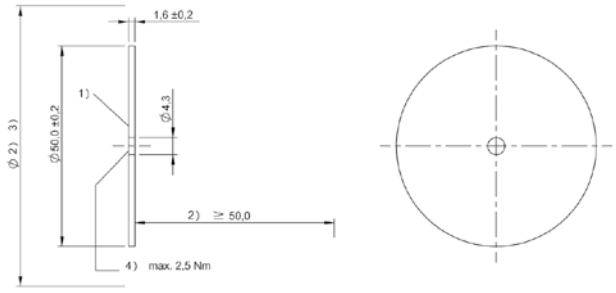
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS003R, BIS0033, BIS0034



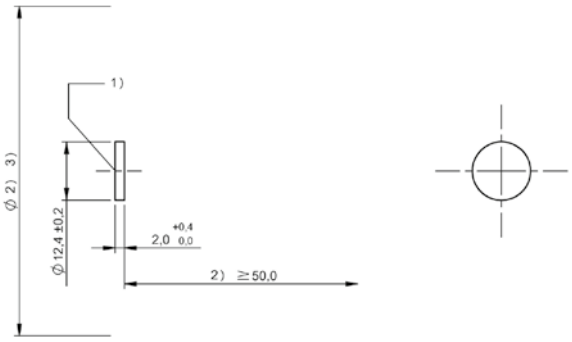
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BIS0038, BIS003T, BIS0036, BIS0037



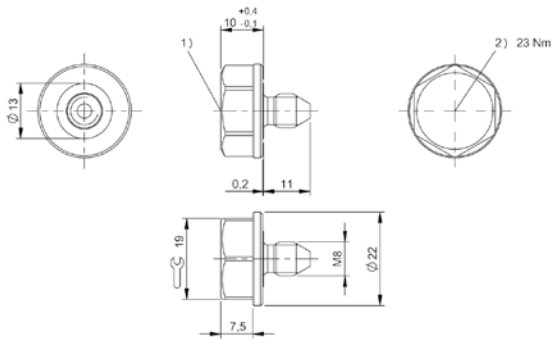
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BIS003C, BIS003U, BIS0039, BIS003A



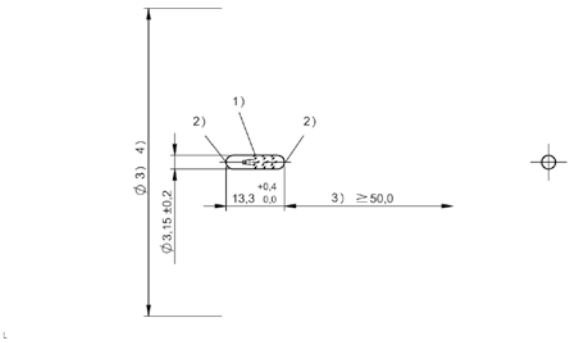
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS003F, BIS003W, BIS003E



1) Sensing surface, 2) Tightening torque

BIS00KR



1) Sensing surface parallel, 2) Sensing surface axial, 3) Clear zone, 4) see corresponding R/W head

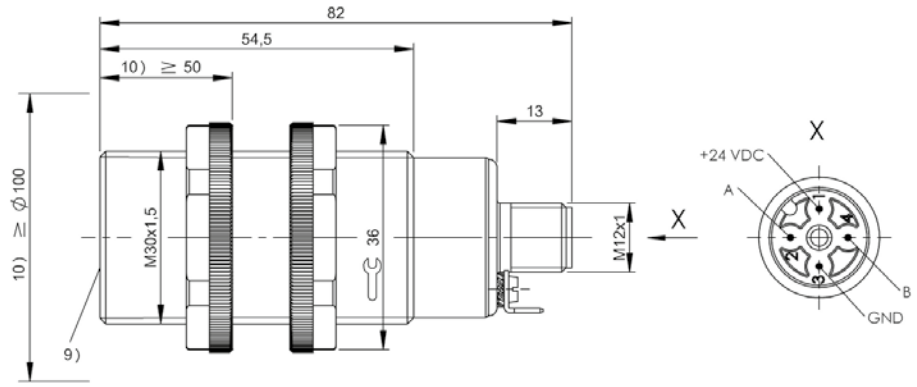
BIS003N

	BIS00UL BIS VL-300-001-S4
Product Group	LF (125 kHz)
Dimension	Ø 30 x 82 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1 connector, 4-pin
Housing material	PVDF, nuts PA 6.6
Interface	—
Operating voltage Ub	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0033			BIS0036			BIS0039			BIS003R			BIS003T BIS0038		
Data carrier distance to metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal
Data carrier clear zone															
Working distance for writing	0-30	10-20	10-20	0-40	10-30	10-30	0-55	15-40	15-40						
Working distance for reading	0-30	10-20	10-20	0-40	10-30	10-30	0-55	15-40	15-40	0-40	10-25	10-20	0-50	10-35	10-30
Offset at distance															
0	±18			±28			±30			±20			±28		
3	±18			±28			±30			±20			±28		
7	±18			±28			±30			±20			±28		
8	±18			±28			±30			±20			±28		
10	±18	±8	±8	±28	±15	±13	±30			±20	±15	±10	±28	±20	±17
12	±18	±8	±8	±28	±15	±13	±30			±20	±15	±10	±28	±20	±17
15	±18	±5	±5	±28	±15	±10	±30	±20	±20	±20	±10	±10	±28	±20	±17
18	±18	±2	±2	±28	±15	±10	±30	±20	±18	±20	±10	±10	±28	±20	±17
20	±18	±0	±0	±28	±15	±10	±30	±20	±15	±20	±10	±0	±28	±20	±17
25	±18			±28	±10	±5	±30	±15	±15	±20	±0		±28	±20	±15
30	±18			±28	±0	±0	±30	±15	±10	±20			±28	±15	±0
35				±28			±30	±15	±0	±20			±28	±0	
40				±28			±30	±0		±20			±28		
45							±30						±28		
50							±30						±28		
55							±0								
60															
70															

Dimensions in mm



9) Sensing surface, 10) Clear zone

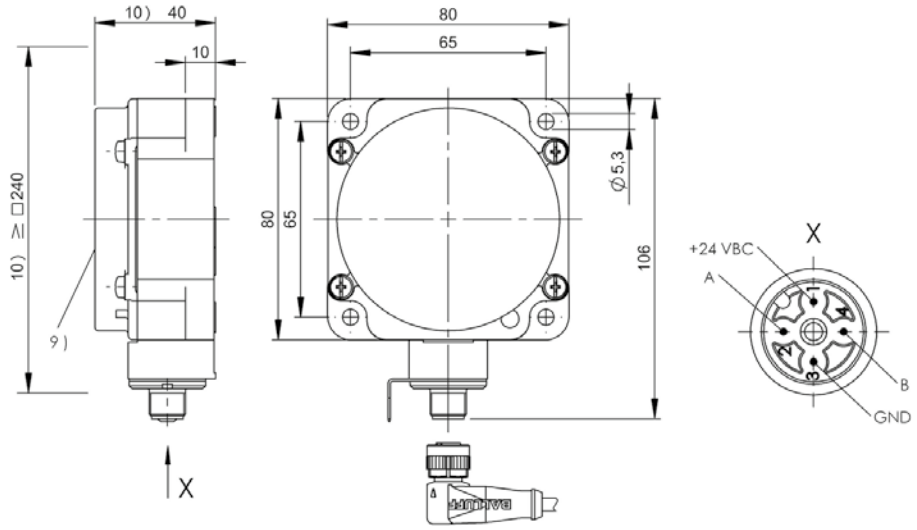
	BIS003U BIS003C			BIS003W BIS003F		
	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal
	0-70	15-45	15-40	0-25	3-12	3-10
	±35			±15		
	±35			±15	±12	±9
	±35			±15	±12	±8
	±35			±15	±12	±8
	±35			±15	±9	±7
	±35			±15	±0	
	±35	±25	±20	±15		
	±35	±25	±20	±15		
	±35	±25	±20	±15		
	±35	±20	±20	±13		
	±35	±20	±20			
	±35	±15	±15			
	±35	±12	±0			
	±35	±0				
	±35					
	±35					
	±35					
	±35					

	BIS00U6 BIS VL-301-001-S4
Product Group	LF (125 kHz)
Dimension	80 x 80 x 40 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1 connector, 4-pin
Housing material	PBT
Interface	—
Operating voltage Ub	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0033			BIS0036			BIS0039			BIS003N BIS017H		BIS003R		
Data carrier distance to metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free		metal-free	on metal	flush in metal
Data carrier clear zone														
Working distance for writing	0-40	15-30	15-25	0-55	15-40	15-35	0-70	20-50	20-50	0-32				
Working distance for reading	0-40	15-30	15-25	0-55	15-40	15-35	0-70	20-50	20-50	0-32		0-70	20-50	20-50
Offset at distance														
0	±30			±35			±40			±24		±40		
3	±30			±35			±40			±24		±40		
7	±30			±35			±40			±24		±40		
8	±30			±35			±40			±24		±40		
10	±30			±35			±40			±24		±40		
12	±30			±35			±40			±24		±40		
15	±30	±20	±15	±35	±20	±20	±40			±24		±40		
18	±30	±15	±10	±35	±20	±20	±40			±24		±40		
20	±30	±15	±10	±35	±20	±20	±40	±25	±22	±24		±40	±25	±22
25	±30	±10	±0	±35	±20	±15	±40	±25	±22	±24		±40	±25	±22
30	±30	±0		±35	±20	±15	±40	±25	±22	±24		±40	±25	±22
35	±30			±35	±15	±0	±40	±20	±15			±40	±20	±15
40	±30			±35	±0		±40	±15	±15			±40	±15	±15
45				±35			±40	±15	±10			±40	±15	±10
50				±35			±40	±0	±0			±40	±0	±0
55				±35			±40					±40		
60							±40					±40		
70							±40					±40		

Dimensions in mm

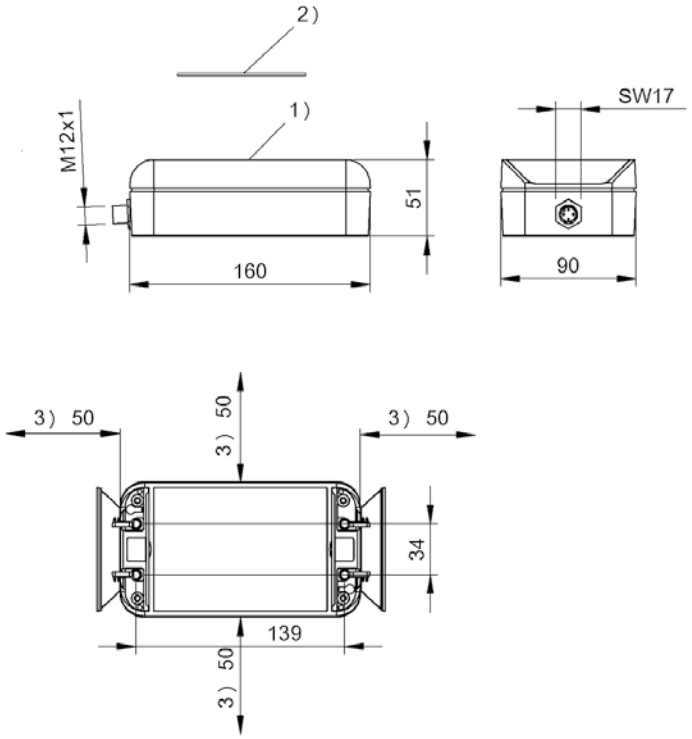


9) Sensing surface, 10) Clear zone

	BIS003T BIS0038			BIS003U BIS003C		
	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal
	0-70	20-45	20-40	0-100	25-60	25-55
	±40			±45		
	±40			±45		
	±40			±45		
	±40			±45		
	±40			±45		
	±40			±45		
	±40			±45		
	±40			±45		
	±40	±24	±20	±45	±30	±30
	±40	±24	±20	±45	±30	±30
	±40	±20	±20	±45	±30	±25
	±40	±20	±15	±45	±30	±25
	±40	±18	±0	±45	±25	±20
	±40	±0		±45	±20	±20
	±40			±45	±10	±0
	±40			±45	±0	
	±40			±45		
	±40			±45		
				±45		

	BIS015U BIS VL-308-001-S4
Product Group	LF (125 kHz)
Dimension	90 x 51 x 160 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1 connector, 4-pin
Housing material	ABS
Interface	—
Operating voltage Ub	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Suitable data carriers on request



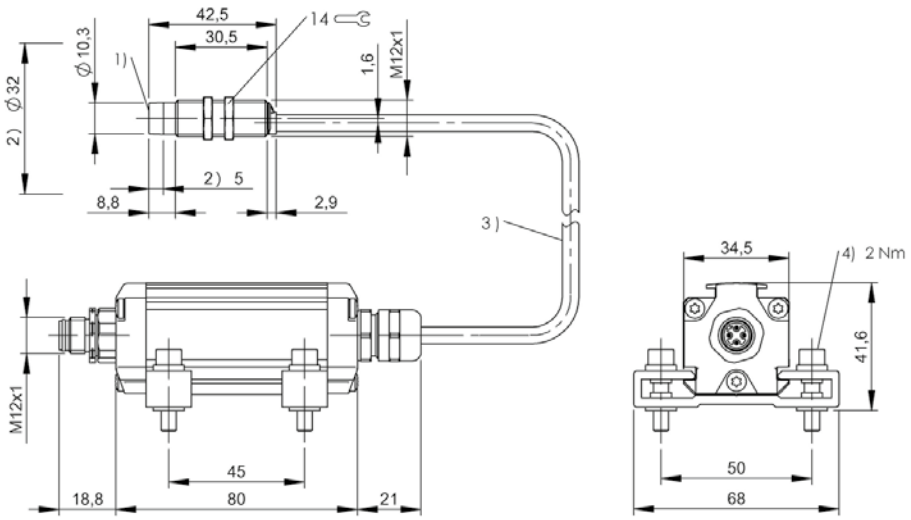
1) Sensing surface, 2) Data carrier, 3) Clear zone

	BIS00UJ BIS VL-306-001-S4
Product Group	LF (125 kHz)
Dimension	Ø 12 x 42.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1-Male, 4-pole, 0.50 m, PU1
Housing material	Brass, interface aluminum
Interface	—
Operating voltage Ub	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0034	BIS003E	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing	0-12	0-7	
Working distance for reading	0-12	0-7	0-7
Offset at distance			
0	±7	±4	±4
3	±7	±4	±4
7	±7	±4	±2
8	±7		
10	±7		
12	±7		
15			
18			
20			
25			
30			
35			
40			

Dimensions in mm



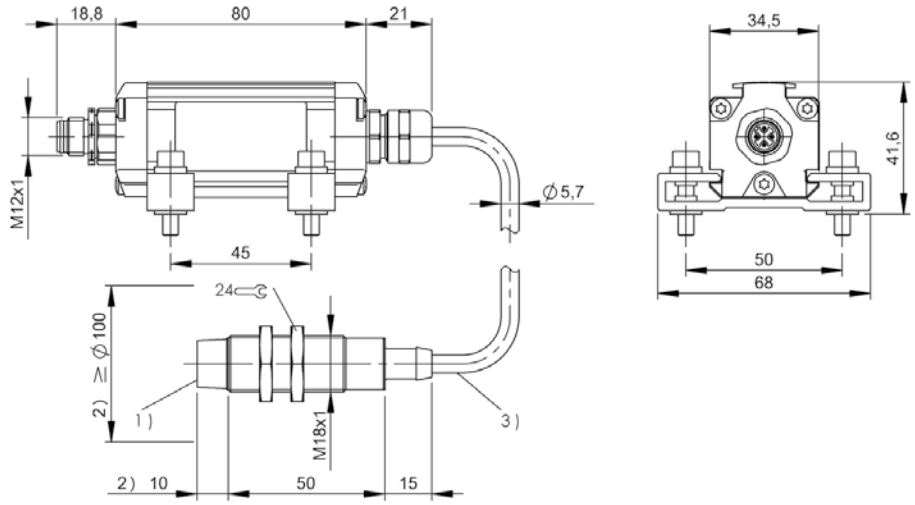
1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) Tightening torque

	BIS00UF BIS VL-302-001-S4
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1-Male, 4-pole, 0.50 m, PVC
Housing material	Brass, interface aluminum
Interface	—
Operating voltage Ub	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0033			BIS0036			BIS0039				BIS003R			BIS003T BIS0038		
Data carrier distance to metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal		metal-free	on metal	flush in metal	metal-free	on metal	flush in metal
Data carrier clear zone																
Working distance for writing	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20							
Working distance for reading	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20		0-25	8-15	8-15	0-30	10-20	10-20
Offset at distance																
0	±10			±12			±15			0	±13			±15		
3	±10			±12			±15			3	±13			±15		
7	±10			±12			±15			4	±13			±15		
8	±10	±6	±6	±12			±15			8	±13	±8	±6	±15		
10	±10	±5	±5	±12	±10	±8	±15	±15	±10	10	±13	±8	±6	±15	±10	±10
12	±10	±4	±4	±12	±10	±8	±15	±15	±10	12	±13	±8	±6	±15	±10	±10
15	±10	±0	±0	±12	±5	±5	±15	±15	±5	15	±13	±0	±0	±15	±10	±8
18	±10			±12	±0	±0	±15	±10	±0	18	±13			±15	±0	±0
20	±10			±12	±0	±0	±15	±10	±0	20	±13			±15	±0	±0
25				±12			±15	±0		25	±13			±15		
30							±15			30				±15		
35										35						
40										40						

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length

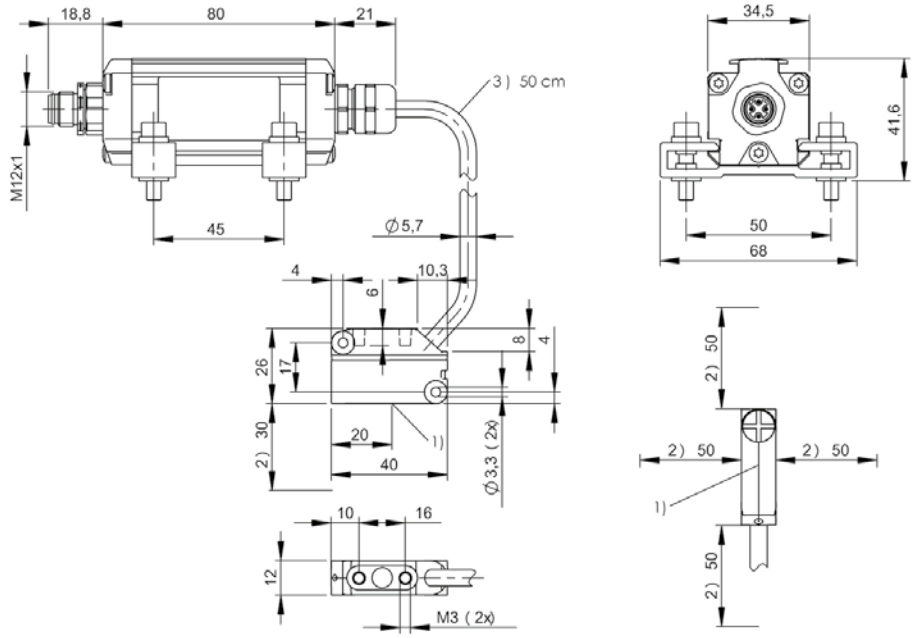
	BIS003U BIS003C			BIS003W BIS003F		
	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal
	0-40	10-25	10-20	0-15	4-10	3-8
	±20			±6		
	±20			±6		±5
	±20			±6	±7	±4
	±20			±6	±6	±3
	±20	±15	±8	±6	±5	
	±20	±15	±8	±6		
	±20	±15	±6	±6		
	±20	±10	±0			
	±20	±10	±0			
	±20	±0				
	±20					
	±20					
	±20					

	BIS00UK BIS VL-350-001-S4
Product Group	LF (125 kHz)
Dimension	12 x 26 x 40 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Connection	M12x1-Male, 4-pole, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Interface	—
Operating voltage Ub	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS003N		
Data carrier distance to metal	metal-free	on metal	flush in metal
Data carrier clear zone			
Working distance for writing	0-17	0-24	0-24
Working distance for reading	0-17	0-24	0-24
Offset at distance			
0	±18	±20	±20
3	±18	±20	±20
7	±18	±20	±20
8	±18	±20	±20
10	±18	±20	±20
12	±10	±20	±20
15	±10	±20	±20
18		±14	±14
20		±14	±14
25		±14	±14

Dimensions in mm



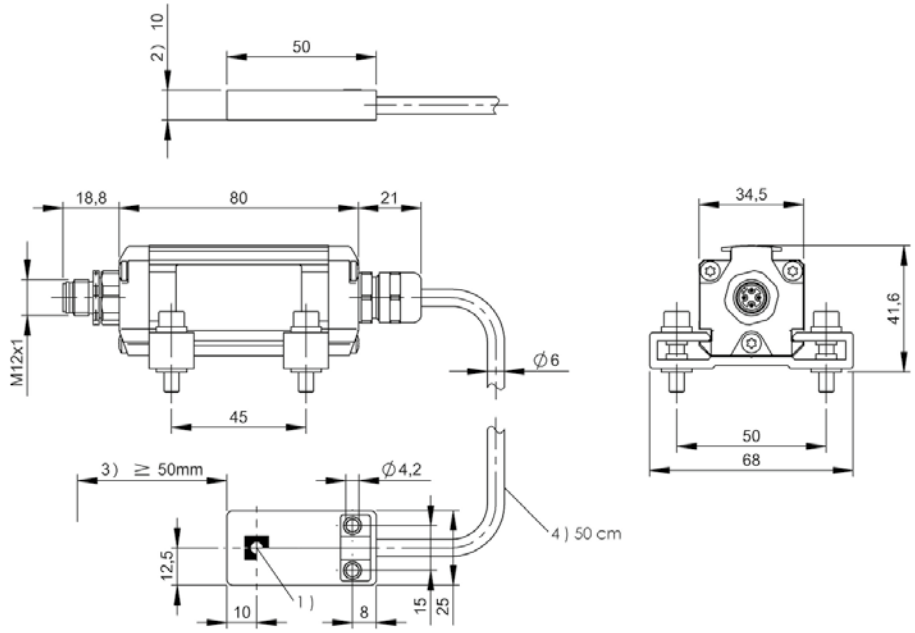
1) Sensing surface, 2) Clear zone, 3) Cable length

	BIS00UH BIS VL-304-001-S4
Product Group	LF (125 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1-Male, 4-pole, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Interface	—
Operating voltage Ub	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0033			BIS0036			BIS0039				BIS003R			BIS003T BIS0038		
Data carrier distance to metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal		metal-free	on metal	flush in metal	metal-free	on metal	flush in metal
Data carrier clear zone																
Working distance for writing	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20							
Working distance for reading	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20		0-25	8-15	8-15	0-30	10-20	10-20
Offset at distance																
0	±10			±12			±15			0	±13			±15		
3	±10			±12			±15			3	±13			±15		
7	±10			±12			±15			4	±13			±15		
8	±10	±6	±6	±12			±15			8	±13	±8	±6	±15		
10	±10	±5	±5	±12	±10	±8	±15	±15	±10	10	±13	±8	±6	±15	±10	±10
12	±10	±3	±3	±12	±10	±8	±15	±15	±10	12	±13	±8	±6	±15	±10	±10
15	±10	±0	±0	±12	±5	±5	±15	±15	±5	15	±13	±0	±0	±15	±10	±8
18	±10			±12	±0	±0	±15	±10	±0	18	±13			±15	±0	±0
20	±10			±12	±0	±0	±15	±10	±0	20	±13			±15	±0	±0
25				±12			±15	±0		25	±13			±15		
30							±15			30				±15		
35										35						
40										40						

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding, 4) Cable length

	BIS003U BIS003C			BIS003W BIS003F		
	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal
	0-40	10-25	10-20	0-15	4-10	3-8
	±20			±6		
	±20			±6		±5
	±20			±6	±7	±3
	±20			±6	±6	±3
	±20	±15	±8	±6	±5	
	±20	±15	±8	±6		
	±20	±15	±6	±6		
	±20	±10	±0			
	±20	±10	±0			
	±20	±0				
	±20					
	±20					
	±20					

For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	**BIS013U** BIS V-6108-048-C002	
Product Group	Multi-Frequency Processor	
Interface	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	
IO-Link-Master-Port	max. 500 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 5-pin	
Productview	Page 472	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz).**

	BIS01AE BIS V-6108-048-C007	BIS013W * BIS V-6108-048-C102	BIS01AF * BIS V-6108-048-C107
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch
	max. 500 mA	max. 500 mA	max. 500 mA
	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	2x M12x1-Female, 4-pin, D-coded M12x1-Male, 5-pin	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 5-pin	2x M12x1-Female, 4-pin, D-coded M12x1-Male, 5-pin
	Page 211	Page 472	Page 211

For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	**BIS00T3** BIS V-6102-019-C001	
Product Group	Multi-Frequency Processor	
Interface	Profibus DP Slave galvanically isolated	
IO-Link-Master-Port	max. 500 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	M12x1-Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded 7/8“-Male, 5-pin	
Productview	Page 472	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz).**

	BIS012E * BIS V-6102-019-C101	BIS01AA BIS V-6107-039-C007	BIS01AC * BIS V-6107-039-C107
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	Profibus DP Slave galvanically isolated	TCP/IP, USB	TCP/IP, USB
	max. 500 mA	max. 1.700 mA	max. 1.700 mA
	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	M12x1-Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded 7/8“-Male, 5-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded M12x1-Male, 5-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded M12x1-Male, 5-pin
	Page 472	Page 210	Page 210

For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	**BIS0186** BIS V-6107-039-C005	
Product Group	Multi-Frequency Processor	
Interface	Ethernet TCP/IP, USB	
IO-Link-Master-Port	max. 1.700 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8“-Male, 5-pin	
Productview	Page 473	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz).**

	BIS018J BIS V-6107-039-C006	BIS0187 * BIS V-6107-039-C105	BIS018K * BIS V-6107-039-C106
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	Ethernet TCP/IP, USB	Ethernet TCP/IP, USB	Ethernet TCP/IP, USB
	max. 1.700 mA	max. 1.700 mA	max. 1.700 mA
	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8“-Male, 4-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8“-Male, 5-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8“-Male, 4-pin
	Page 473	Page 473	Page 473

For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	**BIS012F** BIS V-6106-034-C002	
Product Group	Multi-Frequency Processor	
Interface	Ethernet/IP	
IO-Link-Master-Port	max. 500 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 5-pin	
Productview	Page 436	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz).**

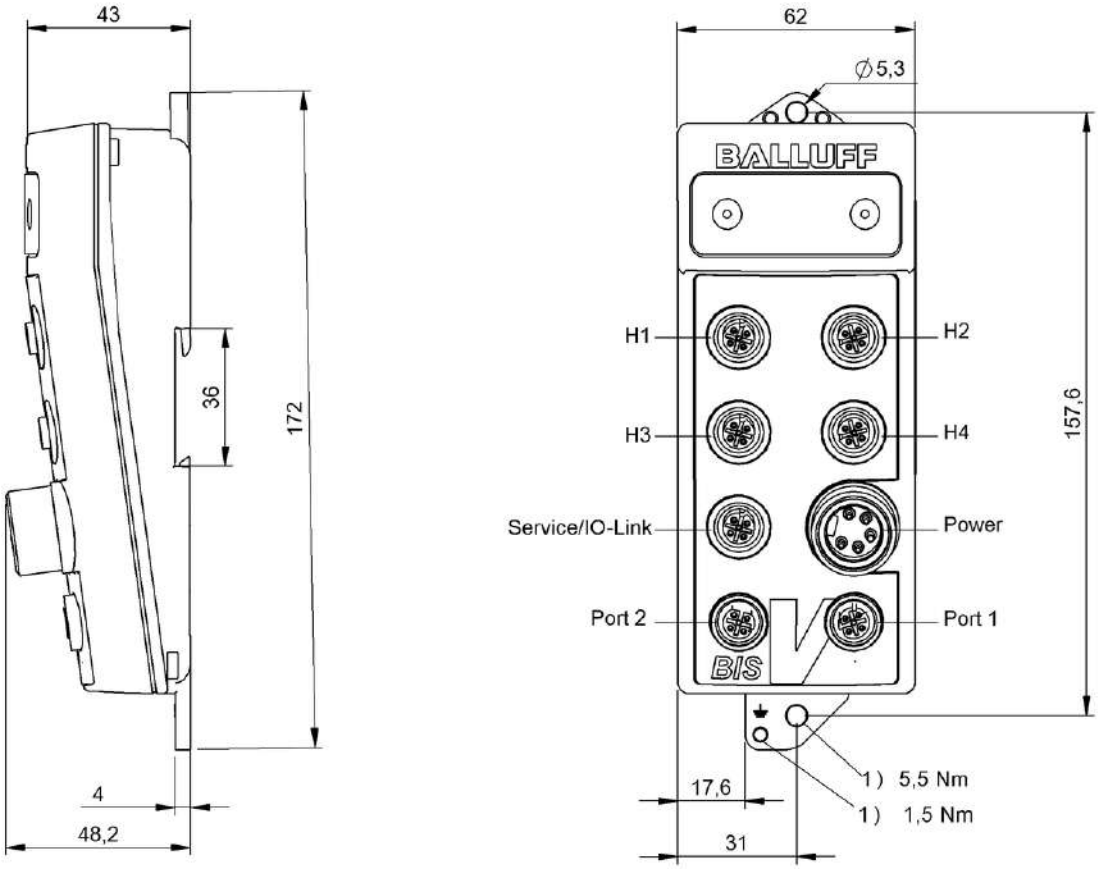
	BIS0122 BIS V-6106-034-C004	BIS014C * BIS V-6106-034-C102	BIS0146 BIS V-6106-034-C104
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	Ethernet/IP	Ethernet/IP	Ethernet/IP
	max. 500 mA	max. 500 mA	max. 500 mA
	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 4-pin	2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 5-pin	2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 4-pin
	Page 436	Page 436	Page 436

For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	**BIS00U9** BIS V-6110-063-C002	
Product Group	Multi-Frequency Processor	
Interface	EtherCAT	
IO-Link-Master-Port	max. 500 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 5-pin	
Productview	Page 437	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz).**

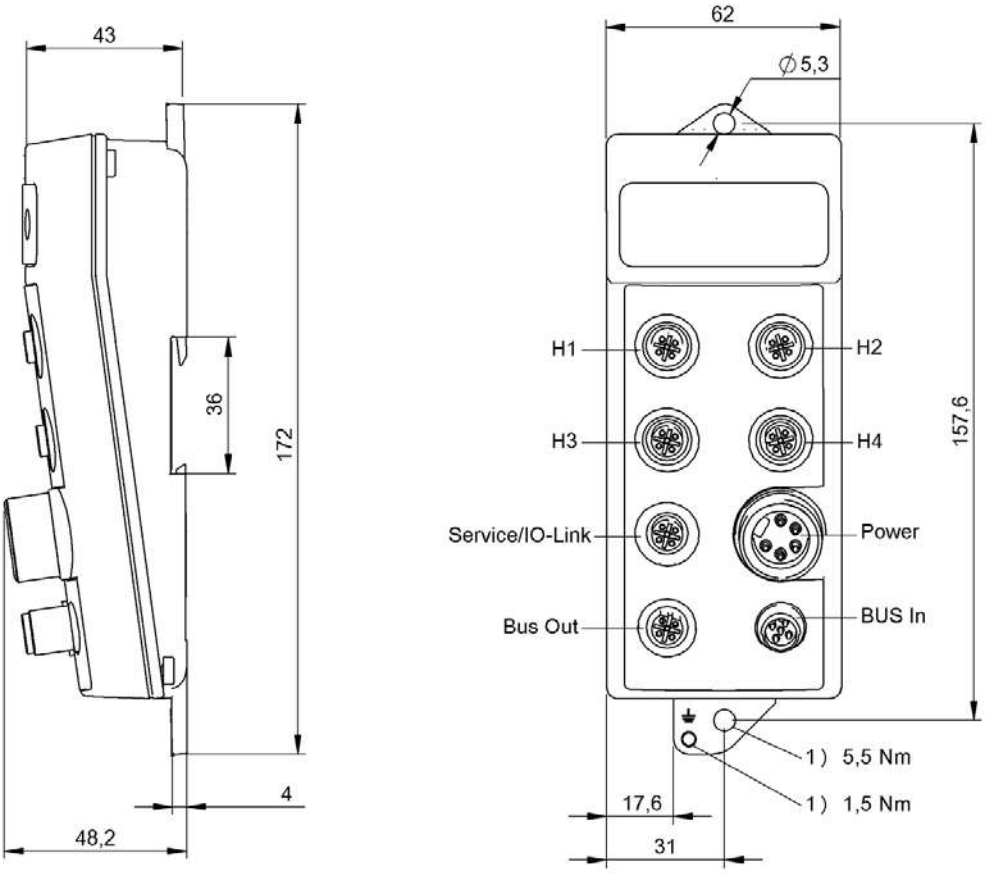
	BIS0147 BIS V-6110-063-C102	BIS010P BIS V-6111-073-C003	BIS014E * BIS V-6111-073-C103
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	EtherCAT	CC-Link	CC-Link
	max. 500 mA	max. 500 mA	max. 500 mA
	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	2x M12x1-Female, 4-pin, D-coded 7/8“-Male, 5-pin	M12x1-Male, 5-pin, A-coded M12x1-Female, 5-pin, A-coded 7/8“-Male, 5-pin	M12x1-Male, 5-pin, A-coded M12x1-Female, 5-pin, A-coded 7/8“-Male, 5-pin
	Page 437	Page 437	Page 437

For read/write heads BIS L-400-043...	**BAE003U** BIS Z-EL-001-ETHERNET	
Product Group	LF (125 kHz)	
Interface	Ethernet TCP/IP	
Supported RFID technologies	LF 125 kHz (BIS L, Easy Loop)	
Number of connectable R/W heads / antennas	16	
Operating voltage Ub	19.2...28.8 VDC	
Housing material	ABS	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE	
Connection	Female, 4-pole, D-coded Male, 5-pole	
Productview	Page 438	



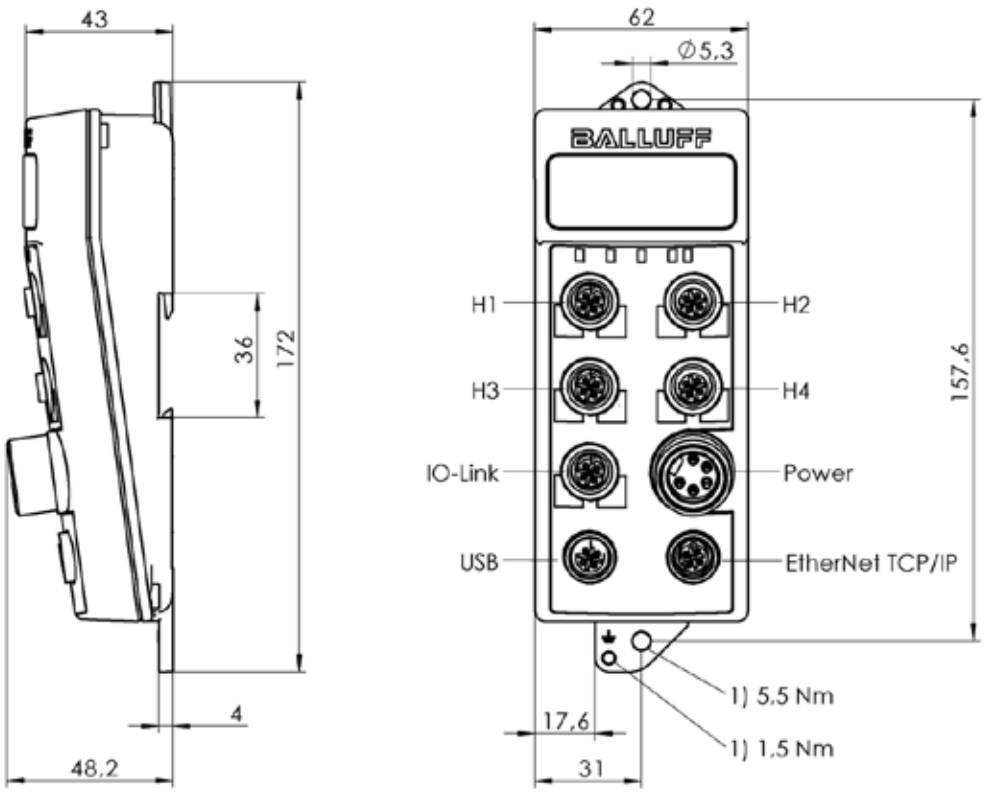
1) Tightening torque

BIS013U, BIS013W



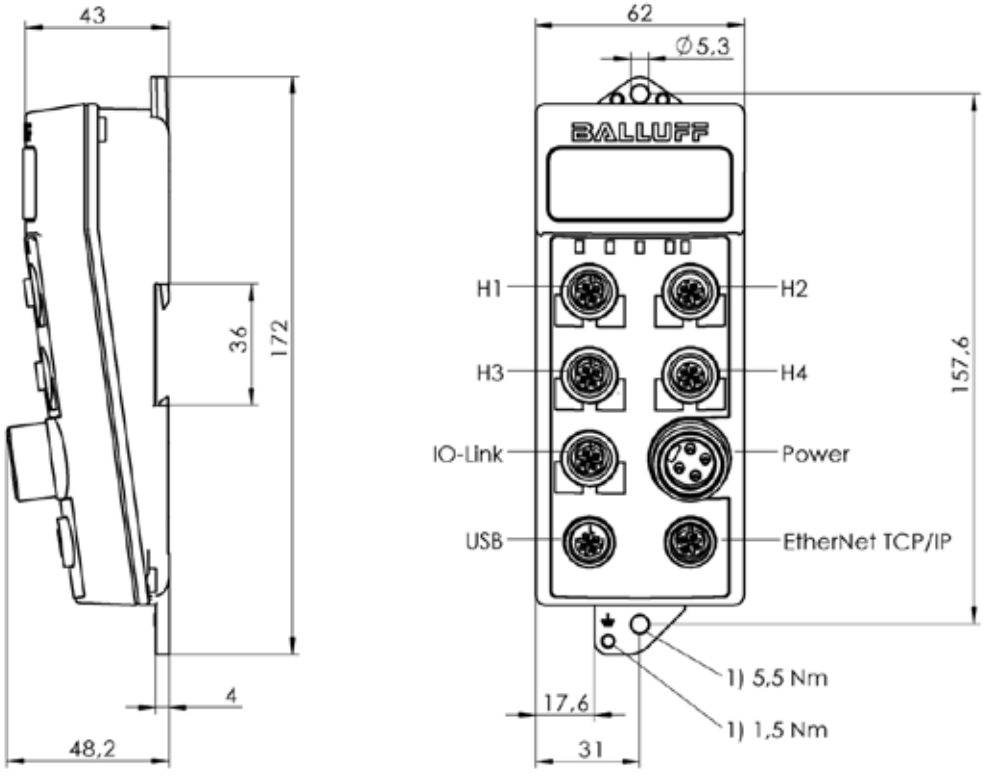
1) Tightening torque

BIS00T3, BIS012E



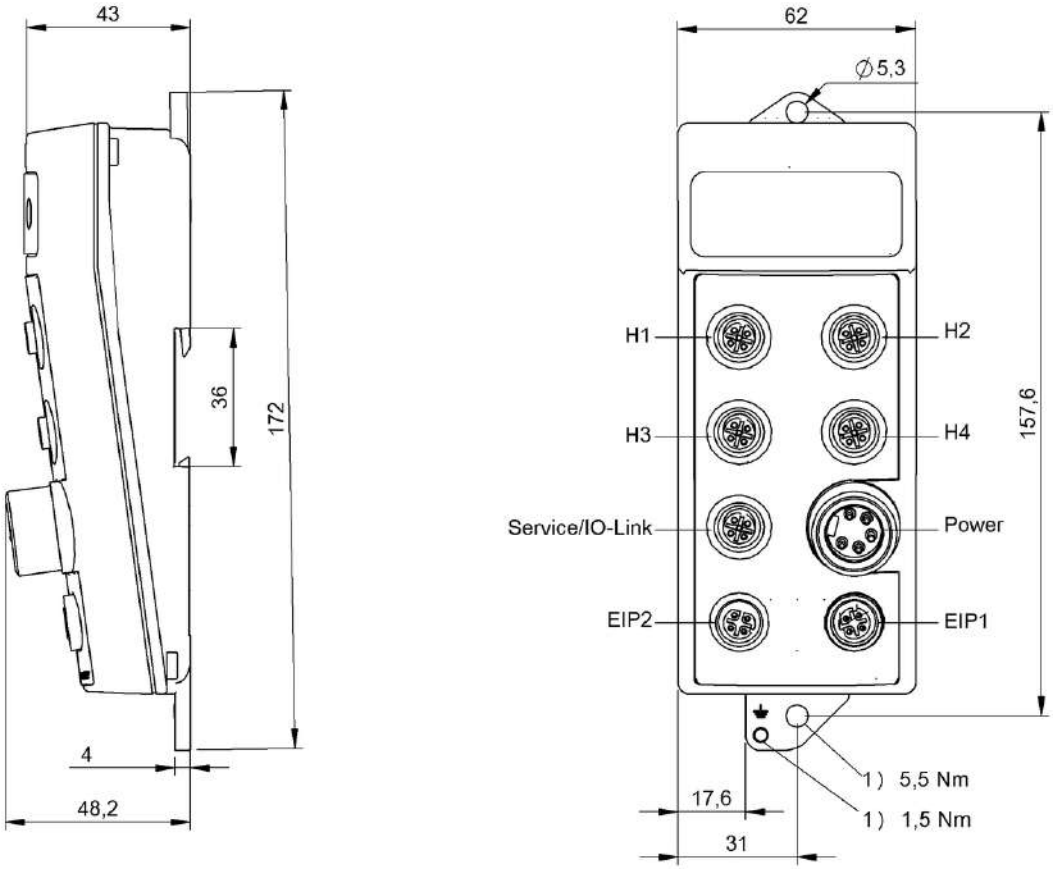
1) Tightening torque

BIS0186, BIS0187



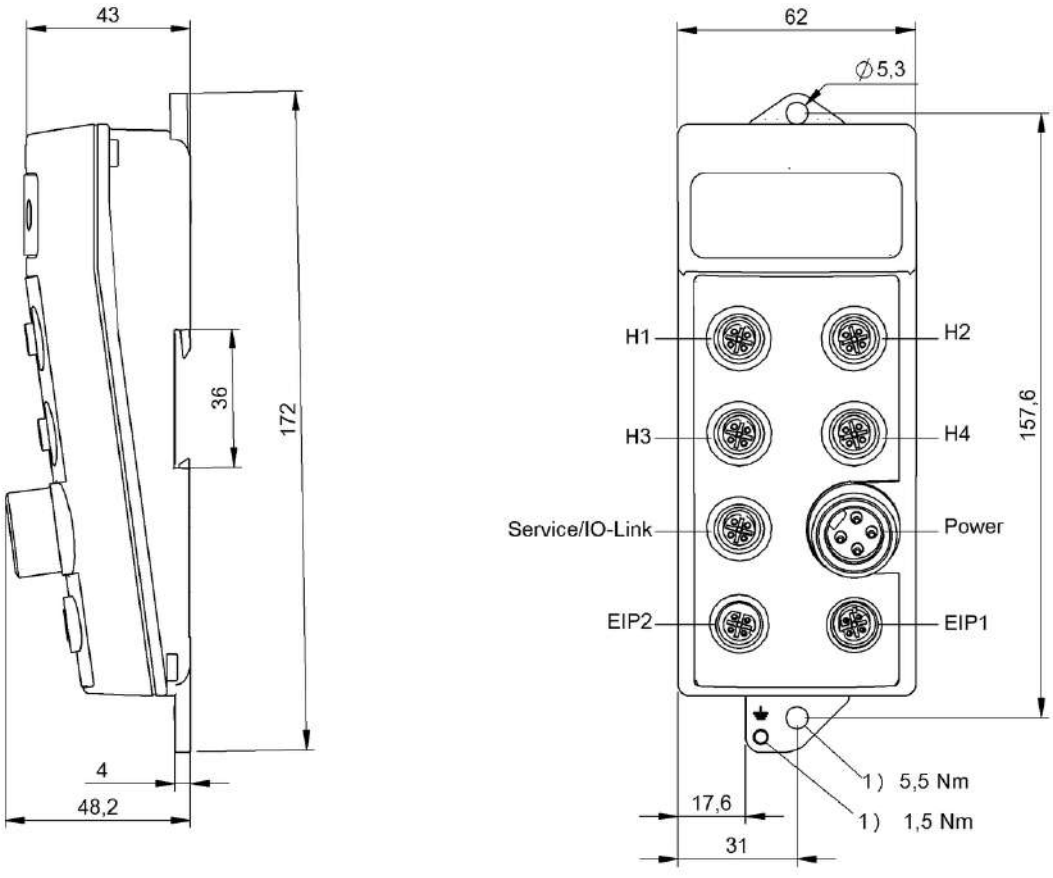
1) Tightening torque

BIS018J, BIS018K



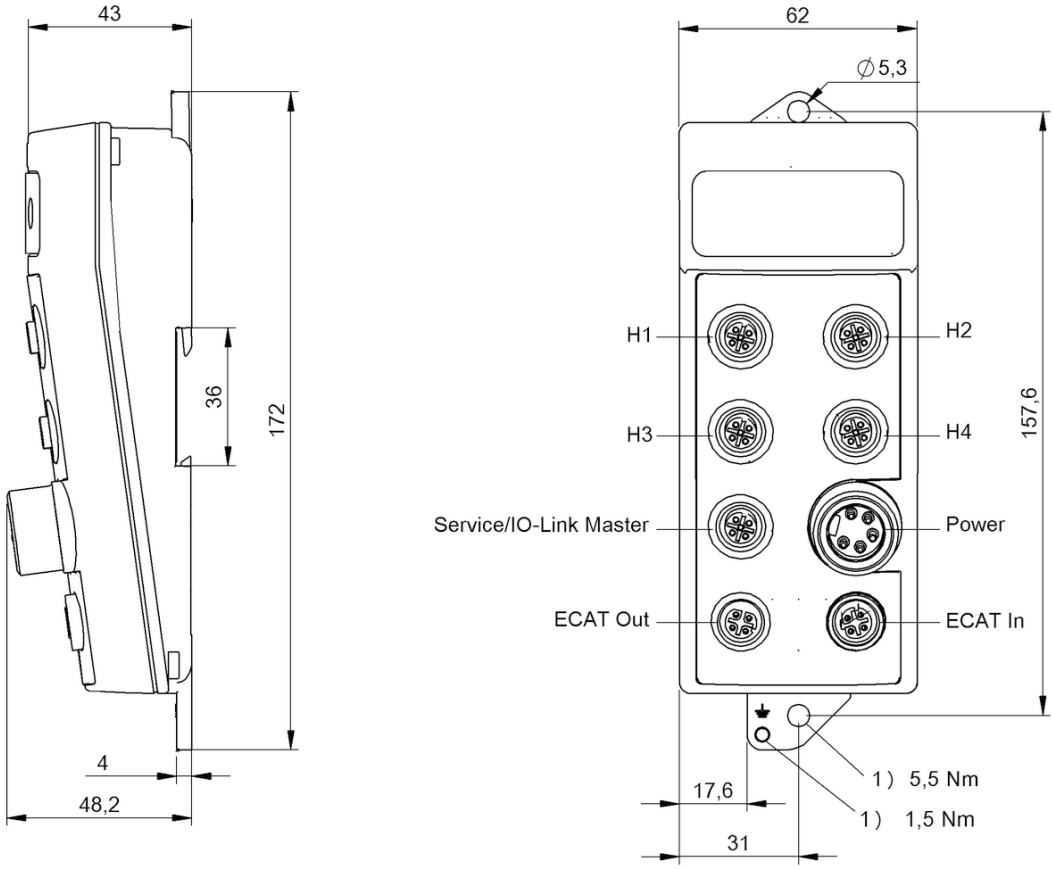
1) Tightening torque

BIS012F, BIS014C



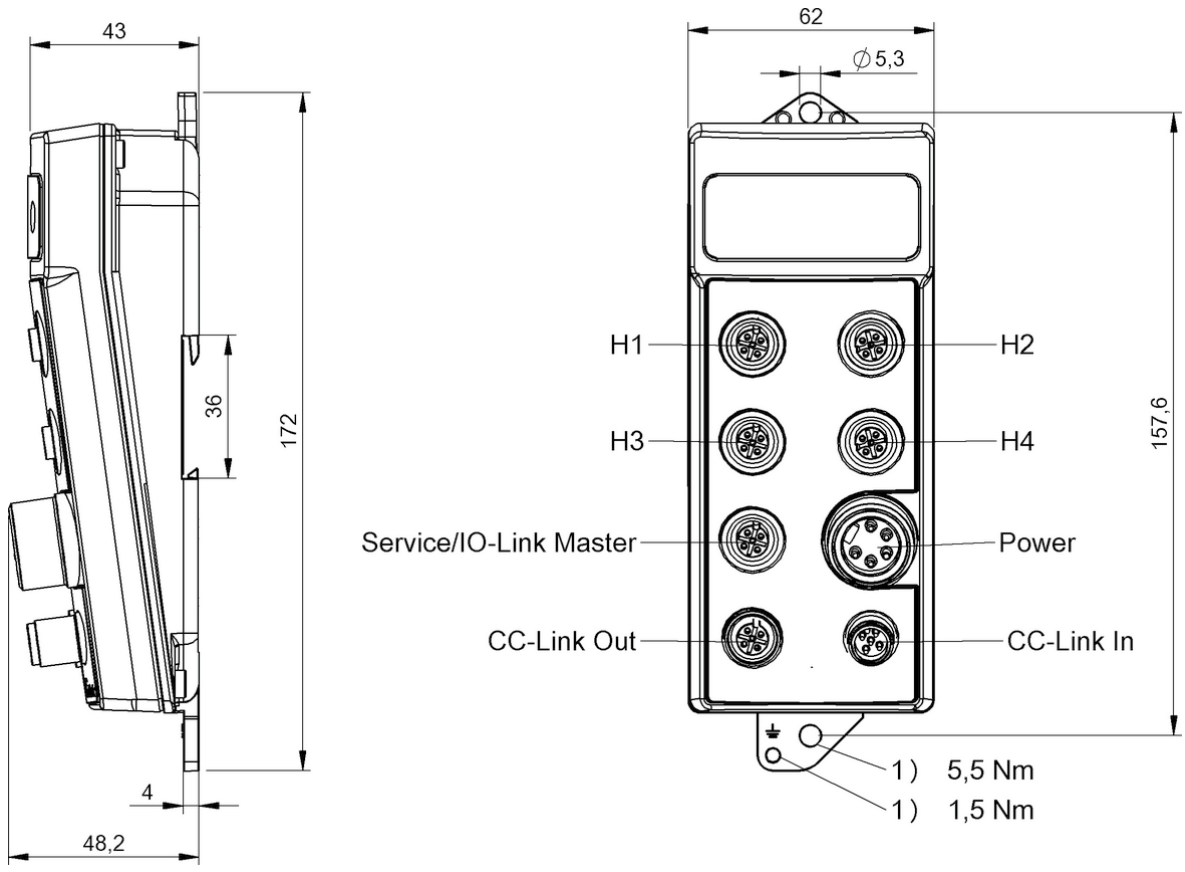
1) Tightening torque

BIS0122, BIS0146



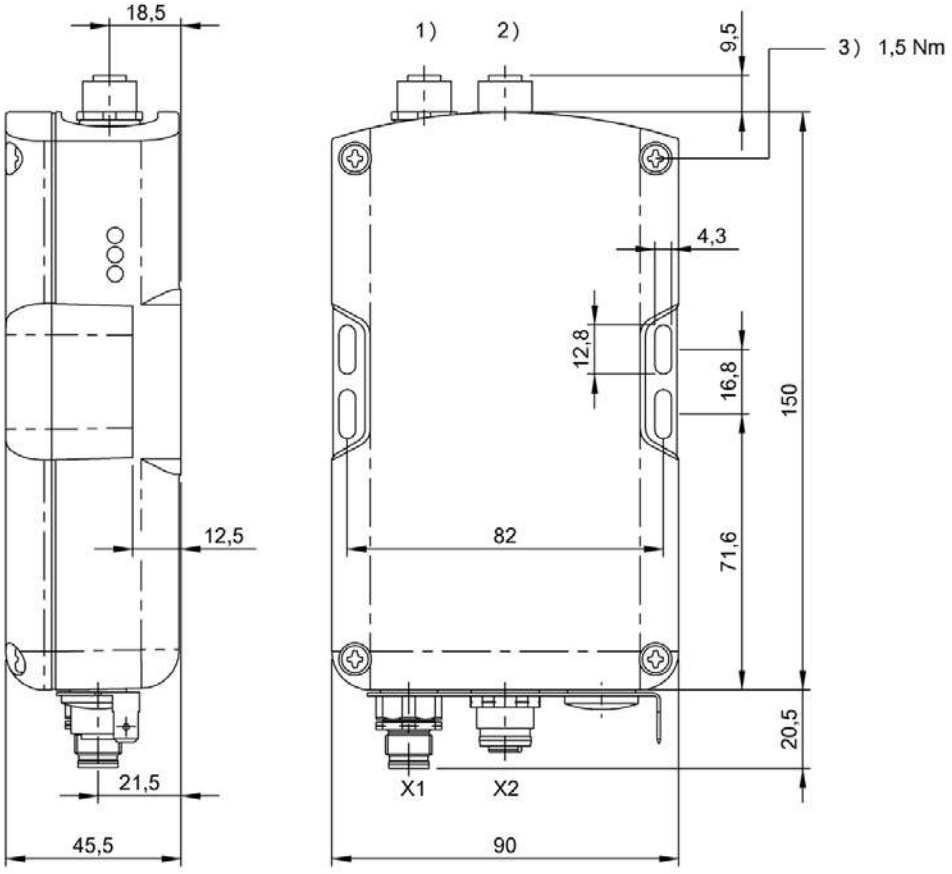
1) Tightening torque

BIS00U9, BIS0147



1) Tightening torque

BIS010P, BIS014E



1) Line 1, 2) Line 2, 3) Tightening torque

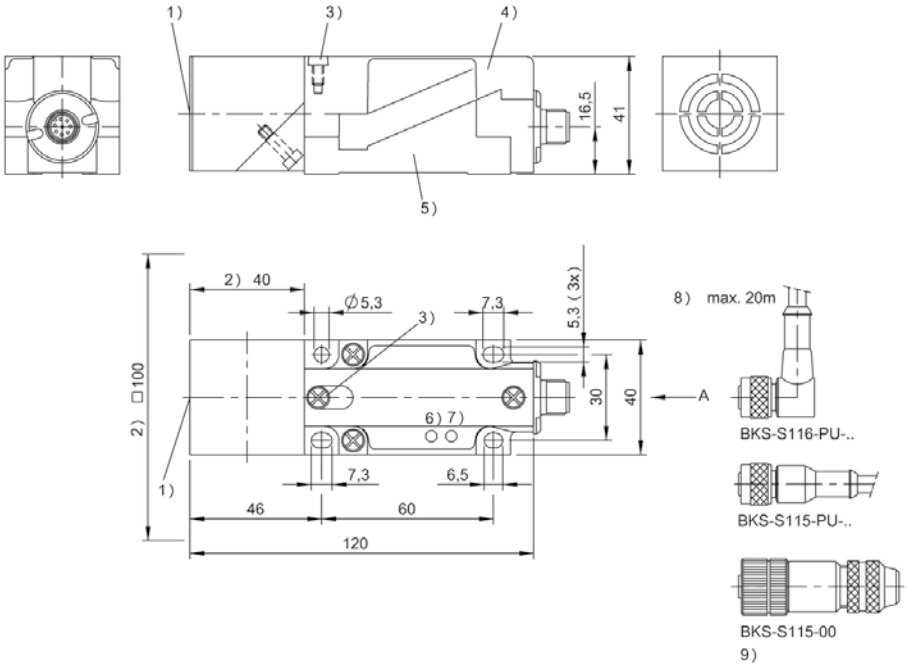
BAE003U

	BIS00C5 BIS L-400-035-001-00-S115
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin
Housing material	PBT
Interface	RS232
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035			**BIS003T BIS0038**			**BIS003U BIS003C**			**BIS003W BIS003F**	
Data carrier distance to metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier clear zone											
Working distance for writing											
Working distance for reading	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Offset at distance											
0	±15	±10		±20	±12	±10	±30	±20	±18	±10	
3	±15	±10		±20	±12	±10	±30	±20	±18	±10	
5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10	
8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10	
10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10	
12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10	
15	±15	±8		±20	±12	±10	±30	±20	±18	±10	
18	±15			±20	±12	±10	±30	±20	±14		
20	±15			±20	±12		±30	±20	±14		
24	±15			±20	±10		±30	±20	±12		
28				±20			±30	±14	±12		
30				±20			±30	±14			
32				±20			±30	±14			
35				±20			±30				
40							±30				

Dimensions in mm



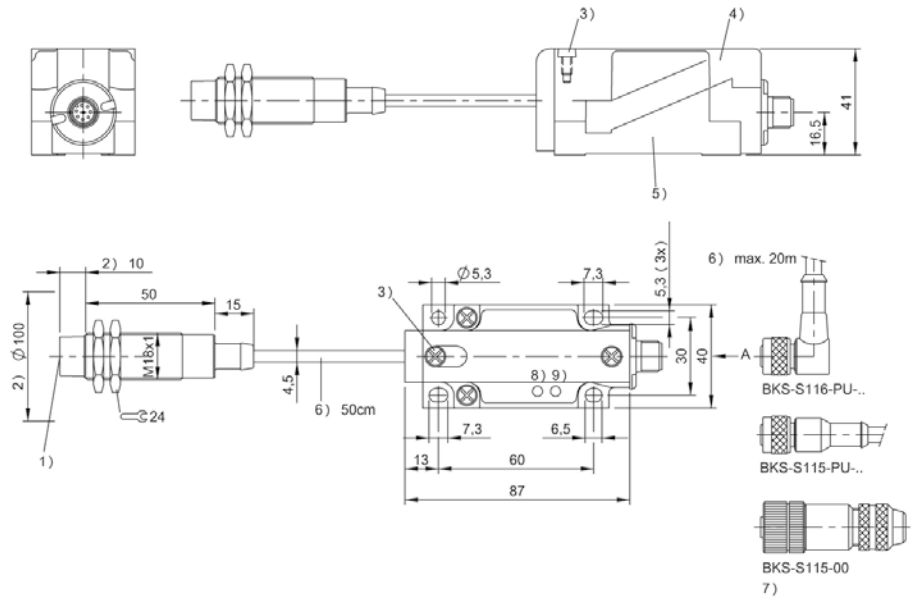
1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present, 8) Cable length, 9) no cable

	BIS00C7 BIS L-400-035-002-00-S115
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	RS232
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
0	±12	±15	±8
3	±12	±15	±8
7	±12	±15	±8
8	±12	±15	±8
10	±12	±15	±8
12	±12	±15	±4
15	±12	±15	±4
18		±15	
20		±15	
25		±6	

Dimensions in mm



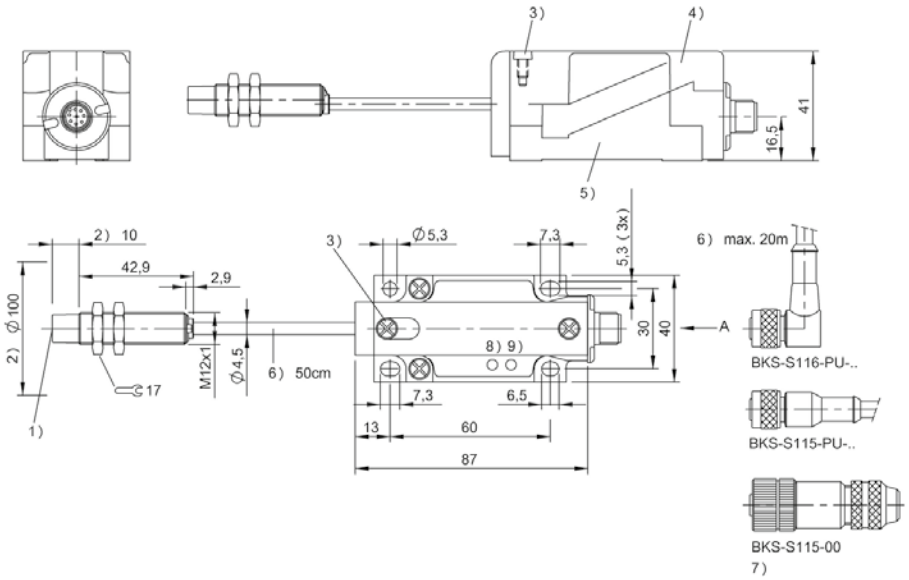
1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) no cable, 8) Power, 9) Tag present

	BIS00C9 BIS L-400-035-003-00-S115
Product Group	LF (125 kHz)
Dimension	Ø 12 x 53 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	RS232
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003W BIS003F
Data carrier distance to metal	metal-free
Data carrier clear zone	
Working distance for writing	
Working distance for reading	0-11
Offset at distance	
0	±6
3	±6
7	±4
8	±4
10	±2

Dimensions in mm



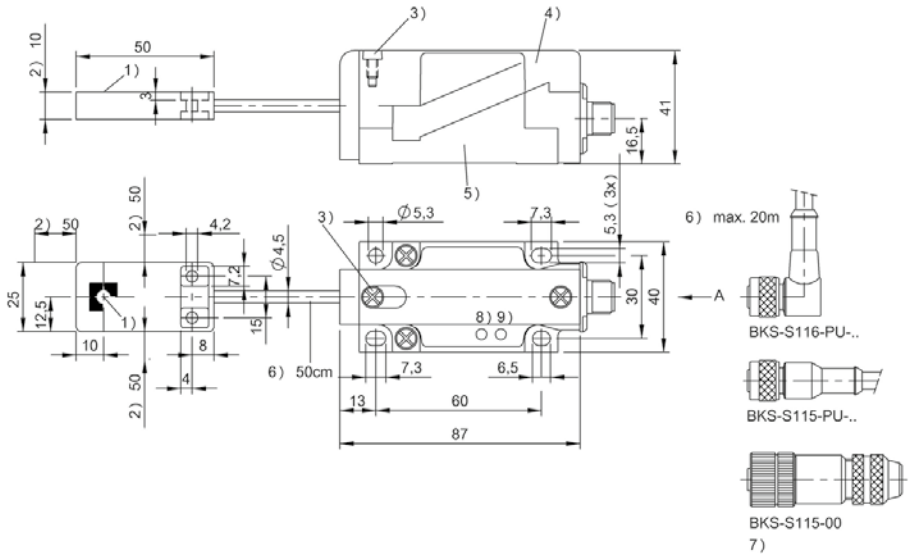
1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) no cable, 8) Power, 9) Tag present

	BIS00CC BIS L-400-035-004-00-S115
Product Group	LF (125 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	ABS, interface PBT
Interface	RS232
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
0	±12	±15	±8
3	±12	±15	±8
7	±12	±15	±8
8	±12	±15	±8
10	±12	±15	±8
12	±12	±15	±4
15	±12	±15	±4
18	±8	±15	
20	±8	±15	
25		±6	

Dimensions in mm



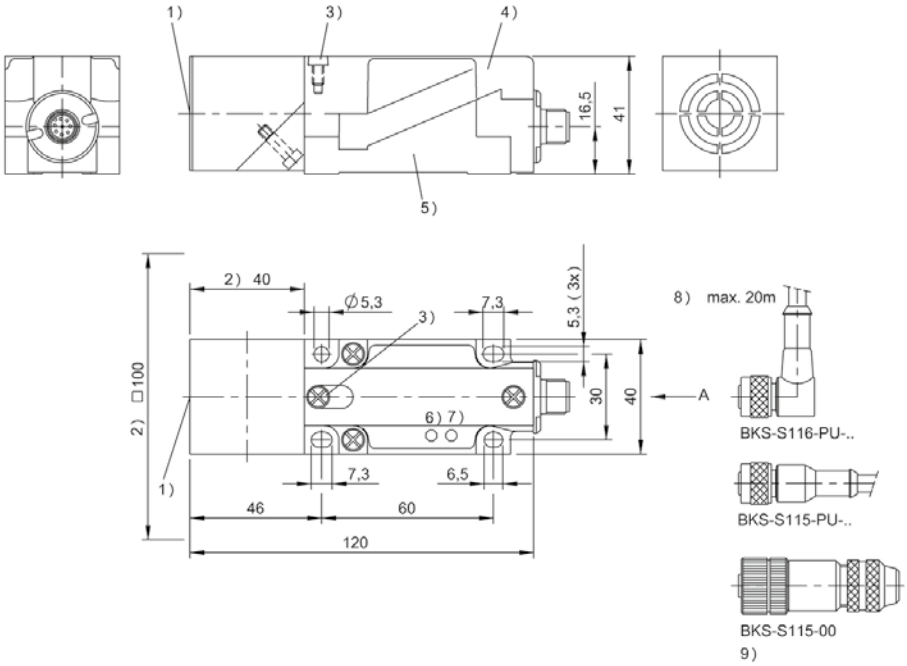
1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) no cable, 8) Power, 9) Tag present

	BIS00C6 BIS L-400-035-001-02-S115
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin
Housing material	PBT
Interface	RS422
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035			BIS003T BIS0038			BIS003U BIS003C			BIS003W BIS003F	
Data carrier distance to metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier clear zone											
Working distance for writing											
Working distance for reading	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Offset at distance											
0	±15	±10		±20	±12	±10	±30	±20	±18	±10	
3	±15	±10		±20	±12	±10	±30	±20	±18	±10	
5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10	
8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10	
10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10	
12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10	
15	±15	±8		±20	±12	±10	±30	±20	±18	±10	
18	±15			±20	±12	±10	±30	±20	±14		
20	±15			±20	±12		±30	±20	±14		
24	±15			±20	±10		±30	±20	±12		
28				±20			±30	±14	±12		
30				±20			±30	±14			
32				±20			±30	±14			
35				±20			±30				
40							±30				

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present, 8) Cable length, 9) no cable

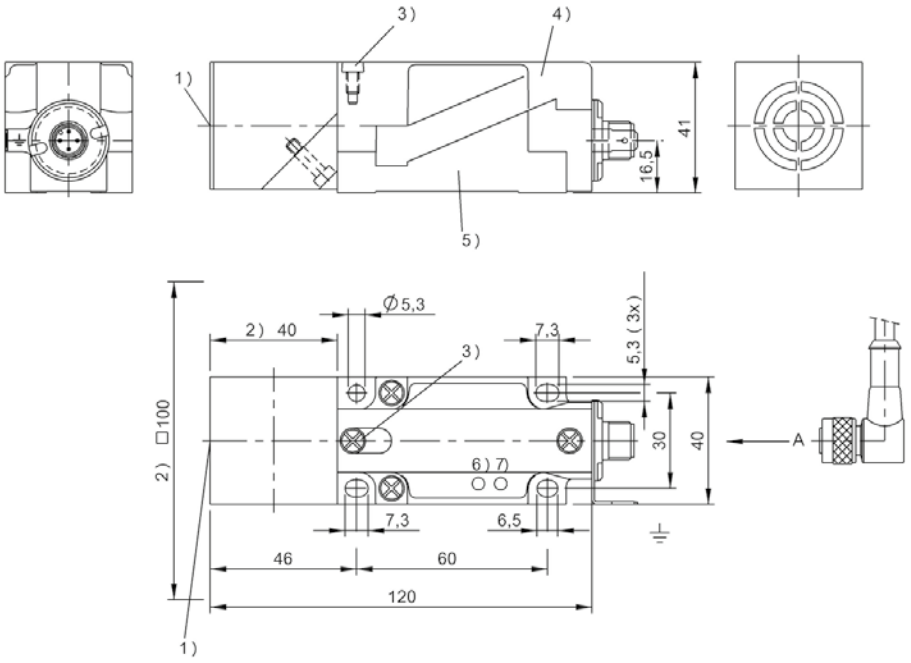
IO-Link, 10 Bytes process data length	**BIS00CZ** BIS L-409-045-001-07-S4
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 4-pin
Housing material	PBT
Interface	IO-Link
Operating voltage Ub	18...30 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Nur mit **IO-Link-Master** verwenden

Appropriate data carrier

	BIS003R BIS0035			**BIS003T BIS0038**			**BIS003U BIS003C**			**BIS003W BIS003F**	
Data carrier distance to metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier clear zone											
Working distance for writing											
Working distance for reading	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Offset at distance											
0	±15	±10		±20	±12	±10	±30	±20	±18	±10	
3	±15	±10		±20	±12	±10	±30	±20	±18	±10	
5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10	
8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10	
10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10	
12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10	
15	±15	±8		±20	±12	±10	±30	±20	±18	±10	
18	±15			±20	±12	±10	±30	±20	±14		
20	±15			±20	±12		±30	±20	±14		
24	±15			±20	±10		±30	±20	±12		
28				±20			±30	±14	±12		
30				±20			±30	±14			
32				±20			±30	±14			
35				±20			±30				
40							±30				

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present

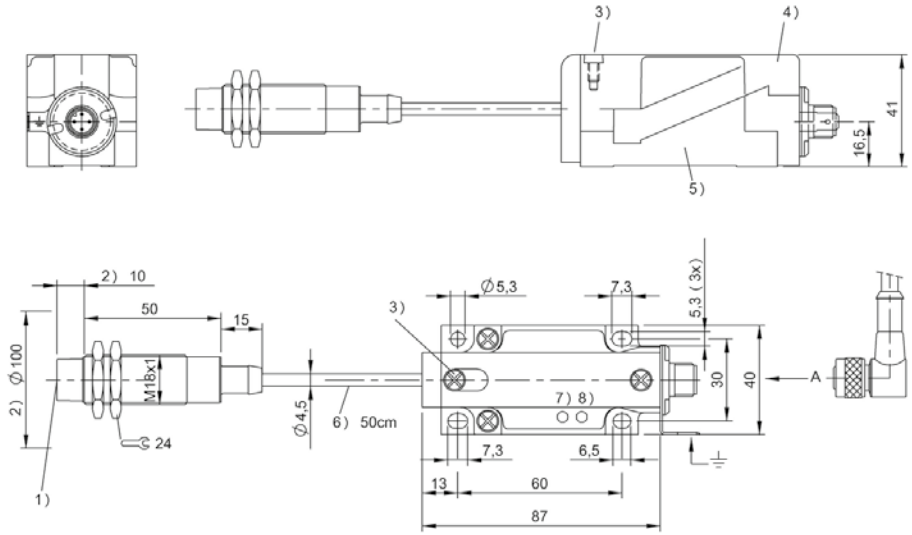
IO-Link, 10 Bytes process data length	**BIS00E0** BIS L-409-045-002-07-S4
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	IO-Link
Operating voltage Ub	18...30 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003R BIS0035		BIS003T BIS0038		BIS003W BIS003F	
Data carrier distance to metal	metal-free		metal-free		metal-free	
Data carrier clear zone						
Working distance for writing						
Working distance for reading	0-23		0-27		0-16	
Offset at distance						
0	±12		±15		±8	
3	±12		±15		±8	
7	±12		±15		±8	
8	±12		±15		±8	
10	±12		±15		±8	
12	±12		±15		±4	
15	±12		±15		±4	
18			±15			
20			±15			
25			±6			

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) Power, 8) Tag present

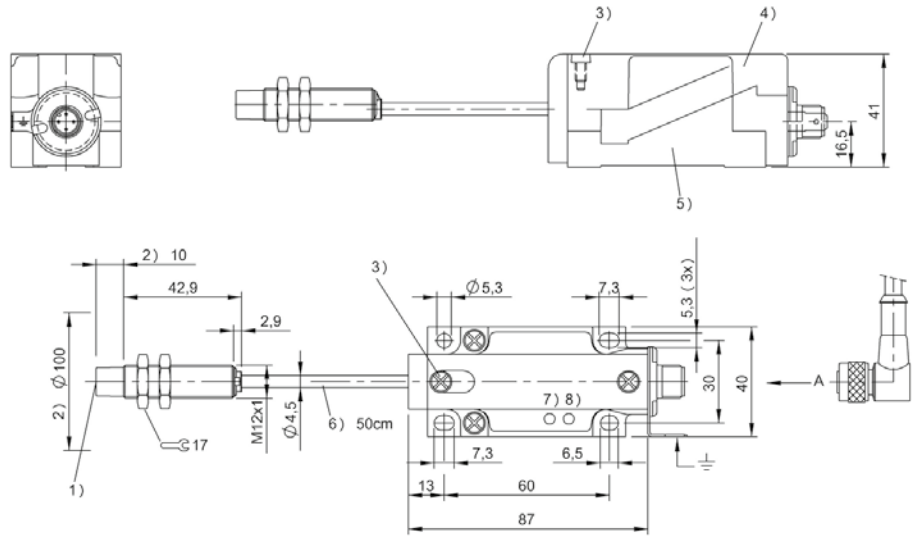
IO-Link, 10 Bytes process data length	**BIS00E1** BIS L-409-045-003-07-S4
Product Group	LF (125 kHz)
Dimension	Ø 12 x 53 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	IO-Link
Operating voltage Ub	18...30 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003W **BIS003F**
Data carrier distance to metal	metal-free
Data carrier clear zone	
Working distance for writing	
Working distance for reading	0-11
Offset at distance	
0	±6
3	±6
7	±4
8	±4
10	±2

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) Power, 8) Tag present

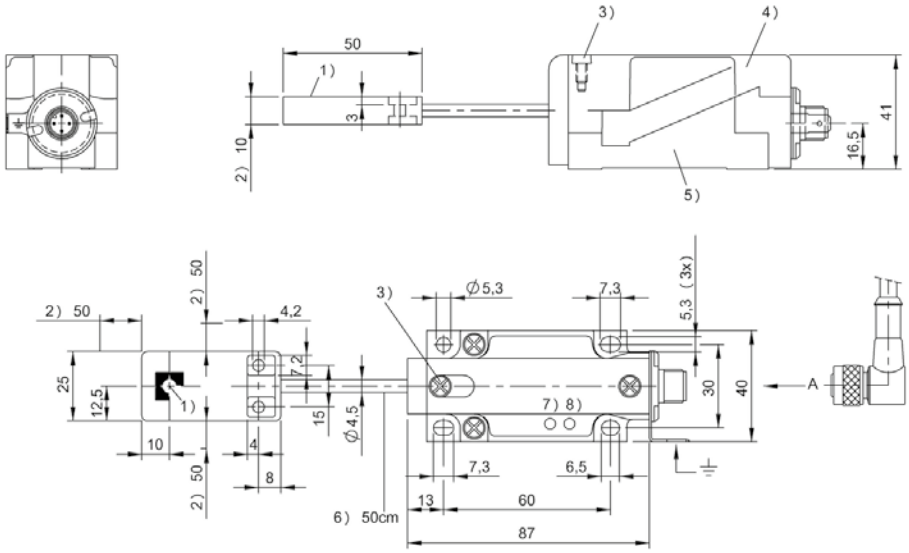
IO-Link, 10 Bytes process data length	**BIS00E2** BIS L-409-045-004-07-S4
Product Group	LF (125 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	ABS, interface PBT
Interface	IO-Link
Operating voltage Ub	18...30 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003R BIS0035		BIS003T BIS0038		BIS003W BIS003F	
Data carrier distance to metal	metal-free		metal-free		metal-free	
Data carrier clear zone						
Working distance for writing						
Working distance for reading	0-23		0-27		0-16	
Offset at distance						
0	±12		±15		±8	
3	±12		±15		±8	
7	±12		±15		±8	
8	±12		±15		±8	
10	±12		±15		±8	
12	±12		±15		±4	
15	±12		±15		±4	
18	±8		±15			
20	±8		±15			
25			±6			

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) Power, 8) Tag present

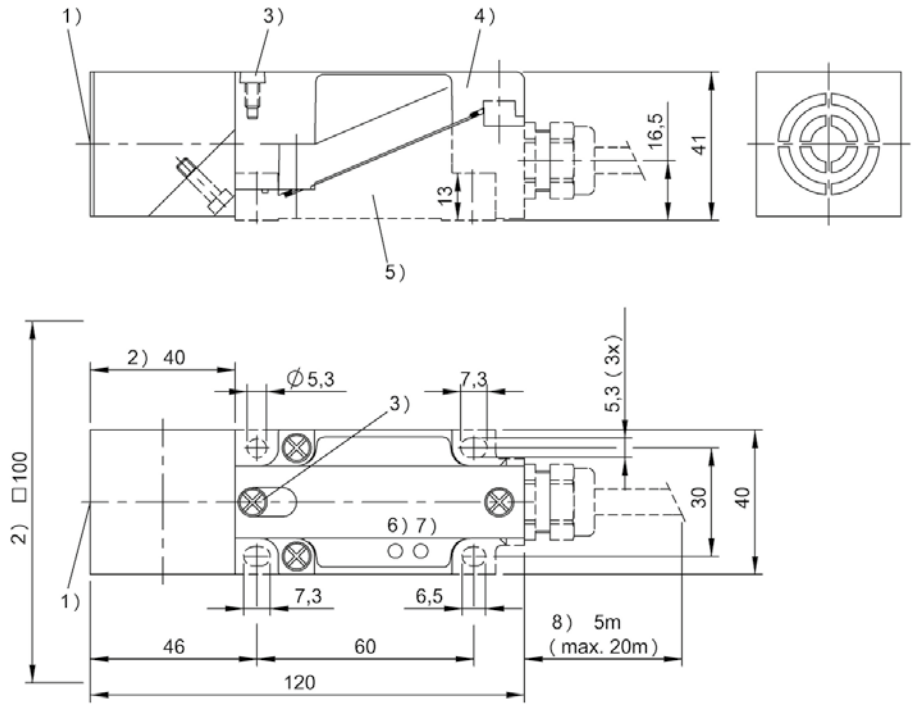
	BIS00CM BIS L-405-033-001-05-MU
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	—
Housing material	PBT
Interface	parallel
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003R BIS0035			BIS003T BIS0038			BIS003U BIS003C			BIS003W BIS003F	
Data carrier distance to metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier clear zone											
Working distance for writing											
Working distance for reading	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Offset at distance											
0	±15	±10		±20	±12	±10	±30	±20	±18	±10	
3	±15	±10		±20	±12	±10	±30	±20	±18	±10	
5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10	
8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10	
10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10	
12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10	
15	±15	±8		±20	±12	±10	±30	±20	±18	±10	
18	±15			±20	±12	±10	±30	±20	±14		
20	±15			±20	±12		±30	±20	±14		
24	±15			±20	±10		±30	±20	±12		
28				±20			±30	±14	±12		
30				±20			±30	±14			
32				±20			±30	±14			
35				±20			±30				
40							±30				

Dimensions in mm



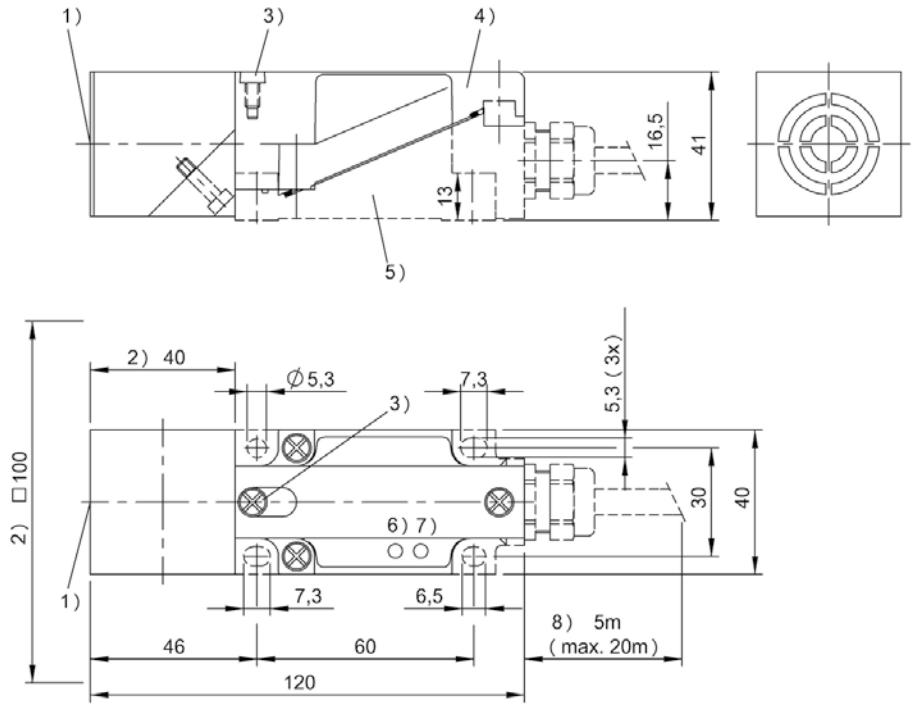
1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present, 8) standard length

	BIS00CT BIS L-405-037-001-05-MU
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	—
Housing material	PBT
Interface	parallel
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

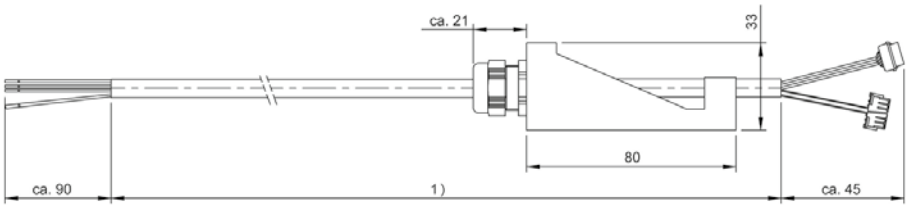
	BIS003R BIS0035			BIS003T BIS0038			BIS003U BIS003C			BIS003W BIS003F	
Data carrier distance to metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier clear zone											
Working distance for writing											
Working distance for reading	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Offset at distance											
0	±15	±10		±20	±12	±10	±30	±20	±18	±10	
3	±15	±10		±20	±12	±10	±30	±20	±18	±10	
5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10	
8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10	
10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10	
12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10	
15	±15	±8		±20	±12	±10	±30	±20	±18	±10	
18	±15			±20	±12	±10	±30	±20	±14		
20	±15			±20	±12		±30	±20	±14		
24	±15			±20	±10		±30	±20	±12		
28				±20			±30	±14	±12		
30				±20			±30	±14			
32				±20			±30	±14			
35				±20			±30				
40							±30				

Dimensions in mm



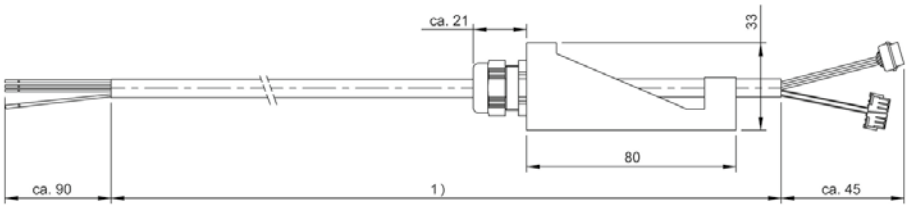
1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present, 8) standard length

	BCC00R2 BIS L-503-PU1-05
Product Group	LF (125 kHz)
Dimension	—
Installation	—
Antenna type	—
Connection	Cable with connector housing, 5.00 m, PU
Housing material	PBT
Interface	parallel
Operating voltage Ub	—
Ambient temperature	—
Protection degree	IP65
Approval/Conformity	CE



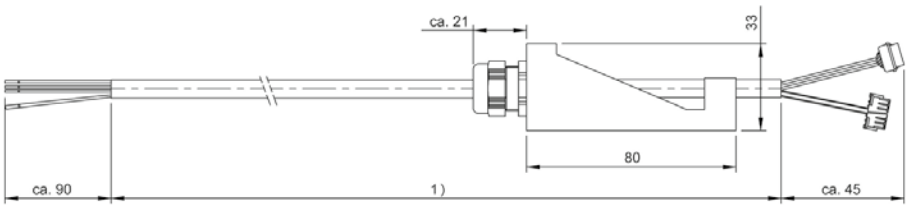
1) Cable length see text

	BCC00R3 BIS L-503-PU1-10
Produktgruppe	LF (125 kHz)
Abmessung	—
Einbau	—
Antennenform	—
Anschluss	Cable with connector housing, 10.00 m, PU
Gehäusematerial	PBT
Schnittstelle	parallel
Betriebsspannung Ub	—
Umgebungstemperatur	—
Schutzart	IP67
Zulassung/Konformität	CE



1) Cable length see text

	BCC00R4 BIS L-503-PU1-15
Product Group	LF (125 kHz)
Dimension	—
Installation	—
Antenna type	—
Connection	Cable with connector housing, 15.00 m, PU
Housing material	PBT
Interface	parallel
Operating voltage Ub	—
Ambient temperature	—
Protection degree	IP65
Approval/Conformity	CE



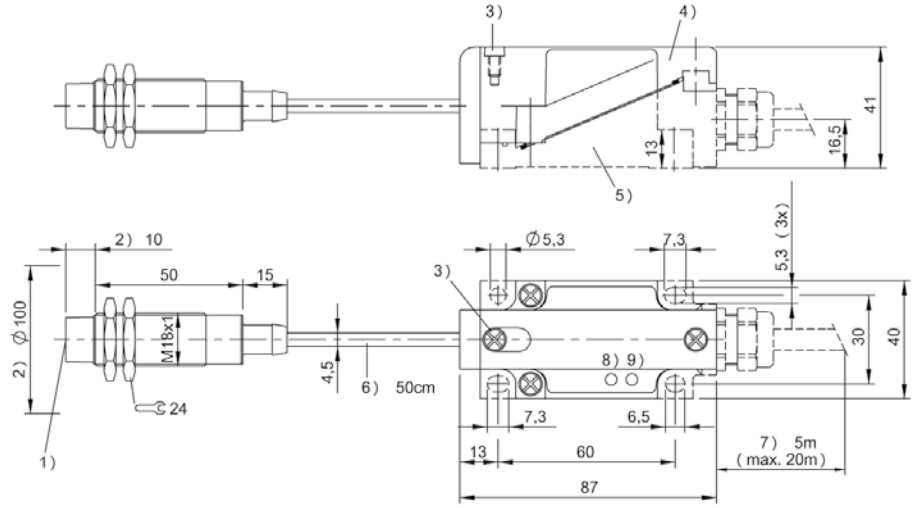
1) Cable length see text

	BIS00CN BIS L-405-033-002-05-MU
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	0.50 m, PU
Housing material	Brass, interface PBT
Interface	parallel
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035		BIS003T BIS0038		BIS003W BIS003F	
Data carrier distance to metal	metal-free		metal-free		metal-free	
Data carrier clear zone						
Working distance for writing						
Working distance for reading	0-23		0-27		0-16	
Offset at distance						
0	±12		±15		±8	
3	±12		±15		±8	
7	±12		±15		±8	
8	±12		±15		±8	
10	±12		±15		±8	
12	±12		±15		±4	
15	±12		±15		±4	
18			±15			
20			±15			
25			±6			

Dimensions in mm



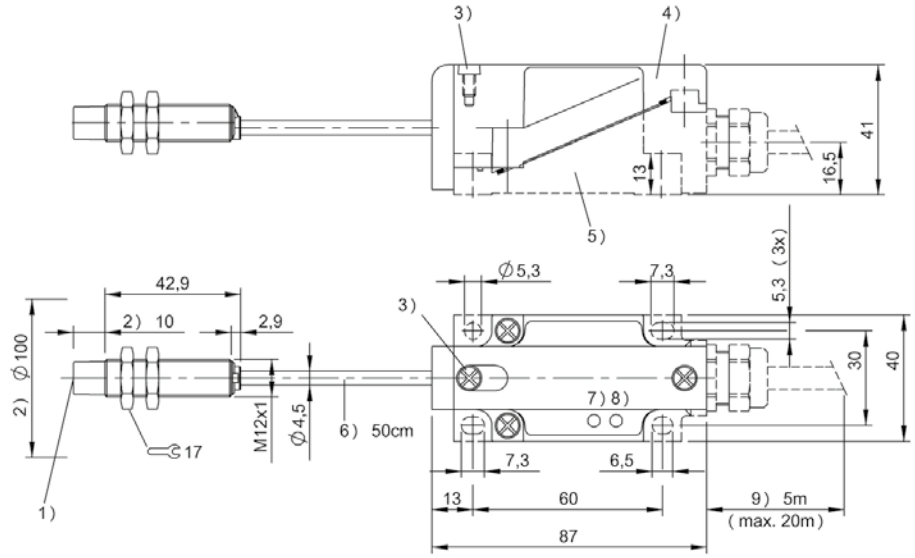
1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) standard length, 8) Power, 9) Tag present

	BIS00CP BIS L-405-033-003-05-MU
Product Group	LF (125 kHz)
Dimension	Ø 12 x 53 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	0.50 m, PU
Housing material	Brass, interface PBT
Interface	parallel
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003W BIS003F
Data carrier distance to metal	metal-free
Data carrier clear zone	
Working distance for writing	
Working distance for reading	0-11
Offset at distance	
0	±6
3	±6
7	±4
8	±4
10	±2

Dimensions in mm



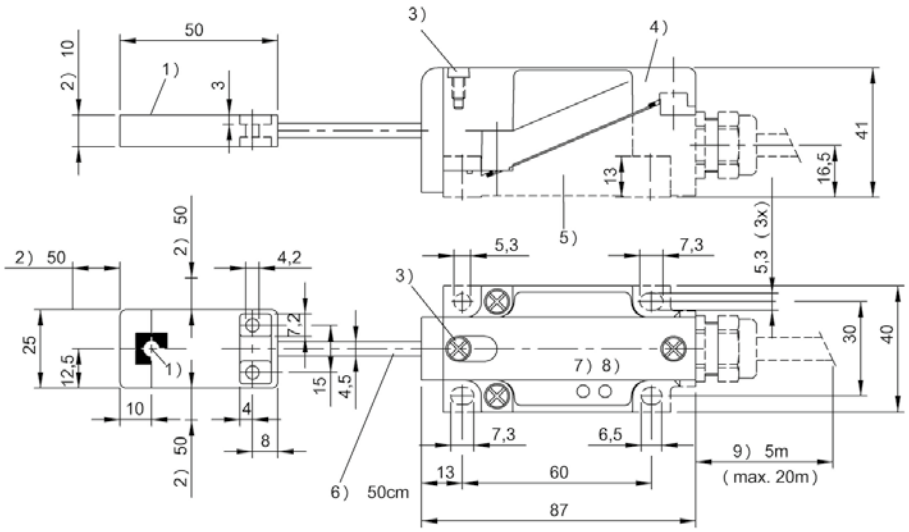
1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) standard length, 8) Power, 9) Tag present

	BIS00CR BIS L-405-033-004-05-MU
Product Group	LF (125 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	0.50 m, PU
Housing material	ABS, interface PBT
Interface	parallel
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035		BIS003T BIS0038		BIS003W BIS003F	
Data carrier distance to metal	metal-free		metal-free		metal-free	
Data carrier clear zone						
Working distance for writing						
Working distance for reading	0-23		0-27		0-16	
Offset at distance						
0	±12		±15		±8	
3	±12		±15		±8	
7	±12		±15		±8	
8	±12		±15		±8	
10	±12		±15		±8	
12	±12		±15		±4	
15	±12		±15		±4	
18	±8		±15			
20	±8		±15			
25			±6			

Dimensions in mm



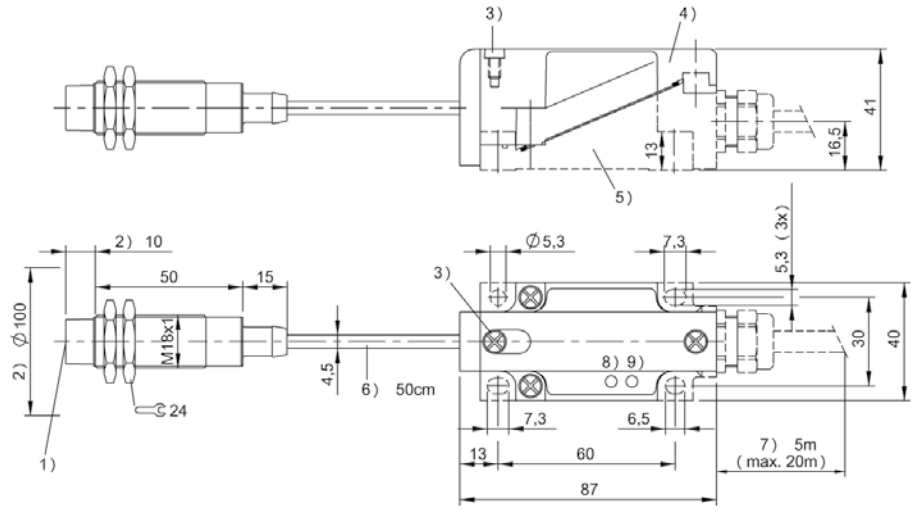
1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) Power, 8) Tag present, 9) standard length

	BIS00CU BIS L-405-037-002-05-MU
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	0.50 m, PU
Housing material	Brass, interface PBT
Interface	parallel
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
0	±12	±15	±8
3	±12	±15	±8
7	±12	±15	±8
8	±12	±15	±8
10	±12	±15	±8
12	±12	±15	±4
15	±12	±15	±4
18		±15	
20		±15	
25		±6	

Dimensions in mm



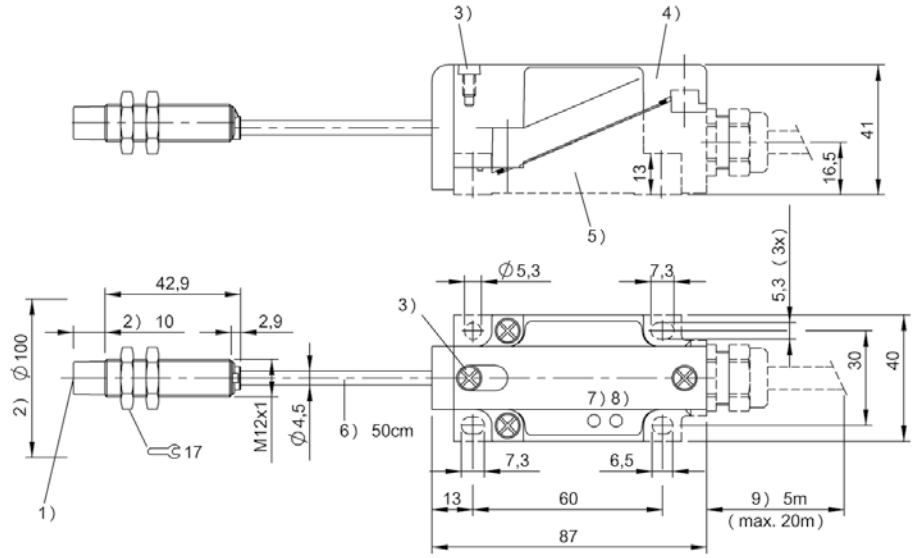
1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) standard length, 8) Power, 9) Tag present

	BIS00CW BIS L-405-037-003-05-MU
Product Group	LF (125 kHz)
Dimension	Ø 12 x 53 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	0.50 m, PU
Housing material	Brass, interface PBT
Interface	parallel
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003W BIS003F
Data carrier distance to metal	metal-free
Data carrier clear zone	
Working distance for writing	
Working distance for reading	0-11
Offset at distance	
0	±6
3	±6
7	±4
8	±4
10	±2

Dimensions in mm



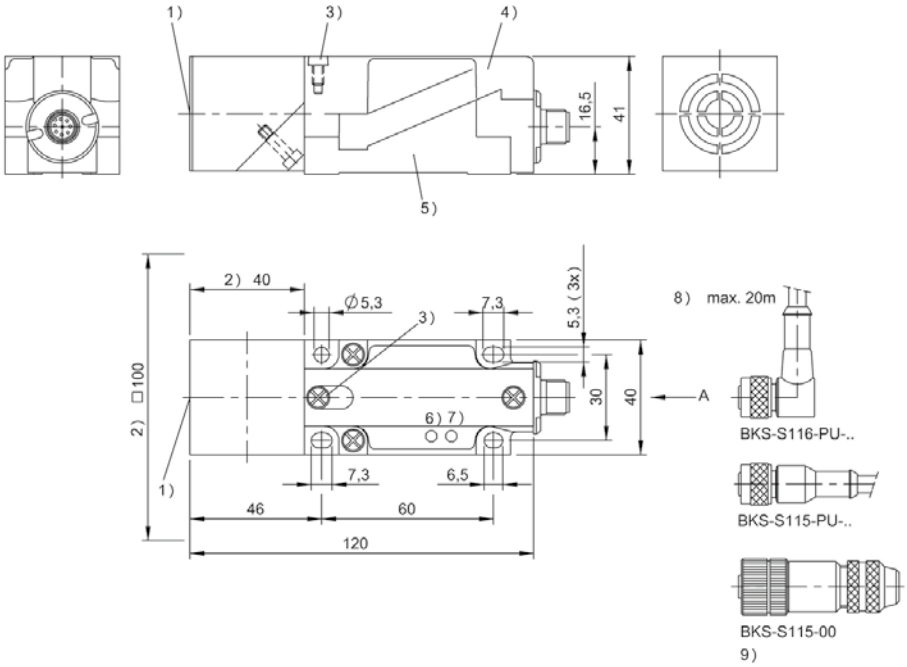
1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) Power, 8) Tag present, 9) standard length

For processor units BAE003W and BAE003U (Easy Loop)	**BIS00CH** BIS L-400-043-001-02-S115
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin
Housing material	PBT
Interface	RS422 (Easy Loop)
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035			**BIS003T BIS0038**			**BIS003U BIS003C**			**BIS003W BIS003F**	
Data carrier distance to metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier clear zone											
Working distance for writing											
Working distance for reading	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Offset at distance											
0	±15	±10		±20	±12	±10	±30	±20	±18	±10	
3	±15	±10		±20	±12	±10	±30	±20	±18	±10	
5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10	
8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10	
10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10	
12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10	
15	±15	±8		±20	±12	±10	±30	±20	±18	±10	
18	±15			±20	±12	±10	±30	±20	±14		
20	±15			±20	±12		±30	±20	±14		
24	±15			±20	±10		±30	±20	±12		
28				±20			±30	±14	±12		
30				±20			±30	±14			
32				±20			±30	±14			
35				±20			±30				
40							±30				

Dimensions in mm



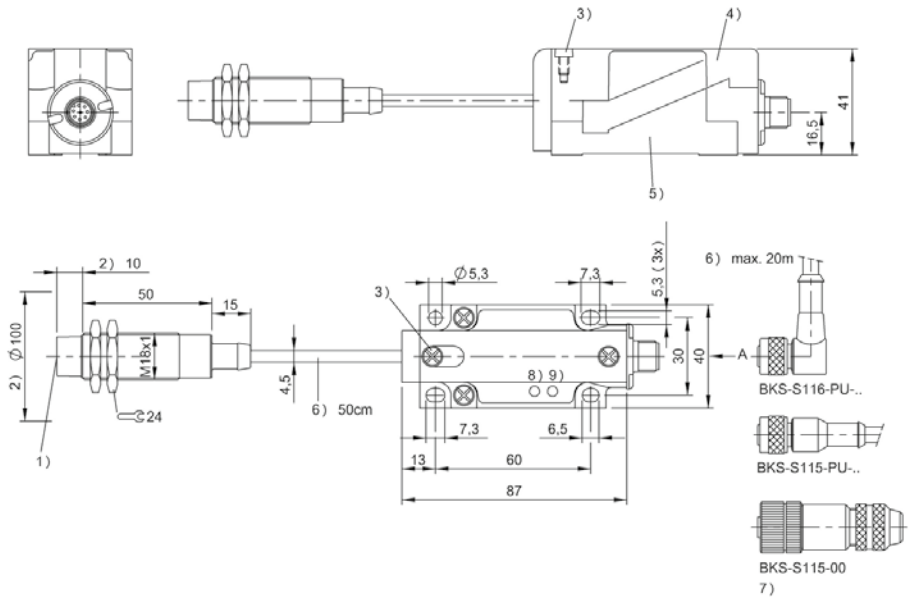
1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present, 8) Cable length, 9) no cable

For processor units BAE003W and BAE003U (Easy Loop)	**BIS00CJ** BIS L-400-043-002-02-S115
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	RS422 (Easy Loop)
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035		BIS003T BIS0038		BIS003W BIS003F	
Data carrier distance to metal	metal-free		metal-free		metal-free	
Data carrier clear zone						
Working distance for writing						
Working distance for reading	0-23		0-27		0-16	
Offset at distance						
0	±12		±15		±8	
3	±12		±15		±8	
7	±12		±15		±8	
8	±12		±15		±8	
10	±12		±15		±8	
12	±12		±15		±4	
15	±12		±15		±4	
18			±15			
20			±15			
25			±6			

Dimensions in mm



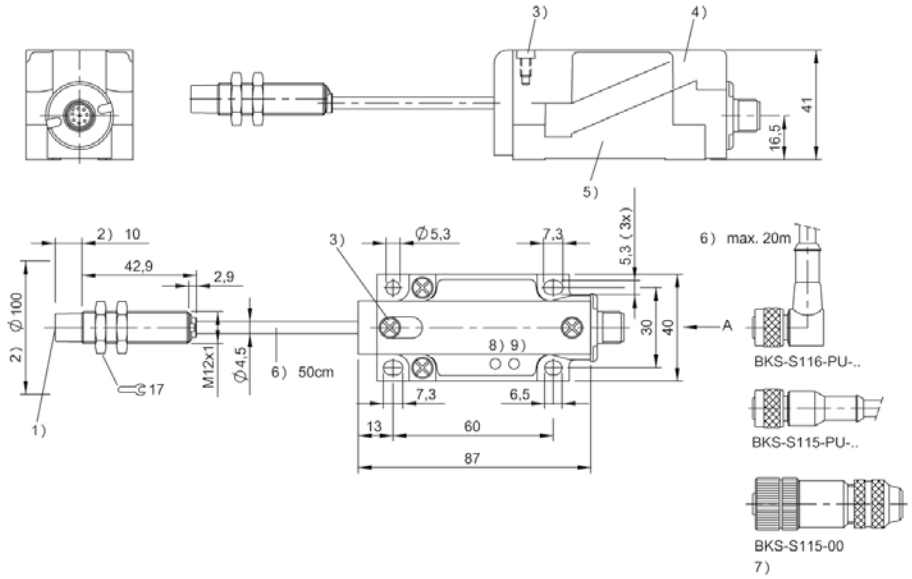
1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) no cable, 8) Power, 9) Tag present

For processor units BAE003W and BAE003U (Easy Loop)	**BIS00CK** BIS L-400-043-003-02-S115
Product Group	LF (125 kHz)
Dimension	Ø 12 x 53 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	RS422 (Easy Loop)
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003W **BIS003F**
Data carrier distance to metal	metal-free
Data carrier clear zone	
Working distance for writing	
Working distance for reading	0-11
Offset at distance	
0	±6
3	±6
7	±4
8	±4
10	±2

Dimensions in mm



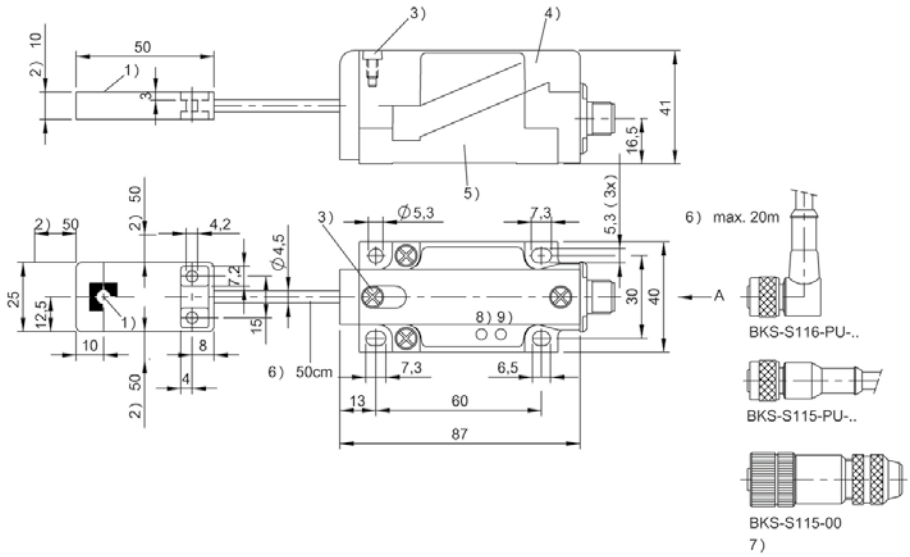
1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) no cable, 8) Power, 9) Tag present

For processor units BAE003W and BAE003U (Easy Loop)	**BIS00CL** BIS L-400-043-004-02-S115
Product Group	LF (125 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	ABS, interface PBT
Interface	RS422 (Easy Loop)
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
0	±12	±15	±8
3	±12	±15	±8
7	±12	±15	±8
8	±12	±15	±8
10	±12	±15	±8
12	±12	±15	±4
15	±12	±15	±4
18	±8	±15	
20	±8	±15	
25		±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) no cable, 8) Power, 9) Tag present

Safety

Safely transport signals

SAFE I/O MODULES

The safe I/O modules from Balluff combine safety and automation technology using IO-Link. They provide both sensor and actuator signals as well as safety-relevant information. The best part: all you need for the safety concept in your plant is an infrastructure for implementing industrial safety in your automation processes. The universal IO-Link interface makes integrating industrial safety technology easier than ever.

At Balluff the core of Safety over IO-Link is the Safety Hub with Profisafe for Profinet. Safety switches and sensors, opto-electronic protective devices or safety command devices are quick and easy to incorporate. All you need is standard M12 cables for connecting virtually any safe field device.

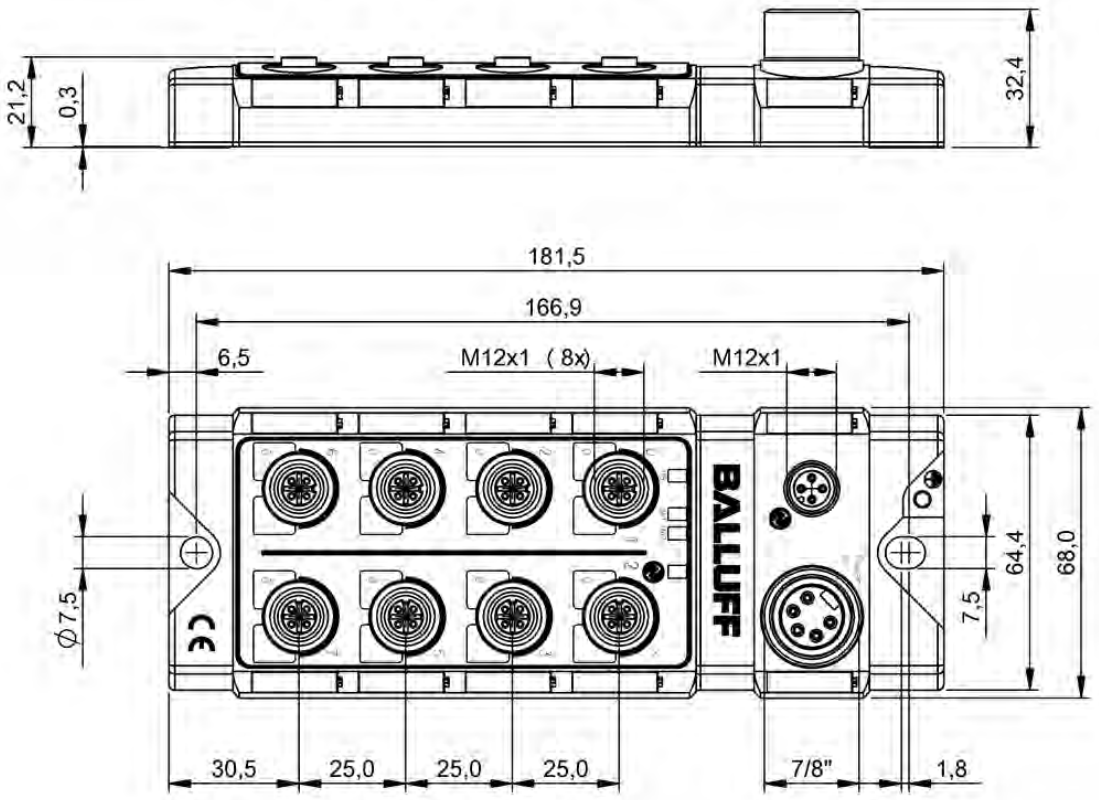
Safe communication with the controller level is via Profisafe for Profinet. Together with our safety components the result is an all-round safe system on which you can rely.

The most important benefits

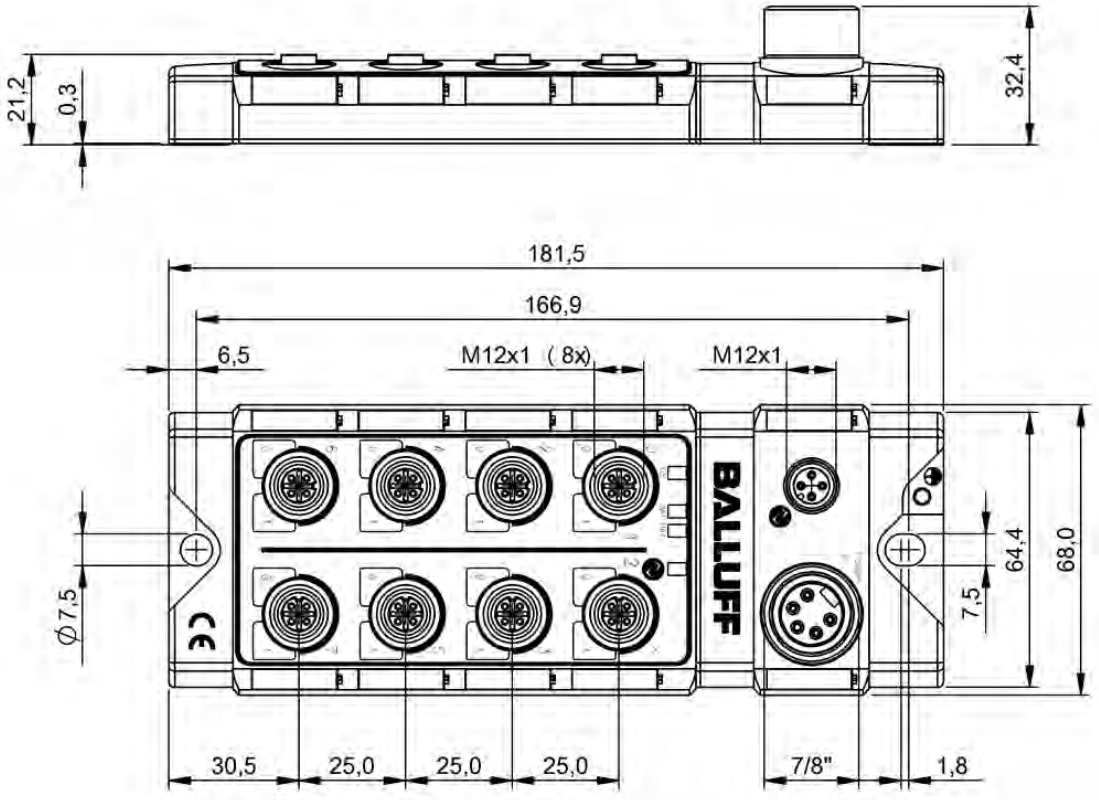
- For safety applications up to PLe/SIL3
- Reduce IP addresses
- Standardized wiring concept with M12 cables, safe interlocking devices can be directly connected
- Simple device replacement
- Nearly any safety device can be connected

	BNI0033 BNI IOL-252-000-Z013	BNI003W BNI IOL-252-S01-Z013	
Performance Level	—	—	
Safety category (EN ISO 13849-1)	—	—	
SIL (IEC 61508)	—	—	
SIL CL (EN 62061)	—	—	
Response time max.	—	—	
Approval/Conformity	CE	CE	
Current sum US, sensor	—	—	
Current sum UA, actuator	9.0 A	9.0 A	
Digital inputs	—	—	
Digital outputs	8x PNP	8x PNP	
Interface	IO-Link 1.0	IO-Link 1.0	
Connection slots	—	—	
Dimension	68 x 32.4 x 181.5 mm	68 x 32.4 x 181.5 mm	
Ambient temperature	-5...70 °C	-5...70 °C	
Protection degree	IP67	IP67	
Housing material	Zinc, die-cast	Zinc, die-cast	
Productview	Page 16	Page 16	

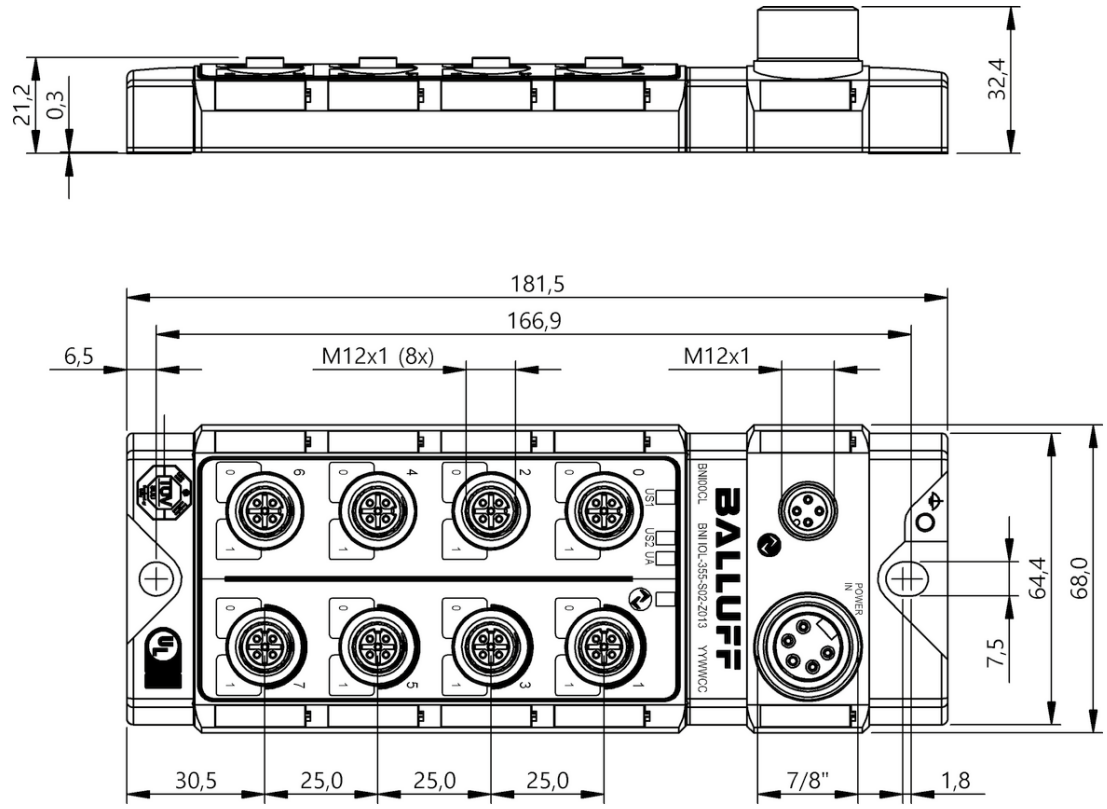
	BNI0034 BNI IOL-256-000-Z013	BNI003Y BNI IOL-256-S01-Z013	BNI00CL BNI IOL-355-S02-Z013	
	—	—	d	
	—	—	3	
	—	—	2	
	—	—	2	
	—	—	1 ms	
	CE	CE	CE, TÜV, IO-Link, cULus, UL-File E319845, VOL.1 SEC.1	
	—	—	9 A	
	9.0 A	9.0 A	9 A	
	—	—	8x PNP, Type3	
	16x PNP	16x PNP	8x yes	
	IO-Link 1.0	IO-Link 1.0	IO-Link 1.1	
	—	—	8x M12x1-Female, 5-pole, A-coded	
	68 x 32.4 x 181.5 mm	68 x 32.4 x 181.5 mm	68 x 32.4 x 181.5 mm	
	-5...70 °C	-5...70 °C	-5...55 °C	
	IP67	IP67	IP67	
	Zinc, die-cast	Zinc, die-cast	Die-cast zinc	
	Page 16	Page 16	Page 17	



BNI0033, BNI003W



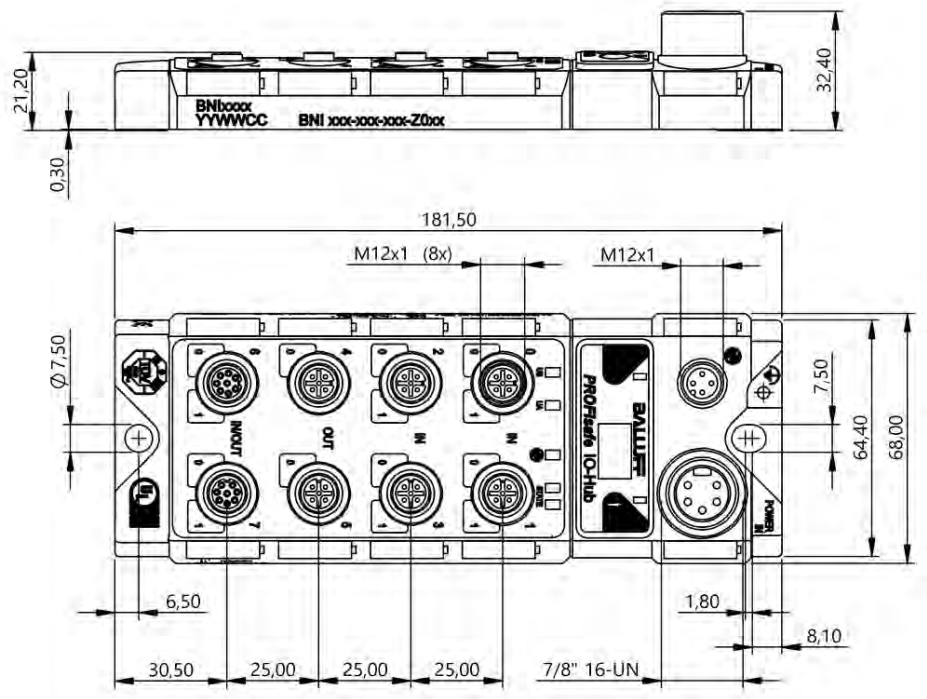
BNI0034, BNI003Y


21,2
0,3
32,4
181,5
166,9
6,5
M12x1 (8x)
M12x1
BNI00CL
BNI IOL-35S-S02-Z013
YYWWCC
POWER IN
64,4
68,0
7,5
30,5
25,0
25,0
25,0
7/8"
1,8

BNI00CL

Performance Level	
Safety category (EN ISO 13849-1)	
SIL (IEC 61508)	
SIL CL (EN 62061)	
Response time max.	
Approval/Conformity	
Number of safe inputs	
Number of safe inputs	
Current sum US, sensor	
Current sum UA, actuator	
Digital inputs	
Interface	
Connection slots	
Dimension	
Ambient temperature	
Protection degree	
Housing material	
Productview	

BNI0098 BNI IOF-329-P02-Z038
e
4
3
3
20 ms
CE, TÜV, cULus, UL-File E319845, VOL.1 SEC.1
12
2
4.8 A
8 A
12x PNP, Type 3
PROFIsafe over IO-Link
2x M12x1-Female, 8-pole, A-coded 6x M12x1-Female, 5-pole, A-coded
68 x 32.4 x 181.5 mm
-5...55 °C
IP67
Die-cast zinc
Page 20


21,20
0,30
32,40
BNIxxxx
YYWWCC
BNI xxx-xxx-xxx-Z0xx
181,50
M12x1 (8x)
M12x1
Ø7,50
7,50
64,40
68,00
IN/OUT
OUT
IN
IN
PROFIsafe IO-Hub
BALLUFF
POWER IN
6,50
1,80
8,10
30,50
25,00
25,00
25,00
7/8" 16-UN

BNI0098

For high plant safety

SAFETY SWITCHES AND SAFETY SENSORS

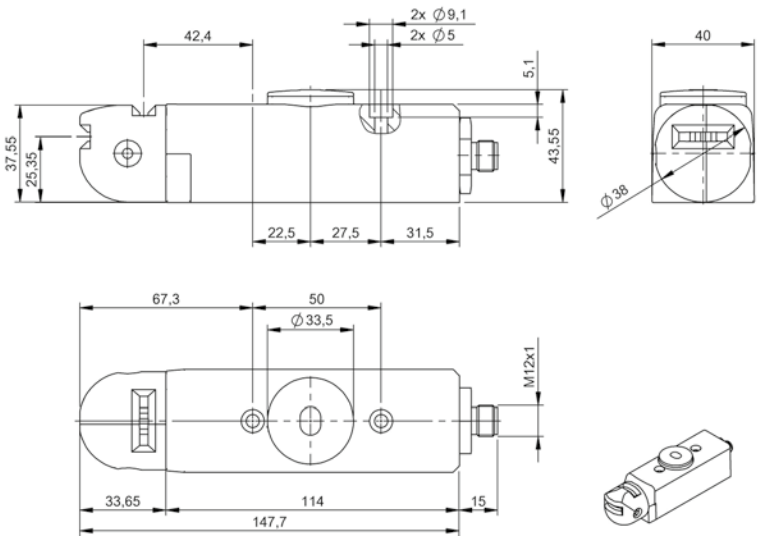
Balluff safety switches and safety sensors are designed for many different application situations. Our safe switches and sensors protect both man and machine alike. The safety switches and sensors offer you a variety of operating principles:
Inductive for non-contact safe detection of position and end-of-travel of metallic objects, electromechanical such as REED or RFID-based for access or position security for both personal and machine protection.

You save time and money thanks to universal M12 standard cables. You also avoid wiring errors, gain a clear overview and ensure reliable monitoring.

The most important benefits

- Safety switches and sensors for a variety of applications
- Rugged housing versions with LED function indicator
- Suitable for safety applications up to PLe/SIL3
- Savings of time and money plus prevention of errors thanks to standardized M12 connection technology
- Reduced installation expense and space requirements
- Also suitable for heavy protective equipment
- Manipulation-resistant
- Insensitive to vibration and imprecise door guides

	BID0005 BID F101-2M100-M20ZZ0-S92
B10d (EN ISO 13849-1)	5 million Switching operations
Coding level (EN ISO 14119)	low
Approval/Conformity	TÜV NRTL, CE, RoHS, TÜV
Operating principle	mechanical - force, contact
No of contacts	2x positive opening
Utilization category	AC-15, DC -13
Approach direction	laterally + above
Life expectancy mechanical	1 million Switching operations
Connection	M12x1-Male, 5-pole, A-coded
Dimension	40 x 147.7 x 43.5 mm
Ambient temperature	0...40 °C
Protection degree	IP65
Housing material	Aluminum
Productview	Page 25


2x ∅9,1
2x ∅5
42,4
40
5,1
37,55
25,35
43,55
∅38
22,5
27,5
31,5
67,3
50
∅33,5
M12x1
33,65
114
15
147,7

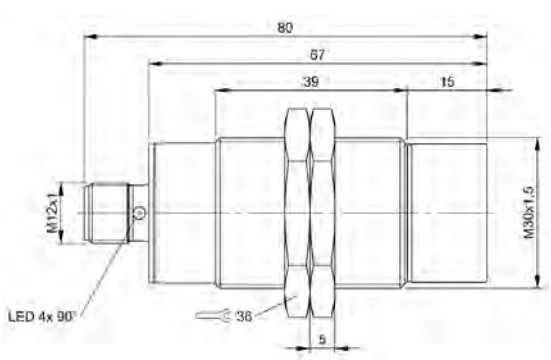
BID0005

	BES0577 BES M30EP-PFC12F-S04G-D12	**BES057A** BES Q40ZU-PFC15B-S04G-D12	**BES057C** BES Q40ZU-PFC20F-S04G-D12	
Performance Level	e	e	e	
Safety category (EN ISO 13849-1)	3	3	3	
SIL (IEC 61508)	3	3	3	
SIL CL (EN 62061)	3	3	3	
Response time max.	200 ms	200 ms	200 ms	
Approval/Conformity	CE, TÜV, cULus	CE, TÜV, cULus	CE, TÜV, cULus	
Operating principle	non-contact (inductive)	non-contact (inductive)	non-contact (inductive)	
Approach direction	any to sensing surface	any to sensing surface	any to sensing surface	
Assured switch on distance Sao	12 mm	15 mm	20 mm	
Assured switch off distance Sar	30 mm	30 mm	45 mm	
Connection	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Switching output	2x PNP OSSD	2x PNP OSSD	2x PNP OSSD	
Installation	non-flush	Shielded on one side	non-flush	
Dimension	Ø 30 x 80 mm	40 × 66 mm	40 × 66 mm	
Ambient temperature	-25...70 °C, for service life ≤ 10 years 10…40 °C, for service life ≤ 20 years	-25...70 °C, for service life ≤ 10 years 10…40 °C, for service life ≤ 20 years	-25...60 °C, for service life ≤ 10 years 10…40 °C, for service life ≤ 20 years	
Protection degree	IP68, IP69K	IP67	IP67	
Housing material	Stainless steel (1.4404)	Die-cast zinc	Die-cast zinc	
Productview	Page 28	Page 28	Page 28	

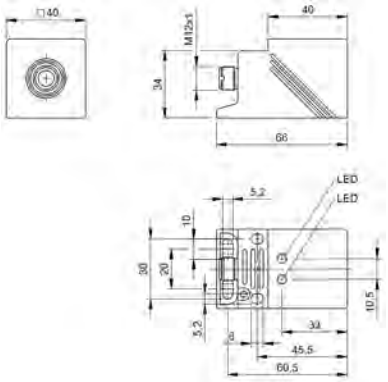




	BES0574 BES M12EN-PFC40F-S04G-D11	BES0575 BES M18EN-PFC80F-S04G-D11	BES0576 BES M18MN-PFC50B-S04G-D11	BES0578 BES M30EN-PFC15F-S04G-D11	BES0579 BES M30MN-PFC10B-S04G-D11
	d	d	d	d	d
	2	2	2	2	2
	2	2	2	2	2
	2	2	2	2	2
	1 ms	1 ms	1 ms	1 ms	1 ms
	CE, TÜV, cULus	CE, TÜV, cULus	CE, TÜV, cULus	CE, TÜV, cULus	CE, TÜV, cULus
	non-contact (inductive)	non-contact (inductive)	non-contact (inductive)	non-contact (inductive)	non-contact (inductive)
	any to sensing surface	any to sensing surface	any to sensing surface	any to sensing surface	any to sensing surface
	4 mm	8 mm	5 mm	15 mm	10 mm
	6 mm	12 mm	7 mm	22 mm	15 mm
	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded
	PNP OSSD, PNP normally closed (NC)	PNP OSSD, PNP normally closed (NC)	PNP OSSD, PNP normally closed (NC)	PNP OSSD, PNP normally closed (NC)	PNP OSSD, PNP normally closed (NC)
	non-flush	non-flush	for flush mounting	non-flush	for flush mounting
	Ø 12 x 70 mm	Ø 18 x 70.5 mm	Ø 18 x 70.5 mm	Ø 30 x 70 mm	Ø 30 x 70 mm
	-25...70 °C, for service life ≤ 10 years 10…40 °C, for service life ≤ 20 years	-25...70 °C, for service life ≤ 10 years 10…40 °C, for service life ≤ 20 years	-25...70 °C, for service life ≤ 10 years 10…40 °C, for service life ≤ 20 years	-25...70 °C, for service life ≤ 10 years 10…40 °C, for service life ≤ 20 years	-25...70 °C, for service life ≤ 10 years 10…40 °C, for service life ≤ 20 years
	IP67	IP67	IP67	IP67	IP67
	Stainless steel (1.4404)	Stainless steel (1.4571)	Brass	Stainless steel (1.4571)	Brass
	Page 28	Page 28	Page 28	Page 28	Page 28

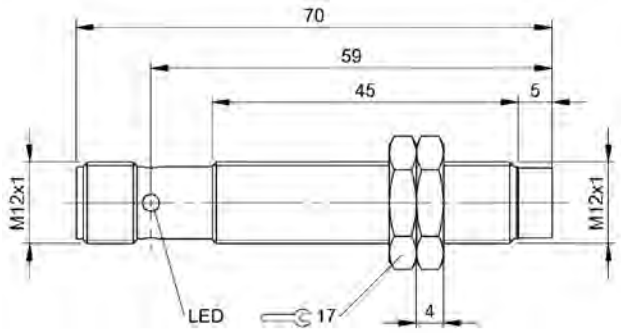


BES0577

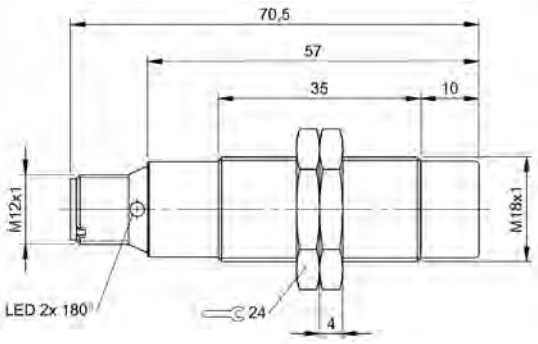


1) Sensing surface

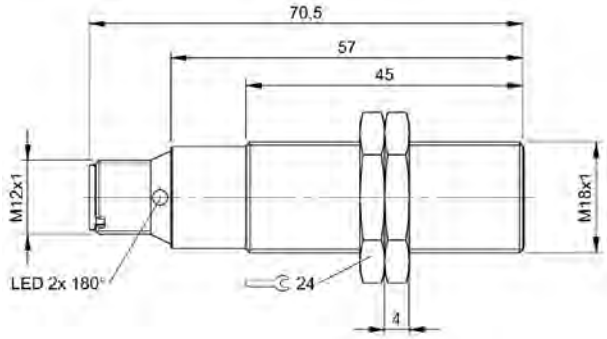
BES057A, BES057C



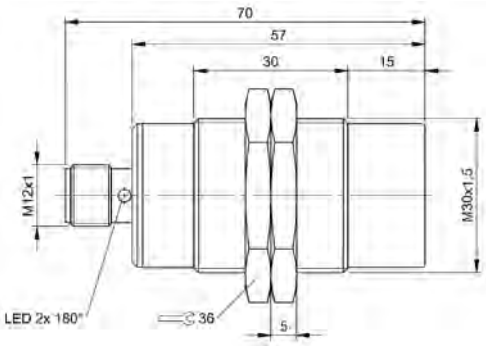
BES0574



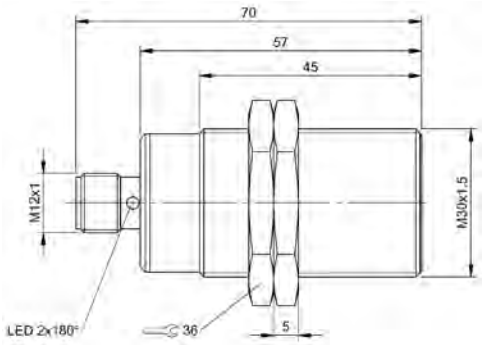
BES0575



BES0576



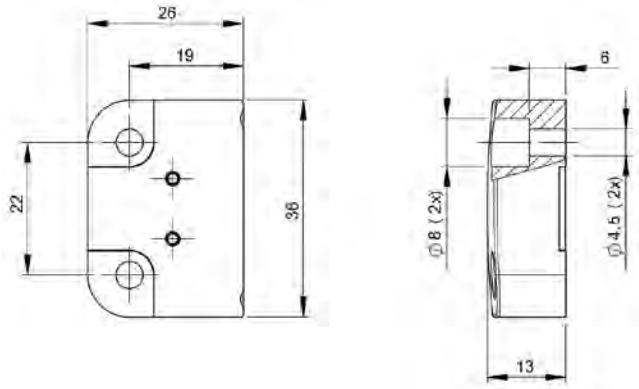
BES0578



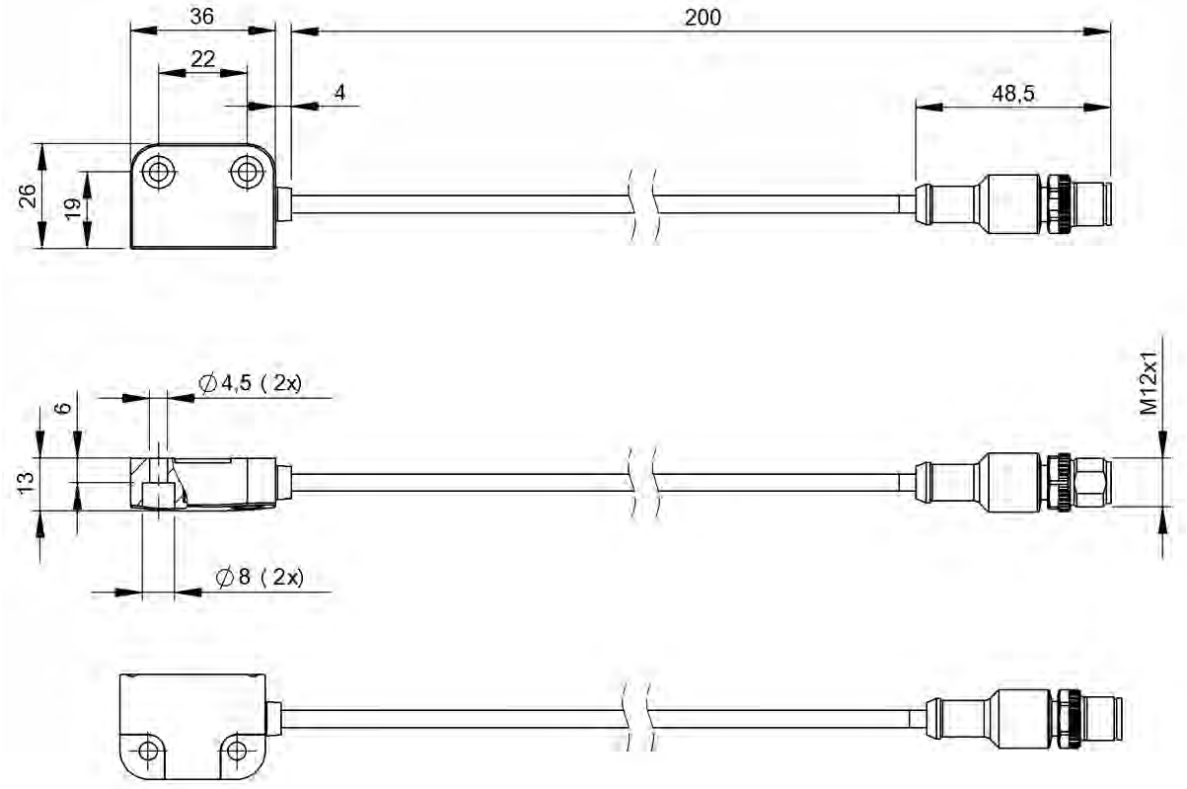
BES0579

	BID000T BID R01K-4M100	
B10d (EN ISO 13849-1)	—	
Coding level (EN ISO 14119)	low	
Approval/Conformity	CE, cULus	
Operating principle	non-contact (magnetic)	
No of contacts	—	
Approach direction	—	
Life expectancy mechanical	—	
Assured switch on distance Sao	5 mm	
Assured switch off distance Sar	—	
Connection	—	
Dimension	26 x 36 x 13 mm	
Ambient temperature	-25...70 °C	
Protection degree	—	
Housing material	Thermoplastic, glass-fibre reinforced	
Productview	Seite 32	

BID0007 BID R01K-4M100-M20ZZ0-EP00,2-S92	
NC at 20% contact load 25 mil. Switching operations	
—	
CE, cULus	
non-contact (magnetic)	
2x NC	
vertrical to the active surface	
100 million Switching operations	
5 mm	
15 mm	
Cable with connector, M12x1, 5-pin, 20 cm, PUR	
26 x 36 x 13 mm	
-25...70 °C	
IP67	
Thermoplastic, glass-fibre reinforced	
Seite 32	



BID000T



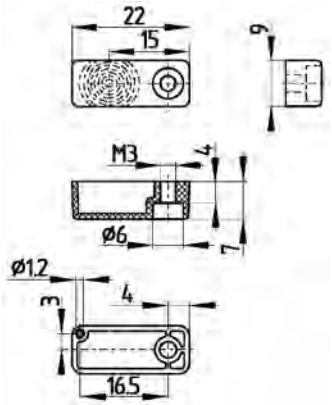
BID0007

	BID000W BID Q02K-4R300	BID000U BID R02K-4R300	
Performance Level	—	—	
Safety category (EN ISO 13849-1)	—	—	
SIL (IEC 61508)	—	—	
SIL CL (EN 62061)	—	—	
Coding level (EN ISO 14119)	—	—	
Response time max.	—	—	
Approval/Conformity	TÜV, cULus, CE	TÜV, cULus, CE	
Operating principle	—	—	
Approach direction	—	—	
Actuator retention force	—	—	
Assured switch on distance Sao	—	—	
Assured switch off distance Sar	—	—	
Connection	—	—	
Switching output	—	—	
Installation	any	any	
Dimension	22 x 7 x 9 mm	39.2 x 18 x 29.5 mm	
Ambient temperature	-25...65 °C	-25...65 °C	
IP rating	—	—	
Housing material	Thermoplast	Thermoplast	
Productview	Page 38	Page 38	

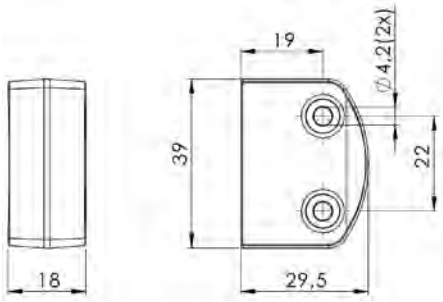
	BID0008 BID R02K-4R100-020ZZ0-EP00,2-S92	BID0009 BID R02K-4R300-020ZZ0-EP00,2-S92	BID000Y BID R03K-4R300	BID000C BID R03K-4R100-020ZZ0-S92
	e	e	—	e
	4	4	—	4
	3	3	—	3
	3	3	—	3
	low	high	—	low
	100 ms	100 ms	—	100 ms
	TÜV, cULus, CE	TÜV, cULus, CE	CE, cULus, TÜV, Ecolab	CE, cULus, TÜV, Ecolab
	non-contact (RFID)	non-contact (RFID)	non-contact (RFID)	non-contact (RFID)
	any to the active surface or laterally	any to the active surface or laterally	—	any to sensing surface
	—	—	0 N	0 N
	4 mm 8 mm	4 mm 8 mm	—	10 mm
	18 mm	18 mm	—	20 mm
	Cable with connector, M12x1, 5-pin, 25 cm, PUR	Cable with connector, M12x1, 5-pin, 25 cm, PUR	—	Connector, M12x1, 5-pin
	2x PNP OSSD	2x PNP OSSD	—	2x PNP OSSD
	for flush mounting	for flush mounting	any	for flush mounting
	39.2 x 18 x 29.5 mm	39.2 x 18 x 29.5 mm	91 x 25 x 22 mm	106 x 25 x 22 mm
	-25...65 °C	-25...65 °C	-25...70 °C	-25...70 °C
	IP65, IP67	IP65, IP67	—	IP65, IP67, IP69
	Thermoplast	Thermoplast	Thermoplastic, glass-fibre reinforced	Thermoplastic, glass-fibre reinforced
	Page 38	Page 38	Page 39	Page 39

	BID000F BID R03K-4R300-O20ZZ0-S92	**BID000Z** BID R03K-4R3S0	
Performance Level	e	—	
Safety category (EN ISO 13849-1)	4	—	
SIL (IEC 61508)	3	—	
SIL CL (EN 62061)	3	—	
Coding level (EN ISO 14119)	high	—	
Response time max.	100 ms	—	
Approval/Conformity	CE, cULus, TÜV, Ecolab	CE, cULus, TÜV, Ecolab	
Operating principle	non-contact (RFID)	non-contact (RFID)	
Approach direction	any to sensing surface	—	
Actuator retention force	0 N	18 N	
Assured switch on distance Sao	10 mm	—	
Assured switch off distance Sar	20 mm	—	
Connection	Connector, M12x1, 5-pin	—	
Switching output	2x PNP OSSD	—	
Installation	for flush mounting	any	
Dimension	106 x 25 x 22 mm	91 x 25 x 22 mm	
Ambient temperature	-25...70 °C	-25...70 °C	
Protection degree	IP65, IP67, IP69	—	
Housing material	Thermoplastic, glass-fibre reinforced	Thermoplastic, glass-fibre reinforced	
Productview	Page 39	Page 39	

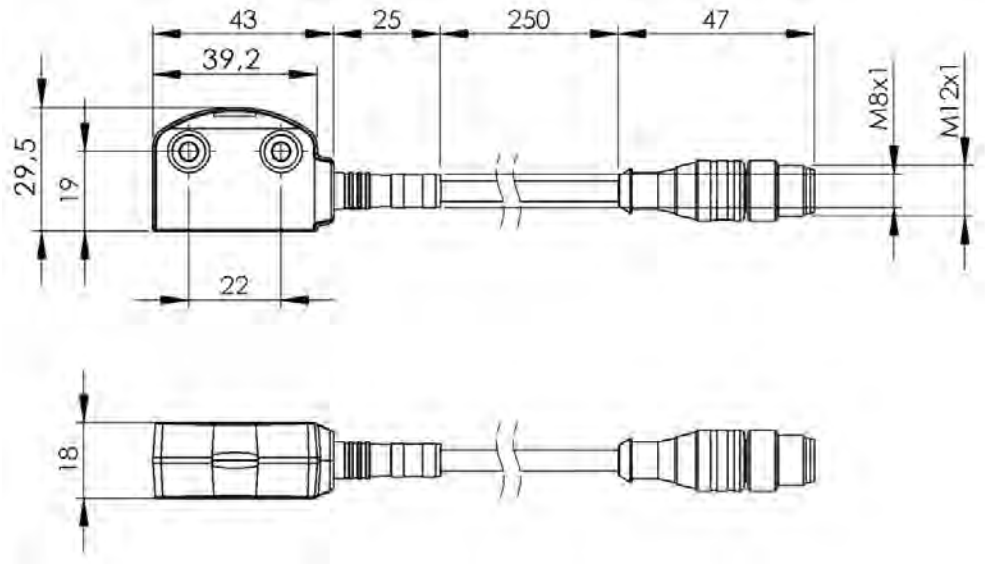
	BID000E BID R03K-4R1S0-020ZZ0-S92	BID000H BID R03K-4R3S0-020ZZ0-S92		
	e	e		
	4	4		
	3	3		
	3	3		
	low	high		
	100 ms	100 ms		
	CE, cULus, TÜV, Ecolab	CE, cULus, TÜV, Ecolab		
	non-contact (RFID)	non-contact (RFID)		
	any to sensing surface	any to sensing surface		
	18 N	18 N		
	10 mm	10 mm		
	20 mm	20 mm		
	Connector, M12x1, 5-pin	Connector, M12x1, 5-pin		
	2x PNP OSSD	2x PNP OSSD		
	for flush mounting	for flush mounting		
	106 x 25 x 22 mm	106 x 25 x 22 mm		
	-25...70 °C	-25...70 °C		
	IP65, IP67, IP69	IP65, IP67, IP69		
	Thermoplastic, glass-fibre reinforced	Thermoplastic, glass-fibre reinforced		
	Page 39	Page 39		



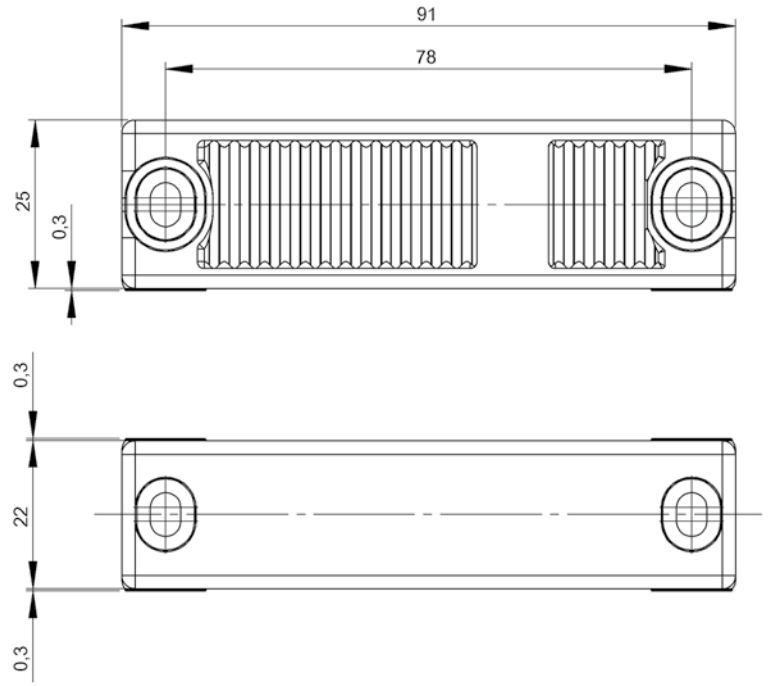
BID000W



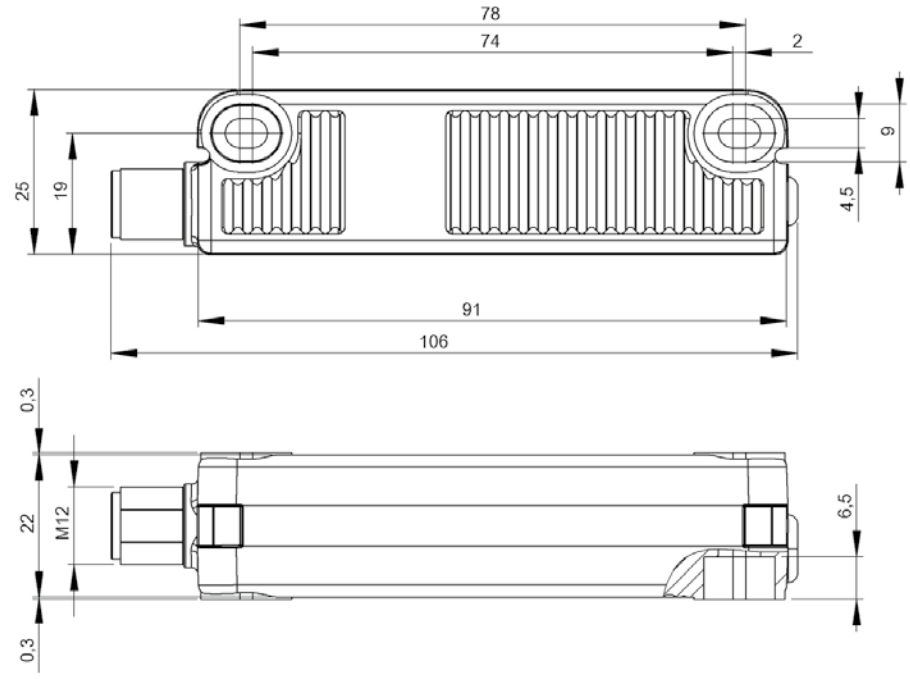
BID000U



BID0008, BID0009



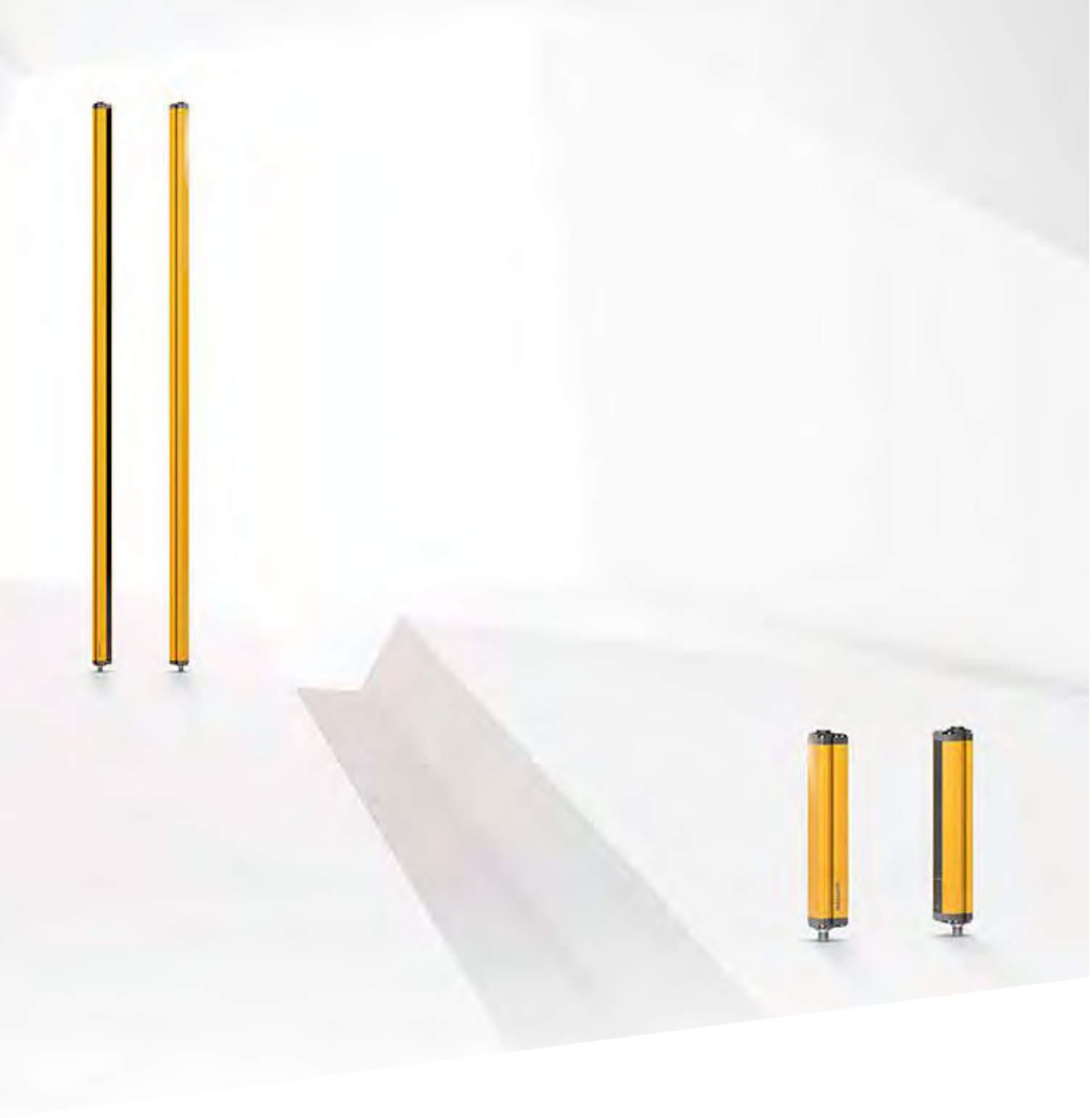
BID000Y, BID000Z



BID000C, BID000F, BID000E, BID000H

Safe personal protection for interaction between man and machine

OPTO-ELECTRONIC PROTECTIVE DEVICES



Flexible production places high demands on safety when man and machine work so closely together.
This interplay must not ever compromise the safety of employees. Opto-electronic protective devices such as light curtains from Balluff provide safe solutions that also enable great flexibility. Another benefit to you: by using light curtains that consist of multiple parallel light beams, you save space since they can replace cumbersome guard fence constructions or assemblies of multiple through-beam sensors.

The most important benefits

- Finger, hand and body detection for convenient and fast interaction between man and machine
- Defined protected area with infrared protection field – suitable for safety applications up to PLe SIL3
- Safe machine stoppage in safety-critical applications
- Better space utilization by eliminating the need for protective fence structures
- High level of manipulation protection

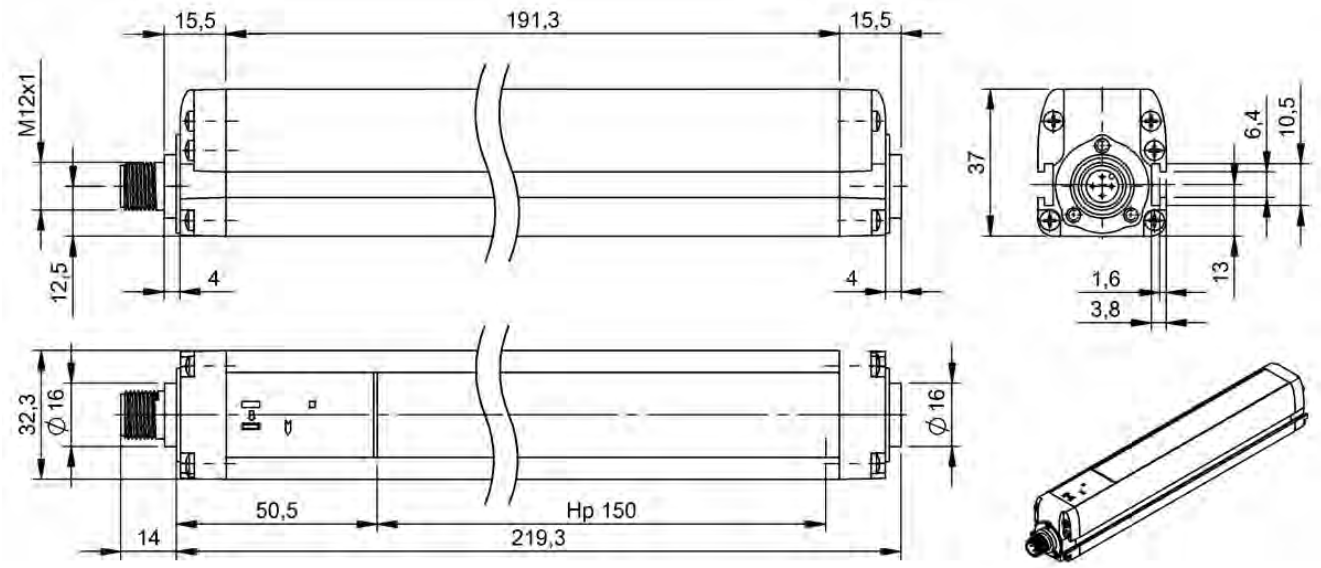


	BLG000A BLG 4A-015-600-014-001-SX	**BLG000C** BLG 4A-030-600-014-001-SX	**BLG000E** BLG 4A-045-600-014-001-SX	
Performance Level	e	e	e	
Safety category (EN ISO 13849-1)	4	4	4	
SIL (IEC 61508)	3	3	3	
SIL CL (EN 62061)	3	3	3	
Response time max.	11 ms	15 ms	18 ms	
Approval/Conformity	TÜV, cULus, CE	TÜV, cULus, CE	TÜV, cULus, CE	
Operating principle	non-contact (photoelectric)	non-contact (photoelectric)	non-contact (photoelectric)	
Detection capability	14 mm	14 mm	14 mm	
Protective field height (Hp)	150 mm	300 mm	450 mm	
Range	6 m	6 m	6 m	
Connection 1	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded	
Connection 2	Receiver: M12x1-Male, A-coded	Receiver: M12x1-Male, A-coded	Receiver: M12x1-Male, A-coded	
Switching output	2x PNP OSSD	2x PNP OSSD	2x PNP OSSD	
Dimension	32.3 x 233.3 x 37 mm	32.3 x 383.2 x 37 mm	32.3 x 533.2 x 37 mm	
Ambient temperature	0...55 °C	0...55 °C	0...55 °C	
Protection degree	IP65	IP65	IP65	
Housing material	Aluminum	Aluminum	Aluminum	
Productview	Seite 46	Seite 46	Seite 47	

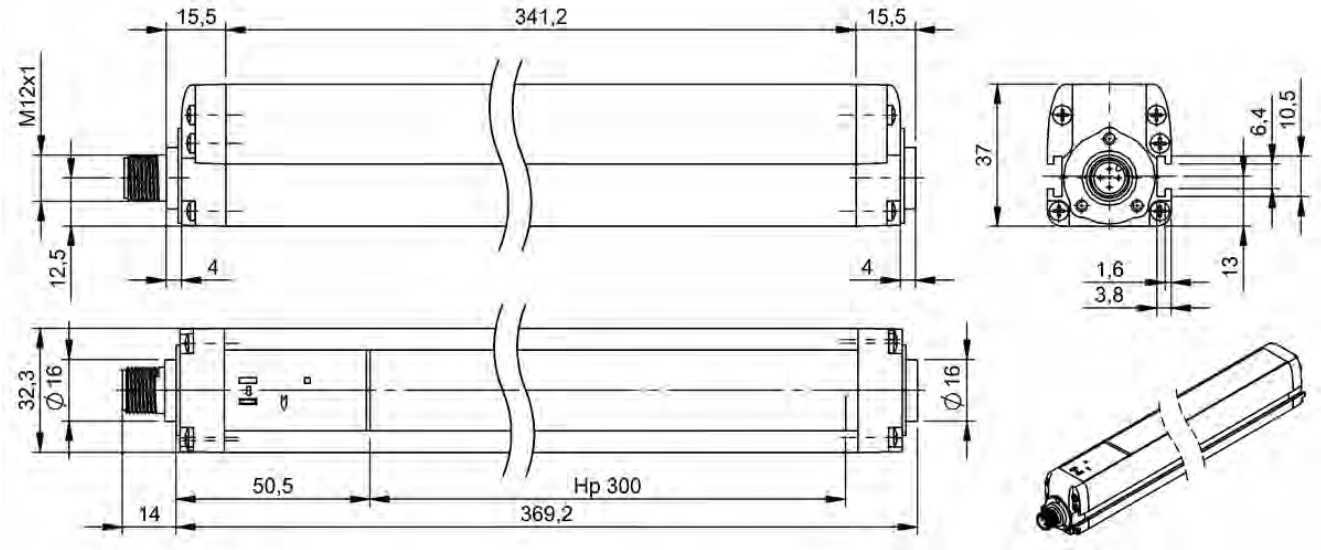
	BLG000F BLG 4A-060-600-014-001-SX	BLG000H BLG 4A-075-600-014-001-SX	BLG000J BLG 4A-090-600-014-001-SX	BLG000K BLG 4A-105-600-014-001-SX	BLG000L BLG 4A-120-600-014-001-SX
	e	e	e	e	e
	4	4	4	4	4
	3	3	3	3	3
	3	3	3	3	3
	22 ms	25 ms	29 ms	33 ms	36 ms
	TÜV, cULus, CE	TÜV, cULus, CE	TÜV, cULus, CE	TÜV, cULus, CE	TÜV, cULus, CE
	non-contact (photoelectric)	non-contact (photoelectric)	non-contact (photoelectric)	non-contact (photoelectric)	non-contact (photoelectric)
	14 mm	14 mm	14 mm	14 mm	14 mm
	600 mm	750 mm	900 mm	1050 mm	1200 mm
	6 m	6 m	6 m	6 m	6 m
	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded
	Receiver: M12x1-Male, A-coded	Receiver: M12x1-Male, A-coded	Receiver: M12x1-Male, A-coded	Receiver: M12x1-Male	Receiver: M12x1-Male
	2x PNP OSSD	2x PNP OSSD	2x PNP OSSD	2x PNP OSSD	2x PNP OSSD
	32.3 x 683.2 x 37 mm	32.3 x 833.2 x 37 mm	32.3 x 983.2 x 37 mm	32.3 x 1133.2 x 37 mm	32.3 x 1283.3 x 37 mm
	0...55 °C	0...55 °C	0...55 °C	0...55 °C	0...55 °C
	IP65	IP65	IP65	IP65	IP65
	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
	Seite 47	Seite 48	Seite 48	Seite 49	Seite 49

	BLG000R BLG 4A-135-600-014-001-SX	**BLG000M** BLG 4A-150-600-014-001-SX	**BLG000N** BLG 4A-165-600-014-001-SX	
Performance Level	e	e	e	
Safety category (EN ISO 13849-1)	4	4	4	
SIL (IEC 61508)	3	3	3	
SIL CL (EN 62061)	3	3	3	
Response time max.	40 ms	43 ms	47 ms	
Approval/Conformity	TÜV, cULus, CE	TÜV, cULus, CE	TÜV, cULus, CE	
Operating principle	non-contact (photoelectric)	non-contact (photoelectric)	non-contact (photoelectric)	
Detection capability	14 mm	14 mm	14 mm	
Protective field height (Hp)	1350 mm	1500 mm	1650 mm	
Range	6 m	6 m	6 m	
Connection 1	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded	
Connection 2	Receiver: M12x1-Male	Receiver: M12x1-Male	Receiver: M12x1-Male	
Switching output	2x PNP OSSD	2x PNP OSSD	2x PNP OSSD	
Dimension	32.3 x 1433.2 x 37 mm	32.3 x 1583.3 x 37 mm	32.3 x 1733.3 x 37 mm	
Ambient temperature	0...55 °C	0...55 °C	0...55 °C	
Protection degree	IP65	IP65	IP65	
Housing material	Aluminum	Aluminum	Aluminum	
Productview	Seite 50	Seite 50	Seite 51	

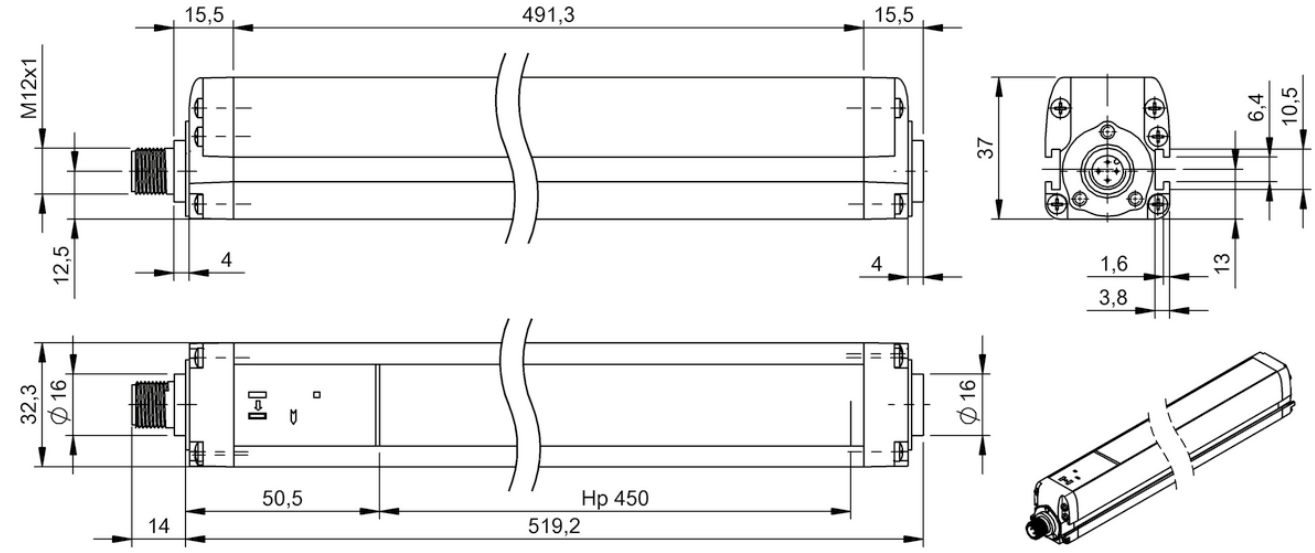
	BLG000P BLG 4A-180-600-014-001-SX				
	e				
	4				
	3				
	3				
	50 ms				
	TÜV, cULus, CE				
	non-contact (photoelectric)				
	14 mm				
	1800 mm				
	6 m				
	Emitter: M12x1-Male, A-coded				
	Receiver: M12x1-Male				
	2x PNP OSSD				
	32.3 x 1883.3 x 37 mm				
	0...55 °C				
	IP65				
	Aluminum				
	Seite 51				



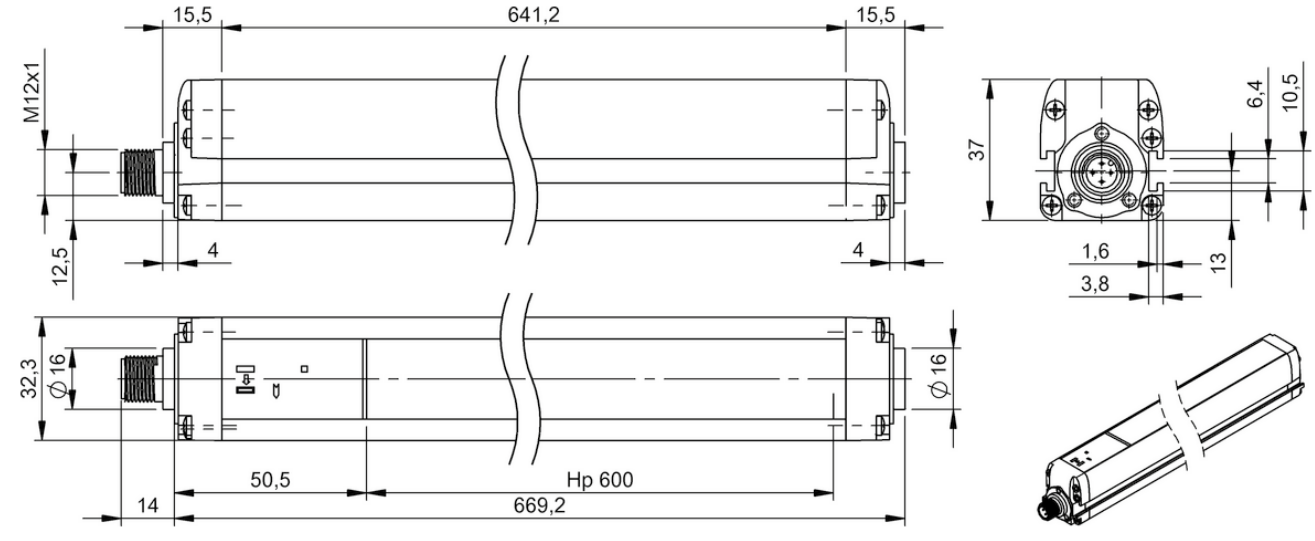
BLG000A



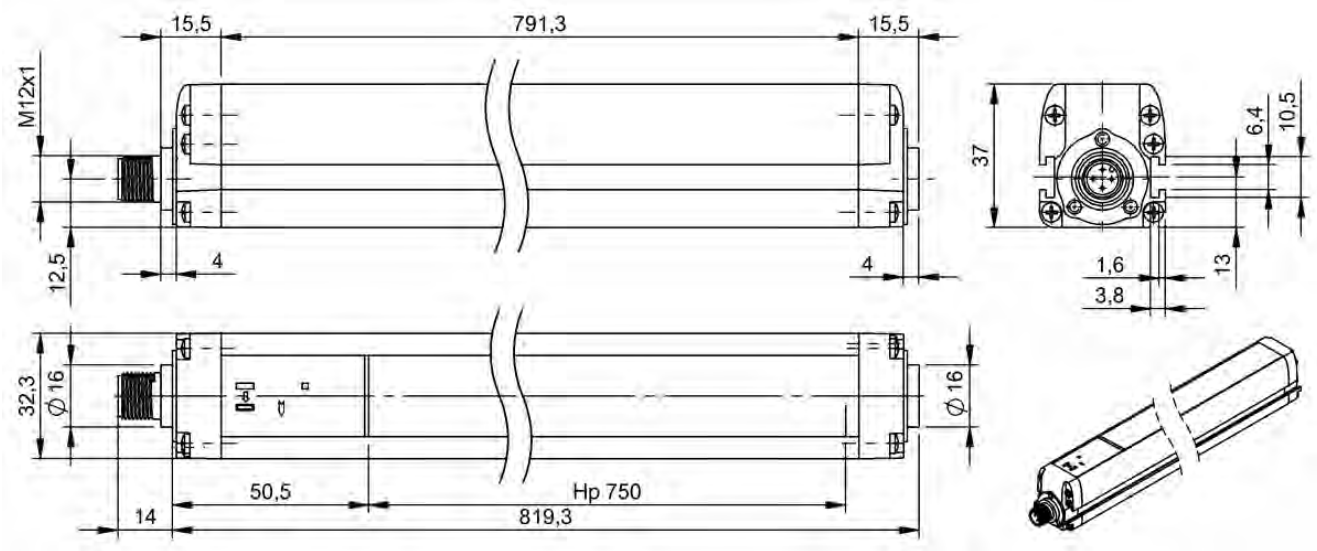
BLG000C



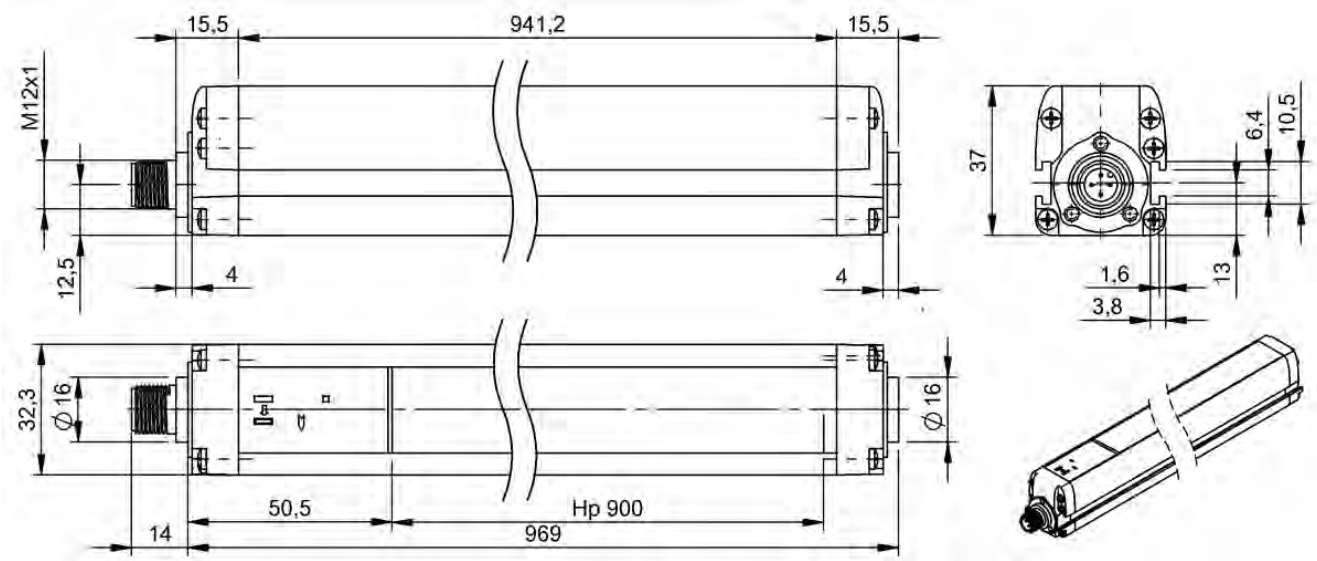
BLG000E



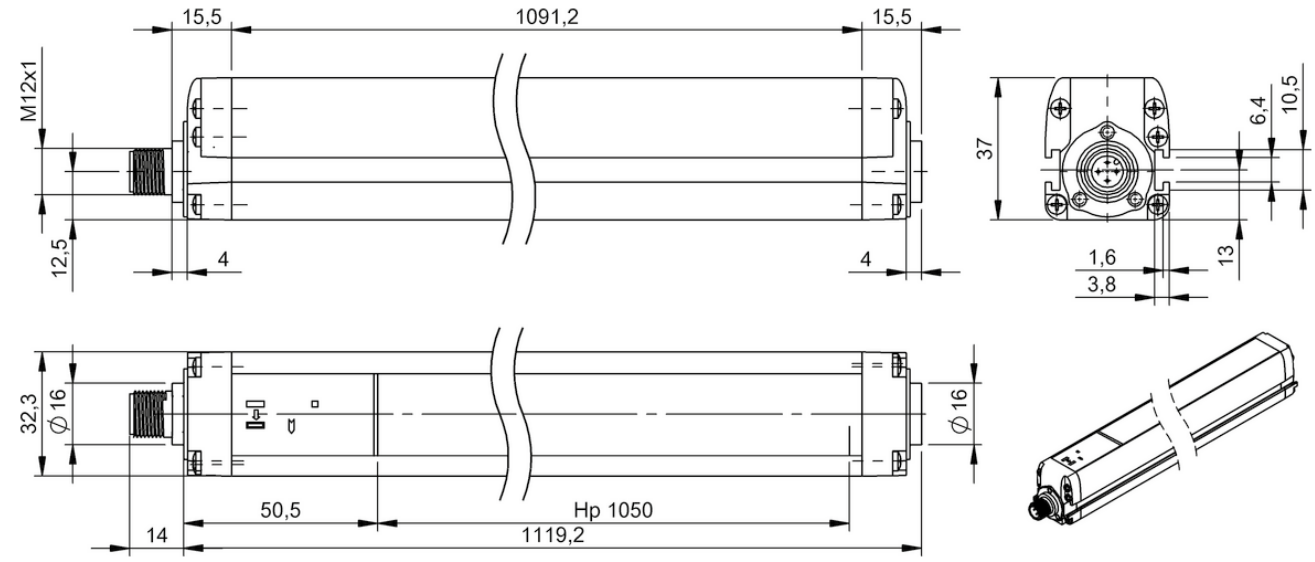
BLG000F



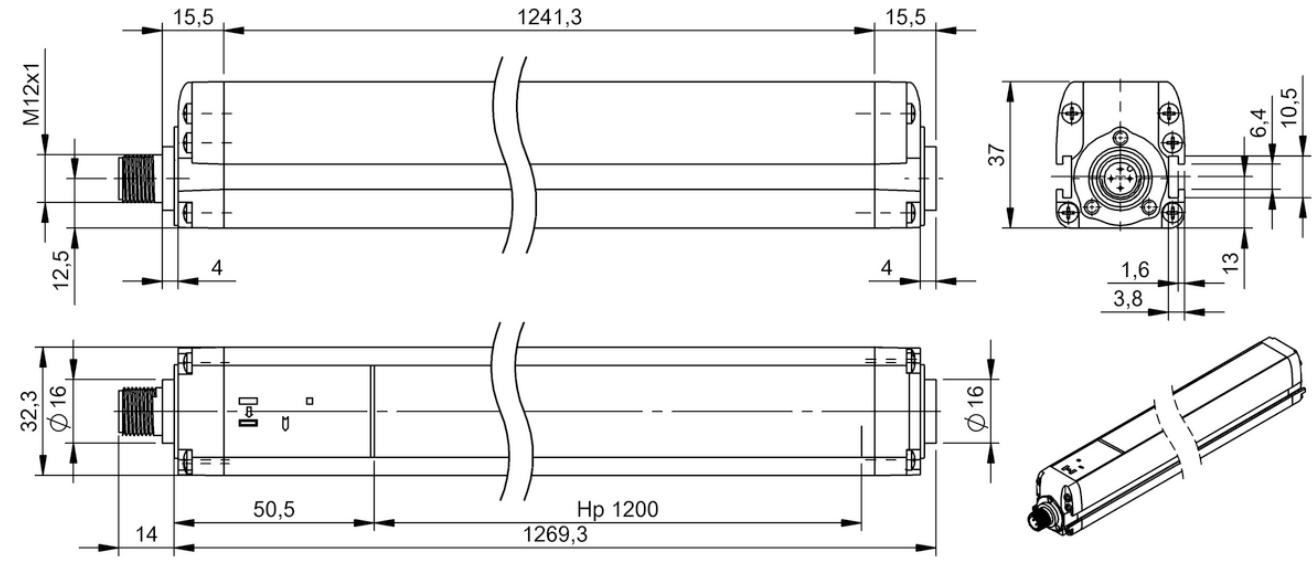
BLG000H



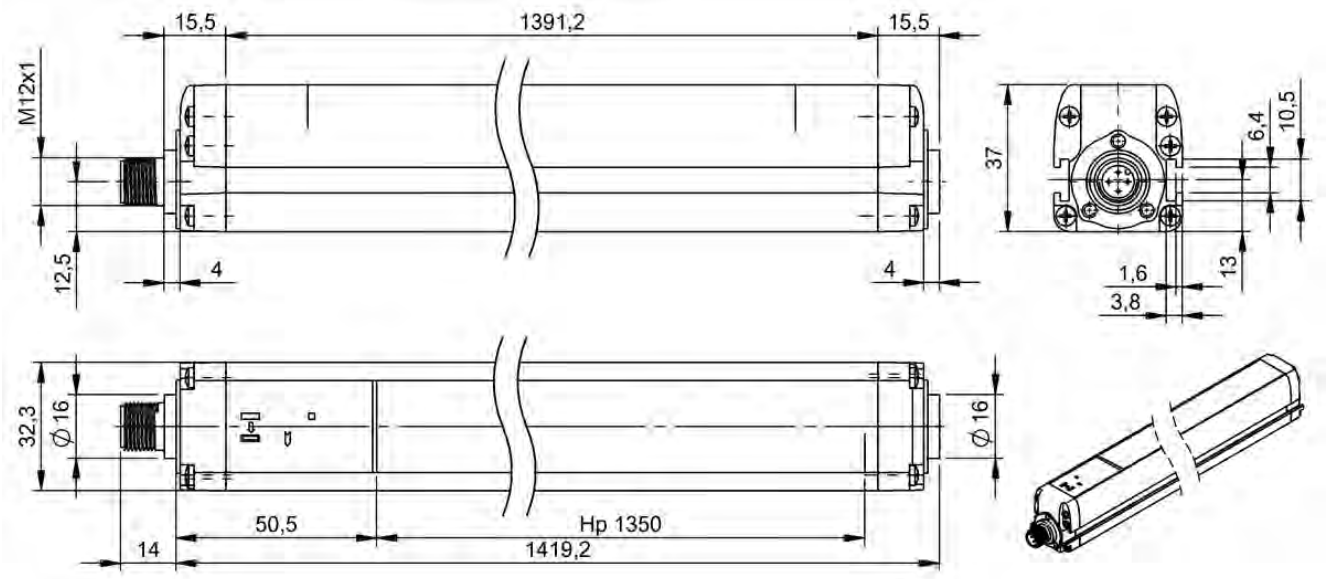
BLG000J



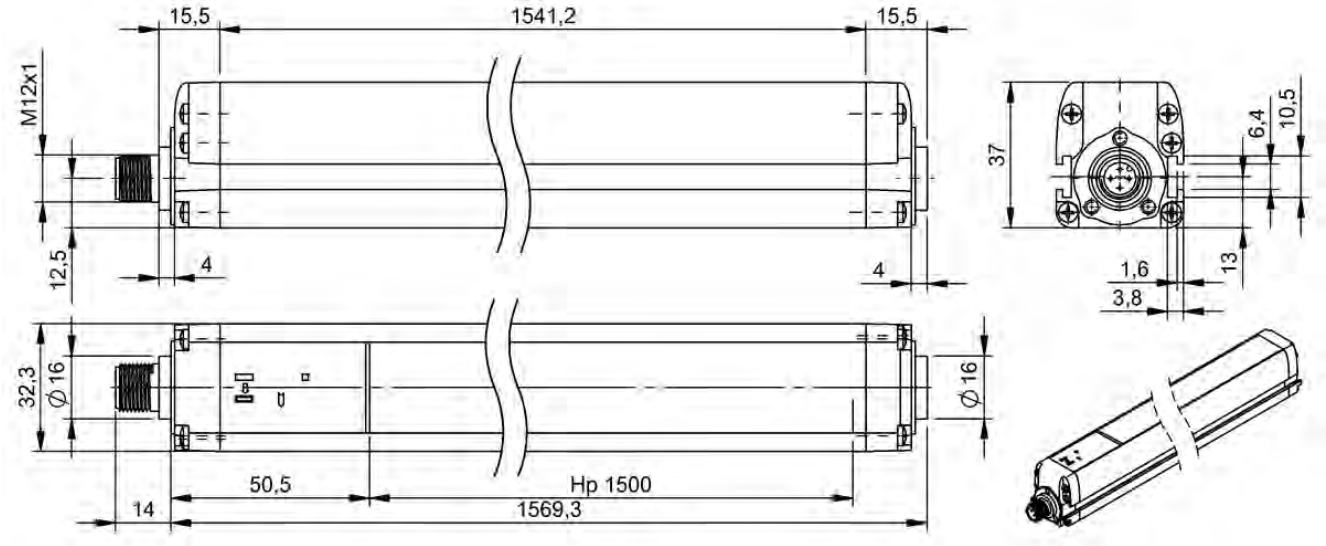
BLG000K



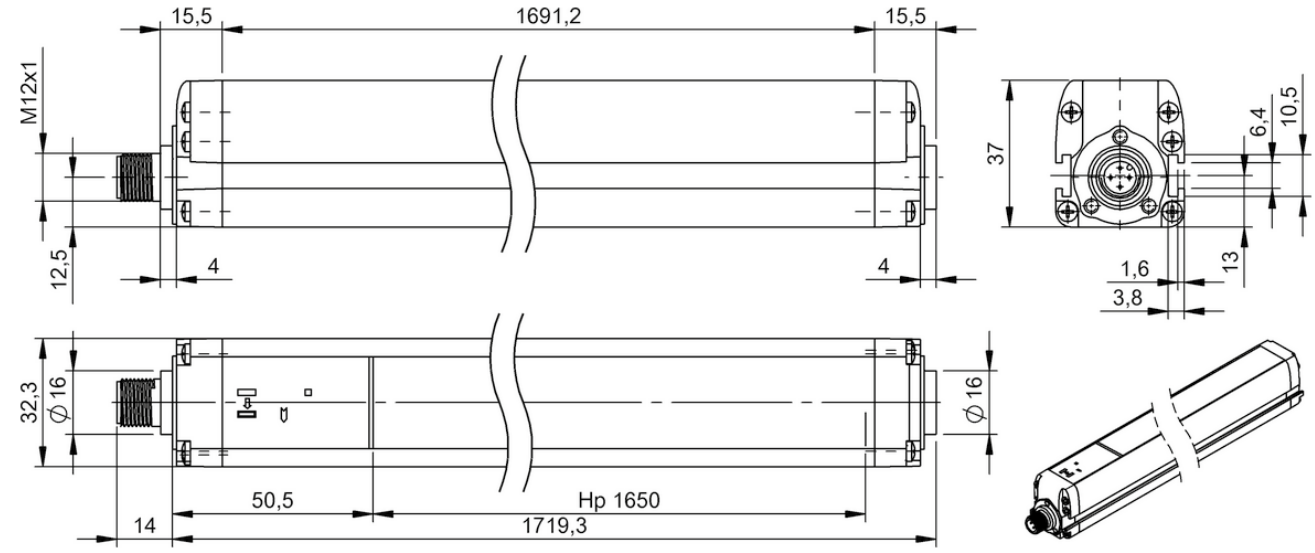
BLG000L



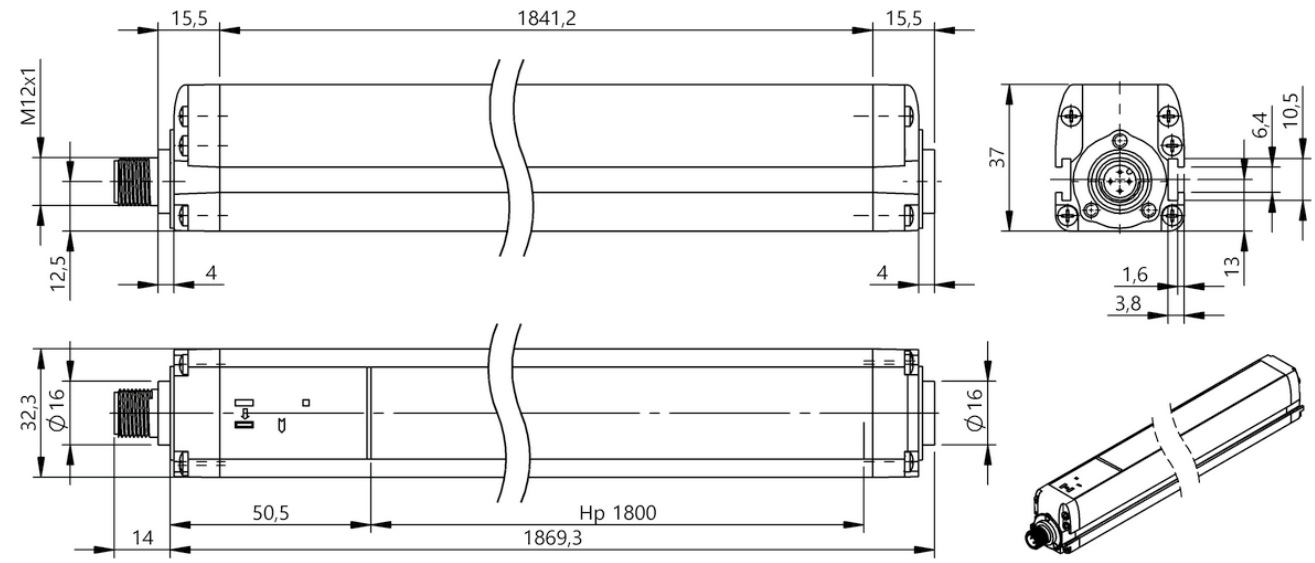
BLG000R



BLG000M



BLG000N



BLG000P



	BLG000T BLG 4A-015-19X-030-001-SX	**BLG000U** BLG 4A-030-19X-030-001-SX	**BLG000W** BLG 4A-045-19X-030-001-SX	
Performance Level	e	e	e	
Safety category (EN ISO 13849-1)	4	4	4	
SIL (IEC 61508)	3	3	3	
SIL CL (EN 62061)	3	3	3	
Response time max.	9 ms	11 ms	13 ms	
Approval/Conformity	TÜV, cULus, CE	TÜV, cULus, CE	TÜV, cULus, CE	
Operating principle	non-contact (photoelectric)	non-contact (photoelectric)	non-contact (photoelectric)	
Detection capability	30 mm	30 mm	30 mm	
Protective field height (Hp)	150 mm	300 mm	450 mm	
Range	19 m	19 m	19 m	
Connection 1	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded	
Connection 2	Receiver: M12x1-Male, A-coded	Receiver: M12x1-Male, A-coded	Receiver: M12x1-Male, A-coded	
Switching output	2x PNP OSSD	2x PNP OSSD	2x PNP OSSD	
Dimension	32.3 x 233.3 x 37 mm	32.3 x 383.2 x 37 mm	32.3 x 533.2 x 37 mm	
Ambient temperature	0...55 °C	0...55 °C	0...55 °C	
Protection degree	IP65	IP65	IP65	
Housing material	Aluminum	Aluminum	Aluminum	
Productview	Seite 56	Seite 56	Seite 57	

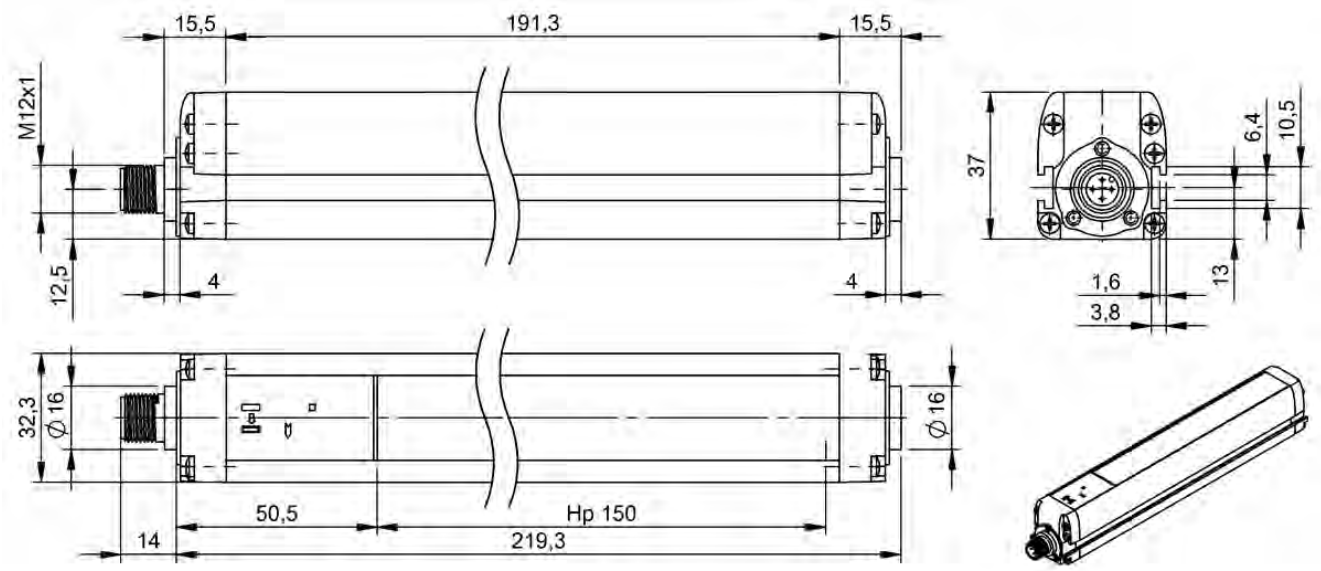




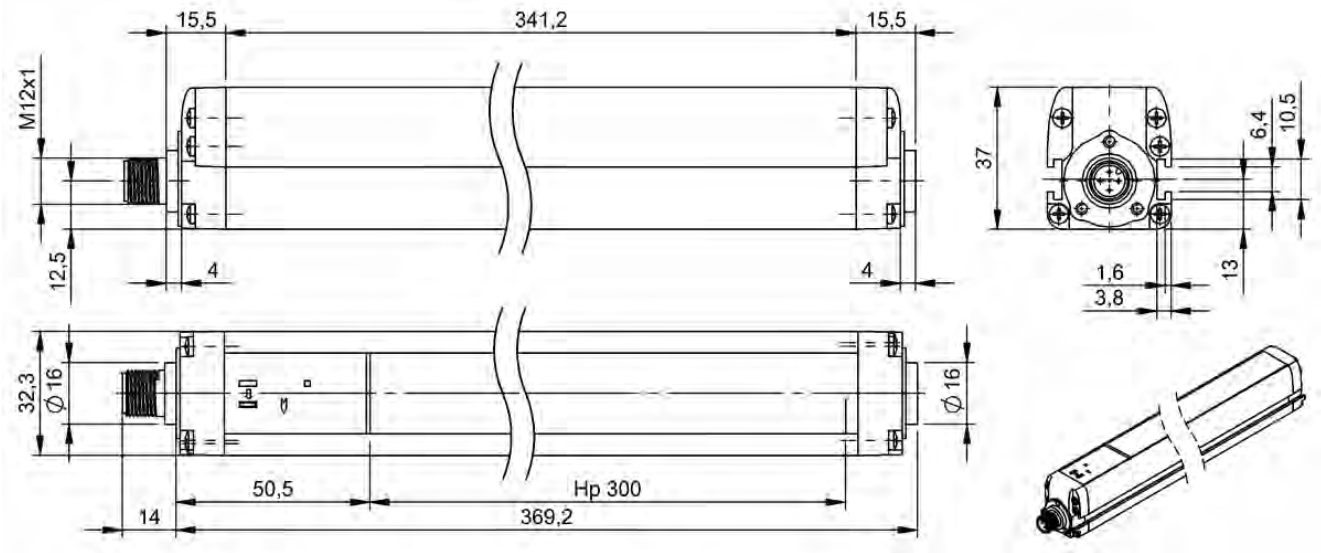
	BLG000Y BLG 4A-060-19X-030-001-SX	BLG000Z BLG 4A-075-19X-030-001-SX	BLG0010 BLG 4A-090-19X-030-001-SX	BLG0011 BLG 4A-105-19X-030-001-SX	BLG0012 BLG 4A-120-19X-030-001-SX
	e	e	e	e	e
	4	4	4	4	4
	3	3	3	3	3
	3	3	3	3	3
	14 ms	16 ms	18 ms	19 ms	21 ms
	TÜV, cULus, CE	TÜV, cULus, CE	TÜV, cULus, CE	TÜV, cULus, CE	TÜV, cULus, CE
	non-contact (photoelectric)	non-contact (photoelectric)	non-contact (photoelectric)	non-contact (photoelectric)	non-contact (photoelectric)
	30 mm	30 mm	30 mm	30 mm	30 mm
	600 mm	750 mm	900 mm	1050 mm	1200 mm
	19 m	19 m	19 m	19 m	19 m
	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded
	Receiver: M12x1-Male, A-coded	Receiver: M12x1-Male, A-coded	Receiver: M12x1-Male, A-coded	Receiver: M12x1-Male, A-coded	Receiver: M12x1-Male
	2x PNP OSSD	2x PNP OSSD	2x PNP OSSD	2x PNP OSSD	2x PNP OSSD
	32.3 x 683.2 x 37 mm	32.3 x 833.2 x 37 mm	32.3 x 983.2 x 37 mm	32.3 x 1133.2 x 37 mm	32.3 x 1283.3 x 37 mm
	0...55 °C	0...55 °C	0...55 °C	0...55 °C	0...55 °C
	IP65	IP65	IP65	IP65	IP65
	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
	Seite 57	Seite 58	Seite 58	Seite 59	Seite 59

	BLG0013 BLG 4A-135-19X-030-001-SX	BLG0014 BLG 4A-150-19X-030-001-SX	BLG0015 BLG 4A-165-19X-030-001-SX	
Performance Level	e	e	e	
Safety category (EN ISO 13849-1)	4	4	4	
SIL (IEC 61508)	3	3	3	
SIL CL (EN 62061)	3	3	3	
Response time max.	23 ms	25 ms	26 ms	
Approval/Conformity	TÜV, cULus, CE	TÜV, cULus, CE	TÜV, cULus, CE	
Operating principle	non-contact (photoelectric)	non-contact (photoelectric)	non-contact (photoelectric)	
Detection capability	30 mm	30 mm	30 mm	
Protective field height (Hp)	1350 mm	1500 mm	1650 mm	
Range	19 m	19 m	19 m	
Connection 1	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded	
Connection 2	Receiver: M12x1-Male	Receiver: M12x1-Male	Receiver: M12x1-Male	
Switching output	2x PNP OSSD	2x PNP OSSD	2x PNP OSSD	
Dimension	32.3 x 1433.2 x 37 mm	32.3 x 1583.3 x 37 mm	32.3 x 1733.3 x 37 mm	
Ambient temperature	0...55 °C	0...55 °C	0...55 °C	
Protection degree	IP65	IP65	IP65	
Housing material	Aluminum	Aluminum	Aluminum	
Productview	Seite 60	Seite 60	Seite 61	

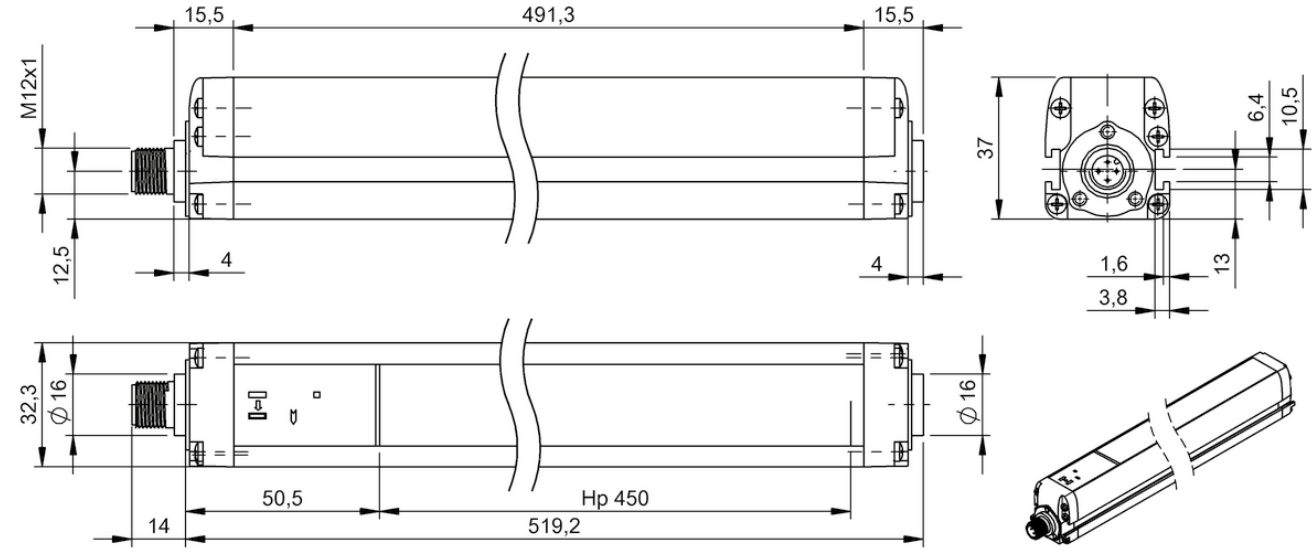
	BLG0016 BLG 4A-180-19X-030-001-SX				
	e				
	4				
	3				
	3				
	28 ms				
	TÜV, CE, cULus				
	non-contact (photoelectric)				
	30 mm				
	1800 mm				
	19 m				
	Emitter: M12x1-Male, A-coded				
	Receiver: M12x1-Male				
	2x PNP OSSD				
	32.3 x 1883.3 x 37 mm				
	0...55 °C				
	IP65				
	Aluminum				
	Seite 61				



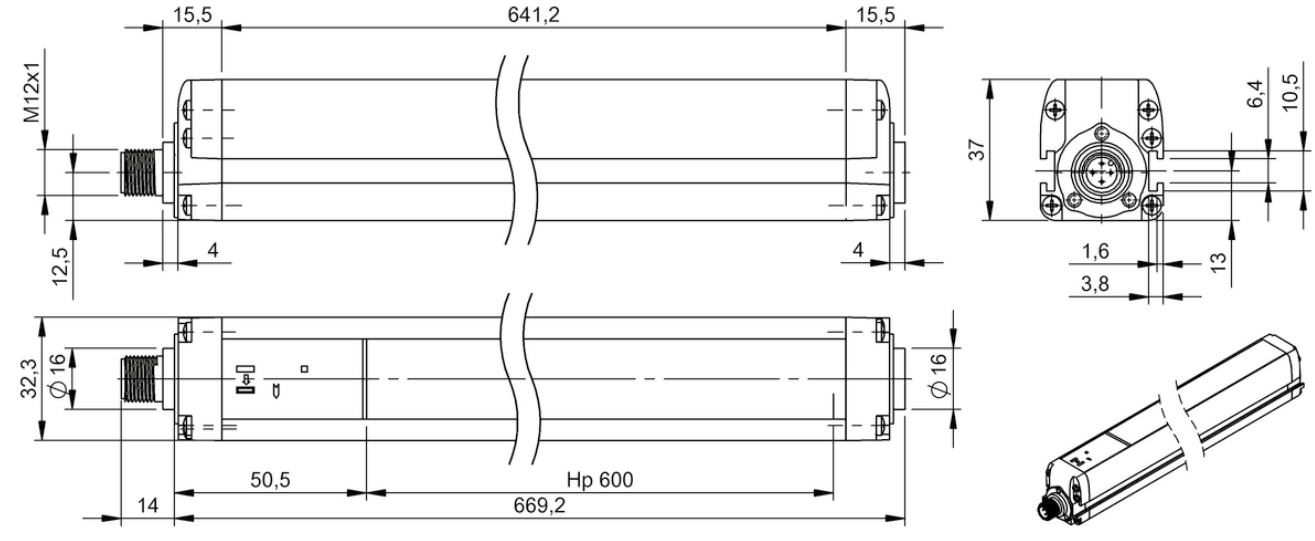
BLG000T



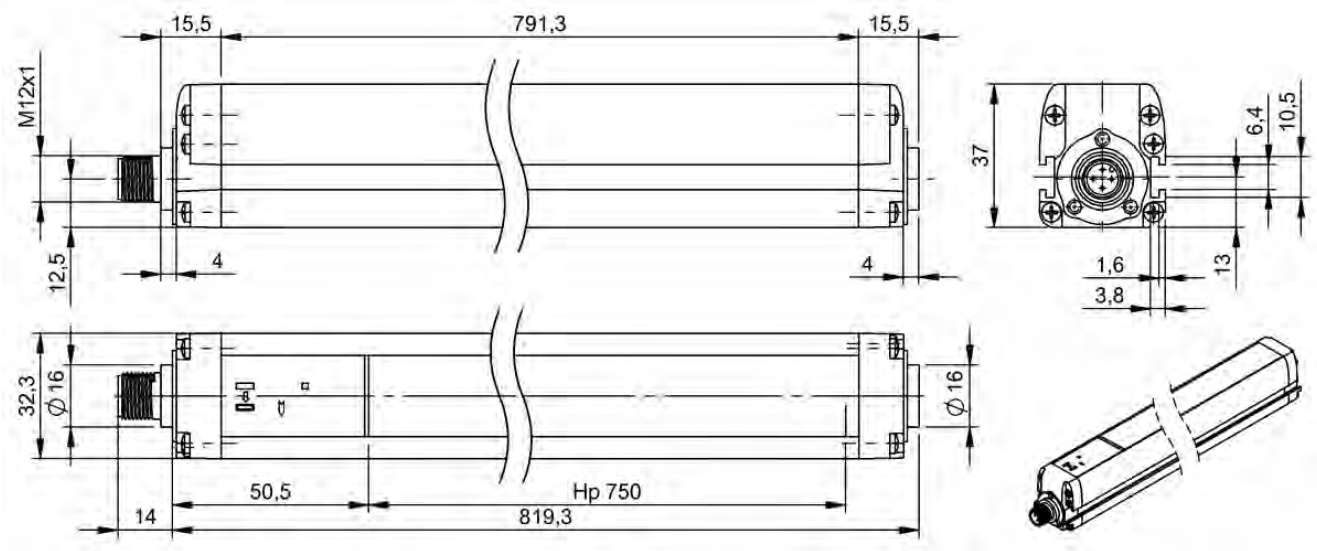
BLG000U



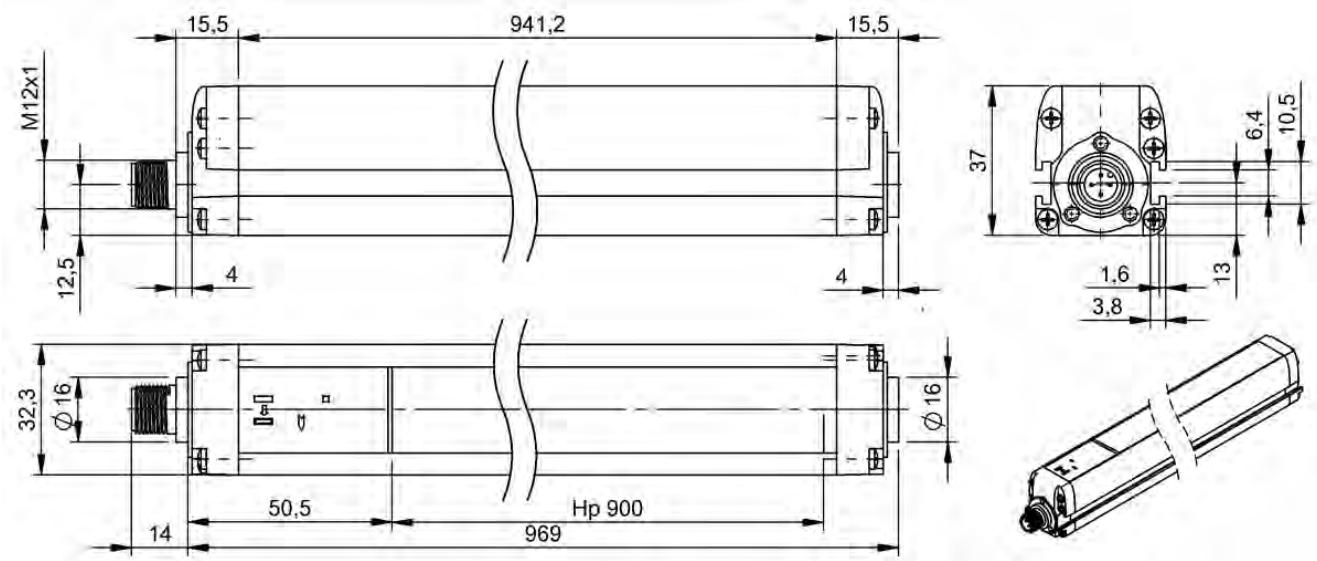
BLG000W



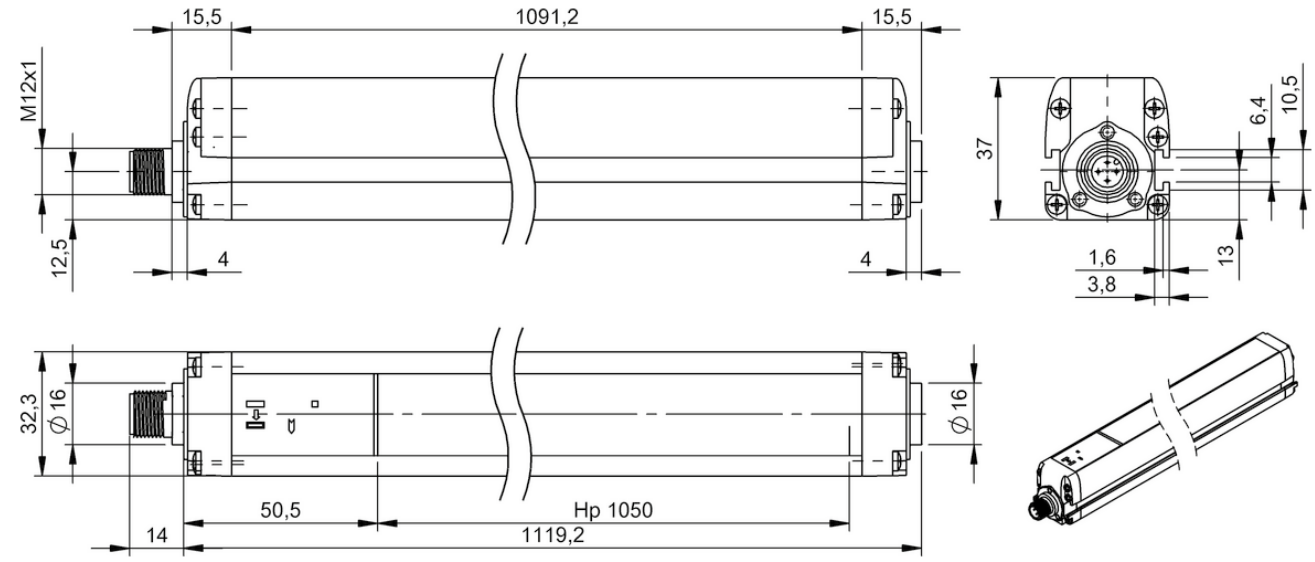
BLG000Y



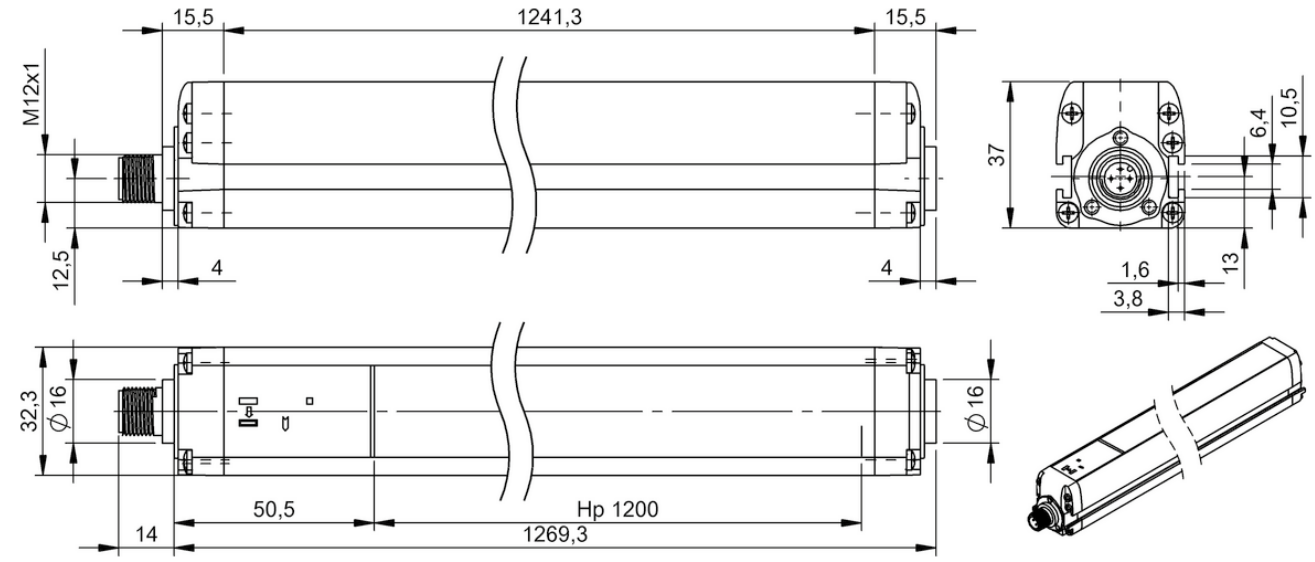
BLG000Z



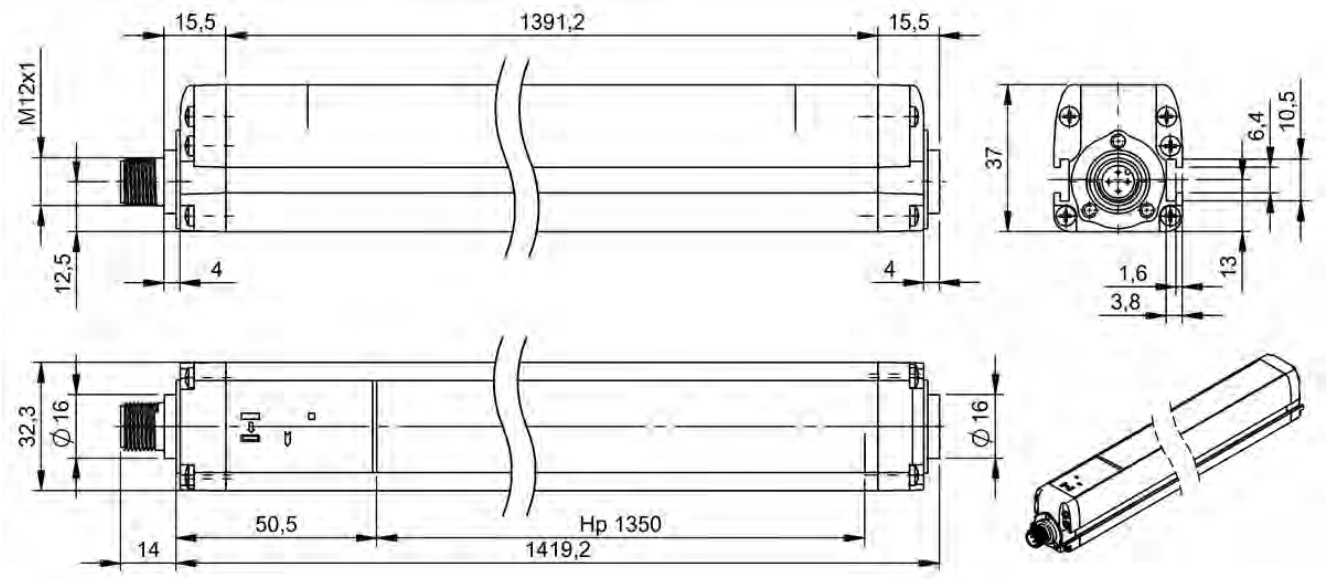
BLG0010



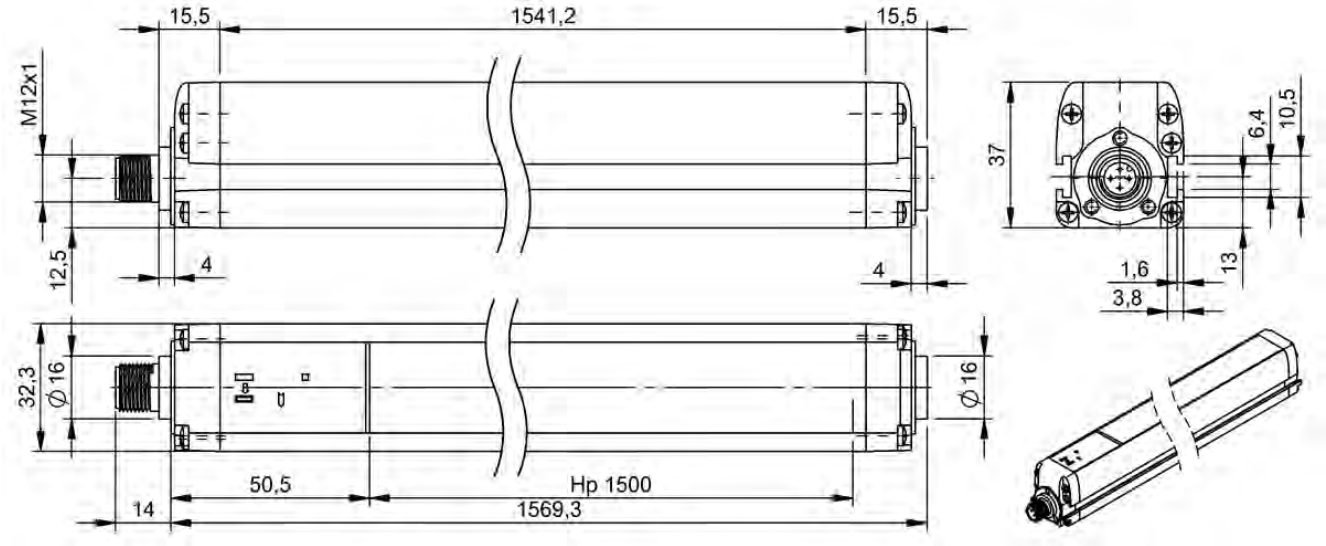
BLG0011



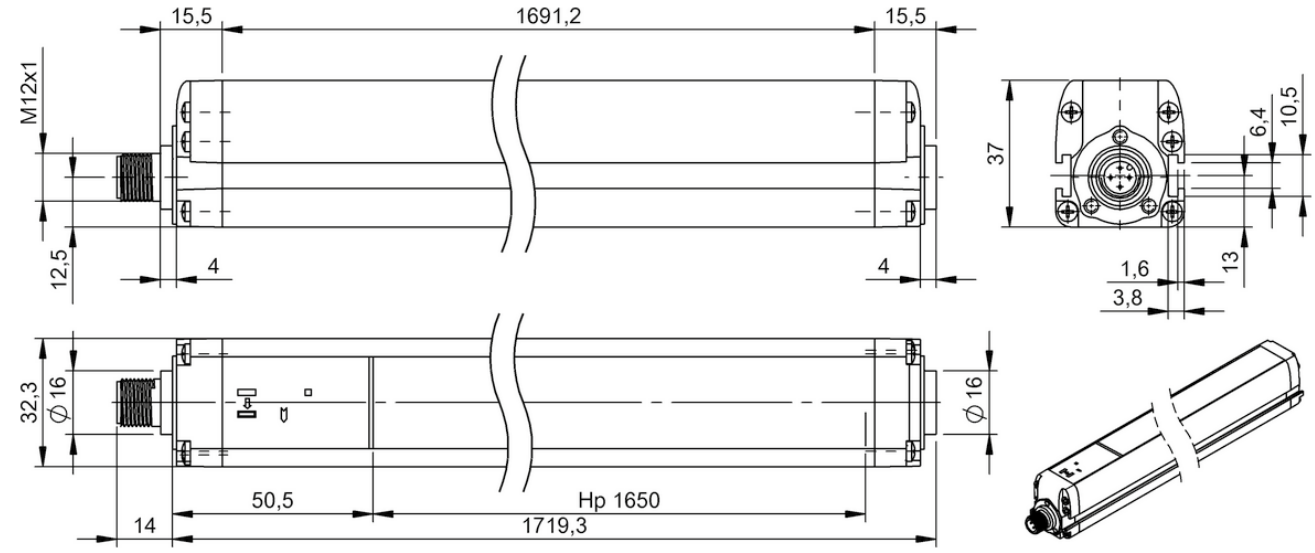
BLG0012



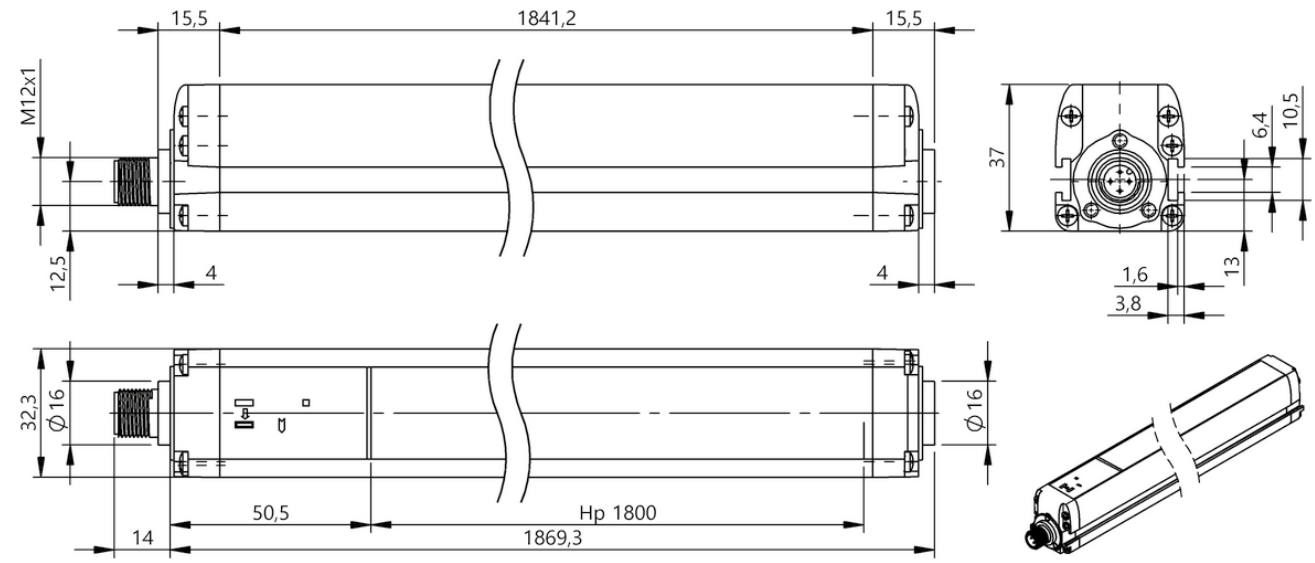
BLG0013



BLG0014



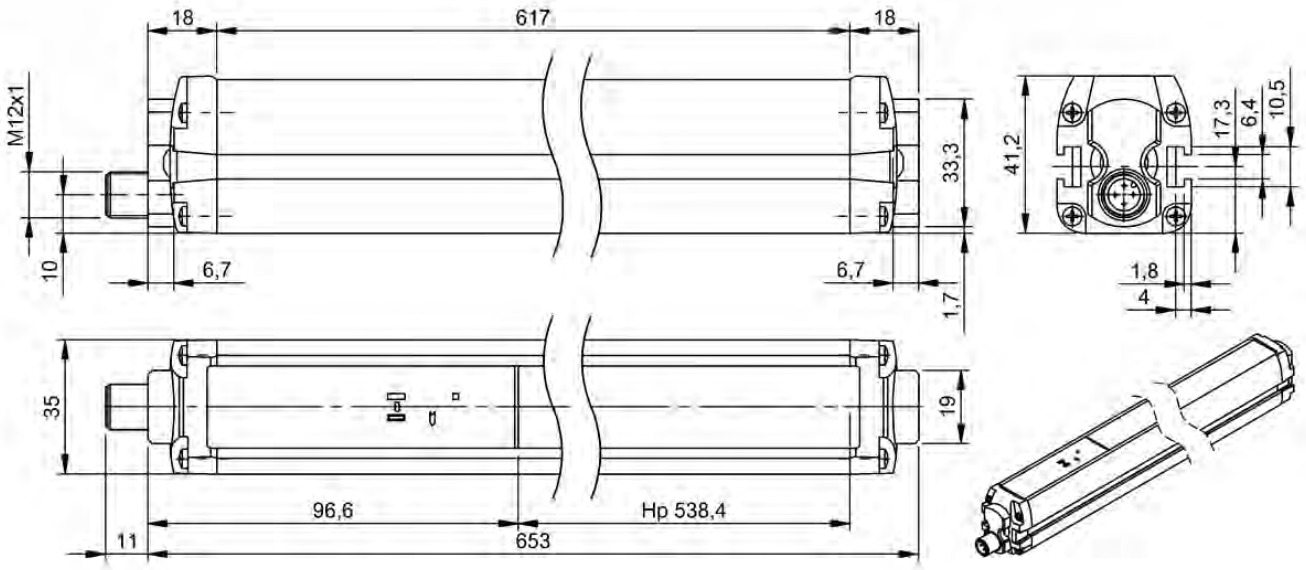
BLG0015



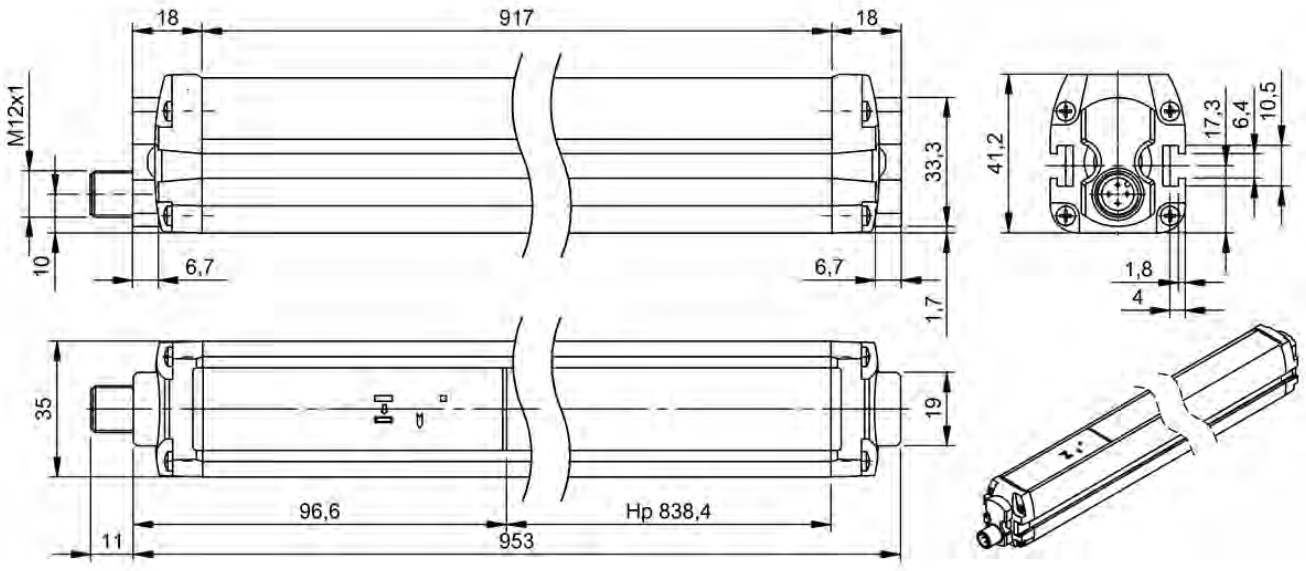
BLG0016

	BLG0006 BLG 4A-050-50X-B02-001-SX	
Performance Level	e	
Safety category (EN ISO 13849-1)	4	
SIL (IEC 61508)	3	
SIL CL (EN 62061)	3	
Response time max.	14 ms	
Approval/Conformity	TÜV, cULus, CE	
Operating principle	non-contact (photoelectric)	
Light beams, number	2	
Protective field height (Hp)	515 mm	
Range	50 m	
Connection 1	Emitter: M12x1-Male, A-coded	
Connection 2	Receiver: M12x1-Male, A-coded	
Switching output	2x PNP OSSD	
Dimension	35 x 664 x 41.2 mm	
Ambient temperature	-10...55 °C	
Protection degree	IP65	
Housing material	Aluminum	
Productview	Seite 64	

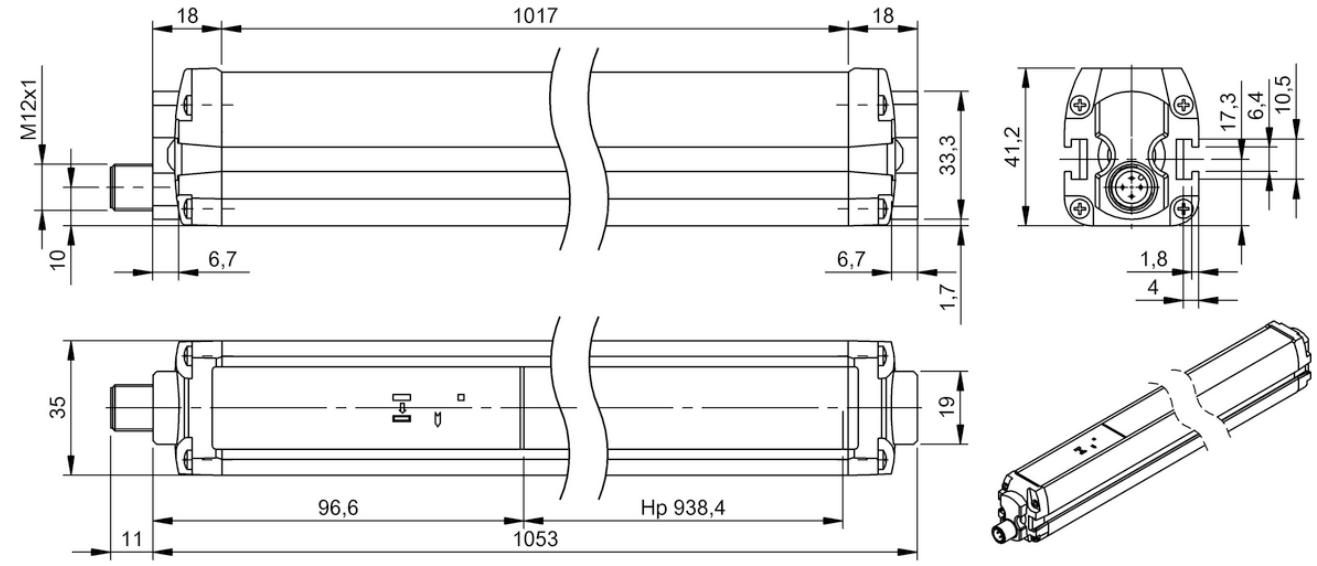
	BLG0007 BLG 4A-080-50X-B03-001-SX	BLG0008 BLG 4A-090-50X-B04-001-SX	BLG0009 BLG 4A-120-50X-B04-001-SX
	e	e	e
	4	4	4
	3	3	3
	3	3	3
	14 ms	16 ms	16 ms
	TÜV, cULus, CE	TÜV, cULus, CE	TÜV, cULus, CE
	non-contact (photoelectric)	non-contact (photoelectric)	non-contact (photoelectric)
	3	4	4
	815 mm	915 mm	1215 mm
	50 m	50 m	50 m
	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded	Emitter: M12x1-Male, A-coded
	Receiver: M12x1-Male, A-coded	Receiver: M12x1-Male, A-coded	Receiver: M12x1-Male
	2x PNP OSSD	2x PNP OSSD	2x PNP OSSD
	35 x 964 x 41.2 mm	35 x 1064 x 41.2 mm	35 x 1364 x 41.2 mm
	-10...55 °C	-10...55 °C	-10...55 °C
	IP65	IP65	IP65
	Aluminum	Aluminum	Aluminum
	Seite 64	Seite 65	Seite 65



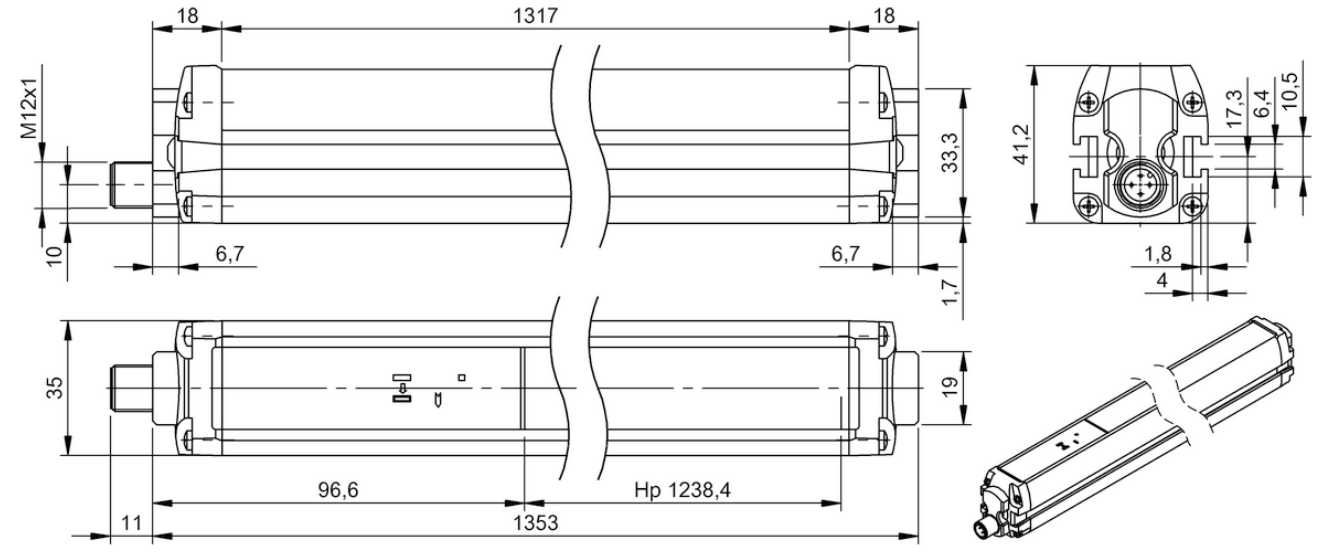
BLG0006



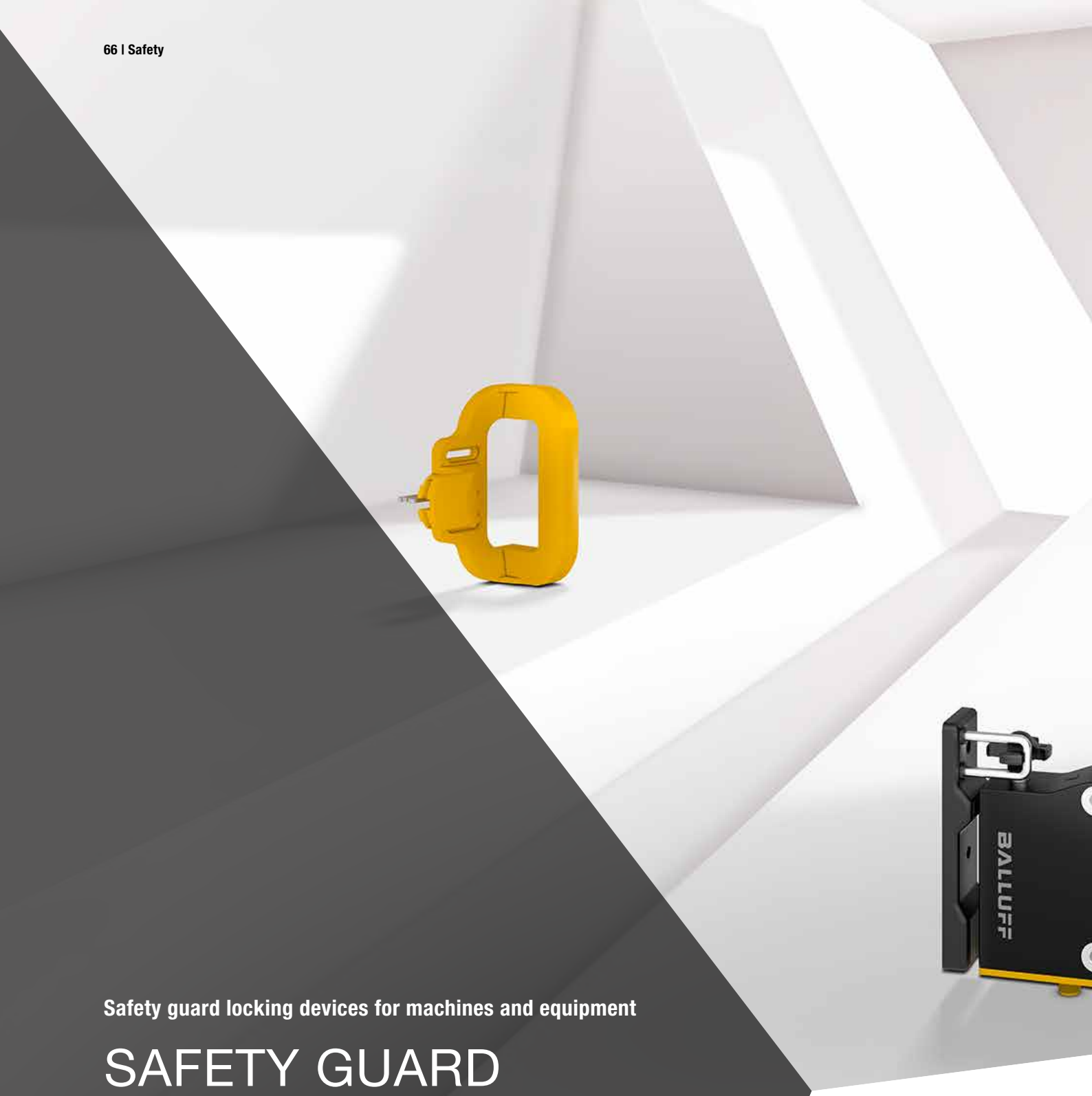
BLG0007



BLG0008



BLG0009



Safety guard locking devices for machines and equipment

SAFETY GUARD LOCKING DEVICES

Interlocking and guard devices from Balluff offer high holding forces of 1000 to 2500 newtons and ensure personal and machine protection. They are suitable for safety applications up to PLe/SIL3 and are an intelligent solution for preventing uncontrolled access to hazardous areas. Our safe interlocking devices feature a high coding level with great anti-tamper protection.

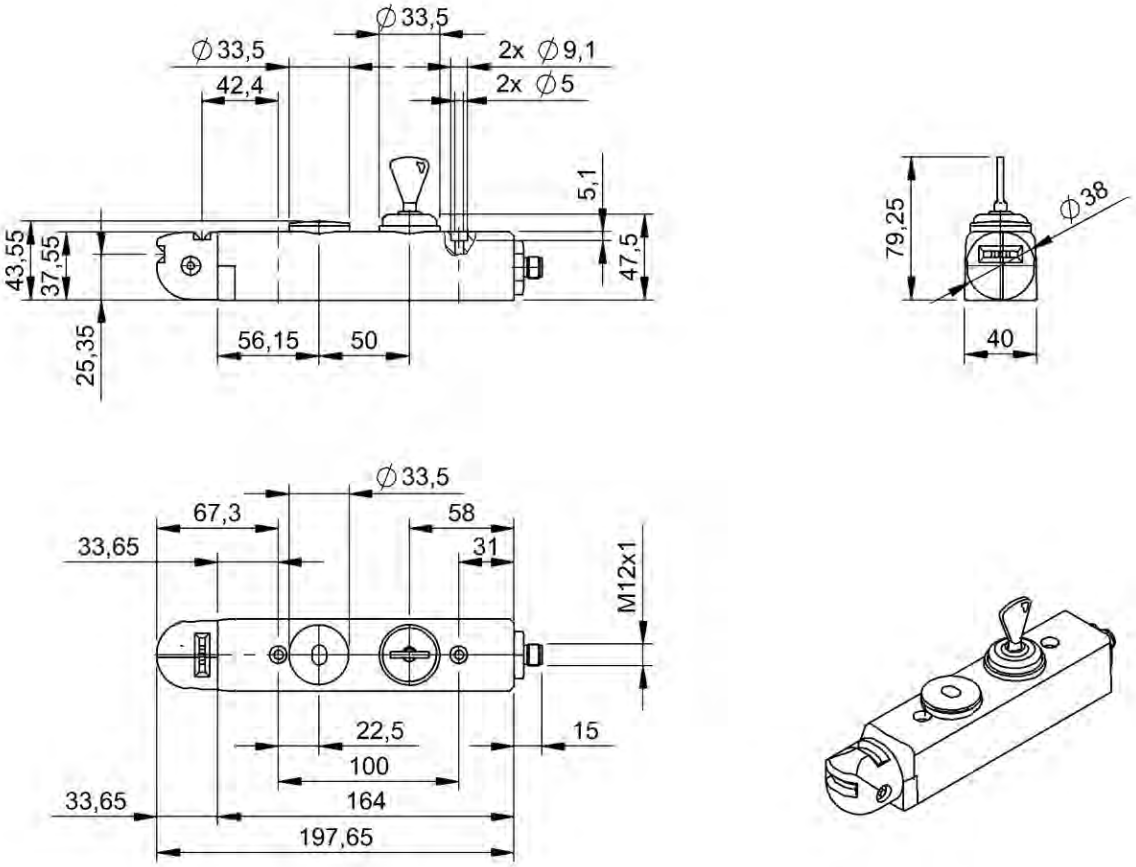
With the different operating principles available from Balluff you can enjoy a wide range of application possibilities. Choose from electromechanical or transponder-coded interlocking devices. It's also good to know that the rugged housings with LED indicator will stand up to harsh environments. This makes selecting the right solution easy.

The most important benefits

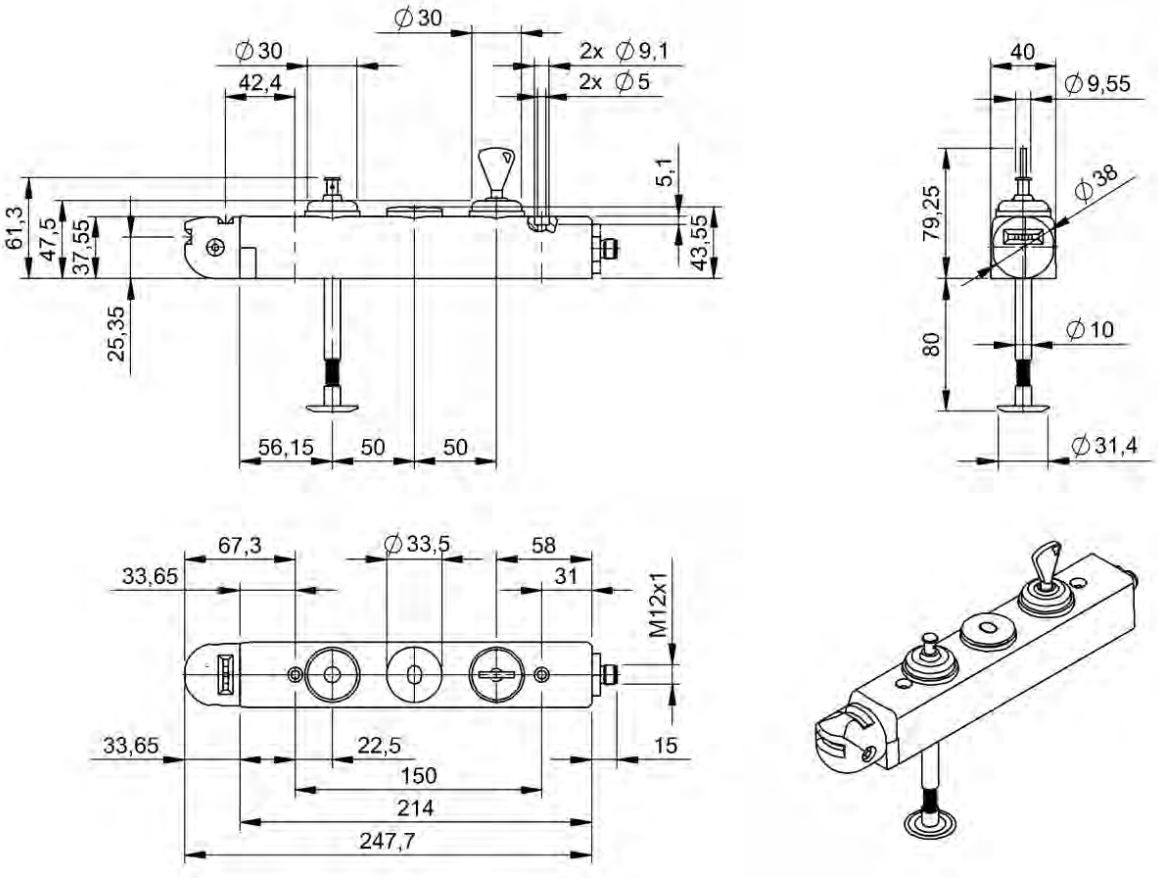
- Suitable for safety applications up to PLe/SIL3
- Insensitive to vibration and mechanical play
- Save installation and assembly time and money
- Also suitable for heavy protective equipment
- Manipulation-resistant
- Simple connections using standardized M12 connectivity

	BID0004 BID F101-2M1M3-M02AZ0-S115	
B10d (EN ISO 13849-1)	5 million Switching operations	
Coding level (EN ISO 14119)	low	
Approval/Conformity	CE, TÜV NRTL, TÜV, RoHS	
Operating principle	mechanical - force, contact	
No of contacts	2x positive opening	
Utilization category	AC-15, DC -13	
Approach direction	laterally + above	
Guard locking, principle	yes, spring force (power to unlock)	
Holding force FZH	2500 N	
Auxillary release	key	
Escape release	no	
Life expectancy mechanical	1 mil. switching operations	
Connection	Connector, M12x1 connector, 8-pin	
Dimension	40 x 197.7 x 47.5 mm	
Ambient temperature	0...40 °C	
Protection degree	IP65	
Housing material	Aluminum	
Productview	Seite 70	

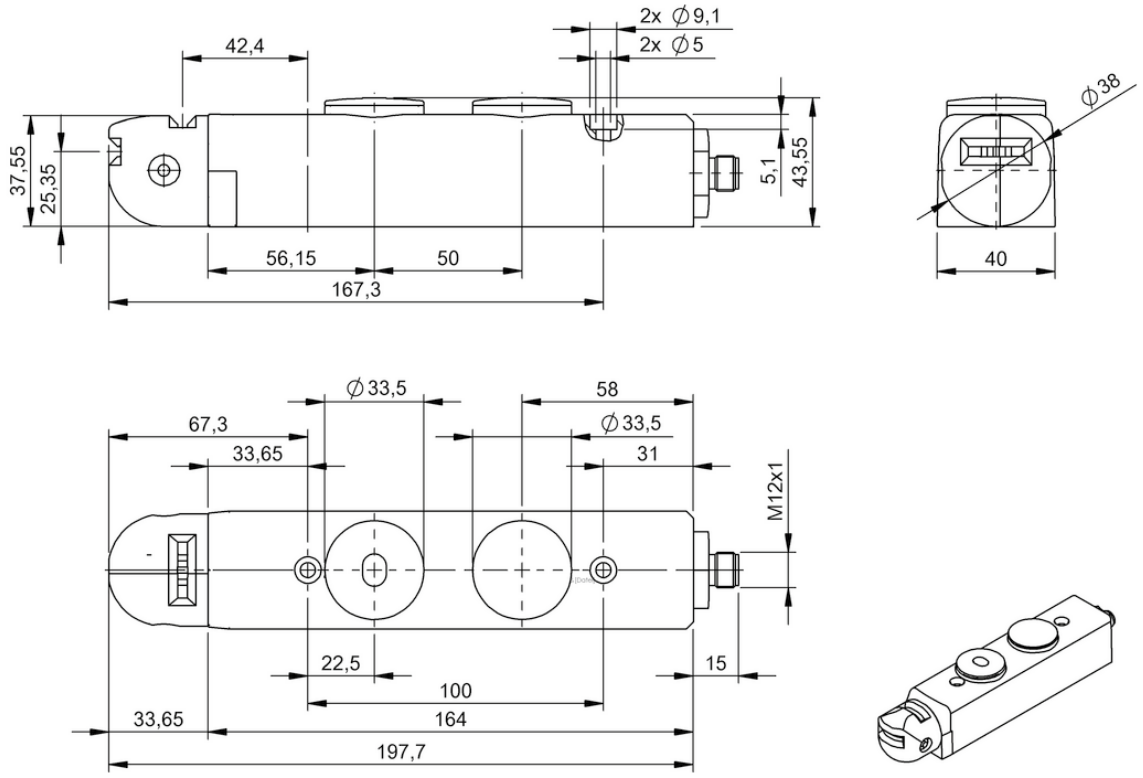
	BID0002 BID F101-2M1M3R-M02AZ0-S115	BID0003 BID F101-2M1E3-M02AZ0-S115	BID0001 BID F101-2M1E3R-M02AZ0-S115
	5 million Switching operations	5 million Switching operations	5 million Switching operations
	low	low	low
	CE, TÜV NRTL, TÜV, RoHS	CE, TÜV NRTL, TÜV, RoHS	TÜV NRTL, TÜV, CE, RoHS
	mechanical - force, contact	mechanical - force, contact	mechanical - force, contact
	2x positive opening	2x positive opening	2x positive opening
	AC-15, DC -13	AC-15, DC -13	AC-15, DC -13
	laterally + above	laterally + above	laterally + above
	yes, spring force (power to unlock)	yes, magnetic force (power to lock)	yes, magnetic force (power to lock)
	2500 N	2500 N	2500 N
	key	no	no
	yes	no	yes
	1 mil. switching operations	1 mil. switching operations	1 mil. switching operations
	Connector, M12x1 connector, 8-pin	Connector, M12x1 connector, 8-pin	Connector, M12x1 connector, 8-pin
	40 x 247.7 x 61.3 mm	40 x 197.7 x 44 mm	40 x 247.7 x 61.3 mm
	0...40 °C	0...40 °C	0...40 °C
	IP65	IP65	IP65
	Aluminum	Aluminum	Aluminum
	Seite 70	Seite 71	Seite 71



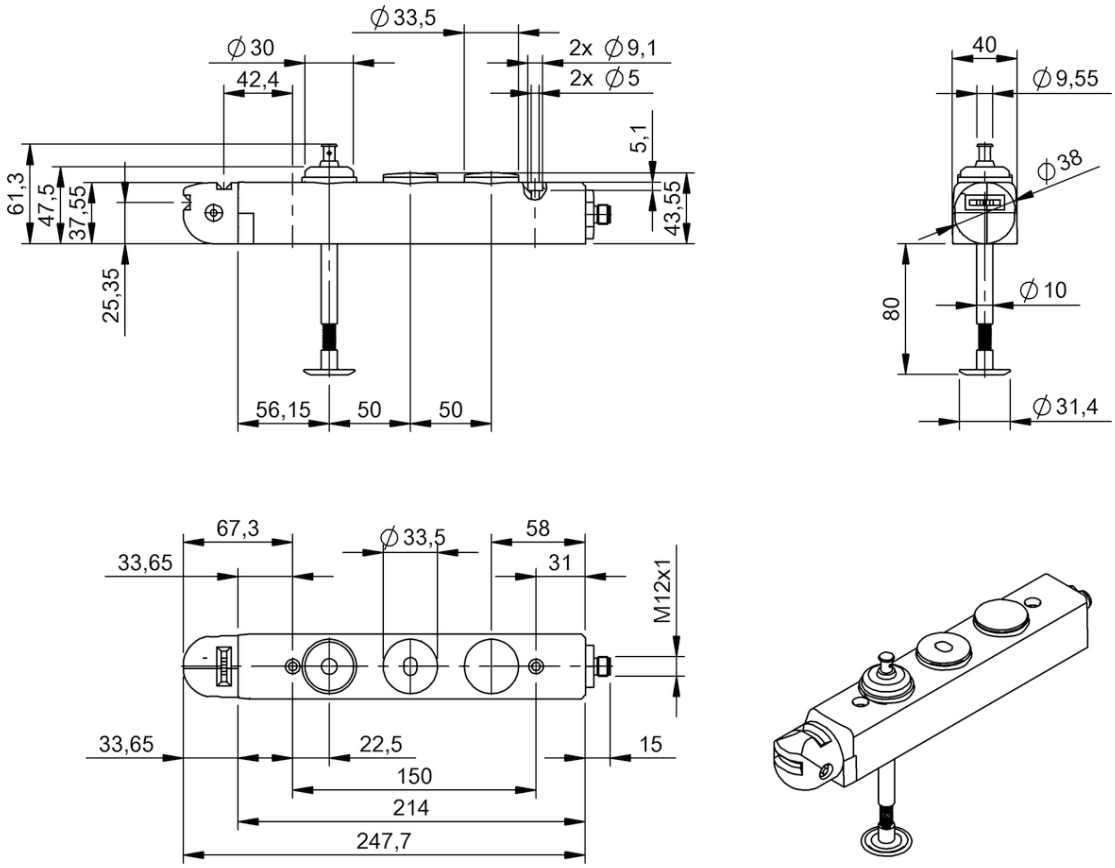
BID0004



BID0002



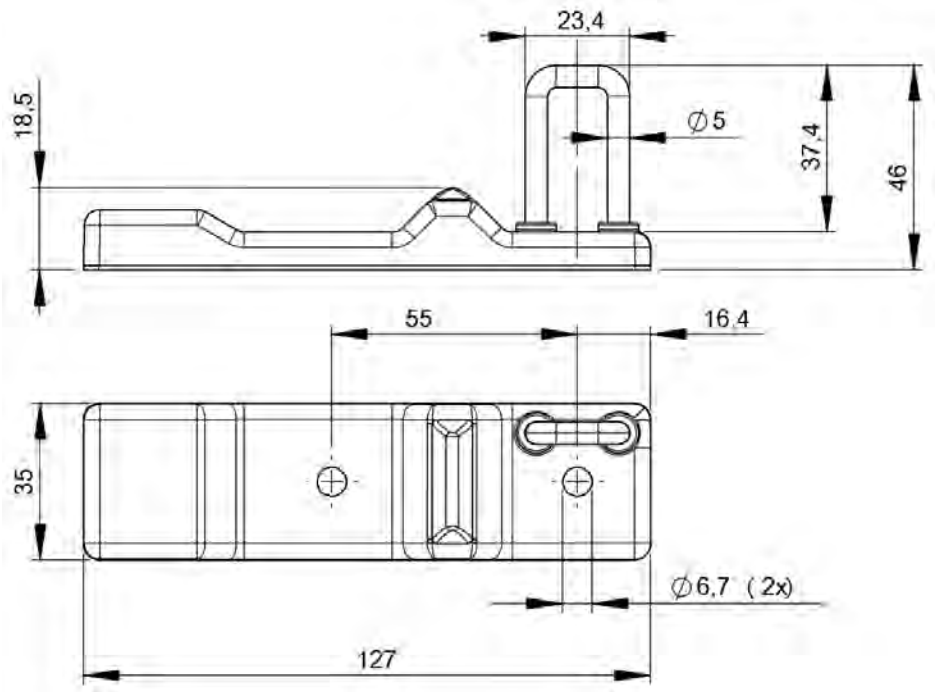
BID0003



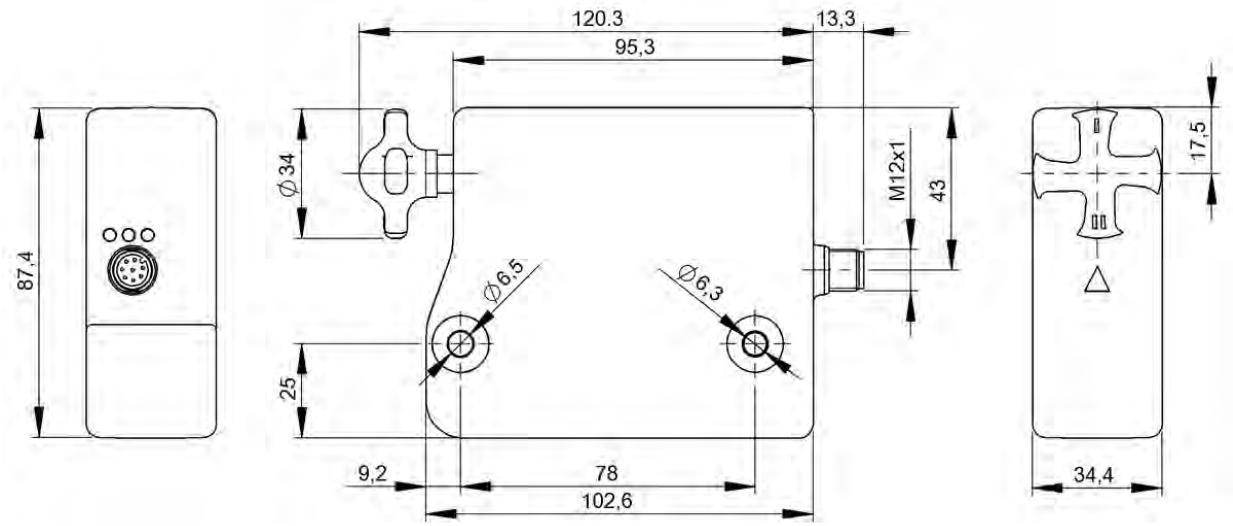
BID0001

	BID0010 BID Z01K-4R3M0	
Performance Level	—	
Safety category (EN ISO 13849-1)	—	
SIL (IEC 61508)	—	
SIL CL (EN 62061)	—	
Coding level (EN ISO 14119)	—	
Response time max.	—	
Approval/Conformity	Ecolab	
Operating principle	non-contact (RFID)	
Utilization category	—	
Approach direction	—	
Guard locking, principle	—	
Holding force FZH	—	
Auxillary release	—	
Escape release	—	
Life expectancy mechanical	—	
Connection	—	
Switching output	—	
Dimension	46 x 127 x 35 mm	
Ambient temperature	0...60 °C	
Protection degree	—	
Housing material	Thermoplastic, glass-fibre reinforced	
Productview	Page 74	

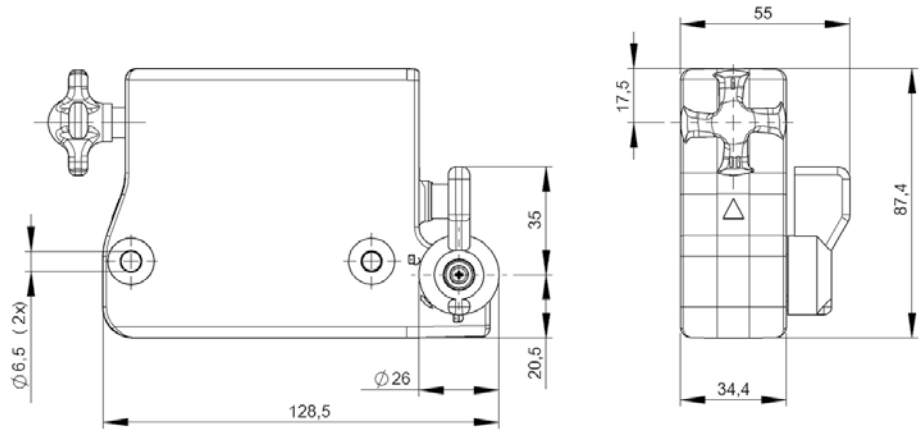
	BID0011 BID Z01K-4R3M3-002KZ0-S115	BID0013 BID Z01K-4R3M3R-002KZ0-S115	BID0012 BID Z01K-4R3E3-002KZ0-S115
	e (for locking function), d (for retention function)	e (for locking function), d (for retention function)	d (for retention function), e (for locking function)
	4 (for locking function), 2 (for retention function)	4 (for locking function), 2 (for retention function)	4 (for locking function), 2 (for retention function)
	3 (for locking function), 2 (for retention function)	3 (for locking function), 2 (for retention function)	3 (for locking function), 2 (for retention function)
	3 (for locking function), 2 (for retention function)	3 (for locking function), 2 (for retention function)	3 (for locking function), 2 (for retention function)
	high	high	high
	100 ms	100 ms	100 ms
	CE, cULus, TÜV, Ecolab	CE, cULus, TÜV, Ecolab	CE, cULus, TÜV, Ecolab
	non-contact (RFID)	non-contact (RFID)	non-contact (RFID)
	DC-12: 24 V/0.25 A, DC-13: 24 V/0.25 A	DC-12: 24 V/0.25 A, DC-13: 24 V/0.25 A	DC-12: 24 V/0.25 A, DC-13: 24 V/0.25 A
	lateral	lateral	lateral
	yes, spring force (power to unlock)	yes, spring force (power to unlock)	yes, magnetic force (power to lock)
	1000 N	1000 N	1000 N
	Screwdriver	Triangular Key	Screwdriver
	no	yes	no
	1 mil. switching operations	1 mil. switching operations	1 mil. switching operations
	Connector, M12x1, 8-pin	Connector, M12x1, 8-pin	Connector, M12x1, 8-pin
	2x PNP OSSD, PNP NC	2x PNP OSSD, PNP NC	2x PNP OSSD, PNP NC
	87.5 x 120 x 35 mm	87.5 x 129 x 35 mm	87.5 x 120 x 35 mm
	0...60 °C	0...60 °C	0...60 °C
	IP69, IP67, IP66	IP69, IP67, IP66	IP69, IP67, IP66
	Thermoplastic, glass-fibre reinforced	Thermoplastic, glass-fibre reinforced	Thermoplastic, glass-fibre reinforced
	Page 74	Page 75	Page 74



BID0010



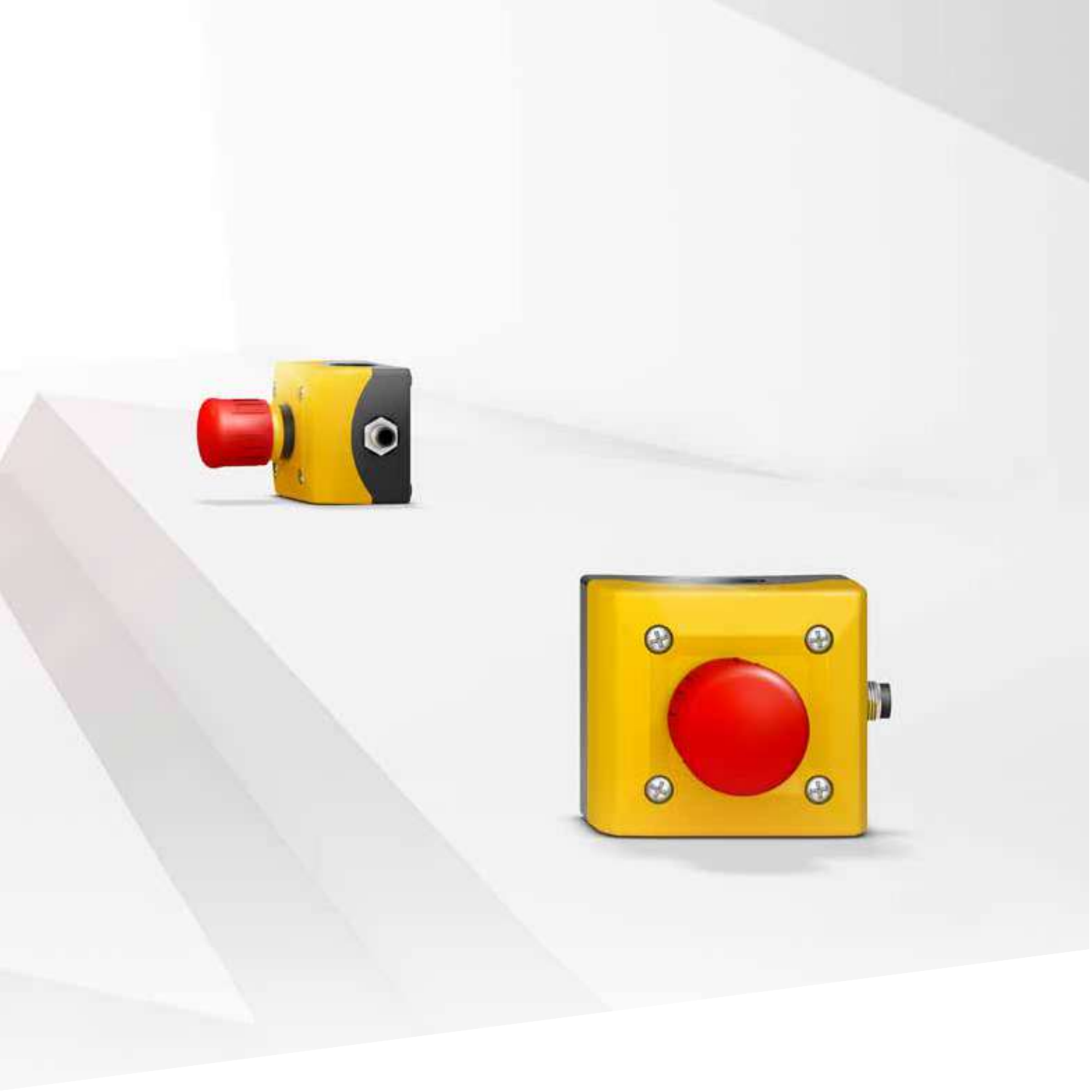
BID0011, BID0012



BID0013

Quickly stop machines at critical times

SAFETY COMMAND DEVICES



Safe operation of automatic machines and equipment falls under a company's due diligence responsibility. To be sure that in emergency situations machine hazards can be prevented or reduced, safety command devices such as E-Stop or E-Off units must be used. As a supplementary protective measure equipment must always include an E-Stop device – whether during installation, operation or maintenance. And regardless of whether this function is implemented as an E-Off (shuts off power) or an E-Stop (hazardous process or movement is stopped).

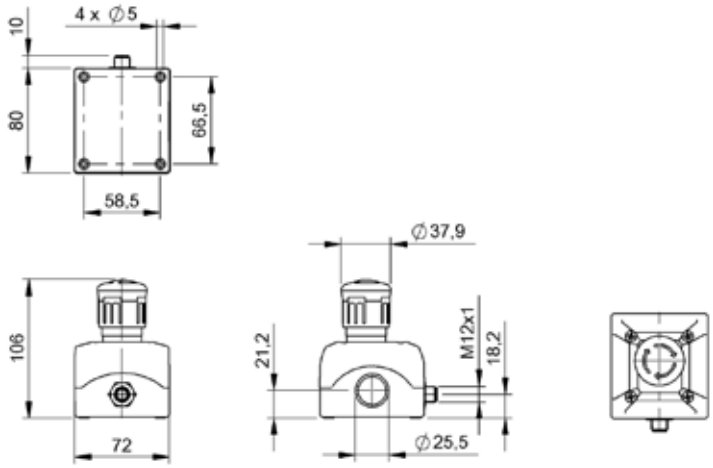
The safety command devices must be easy to reach, always available and functional, and should bring the machine to a safe condition immediately. Our highly visible command devices carry out an immediate E-Stop function when there is a malfunction. This makes them ideal for protecting both persons and machines.

The safety command devices from Balluff feature a compact housing, so that you can install them on various machines, even where space is at a premium. They are also quite easy to install.

The most important benefits

- Reliable disconnection of the power supply
- Positive opening operation compliant with IEC 60947-5-1, Addendum K
- Pluggable connection with M12 (5-pin)
- Turn-to-release mushroom pushbutton
- High degree of protection against dust and water
- Compact housing, easy installation

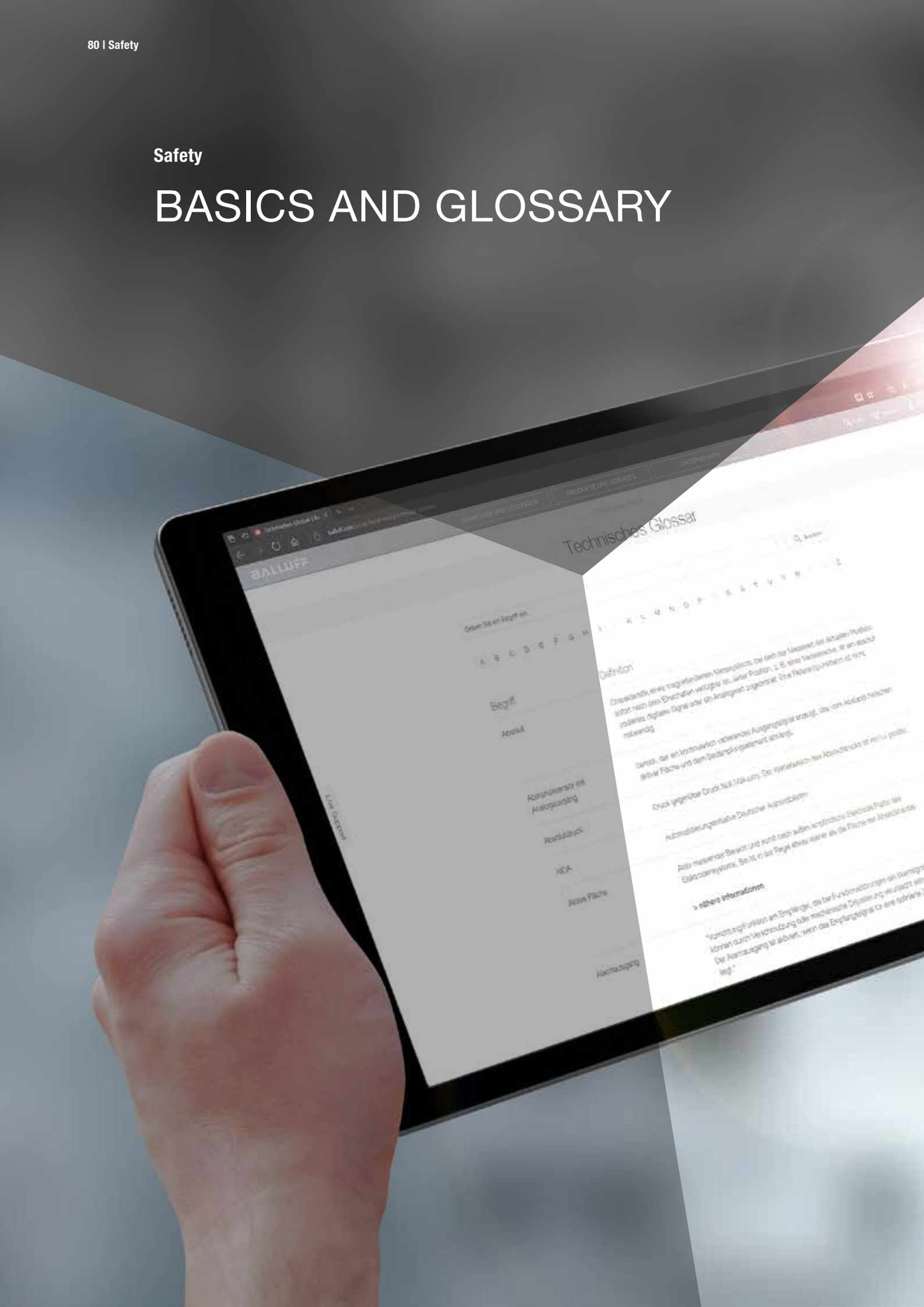
	BAM02HA BAM ES-XA-01D-01-R01-201-S92
B10d (EN ISO 13849-1)	0.1 million Switching operations
Approval/Conformity	UL CERTIFIED, CE, TÜV
Operating principle	PIM-Export ERROR: Attribute failed
No of contacts	2x positive opening
Utilization category	AC-15, DC -13
Type of release	Turning
Life expectancy mechanical	0.06 million Switching operations
Connection	M12x1-Male, 5-pole, A-coded
Dimension	80 x 106 x 72 mm
Ambient temperature	-25...70 °C
Protection degree	IP65
Housing material	Plastic
Productview	Page 79

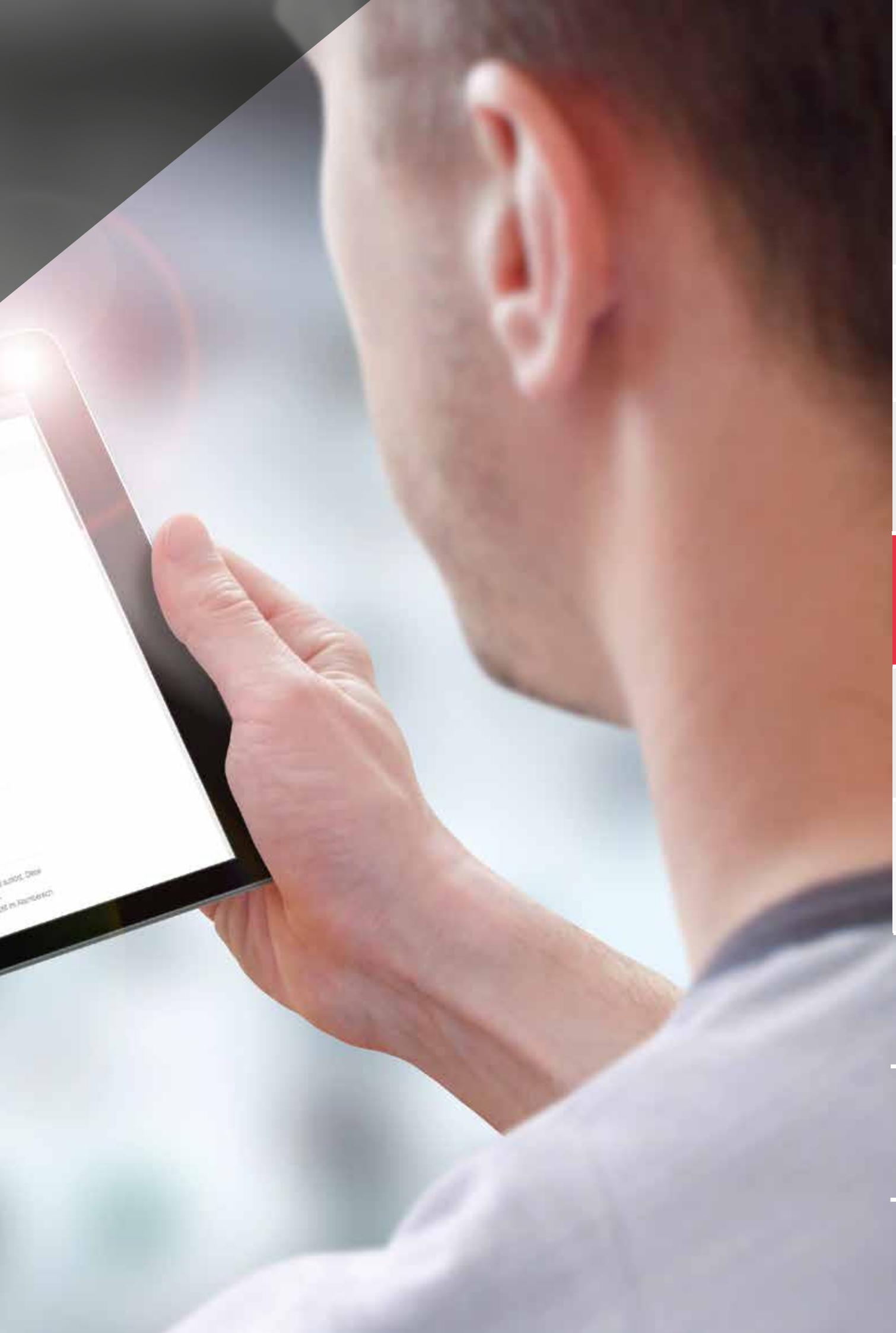


BAM02HA

Safety

BASICS AND GLOSSARY





AOPD	Active opto-electronic protective devices (e.g. light curtains)	DIN EN ISO 13849-1, EN ISO 12 100
AOPDDR	Active opto-electronic protective device responsive to diffuse reflection (e.g. laser scanners)	DIN EN ISO 13849-1, EN ISO 12 100
Open-circuit principle	Using the example of an interlock: when the actuator is plugged in, the current circuit of the safety contacts is closed when the solenoid is energized, causing the device to lock. If the voltage is eliminated from the solenoid, the safety contacts are opened and the locking mechanism is released. See also "Closed-circuit principle"	
Failure	The inability of a unit to fulfill a required function	DIN EN ISO 13849-1, EN ISO 12 100
β	Is the common cause failure factor for undetectable dangerous faults λ_{DU}	IEC 62061
B_{10d}	Number of cycles until 10 % of the components fail dangerously	DIN EN ISO 13849-1
Construction types (of interlocks)	**Type 1:** Interlock with mechanically actuated position switch with non-coded actuator (e.g. interlock with hinge) **Type 2:** Interlock with mechanically actuated position switch with coded actuator (e.g. tongue actuated position switches) **Type 3:** Interlock with non-contract actuated position switch with non-coded actuator (e.g. proximity switches) **Type 4:** Interlock with non-contract actuated position switch with coded actuator (e.g. RFID transponder actuated position switches)	DIN EN ISO 14119
User information (illustrative safety)	All of the information required for safe and proper use of the machine. It informs the user of the residual risk and warn him of it.	EN 12100

ESPE	Electro-sensitive protective equipment	EN 61496
CCF	Common cause failure, a specific type of dependent failure where several failures result from a single shared cause.	DIN EN ISO 13849-1
CE marking	Indication from the manufacturer, distributor or EU-Representative that declares a product in compliance with EU regulation 765/2008, meaning the product meets the prevailing requirements as specified in the harmonization legislation of the Union regarding its affixing.	EU regulation 765/2008, EU regulation 765/2008
Coding	Connectors are designed to be reverse polarity protected.	DIN EN ISO 13849-1, IEC 62061, IEC 61508-2:2000
Coding levels (of interlocks)	The coding of actuators/tags is intended to prevent the interlocking device to be defeated using easily available means. Low coding = 1 to 9 different codes Medium coding = 10 to 1000 different codes High coding = > 1000 different codes	EN ISO 14119
CRC	Cyclic redundancy check, procedure for determining a check value for data in order to detect errors in transmission or saving.	
DC	Diagnostic coverage indicator of the probability that the errors will be revealed by means of a test. Safety systems must be tested so that one knows whether they still function. The diagnostic coverage depends on the quality of the test. Poor tests cover only a few, whereas good tests cover many or even all errors. DC = $\sum\lambda dd/\lambda dtotal$	DIN EN ISO 13855
DCavg	Average diagnostic coverage DC: Measure of the effectiveness of the diagnostics, which can be determined as the ratio of the failure rate of the detected hazardous fault and the fault rate of the total dangerous failures.	DIN EN ISO 13849-1
Diversity	Having multiple means for performing a required function. Diversity-redundant systems can increase reliability.	DIN EN 61508-4, VDE 0803-4

E/E/PES	Functional safety of electrical/electronic/programmable electronic safety-related systems	DIN EN 61508
EDM	Monitoring of controlled actuators, feedback circuit	
Supplementary protective measures (indirect safety) (indirect safety measures)	Standards that must be taken to protect persons from hazards which cannot be sufficiently prevented or where the risks cannot be sufficiently limited.	EN 12100
Broken spring	A failure in a mechanical switching element that can result in a malfunction.	
Error	Condition of a unit characterized by its inability to perform a required function. Not to be confused with "tampering"	DIN EN ISO 13849-1, EN ISO 12100
FIT	Failure in time: A singular failure per 10^9 hours, or one failure per 114,000 years.	DIN EN ISO 13849-1
Escape release	Ability for manual unlocking of the interlocking device without aid from inside the protected area in order to exit this area.	DIN EN ISO 14119
FMEA	Failure mode effects analysis	DIN EN ISO 13849-1, EN ISO 12100
Functional safety	The part of overall safety which depends on the correct function of the E/E/PE safety related system for risk reduction	DIN EN 61508-4 VDE 0803-4
Hazard/risk	Potential source of damage	DIN EN ISO 13849-1
Hazardous area (risk area)	Any area in a machine and/or around a machine in which a person can be subjected to a hazard.	EN ISO 12100
Strict liability	The liability for damages resulting from a permissible risk (e.g. operation of a hazardous device, keeping of a house pet). Strict liability does not depend on the illegality of the action or on the fault of the injuring party.	§§ 1, 10 ProdHaftG – Manufacturer of a (defective) product

Device types	Devices which are evaluated as a system first by the design process of the user are Device Type 2 or 3. Type 1 or Type 4 have been developed directly for use in a safety function. **Device Type 1:** Devices are ready to use safety devices with integrated diagnostics. These are already classified as SIL or PL. Examples: Safety light curtain, safety light grid, components for safety controllers, safe drives/drive functions, safety switching devices **Device Type 2:** Devices where the user must himself evaluate the device in terms of its safety. This requires additional application data (circuit structure, DC, CCF). Examples: Non-safe electronics, e.g. operational amplifier, proximity switch, pressure sensor, hydraulic valve **Device Type 3:** Devices are subject to wear. The user must provide additional application data for evaluating the safety function (switching frequency, actuation frequency, circuit structure, DC, CCF). Examples: Wear-prone electro-mechanical components, including power contactors, switches, pneumatic valves, interlocking devices, command devices **Device Type 4:** A special case of Device Type 1. For Device Type 4 the probability of a dangerous failure per hour PFHD = 0. The fault is either precluded or the fault always results in a safe state.	EN 62061, VDMA 66413 standard sheet
GSD file	General station description, a file which describes the features of a device type uniquely and fully in an exactly specified format. The GSD is generated individually for each device type by the manufacturer and provided to the user as a file for designing Profinet systems.	
GSDML	GSD Markup Language is a language for describing Profinet IO field devices. See also "GSD file"	
HFT	Hardware fault tolerance: Ability to still perform a required function in the presence of errors or failures	DIN EN 62061, VDE0113-50
Auxiliary Release	The manual unlocking of the interlocking device using a tool or key from outside the protected area in case of a malfunction. An interlocking device with auxiliary release is not suitable for emergency release or escape release of the interlocking device.	DIN EN ISO 14119

Inherent safety	Direct intrinsic safety: A design that prevents hazards or reduces risks through suitable selection of design features of the machine itself.	EN 12100
Placing on the market	Includes the responsibility if a distributed product does not comply with the relevant regulations.	MaschRL 2006/42/EG Article 5
IODD Checker	A tool that tool checks not only the schema conformity, but also all the rules of the IODD specification which cannot be checked using an XML schema.	EN 12100
IODD	IO device description concerning sensors and actuators in an IO-Link network. It contains information for identification, device parameters, process and diagnostics data, communication properties and the structure of the user interface in engineering tools.	ISO 15745
IO-Link	IO-Link is the standardized IO technology for communicating with sensors and actuators. IO-Link is not a fieldbus, but rather a point-to-point communication based on the long-familiar 3-conductor sensor and actuator connection.	IEC 61131-9
Iterative process	A process of repetition of the same or similar actions for approaching a solution or particular goal.	DIN EN ISO 13849-1
Category [Cat.]	Categorization of the safety-related parts of a controller with respect to their resistance to errors and their behavior following an error. Categories are based on the structure of the arrangement of the parts, the error detection and/or their reliability.	IEC 61131-9
Conformity	Declaration by the manufacturer that the distributed machine complies with all the relevant safety and health requirements.	MaschRL 2006/42/EG Article 7/12

λ (lambda)	Failure rate in [FIT] = 10^{-9} 1/h	IEC 62061
λ_d	Failure rate in the unsafe (hazardous) direction	IEC 62061
λ_{dd}	Failure rate in the unsafe (hazardous) direction; the failure is however detected through diagnostic means before it can have a hazardous effect.	IEC 62061
λ_{du}	Failure rate in the unsafe (hazardous) direction; the failure is not detected	IEC 62061
Λ_s (also: λsafe)	Failure rate in the safe direction	IEC 62061
Tampering	Intentional defeating or by-passing of protective devices and their components	Addendum 1 No. 2.8 BetrSichV
MTTFd	Mean time to failure: Expected value of the average time until a dangerous failure	DIN EN ISO 13849-1
MTTR	Mean time to repair	
Muting	Temporary automatic suppression of one or more safety functions by the SRP/CS	DIN EN ISO 13849-1
NC	Normally closed contact	
NO	Normally open contact	
Emergency unlocking	Ability for manual unlocking of the interlocking device in emergency cases without aids from outside the protected area. An interlocking device with emergency unlocking can for example be required for freeing enclosed persons or for fire fighting.	

OSSD	Output Signal switching device	EN 61496-1
PDDB (formerly PDF)	Proximity switch with defined behavior under fault conditions	DIN EN 60947-5-3:2014-12, VDE 0660-214:2014-12
PL	Performance level: Discrete level which specifies the capability of safety-relevant parts of a controller for performing a safety function under predictable conditions	DIN EN ISO 13849-1
Personal protection	Use of an interlocking device for protecting a person from a hazard. (See also "Process protection")	
PFD	Probability of failure on demand	EN IEC 61 508-1/-7:2001
PFD(T)	Probability of a hazardous failure on demand at time T. (T generally refers to the proof test interval)	
PFDav	Average probability of failure on demand	
PFH	Probability of (dangerous) failure per hour	
PFHd	Probability of a dangerous failure per hour of a safety system or sub-system	DIN EN 62061, VDE 0113-50
PIPD	Passive infrared protective device	
Product liability	Liability for damages compensation on the part of the manufacturer for damages to the end user resulting from a defective product	§4 Par. 1 Sentence 1 ProduktHaftG
Profisafe	How safety devices (E-Stop buttons, light grids, overfill prevention systems etc.) safely communicate with safety controllers over Profibus.	

Process protection	Use of an interlocking device for protection against interruption of the work process. See also "Personal protection"	DIN EN 62061, VDE 0113-50
PTE	Probability of transmission error: Probability of a hazardous transmission error	EN 61508, EN 62061
RDF	Ratio of dangerous failures (= λD/λ)	VDMA 66413 standard sheet
Response time (for devices)	Time between action and reaction Example for safe I/O module: – Time between detection of a (state) change on the input port and the availability of this information on the communication interface (IO-Link) – Time between detection of new information on the communication interface (IO-Link) and its implementation on the output port	EN 61508, EN 62061
Redundancy	Reproducing critical components or functions of a system in order to increase reliability	IEC 61784-3
Residual risk	Risk remaining after protective measures have been taken	DIN EN ISO 13849-1, ISO 12100
Risk analysis	Combination of determining the limits of the machine, identifying the risk, and risk assessment	DIN EN ISO 13849-1, EN ISO 12100
Risk assessment	Totality of the process which includes a risk analysis and risk assessment	DIN EN ISO 13849-1, EN ISO 12100
	Assessment based on the risk analysis as to whether the goals for risk reduction were achieved	DIN EN ISO 13849-1, EN ISO 12100
Risk estimation	Determination of the probable extent of damage and probability of its occurrence	EN ISO 12100-1, DIN EN 1050

Risk graph	Means for classifying risk. Determines which PL or SIL results from a given case. Factors include severity of the injury, frequency and/or duration of exposure to the hazard, and possibilities for preventing the hazard	DIN EN ISO 13849-1, DIN EN 62061
Closed-circuit principle	Using the example of an interlock: when the actuator is plugged in the current circuit of the safety contacts is closed when the solenoid is energized, so that the device locks. The principle of circuit design where a normally energized electric circuit which, on being interrupted or deenergized, will cause the controlled function to assume its most restrictive condition. See also "Open-circuit principle"	
Safe stop 1 SS1	Corresponds to Stop Category 1 pursuant to IEC 60204. See also "Stop category"	IEC 60204-1
Safe stop 2 SS2	Corresponds to Stop Category 2 pursuant to IEC 60204. See also "Stop category"	IEC 60204-1
Safe torque OFF STO	Corresponds to Stop Category 0 pursuant to IEC 60204. See also "Stop category"	IEC 60204-1
Damage	Physical injury and/or damage too health or objects	DIN EN ISO 13849-1, DIN EN 61508-4, VDE 0803-4
Protection devices	Protective device or guard for protecting persons from possible dangers of a machine.	EN ISO 12100
Protection field	Area in which a specified test body is detected by the protective device	DIN EN ISO 13855
Protective measure	Measure which provides for risk reduction	DIN EN 62061, VDE 0113-50
SFF	Safe failure fraction: Fraction of the total failure rate of a sub-system which results in a non-dangerous failure	DIN EN 61508-4, VDE 0803-4, DIN EN 62061, VDE 0113-50

Safety function	Function of a machine whereby a failure of the function can result in an increased risk (or risks)	DIN EN ISO 13849-1, EN ISO 12100
SIL	Safety integrity level discrete level for specifying the safety integrity of the safety functions, whereby SIL 4 represents the highest level and SIL 1 the lowest level.	EN 61508
SIL CL	SIL claim limit (of a sub-system)	EN 62061
Simatic	Product family name of the Siemens company. It is used for products in automation technology, control technology and the manufacturing execution level.	
SRCF	Safety-relevant control function	EN 62061
SRECS	Safety-relevant electrical control system	EN 62061
SRP/CS	Safety-relevant part of a controller which responds to safety-relevant input signals and generates safety-relevant output signals	DIN EN ISO 13849-1
SRS	Safety requirements specification	
Stop category	**Stop category 0:** Bringing to a stop by immediately interrupting power to the machine drive elements (i.e. an uncontrolled stop) **Stop category 1:** Controlled stopping, where the power to the machine drive elements is retained in order to cause stopping. The power is only interrupted when stop is achieved. **Stop category 1b:** Controlled stopping, where the power to the machine drive elements is maintained in order to cause stopping. Continuity of the stop condition is monitored, and when a failure is detected power is interrupted without generating a hazardous situation. **Stop category 2:** Controlled stopping, where power to the machine drive elements is maintained	IEC 60204-1

TCI	Tool calling interface: Software for enabling communication over Profibus DP or Profinet IO	
TD	Diagnostic test interval: Time between online tests for uncovering errors in a safety-relevant system with a specified diagnostic coverage degree.	DIN EN 61508-4
TIA	Totally integrated automation: Software framework for the entire automation software. The TIA portal is the successor to the traditional STEP 7	
TM	Mission time: Time which covers the specified use of the SRP/CS	DIN EN ISO 13849-1
TS	Sub-system	DIN EN 62061
TSE	Sub-system element	DIN EN 62062
By-passing	An action by means of which the interlocking device can be disabled or by passed such that a machine can no longer be used as intended by the designer or only without the required safety measured.	DGUV
Validation	German Social Accident Insurance, ensures that a product provides the required results. See also "Verification"	DIN EN 61508-4, VDE 0803-4 PMBOK
Verification	Confirmation that a product meets the requirements. See also "Validation"	DIN EN 61508-4, VDE 0803-4 PMBOK
Interlock(ing device)	Mechanical, electrical, or other type of device meant to prevent dangerous machine functions under defined conditions (in general as long as the isolating protection device is not closed). See also "Construction types [of interlocking devices]"	DIN EN ISO 14119

Fault-based liability	The obligation for damages replacement based on legal liability provisions under private law which presume a culpable, i.e. not only objective illegal, but rather personally attributable behavior which is intentional or negligent.	§§ 823 ff BGB
Guard locking device	Device whose purpose is to keep a separating protective device in the closed position and which is connected to the controller.	DIN EN ISO 14119
Reliability	The ability of an object to perform a particular function under particular conditions over a specified time interval	IEC 60050
Positive opening contacts	Contacts in a relay/contactor which are mechanically connected to each other such that normally open and normally closed can never be in the same position at the same time.	IEC EN 60947-5-1, Addendum L
Positive opening	Assurance of contact separation as a direct result of a specified movement of the operating component of the switch over non-sprung parts.	DIN EN 60947-5-1, Addendum K

MACHINE VISION AND OPTICAL IDENTIFICATION

Quality assurance with industrial grade image processing

MACHINE VISION

Machine Vision from Balluff ensures quality and flexibility in modern production facilities. Through the use of industrial image processing our machine vision products provide reliable defect detection and, thereby, ensure exact quality control. All functions of the sensors can be flexibly combined.

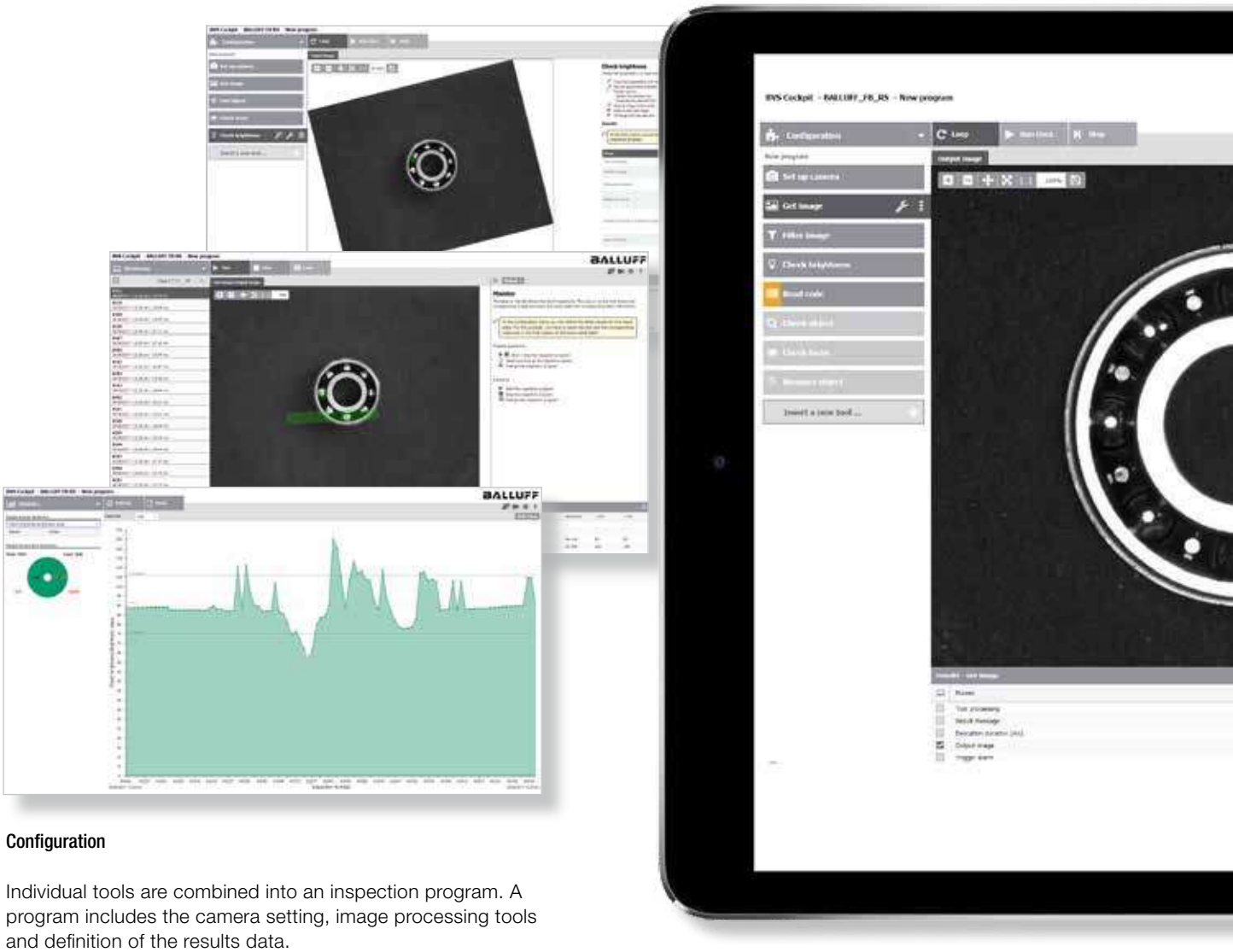
Features

- High cost-effectiveness and potential for cost reduction
- Less scrap thanks to early defect detection
- High system uptime when changing batches

BAI BVS – Balluff Vision Solutions

BVS-COCKPIT NO EXPERTISE REQUIRED

The BVS Cockpit user interface makes it easy to access all functions. You can intuitively set up our cameras with no prior knowledge. In short: our camera concept is designed for everyone.



Configuration

Individual tools are combined into an inspection program. A program includes the camera setting, image processing tools and definition of the results data.

Monitor

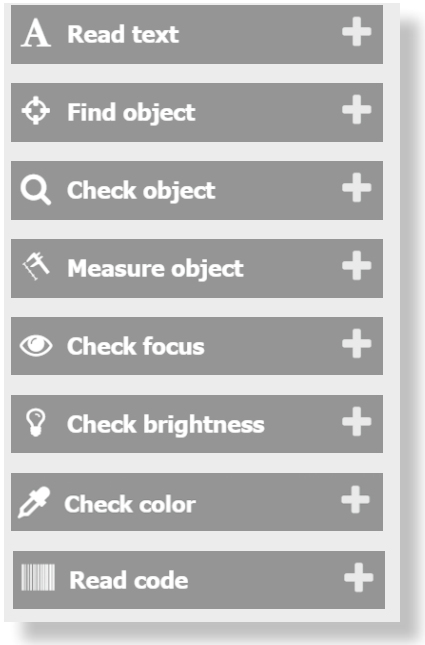
The monitor shows you the current inspection program. The SmartCamera can store up to 100 inspection programs which you can select individually either directly or through the controller.

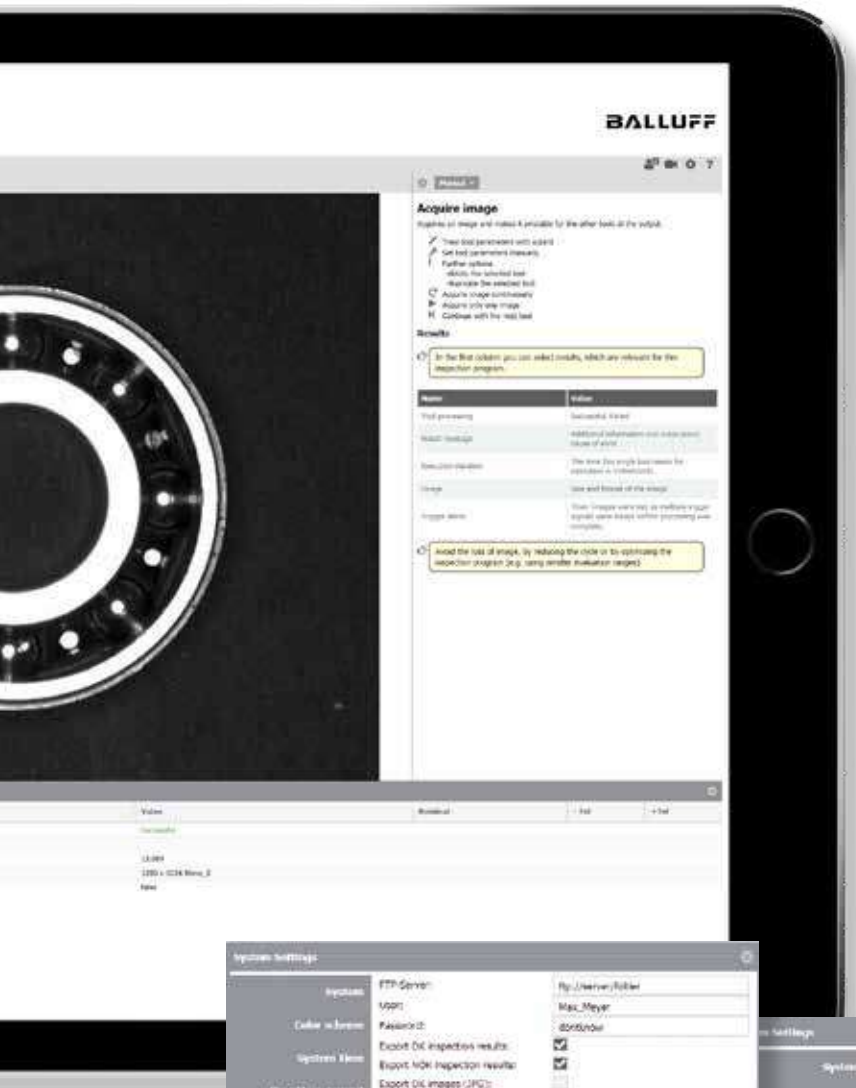
Statistics

While the camera is performing an inspection you can access the statistics, view the entire production quality and analyze the results parameters statistically and in timely fashion. Just a click lets you switch from a graph point to the associated inspection display in Monitor mode.

Image processing tools

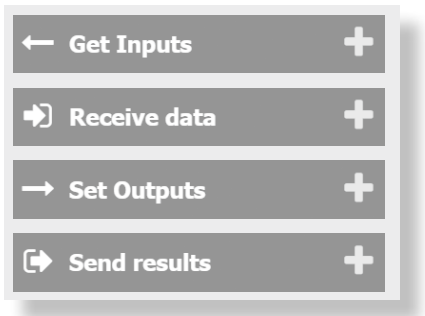
Simple to use, flexible and reliable. The SmartCamera offers intuitive operation and simple to use tools which are based on industry-standard HALCON basic algorithms – all of which ensures you of fast and reliable solutions.

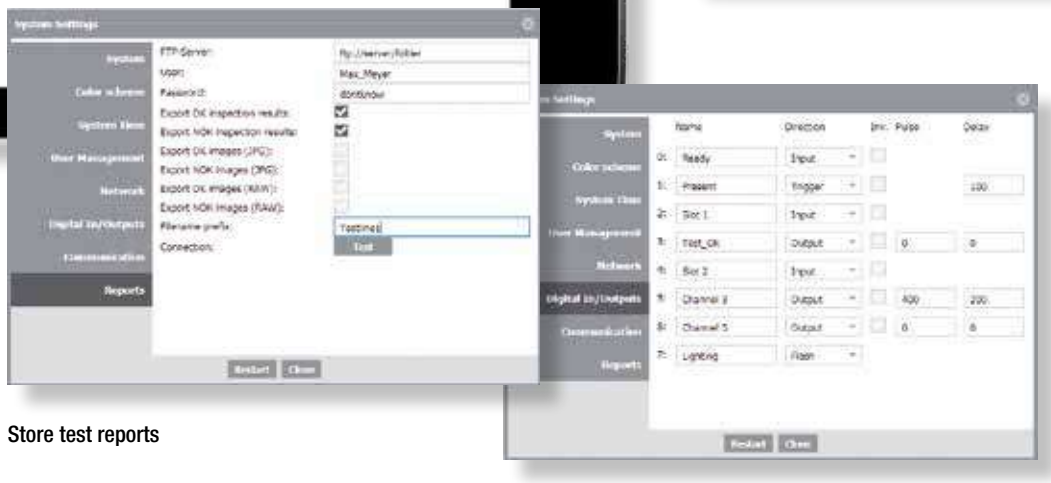




Interface tools

Results can be passed dynamically to the appropriate interface for the particular industrial system.





Store test reports

You can automatically create a results report in XML-format after each inspection and save the associated images to an FTP server. The storage condition can be defined with filter settings (ok/nok).

Definition of inputs and outputs

Up to eight digital channels are assigned to electrical connector pins by type, function and time behavior.

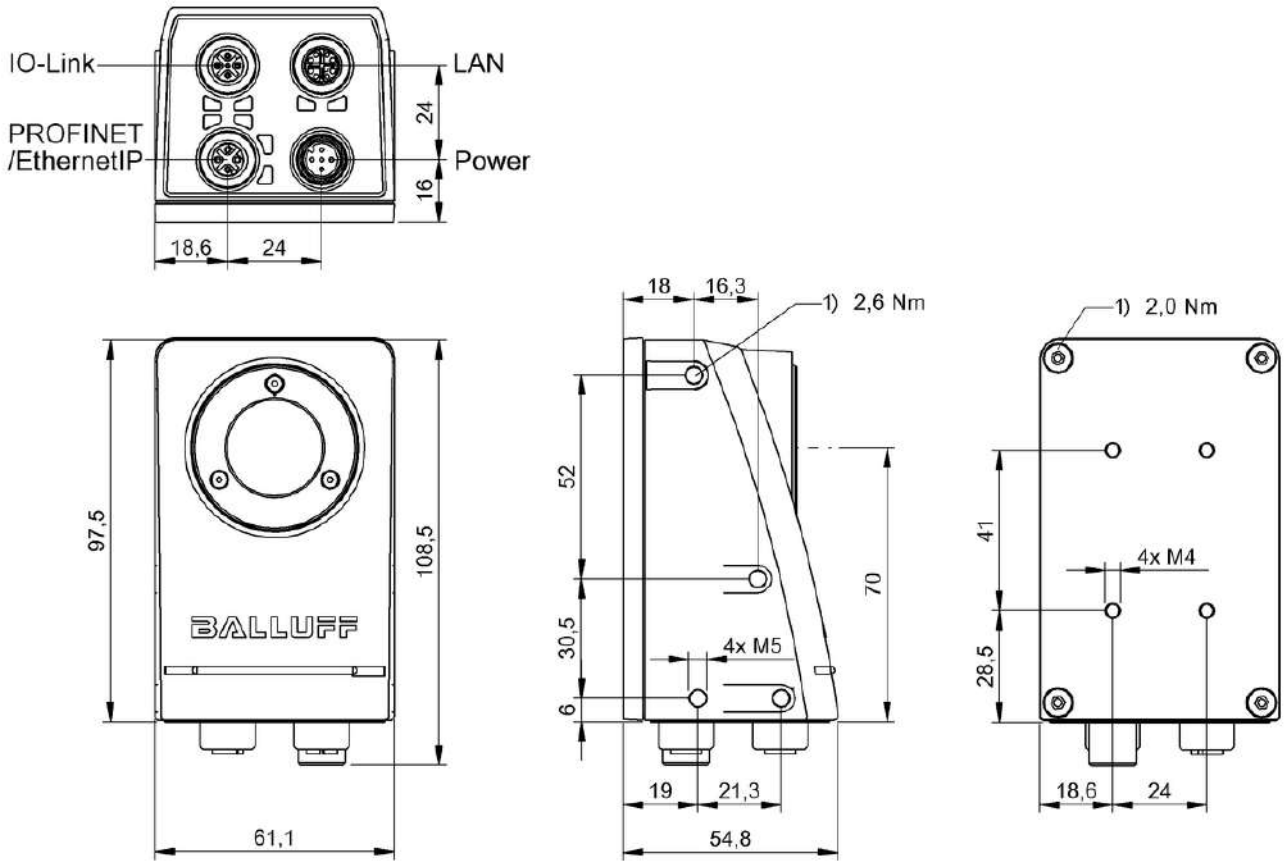


	BVS003P BVS SL-C1280Z00-07-000	BVS003R BVS SL-C1280Z00-07-001	BVS003T BVS SL-M1280Z00-07-000	
Application	Object tracking, code+text analysis, Object verification	Object tracking	Object tracking, code+text analysis, Object verification	
Image resolution	1280 x 1024 pixels	1280 x 1024 pixels	1280 x 1024 pixels	
Sensor type Vision	CMOS 1/1,8“ color global shutter	CMOS 1/1,8“ color global shutter	CMOS 1/1.8“ monochrome global shutter	
Housing material	Aluminum, Painted	Aluminum, Painted	Aluminum, Painted	
Dimension	65 x 40 x 99.5 mm	65 x 40 x 99.5 mm	65 x 40 x 99.5 mm	
Switching output	6x IO configurable	6x IO configurable	6x IO configurable	
Interface	LAN (Gigabit Ethernet), Ethernet TCP/UDP, RS232	LAN (Gigabit Ethernet), Ethernet TCP/UDP, RS232	LAN (Gigabit Ethernet), Ethernet TCP/UDP, RS232	
Operating voltage Ub	19.2...26 VDC	19.2...26 VDC	19.2...26 VDC	
Ambient temperature	0...55 °C	0...55 °C	0...55 °C	
Approval/Conformity	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	
Protection degree	IP67, with protective tube	IP67, with protective tube	IP67, with protective tube	
Productview	Page 514	Page 514	Page 514	



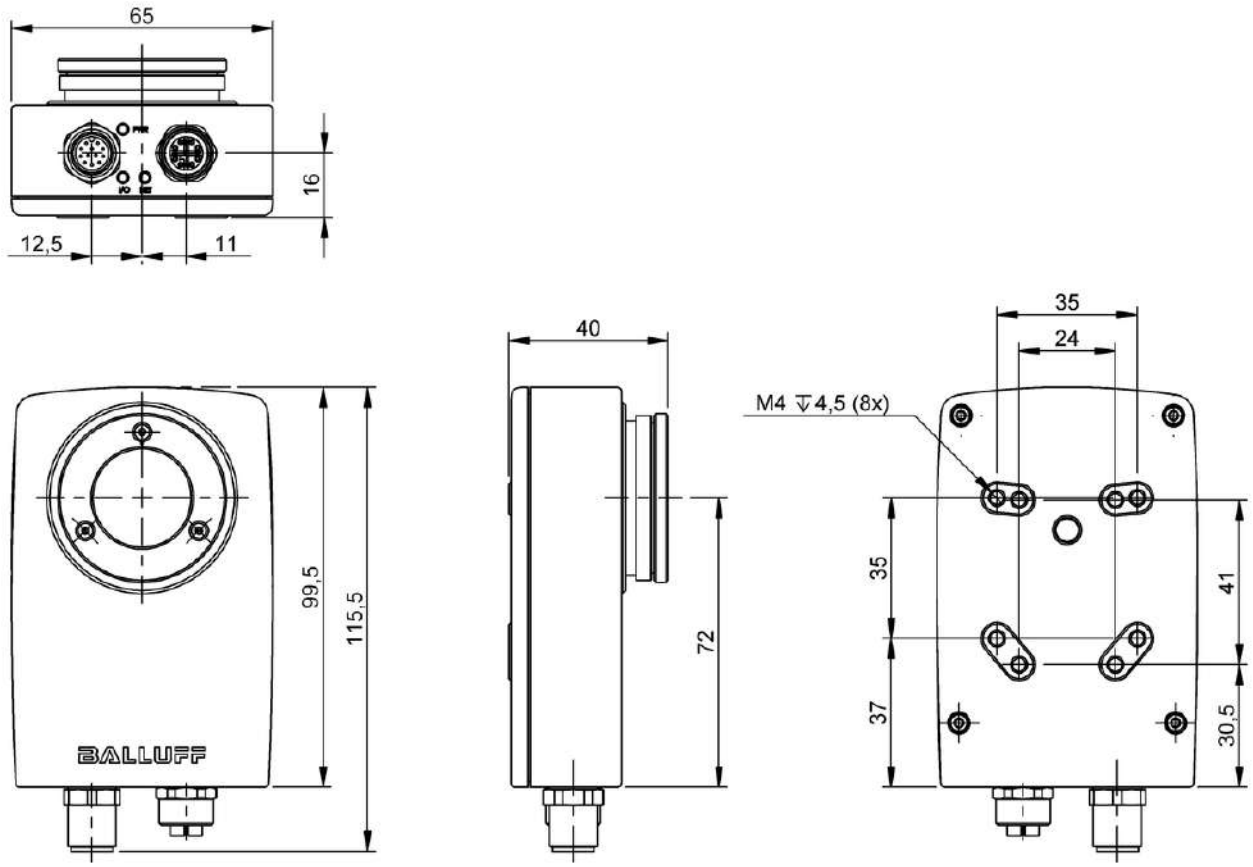


	BVS003U BVS SL-M1280Z00-07-001	BVS002F BVS SC-C1280Z00-30-000	BVS002C BVS SC-M1280Z00-07-000	BVS002A BVS SC-M1280Z00-30-000	BVS0033 BVS SC-M1280Z00-30-020
	Object tracking	Object tracking, code+text analysis, Object verification	Object tracking, code+text analysis, Object verification	Object tracking, code+text analysis, Object verification	Object tracking, code+text analysis, Object verification, Hdevelop interface
	1280 x 1024 pixels	1280 x 1024 pixels	1280 x 1024 pixels	1280 x 1024 pixels	1280 x 1024 pixels
	CMOS 1/1.8“ monochrome global shutter	CMOS 1/1,8“ color global shutter	CMOS 1/1.8“ monochrome global shutter	CMOS 1/1.8“ monochrome global shutter	CMOS 1/1.8“ monochrome global shutter
	Aluminum, Painted	Aluminum, Painted	Aluminum, Painted	Aluminum, Painted	Aluminum, Painted
	65 x 40 x 99.5 mm	62 x 55 x 110 mm	62 x 55 x 110 mm	62 x 55 x 110 mm	62 x 55 x 110 mm
	6x IO configurable	2x IO configurable	8x IO configurable	2x IO configurable	2x IO configurable
	LAN (Gigabit Ethernet), Ethernet TCP/UDP, RS232	LAN (Gigabit Ethernet), Profinet / EtherNet/IP, IO-Link	LAN (Gigabit Ethernet)	LAN (Gigabit Ethernet), Profinet / EtherNet/IP, IO-Link	LAN (Gigabit Ethernet), Profinet / EtherNet/IP, IO-Link
	19.2...26 VDC	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	0...55 °C	0...55 °C	0...55 °C	0...55 °C	0...55 °C
	CE, EAC, WEEE	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC
	IP67, with protective tube	IP67, with protective tube	IP67, with protective tube	IP67, with protective tube	IP67, with protective tube
	Page 514	Page 514	Page 515	Page 514	Page 514

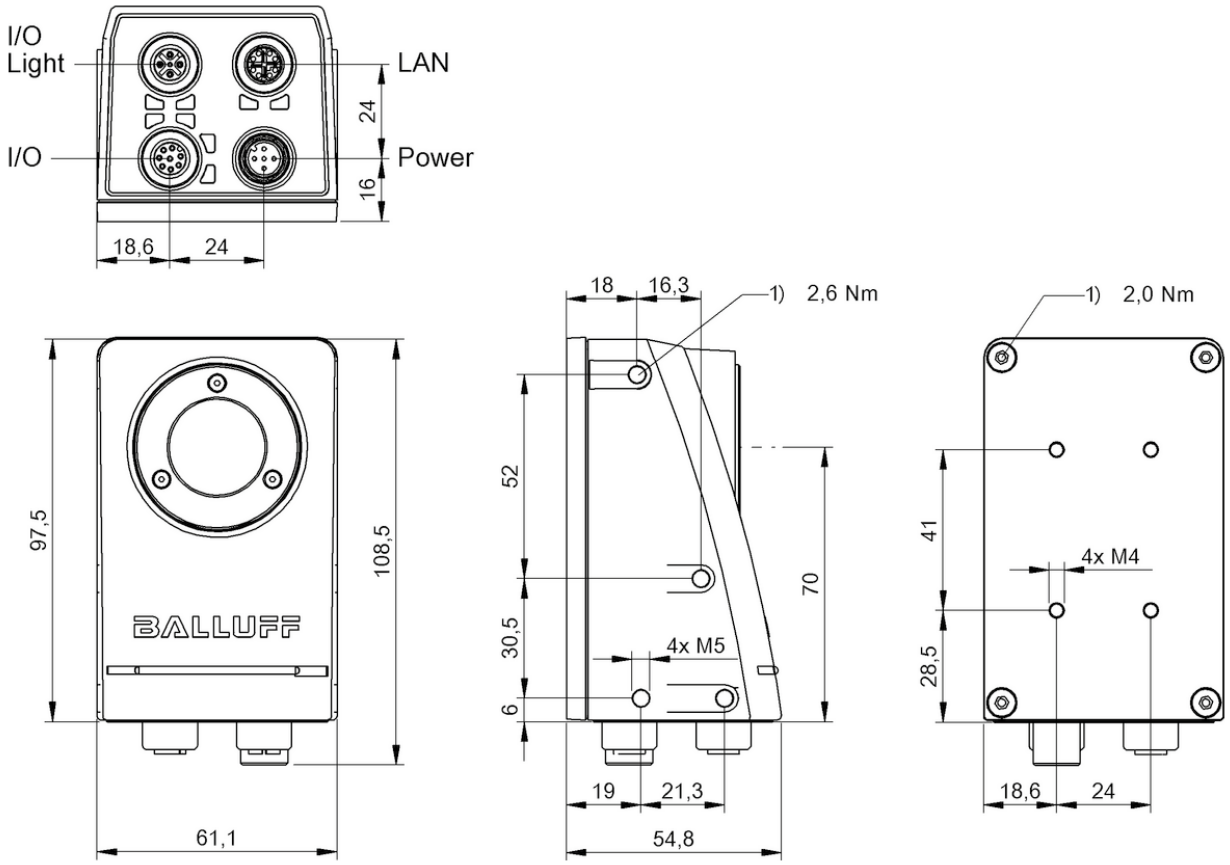


1) Tightening torque

BVS002F, BVS002A, BVS0033



BVS003P, BVS003R, BVS003T, BVS003U



1) Tightening torque

BVS002C



	BVS003C BVS CA-GX0-0016ZC-111C41-XAS2	**BVS003A** BVS CA-GX0-0016ZG-112C41-XAS2	**BVS0035** BVS CA-GX0-0124AC-111C41-XAS2	
Version	GigE Vision industrial camera	GigE Vision industrial camera	GigE Vision industrial camera	
Interface	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE	
Lens mount	C-Mount	C-Mount	C-Mount	
Dimension	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm	
Sensor type Vision	1/2.9“ global shutter CMOS	1/2.9“ global shutter CMOS	1.1“ global shutter CMOS	
Sensor chip	Sony IMX273	Sony IMX273	Sony IMX304	
Image resolution	1.6 MP (1456 x 1088 pixels)	1.6 MP (1456 x 1088 pixels)	12.4 MP (4112 x 3008 pixels)	
Housing material	Aluminum	Aluminum	Aluminum	
Image formats	BayerRG8, BayerRG10, BayerRG12, BayerRG16, BayerRG12Packed, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12Packed, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, BayerRG12Packed, BayerRG12p	
Operating voltage Ub	11...25 VDC, PoE	11...25 VDC, PoE	11...25 VDC, PoE	
Ambient temperature	0...45 °C	0...45 °C	0...45 °C	
Approval/Conformity	CE, EAC, WEEE, cULus	CE, EAC, WEEE, cULus	CE, EAC, WEEE, cULus	
Protection degree	IP67	IP67	IP67	
Productview	Page 520	Page 520	Page 520	





	BVS0034 BVS CA-GX0-0124AG-112C41-XAS2	BVS0039 BVS CA-GX0-0032AC-111C41-XAS2	BVS0038 BVS CA-GX0-0032AG-112C41-XAS2	BVS0037 BVS CA-GX0-0051AC-111C41-XAS2	BVS0036 BVS CA-GX0-0051AG-112C41-XAS2
	GigE Vision industrial camera	GigE Vision industrial camera	GigE Vision industrial camera	GigE Vision industrial camera	GigE Vision industrial camera
	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE
	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount
	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm
	1.1“ global shutter CMOS	1/1.8“ global shutter CMOS	1/1.8“ global shutter CMOS	2/3“ global shutter CMOS	2/3“ global shutter CMOS
	Sony IMX304	Sony IMX265	Sony IMX265	Sony IMX264	Sony IMX264
	12.4 MP (4112 x 3008 pixels)	3.2 MP (2064 x 1544 pixels)	3.2 MP (2064 x 1544 pixels)	5.1 MP (2464 x 2056 pixels)	5.1 MP (2464 x 2056 pixels)
	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12Packed, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, BayerRG12Packed, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12Packed, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, BayerRG12Packed, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12Packed, Mono12p
	11...25 VDC. PoE	11...25 VDC, PoE	11...25 VDC, PoE	11...25 VDC, PoE	11...25 VDC, PoE
	0...45 °C	0...45 °C	0...45 °C	0...45 °C	0...45 °C
	CE, EAC, WEEE, cULus	CE, EAC, WEEE, cULus	CE, EAC, WEEE, cULus	CE, EAC, WEEE, cULus	CE, EAC, WEEE, cULus
	IP67	IP67	IP67	IP67	IP67
	Page 520	Page 520	Page 520	Page 520	Page 520

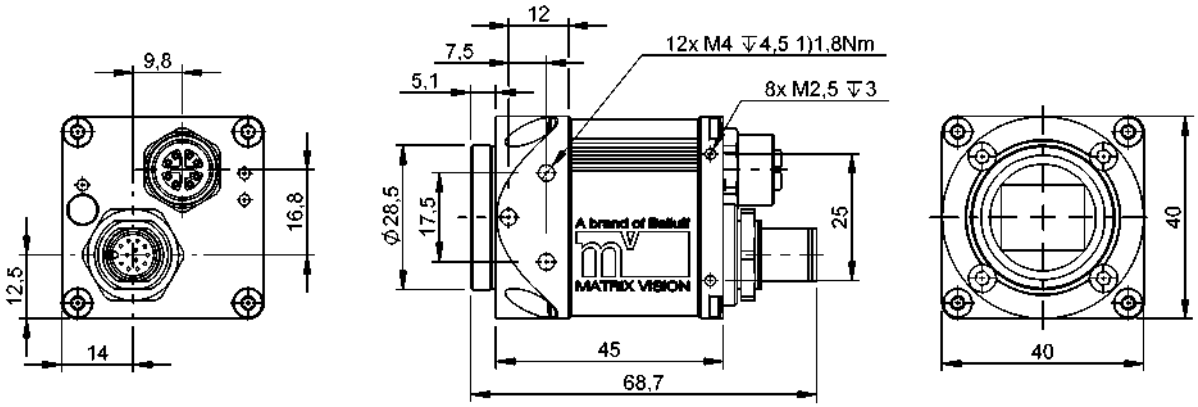


	BVS003N BVS CA-SF2-0016ZC-111121-XAS2	**BVS003M** BVS CA-SF2-0016ZG-112121-XAS2	**BVS003F** BVS CA-SF2-0124AC-111121-XAS2	
Version	USB3 Vision industrial camera	USB3 Vision industrial camera	USB3 Vision industrial camera	
Interface	USB 2.0 / 3.0	USB 2.0 / 3.0	USB 2.0 / 3.0	
Lens mount	C-Mount	C-Mount	C-Mount	
Dimension	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm	
Sensor type Vision	1/2.9“ global shutter CMOS	1/2.9“ global shutter CMOS	1.1“ global shutter CMOS	
Sensor chip	Sony IMX273	Sony IMX273	Sony IMX304	
Image resolution	1.6 MP (1456 x 1088 pixels)	1.6 MP (1456 x 1088 pixels)	12.4 MP (4112 x 3008 pixels)	
Housing material	Aluminum	Aluminum	Aluminum	
Image formats	BayerRG8, BayerRG10, BayerRG12, BayerRG16, RGB8Packed, BGR8Packed, BGRA8Packed, BGR10V2Packed, YUV422Packed, YUV422_YUYVPacked, YUV444Packed, RGB8, BGR8, BGRa8, RGB10p32, YUV422_8_UYVY, YUV422_8, YUV8_UYV, YUV411_8_UYYVYY, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, RGB8Packed, BGR8Packed, BGRA8Packed, BGR10V2Packed, YUV422Packed, YUV422_YUYVPacked, YUV444Packed, RGB8, BGR8, BGRa8, RGB10p32, YUV422_8_UYVY, YUV422_8, YUV8_UYV, YUV411_8_UYYVYY, BayerRG12p	
Operating voltage Ub	11...25 VDC	11...25 VDC	11...25 VDC	
Ambient temperature	0...45 °C	0...45 °C	0...45 °C	
Approval/Conformity	CE, EAC, WEEE, ULus	CE, EAC, WEEE, ULus	CE, EAC, WEEE, ULus	
Protection degree	IP30	IP30	IP30	
Productview	Page 520	Page 520	Page 520	



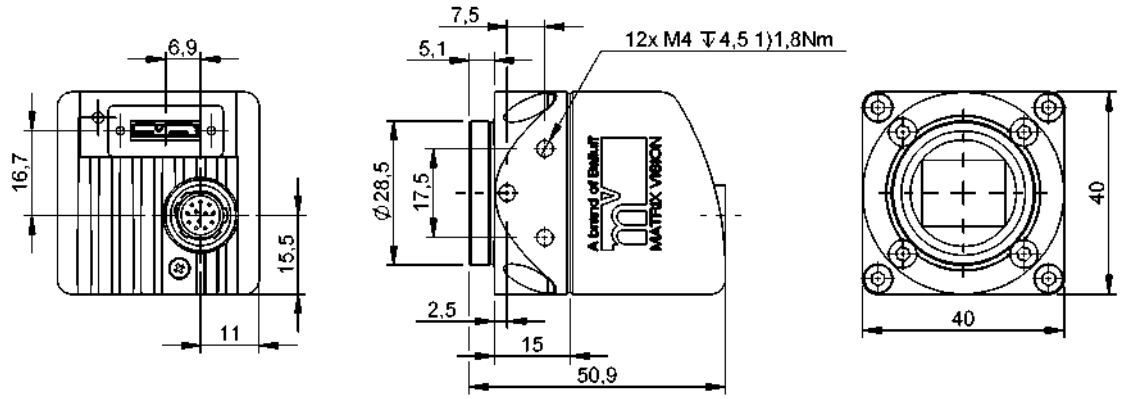


	BVS003E BVS CA-SF2-0124AG-112121-XAS2	BVS003L BVS CA-SF2-0032AC-111121-XAS2	BVS003K BVS CA-SF2-0032AG-112121-XAS2	BVS003J BVS CA-SF2-0051AC-111121-XAS2	BVS003H BVS CA-SF2-0051AG-112121-XAS2
	USB3 Vision industrial camera	USB3 Vision industrial camera	USB3 Vision industrial camera	USB3 Vision industrial camera	USB3 Vision industrial camera
	USB 2.0 / 3.0	USB 2.0 / 3.0	USB 2.0 / 3.0	USB 2.0 / 3.0	USB 2.0 / 3.0
	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount
	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm
	1.1“ global shutter CMOS	1/1.8“ global shutter CMOS	1/1.8“ global shutter CMOS	2/3“ global shutter CMOS	2/3“ global shutter CMOS
	Sony IMX304	Sony IMX265	Sony IMX265	Sony IMX264	Sony IMX264
	12.4 MP (4112 x 3008 pixels)	3.2 MP (2064 x 1544 pixels)	3.2 MP (2064 x 1544 pixels)	5.1 MP (2464 x 2056 pixels)	5.1 MP (2464 x 2056 pixels)
	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, RGB8Packed, BGR8Packed, BGRA8Packed, BGR10V2Packed, YUV422Packed, YUV422_YUYVPacked, YUV444Packed, RGB8, BGR8, BGRa8, RGB10p32, YUV422_8_UYVY, YUV422_8, YUV8_UYV, YUV411_8_UYYVYY, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, RGB8Packed, BGR8Packed, BGRA8Packed, BGR10V2Packed, YUV422Packed, YUV422_YUYVPacked, YUV444Packed, RGB8, BGR8, BGRa8, RGB10p32, YUV422_8_UYVY, YUV422_8, YUV8_UYV, YUV411_8_UYYVYY, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12p
	11...25 VDC	11...25 VDC	11...25 VDC	11...25 VDC	11...25 VDC
	0...45 °C	0...45 °C	0...45 °C	0...45 °C	0...45 °C
	CE, EAC, WEEE, ULus	CE, EAC, WEEE, ULus	CE, EAC, WEEE, ULus	CE, EAC, WEEE, ULus	CE, EAC, WEEE, ULus
	IP30	IP30	IP30	IP30	IP30
	Page 520	Page 520	Page 520	Page 520	Page 520



1) Tightening torque

BVS003C, BVS003A, BVS0035, BVS0034, BVS0039, BVS0038, BVS0037, BVS0036

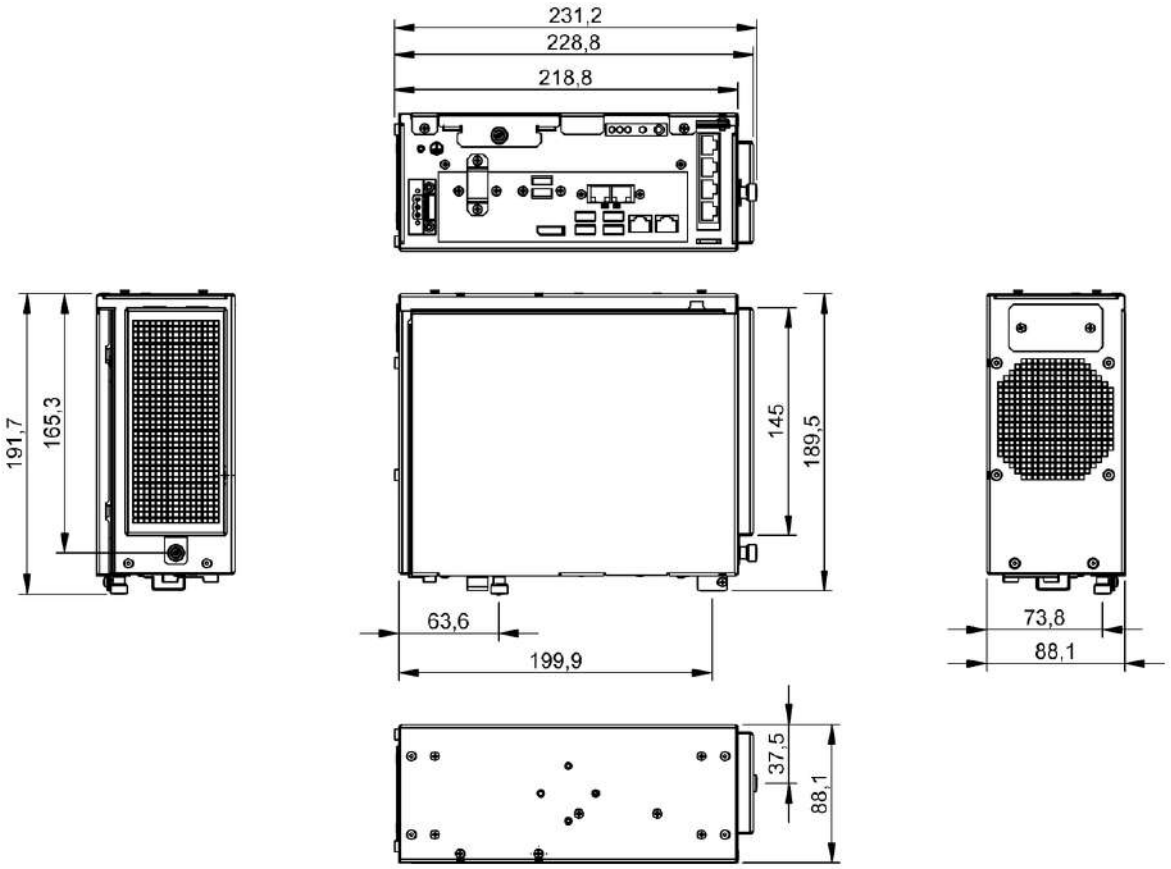


1) Tightening torque

BVS003N, BVS003M, BVS003F, BVS003E, BVS003L, BVS003K, BVS003J, BVS003H

Short description	
Software type	
Use	
Software version	
Scope of delivery	
System requirements - CPU	
System requirements - RAM	
Supported web browsers	
Supported operating systems	
Productview	

	BAI000Z BAI BVS-CA-EPC-001	BAE0103 BAE PD-VS-014-05
	BVS Cockpit Software	SmartVision Controller
	Configuration software	—
	for industrial cameras BVS CA	Accessories for industrial cameras
	—	—
	Software on USB stick, License dongle (HALCON 13.0.2) on USB stick	USB stick with HALCON license, Mounting material
	Dual Core 2 GHz	—
	2 GB	—
	Mozilla Firefox (Version 24), Google Chrome (Version 32.0), Windows Internet Explorer (Version 10)	—
	Windows 7 (64 bit) or higher	—
		Page 524



BAE0103

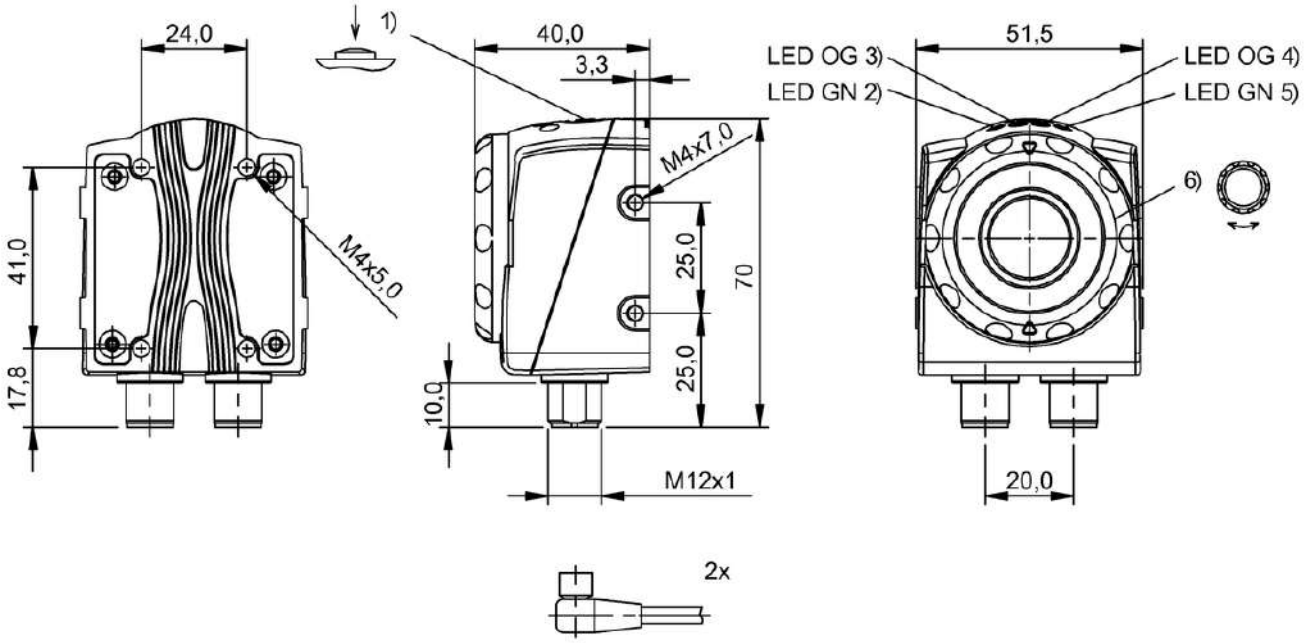


	BVS001F BVS UR-3-105-E	BVS001H BVS UR-3-101-E	BVS001J BVS UR-3-103-E	
Sensor type Vision	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	
Image resolution	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	
Detection rate typ.	3…40 Hz	3…40 Hz	3…40 Hz	
Application	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification	
Range	50...1000 mm	50...1000 mm	50...1000 mm	
Field of view	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	
Focal length	6.0 mm	8.0 mm	12.0 mm	
Light type	Infrared	Infrared	Infrared	
Housing material	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	
Dimension	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	
Switching output	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	
Interface	RS232 (9.6...115.2 kBaud)	RS232 (9.6...115.2 kBaud)	RS232 (9.6...115.2 kBaud)	
Connection 1	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	
Connection 2	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	
Operating voltage Ub	22...26 VDC	22...26 VDC	22...26 VDC	
Ambient temperature	-10...55 °C	-10...55 °C	-10...55 °C	
Approval/Conformity	CE, cULus	CE, cULus	CE, cULus	
Protection degree	IP54	IP54	IP54	
Productview	Page 528	Page 528	Page 528	





	BVS001K BVS UR-3-107-E	BVS001L BVS UR-3-005-E	BVS001M BVS UR-3-001-E	BVS001N BVS UR-3-003-E	BVS001P BVS UR-3-007-E
	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white
	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels
	3…40 Hz	3…40 Hz	3…40 Hz	3…40 Hz	3…40 Hz
	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification
	230...1000 mm	50...1000 mm	50...1000 mm	50...1000 mm	50...1000 mm
	55 x 42 mm ... 240 x 180 mm	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	43 x 32 mm ... 240 x 180 mm
	16.0 mm	6.0 mm	8.0 mm	12.0 mm	16.0 mm
	Infrared	LED, red light	LED, red light	LED, red light	LED, red light
	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS
	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm
	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)
	RS232 (9.6...115.2 kBaud)	RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T	Ethernet 10/100 Base T	Ethernet 10/100 Base T
	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded
	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded
	22...26 VDC	22...26 VDC	22...26 VDC	22...26 VDC	22...26 VDC
	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C
	CE, cULus	CE, cULus	CE, cULus	CE, cULus	CE, cULus
	IP54	IP54	IP54	IP54	IP54
	Page 528	Page 528	Page 528	Page 528	Page 528



1) Teach-in reference image, 2) Operating voltage, 3) Output 1 active, 4) Output 2 active, 5) Connection with PC, 6) Focus

BVS001F, BVS001H, BVS001J, BVS001K, BVS001L, BVS001M, BVS001N, BVS001P

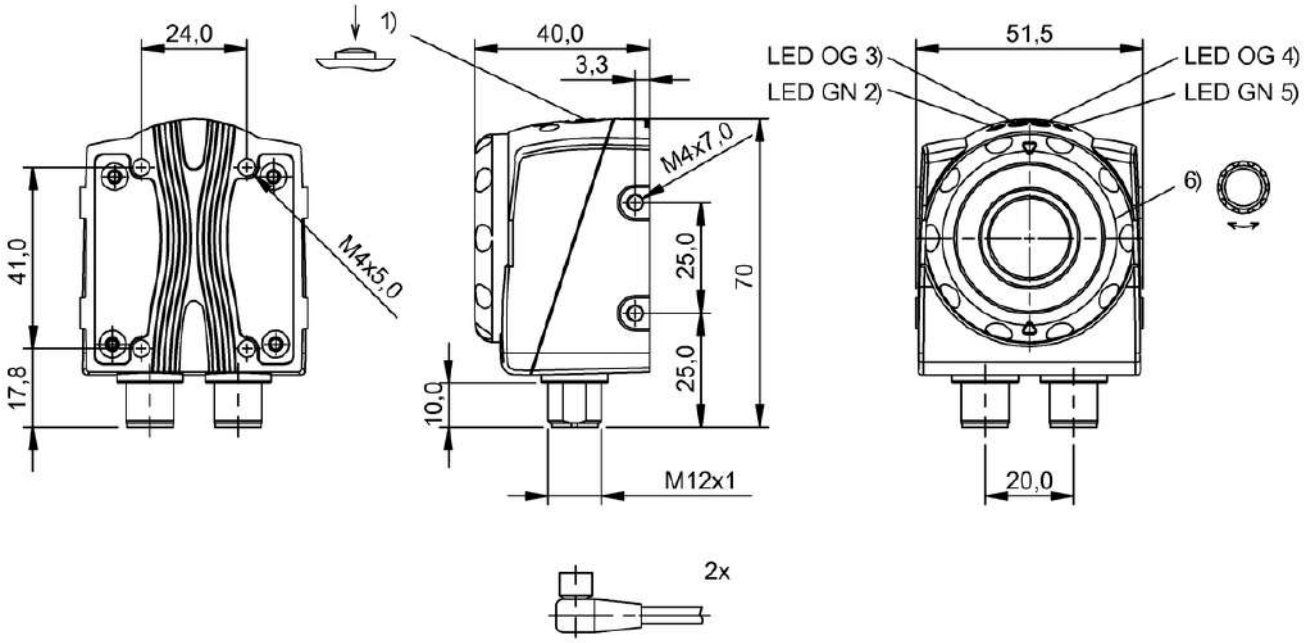


	BVS0016 BVS OI-3-155-E	BVS0015 BVS OI-3-151-E	BVS0017 BVS OI-3-153-E	
Sensor type Vision	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	
Image resolution	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	
Detection rate typ.	3…50 Hz	3…50 Hz	3…50 Hz	
Application	360° detection	360° detection	360° detection	
Range	50...1000 mm	50...1000 mm	50...1000 mm	
Field of view	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	
Focal length	6.0 mm	8.0 mm	12.0 mm	
Light type	Infrared	Infrared	Infrared	
Housing material	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	
Dimension	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	
Switching output	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	
Interface	Ethernet 10/100 Base T	Ethernet 10/100 Base T	Ethernet 10/100 Base T	
Connection 1	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	
Connection 2	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	
Operating voltage Ub	22...26 VDC	22...26 VDC	22...26 VDC	
Ambient temperature	-10...55 °C	-10...55 °C	-10...55 °C	
Approval/Conformity	cULus, CE	cULus, CE	cULus, CE	
Protection degree	IP54	IP54	IP54	
Productview	Page 532	Page 532	Page 532	





	BVS0018 BVS 0I-3-157-E	BVS000L BVS 0I-3-055-E	BVS000J BVS 0I-3-051-E	BVS000K BVS 0I-3-053-E	BVS000W BVS 0I-3-057-E
	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white
	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels
	3…50 Hz	3…40 Hz	3…40 Hz	3…40 Hz	3…40 Hz
	360° detection	360° detection	360° detection	360° detection	360° detection
	180...1000 mm	50...1000 mm	50...1000 mm	50...1000 mm	180...1000 mm
	43 x 32 mm ... 240 x 180 mm	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	43 x 32 mm ... 240 x 180 mm
	16.0 mm	6.0 mm	8.0 mm	12.0 mm	16.0 mm
	Infrared	LED, red light	LED, red light	LED, red light	LED, red light
	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS
	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm
	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)
	Ethernet 10/100 Base T	Ethernet 10/100 Base T	Ethernet 10/100 Base T	Ethernet 10/100 Base T	Ethernet 10/100 Base T
	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded
	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded
	22...26 VDC	22...26 VDC	22...26 VDC	22...26 VDC	22...26 VDC
	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C
	cULus, CE	cULus, CE	cULus, CE	cULus, CE	CE, cULus
	IP54	IP54	IP54	IP54	IP54
	Page 532	Page 532	Page 532	Page 532	Page 532

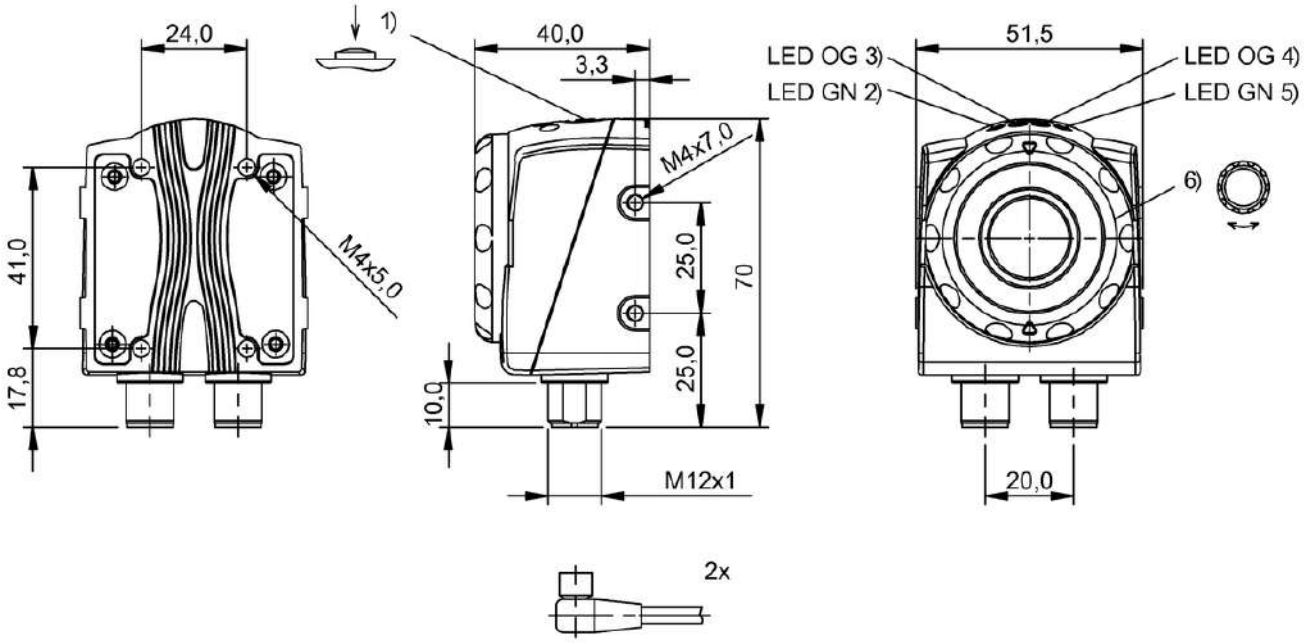


1) Teach-in reference image, 2) Operating voltage, 3) Output 1 active, 4) Output 2 active, 5) Connection with PC, 6) Focus

BVS0016, BVS0015, BVS0017, BVS0018, BVS000L, BVS000J, BVS000K, BVS000W

	BVS0013 BVS 0I-3-105-E	
Sensor type Vision	CMOS image sensor black-white	
Image resolution	VGA 640 x 480 pixels	
Detection rate typ.	3…15 Hz	
Range	50...1000 mm	
Field of view	34 x 25 mm ... 676 x 507 mm	
Focal length	6.0 mm	
Light type	Infrared	
Housing material	Aluminum, die-cast ABS	
Dimension	51.5 x 70 x 40 mm	
Switching output	3x PNP normally open (NO)	
Interface	Ethernet 10/100 Base T	
Connection 1	M12x1-Male, 8-pole, A-coded	
Connection 2	M12x1-Male, 4-pole, D-coded	
Operating voltage Ub	22...26 VDC	
Ambient temperature	-10...55 °C	
Approval/Conformity	CE, cULus	
Protection degree	IP54	
Productview	Page 536	

	BVS0014 BVS 0I-3-101-E	BVS0012 BVS 0I-3-103-E
	CMOS image sensor black-white	CMOS image sensor black-white
	VGA 640 x 480 pixels	VGA 640 x 480 pixels
	3…15 Hz	3…15 Hz
	50...1000 mm	50...1000 mm
	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm
	8.0 mm	12.0 mm
	Infrared	Infrared
	Aluminum, die-cast ABS	Aluminum, die-cast ABS
	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm
	3x PNP normally open (NO)	3x PNP normally open (NO)
	Ethernet 10/100 Base T	Ethernet 10/100 Base T
	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded
	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded
	22...26 VDC	22...26 VDC
	-10...55 °C	-10...55 °C
	cULus, CE	cULus, CE
	IP54	IP54
	Page 536	Page 536

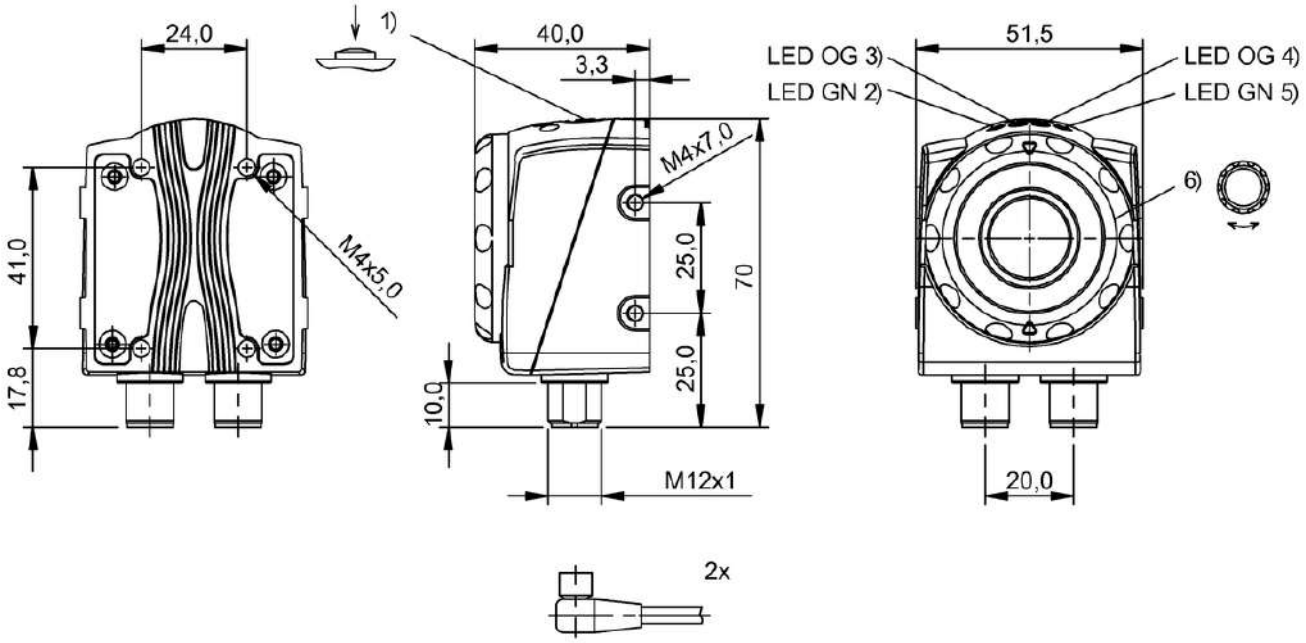


1) Teach-in reference image, 2) Operating voltage, 3) Output 1 active, 4) Output 2 active, 5) Connection with PC, 6) Focus

BVS0013, BVS0014, BVS0012

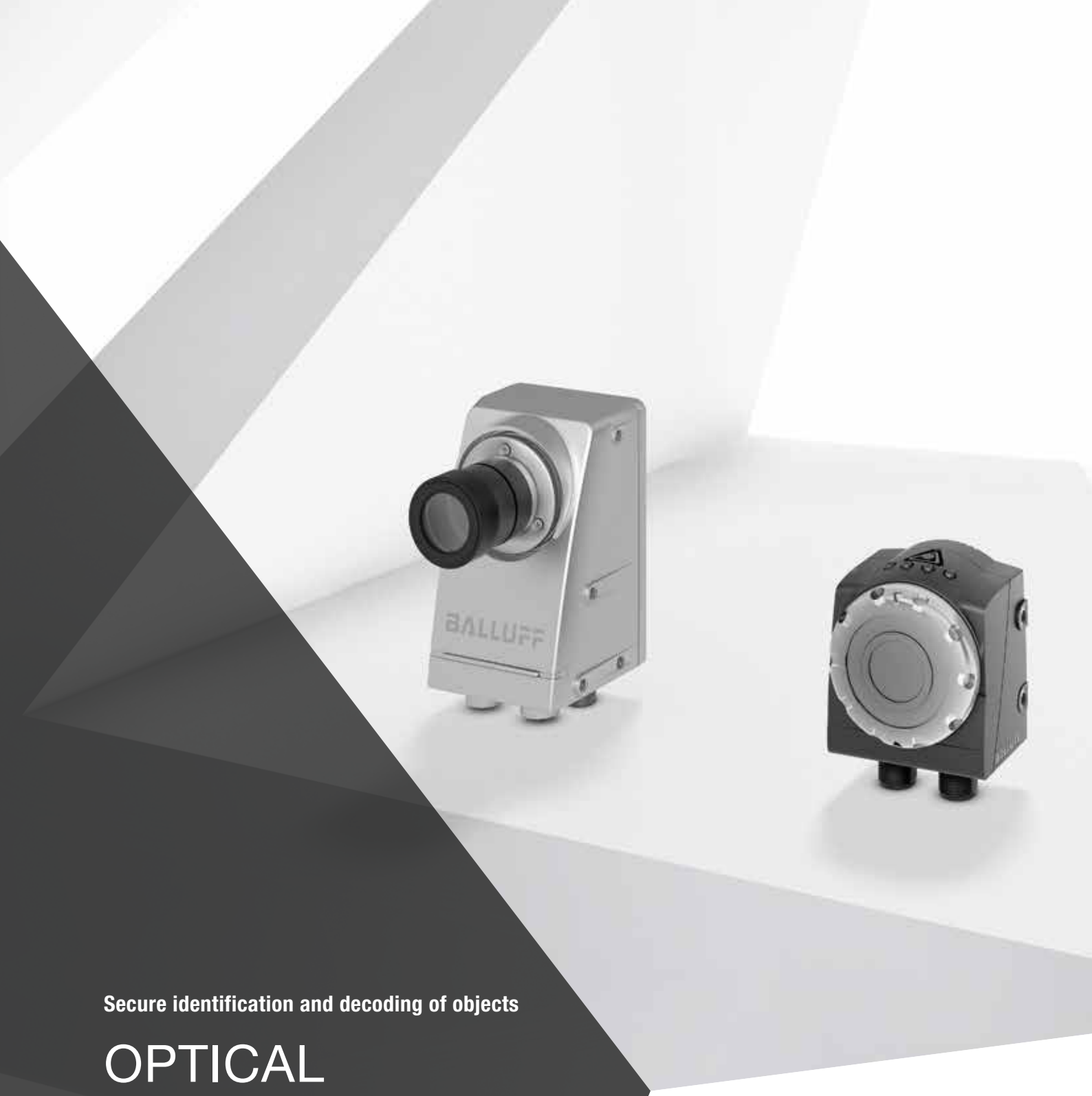
	BVS000E BVS 0I-3-005-E	
Sensor type Vision	CMOS image sensor black-white	
Image resolution	VGA 640 x 480 pixels	
Detection rate typ.	3…15 Hz	
Range	50...1000 mm	
Field of view	34 x 25 mm ... 676 x 507 mm	
Focal length	6.0 mm	
Light type	LED, red light	
Housing material	Aluminum, die-cast ABS	
Dimension	51.5 x 70 x 40 mm	
Switching output	3x PNP normally open (NO)	
Interface	Ethernet 10/100 Base T	
Connection 1	M12x1-Male, 8-pole, A-coded	
Connection 2	M12x1-Male, 4-pole, D-coded	
Operating voltage Ub	22...26 VDC	
Ambient temperature	-10...55 °C	
Approval/Conformity	cULus, CE	
Protection degree	IP54	
Productview	Page 540	

	BVS0003 BVS 0I-3-001-E	BVS0005 BVS 0I-3-003-E
	CMOS image sensor black-white	CMOS image sensor black-white
	VGA 640 x 480 pixels	VGA 640 x 480 pixels
	3…15 Hz	3…15 Hz
	50...1000 mm	50...1000 mm
	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm
	8.0 mm	12.0 mm
	LED, red light	LED, red light
	Aluminum, die-cast ABS	Aluminum, die-cast ABS
	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm
	3x PNP normally open (NO)	3x PNP normally open (NO)
	Ethernet 10/100 Base T	Ethernet 10/100 Base T
	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded
	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded
	22...26 VDC	22...26 VDC
	-10...55 °C	-10...55 °C
	cULus, CE	cULus, CE
	IP54	IP54
	Page 540	Page 540



1) Teach-in reference image, 2) Operating voltage, 3) Output 1 active, 4) Output 2 active, 5) Connection with PC, 6) Focus

BVS000E, BVS0003, BVS0005



Secure identification and decoding of objects

OPTICAL IDENTIFICATION

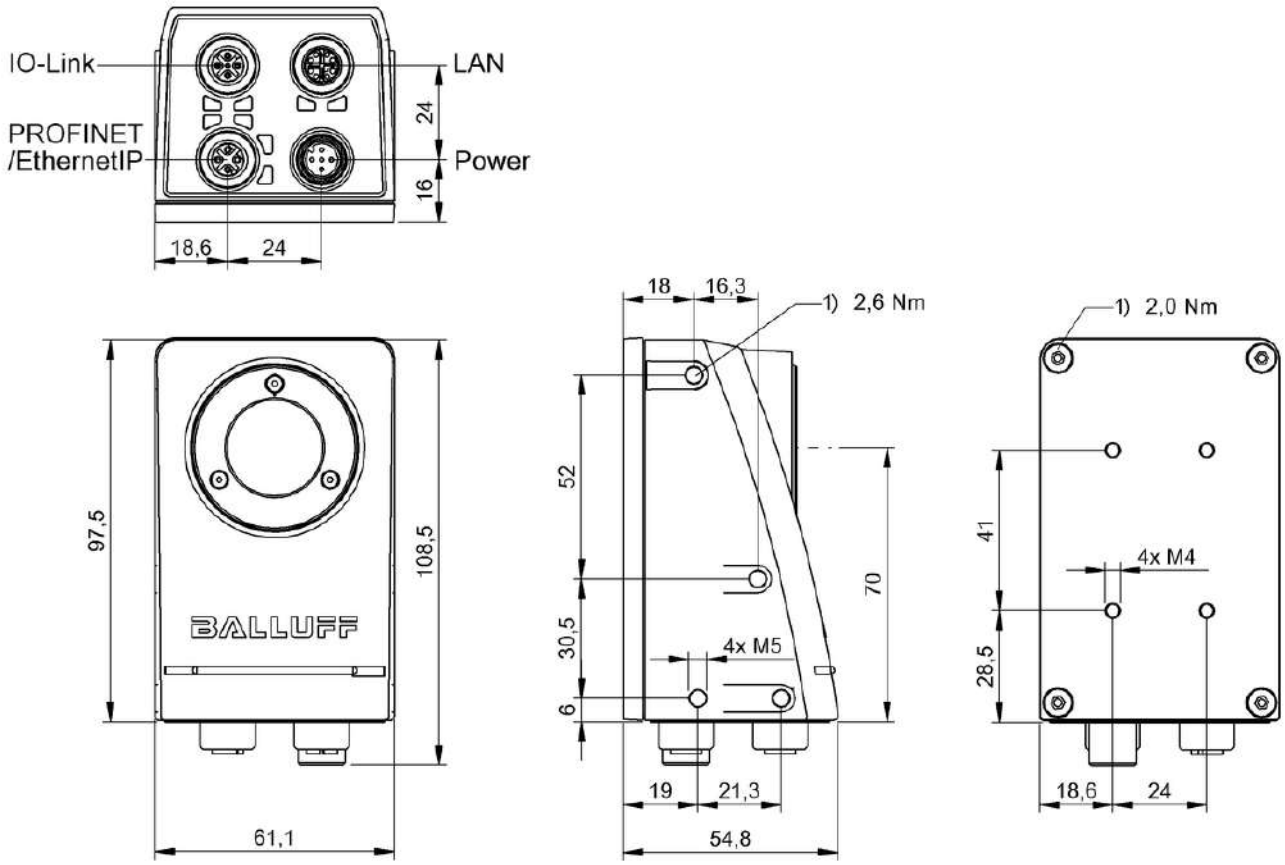
Optical identification via 1D and 2D barcodes is an established way to identify components and objects and precisely manage systems and processes. Our broad range of offerings in this area includes stationary barcode readers, mobile handheld readers and accessories for standard and industrial grade applications.

The most important benefits

- Reliable traceability of products and assembly
- Application areas: control supply processes (e.g., Kanban system), production control, optical tool identification
- Simple startup

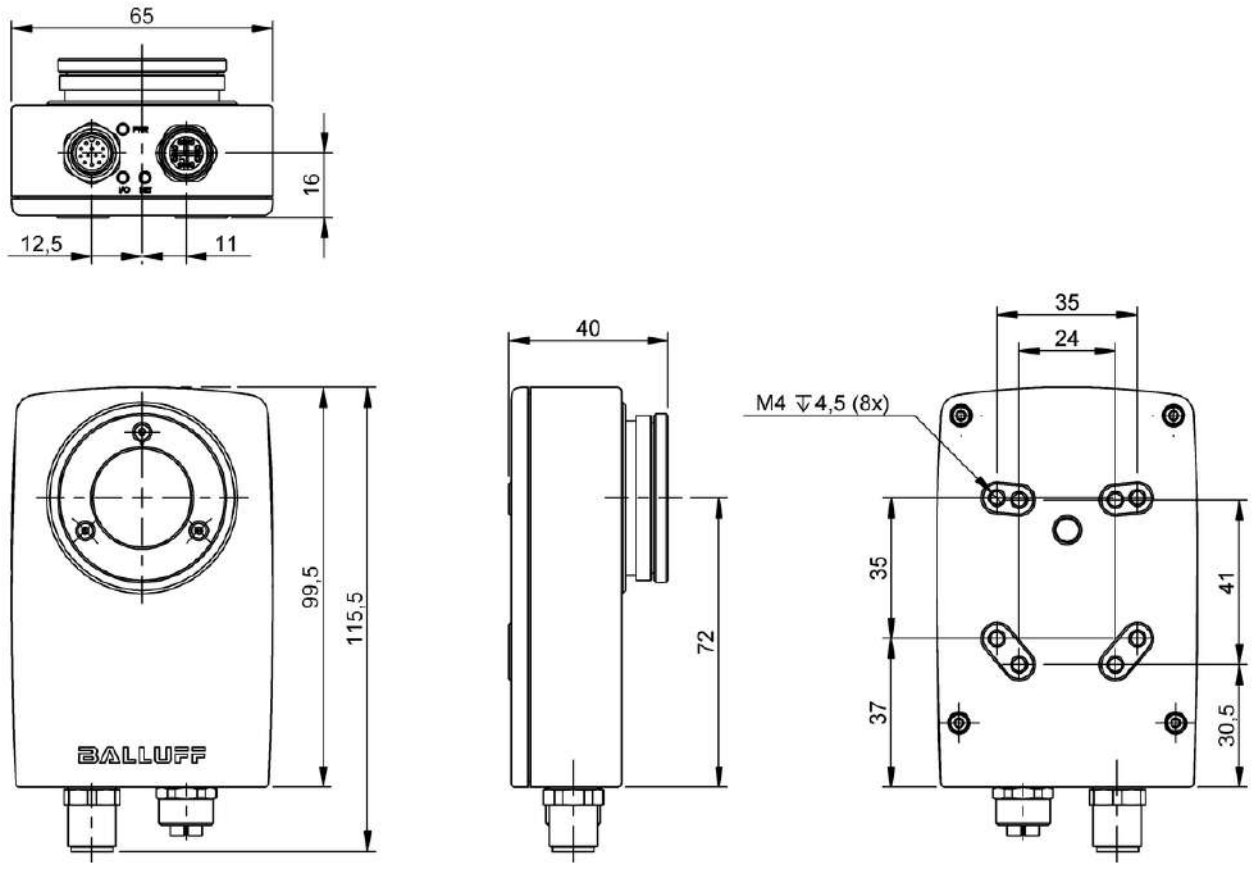
Barcodes	
2D codes	
Application	
Image resolution	
Sensor type Vision	
Housing material	
Dimension	
Switching output	
Interface	
Operating voltage Ub	
Ambient temperature	
Approval/Conformity	
IP rating	
Productview	

BVS0029 BVS SC-M1280Z00-30-010	BVS003W BVS SL-M1280Z00-07-010
GS1 Databar, GS1-128, UPC-A, UPC-E, EAN-8, EAN-13, 2/5 Industrial, 2/5 Interleaved, Codabar, Code 128, Code 39, Code 93, MSI, UPC-A, UPC-E	GS1 Databar, GS1-128, UPC-A, UPC-E, EAN-8, EAN-13, 2/5 Industrial, 2/5 Interleaved, Codabar, Code 128, Code 39, Code 93, MSI, UPC-A, UPC-E
Aztec Code, Data Matrix ECC 200, GS1 Aztec Code, GS1 Data Matrix, GS1 QR Code, Micro QR Code, PDF 417, QR code	Aztec Code, Data Matrix ECC 200, GS1 Aztec Code, GS1 Data Matrix, GS1 QR Code, Micro QR Code, PDF 417, QR code
Object tracking, code+text analysis	Object tracking, code+text analysis
1280 x 1024 pixels	1280 x 1024 pixels
CMOS 1/1.8“ monochrome global shutter	CMOS 1/1.8“ monochrome global shutter
Aluminum, Painted	Aluminum, Painted
62 x 55 x 110 mm	65 x 40 x 99.5 mm
2x IO configurable	6x IO configurable
LAN (Gigabit Ethernet), Profinet / EtherNet/IP, IO-Link	LAN (Gigabit Ethernet), Ethernet TCP/UDP, RS232
19.2...28.8 VDC	19.2...26 VDC
0...55 °C	0...55 °C
CE, cULus, WEEE, EAC	CE, EAC, WEEE
IP67, with protective tube	IP67, with protective tube
Page 546	Page 546



1) Tightening torque

BVS0029

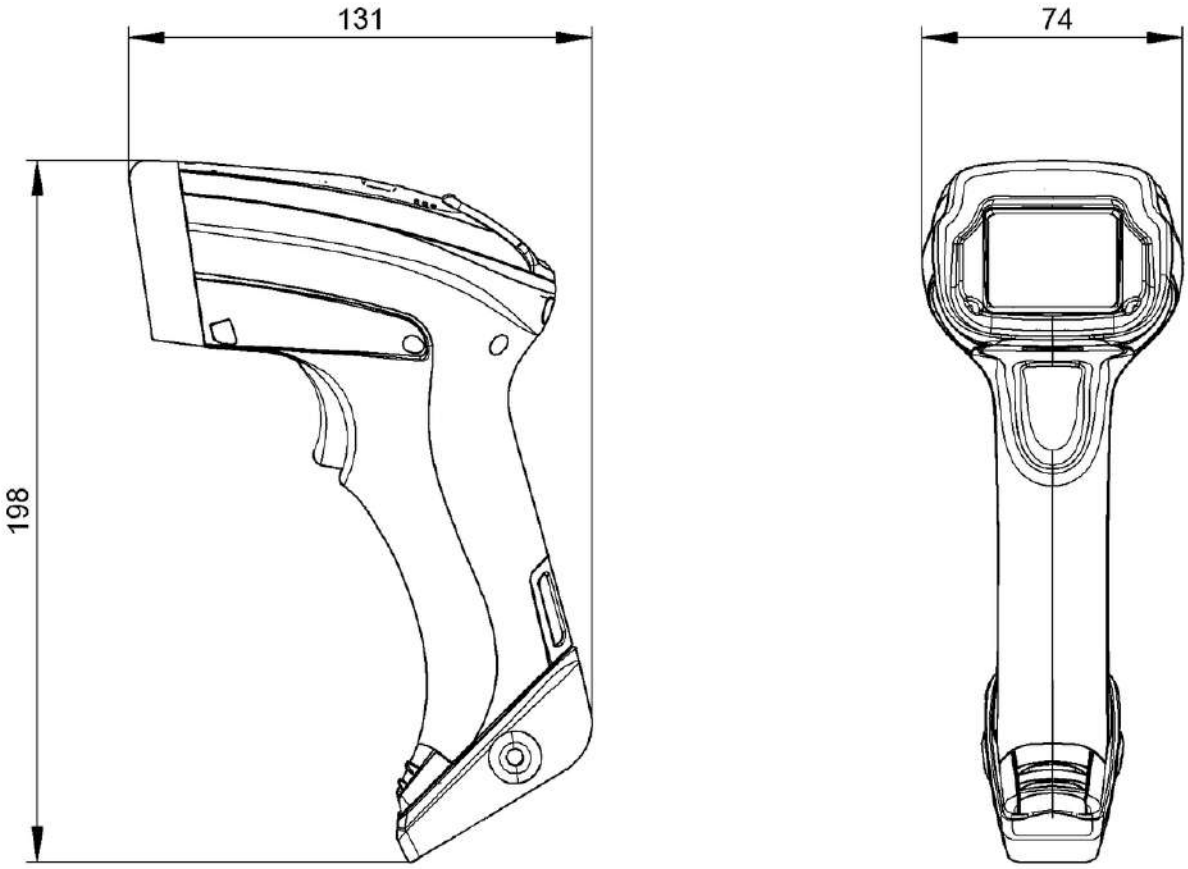


BVS003W

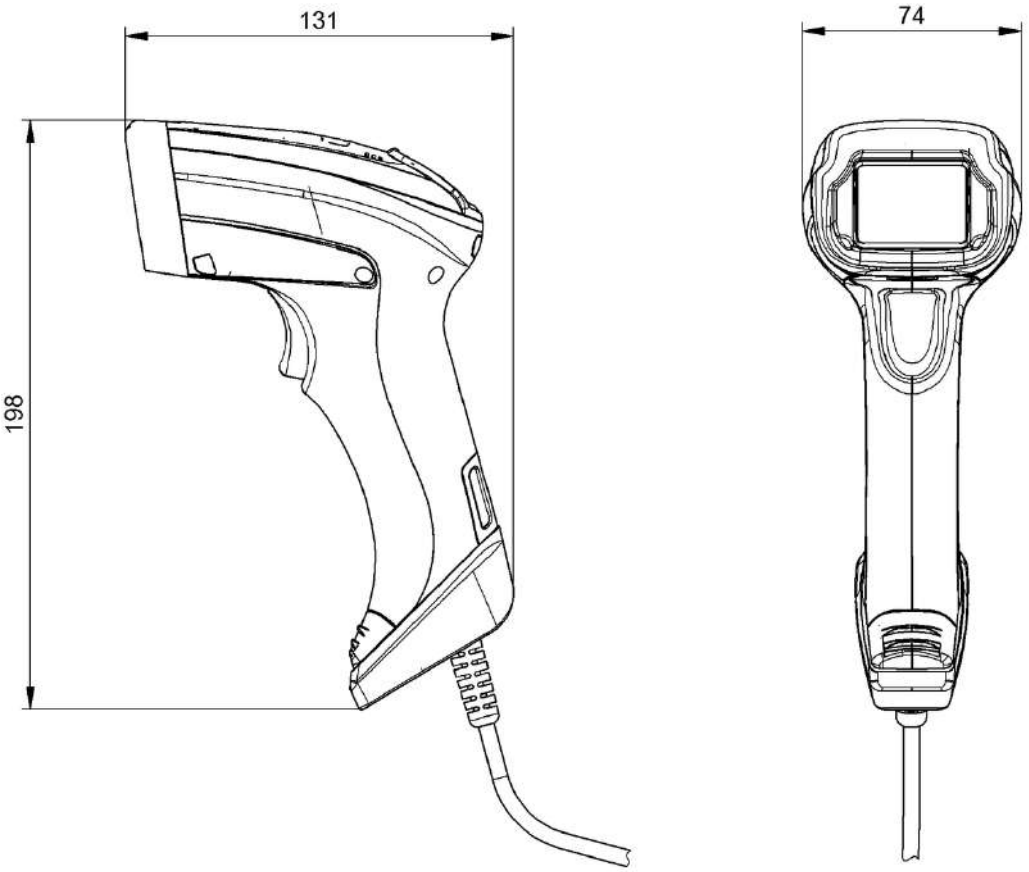
	BVS001Z BVS HS-PB-DPW-MZ-01	
Drop protection	≥ 50 drops, 2.0 m on concrete	
Barcodes	GS1 Databar linear codes UPC/EAN (A, E, 13, 8) UPC/EAN with P2/ P5 Addons UPC/ EAN Coupons ISBN Code128 EAN128 ISBT128 Code39 Code39 Full ASCII Code39 CIP Code 32 Codabar Interleaved 2 of 5 IATA Industrial 2 of 5 standard 2 of 5 Code11 MSI Plessey Code 93 Follet 2/5	
2D codes	Aztec Code, China Han Xin Code, China Sensible Code, Data Matrix, Maxicode, Micro QR Code, QR code	
Stacked codes	Micro PDF417, Macro PDF, GS1 DataBar Stacked, GS1 DataBar Expanded Stacked, PDF417, GS1 DataBar Stacked Omnidir, GS1 DataBar Composites, EAN/JAN Composites, UPC A/E Composites	
Read distance	Datamatrix: 2…10.5 cm at 10 mil, Datamatrix: 2.6…5.2 cm at 4 mil, Code 39: 1.2…9.0 cm at 5 mil, Code 39: 2.5…7.8 cm at 2.5 mil	
Light type illumination	LED White light	
Interface	Bluetooth 2.0 (2.4 GHz)	
Protection degree	IP65	
Productview	Page 550	

	BVS001Y BVS HS-PB-HDW-MZ-01	**BVS001T** BVS HS-PC-DPW-MA-01	**BVS001U** BVS HS-PC-HDW-MA-01
	≥ 50 drops, 2.0 m on concrete	≥ 50 drops, 2.0 m on concrete	≥ 50 drops, 2.0 m on concrete
	GS1 Databar linear codes UPC/EAN (A, E, 13, 8) UPC/EAN with P2/ P5 Addons UPC/ EAN Coupons ISBN Code128 EAN128 ISBT128 Code39 Code39 Full ASCII Code39 CIP Code 32 Codabar Interleaved 2 of 5 IATA Industrial 2 of 5 standard 2 of 5 Code11 MSI Plessey Code 93 Follet 2/5	GS1 Databar linear codes UPC/EAN (A, E, 13, 8) UPC/EAN with P2/ P5 Addons UPC/ EAN Coupons ISBN Code128 EAN128 ISBT128 Code39 Code39 Full ASCII Code39 CIP Code 32 Codabar Interleaved 2 of 5 IATA Industrial 2 of 5 standard 2 of 5 Code11 MSI Plessey Code 93 Follet 2/5	GS1 Databar linear codes UPC/EAN (A, E, 13, 8) UPC/EAN with P2/ P5 Addons UPC/ EAN Coupons ISBN Code128 EAN128 ISBT128 Code39 Code39 Full ASCII Code39 CIP Code 32 Codabar Interleaved 2 of 5 IATA Industrial 2 of 5 standard 2 of 5 Code11 MSI Plessey Code 93 Follet 2/5
	Aztec Code, China Han Xin Code, China Sensible Code, Data Matrix, Maxicode, Micro QR Code, QR code	Aztec Code, China Sensible Code, Data Matrix, Maxicode, Micro QR Code, QR code	Aztec Code, China Sensible Code, Data Matrix, Maxicode, Micro QR Code, QR code
	GS1 DataBar Expanded Stacked, GS1 DataBar Stacked Omnidir, GS1 DataBar Stacked, Macro PDF, GS1 DataBar Composites, EAN/JAN Composites, Micro PDF417, UPC A/E Composites, PDF417	PDF417, Macro PDF, GS1 DataBar Stacked Omnidir, GS1 DataBar Composites, GS1 DataBar Stacked, GS1 DataBar Expanded Stacked, Micro PDF417, UPC A/E Composites, EAN/JAN Composites	Micro PDF417, GS1 DataBar Composites, Macro PDF, GS1 DataBar Stacked, GS1 DataBar Expanded Stacked, GS1 DataBar Stacked Omnidir, PDF417
	Datamatrix: 2…20 cm at 10 mil, Datamatrix: 2…6 cm at 4 mil, Code 39: 3…110 cm at 40 mil, Code 39: 2…6 cm at 2.5 mil	Datamatrix: 2…10.5 cm at 10 mil, Code 39: 2.5…7.8 cm at 2.5 mil, Code 39: 1.2…9.0 cm at 5 mil, Datamatrix: 2.6…5.2 cm at 4 mil	Code 39: 2…6 cm at 2.5 mil, Code 39: 3…110 cm at 40 mil, Datamatrix: 2…6 cm at 4 mil, Datamatrix: 2…20 cm at 10 mil
	LED White light	LED White light	LED White light
	Bluetooth 2.0 (2.4 GHz)	RS232/ USB	RS232/ USB
	IP65	IP65	IP65
	Page 550	Page 550	Page 550



BVS001Z, BVS001Y



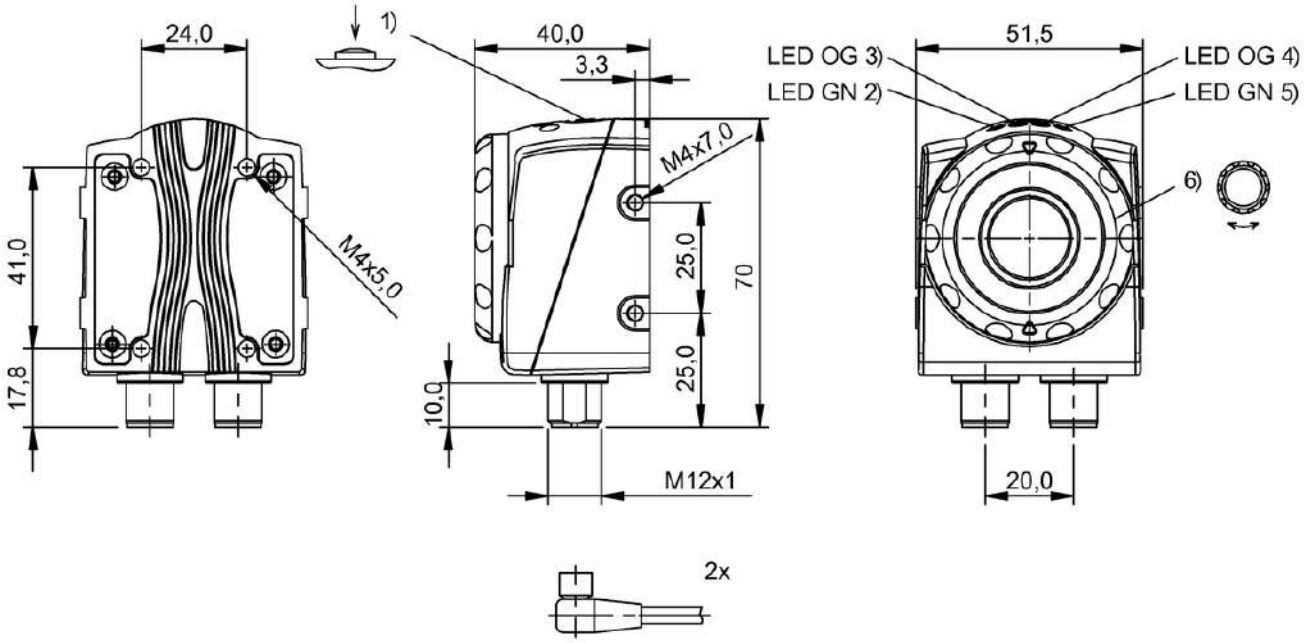
BVS001T, BVS001U



	BVS001C BVS ID-3-105-E	BVS0019 BVS ID-3-101-E	BVS001A BVS ID-3-103-E	
Barcodes	Interleaved 2-of-5,Code 39, Code 128, Pharma-code,Codabar, EAN 8, EAN 13, UPC-E, UPC-A	Interleaved 2-of-5,Code 39, Code 128, Pharma-code,Codabar, EAN 8, EAN 13, UPC-E, UPC-A	Interleaved 2-of-5,Code 39, Code 128, Pharma-code,Codabar, EAN 8, EAN 13, UPC-E, UPC-A	
2D codes	Data Matrix ECC 200, QR code, Mini QR	Data Matrix ECC 200, QR code, Mini QR	Data Matrix ECC 200, QR code, Mini QR	
Stacked codes	PDF417	PDF417	PDF417	
Application	Multi-Code-Reading, Verifying character strings	Multi-Code-Reading, Verifying character strings	Multi-Code-Reading, Verifying character strings	
Image resolution	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	
Sensor type Vision	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	
Range	50...1000 mm	50...1000 mm	50...1000 mm	
Field of view	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	
Focal length	6.0 mm	8.0 mm	12.0 mm	
Light type	Infrared	Infrared	Infrared	
Housing material	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	
Dimension	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	
Switching output	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	
Interface	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	
Connection 1	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	
Connection 2	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	
Operating voltage Ub	22...26 VDC	22...26 VDC	22...26 VDC	
Ambient temperature	-10...55 °C	-10...55 °C	-10...55 °C	
Approval/Conformity	cULus, CE	cULus, CE	cULus, CE	
Protection degree	IP54	IP54	IP54	
Productview	Page 554	Page 554	Page 554	




	BVS001R BVS ID-3-005-E	BVS0001 BVS ID-3-001-E	BVS000T BVS ID-3-003-E	BVS000Y BVS ID-3-007-E	
	Interleaved 2-of-5,Code 39, Code 128, Pharma-code,Codabar, EAN 8, EAN 13, UPC-E, UPC-A	Interleaved 2-of-5,Code 39, Code 128, Pharma-code,Codabar, EAN 8, EAN 13, UPC-E, UPC-A	Interleaved 2-of-5,Code 39, Code 128, Pharma-code,Codabar, EAN 8, EAN 13, UPC-E, UPC-A	Interleaved 2-of-5,Code 39, Code 128, Pharma-code,Codabar, EAN 8, EAN 13, UPC-E, UPC-A	
	Data Matrix ECC 200, QR code, Mini QR	Data Matrix ECC 200, QR code, Mini QR	Data Matrix ECC 200, QR code, Mini QR	Data Matrix ECC 200, QR code, Mini QR	
	PDF417	PDF417	PDF417	PDF417	
	Multi-Code-Reading, Verifying character strings	Multi-Code-Reading, Verifying character strings	Multi-Code-Reading, Verifying character strings	Multi-Code-Reading, Verifying character strings	
	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	
	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	
	50...1000 mm	50...1000 mm	50...1000 mm	150...1000 mm	
	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	43 x 32 mm ... 240 x 180 mm	
	6.0 mm	8.0 mm	12.0 mm	16.0 mm	
	LED, red light	LED, red light	LED, red light	LED, red light	
	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	
	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	
	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	
	RS232 (9.6...115.2 kBaud), RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	
	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	
	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	
	22...26 VDC	22...26 VDC	22...26 VDC	22...26 VDC	
	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C	
	CE, cULus	cULus, CE	CE, cULus	CE, cULus	
	IP54	IP54	IP54	IP54	
	Page 554	Page 554	Page 554	Page 554	



1) Teach-in reference image, 2) Operating voltage, 3) Output 1 active, 4) Output 2 active, 5) Connection with PC, 6) Focus

BVS001C, BVS0019, BVS001A, BVS001R, BVS0001, BVS000T, BVS000Y

Accessories

High-quality gear for virtually any application

ACCESSORIES

innovating automation

Our great selection of high-quality accessories supports you in the optimum embedding of the sensor in machines and systems. Through easy assembly and installation, exact positioning and high machine availability. The wide Balluff product range offers the optimum gear for nearly every application.

Your Balluff solutions

- Fastening technology
- Lighting for Vision Systems
- Reflectors, fibers, optics
- Mechanical protection
- Signal converters and communication adapters
- Mechanical accessories

High-quality accessories system for optical applications

REFLECTORS, FIBERS, OPTICS

Our accessories for optical applications include round and square reflectors and reflex films. You can obtain plastic and glass fibers as well as shields, lenses, filters and deflecting mirrors.

The optical accessory system is qualified for Balluff sensors and available in various versions, including for demanding applications.

The most important benefits

- High quality and flexible
- Simple to install
- Compatibility


	BAM01CF BOS R-40	BAM01HF BOS R-45	BAM00UM BOS R-12	
Version	Reflective foil, micro-pyramids	Reflective foil, micro-pyramids	Cube corner 0.9 mm	
Use	for photoelectric retroreflective sensors, for photoelectric laser retroreflective sensors	for photoelectric retroreflective sensors, for photoelectric laser retroreflective sensors	for photoelectric retroreflective sensors, for photoelectric laser retroreflective sensors	
Style	Film cutoff, Rectangular	Film cutoff, Rectangular	Square, 2 mounting holes	
Dimension	50 x 100 x 0.6 mm	200 x 300 x 0.5 mm	14 x 23 x 4.9 mm	
Sensing surface	50.0 cm²	600.0 cm²	1.7 cm²	
Ambient temperature	-20...60 °C	-20...60 °C	-20...60 °C	
Material sensing surface	PMMA, rear coated Al	PMMA, rear coated Al	PMMA	
Material	Film	Film	ABS	
Light type	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light	
Mounting	Self-adhesive	Self-adhesive	Adhesive, Screw M1.5	
Approval/Conformity	—	—	—	
Productview	Page 344	Page 344	Page 344	





	BAM00UY BOS R-22	BAM01H9 BOS R-41	BAM023T BOS R-55	BAM023U BOS R-56	BAM00UN BOS R-13
	Cube corner 1.2 mm	Cube corner 1.2 mm	Cube corner 1.1 mm	Micro-pyamids	Cube corner 1.2 mm
	for photoelectric retroreflective sensors, for photoelectric laser retroreflective sensors	for photoelectric retroreflective sensors, for photoelectric laser retroreflective sensors	for photoelectric retroreflective sensors, for photoelectric laser retroreflective sensors	for photoelectric retroreflective sensors, for photoelectric laser retroreflective sensors	for photoelectric retroreflective sensors, for photoelectric laser retroreflective sensors
	Square, 2 mounting holes	Square, 2 mounting holes	Square, 2 mounting holes	Square, 2 mounting holes	Cylinder
	51 x 61 x 7.5 mm	10 x 40 x 3.7 mm	20 x 32 x 3 mm	20 x 32 x 3 mm	25 × 5.5 mm
	22.6 cm²	1.4 cm²	2.7 cm²	2.7 cm²	3.3 cm²
	-20...60 °C	-20...60 °C	-20...140 °C	-20...60 °C	-20...60 °C
	PMMA	PMMA	Solidchem	PMMA	PMMA
	ABS	ABS	Solidchem	ABS	ABS
	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light
	Adhesive, Screw M4	Adhesive, Screw M3	Screw M3	Screw M3	Adhesive
	—	—	Solidchem, TÜV Rheinland, Ecolab	—	—
	Page 344	Page 344	Page 344	Page 344	Page 344



	BAM00UT BOS R-16	BAM01H7 BOS R-38	BAM01HA BOS R-42	
Version	Cube corner 1.2 mm	Cube corner 0.9 mm	Cube corner 0.9 mm	
Use	for photoelectric retroreflective sensors, for photoelectric laser retroreflective sensors	for photoelectric retroreflective sensors, for photoelectric laser retroreflective sensors	for photoelectric retroreflective sensors, for photoelectric laser retroreflective sensors	
Style	Cylinder	Cylinder with threaded pin	Cylinder with threaded pin	
Dimension	Ø 21 x 5.2 mm	Ø 10 x 13.6 mm	Ø 19 x 14.6 mm	
Sensing surface	1.9 cm²	0.3 cm²	1.9 cm²	
Ambient temperature	-20...60 °C	-20...60 °C	-20...60 °C	
Material sensing surface	PMMA	PMMA	PMMA	
Material	ABS	ABS	ABS	
Light type	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light	
Mounting	Adhesive	M3 nut	M3 nut	
Approval/Conformity	—	—	—	
Productview	Page 345	Page 345	Page 345	



	BAM01HC BOS R-43	BAM0333 BAM RF-XO-030-S000/04-PM-FA	BAM00W6 BOS R-32-0,40	BAM00W9 BOS R-35	BAM01JM BOS R-50
	Cube corner 1.2 mm	Reflective foil, micro-pyramids	Reflective foil, micro-pyramids	Reflective film, micro-glass balls	Reflective foil, micro-pyramids
	for photoelectric retroreflective sensors, for photoelectric laser retroreflective sensors	for photoelectric retroreflective sensors	for photoelectric retroreflective sensors	for photoelectric retroreflective sensors	for photoelectric retroreflective sensors
	Cylinder with threaded pin	Film cutoff, Rectangular	Film cutoff, Rectangular	Film cutoff, Rectangular	Film cutoff, Rectangular
	Ø 25 x 15.5 mm	35 x 40 x 0.5 mm	50 x 90 x 0.5 mm	200 x 200 x 0.5 mm	100 x 100 x 0.5 mm
	3.3 cm²	14.0 cm²	45.0 cm²	400.0 cm²	100.0 cm²
	-20...60 °C	-20...60 °C	-20...60 °C	-20...60 °C	-20...60 °C
	PMMA	Acrylic	PMMA	Glass	PMMA
	ABS	Film	Film	Film	Film
	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light	non-polarized light, also for polarized light
	M4 nut	Self-adhesive	Self-adhesive	Self-adhesive	Self-adhesive
	—	—	—	—	—
	Page 345	Page 345	Page 345	Page 345	Page 345

	BAM00WC BOS R-6-0,25	BAM00WE BOS R-6-45	BAM02R3 BOS R-60-22	
Version	Reflective foil, micro-pyramids	Reflective foil, micro-pyramids	Reflective foil, micro-pyramids	
Use	for photoelectric retroreflective sensors	for photoelectric retroreflective sensors	for photoelectric retroreflective sensors	
Style	Film cutoff, Rectangular	Foil web	Foil web	
Dimension	50 x 250 x 0.3 mm	50 mm x 45 m x 0.3 mm	100 × 0.5 mm	
Sensing surface	125.0 cm²	22850.0 cm²	22800.0 cm²	
Ambient temperature	-20...60 °C	-20...60 °C	-20...60 °C	
Material sensing surface	PMMA	PMMA	PMMA	
Material	Film	Film	Film	
Light type	non-polarized light	non-polarized light	non-polarized light, also for polarized light	
Mounting	Self-adhesive	Self-adhesive	Self-adhesive	
Approval/Conformity	—	—	—	
Productview	Page 346	Page 346	Page 346	




	BAM00WF BOS R-7-0,25	BAM00WH BOS R-7-22	BAM00WJ BOS R-8-0,25	BAM00WK BOS R-8-22	BAM0330 BAM RF-X0-025-S023/40-PM-AS
	Reflective foil, micro-pyramids	Reflective foil, micro-pyramids	Reflective foil, micro-pyramids	Reflective foil, micro-pyramids	Cube corner 4 mm
	for photoelectric retroreflective sensors	for photoelectric retroreflective sensors	for photoelectric retroreflective sensors	for photoelectric retroreflective sensors	for photoelectric retroreflective sensors
	Film cutoff, Rectangular	Foil web	Film cutoff, Rectangular	Foil web	Square, 2 mounting holes
	50 x 250 x 0.5 mm	50 mm x 22 m x 0.5 mm	25 x 250 x 0.5 mm	25 mm x 22 m x 0.5 mm	51 x 72 x 7.3 mm
	125.0 cm²	11000.0 cm²	62.5 cm²	5500.0 cm²	22.6 cm²
	-20...60 °C	-20...60 °C	-20...60 °C	-20...60 °C	-20...60 °C
	PMMA	PMMA	PMMA	PMMA	PMMA
	Film	Film	Film	Film	ABS
	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light
	Self-adhesive	Self-adhesive	Self-adhesive	Self-adhesive	Screw M4
	—	—	—	—	—
	Page 346	Page 346	Page 346	Page 346	Page 346



	BAM0331 BAM RF-XO-026-S012/40-PM-AS	BAM0332 BAM RF-XO-027-S004/25-PM-AS	BAM00UL BOS R-11	
Version	Cube corner 4 mm	Cube corner 1.2 mm	Cube corner 4 mm	
Use	for photoelectric retrore-flective sensors	for photoelectric retrore-flective sensors	for photoelectric retrore-flective sensors	
Style	Square, 2 mounting holes	Square, 2 mounting holes	Square, 2 mounting holes	
Dimension	35 x 42 x 8.6 mm	12.9 x 33.4 x 11.2 mm	84 x 84 x 9.1 mm	
Sensing surface	9.6 cm²	2.2 cm²	63.7 cm²	
Ambient temperature	-20...60 °C	-20...60 °C	-20...60 °C	
Material sensing surface	PMMA	PMMA	PMMA	
Material	ABS	ABS	ABS	
Light type	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light	
Mounting	Screw M3	Screw M3	Adhesive, Screw M3	
Approval/Conformity	—	—	—	
Productview	Page 347	Page 347	Page 347	





	BAM00W7 BOS R-33	BAM00W8 BOS R-34	BAM01CM BOS R-36	BAM01HE BOS R-44	BAM01JP BOS R-46
	Cube corner 4 mm	Cube corner 4 mm	Cube corner 4 mm	Cube corner 4 mm	Cube corner 4 mm
	for photoelectric retrore-flective sensors	for photoelectric retrore-flective sensors	for photoelectric retrore-flective sensors	for photoelectric retrore-flective sensors	for photoelectric retrore-flective sensors
	Square, 2 mounting holes	Square, 2 mounting holes	Square, 2 mounting holes	Square, 2 mounting holes	Square, 2 mounting holes
	19 x 60 x 6.1 mm	40 x 60 x 7.5 mm	40 x 60 x 7.5 mm	40 x 60 x 7.5 mm	40 x 60 x 7.5 mm
	4.9 cm²	19.9 cm²	19.9 cm²	19.9 cm²	19.9 cm²
	-20...60 °C	-20...150 °C	-20...60 °C	-20...140 °C	-20...60 °C
	PMMA	HOT	PMMA Anti-fog coated	Solidchem	PMMA
	ABS	HOT	ABS	Solidchem	ABS
	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light
	Adhesive, Screw M4	Adhesive, Screw M3	Adhesive, Screw M3	Adhesive, Screw M3	Adhesive, Screw M3
	—	—	—	Solidchem, TÜV Rhein-land, Ecolab	—
	Page 347	Page 347	Page 347	Page 347	Page 347



	BAM01JN BOS R-47	BAM01LA BOS R-48	BAM01NH BOS R-49	
Version	Cube corner 4 mm	Cube corner 4 mm	Cube corner 0.9 mm	
Use	for photoelectric retrore-flective sensors	for photoelectric retrore-flective sensors	for photoelectric retrore-flective sensors	
Style	Square, 2 mounting holes	Square, 2 mounting holes	Square, 2 mounting holes	
Dimension	100 x 100 x 9.2 mm	23 x 82 x 7.5 mm	14 x 23 x 4.9 mm	
Sensing surface	92.5 cm²	10.0 cm²	1.7 cm²	
Ambient temperature	-20...60 °C	-20...60 °C	-20...110 °C	
Material sensing surface	PMMA	PMMA	HOT	
Material	ABS	ABS	HOT	
Light type	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light	
Mounting	Adhesive, Screw M3	Adhesive, Screw M3	Adhesive, Screw M1.5	
Approval/Conformity	—	—	—	
Productview	Page 348	Page 348	Page 348	



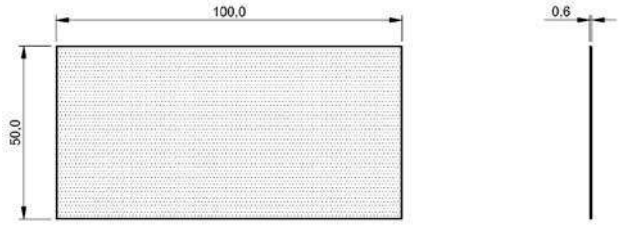


	BAM00WA BOS R-5	BAM00WL BOS R-9	BAM00UK BOS R-1	BAM0126 BOS R-10	BAM00UP BOS R-14
	Cube corner 4 mm	Cube corner 4 mm	Cube corner 4 mm	Cube corner 4 mm	Cube corner 4 mm
	for photoelectric retrore-flective sensors	for photoelectric retrore-flective sensors	for photoelectric retrore-flective sensors	for photoelectric retrore-flective sensors	for photoelectric retrore-flective sensors
	Square, 2 mounting holes	Square, 2 mounting holes	Cylinder, 1 fastening hole	Cylinder, 2 mounting holes	Cylinder with expanding rivet
	18 x 120 x 6 mm	51 x 61 x 8 mm	Ø 84 x 7.3 mm	Ø 62 x 8.8 mm	Ø 51 x 7.4 mm
	13.9 cm^2	22.6 cm^2	50.9 cm^2	20.4 cm^2	17.7 cm^2
	-20...60 °C	-20...60 °C	-20...60 °C	-20...60 °C	-20...100 °C
	PMMA	PMMA	PMMA	PMMA	PC
	ABS	ABS	ABS	ABS	PC
	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light
	Adhesive, Screw M4	Adhesive, Screw M4	Adhesive, Screw M4	Adhesive, Screw M4	Diameter 6.0 mm
	–	–	–	–	–
	Page 348	Page 348	Page 348	Page 348	Page 348

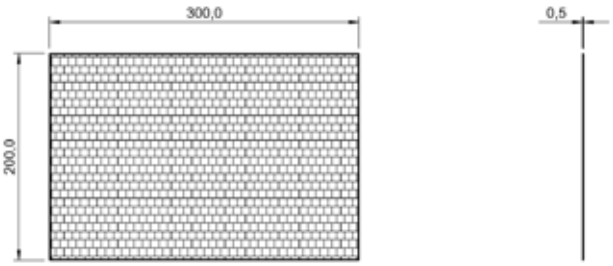


	BAM00UR BOS R-15	BAM00UW BOS R-2	BAM00W4 BOS R-3	
Version	Cube corner 2 mm	Cube corner 2.5 mm	Cube corner 2 mm	
Use	for photoelectric retroreflective sensors	for photoelectric retroreflective sensors	for photoelectric retroreflective sensors	
Style	Cylinder	Cylinder	Cylinder	
Dimension	Ø 21 x 5.2 mm	Ø 46 x 6.5 mm	Ø 21 x 5.2 mm	
Sensing surface	2.4 cm²	11.6 cm²	1.9 cm²	
Ambient temperature	-20...100 °C	-20...60 °C	-20...60 °C	
Material sensing surface	HOT	PMMA	PMMA	
Material	HOT	ABS	ABS	
Light type	non-polarized light, also for polarized light	non-polarized light, also for polarized light	non-polarized light, also for polarized light	
Mounting	Glue	Glue	Glue	
Approval/Conformity	—	—	—	
Productview	Page 349	Page 349	Page 349	

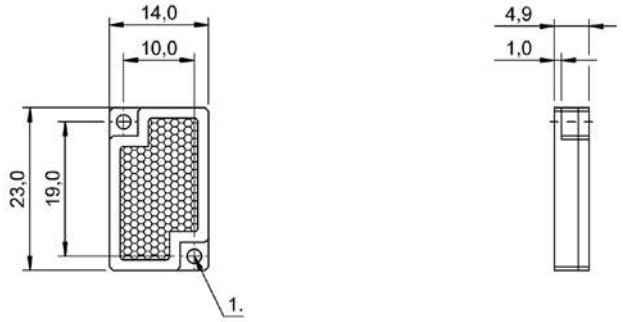
	BAM01H6 BOS R-31				
	Cube corner 5 mm				
	for photoelectric retrore-flective sensors				
	Cylinder				
	Ø 52 x 9 mm				
	14.3 cm²				
	-20...500 °C				
	Borosilicate crown glass				
	Borosilicate crown glass				
	non-polarized light, also for polarized light				
	Clamps				
	—				
	Page 349				



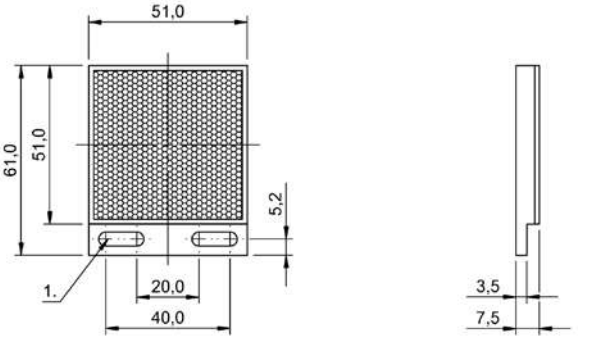
BAM01CF



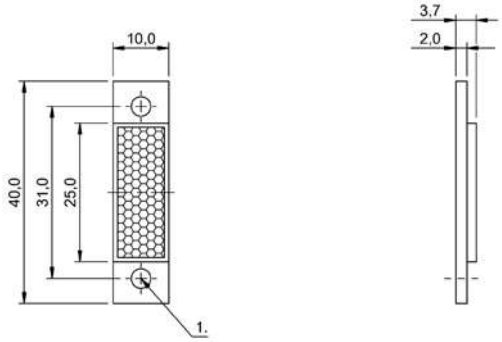
BAM01HF



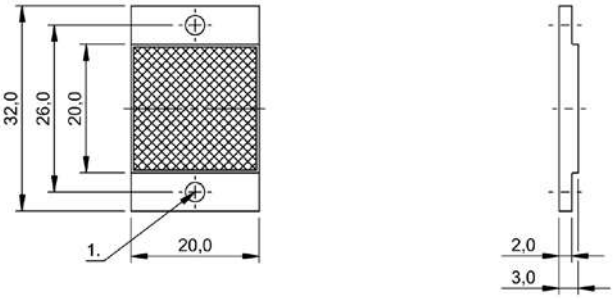
BAM00UM



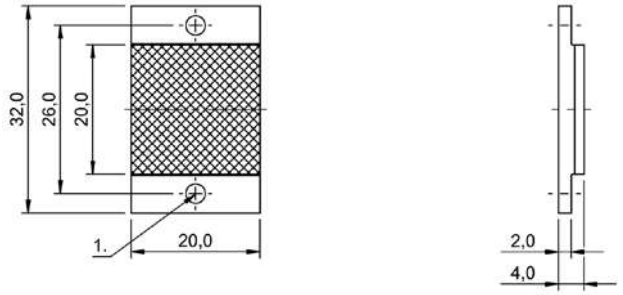
BAM00UY



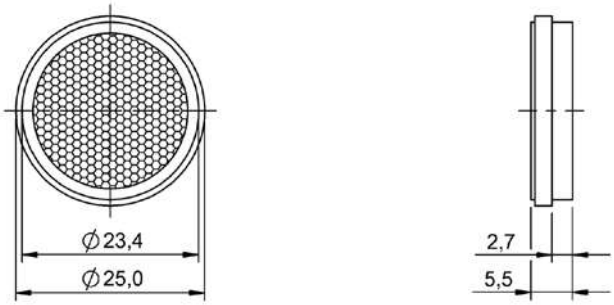
BAM01H9



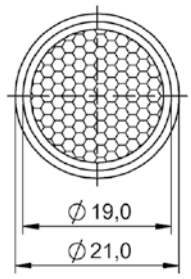
BAM023T

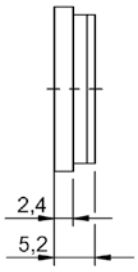


BAM023U

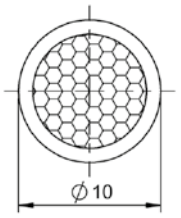


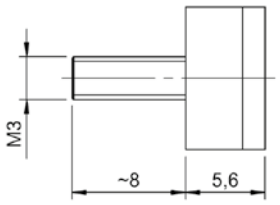
BAM00UN



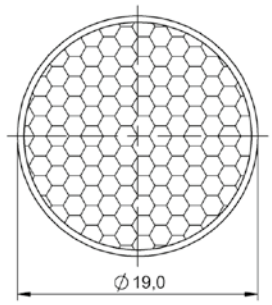


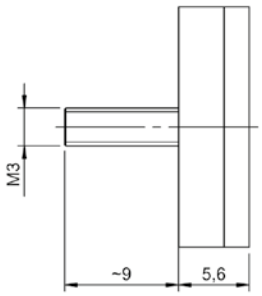
BAM00UT



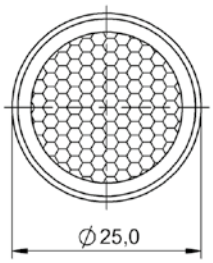


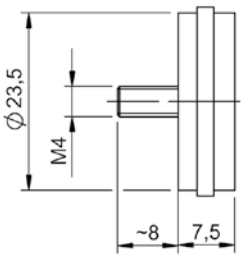
BAM01H7



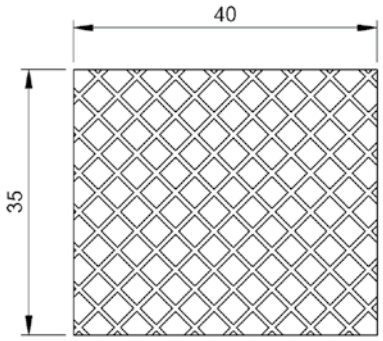


BAM01HA

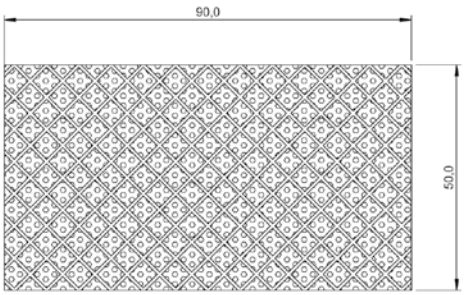




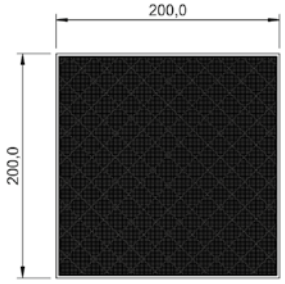
BAM01HC



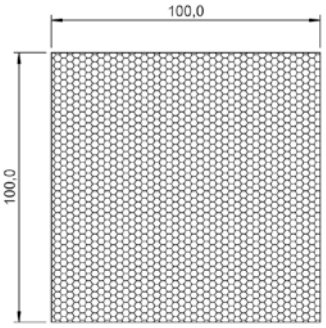
BAM0333



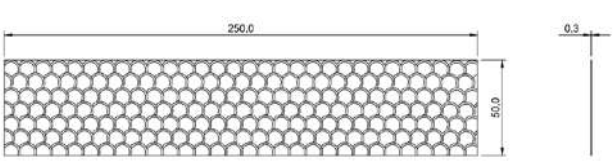
BAM00W6



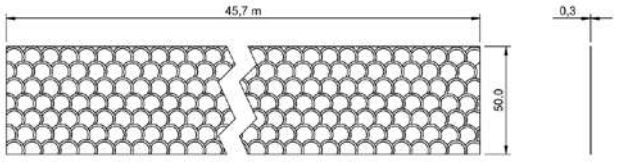
BAM00W9



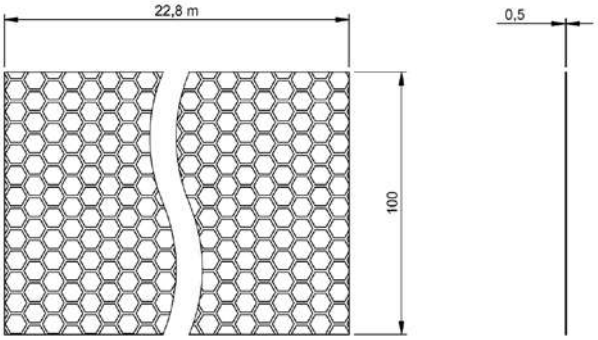
BAM01JM



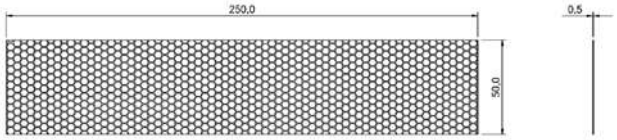
BAM00WC



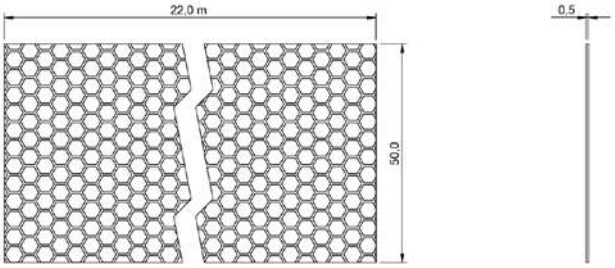
BAM00WE



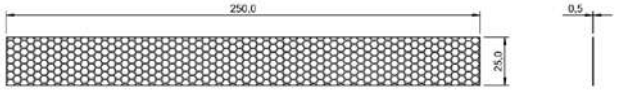
BAM02R3



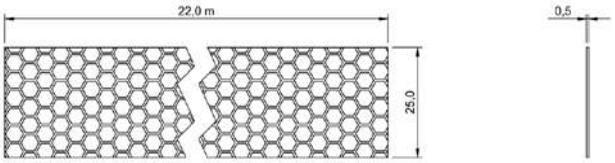
BAM00WF



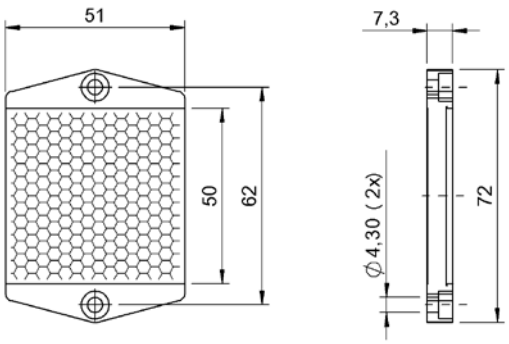
BAM00WH



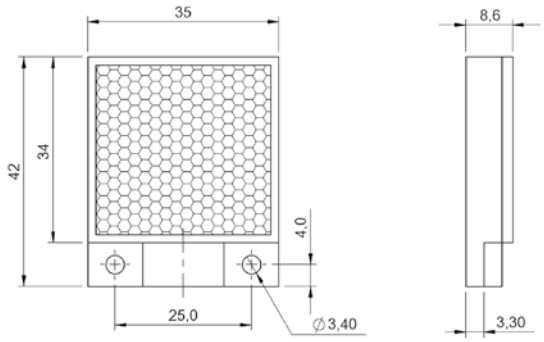
BAM00WJ



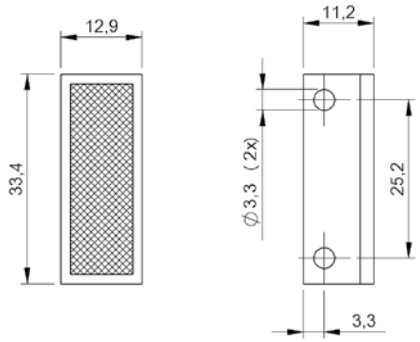
BAM00WK



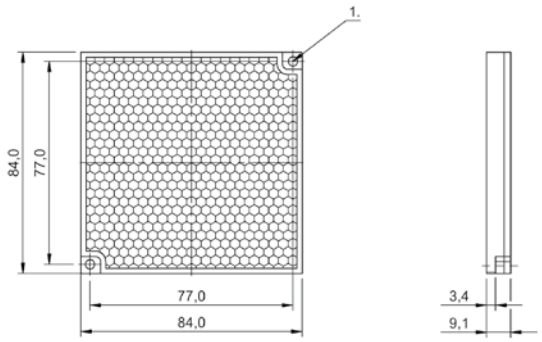
BAM0330



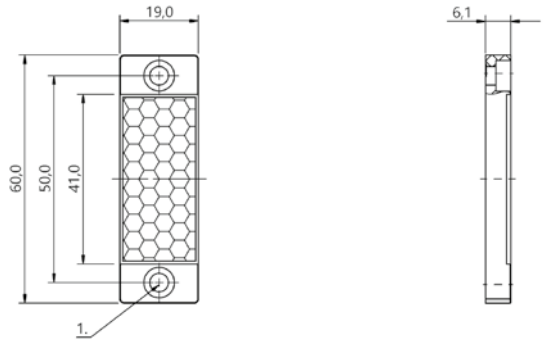
BAM0331



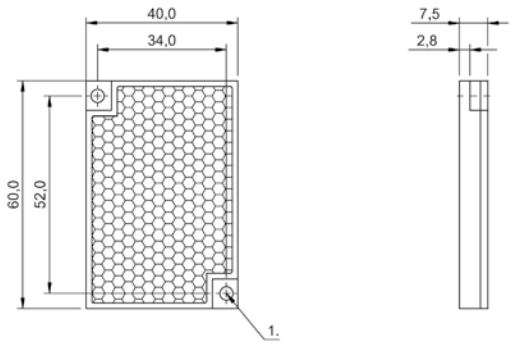
BAM0332



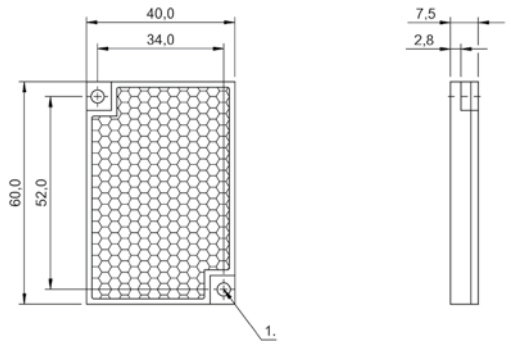
BAM00UL



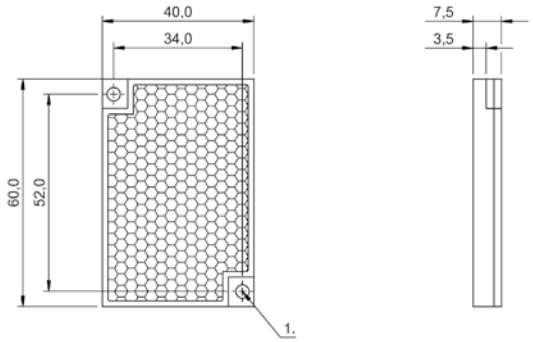
BAM00W7



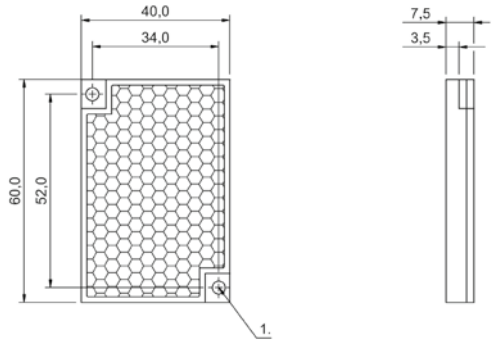
BAM00W8



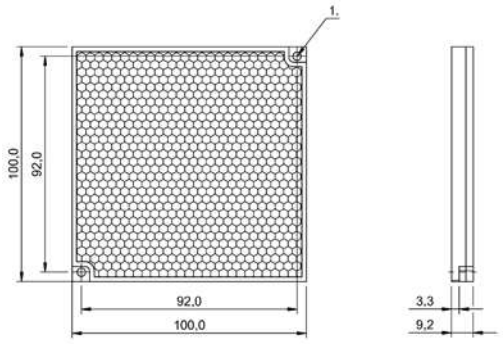
BAM01CM



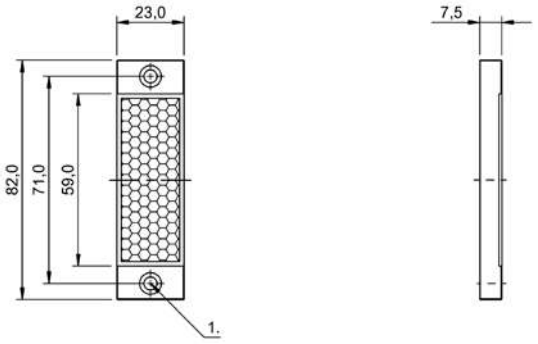
BAM01HE



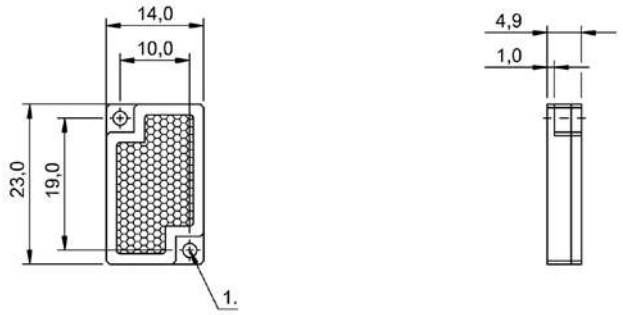
BAM01JP



BAM01JN

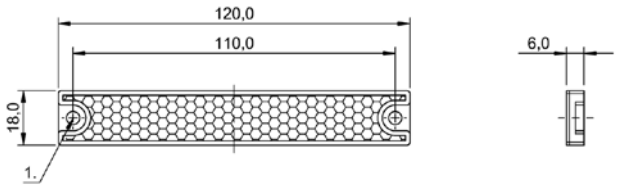


BAM01LA

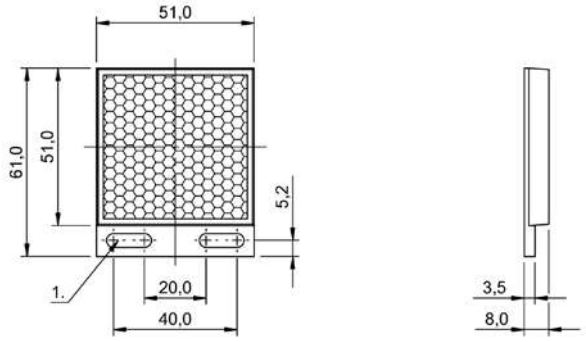


1) for M1.5

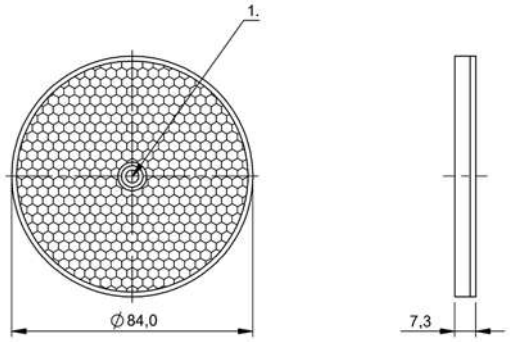
BAM01NH



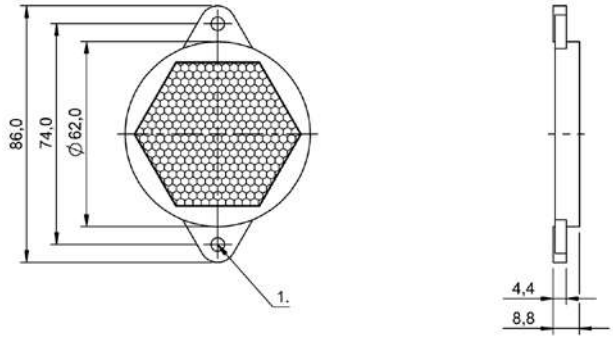
BAM00WA



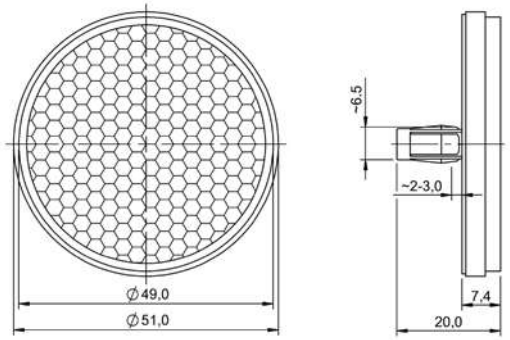
BAM00WL



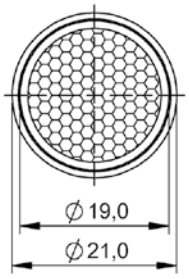
BAM00UK

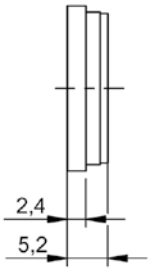


BAM0126

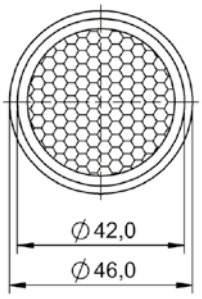


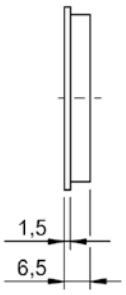
BAM00UP



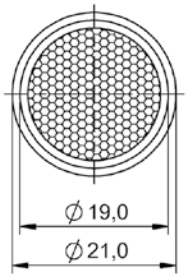


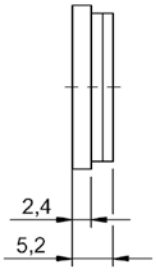
BAM00UR



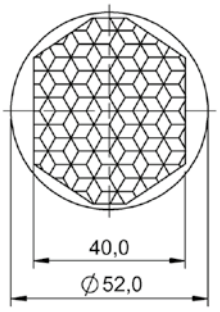


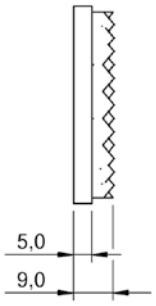
BAM00UW





BAM00W4





BAM01H6

	BAM00NM ADAPTER BFO 30-A1	BAM00P0 BFO 08,0-KB-1	BAM000J BFO D10-LA-DC-10	
Principle of operation	Fiber optics adapter	Clamp holder	Fiber optics adapter	
Version	Adapter ring	Mounting block	Clamping sleeve for Ø 1.0 mm	
Filter	—	—	—	
Use	for photoelectric fiber optics BFO 18V	for sensors Ø8 mm	for photoelectric fiber optics BFO D10	
Dimension	Ø 27.5 x 16.7 mm	16 x 20 x 12 mm	Ø 3.6 x 25 mm	
Material	—	—	—	
Material sensing surface	—	—	—	
Sensing surface	—	—	—	
Mounting	Cap nut M30x1.5	Screw M3	Clamps	
Focal length	—	—	—	
Minimum object distance (MOD)	—	—	—	
Productview	Page 372	Page 372	Page 372	





	BAM00P1 BFO D13-LA-EC-10	BFO005F BFO D22-LA-AC-20	BFO005J BFO D22-LA-BC-10	BFO005L BFO D22-LA-CC-30	BAM00PW BOS 12-BL-1
	Fiber optics adapter	Add-on lens	Add-on lens	Add-on lens	Aperture BOS
	Clamping sleeve for Ø 1.3 mm	Clamping sleeve with 90° lens	Clamp sleeve	Clamping sleeve with lens	Slit aperture set
	–	–	–	–	–
	for photoelectric fiber optics BFO D13-	for photoelectric fiber optics BFO	for photoelectric fiber optics BFO	for photoelectric fiber optics BFO	for photoelectric sensors BOS 12M
	Ø 4.2 x 25.5 mm	Ø 5 x 23.5 mm	Ø 5 x 21 mm	Ø 5 x 21.5 mm	Ø 9.4 x 0.2 mm
	–	–	–	–	–
	–	–	–	–	–
	–	Prism, cylindrical	–	convex, 1 aperture	Width 1.0/1.5/2.0 mm
	Clamps	Screws, clamps	Screws, clamps	Screws, clamps	Self-adhesive
	–	–	–	–	–
	–	–	–	–	–
	Page 372	Page 372	Page 372	Page 372	Page 372



	BAM00R6 BOS 18-BL-1	BAM00R7 BOS 18-BL-2	BAM00TU BOS 5-BL-1	
Principle of operation	Aperture BOS	Aperture BOS	Aperture BOS	
Version	Round aperture	Double slit aperture	Vertical slit aperture	
Filter	—	—	—	
Use	for photoelectric sensors BOS 18M	for photoelectric sensors BOS 18M	for photoelectric sensors BOS 5K	
Dimension	Ø 22 x 16 mm	Ø 22 x 85 mm	8.2 x 32.1 x 6.1 mm	
Material	—	—	—	
Material sensing surface	—	Glass	—	
Sensing surface	Ø 2 mm	Width 2.0 mm	Width 0.5 mm	
Mounting	Thread M18x1	Thread M18x1	Snap-on	
Focal length	—	—	—	
Minimum object distance (MOD)	—	—	—	
Productview	Page 373	Page 373	Page 373	





	BAM00TW BOS 5-BL-2	BAM00TY BOS 5-BL-3	BAM00TZ BOS 5-BL-4	BAM00U0 BOS 5-BL-5	BAM00U1 BOS 5-BL-6
	Aperture BOS	Aperture BOS	Aperture BOS	Aperture BOS	Aperture BOS
	Vertical slit aperture	Vertical slit aperture	Horizontal slit aperture	Horizontal slit aperture	Horizontal slit aperture
	–	–	–	–	–
	for photoelectric sensors BOS 5K	for photoelectric sensors BOS 5K	for photoelectric sensors BOS 5K	for photoelectric sensors BOS 5K	for photoelectric sensors BOS 5K
	8.2 x 32.1 x 6.1 mm	8.2 x 32.1 x 6.1 mm	8.2 x 32.1 x 6.1 mm	8.2 x 32.1 x 6.1 mm	8.2 x 32.1 x 6.1 mm
	–	–	–	–	–
	–	–	–	–	–
	Width 1.0 mm	Width 2.0 mm	Width 0.5 mm	Width 1.0 mm	Width 2.0 mm
	Snap-on	Snap-on	Snap-on	Snap-on	Snap-on
	–	–	–	–	–
	–	–	–	–	–
	Page 373	Page 373	Page 373	Page 373	Page 373



	BAM00U2 BOS 5-BL-7	BAM00U3 BOS 5-BL-8	BAM00U4 BOS 5-BL-9	
Principle of operation	Aperture BOS	Aperture BOS	Aperture BOS	
Version	Round aperture	Round aperture	Round aperture	
Filter	—	—	—	
Use	for photoelectric sensors BOS 5K	for photoelectric sensors BOS 5K	for photoelectric sensors BOS 5K	
Dimension	8.2 x 32.1 x 6.1 mm	8.2 x 32.1 x 6.1 mm	8.2 x 32.1 x 6.1 mm	
Material	—	—	—	
Material sensing surface	—	—	—	
Sensing surface	Ø 0.5 mm	Ø 1 mm	Ø 2 mm	
Mounting	Snap-on	Snap-on	Snap-on	
Focal length	—	—	—	
Minimum object distance (MOD)	—	—	—	
Productview	Page 374	Page 374	Page 374	





	BAM02PM BOS 6-BL-1	BAM029R BAM LS-VS-004-C2/3-0614-2	BAM02FA BAM LS-VS-004-C2/3-0814-2	BAM02FC BAM LS-VS-004-C2/3-1214-2	BAM02FE BAM LS-VS-004-C2/3-1614-2
	Aperture BOS	Camera lens	Camera lens	Camera lens	Camera lens
	Round aperture	C-Mount	C-Mount	C-Mount	C-Mount
	–	–	–	–	–
	for photoelectric sensors BOS 6K	for BVS SC-..	for BVS SC-..	for BVS SC-..	for BVS SC-..
	35 x 28 x 14.1 mm	Ø 32 x 43.4 mm	Ø 42 x 44 mm	Ø 29.5 x 53.7 mm	Ø 29.5 x 39.8 mm
	–	–	–	–	–
	–	Glass, polished	Glass, polished	Glass, polished	Glass, polished
	Ø 1 mm (2x)	–	–	–	–
	Oval holes 3.5 mm x 4.0 mm	Screws	Screws	Screws	Screws
	–	6 mm	8 mm	12 mm	16 mm
	–	100 mm	100 mm	100 mm	100 mm
	Page 374	Page 374	Page 374	Page 374	Page 374



	BAM02FF BAM LS-VS-004-C2/3-2514-2	BAM02FH BAM LS-VS-004-C2/3-3514-2	BAM02FJ BAM LS-VS-004-C2/3-5014-2	
Principle of operation	Camera lens	Camera lens	Camera lens	
Version	C-Mount	C-Mount	C-Mount	
Filter	—	—	—	
Use	for BVS SC-..	for BVS SC-..	for BVS SC-..	
Dimension	Ø 32 x 44.9 mm	Ø 29.5 x 41.4 mm	Ø 32 x 50.5 mm	
Material	—	Aluminum, black anodized	—	
Material sensing surface	Glass, polished	Glass, polished	Glass, polished	
Sensing surface	—	—	—	
Mounting	Screws	Screws	Screws	
Focal length	25 mm	35 mm	50 mm	
Minimum object distance (MOD)	100 mm	400 mm	300 mm	
Productview	Page 375	Page 375	Page 375	





	BAM02Y3 BAM LS-VS-004-C2/3-7532-2	**BAM03H1** BAM LS-VS-008-C2/3-0528-5	**BAM03H2** BAM LS-VS-008-C2/3-0814-5	**BAM03H3** BAM LS-VS-008-C2/3-1214-5	**BAM03H4** BAM LS-VS-008-C2/3-1614-5
	Camera lens	Camera lens	Camera lens	Camera lens	Camera lens
	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount
	—	—	—	—	—
	for BVS SC-..	for industrial cameras BVS CA-.. <12 MP	for industrial cameras BVS CA-.. <12 MP	for industrial cameras BVS CA-.. <12 MP	for industrial cameras BVS CA-.. <12 MP
	Ø 34 x 63.6 mm	Ø 43 x 45.8 mm	Ø 33 x 50.1 mm	Ø 33 x 42.7 mm	Ø 33 x 41.4 mm
	Aluminum, black anodized	—	—	—	—
	Glass, polished	Glass, polished	Glass, polished	Glass, polished	Glass, polished
	—	—	—	—	—
	Screws	—	—	—	—
	75 mm	5 mm	8 mm	12 mm	16 mm
	700 mm	100 mm	100 mm	150 mm	200 mm
	Page 375	Page 375	Page 375	Page 375	Page 375



	BAM03H5 BAM LS-VS-008-C2/3-2514-5	BAM03H6 BAM LS-VS-008-C2/3-3520-5	BAM03H7 BAM LS-VS-008-C2/3-5028-5	
Principle of operation	Camera lens	Camera lens	Camera lens	
Version	C-Mount	C-Mount	C-Mount	
Filter	—	—	—	
Use	for industrial cameras BVS CA-.. <12 MP	for industrial cameras BVS CA-.. <12 MP	for industrial cameras BVS CA-.. <12 MP	
Dimension	Ø 33 x 47 mm	Ø 33 x 42.8 mm	Ø 33 x 60.2 mm	
Material	—	—	—	
Material sensing surface	Glass, polished	Glass, polished	Glass, polished	
Sensing surface	—	—	—	
Mounting	—	—	—	
Focal length	25 mm	35 mm	50 mm	
Minimum object distance (MOD)	200 mm	200 mm	200 mm	
Productview	Page 376	Page 376	Page 376	





	BAM03MN BAM LS-VS-009-C1/1-0625-0	BAM03MP BAM LS-VS-009-C1/1-0825-0	BAM03MR BAM LS-VS-009-C1/1-1218-0	BAM03MT BAM LS-VS-009-C1/1-1618-0	BAM03MU BAM LS-VS-009-C1/1-2518-0
	Camera lens	Camera lens	Camera lens	Camera lens	Camera lens
	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount
	–	–	–	–	–
	for industrial cameras BVS CA-.. <12 MP	for industrial cameras BVS CA-.. 12 MP	for industrial cameras BVS CA-.. <12 MP	for industrial cameras BVS CA-.. 12 MP	for industrial cameras BVS CA-.. 12 MP
	Ø 84 x 79.1 mm	Ø 64 x 73.3 mm	Ø 51 x 73.8 mm	Ø 43 x 65.7 mm	Ø 43 x 69.4 mm
	Aluminum, black anodized	Aluminum, black anodized	Aluminum, black anodized	Aluminum, black anodized	Aluminum, black anodized
	Glass, polished	Glass, polished	Glass, polished	Glass, polished	Glass, polished
	–	–	–	–	–
	Screws	Screws	Screws	Screws	Screws
	6.5 mm	8.5 mm	12 mm	16 mm	25 mm
	100 mm	100 mm	100 mm	100 mm	100 mm
	Page 376	Page 376	Page 376	Page 376	Page 376



	BAM03MW BAM LS-VS-009-C1/1-3518-0	BAM03MY BAM LS-VS-009-C1/1-5018-0	BAM02MT BAM SP-XO-002-0,5-40-31-A	
Principle of operation	Camera lens	Camera lens	Spacer ring, piece	
Version	C-Mount	C-Mount	C-Mount	
Filter	—	—	—	
Use	for industrial cameras BVS CA-.. <12 MP	for industrial cameras BVS CA-.. 12 MP	for C-mount camera lenses	
Dimension	Ø 45 x 66 mm	Ø 45 x 74.5 mm	Ø 31 x 40 mm	
Material	Aluminum, black anodized	Aluminum, black anodized	—	
Material sensing surface	Glass, polished	Glass, polished	—	
Sensing surface	—	—	—	
Mounting	Screws	Screws	—	
Focal length	35 mm	50 mm	—	
Minimum object distance (MOD)	200 mm	200 mm	—	
Productview	Page 377	Page 377	Page 377	





	BAM01A7 BAM OF-VS-001-D-RX100	BAM02FR BAM OF-VS-002-BU-27	BAM02FZ BAM OF-VS-002-BU-30	BAM02FP BAM OF-VS-002-GN-27	BAM02FY BAM OF-VS-002-GN-30
	Optical filter BVS	Optical filter BVS	Optical filter BVS	Optical filter BVS	Optical filter BVS
	Diffusing plate, 1 aperture	Spectral filter	Spectral filter	Spectral filter	Spectral filter
	–	Blue	Blue	Green	Green
	for vision lighting ring light	for C-mount camera lenses	for C-mount camera lenses	for C-mount camera lenses	for C-mount camera lenses
	Ø 116 x 8 mm	Ø 29 x 6.5 mm	Ø 32 x 7 mm	Ø 29 x 6.5 mm	Ø 32 x 7 mm
	–	–	–	–	–
	Glass	Glass, polished	Glass, polished	Glass, polished	Glass, polished
	Ring Ø 104/Ø 64 mm	–	–	–	–
	Screw M1.6	Screws	Screws	Screws	Screws
	–	–	–	–	–
	–	–	–	–	–
	Page 377	Page 377	Page 377	Page 377	Page 377



	BAM02MN BAM OF-VS-002-IR-27	BAM02MP BAM OF-VS-002-IR-30	BAM02MR BAM OF-VS-002-IR-40	
Principle of operation	Optical filter BVS	Optical filter BVS	Optical filter BVS	
Version	Spectral filter	Spectral filter	Spectral filter	
Filter	Infrared	Infrared	Infrared	
Use	for C-mount camera lenses	for C-mount camera lenses	for C-mount camera lenses	
Dimension	Ø 29 x 6.5 mm	Ø 32 x 7 mm	Ø 42 x 7 mm	
Material	—	—	—	
Material sensing surface	Glass, polished	Glass, polished	Glass, polished	
Sensing surface	—	—	—	
Mounting	Screws	Screws	Screws	
Focal length	—	—	—	
Minimum object distance (MOD)	—	—	—	
Productview	Page 377	Page 377	Page 377	





	BAM02FK BAM OF-VS-002-PL-27	BAM02FT BAM OF-VS-002-PL-30	BAM02H0 BAM OF-VS-002-PL-40	BAM02FM BAM OF-VS-002-RD-27	BAM02FW BAM OF-VS-002-RD-30
	Optical filter BVS	Optical filter BVS	Optical filter BVS	Optical filter BVS	Optical filter BVS
	Spectral filter	Spectral filter	Spectral filter	Spectral filter	Spectral filter
	polarized	polarized	polarized	Red	Red
	for C-mount camera lenses	for C-mount camera lenses	for C-mount camera lenses	for C-mount camera lenses	for C-mount camera lenses
	Ø 29 x 9.5 mm	Ø 32 x 10 mm	Ø 42 x 10 mm	Ø 29 x 6.5 mm	Ø 32 x 7 mm
	–	–	–	–	–
	Glass, polished	Glass, polished	Glass, polished	Glass, polished	Glass, polished
	–	–	–	–	–
	Screws	Screws	Screws	Screws	Screws
	–	–	–	–	–
	–	–	–	–	–
	Page 377	Page 378	Page 378	Page 377	Page 377



	BAM02FL BAM OF-VS-002-UV-27	BAM02FU BAM OF-VS-002-UV-30	BAM02H1 BAM OF-VS-002-UV-40	
Principle of operation	Optical filter BVS	Optical filter BVS	Optical filter BVS	
Version	Spectral filter	Spectral filter	Spectral filter	
Filter	Ultraviolet	Ultraviolet	Ultraviolet	
Use	for C-mount camera lenses	for C-mount camera lenses	for C-mount camera lenses	
Dimension	Ø 29 x 6.5 mm	Ø 32 x 7 mm	Ø 42 x 7 mm	
Material	—	—	—	
Material sensing surface	Glass, polished	Glass, polished	Glass, polished	
Sensing surface	—	—	—	
Mounting	Screws	Screws	Screws	
Focal length	—	—	—	
Minimum object distance (MOD)	—	—	—	
Productview	Page 377	Page 377	Page 377	





	BAM02FN BAM 0F-VS-002-YE-27	**BAM01U2** BAM LS-FO-002-F	**BAM020P** BAM LS-FO-003-M6-L	**BAM030N** BAM LS-FO-005-U1-22	**BAM00NN** BFO 02-PK-1
	Optical filter BVS	Adjustable optics module	Lens	Lens	Lens
	Spectral filter	Optics	Add-on lens	Add-on lens	Add-on lens
	Yellow	–	–	–	–
	for C-mount camera lenses	for fibre optics BFO M6	for photoelectric color sensors BFS 33M-GSS-...	for photoelectric color sensors BFS 33M-GSS-..., for BFO00H8, for BFB-...	for photoelectric fiber optics BFO
	Ø 29 x 6.5 mm	Ø 19 x 38 mm	Ø 28.2 x 38.9 mm	Ø 18 x 44.9 mm	Ø 4 x 11.2 mm
	–	–	–	Aluminum anodized, black	–
	Glass, polished	Glass, anti-glare	Glass	Glass	Glass
	–	convex, 1 aperture	convex, 1 aperture	–	convex, 1 aperture
	Screws	Thread M18x1	Thread M12x1	Thread M18x1	Threads M2.6x0.45
	–	–	–	–	–
	–	–	–	–	–
	Page 377	Page 378	Page 378	Page 378	Page 378



	BAM00NR BFO 04-FL-1	BAM00NT BFO 04-FL-2	BAM00NW BFO 04-PK-1	
Principle of operation	Lens	Lens	Lens	
Version	Add-on lens	Add-on lens	Add-on lens	
Filter	—	—	—	
Use	for fibre optics BFO M4	for photoelectric color sensors BFS 33M-GSS-..., for BFB-...	for photoelectric fiber optics BFO	
Dimension	Ø 6.5 x 12 mm	Ø 6.5 x 15 mm	Ø 7 x 10.5 mm	
Material	—	—	—	
Material sensing surface	Glass	Glass	Glass	
Sensing surface	convex, 1 aperture	convex, 1 aperture	convex, 1 aperture	
Mounting	M4 thread	M4 thread	M4 thread	
Focal length	—	—	—	
Minimum object distance (MOD)	—	—	—	
Productview	Page 378	Page 378	Page 379	





	BAM0120 BKT M-PK-1	BAM0121 BKT M-PK-2	BAM0122 BKT M-PK-3	BAM00P2 BKT M-PK-4	BAM00P3 BKT M-PK-5
	Lens	Lens	Lens	Lens	Lens
	Add-on lens f= 18 mm	Add-on lens f= 9 mm	Add-on lens f= 28 mm	Intermediate ring with lens	Add-on lens f= 50 mm
	–	–	–	–	–
	for photoelectric luminescence sensors BLT, for photoelectric contrast sensors BKT, for photoelectric contrast sensors BKT 67M	for photoelectric contrast sensors BKT, for photoelectric contrast sensors BKT 67M	for photoelectric contrast sensors BKT, for photoelectric contrast sensors BKT 67M	for photoelectric contrast sensors BKT, for photoelectric contrast sensors BKT 67M	for photoelectric contrast sensors BKT, for photoelectric contrast sensors BKT 67M
	Ø 25 x 11 mm	Ø 25 x 8.5 mm	Ø 33 x 48.5 mm	Ø 25 x 15.5 mm	Ø 32 x 25 mm
	–	–	–	–	–
	Glass	Glass	Glass	Glass	Glass
	convex, 1 aperture	convex, 1 aperture	convex, 1 aperture	convex, 1 aperture	convex, 1 aperture
	Thread M20x0.7	Thread M20x0.7	Thread M20x0.7	Thread M20x0.7	Thread M20x0.7
	–	–	–	–	–
	–	–	–	–	–
	Page 379	Page 379	Page 379	Page 379	Page 379



	BAM00NP BFO 02-UK-1	BAM00R0 BOS 12-WS-1	BAM00R1 BOS 12-WS-2	
Principle of operation	Beam deflector BFO	Beam deflector BFO	Beam deflector BFO	
Version	90° lens, 1 mirror in housing	90° lens, 1 open mirror	90° lens, 1 open mirror	
Filter	—	—	—	
Use	for photoelectric fiber optics BFO	for photoelectric sensors BOS 12M	for photoelectric sensors BOS 12M, for photoelectric sensors BOS 12M	
Dimension	Ø 4 x 4 mm	16 x 35 x 24 mm	16 x 35 x 24 mm	
Material	—	—	—	
Material sensing surface	Glass	PET, coated Al	Glass, coated Al	
Sensing surface	Prism, cylindrical	Mirror surface	Mirror surface	
Mounting	Threads M2.6x0.45	Nut M12x1	Nut M12x1	
Focal length	—	—	—	
Minimum object distance (MOD)	—	—	—	
Productview	Page 379	Page 379	Page 380	



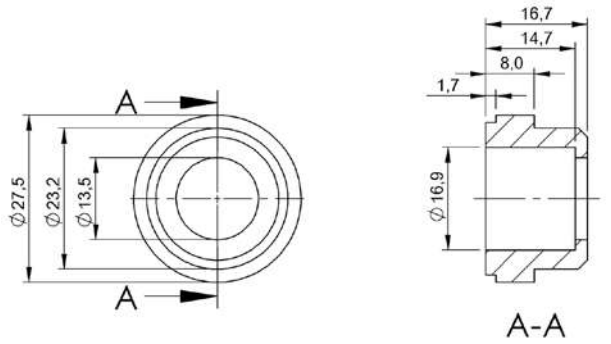


	BAM00RP BOS 18-UK-1	BAM00RR BOS 18-UK-10	BAM00RT BOS 18-UK-2	BAM00RU BOS 18-WS-1	BAM01ET BAM AP-US-001-M12-0
	Beam deflector BFO	Beam deflector BFO	Beam deflector BFO	Beam deflector BFO	Focusing attachment BUS
	90° lens, 2 mirrors in housing	90° lens, 1 mirror in housing	90° lens, 2 mirrors in housing	90° lens, 1 open mirror	Focusing attachment
	–	–	–	–	–
	for photoelectric sensors BOS 18M	for photoelectric sensors BOS 18K, for photoelectric sensors BOS 18M	for photoelectric sensors BOS 18M	for photoelectric sensors BOS 18M, for photoelectric sensors BOS 18K	for ultrasonic sensors BUS
	Ø 23.5 x 23.5 mm	Ø 23.5 x 23.5 mm	Ø 23.5 x 23.5 mm	22 x 42 x 30 mm	Ø 17 x 40 mm
	–	–	–	–	–
	PMMA	Glass, coated Al	PMMA	PET, coated Al	–
	Double lens, flat on outside	Mirror surface	Front pane	Mirror surface	Ø 5 mm
	Thread M18x1	Thread M18x1	Thread M18x1	Nut M18x1	Thread M12x1
	–	–	–	–	–
	–	–	–	–	–
	Page 380	Page 380	Page 380	Page 380	Page 380

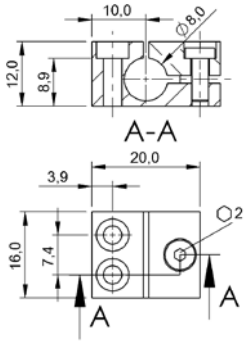


	BAM01YU BAM AP-US-004-R06-Y	**BAM01HJ** BAM AP-US-002-M18-0	**BAM01EP** BAM BD-US-001-D20-4	
Principle of operation	Focusing attachment BUS	—	Beam deflector BUS	
Version	Focusing attachment	Focusing attachment	90° deflector, open	
Filter	—	—	—	
Use	for ultrasonic sensors BUS	for ultrasonic sensors BUS	for ultrasonic sensors BUS	
Dimension	12 x 18.4 x 28.1 mm	Ø 25 x 80 mm	50 x 105 x 50 mm	
Material	—	—	—	
Material sensing surface	—	—	—	
Sensing surface	Ø 3 mm	Ø 11 mm	Deflection surface	
Mounting	Adhesive	Thread M18x1	Nut M18x1, Screw M5	
Focal length	—	—	—	
Minimum object distance (MOD)	—	—	—	
Productview	Page 380	Page 380	Page 381	

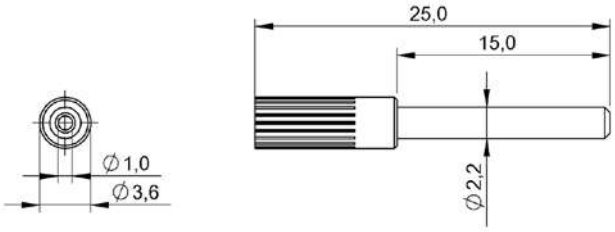
	BAM01ER BAM BD-US-001-D32-4				
	Beam deflector BUS				
	90° deflector, open				
	–				
	for ultrasonic sensors BUS				
	50 x 105 x 50 mm				
	–				
	–				
	Deflection surface				
	Nut M30x1.5, Screw M5				
	–				
	–				
	Page 381				



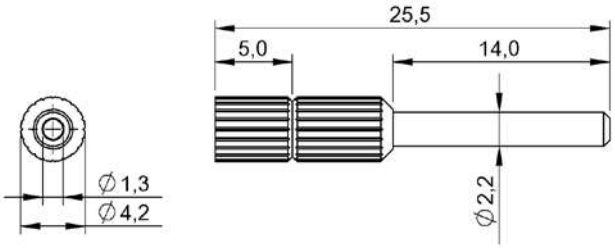
BAM00NM



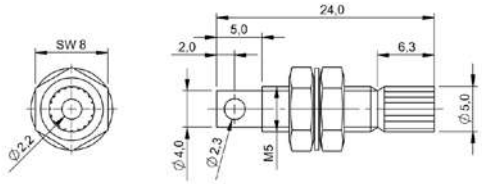
BAM00P0



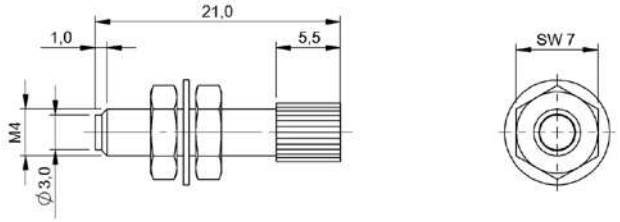
BAM000J



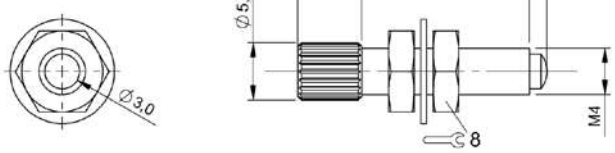
BAM00P1



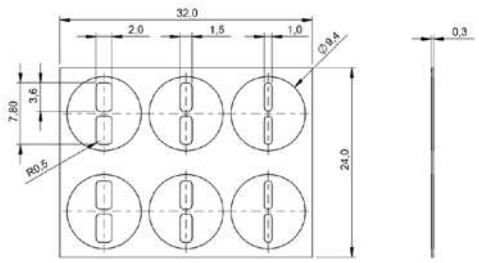
BFO005F



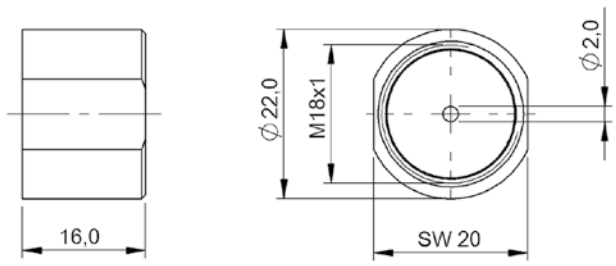
BFO005J



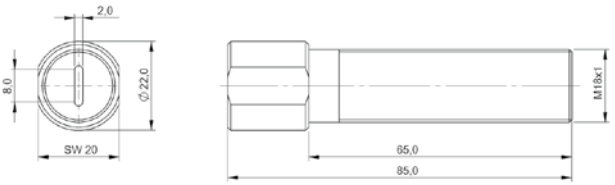
BFO005L



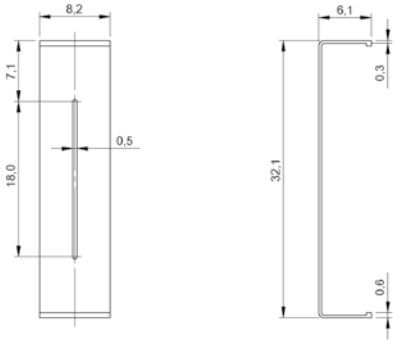
BAM00PW



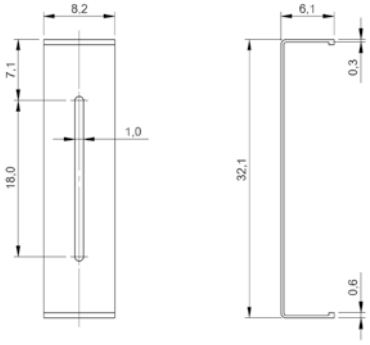
BAM00R6



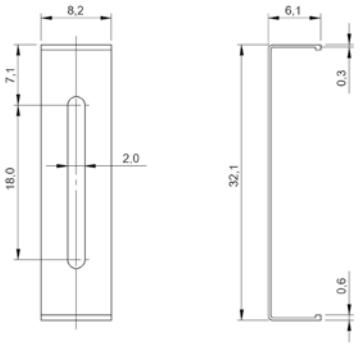
BAM00R7



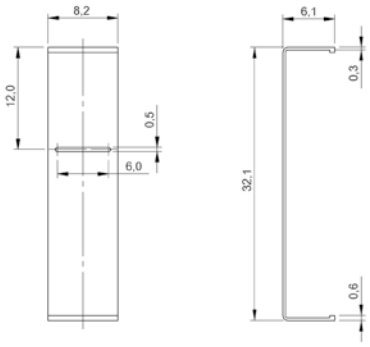
BAM00TU



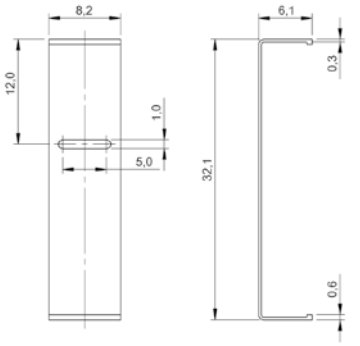
BAM00TW



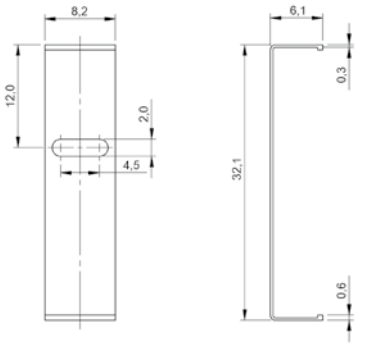
BAM00TY



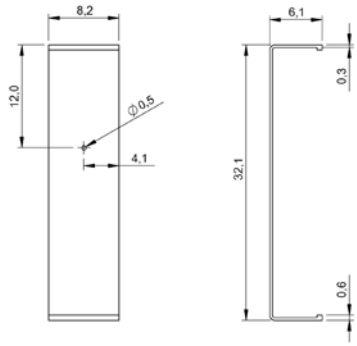
BAM00TZ



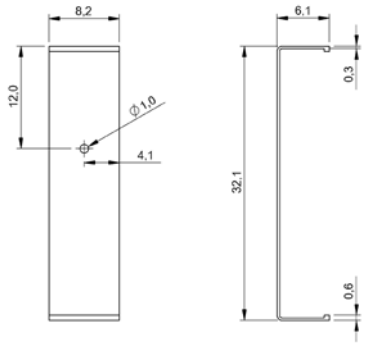
BAM00U0



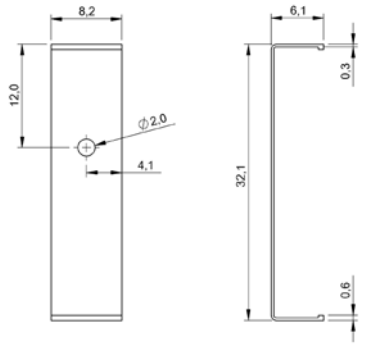
BAM00U1



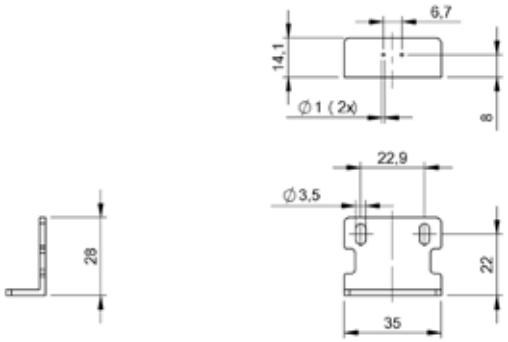
BAM00U2



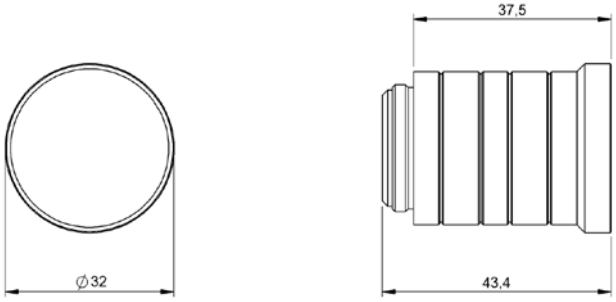
BAM00U3



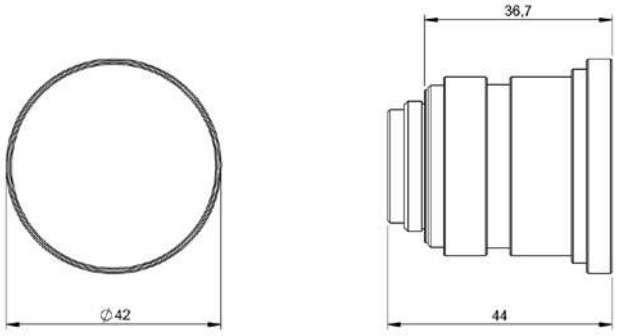
BAM00U4



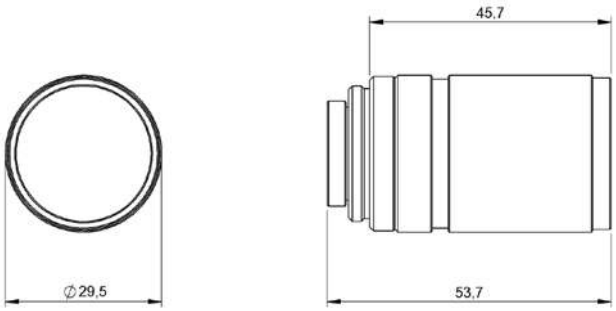
BAM02PM



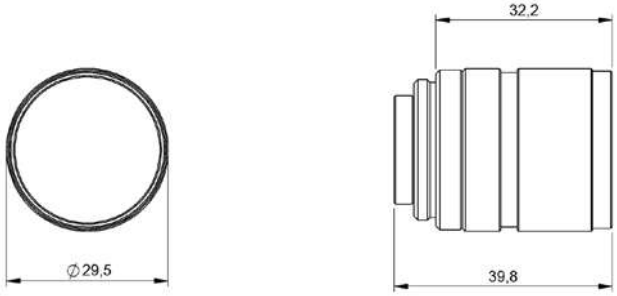
BAM029R



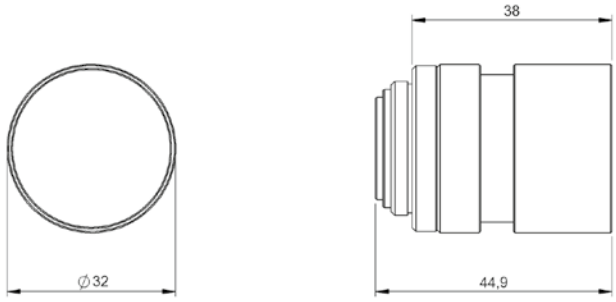
BAM02FA



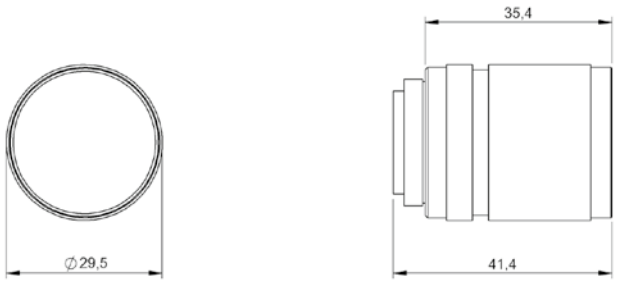
BAM02FC



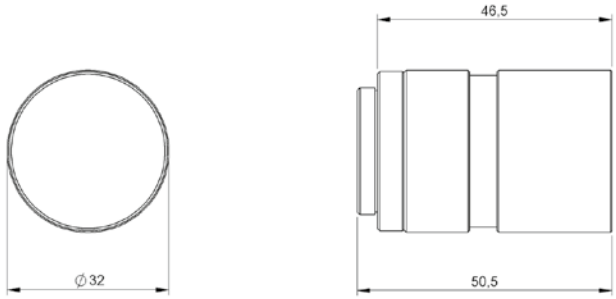
BAM02FE



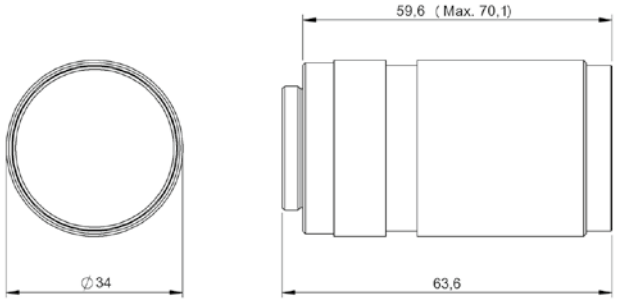
BAM02FF



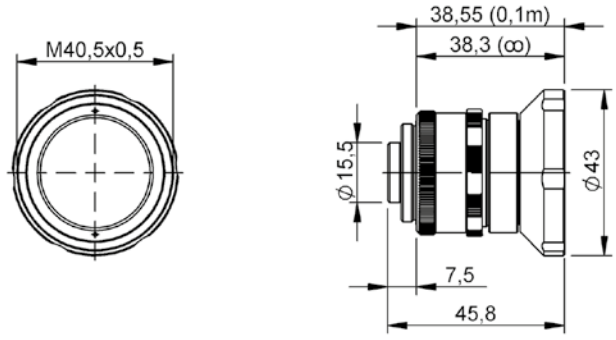
BAM02FH



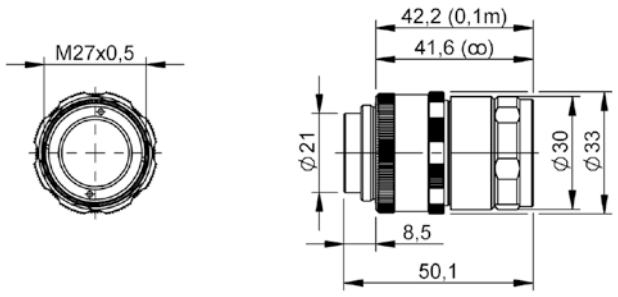
BAM02FJ



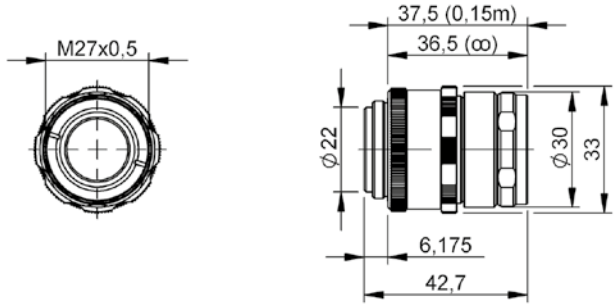
BAM02Y3



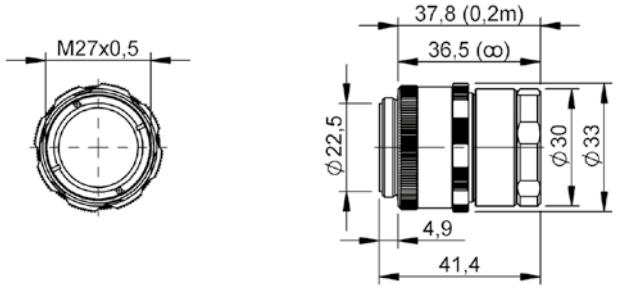
BAM03H1



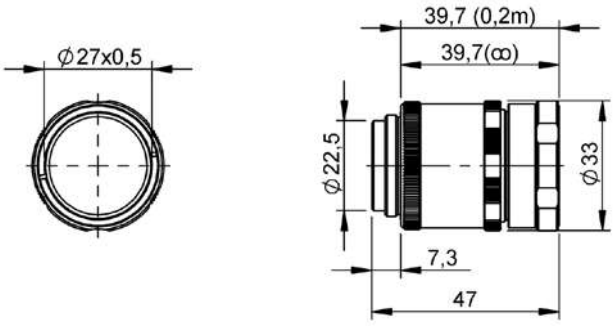
BAM03H2



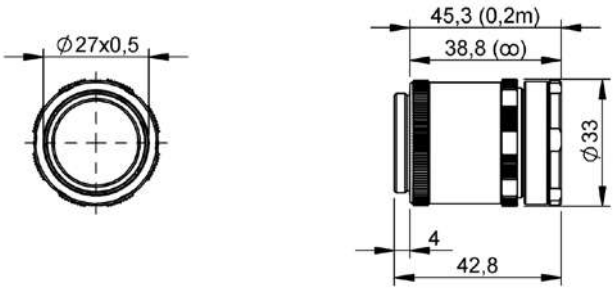
BAM03H3



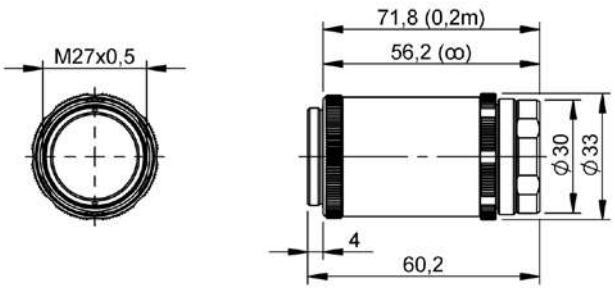
BAM03H4



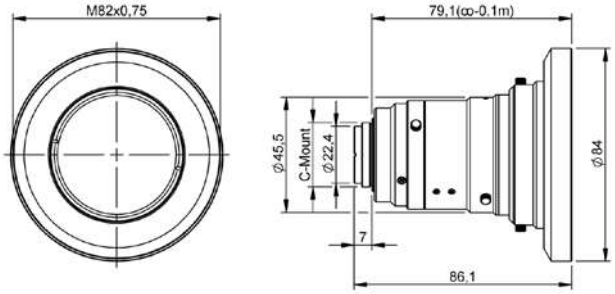
BAM03H5



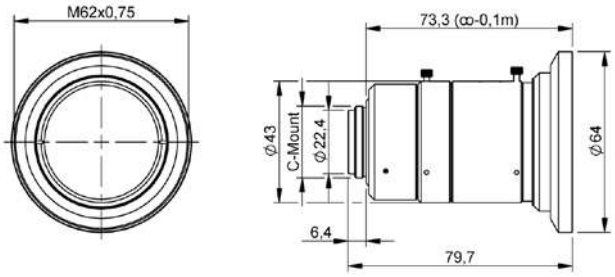
BAM03H6



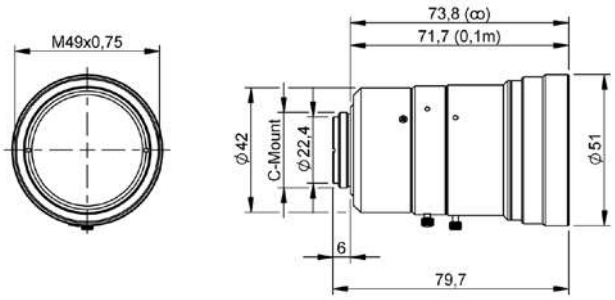
BAM03H7



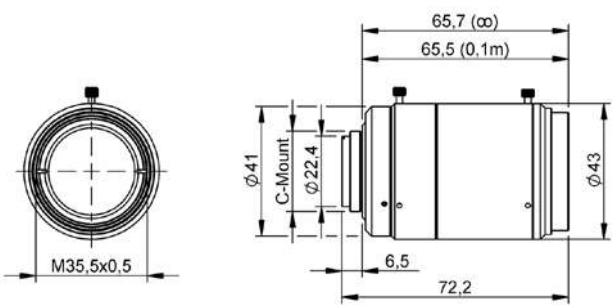
BAM03MN



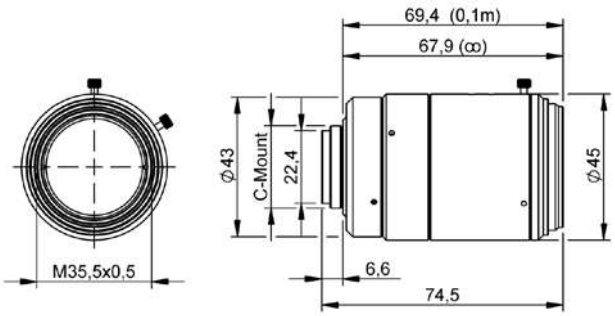
BAM03MP



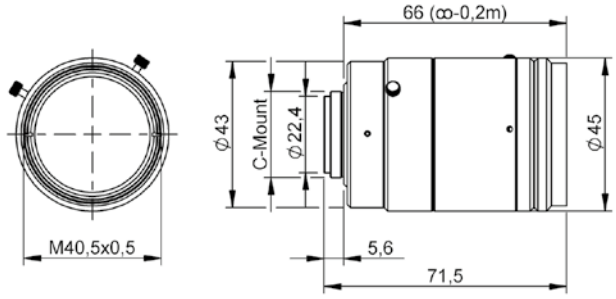
BAM03MR



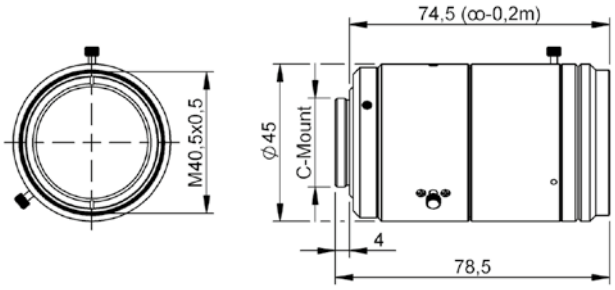
BAM03MT



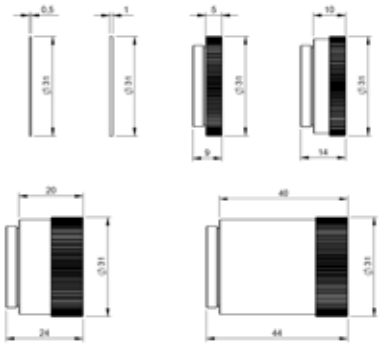
BAM03MU



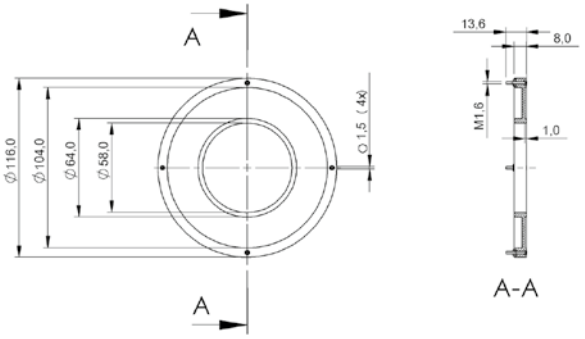
BAM03MW



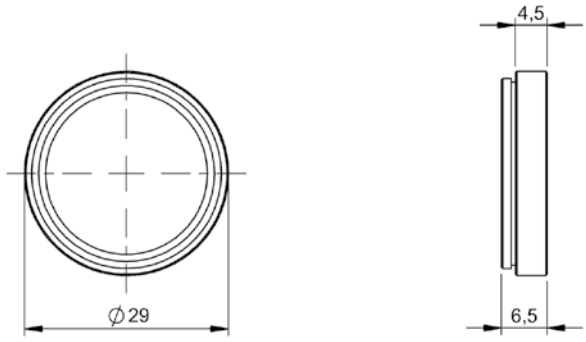
BAM03MY



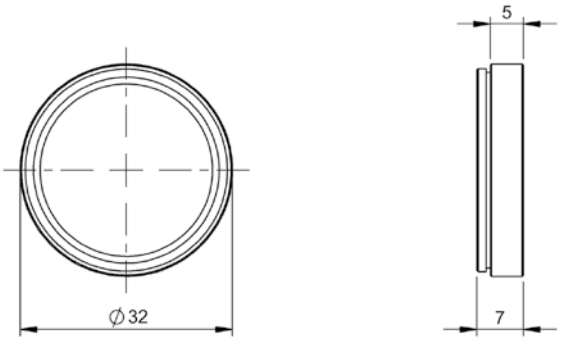
BAM02MT



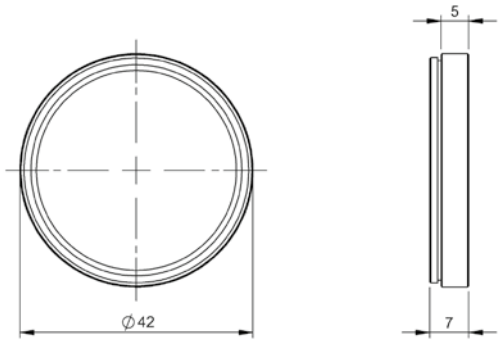
BAM01A7



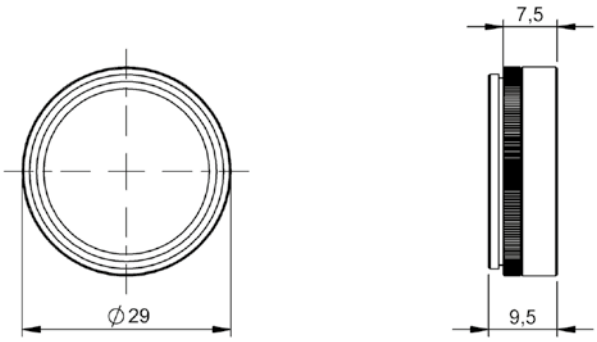
BAM02FR, BAM02FP, BAM02MN, BAM02FM, BAM02FL, BAM02FN



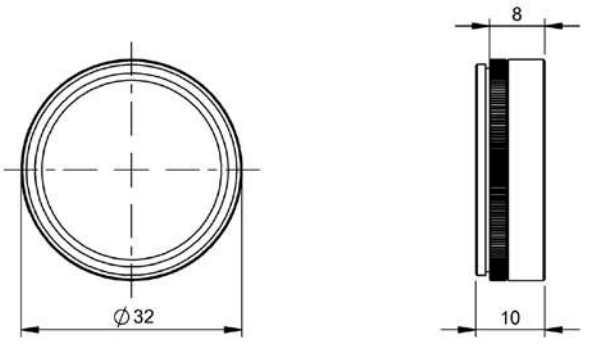
BAM02FZ, BAM02FY, BAM02MP, BAM02FW, BAM02FU



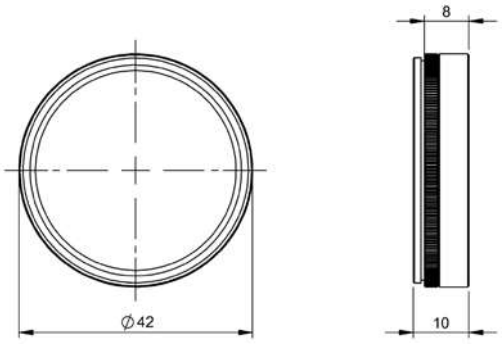
BAM02MR, BAM02H1



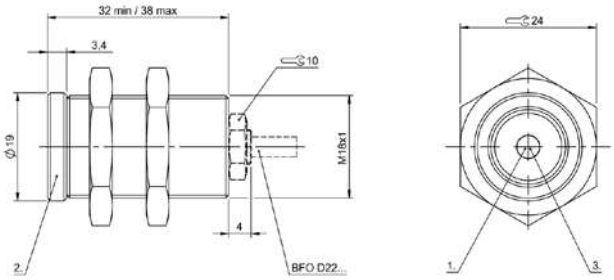
BAM02FK



BAM02FT

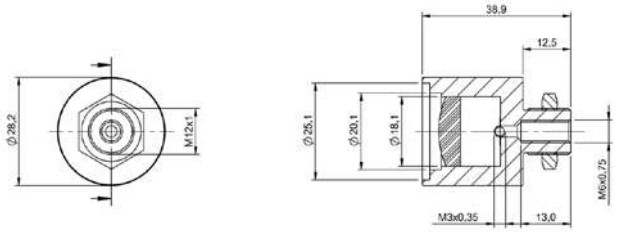


BAM02H0

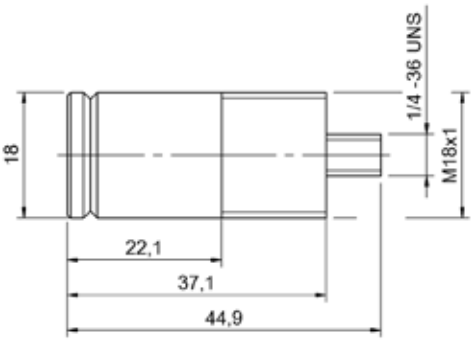


1) Receiver, 2) Knurl, 3) Emitter

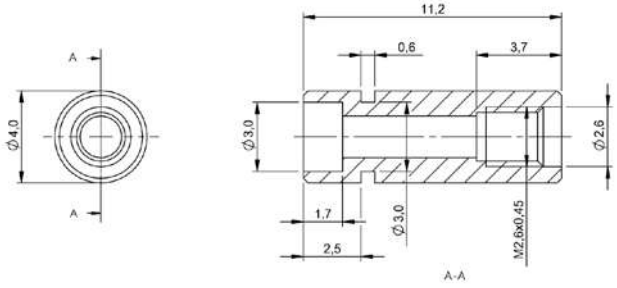
BAM01U2



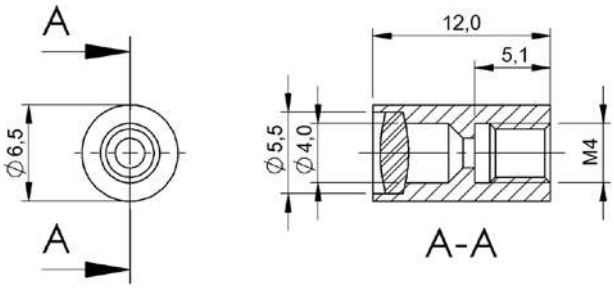
BAM020P



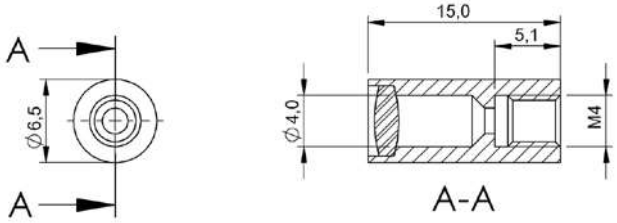
BAM030N



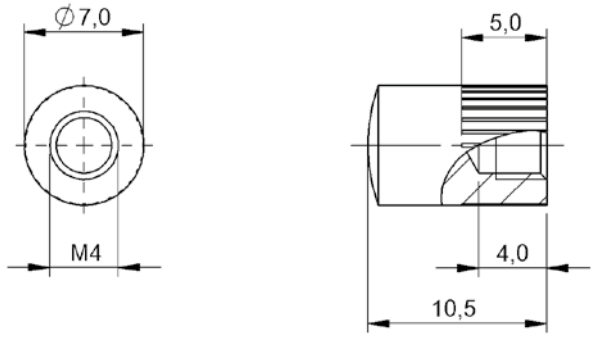
BAM00NN



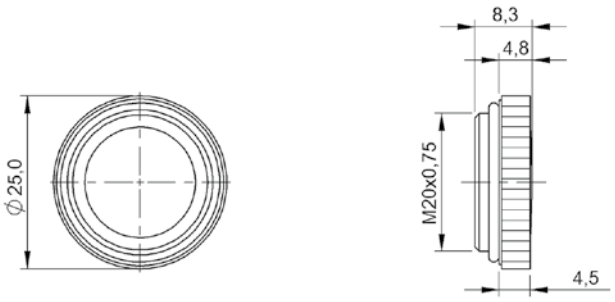
BAM00NR



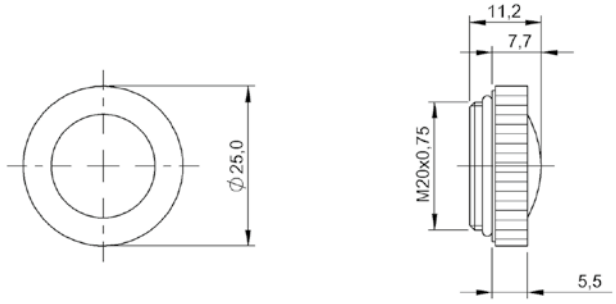
BAM00NT



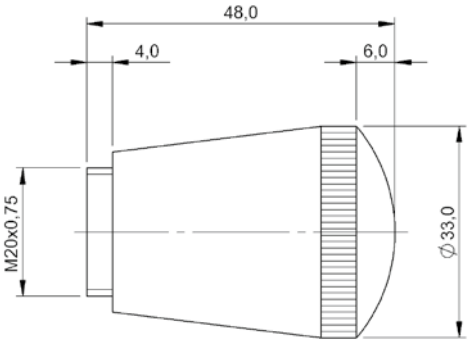
BAM00NW



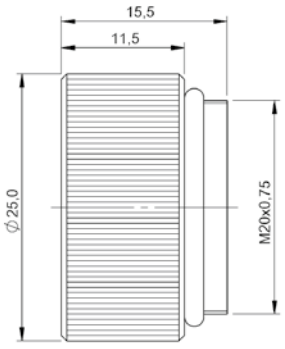
BAM0120



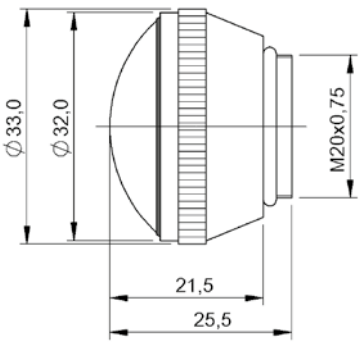
BAM0121



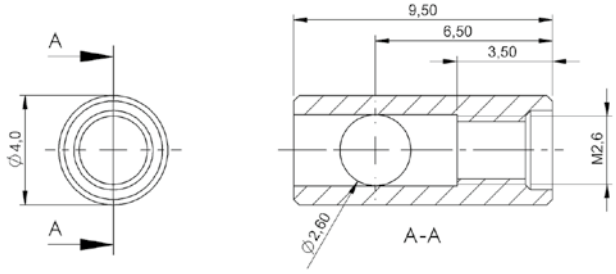
BAM0122



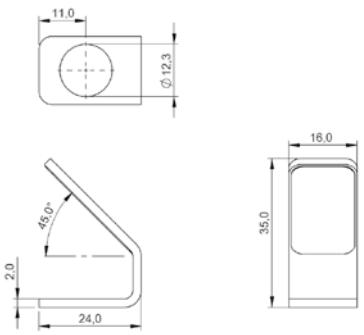
BAM00P2



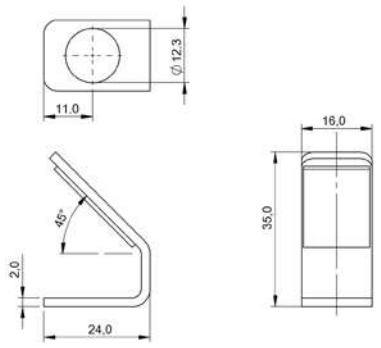
BAM00P3



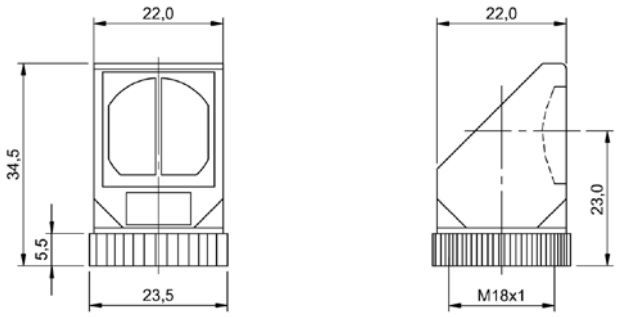
BAM00NP



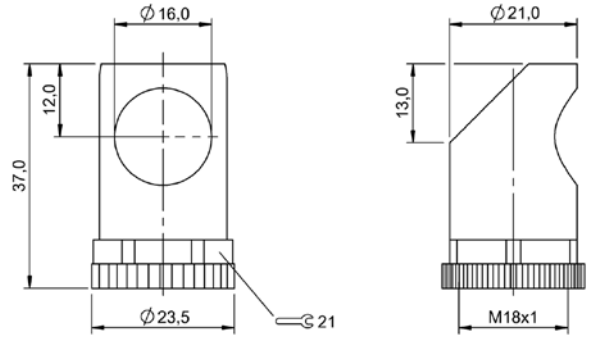
BAM00R0



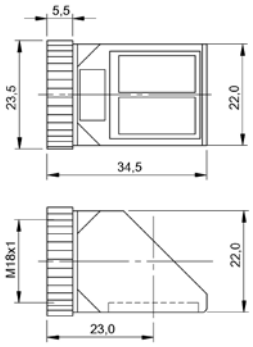
BAM00R1



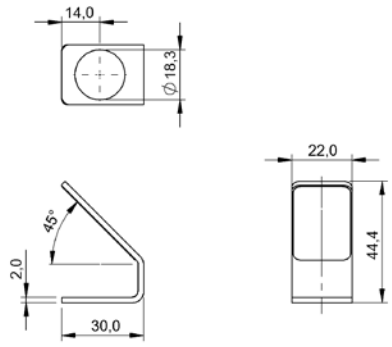
BAM00RP



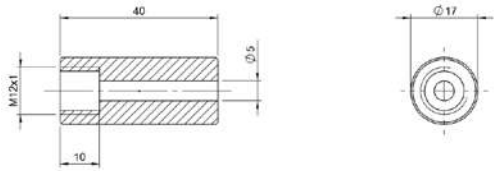
BAM00RR



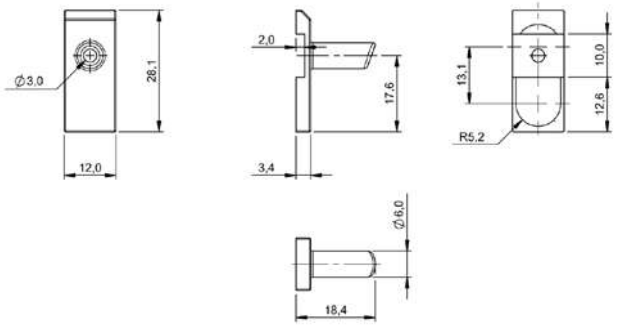
BAM00RT



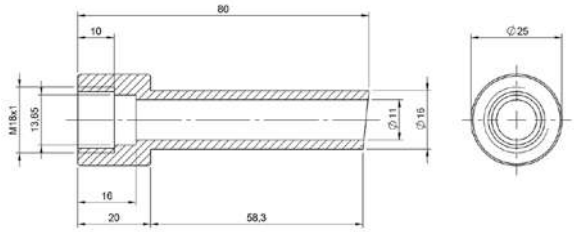
BAM00RU



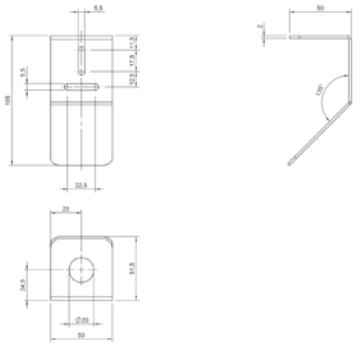
BAM01ET



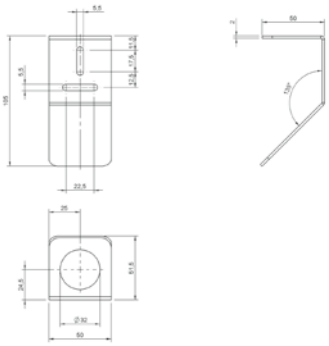
BAM01YU



BAM01HJ



BAM01EP



BAM01ER

Mechanical protection for sensors and devices

MECHANICAL PROTECTION

Our protective caps, protective housings, protective covers, protective tubes and sabotage protection prevent any mechanical damage to the sensor or a device.

Select from different versions – even for sophisticated applications.

The most important benefits

- High-quality and long service life
- Simple to install
- Compatibility



	BAM0183 BKS-PW-26/20-SI-TR-03,5	**BAM0182** BKS-PW-51/30-SI-TR-11	**BAM021E** BAM PT-XA-005-260-T-R20	
Short description	Silicone strip	Silicone strip	Silicone strip	
Use	for cable guard, for weld protection	for cable guard, for weld protection	for cable guard, for weld protection	
Material	Silicone 60 white, translucent	Silicone 60 white, translucent	Silicone 60 white, translucent	
Dimension	1.6 x 26 x 3658 mm	1.6 x 51 x 10970 mm	1.6 x 26 x 20000 mm	
Ambient temperature	-65...260 °C	-65...260 °C	-40...180 °C	
Productview	Page 388	Page 388	Page 388	



	BAM01R2 BAM PT-XA-002-127-2-30	**BAM0231** BAM PT-XA-002-190-2-R15	**BAM01UY** BAM PT-XA-002-190-2-30	
Short description	Silicone-fiberglass tube	Silicone-fiberglass tube	Silicone-fiberglass tube	
Use	for cable guard, for weld protection	for cable guard, for weld protection	for cable guard, for weld protection	
Material	Fiberglass sheathed Silicon rubber, red lion oxide red silicone rubber	Fiberglass sheathed Silicon rubber, red	Fiberglass sheathed Silicon rubber, red lion oxide red silicone rubber	
Dimension	Ø 20.7 x 30480 mm	Ø 26 x 15000 mm	Ø 27.1 x 30480 mm	
Ambient temperature	-55...260 °C	-40...250 °C	-55...260 °C	
Productview	Page 388	Page 388	Page 388	




	BAM021F BAM PT-XA-005-510-T-R20	BAM02E3 BAM PT-XA-006-M91-T-00,9	BAM022Z BAM PT-XA-002-100-2-R15	BAM0230 BAM PT-XA-002-130-2-R15	
	Silicone strip	Silicone film	Silicone-fiberglass tube	Silicone-fiberglass tube	
	for cable guard, for weld protection	for cable guard, for weld protection	for cable guard, for weld protection	for cable guard, for weld protection	
	Silicone 60 white, trans-lucent	Silicone	Fiberglass sheathed Silicon rubber, red	Fiberglass sheathed Silicon rubber, red	
	1.6 x 51 x 20000 mm	1.6 x 914 x 914 mm	Ø 17 x 15000 mm	Ø 20 x 15000 mm	
	-40...180 °C	-65...233 °C	-40...250 °C	-40...250 °C	
	Page 388	Page 388	Page 388	Page 388	

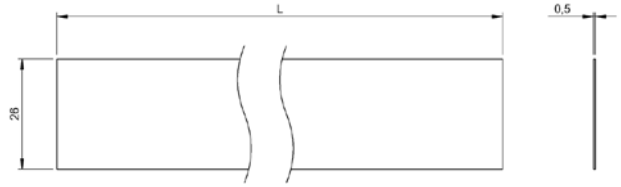


	BAM0232 BAM PT-XA-002-380-2-R15	BAM0233 BAM PT-XA-002-500-2-R15	BAM017E BKS-PT-07/16-SI-15	BAM0212 BAM PT-XA-004-070-T-R16	BAM017H BKS-PT-10/16-SI-15
	Silicone-fiberglass tube	Silicone-fiberglass tube	Silicone tube	Silicone tube	Silicone tube
	for cable guard, for weld protection	for cable guard, for weld protection	for cable guard, for weld protection	for cable guard, for weld protection	for cable guard, for weld protection
	Fiberglass sheathed Silicon rubber, red	Fiberglass sheathed Silicon rubber, red	Silicone 60 white, translucent	Silicone 60 white, translucent	Silicone 60 white, translucent
	Ø 45 x 15000 mm	Ø 57 x 15000 mm	Ø 10.2 x 15000 mm	Ø 10.2 x 16000 mm	Ø 13.2 x 15000 mm
	-40...250 °C	-40...250 °C	-60...260 °C	-40...200 °C	-60...260 °C
	Page 388	Page 388	Page 388	Page 388	Page 389

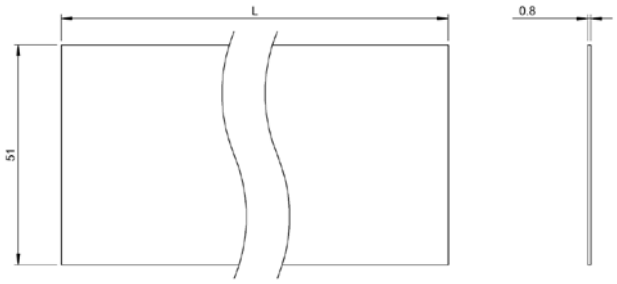
	BAM0213 BAM PT-XA-004-100-T-R16	**BAM017L** BKS-PT-13/16-SI-15	**BAM0214** BAM PT-XA-004-130-T-R16	
Short description	Silicone tube	Silicone tube	Silicone tube	
Use	for cable guard, for weld protection	for cable guard, for weld protection	for cable guard, for weld protection	
Material	Silicone 60 white, translucent	Silicone 60 white, translucent	Silicone 60 white, translucent	
Dimension	Ø 13.2 x 16000 mm	Ø 16.2 x 15000 mm	Ø 16.2 x 16000 mm	
Ambient temperature	-40...200 °C	-60...260 °C	-40...200 °C	
Productview	Page 388	Page 389	Page 388	

	BAM017Z BKS-PT-50/16-SI-07.5	**BAM0217** BAM PT-XA-004-500-T-R16		
Short description	Silicone tube	Silicone tube		
Use	for cable guard, for weld protection	for cable guard, for weld protection		
Material	Silicone 60 white, translucent	Silicone 60 white, translucent		
Dimension	Ø 53.2 x 7500 mm	Ø 53.2 x 16000 mm		
Ambient temperature	-60...260 °C	-40...200 °C		
Productview	Page 389	Page 388		

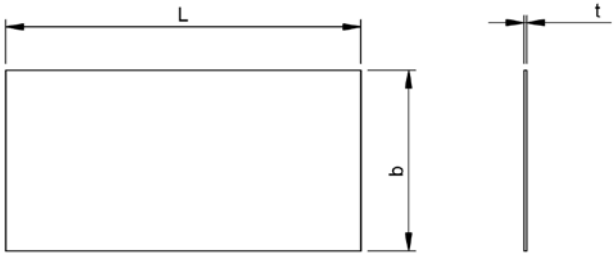
	BAM017N BKS-PT-16/16-SI-15	BAM0215 BAM PT-XA-004-160-T-R16	BAM0216 BAM PT-XA-004-190-T-R16	BAM017R BKS-PT-19/16-SI-15	BAM017U BKS-PT-38/16-SI-07.5
	Silicone tube	Silicone tube	Silicone tube	Silicone tube	Silicone tube
	for cable guard, for weld protection	for cable guard, for weld protection	for cable guard, for weld protection	for cable guard, for weld protection	for cable guard, for weld protection
	Silicone 60 white, trans-lucent	Silicone 60 white, trans-lucent	Silicone 60 white, trans-lucent	Silicone 60 white, trans-lucent	Silicone 60 white, trans-lucent
	Ø 19.2 x 15000 mm	Ø 19.2 x 16000 mm	Ø 21.2 x 16000 mm	Ø 22.2 x 15000 mm	Ø 41.2 x 7500 mm
	-60...260 °C	-40...200 °C	-40...200 °C	-60...260 °C	-60...260 °C
	Page 389	Page 388	Page 388	Page 389	Page 389



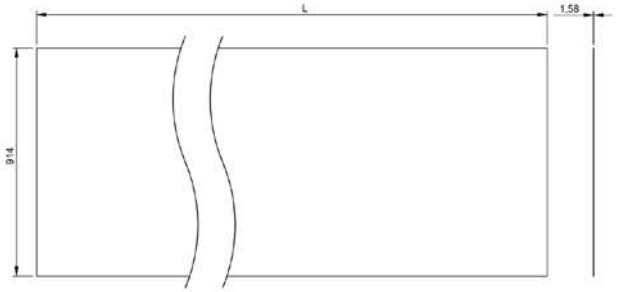
BAM0183



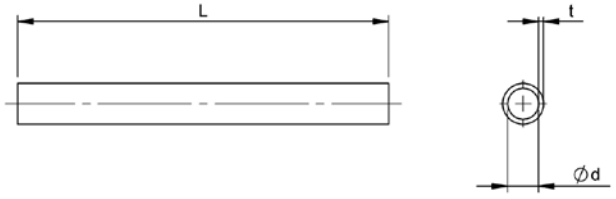
BAM0182



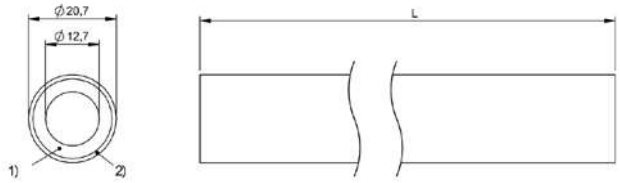
BAM021E, BAM021F



BAM02E3

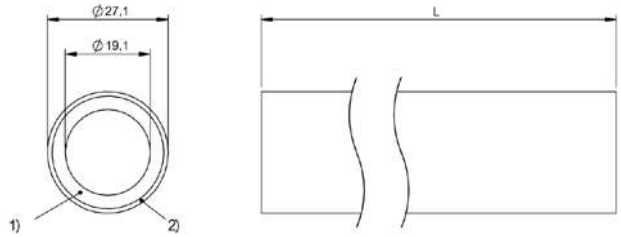


BAM022Z, BAM0230, BAM0231, BAM0232, BAM0233, BAM0212, BAM0213, BAM0214, BAM0215, BAM0216, BAM0217



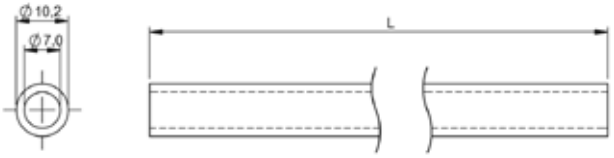
1) Fiberglass braided sleeve, 2) Red iron oxide flame protection

BAM01R2

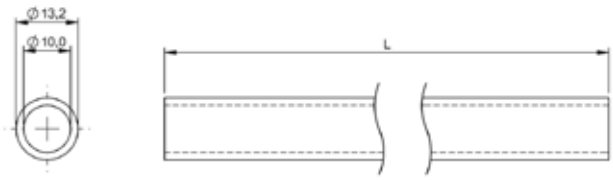


1) Fiberglass braided sleeve, 2) Red iron oxide flame protection

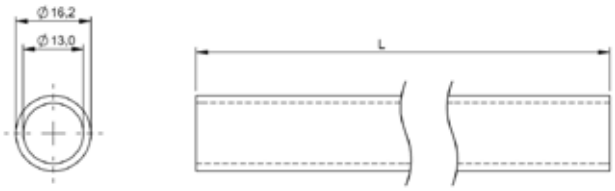
BAM01UY



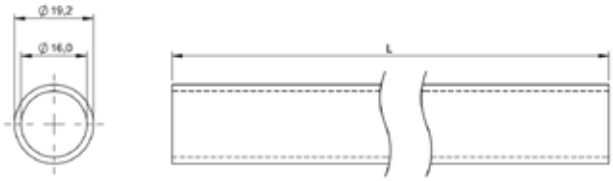
BAM017E



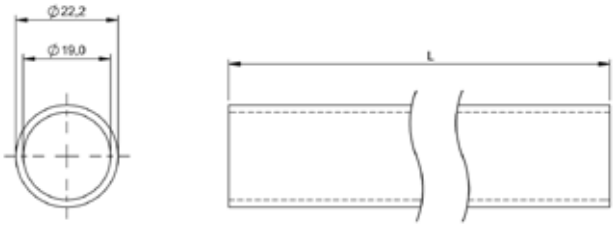
BAM017H



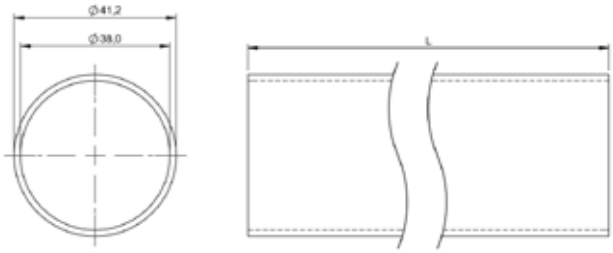
BAM017L



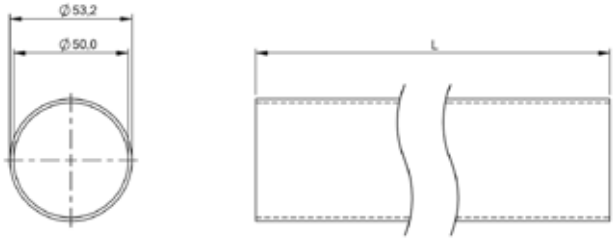
BAM017N



BAM017R



BAM017U



BAM017Z



	BAM02JE BES 08-FA-17	BAM009L BES 08-FA-49	BAM009M BES 08-FA-89	
Short description	Fixed stop	Fixed stop	Fixed stop	
Use	for inductive sensors Ø4, for inductive sensors BES M8	for inductive sensors Ø4, for inductive sensors BES M8	for inductive sensors Ø4, for inductive sensors BES M8	
Material	Stainless steel	Stainless steel	Stainless steel	
Dimension	Ø 8 x 28 mm	Ø 8 x 57 mm	Ø 8 x 97 mm	
Mounting	Screws M8	Screws M8	Screws M8	
Switching output	—	—	—	
Connection	—	—	—	
Ambient temperature	-25...100 °C	-25...100 °C	-25...100 °C	
Productview	Page 400	Page 400	Page 400	





	BAM00AZ BES 12-FA-70	BAM009N BES 08-FA-BS-4,0-G	BAM009P BES 08-FA-BS-4,0-W	BAM009R BES 08-FA-BS-8,0-G	BAM009T BES 08-FA-BS-8,0-W
	Fixed stop	Fixed stop	Fixed stop	Fixed stop	Fixed stop
	for inductive sensors Ø8, for inductive sensors BES M8	for inductive sensors Ø4, for inductive sensors BES M8	for inductive sensors Ø4, for inductive sensors BES M8	for inductive sensors Ø8, for inductive sensors BES M8	for inductive sensors BES M8
	Stainless steel	Aluminum anodized, red	Aluminum anodized, red	Aluminum anodized, red	Aluminum anodized, red
	Ø 12 x 78 mm	28 x 12 x 20 mm	31.8 x 12 x 20 mm	28 x 12 x 20 mm	31.8 x 12 x 20 mm
	Screws M12	Clamps	Clamps	Clamps	Clamps
	–	–	–	–	–
	–	–	–	–	–
	-25...100 °C	-25...100 °C	-25...100 °C	-25...100 °C	-25...100 °C
	Page 400	Page 400	Page 400	Page 400	Page 400



	BAM01AZ BAM FS-XE-001-M5-4	**BAM019Y** BAM FS-XE-003-M5-4	**BAM019W** BAM FS-XE-004-M8-4	
Short description	Positive stop tube switch	Positive stop tube switch	Positive stop tube switch	
Use	for inductive sensors BES M5, for inductive sensors Ø5	for inductive sensors BES M5, for inductive sensors Ø5	for inductive sensors BES M8	
Material	Stainless steel	Stainless steel	Stainless steel	
Dimension	Ø 8 x 35 mm	Ø 19 x 35 mm	Ø 19 x 53 mm	
Mounting	Screws M8	Screws M12	Screws M12	
Switching output	—	—	—	
Connection	—	—	—	
Ambient temperature	—	—	—	
Productview	Page 401	Page 401	Page 401	





	BAM01C0 BAM FS-XE-002-D4-4	SET0167 BAV BP-PH-00100-01	SET0168 BAV BP-PH-00100-02	SET017U BAV BP-PH-00100-11	SET016C BAV BP-PH-00102-01
	Positive stop tube switch	Plunger probe with chisel tip	Plunger probe with chisel tip	Plunger probe with chisel tip	Plunger probe with internal threads
	for inductive sensors Ø4	for positive stop plunger probe	for positive stop plunger probe	for positive stop plunger probe	for positive stop plunger probe
	Stainless steel	Brass Chrome-plated Steel Bronze Stainless steel Chrome-plated	Brass Chrome-plated Steel Bronze Stainless steel Chrome-plated	Brass Chrome-plated Steel Bronze Stainless steel Chrome-plated	Brass Chrome-plated Steel Bronze Stainless steel Chrome-plated
	Ø 13 x 47 mm	Ø 18 x 120.5 mm	Ø 18 x 125.6 mm	Ø 18 x 120.5 mm	Ø 18 x 120.5 mm
	Screws M8	Screws M18	Screws M18	Screws M18	Screws M18
	—	PNP normally open (NO)	PNP normally open (NO)	NPN normally open (NO)	PNP normally open (NO)
	—	Connector, M8x1-Male, 3-pin	Cable with connector, M12x1-Male, 4-pin, 0.20 m, PUR	Connector, M8x1-Male, 3-pin	Connector, M8x1-Male, 3-pin
	—	0...60 °C	0...60 °C	0...60 °C	0...60 °C
	Page 401	Page 401	Page 401	Page 401	Page 401



	SET016E BAV BP-PH-00102-02	**SET0180** BAV BP-PH-00102-11	**SET0181** BAV BP-PH-00102-12	
Short description	Plunger probe with internal threads	Plunger probe with internal threads	Plunger probe with internal threads	
Use	for positive stop plunger probe	for positive stop plunger probe	for positive stop plunger probe	
Material	Brass Chrome-plated Steel Bronze Stainless steel Chrome-plated	Brass Chrome-plated Steel Bronze Stainless steel	Brass Chrome-plated Steel Bronze Stainless steel Chrome-plated	
Dimension	Ø 18 x 125.6 mm	Ø 18 x 120.5 mm	Ø 18 x 125.6 mm	
Mounting	Screws M18	Screws M18	Screws M18	
Switching output	PNP normally open (NO)	NPN normally open (NO)	NPN normally open (NO)	
Connection	Cable with connector, M12x1-Male, 4-pin, 0.20 m, PUR	Connector, M8x1-Male, 3-pin	Cable with connector, M12x1-Male, 4-pin, 0.20 m, PUR	
Ambient temperature	0...60 °C	0...60 °C	0...60 °C	
Productview	Page 401	Page 401	Page 401	





	SET0169 BAV BP-PH-00101-01	SET016A BAV BP-PH-00101-02	SET017Y BAV BP-PH-00101-11	SET017Z BAV BP-PH-00101-12	SET015A BAV BP-PH-00093-01
	Plunger probe with flat tip	Plunger probe with flat tip	Plunger probe with flat tip	Plunger probe with flat tip	Plunger probe with round tip
	for positive stop plunger probe	for positive stop plunger probe	for positive stop plunger probe	for positive stop plunger probe	for positive stop plunger probe
	Brass Chrome-plated Steel Bronze Stainless steel Chrome-plated	Brass Chrome-plated Steel Bronze Stainless steel Chrome-plated	Brass Chrome-plated Steel Bronze Stainless steel Chro-me-plated	Brass Chrome-plated Steel Bronze Stainless steel Chrome-plated	Brass Chrome-plated Steel Bronze Stainless steel Chrome-plated
	Ø 18 x 120.5 mm	Ø 18 x 125.6 mm	Ø 18 x 120.5 mm	Ø 18 x 125.6 mm	Ø 18 x 120.5 mm
	Screws M18	Screws M18	Screws M18	Screws M18	Screws M18
	PNP normally open (NO)	PNP normally open (NO)	NPN normally open (NO)	NPN normally open (NO)	PNP normally open (NO)
	Connector, M8x1-Male, 3-pin	Cable with connector, M12x1-Male, 4-pin, 0.20 m, PUR	Connector, M8x1-Male, 3-pin	Cable with connector, M12x1-Male, 4-pin, 0.20 m, PUR	Connector, M8x1-Male, 3-pin
	0...60 °C	0...60 °C	0...60 °C	0...60 °C	0...60 °C
	Page 402	Page 402	Page 402	Page 402	Page 402



	SET015F BAV BP-PH-00093-02	**SET017R** BAV BP-PH-00093-11	**SET017T** BAV BP-PH-00093-12	
Short description	Plunger probe with round tip	Plunger probe with round tip	Plunger probe with round tip	
Use	for positive stop plunger probe	for positive stop plunger probe	for positive stop plunger probe	
Material	Brass Chrome-plated Steel Bronze Stainless steel Chrome-plated	Brass Chrome-plated Steel Bronze Stainless steel Chrome-plated	Brass Chrome-plated Steel Bronze Stainless steel Chrome-plated	
Dimension	Ø 18 x 125.6 mm	Ø 18 x 120.5 mm	Ø 18 x 125.6 mm	
Mounting	Screws M18	Screws M18	Screws M18	
Switching output	PNP normally open (NO)	NPN normally open (NO)	NPN normally open (NO)	
Connection	Cable with connector, M12x1-Male, 4-pin, 0.20 m, PUR	Connector, M8x1-Male, 3-pin	Cable with connector, M12x1-Male, 4-pin, 0.20 m, PUR	
Ambient temperature	0...60 °C	0...60 °C	0...60 °C	
Productview	Page 402	Page 402	Page 402	



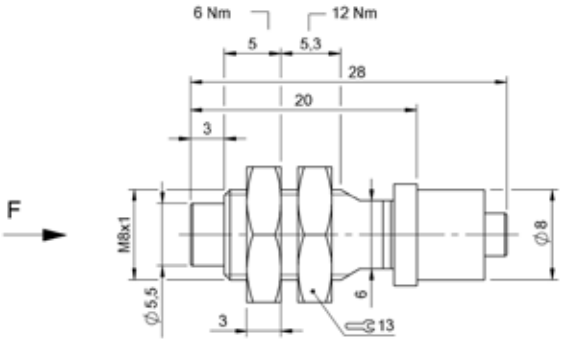


	BAM025T BAM TG-AM-015-001	BAM02YU BAM TG-AM-015-006	BAM02JW BAM TG-AM-015-004	BAM02JY BAM TG-AM-015-005	BAM02JU BAM TG-AM-015-003
	Disc tip	Disc tip	Tip M8	Tip M10	Tip M4
	for positive stop plunger probe	for positive stop plunger probe	for positive stop plunger probe	for positive stop plunger probe	for positive stop plunger probe
	Stainless steel (1.7225) Zinc coated, light	Stainless steel (1.7225) Zinc coated, light	Stainless steel (1.7225) Zinc coated, light	Stainless steel (1.7225) Zinc coated, light	Stainless steel (1.7225) Zinc coated, light
	Ø 50.8 x 12 mm	Ø 25.4 x 12 mm	Ø 9.5 x 29 mm	Ø 9.5 x 29 mm	Ø 9.5 x 29 mm
	Screw M6	–	Screw M6	Screw M6	Screw M6
	–	–	–	–	–
	–	–	–	–	–
	0...60 °C	0...60 °C	0...60 °C	0...60 °C	0...60 °C
	Page 402	Page 402	Page 402	Page 402	Page 403

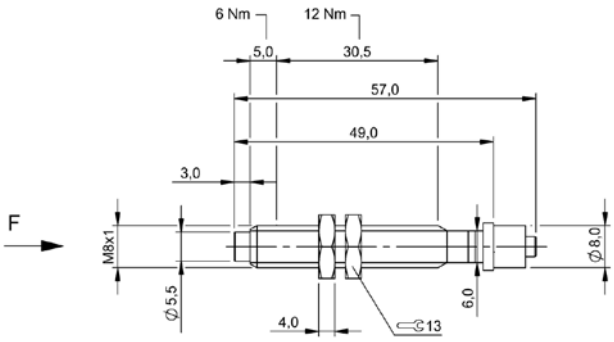


	BAM027T BAM TG-AM-015-002	**BAM0260** BAM FS-XE-005-M8-2-01T	**BAM025U** BAM FS-XE-005-M8-2-01P	
Short description	Tip M6	Spare parts set for plunger probe	Spare parts set for plunger probe	
Use	for positive stop plunger probe	for positive stop plunger probe	for positive stop plunger probe	
Material	Stainless steel (1.7225) Zinc coated, light	Brass Chrome-plated Steel Bronze Stainless steel Chrome-plated	Brass Chrome-plated Steel Stainless steel Bronze Chrome-plated	
Dimension	Ø 9.5 x 29 mm	Ø 18 x 120.5 mm	Ø 18 x 125.6 mm	
Mounting	Screw M6	Screws	M8x1	
Switching output	—	—	—	
Connection	—	—	—	
Ambient temperature	0...60 °C	0...60 °C	0...60 °C	
Productview	Page 403	Page 403	Page 403	

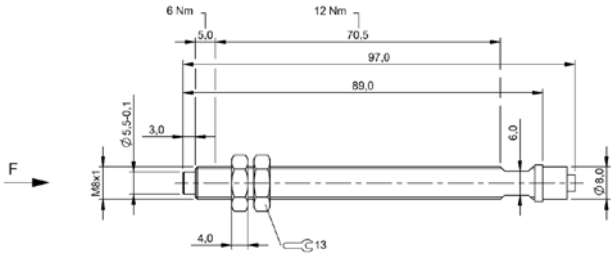
	BAM025W BAM FS-XE-005-M8-2-01F	BAM022W BAM FS-XE-005-M8-2-01R			
	Spare parts set for plunger probe	Spare parts set for plunger probe			
	for positive stop plunger probe	for positive stop plunger probe			
	Brass Chrome-plated Steel Stainless steel Bronze Chrome-plated	Brass Chrome-plated Steel Bronze Stainless steel Chrome-plated			
	Ø 18 x 120.5 mm	Ø 18 x 125.3 mm			
	Screws	Screws			
	–	–			
	–	–			
	0...60 °C	0...60 °C			
	Page 403	Page 403			



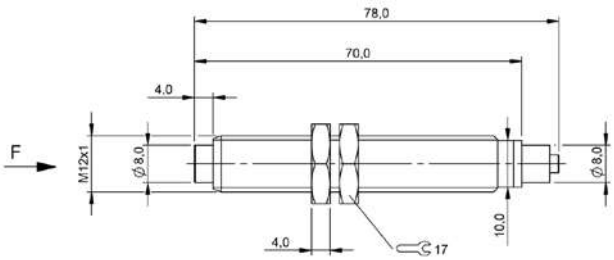
BAM02JE



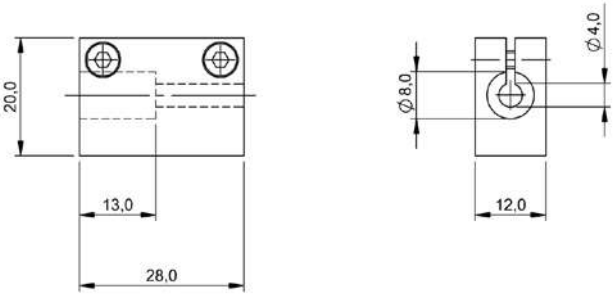
BAM009L



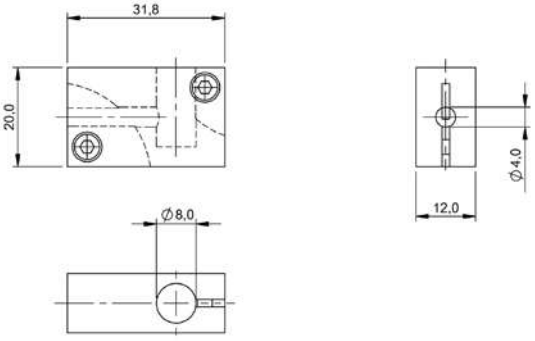
BAM009M



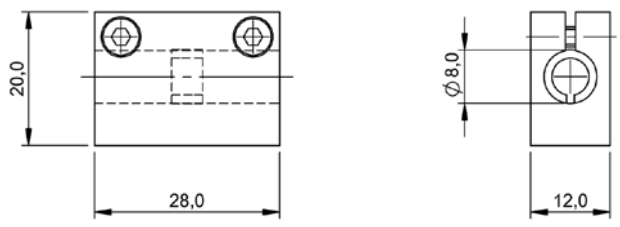
BAM00AZ



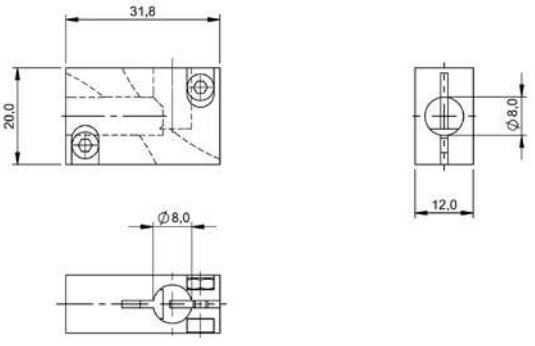
BAM009N



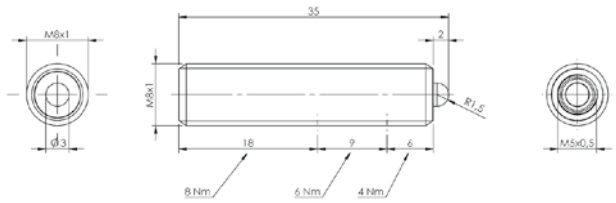
BAM009P



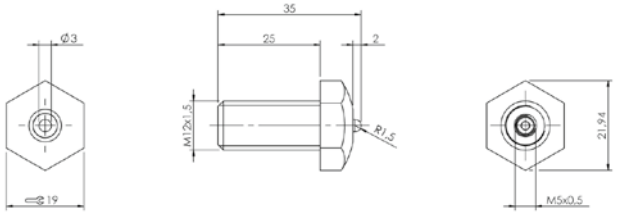
BAM009R



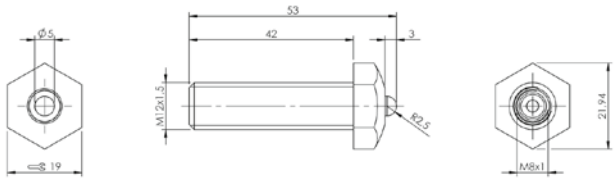
BAM009T



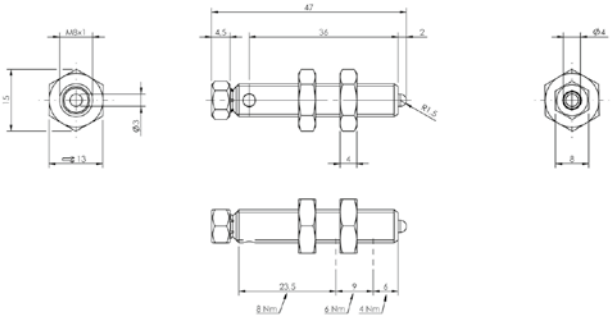
BAM01AZ



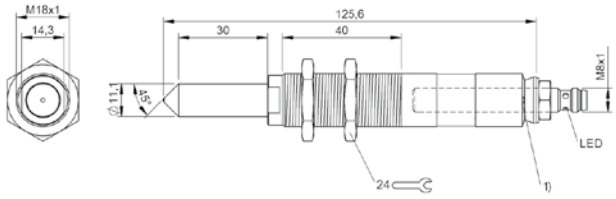
BAM019Y



BAM019W

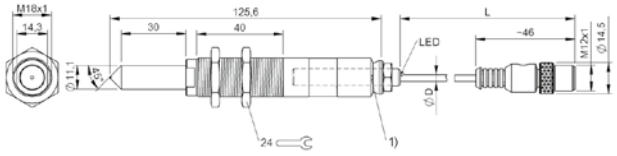


BAM01C0



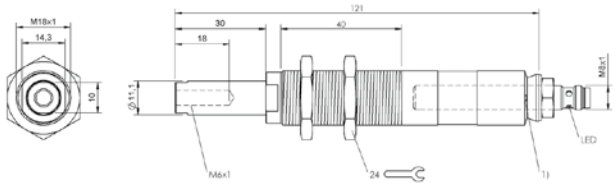
1) Leakage hole

SET0167, SET017U



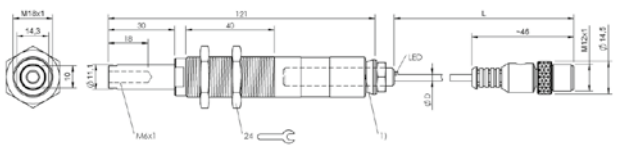
1) Leakage hole

SET0168



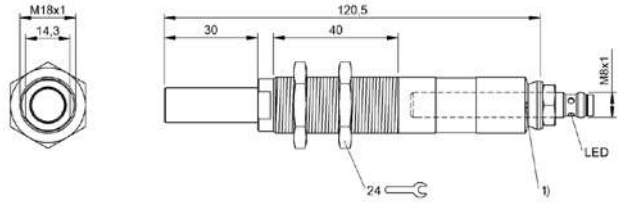
1) Leakage hole

SET016C, SET0180



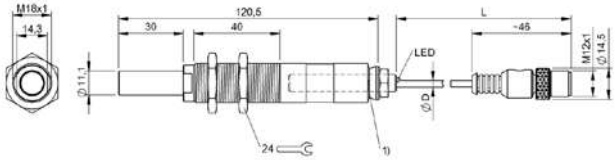
1) Leakage hole

SET016E, SET0181



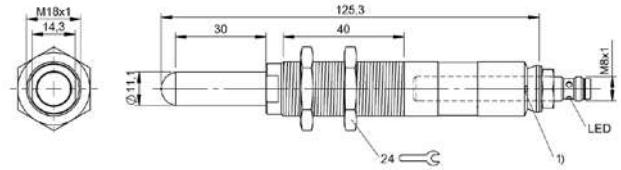
1) Leakage hole

SET0169, SET017Y



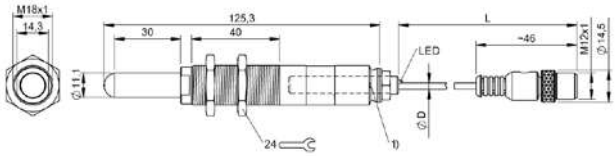
1) Leakage hole

SET016A, SET017Z



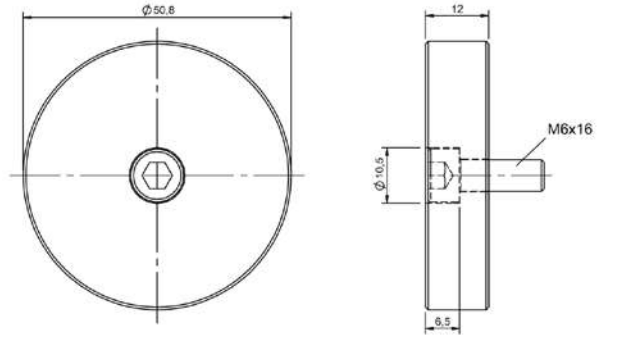
1) Leakage hole

SET015A, SET017R

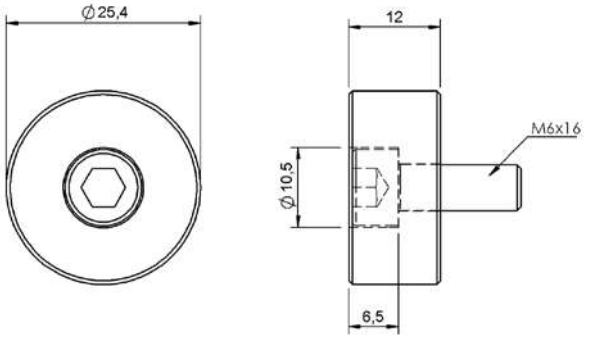


1) Leakage hole

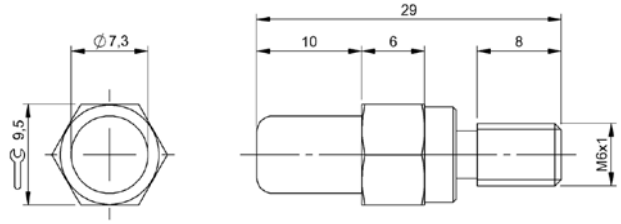
SET015F, SET017T



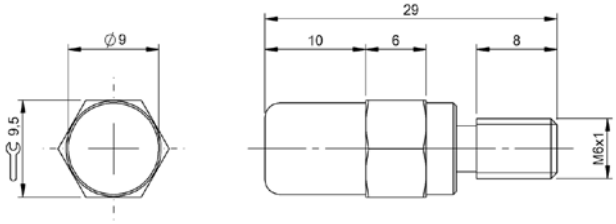
BAM025T



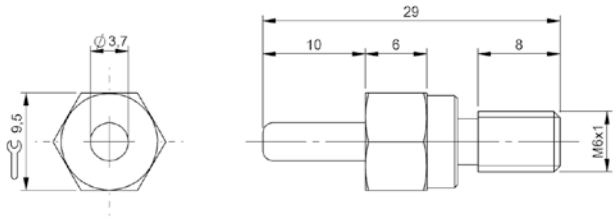
BAM02YU



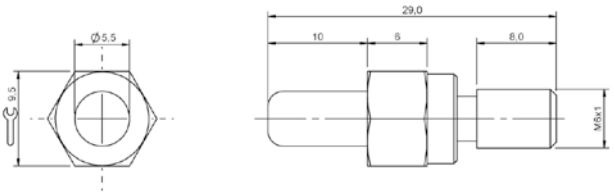
BAM02JW



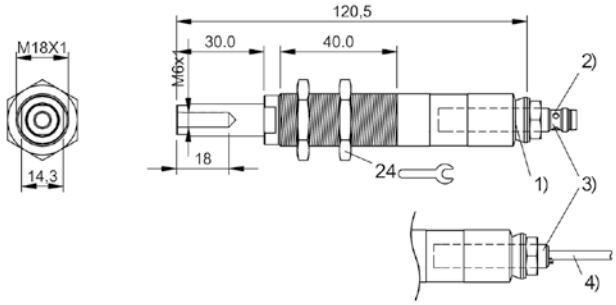
BAM02JY



BAM02JU

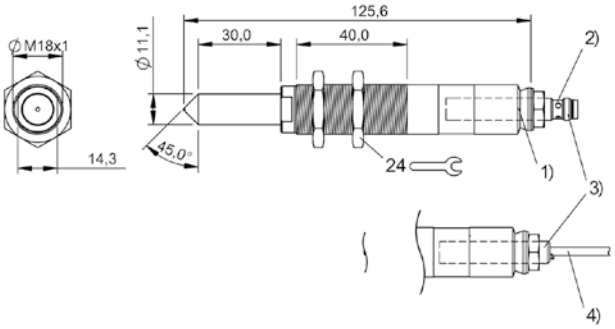


BAM027T



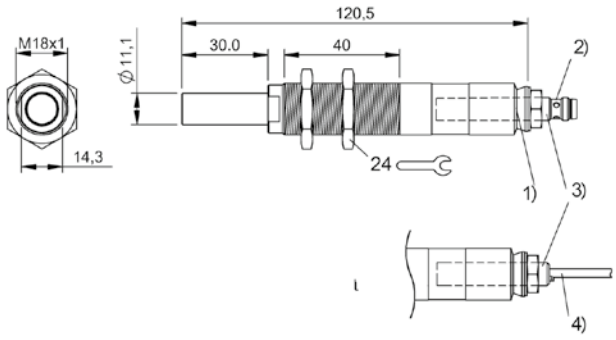
1) Leakage hole, 2) Detail of connector installation, 3) Not included in scope of delivery, 4) Cable attachment detail

BAM0260



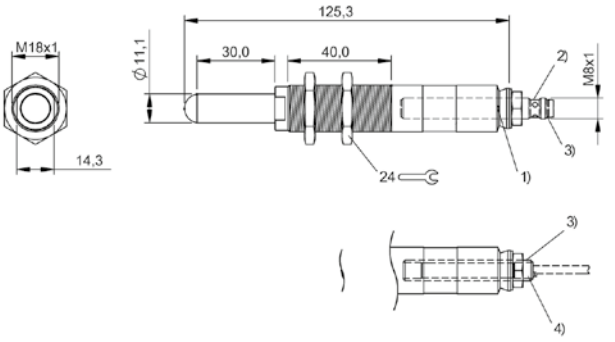
1) Leakage hole, 2) Detail of connector installation, 3) Not included in scope of delivery, 4) Cable attachment detail

BAM025U



1) Leakage hole, 2) Detail of connector installation, 3) Not included in scope of delivery, 4) Cable attachment detail

BAM025W



1) Leakage hole, 2) Detail of connector installation, 3) Included in the scope of delivery, 4) not installed, 5) Cable attachment detail

BAM022W



	BAM02R5 BAM PC-XE-028-M8-9	BAM009Z BES 08-SM-1	BAM00A0 BES 08-SM-1F	
Short description	Protective cap	Protective cap	Protective cap	
Use	For M08 sensors	For M08 sensors	For M08 sensors	
Material	Ceramic	PTFE	PTFE	
Dimension	Ø 38 x 20 mm	Ø 10 x 5 mm	Ø 10 x 9 mm	
Mounting	M8x1	Screws	Screws	
Productview	Page 372	Page 372	Page 372	



	BAM00EZ BES 18-SM-1	BAM00F0 BES 18-SM-2	BAM00F1 BES 18-SM-3	
Short description	Protective cap	Protective cap	Protective cap	
Use	For M18 sensors	For M18 sensors	For M18 sensors	
Material	PTFE	POM	PTFE	
Dimension	Ø 22.00 mm/ Ø 18.00 mm x 5.00 mm	Ø 21.50 mm/ Ø 18.00 mm x 9.30 mm	Ø 38.50 mm/ Ø 18.00 mm x 65.00 mm	
Mounting	Screws	Screws	Screws	
Productview	Page 373	Page 373	Page 373	



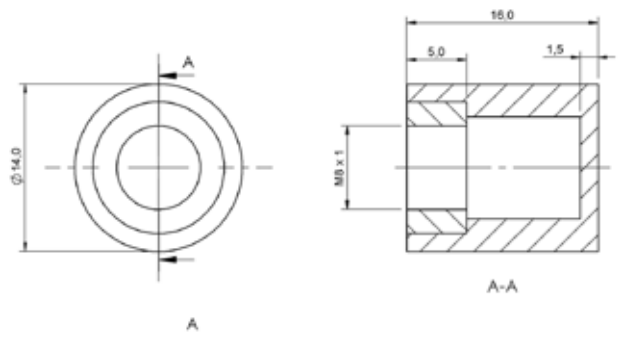
	BAM02KM BAM CS-XA-001-M12-5	BAM02R6 BAM PC-XE-028-M12-9	BAM00C2 BES 12-SM-2	BAM00EP BES 16-SM-2	BAM02R7 BAM PC-XE-028-M18-9
	Protective cap	Protective cap	Protective cap	Protective cap	Protective cap
	for M12 connector	For M12 sensors	For M12 sensors	For M16 sensors	for front-flush sensors M18, for inductive sensors BES M18
	Stainless steel	Ceramic	POM	PTFE	Ceramic
	Ø 13.5 x 12.5 mm	Ø 38 x 20 mm	Ø 16 x 10 mm	Ø 20 x 15 mm	Ø 38 x 20 mm
	Screws	M12x1	Screws	Screws	—
	Page 372	Page 372	Page 372	Page 372	Page 372



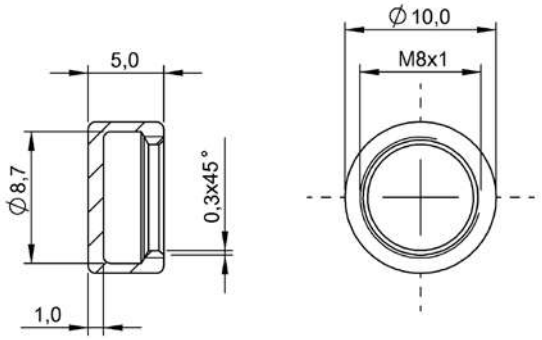

	BAM00H8 BES 22-SM-2	BAM012P BKS-23-CS-00	BAM02R8 BAM PC-XE-028-M30-9	BAM00HJ BES 30-SM-1	BAM00HK BES 30-SM-2
	Protective cap	Protective cap	Protective cap	Protective cap	Protective cap
	for M22 sensors	for inductive sensors BES M23	for front-flush sensors M30	For M30 sensors	For M30 sensors
	PTFE	Brass	Ceramic	POM	POM
	Ø 28 x 15 mm	Ø 26 x 11 mm	Ø 38 x 20 mm	Ø 34 x 5 mm	Ø 37 x 15 mm
	Screws	Screws	Screws	Screws	Screws
	Page 373	Page 373	Page 373	Page 373	Page 373


	BAM00HL BES 30-SM-3	BAM00HM BES 30-SM-5	BAM00JL BES 36-SM-2	
Short description	Protective cap	Protective cap	Protective cap	
Use	For M30 sensors	For M30 sensors	For M36 sensors	
Material	PTFE	PTFE	POM	
Dimension	Ø 41.3 x 73.4 mm	Ø 41.3 x 73.4 mm	Ø 42 x 15 mm	
Mounting	Screws	Screws	Screws	
Productview	Page 410	Page 410	Page 410	

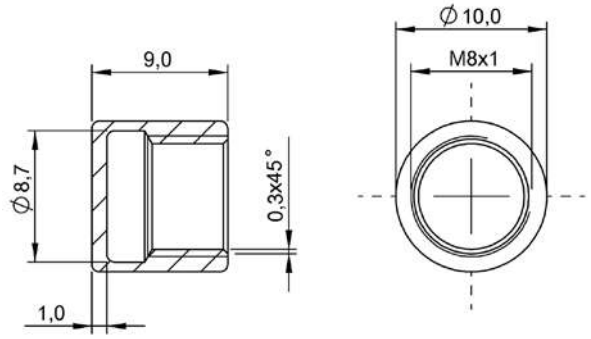
	BAM02TU BAM CS-XA-001-M12-2				
	Protective cap				
	for processor units BIS U				
	Brass nickel plated				
	Ø 14.5 x 15 mm				
	Screws				
	Page 410				



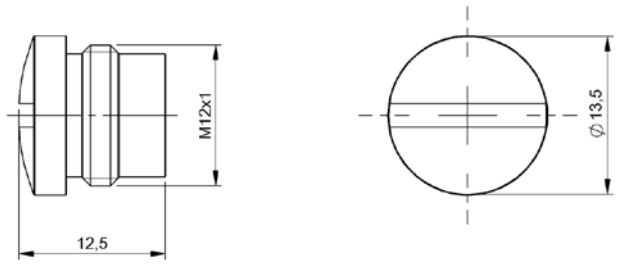
BAM02R5



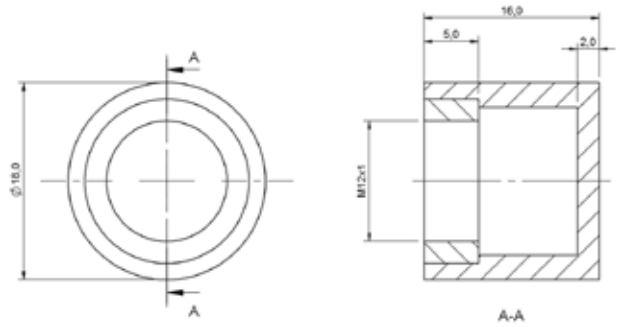
BAM009Z



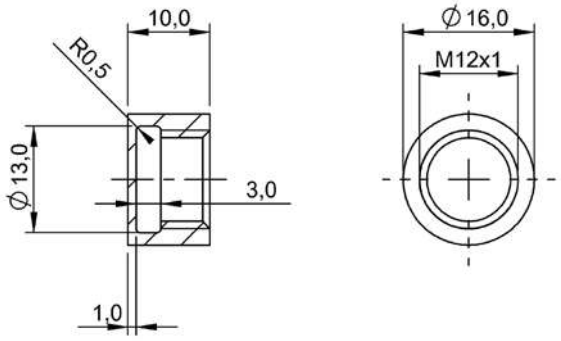
BAM00A0



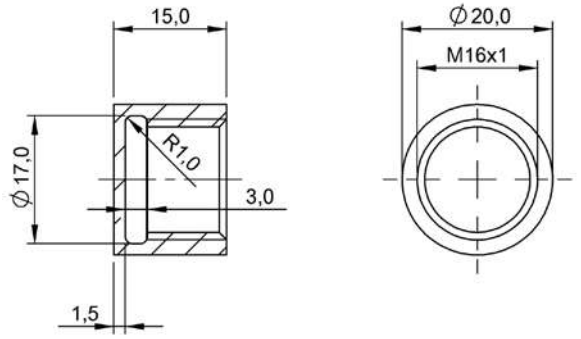
BAM02KM



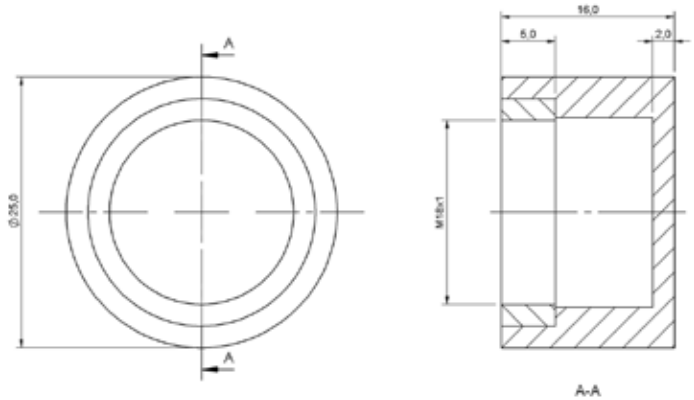
BAM02R6



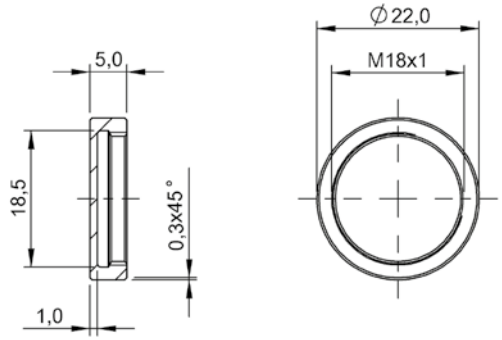
BAM00C2



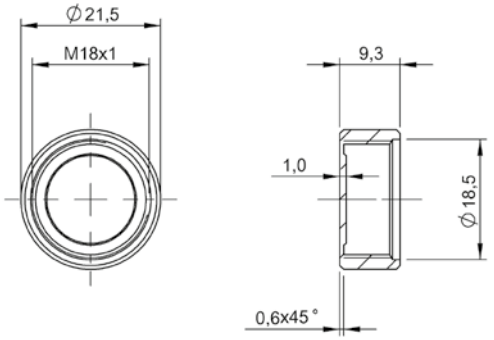
BAM00EP



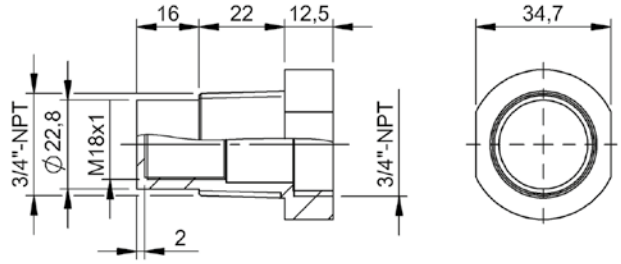
BAM02R7



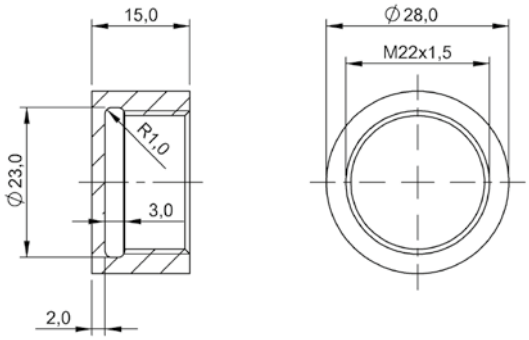
BAM00EZ



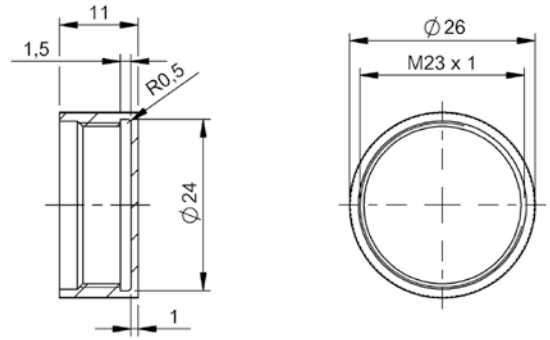
BAM00F0



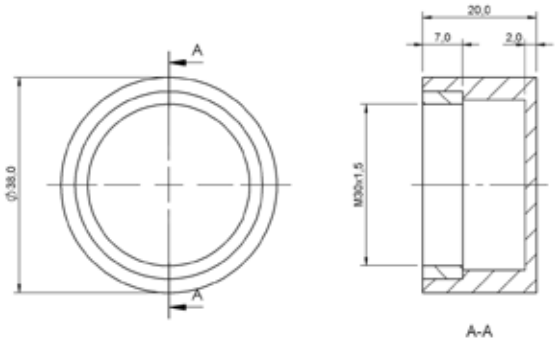
BAM00F1



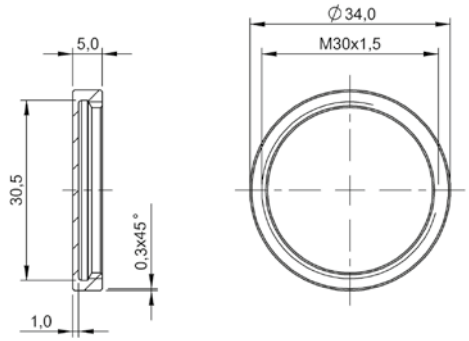
BAM00H8



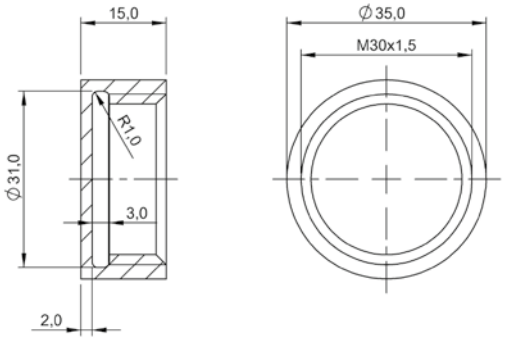
BAM012P



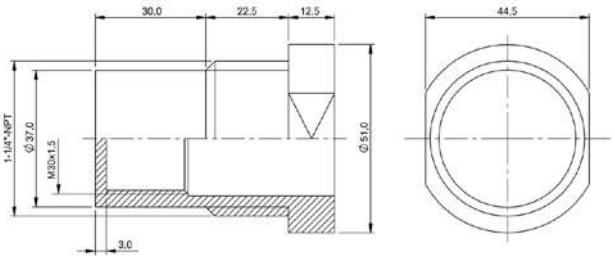
BAM02R8



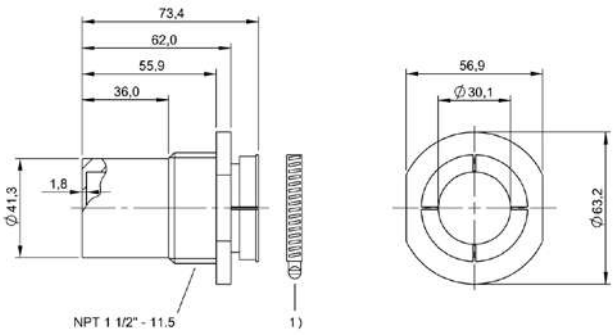
BAM00HJ



BAM00HK

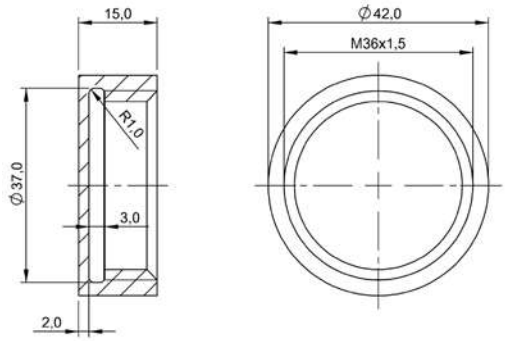


BAM00HL

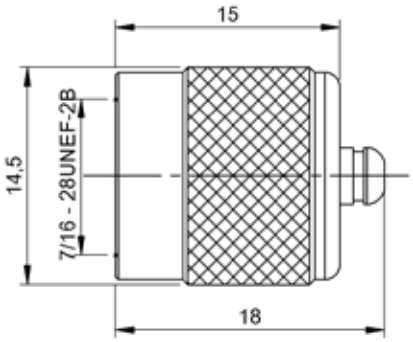


1) Hose clamp 8x0.6 on Ø43

BAM00HM



BAM00JL



BAM02TU

	BAM029N BAM AN-AM-001-01-1	BAM00PY BOS 12-LT-1	
Short description	air tube / cooling	air tube / cooling	
Use	for protective housing BOS 23K, for protective housing BOS 50K	for photoelectric sensors BOS 12M	
Material	—	—	
Protection sheet material	—	—	
Dimension	62 x 17.3 x 21.2 mm	Ø 14 x 25 mm	
Mounting	Screws	Thread M12x1	
Ambient temperature	—	—	
Approval/Conformity	—	—	
Productview	Page 418	Page 418	

	BAM02WF BAM PC-XE-034-Q40-1	BAM01LJ BAM PC-US-007-M18-2/W	
Short description	Protective cover	Protective cover	
Use	for inductive sensors BES Q40, for inductive couplers BIC Q40	for ultrasonic sensors BUS M18	
Material	PA 6 Aluminum Anodized	Beryllium copper black coated	
Protection sheet material	—	—	
Dimension	106 x 103.2 x 65 mm	Ø 22 x 25 mm	
Mounting	Screws	Screws	
Ambient temperature	—	—	
Approval/Conformity	—	—	
Productview	Page 418	Page 418	

	BAM00R9 BOS 18-LT-1	BAM01LE BAM CS-XA-004-U7/8-A	BAM01LF BAM CS-XA-005-U7/8-A	BAM01YN BAM CS-XA-008-M12-4
	air tube / cooling	Protective cover	Protective cover	Protective cover
	for photoelectric sensors BOS 18K, for photoelectric sensors BOS 18M	BNI, BPI	BNI, BPI	for M12 connector
	—	PA	PA	Brass nickel plated
	—	—	—	—
	Ø 22 x 30 mm	Ø 27 x 150 mm	Ø 27 x 150 mm	15 × 10.5 mm
	Thread M18x1	Screws	Screws	Screws
	—	—	—	—
	—	—	—	—
	Page 418	Page 418	Page 418	Page 418

	BAM024W BAM PC-VS-017-1	BAM02NA BAM PC-VS-023-1	BAM02W0 BAM PC-VS-023-1-01	BAM029L BAM PC-OS-024-23K-1
	Protective cover for optics	Protective cover for optics	Protective cover for optics	Protective housing
	for BVS …-E	for BVS SC-..	for BVS SC-..	for photoelectric sensors BOS 23K
	Stainless steel Aluminum	Aluminum anodized, black	Aluminum anodized, black	—
	Glass ceramic	Luxacryl/2h	Luxacryl/2h	Glass ceramic
	64 x 46 x 60 mm	Ø 45 x 54 mm	Ø 45 x 83 mm	84.1 x 107 x 124.5 mm
	Screws	Screws	Screws	Screws, Clamps
	—	—	—	-5...70 °C, cooled max. 160 °C, min. 0 °C (water 8°C, 2l/min)
	—	—	—	CE, ATEX, WEEE
	Page 419	Page 419	Page 419	Page 419

	BAM029M BAM PC-OS-025-23K-1	BAM029K BAM PC-OS-026-23K-1	
Short description	Protective housing	Water connection for protective housing	
Use	for photoelectric sensors BOS 23K	for protective housing BOS 23K	
Material	—	—	
Protection sheet material	PMMA	—	
Dimension	84.1 x 107 x 124.5 mm	3 x 70.7 x 45.7 mm	
Mounting	Screws, Clamps	Screws	
Ambient temperature	-5...90 °C, uncooled	—	
Approval/Conformity	—	—	
Productview	Page 419	Page 419	

	BAM01Y5 BAM PC-XO-005-08M-4	BAM01Y6 BAM PC-XO-005-12M-4	
Short description	Protective nut	Protective nut	
Use	for photoelectric sensors BOS 08M	for photoelectric sensors BOS 12M	
Material	Stainless steel Glass	Stainless steel Glass	
Protection sheet material	—	—	
Dimension	Ø 12 x 10 mm	Ø 17 x 10 mm	
Mounting	Screws	Screws	
Ambient temperature	—	—	
Approval/Conformity	—	—	
Productview	Page 420	Page 420	

BAM029C BAM PC-OS-024-50K-1
Protective housing
for photoelectric sensors BOS 50K
–
Glass ceramic
89.1 x 133 x 135.7 mm
Screws, Clamps
-5...70 °C, cooled max. 160 °C, min. 0 °C (water 8°C, 2l/min)
CE, ATEX, WEEE
Page 419

BAM02H4 BAM PC-OS-025-50K-1
Protective housing
for photoelectric sensors BOS 50K
–
PMMA
89.1 x 133 x 135.7 mm
Screws, Clamps
-5...90 °C, uncooled
–
Page 419

BAM029P BAM PC-OS-026-50K-1
Water connection for protective housing
for protection cover optics BOS 50K
–
–
3 x 80.7 x 49.7 mm
Screws
–
–
Page 419

BAM01RR BAM PC-VS-008-1
Protective housing
for Vision sensor BVS
Aluminum Painted Glass
–
80 x 175 x 58 mm
Screws
–
–
Page 419

BAM01NC BAM PC-XO-005-18M-4
Protective nut
for photoelectric sensors BOS 18M
Stainless steel Glass
–
Ø 22 x 13 mm
Screws
–
–
Page 420

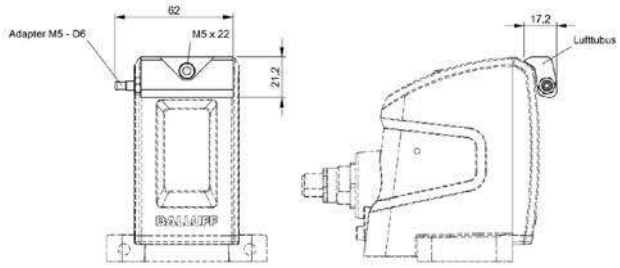
BAM00RL BOS 18-SM-1
Protective nut
for photoelectric sensors BOS 18M
POM
Glass
Ø 22 x 16 mm
Screws
–
–
Page 420

BAM01L8 BAM PC-XO-006-23K-1
Protective cover for optics
for photoelectric sensors BOS 23K
Aluminum Anodized Glass
–
22.5 x 59.3 x 34.3 mm
Screws
–
–
Page 420

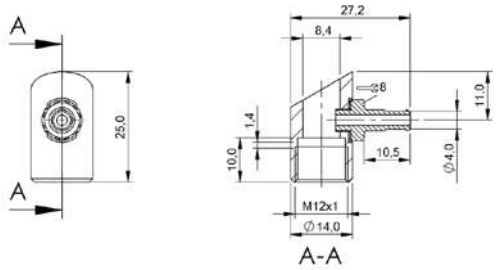
BAM01YL BAM PC-XO-006-23K-G/RK
Protective cover for optics
for protection cover optics BOS 23K
Glass
–
58 x 3 x 19.9 mm
Screws
–
–
Page 420

	BAM01C1 BAM CS-XA-001-M8-C	BAM01C2 BAM CS-XA-002-M12-A	
Short description	Protective nut	Protective nut	
Use	for junction blocks M8	BNI M12	
Material	PC ABS	PC ABS (UL certified)	
Protection sheet material	—	—	
Dimension	Ø 9.1 x 8.5 mm	Ø 14 x 13.2 mm	
Mounting	Screws	Screws	
Ambient temperature	—	—	
Approval/Conformity	—	—	
Productview	Page 420	Page 420	

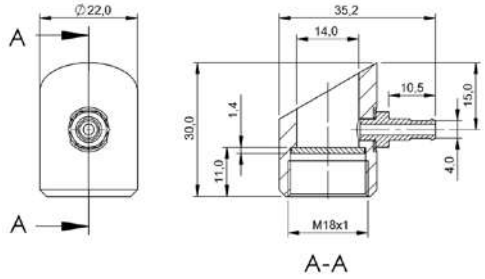
	BAM0114 BKS-12-CS-01	BAM0115 BKS-12-CS-02	BAM012T BKS-7/8-CS-00-A	
	Protective nut	Port cover	Port cover	
	for M12 connector	for active and passive junction blocks	for active and passive junction blocks	
	Brass nickel plated	PC/ABS	Aluminum Anodized Nickel-plated brass	
	–	–	–	
	Ø 13.5 x 12 mm	Ø 12 x 11.9 mm	Ø 0.9 „ x 0.8 ″	
	Screws	M12x1	7/8“-16	
	–	–	–	
	–	–	–	
	Page 421	Page 421	Page 421	



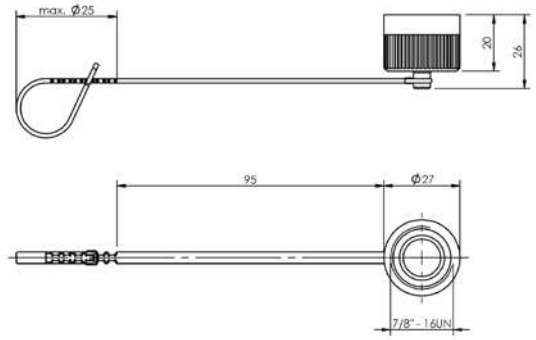
BAM029N



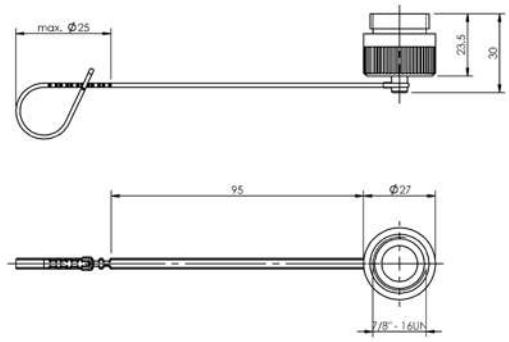
BAM00PY



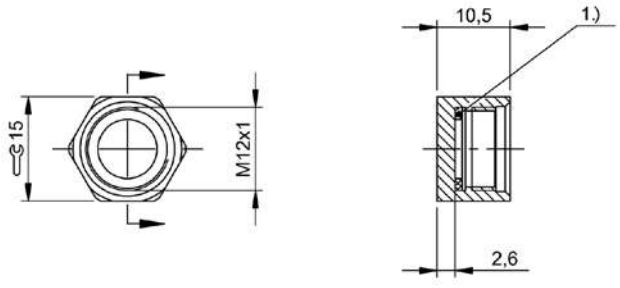
BAM00R9



BAM01LE

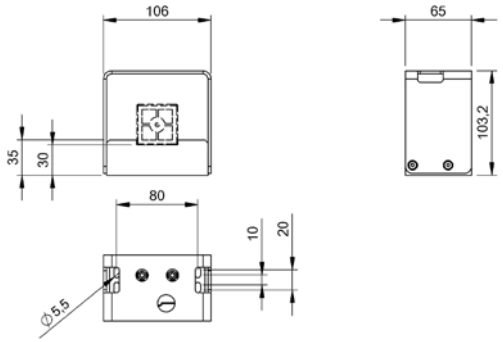


BAM01LF

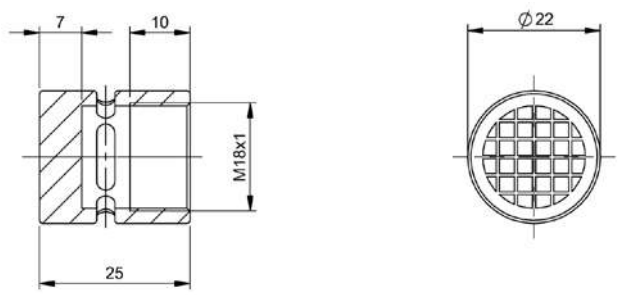


1) Sealing ring

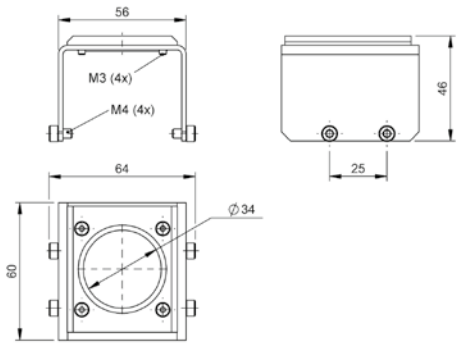
BAM01YN



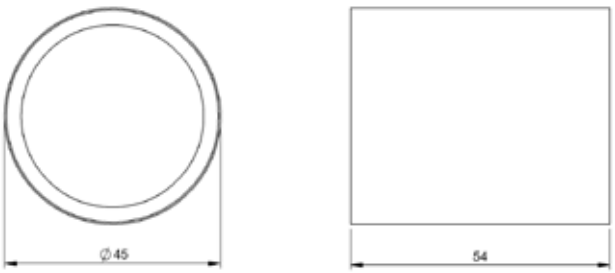
BAM02WF



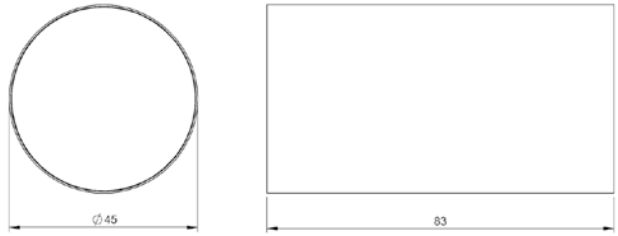
BAM01LJ



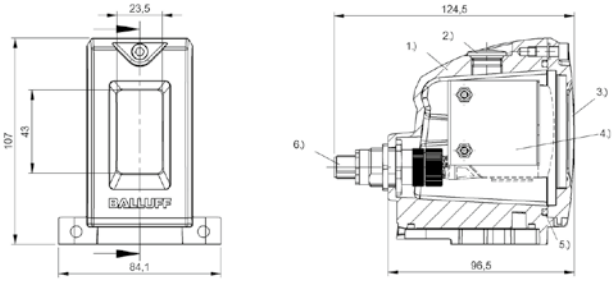
BAM024W



BAM02NA

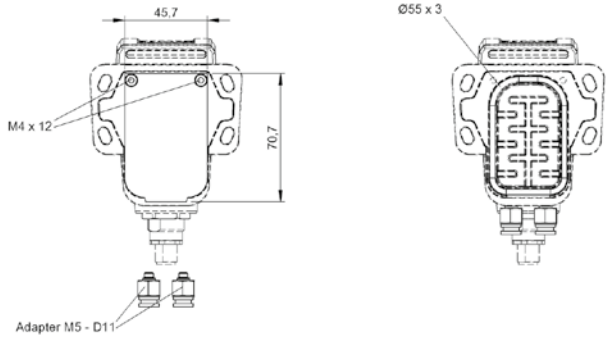


BAM02W0

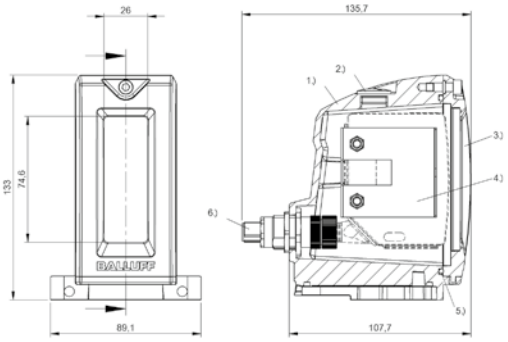


1) Housing, 2) Sensor setting access, 3) Cover, 4) Mounting plate, 5) Sealing ring, 6) Pass-through

BAM029L, BAM029M

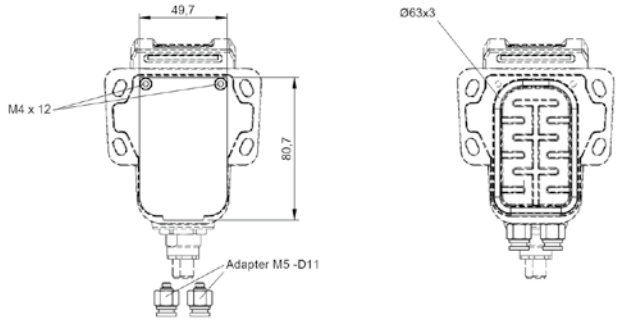


BAM029K

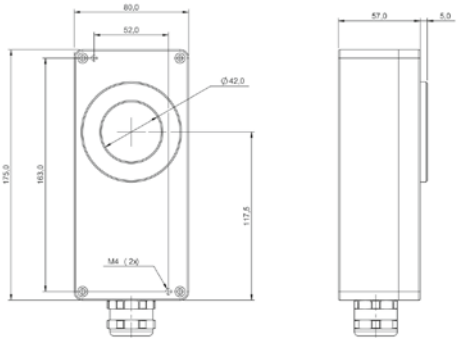


1) Housing, 2) Sensor setting access, 3) Cover, 4) Mounting plate, 5) Sealing ring, 6) Pass-through

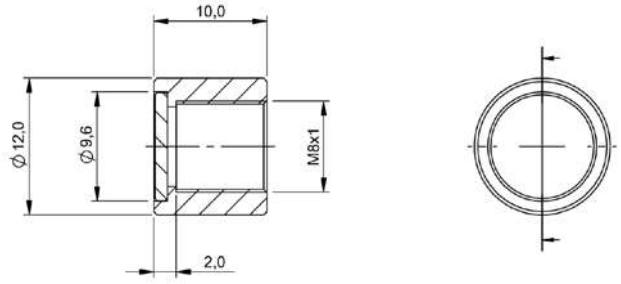
BAM029C, BAM02H4



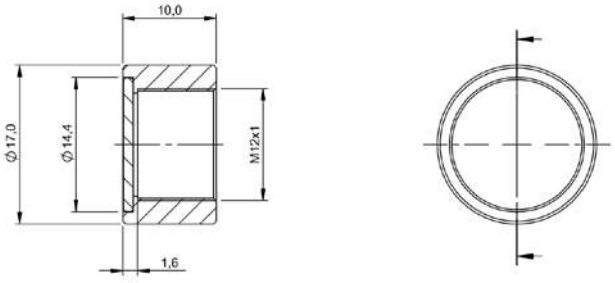
BAM029P



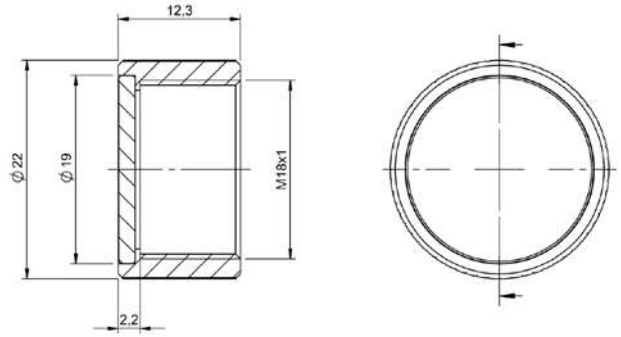
BAM01RR



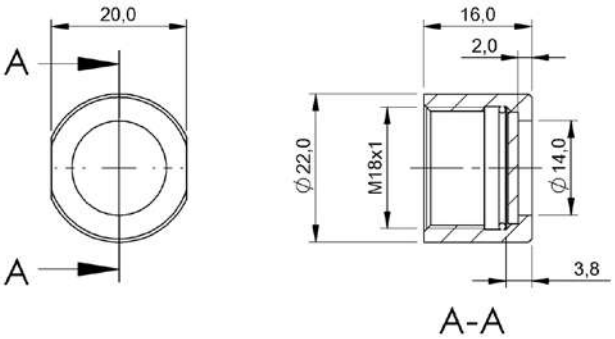
BAM01Y5



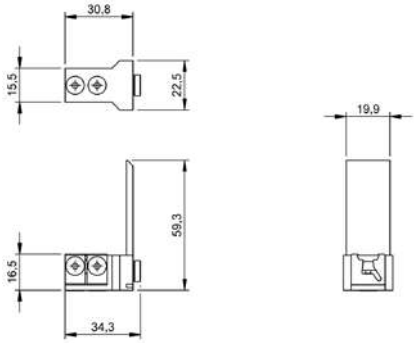
BAM01Y6



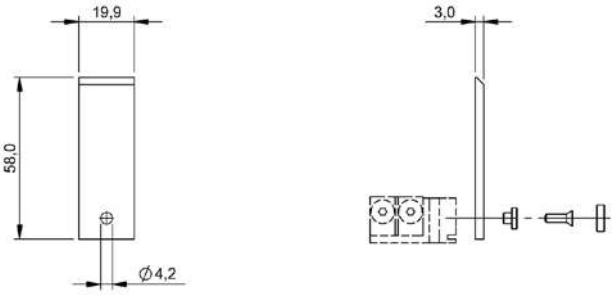
BAM01NC



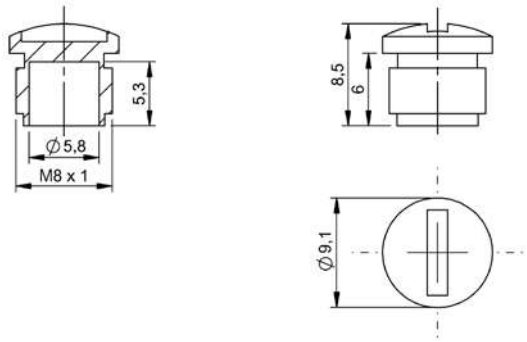
BAM00RL



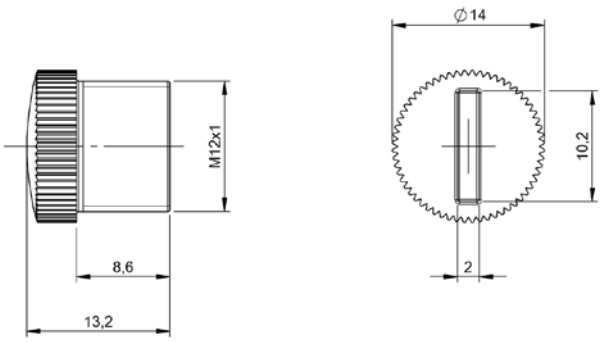
BAM01L8



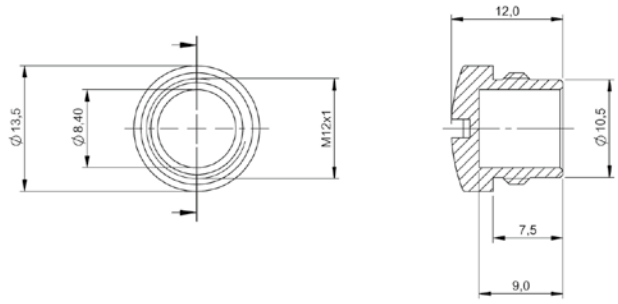
BAM01YL



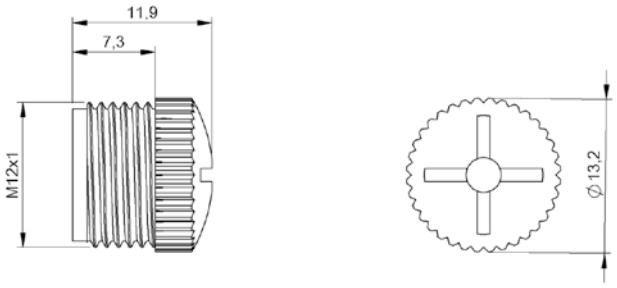
BAM01C1



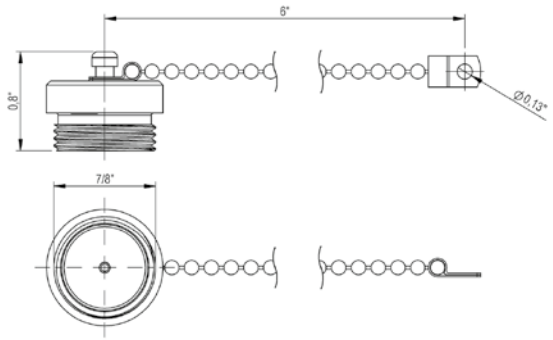
BAM01C2



BAM0114

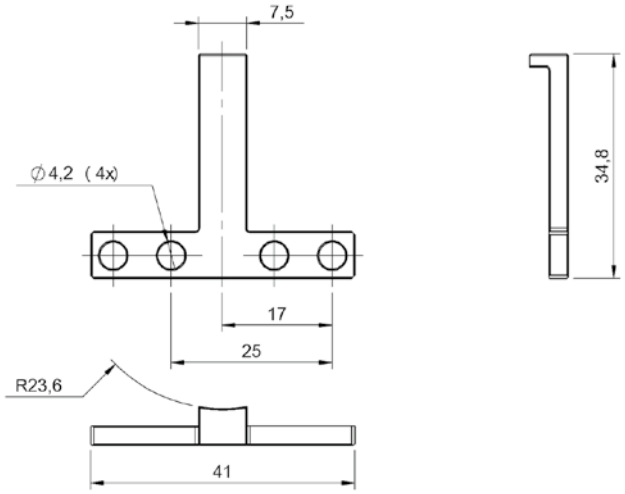


BAM0115



BAM012T

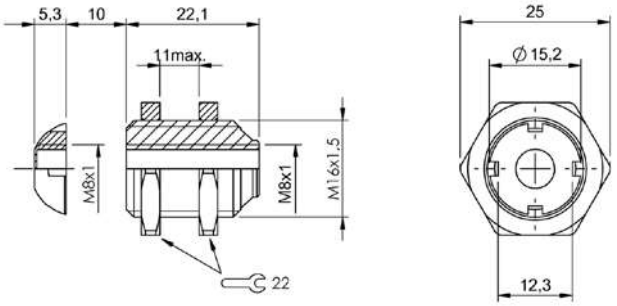
	BAM0206 BAM FK-VS-002-03-1
Short description	Focusing ring lock
Use	for Vision sensor BVS
Application	For locking the set focus
Material	Aluminum anodized
Mounting	Screw M4



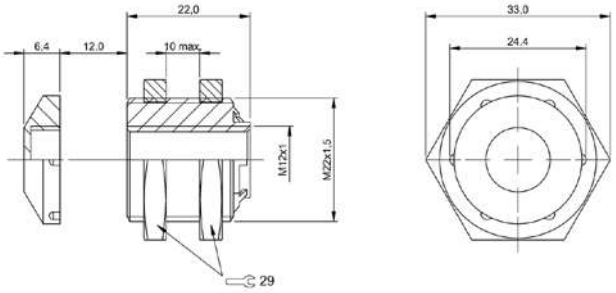
BAM0206

	BAM015U BESA-08-CM	BAM015W BESA-12-CM	
Short description	Collision Protection	Collision Protection	
Use	for inductive sensors BES M8	for inductive sensors BES M12	
Material	POM anodized Aluminum	POM anodized Aluminum	
Dimension	Ø 16 x 22.1 mm	Ø 22 x 21 mm	
Mounting	Screws M16	Screws M22	
Ambient temperature	-45...85 °C	-45...85 °C	
Productview	Page 426	Page 426	

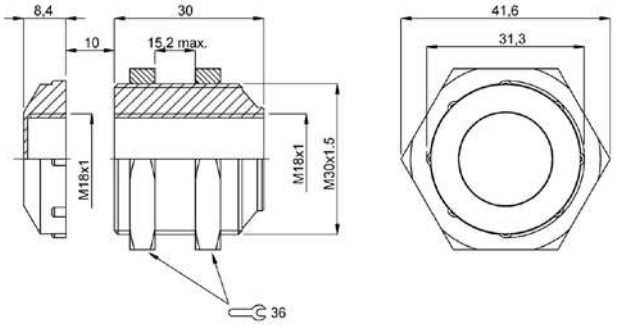
	BAM015Y BESA-18-CM	BAM015Z BESA-30-CM	BAM00NU BFO 04-FS-1	
	Collision Protection	Collision Protection	Metal corrugated tubes	
	for inductive sensors BES M18	for inductive sensors BES M30	for fibre optics BFO M4	
	POM anodized Aluminum	POM anodized Aluminum	Brass nickel plated Steel	
	Ø 30 x 30 mm	Ø 47 x 37.3 mm	Ø 12 x 2000 mm	
	Screws M30	Screws M47	Screw M3	
	-45...85 °C	-45...85 °C	—	
	Page 426	Page 426	Page 426	



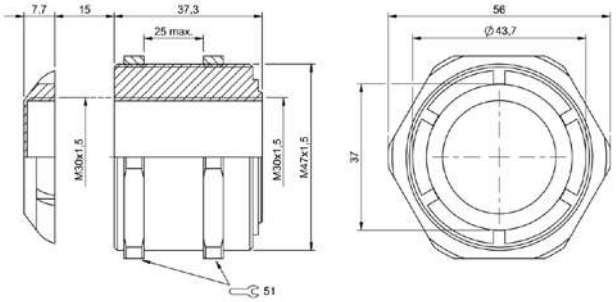
BAM015U



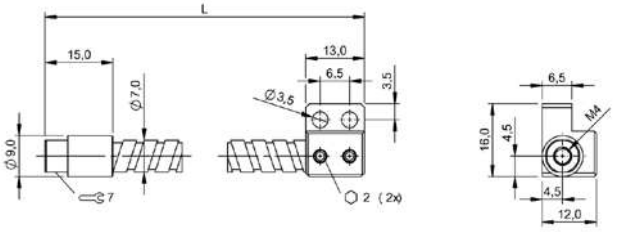
BAM015W



BAM015Y



BAM015Z



BAM00NU

Versatile and flexible mounting solutions

FASTENING TECHNOLOGY

With our assembly systems and brackets, you can adapt the sensors and equipment to your particular task.

Simple to install and adjust, these provide – in addition to attachment – exact positioning, even under difficult conditions. Balluff mounting solutions are distinguished by high-quality materials and exact processing.

The most important benefits

- Flexible and versatile
- Compatible and universal
- Excellent price/performance ratio

	SET011L BAV BP-PH-00064-01	SET011M BAV BP-PH-00065-01	SET01NU BAV BP-PH-00180-01	
Principle of operation	Mounting system	Mounting system	—	
Use	for mounting system BMS	for mounting system BMS	for holding rods with Ø12 mm, for mounting system BMS	
Material	Aluminum Plastic	Aluminum Anodized Die-cast zinc	Aluminum Anodized Die-cast zinc	
Dimension	150 × 150 mm	150 × 150 mm	150 × 150 mm	
Mounting	Screws, clamps	Screws, clamps	Screws, clamps	
Additional features	—	—	—	
Approval/Conformity	—	—	—	
Productview	Page 444	Page 444	Page 444	

	BAM0275 BMS CU-M-D12-B040-00	BAM02JT BMS CU-M-D12-B040-02	BAM03EU BMS CU-M-D12-E038-01	
Principle of operation	Mounting system	Mounting system	Mounting system	
Use	for mounting system BMS, for holding rods with Ø12 mm	for mounting system BMS, for holding rods with Ø12 mm	for holding rods with Ø12 mm, for monitor holder BMS, for mounting system BMS	
Material	Zinc chrome plated, matte	Zinc chrome plated, matte	Stainless steel	
Dimension	60 x 30 x 36 mm	60 x 30 x 42.8 mm	30 x 37 x 50 mm	
Mounting	Screws, clamps	Screws, clamps	Screws, Clamps	
Additional features	—	—	—	
Approval/Conformity	—	—	Ecolab	
Productview	Page 445	Page 445	Page 445	





	SET01U1 BAV BP-PH-00214-01	SET01KE BAV DG-PH-00096-01	BAM033K BMS AD-M-004-X19/MIS-D	BAM024R BMS CCJ-M-D12-B-01	BAM024P BMS CU-M-D12-B028-00
	Holding system	–	Mounting system	Mounting system	Mounting system
	for holding rods with Ø12 mm, for mounting system BMS	for holding rods with Ø30 mm, for mounting system BMS	for monitor holder BMS, for quick-change plate BVS	for mounting system BMS, for holding rods with Ø12 mm	for mounting system BMS, for holding rods with Ø12 mm
	Stainless steel	Aluminum Cast aluminum	Aluminum anodized, natural	Zinc chrome plated, matte	Zinc chrome plated, matte
	400 x 600 mm	310 × 510 mm	6 x 116 x 116 mm	45.5 x 36 x 30 mm	64 x 30 x 36 mm
	Screws, clamps	Screws, clamps	Screws	Screws, clamps	Screws, clamps
	–	–	–	–	–
	Ecolab	–	–	–	–
	Page 444	Page 444	Page 444	Page 444	Page 444





	BAM03EY BMS CU-M-D12-E038-02	BAM033U BMS CU-M-D30-E040-00	BAM002J BMS CU-P-D12-A040-00	BAM034K BMS CUJ-M-D30-E057-00	BAM034L BMS CUJ-M-D30-E060-01
	Mounting system	Mounting system	Mounting system	Mounting system	Mounting system
	for holding rods with Ø12 mm, for monitor holder BMS, for mounting system BMS	for holding rods with Ø30 mm, for mounting system BMS	for holding rods with Ø12 mm, for holding rods with 10x10 mm	for mounting system BMS, for monitor holder BMS	for mounting system BMS, for monitor holder BMS
	Stainless steel	Cast aluminum	POM	Aluminum	Aluminum
	37 x 40.5 x 50 mm	60 x 50 x 60 mm	56 x 30 x 40 mm	75 x 75 x 108 mm	40 x 74 x 108 mm
	Screws, Clamps	Screws, clamps	Screws, clamps	Screws, Clamps	Screws, Clamps
	–	–	–	–	–
	Ecolab	–	–	–	–
	Page 445	Page 445	Page 445	Page 445	Page 445



	BAM002Y BMS CUJ-P-D12-R040-00	**BAM0044** BMS CU-M-D12-I060-01	**BAM01CH** BMS CU-M-D12-I060-02	
Principle of operation	Mounting system	Mounting system	Mounting system	
Use	for mounting system BMS, for holding rods with Ø12 mm	for mounting system BMS	for mounting system BMS	
Material	PA	Stainless steel (1.4301)	Stainless steel (1.4301)	
Dimension	50 x 65 x 35 mm	76.4 x 10 x 30 mm	76.4 x 10 x 30 mm	
Mounting	Screws, clamps	Screws, clamps	Screws, clamps	
Additional features	—	—	—	
Approval/Conformity	—	—	—	
Productview	Page 446	Page 446	Page 446	



	BAM03AN BAM IA-XA-033-04-R	**BAM032T** BAM IA-XA-031-200-R	**BAM0031** BMS CS-M-D12-IZ	
Principle of operation	Cable Spacer	Cable ties	Mounting system	
Use	for 2x cables D5,5-6,9 mm + 2x cables D9,3-11,6 mm	for cable fastener	for mounting system BMS, for holding rods with Ø12 mm	
Material	PP	PP	Zinc	
Dimension	53.9 x 62.6 mm	21 x 1.5 x 200 mm	Ø 27 x 37 mm	
Mounting	—	—	Screws, clamps	
Additional features	—	—	—	
Approval/Conformity	—	—	—	
Productview	Page 447	Page 447	Page 447	





	BAM03CF BAM IA-XA-034-M08-A-4	BAM03CH BAM IA-XA-034-M12-A-5	BAM03AK BAM IA-XA-033-01-R	BAM03AL BAM IA-XA-033-02-R	BAM03AM BAM IA-XA-033-03-R
	Modular mounting clip for connector	Modular mounting clip for connector	Cable Spacer	Cable Spacer	Cable Spacer
	for M8 connector	for M12 connector	for 4x cables D4,3-5,4 mm	for 4x cables D5,5-6,9 mm	for 2x cables D5,5-6,9 mm + 2x cables D7,7-8 mm
	PPO schwarz	PPO schwarz	PP	PP	PP
	15 x 17 x 19 mm	20 x 21 x 19 mm	43.2 x 61.6 mm	43.9 x 61.6 mm	52.4 x 61.6 mm
	Screw M4	Screw M5	–	–	–
	–	–	–	–	–
	–	–	–	–	–
	Page 446	Page 446	Page 446	Page 446	Page 446





	BAM003Y BMS CS-M-D12-IZ-01	BAM035N BMS CS-M-D12-IZ-02	BAM035A BMS CS-M-D30-BZ-03	BAM002Z BMS CC-M-D12-B-00	BAM035P BMS CC-M-D12-B-03
	Mounting system	Mounting system	Mounting system	Mounting system	Mounting system
	for mounting system BMS, for holding rods with Ø12 mm	for mounting system BMS, for holding rods with Ø12 mm	for mounting system BMS, for holding rods with Ø30 mm	for mounting system BMS, for holding rods with Ø12 mm	for mounting system BMS, for holding rods with Ø12 mm
	Stainless steel (1.4301)	Chrome-plated zinc, matt	Cast aluminum	Aluminum Anodized	Chrome-plated zinc, matt
	Ø 27 x 37 mm	Ø 27 x 39.1 mm	Ø 30 x 59 mm	55 x 20 x 20 mm	55 x 20 x 20 mm
	Screws, clamps	Clamps	Screws, clamps	Screws, clamps	Clamps
	–	–	–	–	–
	Ecolab	–	–	–	–
	Page 447	Page 447	Page 447	Page 447	Page 447



	BAM03EY BMS CC-M-D12-E-01	BAM033W BMS CC-M-D30-E-00	BAM033Y BMS CC-M-D30-E-01	
Principle of operation	Mounting system	Mounting system	Mounting system	
Use	for holding rods with Ø12 mm, for monitor holder BMS, for mounting system BMS	for holding rods with Ø30 mm, for mounting system BMS	for holding rods with Ø30 mm, for holding rods with Ø12 mm, for mounting system BMS	
Material	Stainless steel	Cast aluminum	Cast aluminum	
Dimension	25.5 x 25.5 x 64 mm	40 × 98 mm	40 × 84 mm	
Mounting	Clamps, Screws	Screws, clamps	Screws, clamps	
Additional features	—	—	—	
Approval/Conformity	Ecolab	—	—	
Productview	Page 447	Page 448	Page 448	



	BAM003W BMS KIT-V1	BAM021Y BMS RS-M-D12-0100-00	BAM002R BMS RS-M-D12-0150-00	
Principle of operation	Mounting kit equipped	Mounting system	Mounting system	
Use	for mounting system BMS	for mounting system BMS	for mounting system BMS	
Material	Aluminum Die-cast zinc Stainless steel Plastic	Aluminum Anodized	Aluminum Anodized	
Dimension	390 x 135 x 510 mm	Ø 12 x 100 mm	Ø 12 x 150 mm	
Mounting	—	Clamps	Clamps	
Additional features	—	—	—	
Approval/Conformity	—	—	—	
Productview	—	Page 448	Page 448	





	BAM003U BMS CC-P-D10-A-00	BAM002M BMS CC-P-D12-A-00	BAM01CW BMS CS-M-D12-BX08-07	BAM0343 BMS CSJ-M-D30-EX19-02	BAM003T BMS CASE-01
	Mounting system	Mounting system	Mounting system	Mounting system	Mounting kit empty
	for holding rods with Ø10 mm, for holding rods with 8x8 mm, for mounting system BMS	for holding rods with Ø12 mm, for holding rods with 10x10 mm, for mounting system BMS	for holding rods with Ø12 mm, for fork sensor BGL, for photoelectric sensors BOS 2K, for photoelectric sensors BOS 6K	for mounting system BMS, for connection plate VESA 75/100	for mounting system BMS
	POM	POM	Aluminum Anodized	PA 6.6 GF30	Aluminum Anodized
	55 x 22 x 22 mm	55 x 22 x 22 mm	37 x 20 x 30 mm	Ø 60 x 190.5 mm	390 x 135 x 510 mm
	Screws, clamps	Screws, clamps	Screws, clamps	Screws, clamps	—
	—	—	—	max. load capacity 10 Kg (static), Latches in 15° increments, 60° free swivel range	—
	—	—	—	—	—
	Page 448	Page 448	Page 448	Page 448	—





	BAM021T BMS RS-M-D12-0200-00	BAM002T BMS RS-M-D12-0250-00	BAM021W BMS RS-M-D12-0300-00	BAM021U BMS RS-M-D12-0750-00	BAM002U BMS RS-M-D12-1000-00
	Mounting system	Mounting system	Mounting system	Mounting system	Mounting system
	for mounting system BMS	for mounting system BMS	for mounting system BMS	for mounting system BMS	for mounting system BMS
	Aluminum Anodized	Aluminum Anodized	Aluminum Anodized	Aluminum Anodized	Aluminum Anodized
	Ø 12 x 200 mm	Ø 12 x 250 mm	Ø 12 x 300 mm	Ø 12 x 750 mm	Ø 12 x 1000 mm
	Clamps	Clamps	Clamps	Clamps	Clamps
	—	—	—	—	—
	—	—	—	—	—
	Page 448	Page 448	Page 448	Page 448	Page 448



	BAM033Z BMS RS-M-D30-0300-01	**BAM0340** BMS RS-M-D30-0500-01	**BAM0341** BMS RS-M-D30-1000-01	
Principle of operation	Mounting system	Mounting system	Mounting system	
Use	for mounting system BMS	for mounting system BMS	for mounting system BMS	
Material	Aluminum Anodized	Aluminum Anodized	Aluminum Anodized	
Dimension	Ø 30 x 300 mm	Ø 30 x 500 mm	Ø 30 x 1000 mm	
Mounting	Clamps	Clamps	Clamps	
Additional features	—	—	—	
Approval/Conformity	—	—	—	
Productview	Page 448	Page 449	Page 449	



	BAM003J BMS AD-M-003-D12/IZ	**BAM0041** BMS CZ-M-D12-I-001	**BAM003A** BMS BS-M-D12-0250-01	
Principle of operation	Mounting system	Beam deflector	Mounting system	
Use	for mounting system BMS	for cleaning of sensors and reflectors	For BOS R-14 reflectors, for reflectors BOS R-1/R-9, for reflectors BOS R-22/R-26	
Material	Aluminum Anodized	Aluminum Anodized Plastic	Aluminum Anodized	
Dimension	Ø 30 x 10 mm	190 × 30 mm	Ø 12 x 250 mm	
Mounting	Clamps	Clamps	Clamps	
Additional features	—	—	—	
Approval/Conformity	—	—	—	
Productview	Page 449	Page 449	Page 449	





	BAM0045 BMS RS-S-D12-0150-00	BAM0046 BMS RS-S-D12-0300-00	BAM03F0 BMS RS-S-D12-0400-00	BAM03F1 BMS RS-S-D12-0600-00	BAM03F2 BMS RS-S-D12-0800-00
	Mounting system	Mounting system	Mounting system	Mounting system	Mounting system
	for mounting system BMS	for mounting system BMS	for mounting system BMS	for mounting system BMS	for mounting system BMS
	Stainless steel (1.4301)	Stainless steel (1.4301)	Stainless steel	Stainless steel	Stainless steel
	Ø 12 x 150 mm	Ø 12 x 300 mm	Ø 12 x 400 mm	Ø 12 x 600 mm	Ø 12 x 800 mm
	Clamps	Clamps	Clamps	Clamps	Clamps
	–	–	–	–	–
	Ecolab	Ecolab	Ecolab	Ecolab	Ecolab
	Page 449	Page 449	Page 449	Page 449	Page 449





	BAM033T BMS BS-M-D12-0250-05	BAM0035 BMS CR-M-D12-IS-03	BAM0042 BMS CR-M-D12-IS-04	BAM0034 BMS CR-M-D12-IU-02	BAM003N BMS CR-M-D12-IU-05
	Mounting system	Mounting system	Mounting system	Mounting system	Mounting system
	for reflectors -025-S023…, for reflectors -026-S012…, for reflectors -027-S004…, for photoelectric sensors BOS 6K	For BOS R-11 reflectors	for photoelectric sensors BOS 21M, For BOS R-9 reflectors	For BOS R-1 reflectors, For BOS R-2 reflectors, For BOS R-3 reflectors	For BOS R-1 reflectors
	–	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	Ø 12 x 250 mm	93 x 34.5 x 85 mm	61.5 x 34 x 59 mm	Ø 33 x 39 mm	Ø 84 x 92.5 mm
	Screws, clamps	Clamps	Clamps	Clamps	Clamps
	–	–	–	–	–
	–	–	Ecolab	–	–
	Page 450	Page 450	Page 450	Page 450	Page 450



	BAM002L BMS CR-P-D12-AU-00	**BAM0039** BMS BS-M-D12-0250-02	**BAM003F** BMS BS-M-D12-0250-03	
Principle of operation	Mounting system	Mounting system	Mounting system	
Use	for holding rods with Ø12 mm, for holding rods with 10x10 mm, for all reflectors with Ø20mm	for photoelectric sensors BOS Q08M, for inductive sensors BES, for photoelectric sensors BOS 2K, for photoelectric sensors BOS 5K, for photoelectric sensors BOS 6K	for photoelectric fork sensors BGL 5A, for photoelectric fork sensors BGL 10A, for photoelectric fork sensors BGL 20A, for photoelectric fork sensors BGL 30A, for photoelectric fork sensors BGL 50A	
Material	POM	Aluminum Anodized	Aluminum Anodized	
Dimension	60 x 30 x 30 mm	Ø 12 x 250 mm	Ø 12 x 250 mm	
Mounting	Screws	Clamps	Screws, clamps	
Additional features	—	—	—	
Approval/Conformity	—	—	—	
Productview	Page 450	Page 450	Page 450	





	BAM003H BMS BS-M-D12-0400-04	BAM0043 BMS CS-M-D12-B21K-04	BAM01AW BMS CS-M-D12-B23K-05	BAM003C BMS CS-M-D12-BX05-02	BAM0040 BMS CS-M-D12-BX06-03
	Mounting system	Mounting system	Mounting system	Mounting system	Mounting system
	for photoelectric fork sensors BGL 80A/120A, for photoelectric fork sensors BGL 180A/220A	for photoelectric sensors BOS 21M	for photoelectric sensors BOS 23K, for photoelectric sensors BOS 26K	for photoelectric sensors BOS 21M, for photoelectric sensors BOS 23K, for photoelectric sensors BOS 25K, for photoelectric sensors BOS 26K, for photoelectric sensors BOS 50K, for photoelectric sensors BOS 64K, for photoelectric distance sensors BOD 63M, for photoelectric distance sensors BOD 66M, For BOS R-9 reflectors, For BOS R-22 reflectors, For BOS R-34 reflectors, For BOS R-36 reflectors, For BOS R-44 reflectors, For BOS R-46 reflectors	for photoelectric sensors BOS 2K, for photoelectric sensors BOS 5K, for photoelectric sensors BOS 6K
	Aluminum Anodized	Zinc nickel plated	Stainless steel	Aluminum Anodized	Stainless steel
	Ø 12 x 400 mm	88 x 20 x 56 mm	93 x 30 x 55 mm	120 x 5 x 60 mm	79 x 23 x 28 mm
	Clamps	Clamps	Clamps	Screws, clamps	Screws, clamps
	–	–	–	–	–
	–	–	Ecolab	–	Ecolab
	Page 451	Page 451	Page 451	Page 451	Page 451



	BAM01AY BMS CS-M-D12-BX07-06	BAM01F3 BMS CS-M-D12-BX10-08	BAM01F2 BMS CS-M-D12-BX11-09	
Principle of operation	Mounting system	Mounting system	Mounting system	
Use	Mounting bracket for BIS M-400x, for photoelectric sensors BOS 50K, For BOS R-11 reflectors	for angle sensors BWL, for fork sensor BGL	for line light BVS, for background lights BVS, for angle sensors BWL D	
Material	Stainless steel (1.4571)	Stainless steel	Stainless steel	
Dimension	93 x 34.5 x 85 mm	61 x 34 x 36 mm	185 x 21 x 34 mm	
Mounting	Screws, clamps	Screws, clamps	Screws, clamps	
Additional features	—	—	—	
Approval/Conformity	—	—	—	
Productview	Page 451	Page 451	Page 451	



	BAM0032 BMS CS-M-D12-ID18-01	BAM003L BMS CS-M-D12-ID24-01	BAM0033 BMS CS-M-D12-ID30-01	
Principle of operation	Mounting system	Mounting system	Mounting system	
Use	For M18 sensors	For M24 sensors	For M30 sensors	
Material	Stainless steel	Stainless steel	Stainless steel	
Dimension	Ø 28 x 34 mm	Ø 35 x 41.5 mm	Ø 42 x 47 mm	
Mounting	Clamps	Clamps	Clamps	
Additional features	—	—	—	
Approval/Conformity	Ecolab	Ecolab	Ecolab	
Productview	Page 452	Page 452	Page 452	



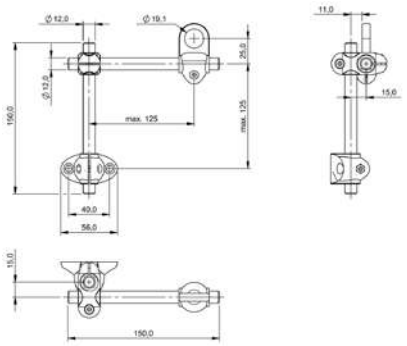


	BAM0277 BMS CS-M-D12-BX17-11	BAM024T BMS CS-M-D12-BZ	BAM0036 BMS CS-M-D12-ID08-01	BAM0037 BMS CS-M-D12-ID12-01	BAM003K BMS CS-M-D12-ID16-01
	Mounting system	Mounting system	Mounting system	Mounting system	Mounting system
	for line light BVS	for mounting system BMS, for holding rods with Ø12 mm	For M08 sensors	For M12 sensors	For M16 sensors
	Stainless steel	Zinc chrome plated, matte	Stainless steel	Stainless steel	Stainless steel
	75 x 3 x 44 mm	45.5 x 24 x 30 mm	Ø 28 x 34 mm	Ø 28 x 34 mm	Ø 33 x 36.5 mm
	Screws	Screws, clamps	Clamps	Clamps	Clamps
	–	–	–	–	–
	–	–	Ecolab	Ecolab	Ecolab
	Page 452	Page 452	Page 452	Page 452	Page 452

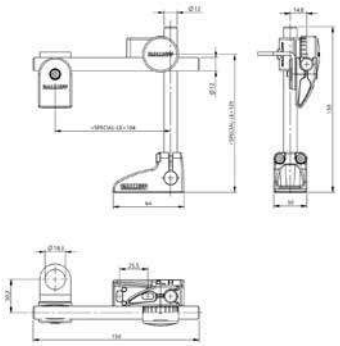



	BAM003M BMS CS-M-D12-ID36-01	BAM003P BMS CS-M-D12-IQ40-02	BAM003R BMS CS-M-D12-IQ40-03	BAM01UL BMS CS-M-D12-IX14-01	BAM002K BMS CS-P-D12-AD08-00
	Mounting system	Mounting system	Mounting system	Mounting system	Mounting system
	For M36 sensors	for capacitive sensors BCS Q40, for inductive sensors BES Q40, for inductive couplers BIC Q40	for capacitive sensors BCS Q40, for inductive sensors BES Q40, for inductive couplers BIC Q40	for capacitive sensors BCS Q40, for inductive sensors BES Q40	for sensors Ø8 mm, For M08 sensors, for holding rods with Ø12 mm, for holding rods with 10x10 mm
	Stainless steel	Stainless steel	Stainless steel	Stainless steel	POM
	Ø 48 x 54 mm	102 x 40 x 60 mm	121 x 3 x 60 mm	39 x 16 x 34 mm	60 x 30 x 30 mm
	Clamps	Screws, clamps	Screws, clamps	Clamps	Clamps
	–	–	–	–	–
	Ecolab	–	–	–	–
	Page 453	Page 453	Page 453	Page 453	Page 453

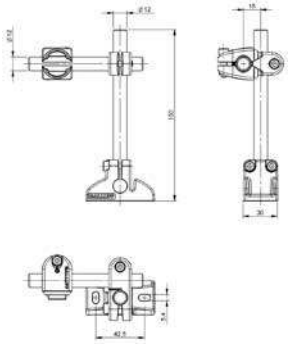
	BAM002N BMS CS-P-D12-AD12-00	BAM002P BMS CS-P-D12-AD18-00		
Principle of operation	Mounting system	Mounting system		
Use	for sensors Ø12 mm, For M12 sensors, for holding rods with Ø12 mm, for holding rods with 10x10 mm	for sensors Ø18 mm, For M18 sensors, for holding rods with Ø12 mm, for holding rods with 10x10 mm		
Material	POM	POM		
Dimension	60 x 30 x 30 mm	60 x 30 x 30 mm		
Mounting	Clamps	Clamps		
Additional features	—	—		
Approval/Conformity	—	—		
Productview	Page 453	Page 453		



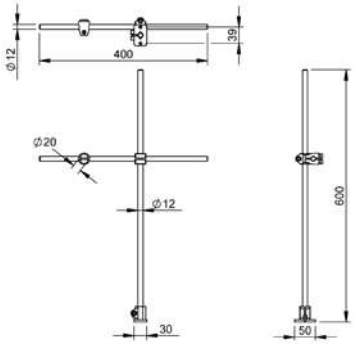
SET011L



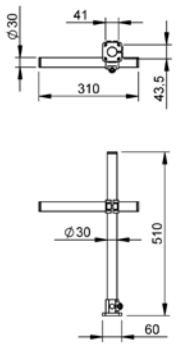
SET011M



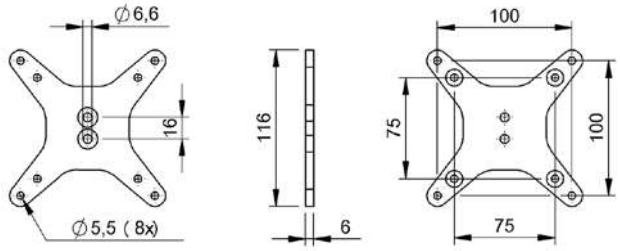
SET01NU



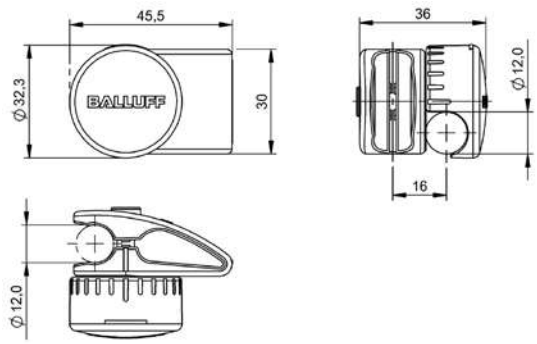
SET01U1



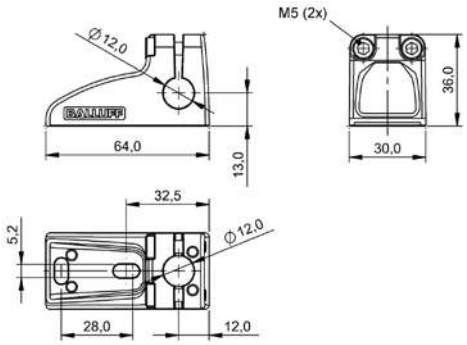
SET01KE



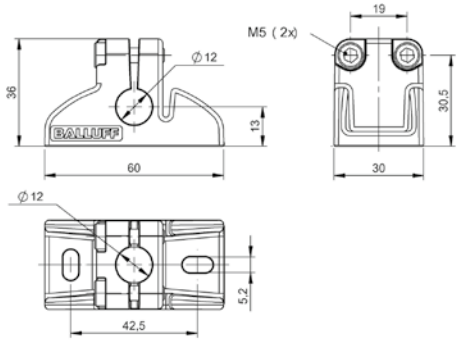
BAM033K



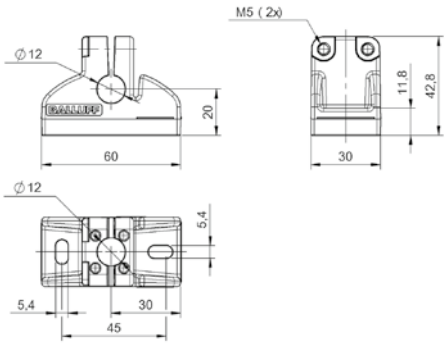
BAM024R



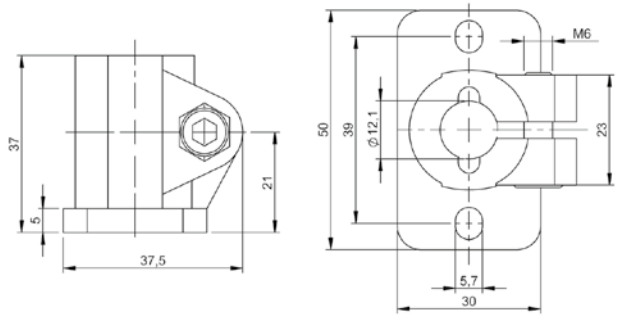
BAM024P



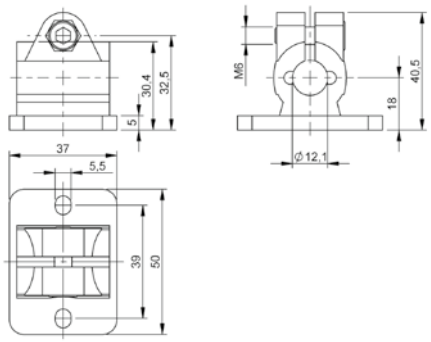
BAM0275



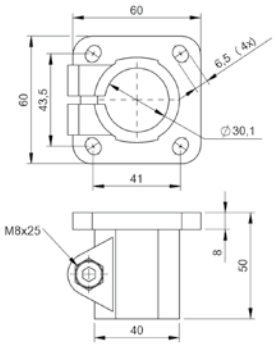
BAM02JT



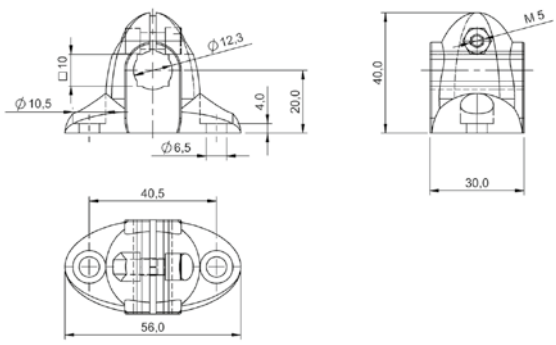
BAM03EU



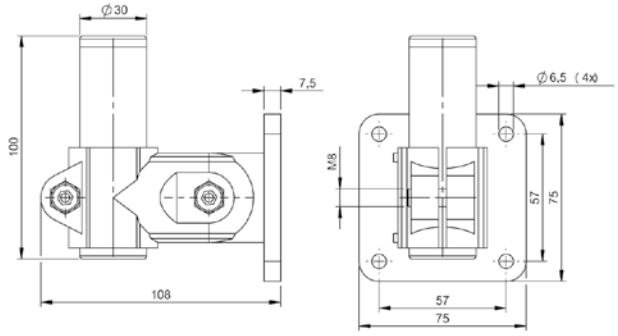
BAM03EW



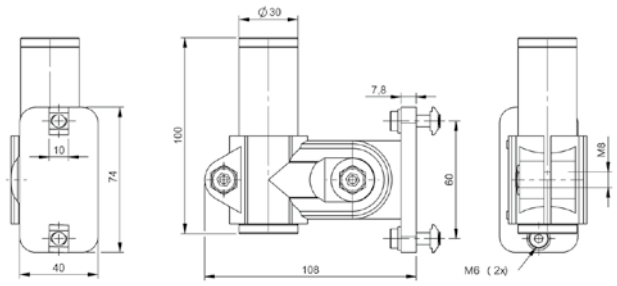
BAM033U



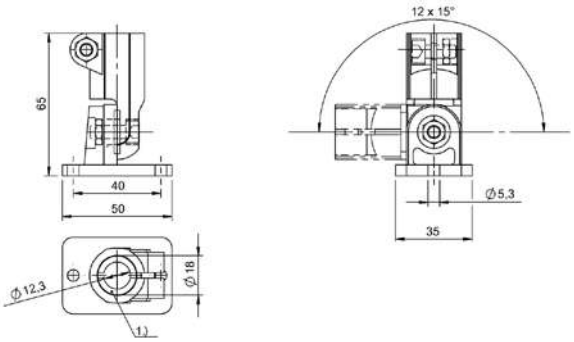
BAM002J



BAM034K

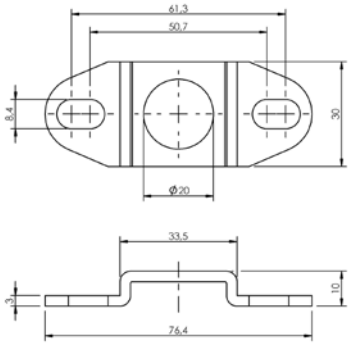


BAM034L

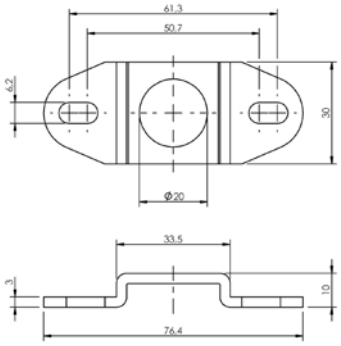


1) Reducing sleeve

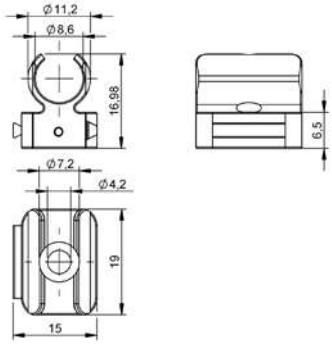
BAM002Y



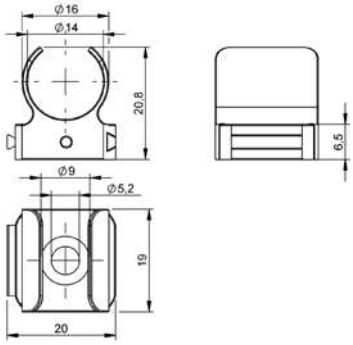
BAM0044



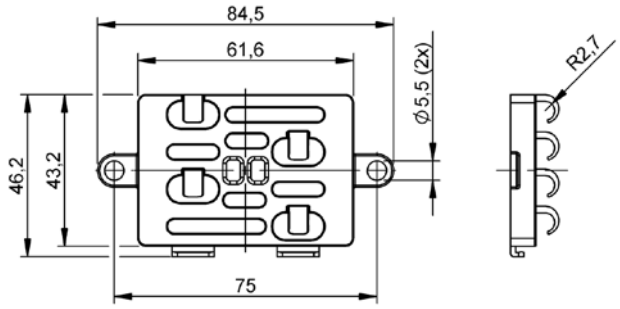
BAM01CH



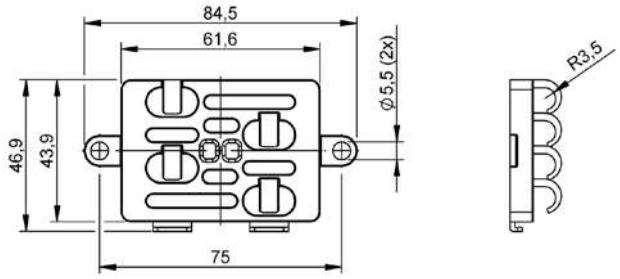
BAM03CF



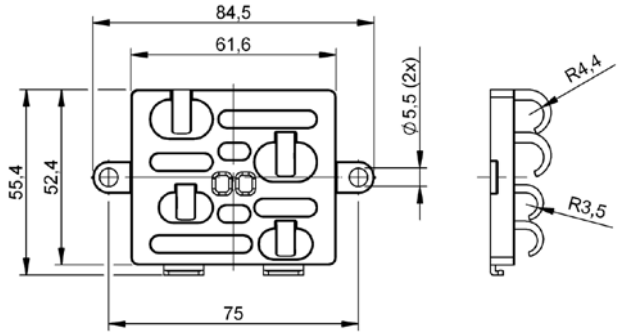
BAM03CH



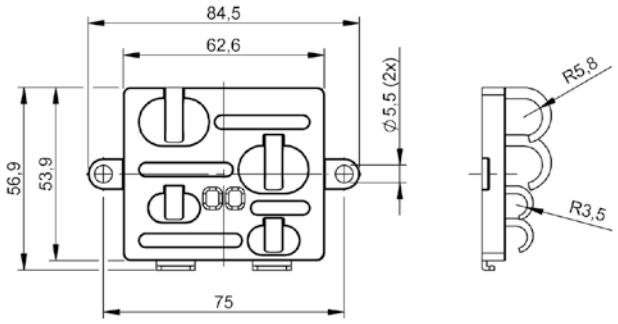
BAM03AK



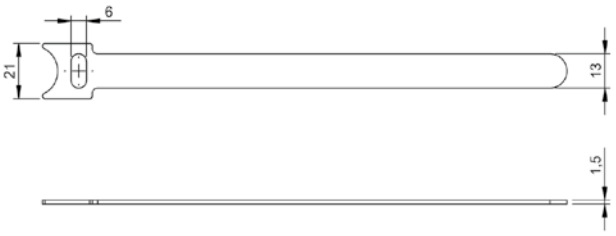
BAM03AL



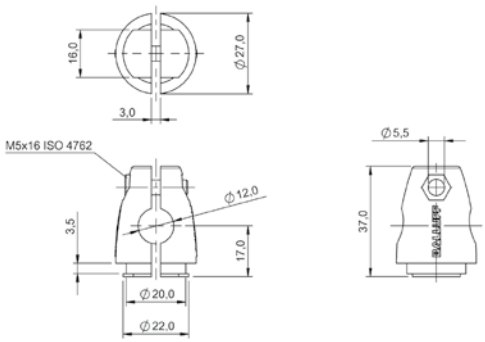
BAM03AM



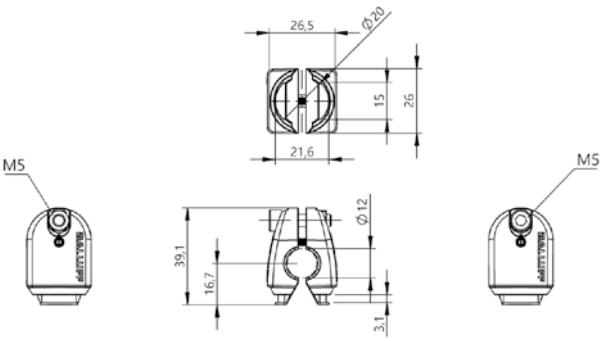
BAM03AN



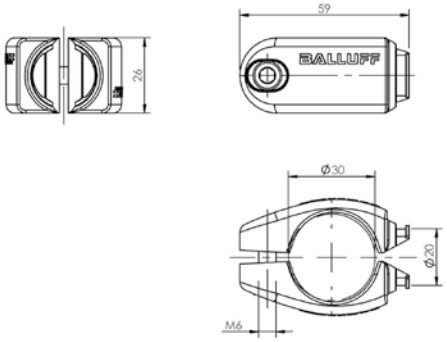
BAM032T



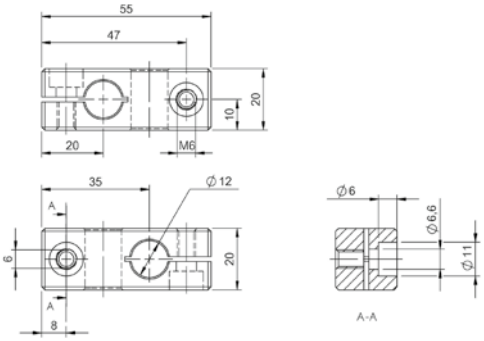
BAM0031, BAM003Y



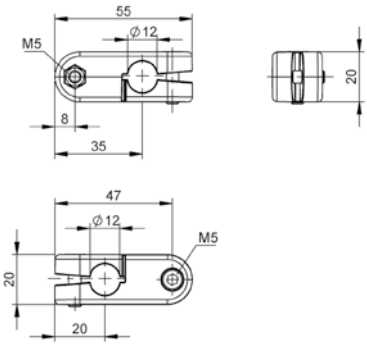
BAM035N



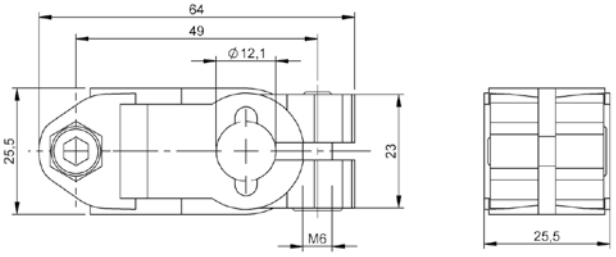
BAM035A



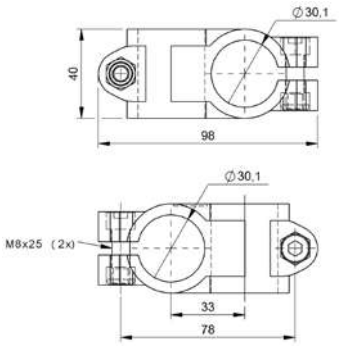
BAM002Z



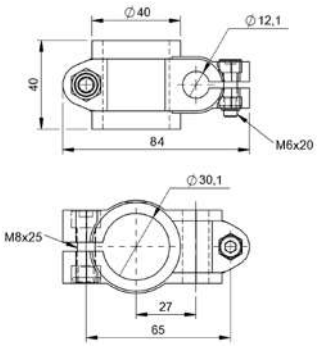
BAM035P



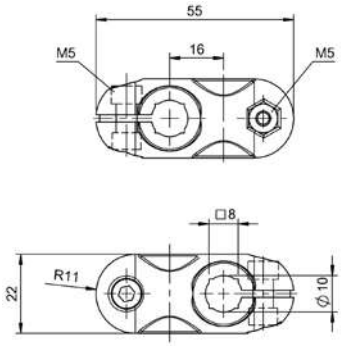
BAM03EY



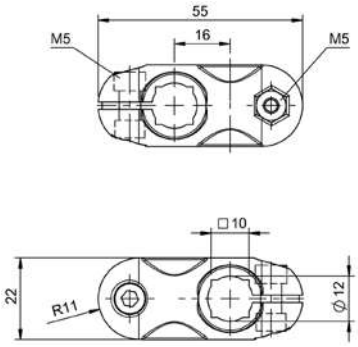
BAM033W



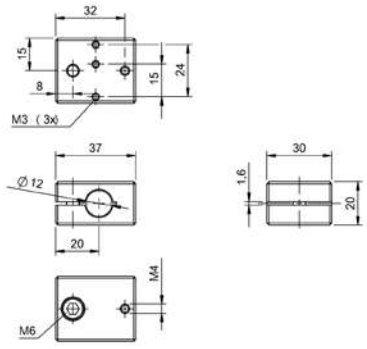
BAM033Y



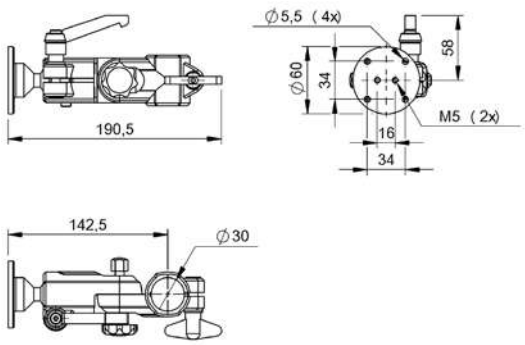
BAM003U



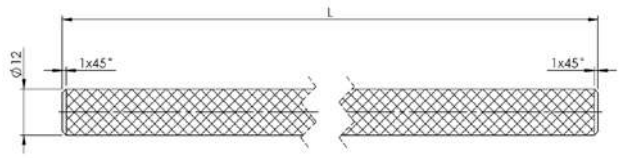
BAM002M



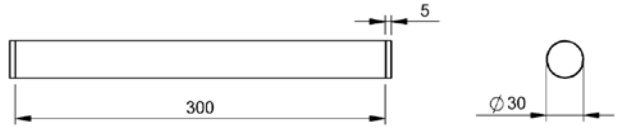
BAM01CW



BAM0343

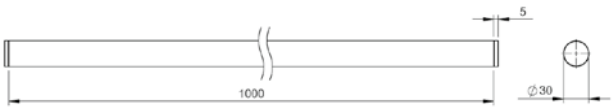


BAM021Y, BAM002R, BAM021T, BAM002T, BAM021W, BAM021U, BAM002U

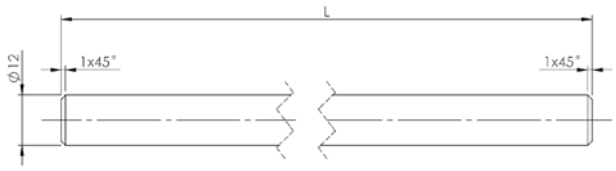


BAM033Z

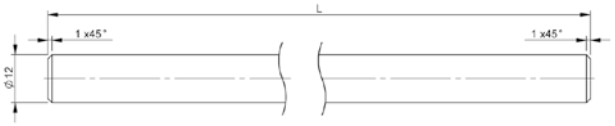
BAM0340



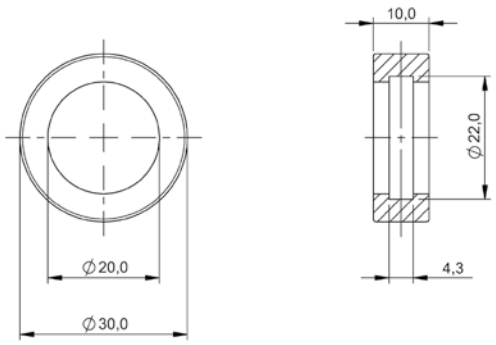
BAM0341



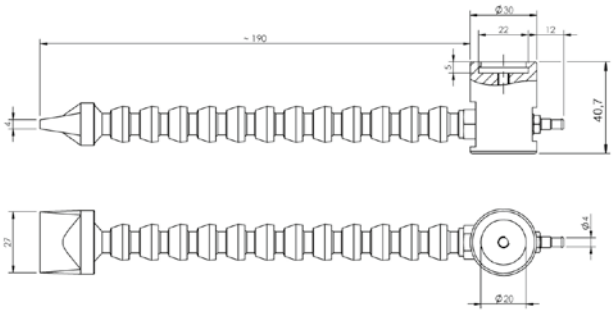
BAM0045, BAM0046



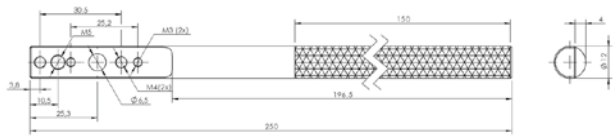
BAM03F0, BAM03F1, BAM03F2



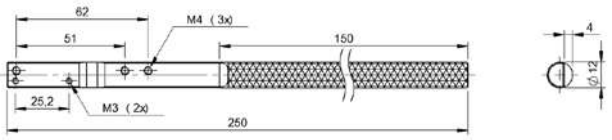
BAM003J



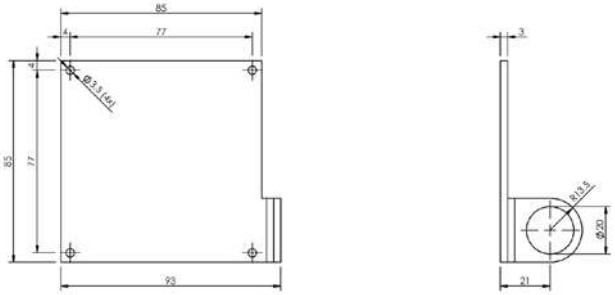
BAM0041



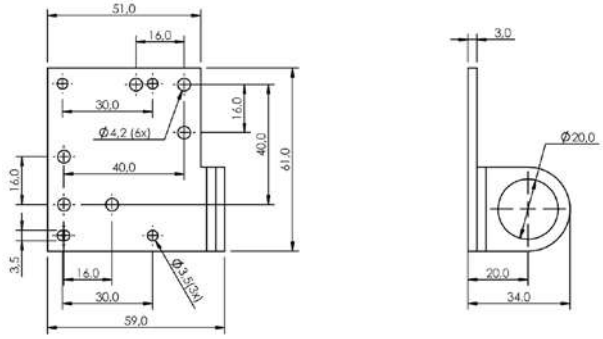
BAM003A



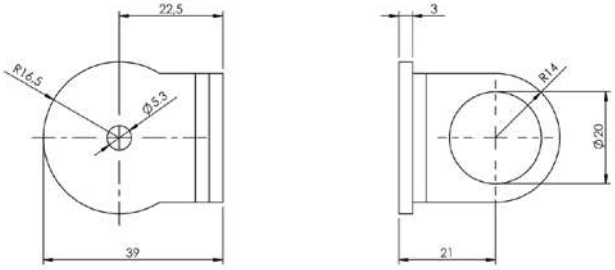
BAM033T



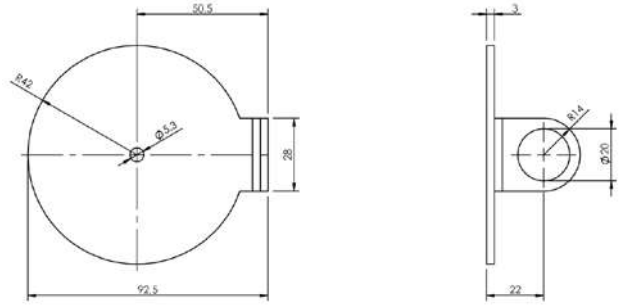
BAM0035



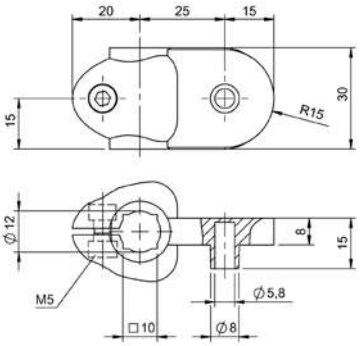
BAM0042



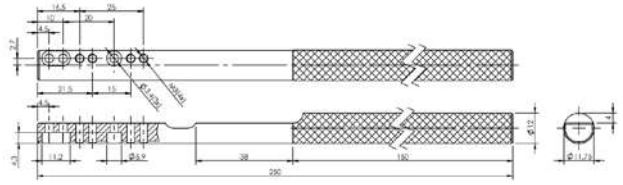
BAM0034



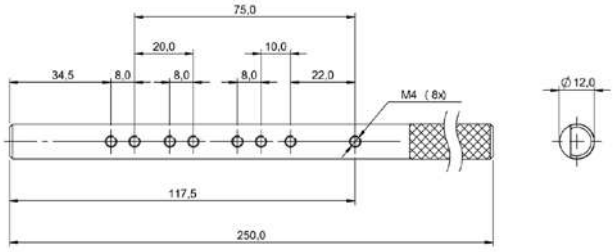
BAM003N



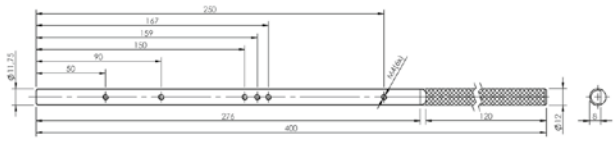
BAM002L



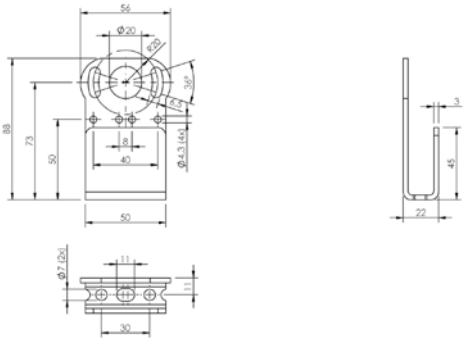
BAM0039



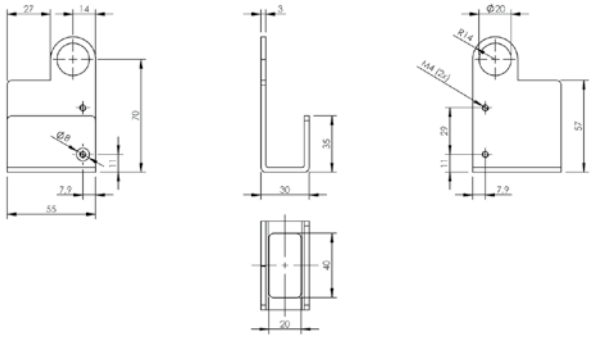
BAM003F



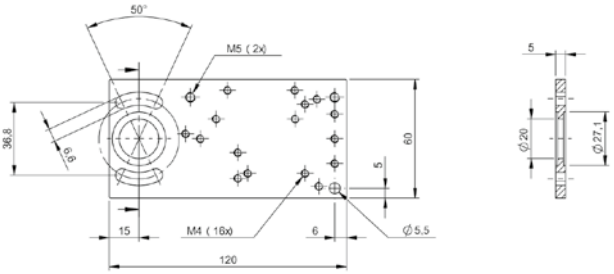
BAM003H



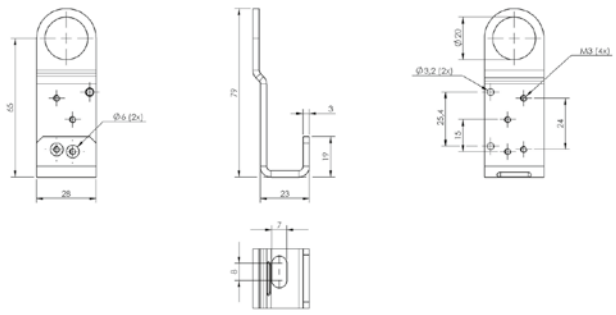
BAM0043



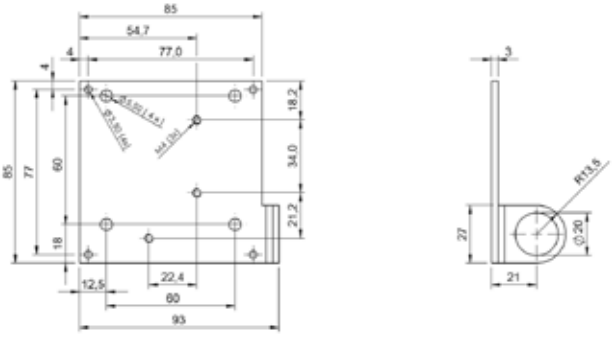
BAM01AW



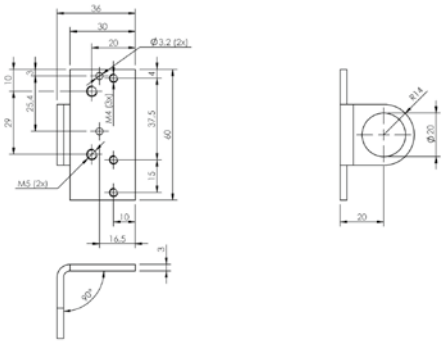
BAM003C



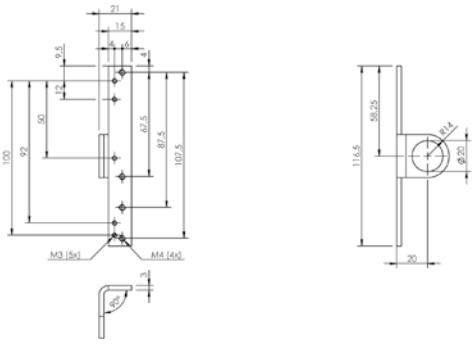
BAM0040



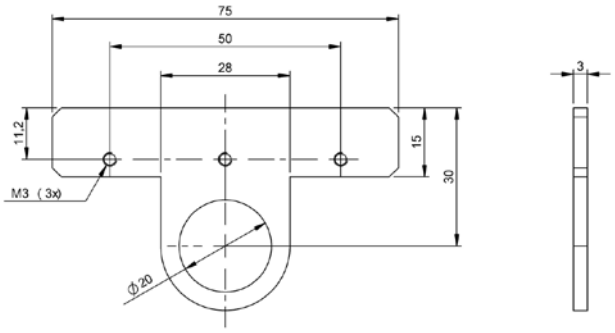
BAM01AY



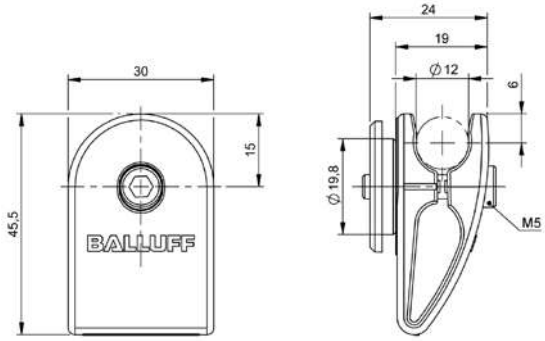
BAM01F3



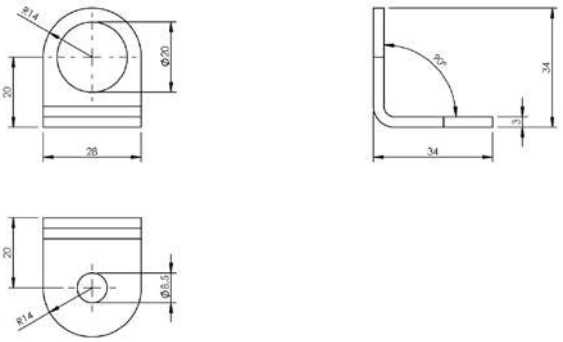
BAM01F2



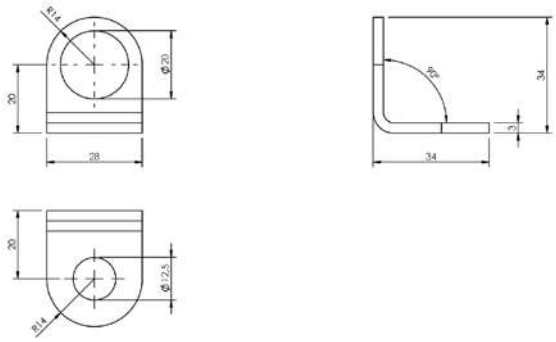
BAM0277



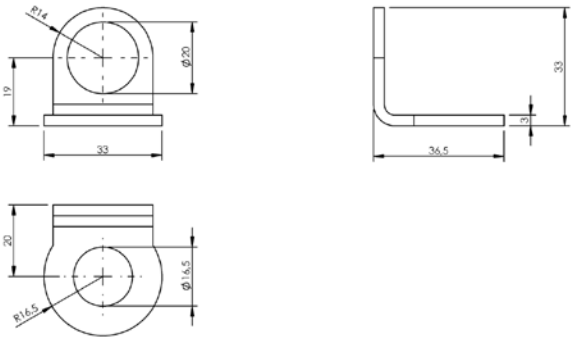
BAM024T



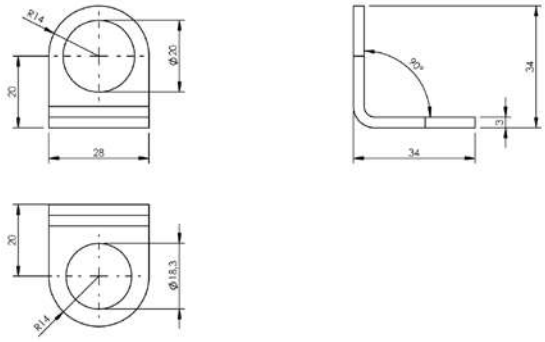
BAM0036



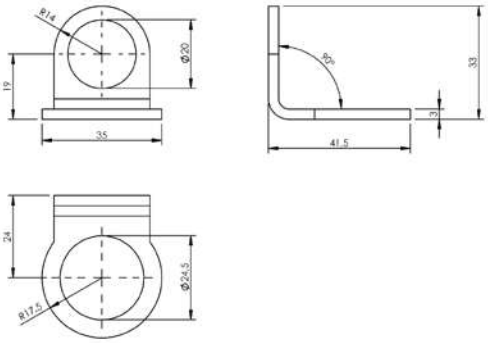
BAM0037



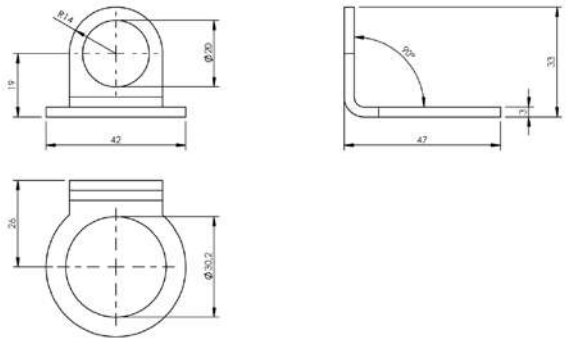
BAM003K



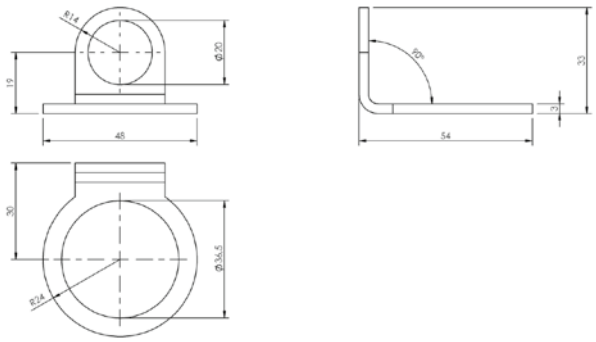
BAM0032



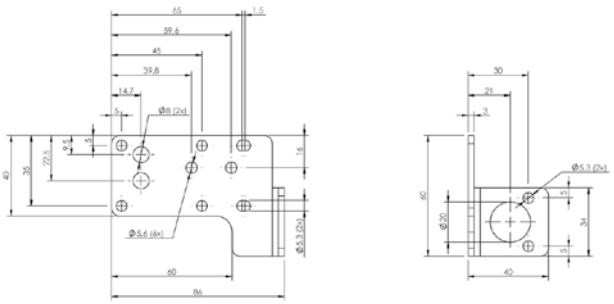
BAM003L



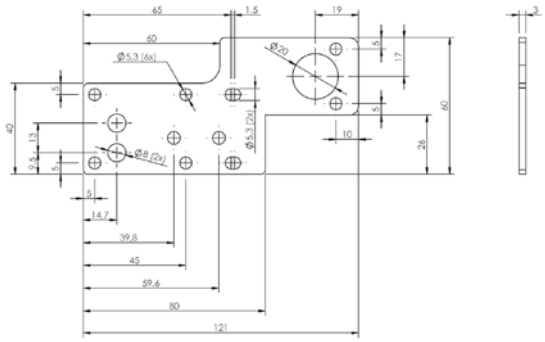
BAM0033



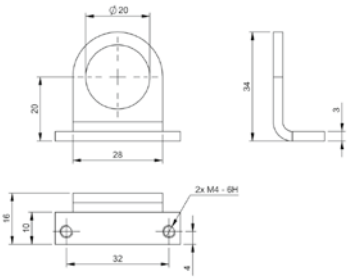
BAM003M



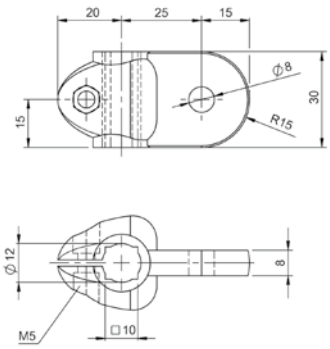
BAM003P



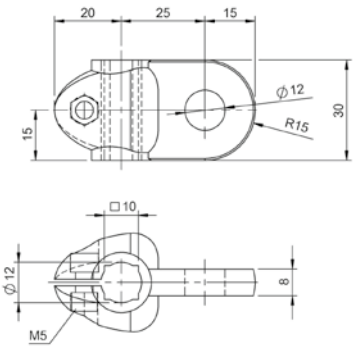
BAM003R



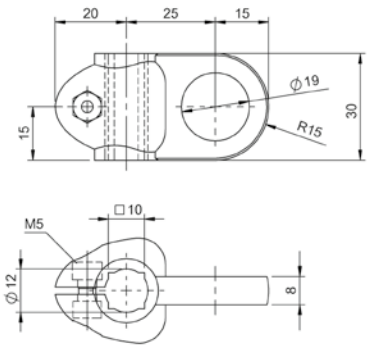
BAM01UL



BAM002K



BAM002N



BAM002P



	BAM0099 BES 05,0-KH-2S	BAM0313 BAM MC-XA-023-D08,0-2-FS	BAM0318 BAM MC-XA-023-D08,0-2-FXL/W	
Use	For sensors Ø5 mm, for M05 sensors, fastening length 30 mm and longer	For M08 sensors, for sensors Ø8 mm, fastening length 32 mm and longer	For M08 sensors, for sensors Ø8 mm, fastening length 50 mm and longer	
Material	Stainless steel (1.4104)	Brass nickel plated	Brass, PTFE coated	
Dimension	Ø 13 x 24 mm	Ø 19.5 x 28 mm	Ø 19.5 x 48 mm	
Mounting	Screws, terminals	Screws, terminals	Screws, terminals	
Additional features	—	—	Weld immune	
Productview	Page 460	Page 460	Page 460	



	BAM00AR BES 08,0-KH-6S	BAM01UT BAM MC-XA-020-D12,0-2-FS/W	BAM0247 BAM MC-XA-023-D12,0-2-FM/W	
Use	For sensors Ø8 mm, for M08 sensors, fastening length 32 mm and longer	For sensors Ø12 mm, for M12 sensors, fastening length 32 mm and longer	For sensors Ø12 mm, for M12 sensors, fastening length 36 mm and longer	
Material	Stainless steel (1.4305)	Brass, PTFE coated	Brass, PTFE coated	
Dimension	Ø 17 x 32 mm	Ø 22 x 34 mm	Ø 23 x 34 mm	
Mounting	Screws, terminals	Screws, terminals	Screws, terminals	
Additional features	—	Weld immune	Weld immune	
Productview	Page 460	Page 460	Page 461	





	BAM0310 BAM MC-XA-023-D08,0-4-FS/W	BAM00AE BES 08,0-KH-2L	BAM00AH BES 08,0-KH-2S	BAM00AK BES 08,0-KH-2S/W	BAM00AL BES 08,0-KH-3L
	For M08 sensors, for sensors Ø8 mm, fastening length 32 mm and longer	For sensors Ø8 mm, for M08 sensors, fastening length 50 mm and longer	For sensors Ø8 mm, for M08 sensors, fastening length 32 mm and longer	For sensors Ø8 mm, for M08 sensors, fastening length 32 mm and longer	For M08 sensors, for sensors Ø8 mm, fastening length 50 mm and longer
	Stainless steel (1.4104), coated, PTFE	Brass nickel plated	Brass nickel plated	Brass, PTFE coated	PBT nickel plated
	Ø 19.5 x 28 mm	Ø 17 x 48.5 mm	Ø 17 x 32 mm	Ø 17 x 32 mm	Ø 17 x 48.5 mm
	Screws, terminals	Screws, terminals	Screws, terminals	Screws, terminals	Screws, terminals
	Weld immune	—	—	Weld immune	—
	Page 460	Page 460	Page 460	Page 460	Page 460





	BAM0246 BAM MC-XA-023-D12,0-2-FS	BAM024E BAM MC-XA-024-D12,0-2-FM/W	BAM024F BAM MC-XA-024-D12,0-2-FXL/W	BAM00CY BES 12,0-KH-2L	BAM00CZ BES 12,0-KH-2L/W
	For sensors Ø12 mm, for M12 sensors, fastening length 32 mm and longer	For sensors Ø12 mm, for M12 sensors, fastening length 40 mm and longer	For sensors Ø12 mm, for M12 sensors, fastening length 50 mm and longer	For sensors Ø12 mm, for M12 sensors, fastening length 46 mm and longer	For sensors Ø12 mm, for M12 sensors, fastening length 46 mm and longer
	Brass nickel plated	Brass, PTFE coated	Brass, PTFE coated	Brass nickel plated	Brass, PTFE coated
	Ø 23 x 30.5 mm	Ø 23 x 38 mm	Ø 23 x 48.5 mm	Ø 22 x 44.5 mm	Ø 22 x 44.5 mm
	Screws, terminals	Screws, terminals	Screws, terminals	Screws, terminals	Screws, terminals
	—	Weld immune	Weld immune	—	Weld immune
	Page 461	Page 461	Page 461	Page 461	Page 461



	BAM00E0 BES 12,0-KH-2S	BAM00E1 BES 12,0-KH-2S/W	BAM00E2 BES 12,0-KH-3L	
Use	For sensors Ø12 mm, for M12 sensors, fastening length 36 mm and longer	For sensors Ø12 mm, for M12 sensors	For M12 sensors, f astening length 46 mm and longer	
Material	Brass nickel plated	Brass, PTFE coated	PBT	
Dimension	Ø 22 x 34 mm	Ø 22 x 34 mm	Ø 22 x 44.5 mm	
Mounting	Screws, terminals	Screws, terminals	Screws, terminals	
Additional features	—	Weld immune	—	
Productview	Page 461	Page 461	Page 461	



	BAM00FR BES 18,0-KH-2M	BAM00FT BES 18,0-KH-2S	BAM00FW BES 18,0-KH-2S/W	
Use	For sensors Ø18 mm, for M18 sensors, fastening length 50 mm and longer	For sensors Ø18 mm, for M18 sensors, fastening length 36 mm and longer	For sensors Ø18 mm, for M18 sensors, fastening length 40 mm and longer	
Material	Brass nickel plated	Brass nickel plated	Brass, PTFE coated	
Dimension	Ø 30 x 48.5 mm	Ø 30 x 36 mm	Ø 30 x 36 mm	
Mounting	Screws, terminals	Screws, terminals	Screws, terminals	
Additional features	—	—	Weld immune	
Productview	Page 462	Page 462	Page 462	





	BAM022L BAM MC-XA-023-D18,0-2-FL	BAM022K BAM MC-XA-023-D18,0-2-FS	BAM022M BAM MC-XA-024-D18,0-2-FM/W	BAM00FN BES 18,0-KH-2L	BAM00FP BES 18,0-KH-2L/W
	For sensors Ø18 mm, for M18 sensors, fastening length 50 mm and longer	For sensors Ø18 mm, for M18 sensors, fastening length 40 mm and longer	For sensors Ø18 mm, for M18 sensors, fastening length 50 mm and longer	For sensors Ø18 mm, for M18 sensors, fastening length 50 mm and longer	For sensors Ø18 mm, for M18 sensors, fastening length 60 mm and longer
	Brass nickel plated	Brass nickel plated	Brass coated, PTFE LCP	Brass nickel plated	Brass, PTFE coated
	Ø 32 x 48.5 mm	Ø 32 x 36 mm	Ø 32 x 46 mm	Ø 30 x 58 mm	Ø 30 x 58 mm
	Screws, terminals	Screws, terminals	Screws, terminals	Screws, terminals	Screws, terminals
	–	–	Weld immune	–	Weld immune
	Page 461	Page 462	Page 462	Page 462	Page 462

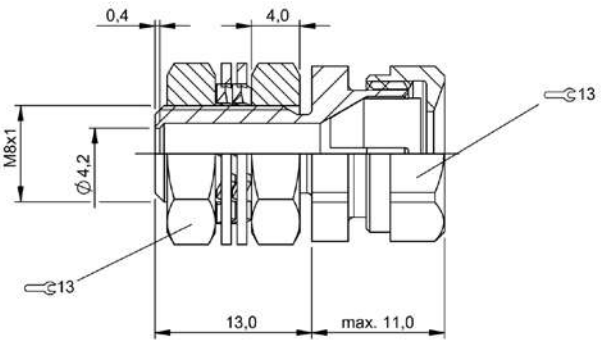




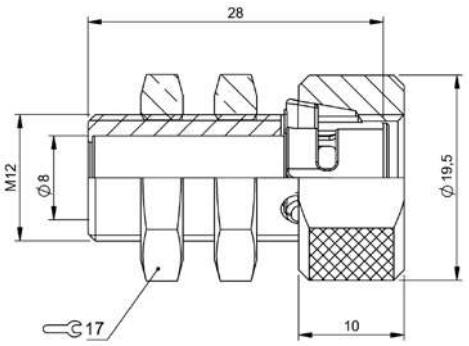
	BAM00FY BES 18,0-KH-3L	BAM0264 BAM MC-XA-023-D30,0-2-FS	BAM0265 BAM MC-XA-023-D30,0-2-FXL	BAM024C BAM MC-XA-023-D30,0-2-FXL/W	BAM024H BAM MC-XA-024-D30,0-2-FM/W
	For M18 sensors, fastening length 60mm and longer	For sensors Ø30 mm, for M30 sensors, fastening length 40 mm and longer	For sensors Ø30 mm, for M30 sensors, fastening length 60 mm and longer	For sensors Ø30 mm, for M30 sensors, fastening length 60 mm and longer	For sensors Ø30 mm, for M30 sensors, fastening length 50 mm and longer
	PBT	Brass nickel plated	Brass nickel plated	Brass, PTFE coated	Brass, PTFE coated
	Ø 30 x 59.5 mm	Ø 45 x 36 mm	Ø 45 x 58 mm	Ø 45 x 58 mm	Ø 45 x 48 mm
	Screws, terminals	Screws, terminals	Screws, terminals	Screws, terminals	Screws, terminals
	–	–	–	Weld immune	Weld immune
	Page 462	Page 462	Page 462	Page 462	Page 463

	BAM00J4 BES 30,0-KH-2L	BAM00J5 BES 30,0-KH-2L/W	BAM00J6 BES 30,0-KH-2S	
Use	For sensors Ø30 mm, for M30 sensors, fastening length 60 mm and longer	For sensors Ø30 mm, for M30 sensors, fastening length 60 mm and longer	For sensors Ø30 mm, for M30 sensors, fastening length 36 mm and longer	
Material	Brass nickel plated	Brass, PTFE coated	Brass nickel plated	
Dimension	Ø 41 x 58 mm	Ø 41 x 58 mm	Ø 41 x 36 mm	
Mounting	Screws, terminals	Screws, terminals	Screws, terminals	
Additional features	—	Weld immune	—	
Productview	Page 463	Page 463	Page 463	

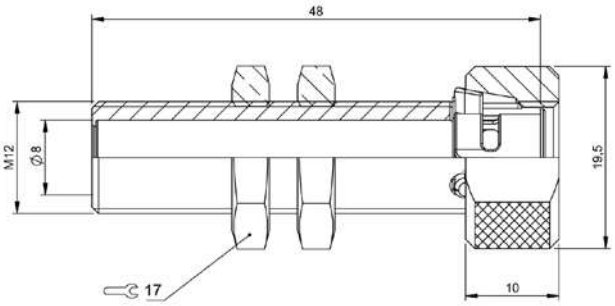
	BAM00J7 BES 30,0-KH-2S/W				
	For sensors Ø30 mm, for M30 sensors, fastening length 36 mm and longer				
	Brass, PTFE coated				
	Ø 41 x 36 mm				
	Screws, terminals				
	Weld immune				
	Page 463				



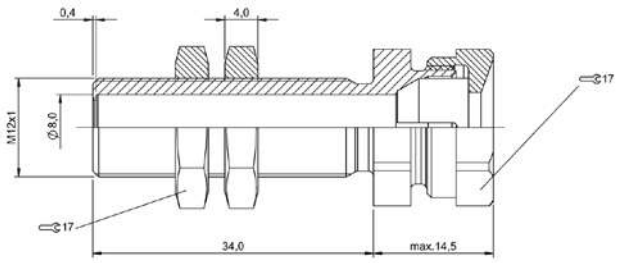
BAM0099



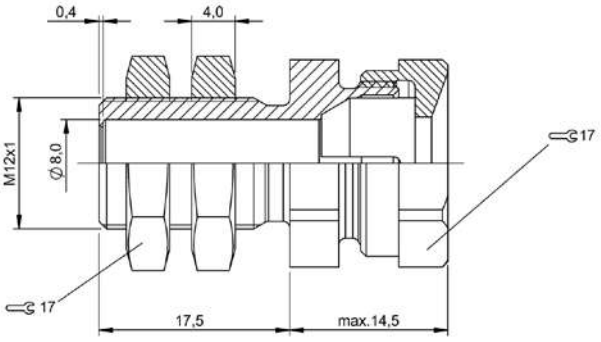
BAM0313, BAM0310



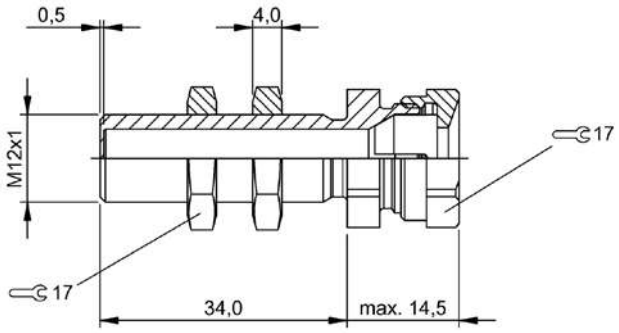
BAM0318



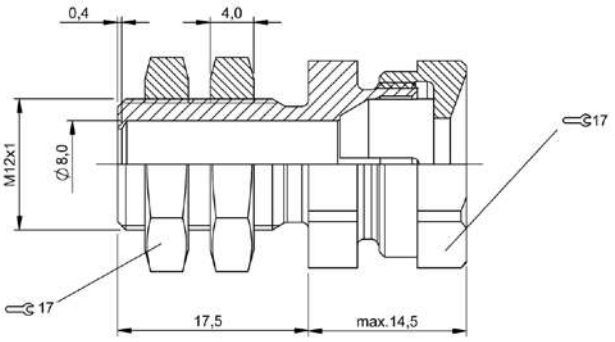
BAM00AE



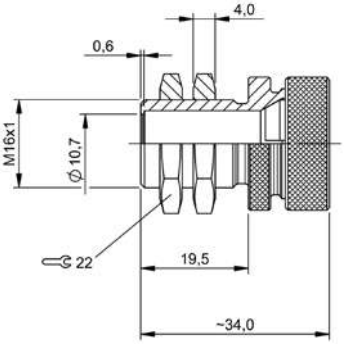
BAM00AH, BAM00AK



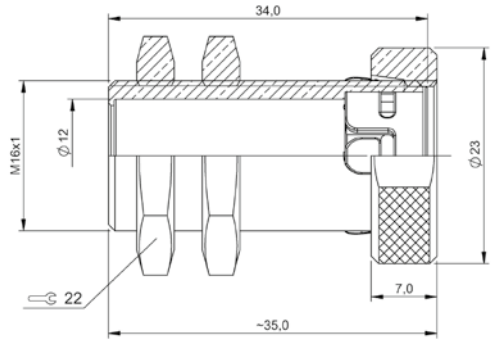
BAM00AL



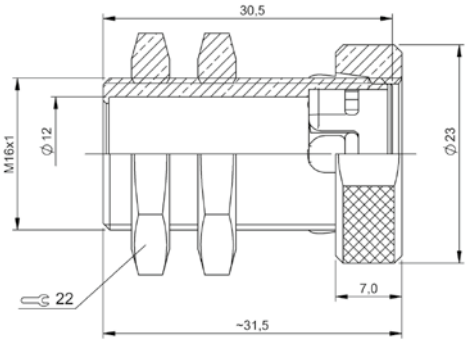
BAM00AR



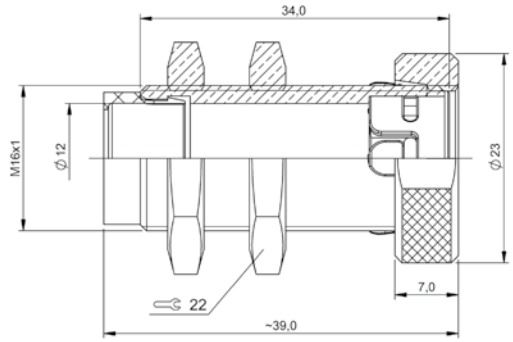
BAM01UT



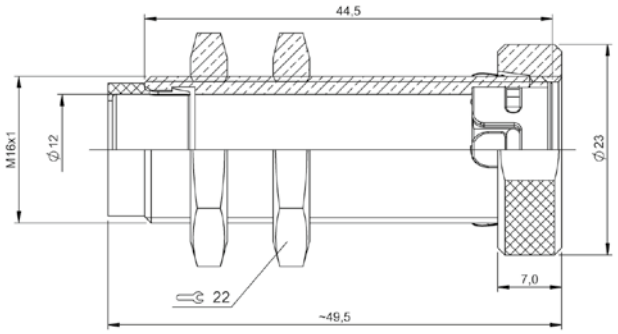
BAM0247



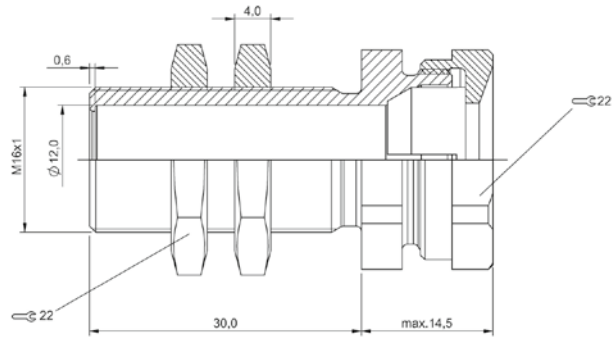
BAM0246



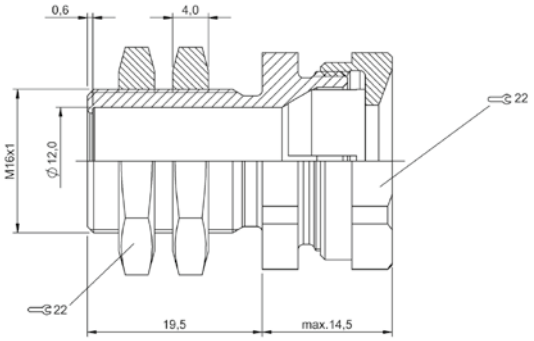
BAM024E



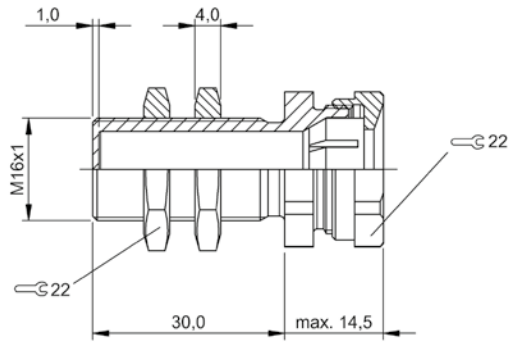
BAM024F



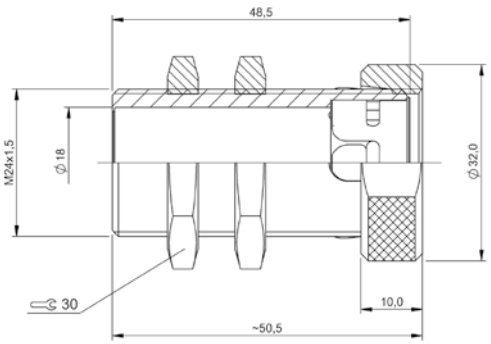
BAM00CY, BAM00CZ



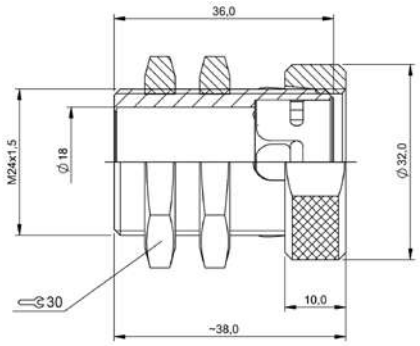
BAM00E0, BAM00E1



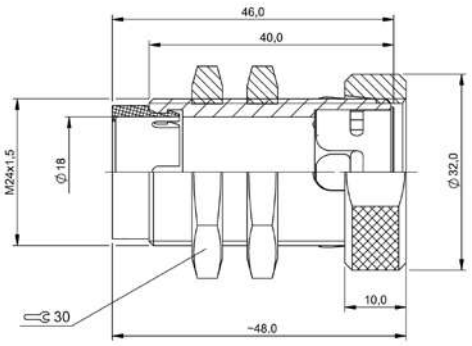
BAM00E2



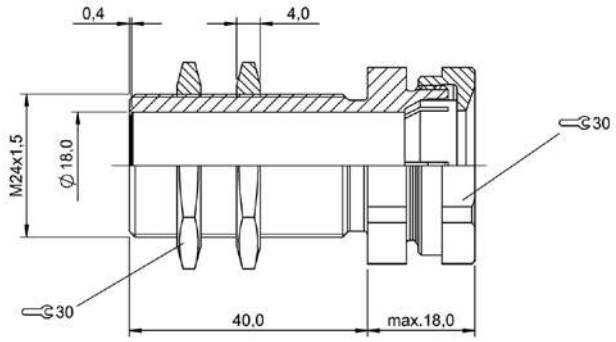
BAM022L



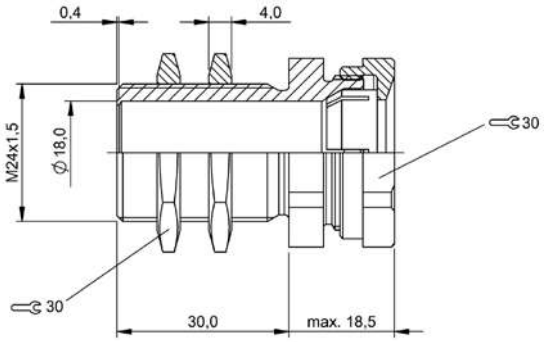
BAM022K



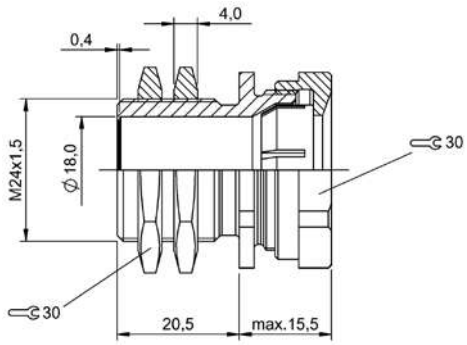
BAM022M



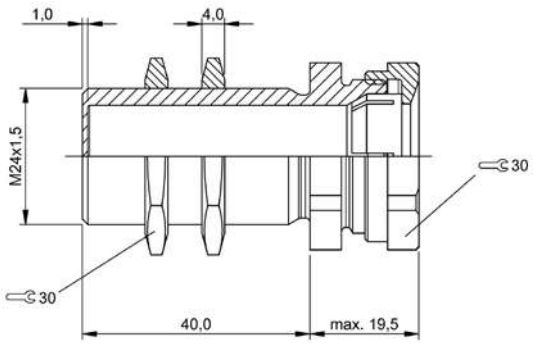
BAM00FN, BAM00FP



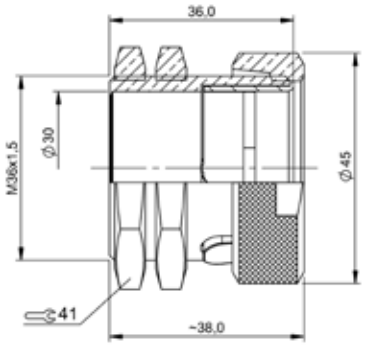
BAM00FR



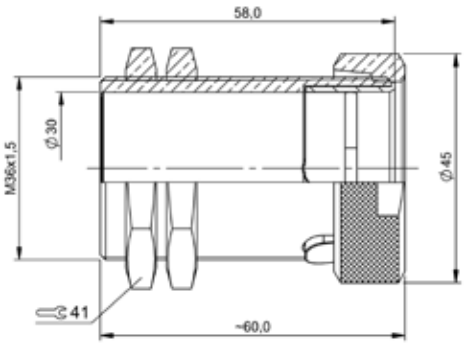
BAM00FT, BAM00FW



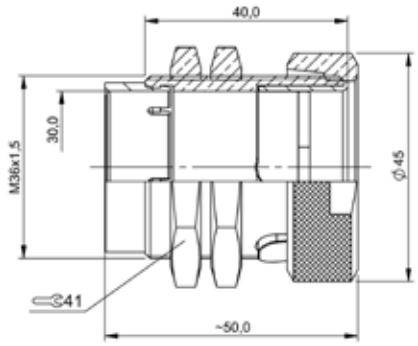
BAM00FY



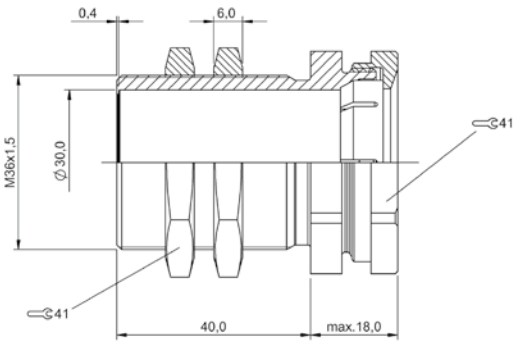
BAM0264



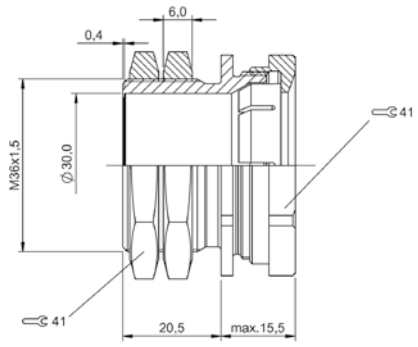
BAM0265, BAM024C



BAM024H



BAM00J4, BAM00J5



BAM00J6, BAM00J7



	BAM02P1 BAM MC-CS-043-R08-R-01	BAM02P2 BAM MC-CS-043-R08-R-02	BAM037T BAM MC-XA-054-D02,0-4	
Use	for capacitive sensors BCS R08	for capacitive sensors BCS R08	for sensors and fiber optics Ø2	
Material	PP	PP	Brass nickel plated	
Dimension	22 x 10 x 35 mm	75 x 9.4 x 54 mm	8 x 10 mm	
Mounting	Screws, terminals	Screws, terminals	Screws, terminals	
Ambient temperature	-25...85 °C	-25...85 °C	-25...85 °C	
Approval/Conformity	—	—	—	
Productview	Page 466	Page 466	Page 466	



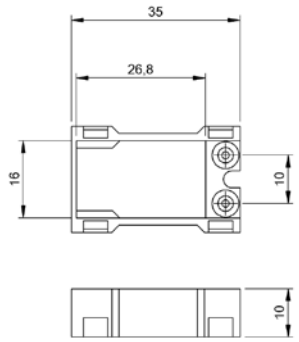
	BAM000W BAM MC-XA-002-D06,5-2	BAM000Y BAM MC-XA-002-D08,0-2	BAM0349 BAM MC-XA-049-D18,0-5	
Use	for sensors Ø6.5 mm	for sensors Ø8 mm	for ultrasonic sensors BUS, for sensors Ø18 mm	
Material	Brass nickel plated	Brass nickel plated	Stainless steel (1.4404) Silicon SI 70/101	
Dimension	8 × 11 mm	10 × 12 mm	Ø 30 x 25.5 mm	
Mounting	Screws, terminals	Screws, terminals	Screws, terminals	
Ambient temperature	-25...85 °C	-25...85 °C	-20...80 °C	
Approval/Conformity	—	—	EHEDG conformal	
Productview	Page 467	Page 467	Page 467	



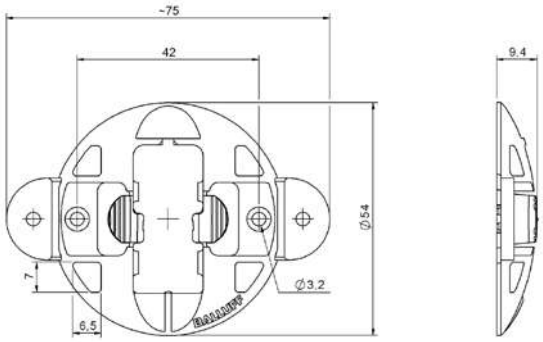


	BAM000T BAM MC-XA-002-D03,0-2	BAM037U BAM MC-XA-054-D03,0-4	BAM000U BAM MC-XA-002-D04,0-2	BAM037W BAM MC-XA-054-D04,0-4	BAM037Y BAM MC-XA-054-D05,0-4
	for sensors and fiber optics Ø3	for sensors and fiber optics Ø3	for sensors and fiber optics Ø4	for sensors and fiber optics Ø4	for sensors and fiber optics Ø5
	Brass nickel plated	Brass nickel plated	Brass nickel plated	Brass nickel plated	Brass nickel plated
	5 × 7 mm	8 x 10 mm	6 x 7 mm	8 x 10 mm	8 x 10 mm
	Screws, terminals	Screws, terminals	Screws, terminals	Screws, terminals	Screws, terminals
	-25...85 °C	-25...85 °C	-25...85 °C	-25...85 °C	-25...85 °C
	—	—	—	—	—
	Page 466	Page 466	Page 466	Page 466	Page 466

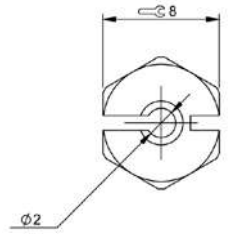
	BAM034A BAM MC-XA-049-D30,0-5				
	for ultrasonic sensors BUS, for sensors Ø30 mm				
	Stainless steel (1.4404) Silicon SI 70/101				
	Ø 50 x 40 mm				
	Screws, terminals				
	-20...80 °C				
	EHEDG conformal				
	Page 467				

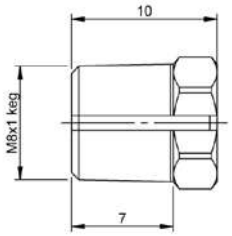


BAM02P1

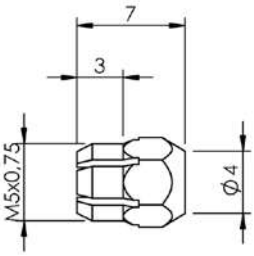


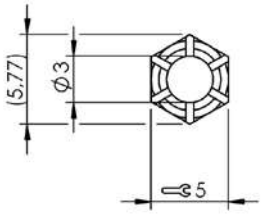
BAM02P2



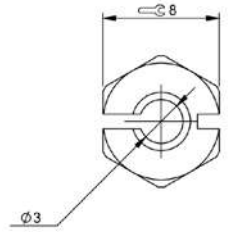


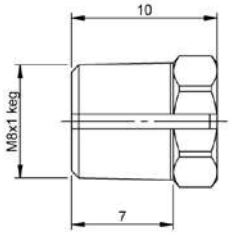
BAM037T



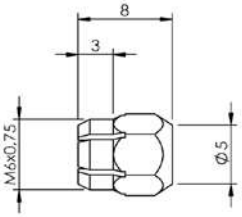


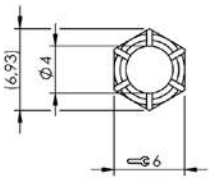
BAM000T



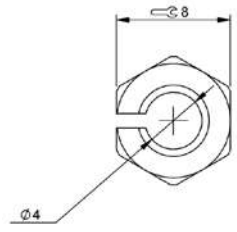


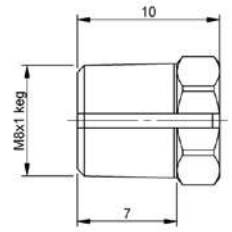
BAM037U



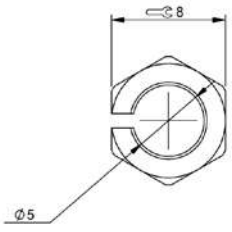


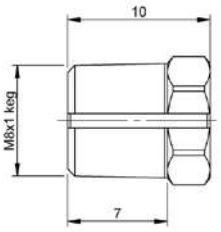
BAM000U



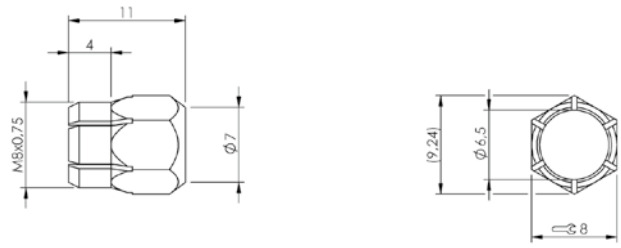


BAM037W

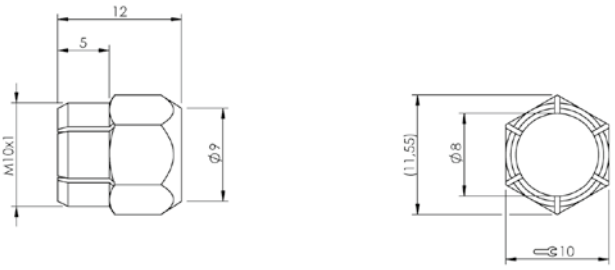




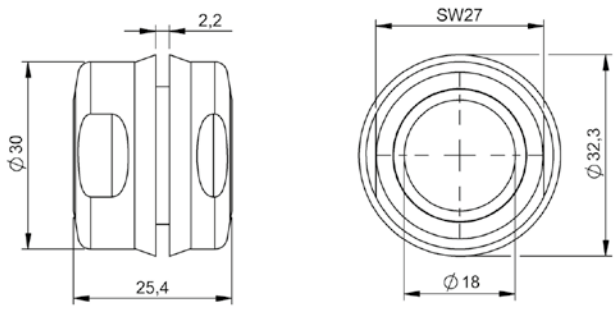
BAM037Y



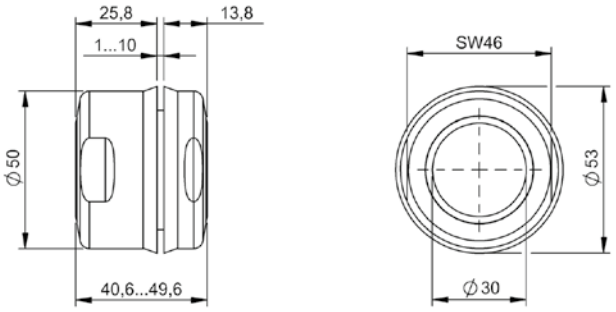
BAM000W



BAM000Y



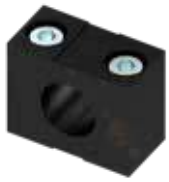
BAM0349



BAM034A



	BAM009A BES 06,5-BS-1	BAM0269 BAM MC-XA-027-D08,0-1	BAM00A2 BES 08,0-BS-1	
Version	Mounting clamp	Mounting clamp	Mounting clamp	
Use	for sensors Ø6.5 mm	for sensors Ø8 mm	for sensors Ø8 mm	
Material	PA 6	Aluminum Anodized	PA 6	
Dimension	27 x 12 x 16 mm	12 x 15 x 27 mm	27 x 12 x 16 mm	
Mounting	Screws, clamps	Screws, clamps	Screws, clamps	
Approval/Conformity	—	—	—	
Productview	Page 478	Page 478	Page 478	


	BAM00F2 BES 18,0-BS-1	BAM00F3 BES 18,0-BS-2	BAM0327 BAM MC-XA-027-D20,0-1	
Version	Mounting clamp	Mounting clamp	Mounting clamp	
Use	for sensors Ø18 mm and M18, for read/write heads Ø18 mm	for sensors Ø18 mm and M18	for machine light Ø20 mm, for line laser Ø20 mm	
Material	PA 6	PBT	Aluminum anodized, natural	
Dimension	36 x 12 x 26 mm	20 x 32 x 40 mm	15 x 30 x 40 mm	
Mounting	Screws, clamps	Screws, clamps	Screws, clamps	
Approval/Conformity	—	—	—	
Productview	Page 479	Page 479	Page 479	





	BAM0218 BAM MC-XA-027-D12,0-1	BAM00C4 BES 12,0-BS-1	BAM00EM BES 14,5-BS-1	BAM00ET BES 16,0-BS-1	BAM0219 BAM MC-XA-027-D18,0-1
	Mounting clamp	Mounting clamp	Mounting clamp	Mounting clamp	Mounting clamp
	for sensors Ø12 mm, for M12 sensors	for sensors Ø12 mm, for read/write heads Ø12 mm	for sensors Ø14.5 mm, for read/write heads Ø14.5 mm, for RFID system BIS C-300	for sensors Ø16 mm, for read/write heads Ø16 mm	for sensors Ø18 mm, for M18 sensors
	Aluminum Anodized	PA 6	PA 6	PA 6	Aluminum Anodized
	12 x 20 x 32 mm	32 x 12 x 20 mm	32 x 12 x 20 mm	36 x 12 x 26 mm	12 x 26 x 36 mm
	Screws, clamps	Screws, clamps	Screws, clamps	Screws, clamps	Screws, clamps
	–	–	–	–	–
	Page 478	Page 478	Page 478	Page 478	Page 478





	BAM0377 BAM MC-XA-053-D20,0-1	BAM00H7 BES 20,0-BS-1	BAM01U0 BAM MC-XA-017-D30,0-1	BAM00HN BES 30,0-BS-1	BAM035Y BAM FS-AM-011-D45,0-4
	Mounting clamp	Mounting clamp	Mounting clamp	Mounting clamp	Holder
	for machine light Ø20 mm, for line laser Ø20 mm	for sensors Ø20 mm	for sensors Ø30 mm, for M30 sensors	for sensors Ø30 mm, for M30 sensors, for read/ write heads Ø30 mm	for machine light Ø45 mm, for mounting cuff Ø45mm
	Aluminum anodized, natural	PA 6	Aluminum Anodized	PA 6 GF	Stainless steel
	15 x 29 x 35 mm	45 x 15 x 30 mm	15 x 46 x 64 mm	55 x 18 x 39 mm	1.5 x 40 x 76 mm
	Screws, clamps	Screws, clamps	Screws, clamps	Screws, clamps	Clamps
	–	–	–	Ecolab	–
	Page 479	Page 479	Page 479	Page 479	Page 479



	BAM0379 BAM MC-XA-050-D45,0-1	BAM0360 BAM MC-XE-051-D45,0-3	BAM035Z BAM MC-XE-052-D45,0-1	
Version	Installation set	Mounting clamp	Installation set	
Use	for machine light Ø45 mm	for machine light Ø45 mm	for machine light Ø45 mm	
Material	Aluminum, anodized, natura	Steel, Zinc plated EPDM	Aluminum, anodized, natural	
Dimension	34 x 62.3 x 50 mm	16 x 62.5 x 80 mm	20 x 56 x 50 mm	
Mounting	Screws, clamps	Clamps	Clamps	
Approval/Conformity	—	—	—	
Productview	Page 480	Page 480	Page 480	



	BAM00JW BES Q40-HW-1	BAM00JY BES Q40-HW-2	BAM00JZ BES Q40-HW-3	
Version	Holder	Mounting block	Mounting block	
Use	for inductive sensors BES Q40	for capacitive sensors BCS Q40, for inductive sensors BES Q40, for inductive couplers BIC Q40	For processors BIS C-324, for capacitive sensors BCS Q40, for inductive sensors BES Q40, for inductive couplers BIC Q40	
Material	Aluminum Anodized	Die-cast zinc	Aluminum Anodized	
Dimension	61.5 x 5 x 35 mm	40 x 25 x 40 mm	22 x 40 x 40 mm	
Mounting	Screws	Screws, clamps	Screws, clamps	
Approval/Conformity	—	—	—	
Productview	Page 481	Page 481	Page 481	





	BAM00P0 BF0 08,0-KB-1	BAM02WA BAM MB-XE-031-Q40-A	BAM034N BAM MB-XE-031-Q40-A-01	BAM01TM BAM MC-XA-016-Q40-1	BAM026J BAM MC-XA-032-Q40-1
	Mounting block	Holder	Holder	Holder	Holder
	for sensors Ø8 mm	for inductive couplers BIC Q40, for inductive sensors BES Q40	for capacitive sensors BCS Q40, for inductive sensors BES Q40	for capacitive sensors BCS Q40, for Unicompact sensors, for inductive sensors BES Q40, for inductive couplers BIC Q40	for capacitive sensors BCS Q40, for inductive sensors BES Q40, for inductive couplers BIC Q40
	Aluminum	PA 6	PA 6	Aluminum Anodized Plastic	Aluminum Anodized
	16 x 20 x 12 mm	40 x 30 x 62.7 mm	40 x 30 x 65 mm	100 x 5 x 40 mm	50 x 5 x 80 mm
	Screw M3	Screws	Screws	Screws	Screws
	–	–	–	–	–
	Page 480	Page 480	Page 480	Page 480	Page 480





	BAM00K3 BES R04-MF-01	BAM02Y5 BAM MB-XA-029-D30,0-5	BAM0158 BES 516-MB-08	BAM0159 BES 516-MB-12	BAM015A BES 516-MB-18
	Holder	Mounting bracket	Mounting bracket	Mounting bracket	Mounting bracket
	for inductive sensors BES R04	for sensors Ø30 mm, for temperature sensor BTS M30	For M08 sensors	For M12 sensors	For M18 sensors
	Stainless steel	Stainless steel (1.4404)	Stainless steel	Stainless steel	Stainless steel
	4 x 16.2 x 9 mm	50 x 63 x 108 mm	29 x 34 x 76 mm	29 x 34 x 76 mm	29 x 34 x 76 mm
	Screws	Clamps	Screws	Screws	Screws
	–	–	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE
	Page 481	Page 481	Page 481	Page 481	Page 481



	BAM015C BES 516-MB-30	BAM0092 BES 03,0-KB-3	BAM0094 BES 04,0-KB-1	
Version	Mounting bracket	Mounting block	Mounting block	
Use	For M30 sensors	for sensors and fiber optics Ø3	for sensors and fiber optics Ø4	
Material	Stainless steel	PA 6	PA 6	
Dimension	48 x 55 x 108 mm	16 x 12 x 20 mm	17 x 12 x 9 mm	
Mounting	Screws	Screws, clamps	Screws, clamps	
Approval/Conformity	CE, EAC, WEEE	—	—	
Productview	Page 482	Page 482	Page 482	



	BAM009F BES 06,5-KB-7	BAM00A4 BES 08,0-KB-10/W	BAM00A5 BES 08,0-KB-3	
Version	Mounting block	Mounting block	Mounting block	
Use	for sensors Ø6.5 mm	for sensors Ø8 mm, for M08 sensors	for sensors Ø8 mm, for M08 sensors	
Material	Aluminum Anodized	Steel galvanized	PA 6	
Dimension	16 x 12 x 20 mm	35 x 12.7 x 28.6 mm	16 x 12 x 20 mm	
Mounting	Screws, clamps	Screws, clamps	Screws, clamps	
Approval/Conformity	—	—	—	
Productview	Page 483	Page 483	Page 483	





	BAM0095 BES 04,0-KB-3	BAM0097 BES 05,0-KB-1	BAM0098 BES 05,0-KB-3	BAM009C BES 06,5-KB-1	BAM009E BES 06,5-KB-3
	Mounting block	Mounting block	Mounting block	Mounting block	Mounting block
	for sensors and fiber optics Ø4	for sensors Ø5 mm, for M05 sensors	for sensors Ø5 mm, for M05 sensors	for sensors Ø6.5 mm	for sensors Ø6.5 mm
	PA 6	PA 6	PA 6	PA 6	PA 6
	16 x 12 x 20 mm	17 x 12 x 9 mm	16 x 12 x 20 mm	17 x 12 x 9 mm	16 x 12 x 20 mm
	Screws, clamps	Screws, clamps	Screws, clamps	Screws, clamps	Screws, clamps
	–	–	–	–	–
	Page 482	Page 482	Page 482	Page 482	Page 482





	BAM00A6 BES 08,0-KB-3-F	BAM00AA BES 08,0-KB-7	BAM00AW BES 08,1-KB-4-F	BAM00C6 BES 12,0-KB-10/W	BAM00C7 BES 12,0-KB-2
	Mounting clamp with positive stop	Mounting block	Mounting clamp with positive stop	Mounting block	Mounting block
	for sensors Ø8 mm, for M08 sensors	for sensors Ø8 mm, for M08 sensors	for sensors Ø8 mm, for M08 sensors	for sensors Ø12 mm, for M12 sensors	for sensors Ø12 mm, for M12 sensors
	PA 6	Aluminum Anodized	Aluminum	Steel galvanized	PA 6
	16 x 12 x 20 mm	16 x 12 x 20 mm	28 x 30 x 12 mm	38.1 x 19 x 34.9 mm	40 x 16 x 40 mm
	Screws, clamps	Screws, clamps	Screws, clamps	Screws, clamps	Screws, clamps
	–	–	–	–	–
	Page 483	Page 483	Page 483	Page 483	Page 483



	BAM00C9 BES 12,0-KB-3	BAM00CA BES 12,0-KB-3-F	BAM00CF BES 12,0-KB-4-F	
Version	Mounting block	Mounting clamp with positive stop	Mounting clamp with positive stop	
Use	for sensors Ø12 mm, for M12 sensors	for sensors Ø12 mm, for M12 sensors	for sensors Ø12 mm, for M12 sensors	
Material	PA 6	PA 6	Aluminum Anodized	
Dimension	40 x 18 x 30 mm	40 x 18 x 30 mm	35 x 16 x 28 mm	
Mounting	Screws, clamps	Screws, clamps	Screws, clamps	
Approval/Conformity	—	—	—	
Productview	Page 484	Page 484	Page 484	



	BAM00FC BES 18,0-KB-4-F	BAM00FE BES 18,0-KB-5-F	BAM00T3 BOS 18,0-KB-1	
Version	Mounting clamp with positive stop	Mounting clamp with positive stop	Mounting clamp with ball joint	
Use	for sensors Ø18 mm, for M18 sensors	for sensors Ø18 mm, for M18 sensors	For M18 sensors	
Material	Aluminum Anodized	PC	PA GF	
Dimension	40 x 22 x 28 mm	30 x 24 x 29 mm	32.5 x 66 x 57.2 mm	
Mounting	Screws, clamps	Clamps	Screws, clamps	
Approval/Conformity	—	—	—	
Productview	Page 485	Page 485	Page 485	

BAM00EK BES 12.0-KB-9S
Mounting block
for sensors Ø12 mm, for M12 sensors
Aluminum
31.8 x 18 x 38.1 mm
Screws, clamps
–
Page 484

BAM01KM BOS 12,0-KB-1
Mounting clamp with ball joint
For M12 sensors
PA
32.5 x 66 x 57.2 mm
Screws, clamps
–
Page 484

BAM00F5 BES 18,0-KB-10/W
Mounting block
for sensors Ø18 mm, for M12 sensors
Steel galvanized
38.1 x 25.4 x 38.1 mm
Screws, clamps
–
Page 484

BAM00F7 BES 18,0-KB-3
Mounting block
for sensors Ø18 mm, for M18 sensors
PA 6
40 x 24 x 30 mm
Screws, clamps
–
Page 484

BAM00F8 BES 18,0-KB-3-F
Mounting clamp with positive stop
for sensors Ø18 mm, for M18 sensors
PA 6
40 x 24 x 30 mm
Screws, clamps
–
Page 484

BAM00HR BES 30,0-KB-10/W
Mounting block
for sensors Ø30 mm, for M30 sensors
Steel galvanized
44.5 x 38.1 x 60 mm
Screws, clamps
–
Page 485

BAM00HU BES 30,0-KB-3-F
Mounting clamp with positive stop
for sensors Ø30 mm, for M30 sensors
PA 6
54 x 36 x 30 mm
Screws, clamps
–
Page 485

BAM00HW BES 30,0-KB-4-F
Mounting clamp with positive stop
for sensors Ø30 mm, for M30 sensors
Aluminum Anodized
56 x 34 x 34 mm
Screws, clamps
–
Page 485

BAM00HY BES 30,0-KB-5-F
Mounting clamp with positive stop
for sensors Ø30 mm, for M30 sensors
PC
35 x 35 x 41 mm
Clamps
–
Page 485

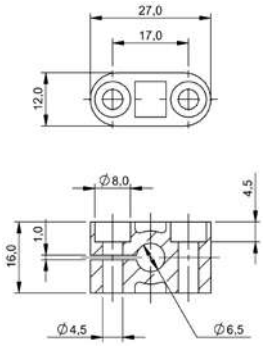
BAM00TN BOS 30,0-KB-1
Mounting clamp with ball joint
For M30 sensors
PA GF
32.5 x 66 x 57.2 mm
Screws, clamps
–
Page 485



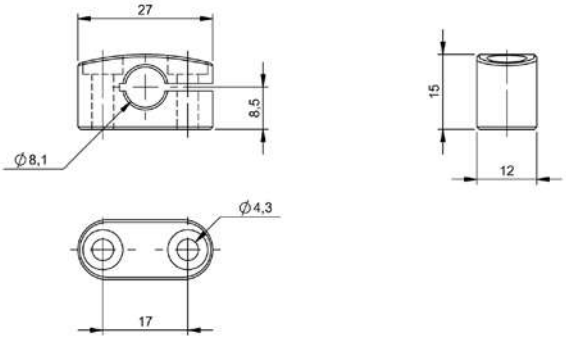
	BAM02UE BAM MC-XA-014-Q08-2	BAM00NJ BES Q08-KH-2	BAM01AU BES Q08-KH-3	
Version	Holder	Holder	Holder	
Use	for photoelectric sensors BOS Q08M	for photoelectric sensors BOS Q08M	for photoelectric sensors BOS Q08M	
Material	Brass White bronze	Copper Zinc plated	Copper Zinc plated	
Dimension	13.5 x 14 x 65 mm	17.6 x 12.1 x 61.5 mm	17.6 x 12.1 x 60 mm	
Mounting	Minitec Profile	Item Profile 8mm slot	Bosch profile 10 mm slit	
Approval/Conformity	—	—	—	
Productview	Page 486	Page 486	Page 486	



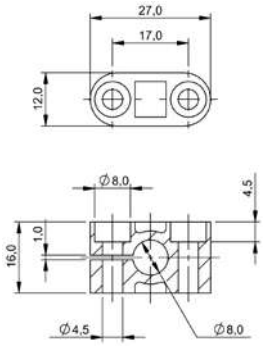

	BAM009U BES 08-HW-1	BAM00C0 BES 12-HW-1	BAM00EY BES 18-HW-1	BAM00HH BES 30-HW-1	
	Mounting bracket	Mounting bracket	Mounting bracket	Mounting bracket	
	For M08 sensors, for positive stop M8	For M12 sensors, for positive stop M12	For M18 sensors, for positive stop M18	For M30 sensors, for positive stop M30	
	Aluminum	Aluminum	Aluminum	Aluminum	
	25 x 30 x 30 mm	25 x 30 x 30 mm	30 x 40 x 40 mm	40 x 40 x 60 mm	
	Screws	Screws	Screws	Screws	
	—	—	—	—	
	Page 486	Page 486	Page 486	Page 486	



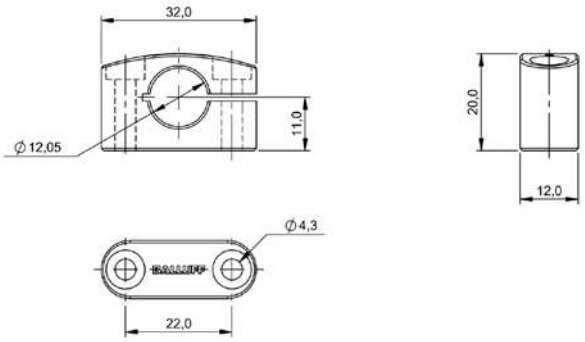
BAM009A



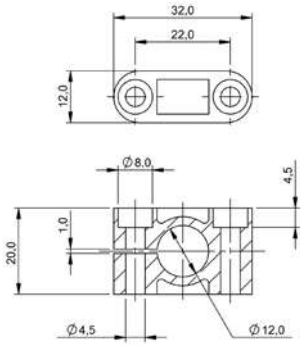
BAM0269



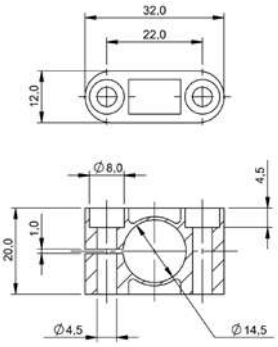
BAM00A2



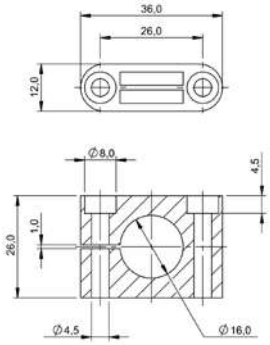
BAM0218



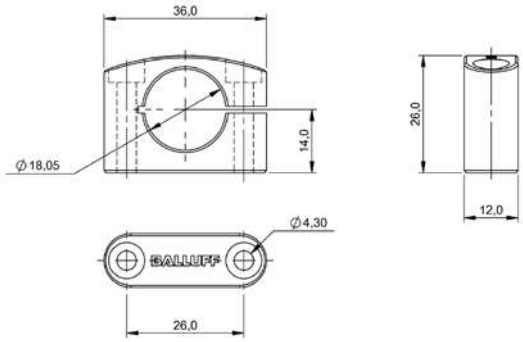
BAM00C4



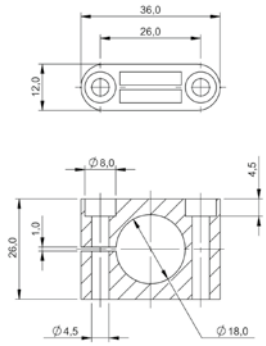
BAM00EM



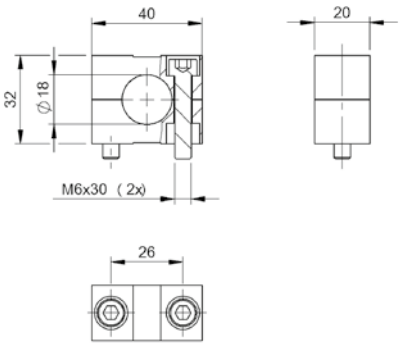
BAM00ET



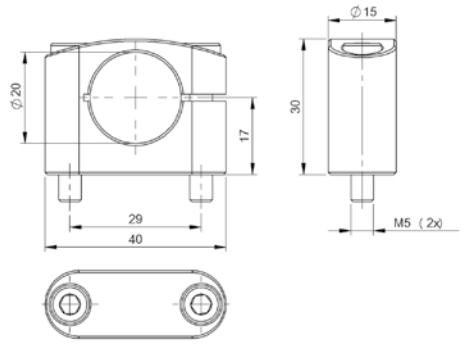
BAM0219



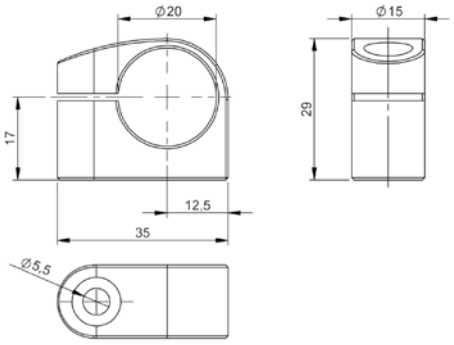
BAM00F2



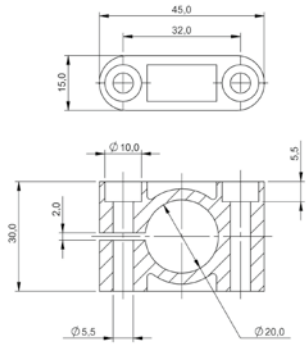
BAM00F3



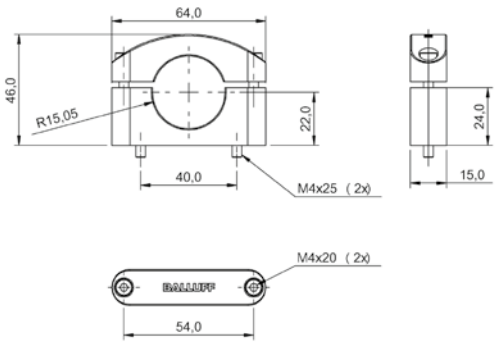
BAM0327



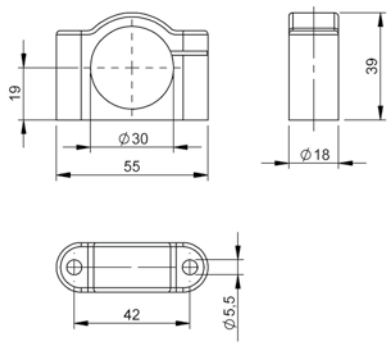
BAM0377



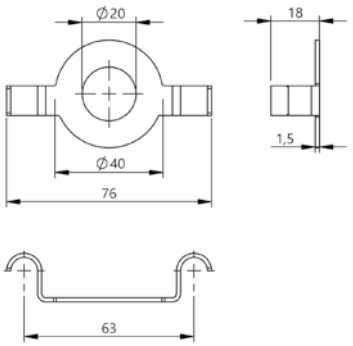
BAM00H7



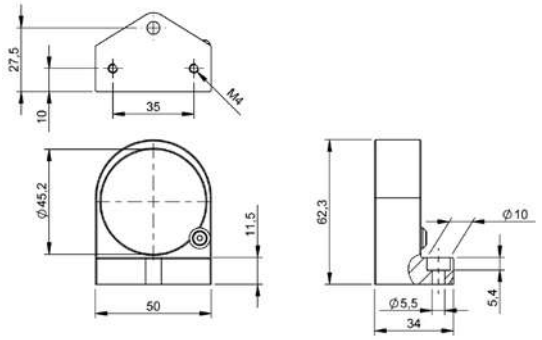
BAM01U0



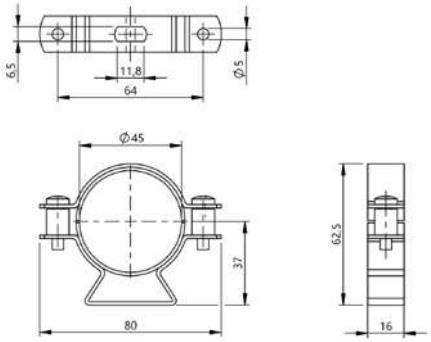
BAM00HN



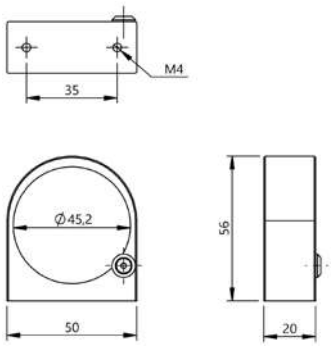
BAM035Y



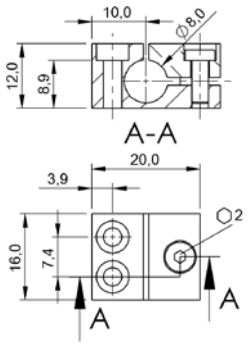
BAM0379



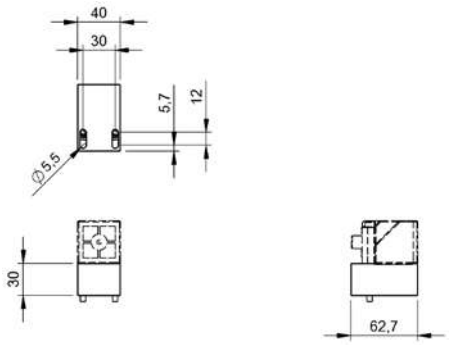
BAM0360



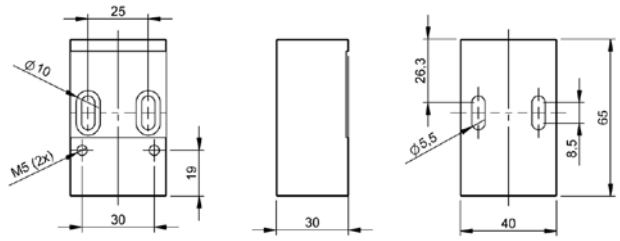
BAM035Z



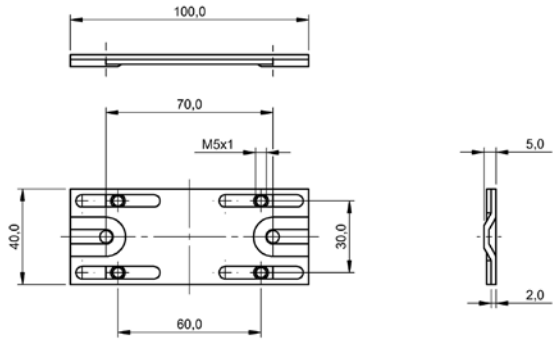
BAM00P0



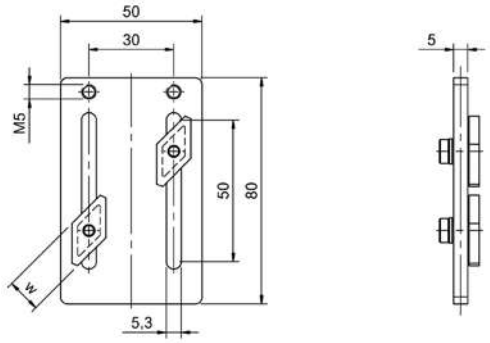
BAM02WA



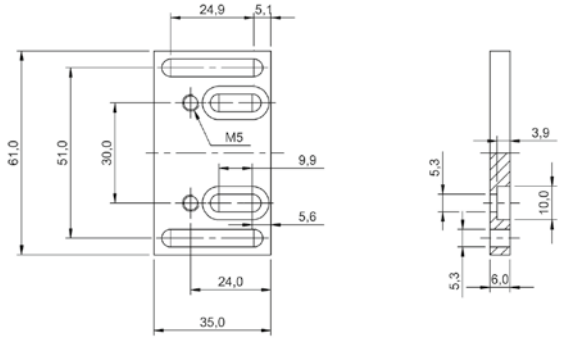
BAM034N



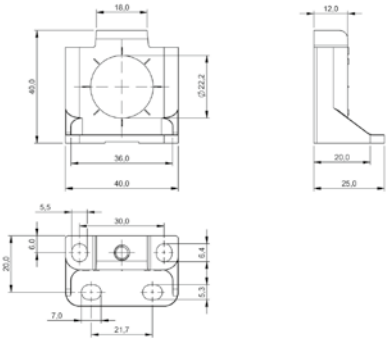
BAM01TM



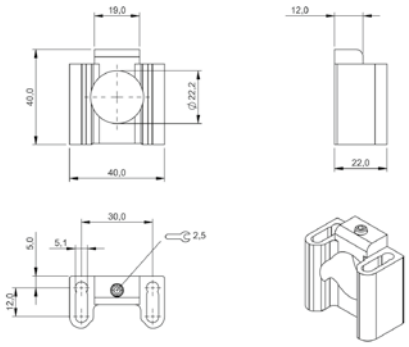
BAM026J



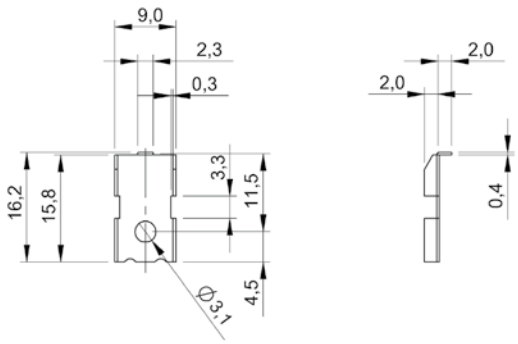
BAM00JW



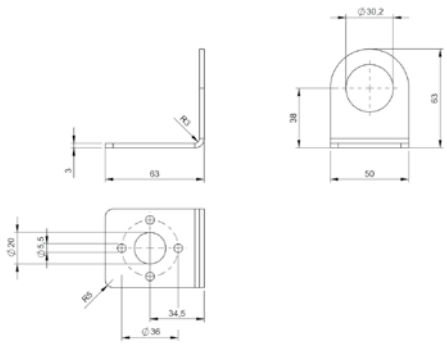
BAM00JY



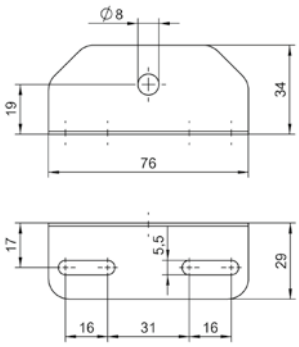
BAM00JZ



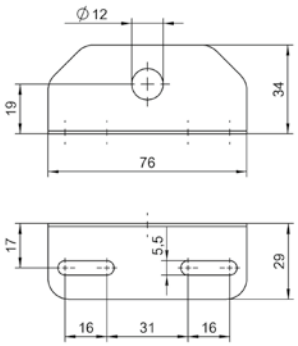
BAM00K3



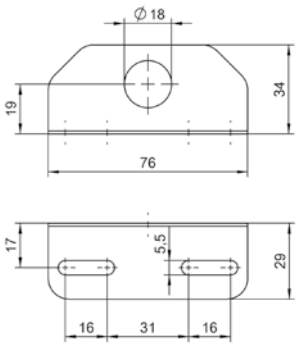
BAM02Y5



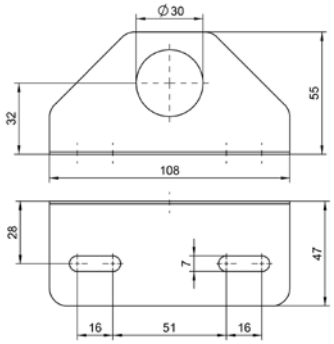
BAM0158



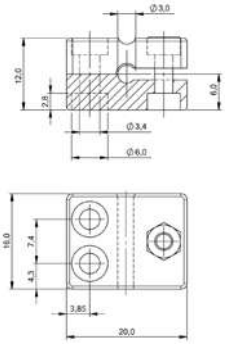
BAM0159



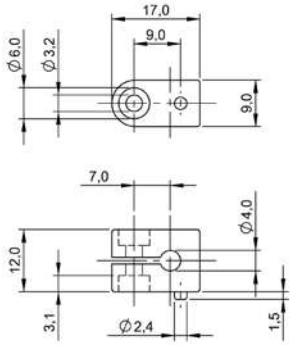
BAM015A



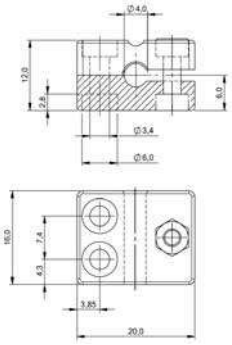
BAM015C



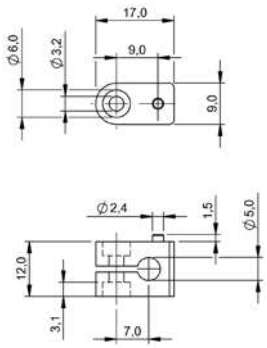
BAM0092



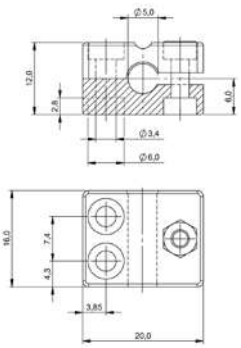
BAM0094



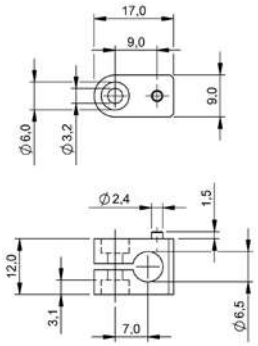
BAM0095



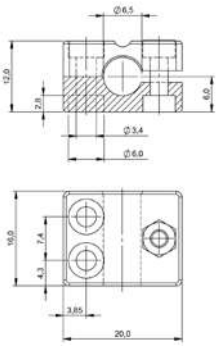
BAM0097



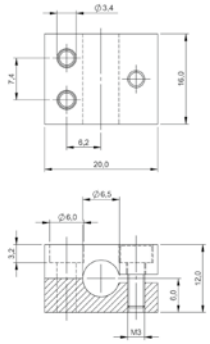
BAM0098



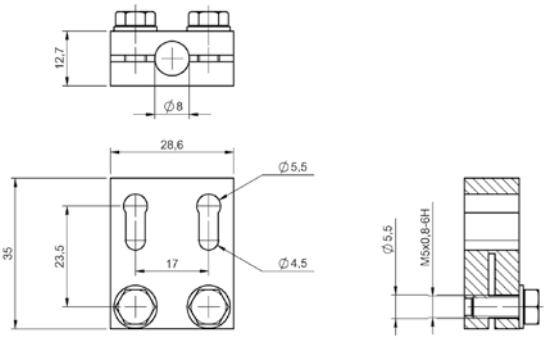
BAM009C



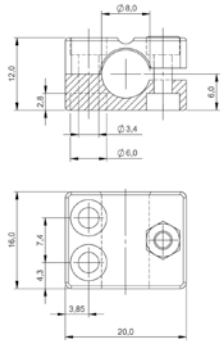
BAM009E



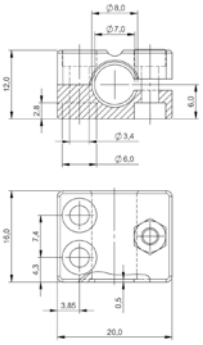
BAM009F



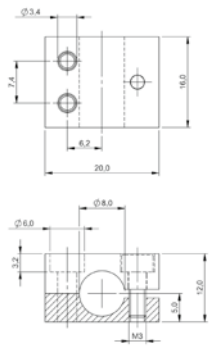
BAM00A4



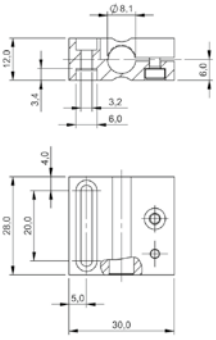
BAM00A5



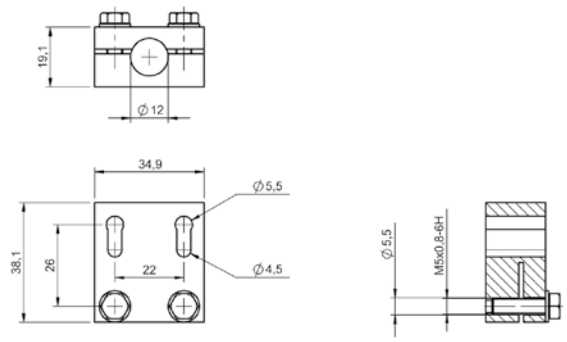
BAM00A6



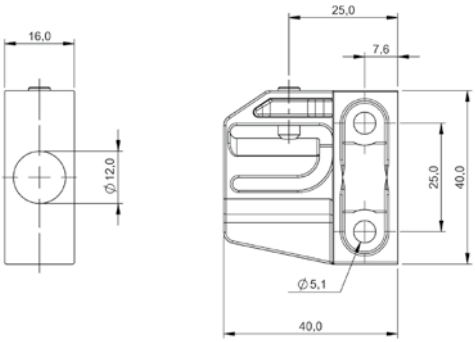
BAM00AA



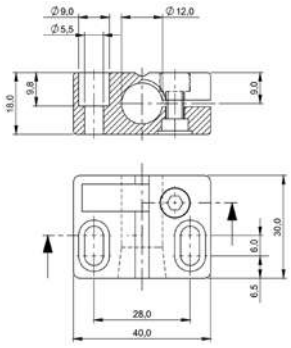
BAM00AW



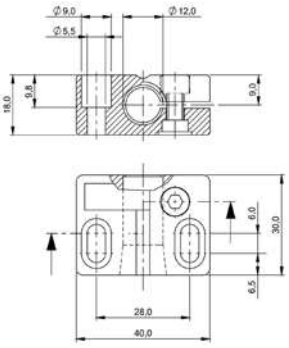
BAM00C6



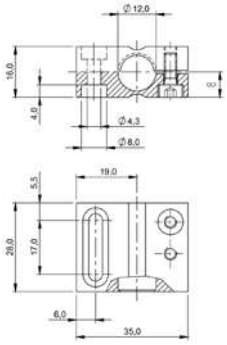
BAM00C7



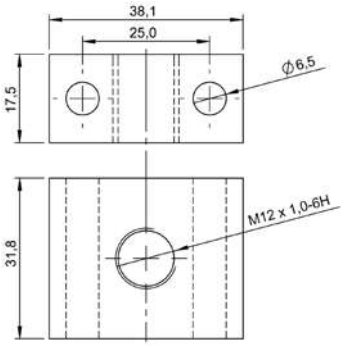
BAM00C9



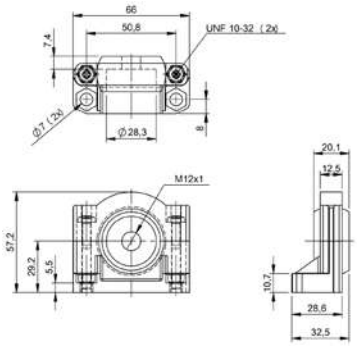
BAM00CA



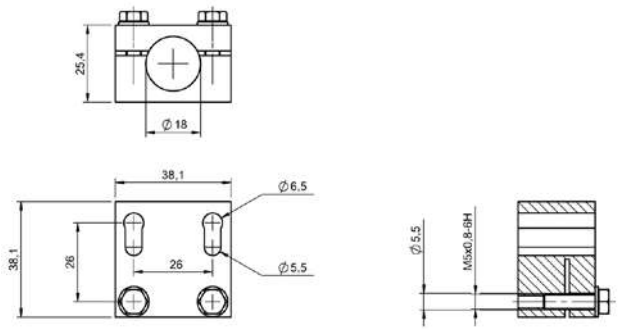
BAM00CF



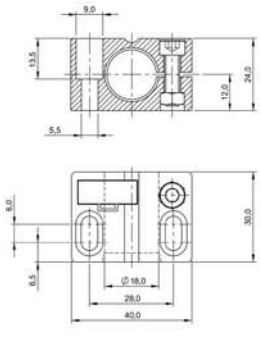
BAM00EK



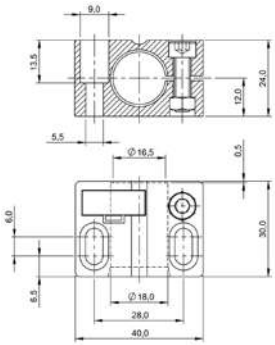
BAM01KM



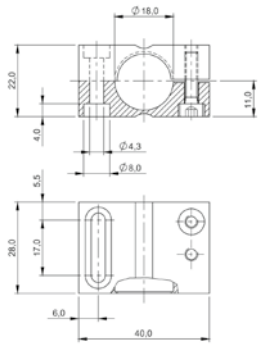
BAM00F5



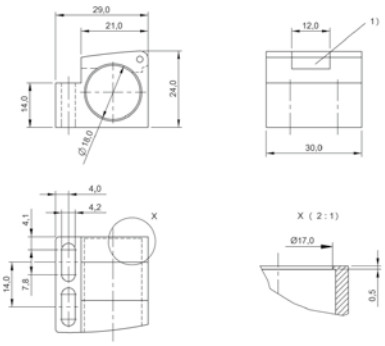
BAM00F7



BAM00F8

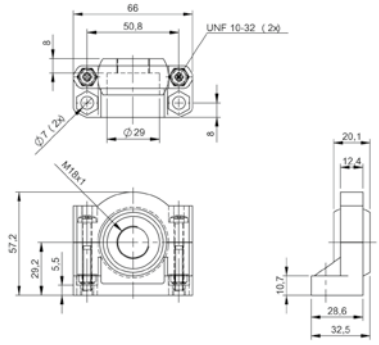


BAM00FC

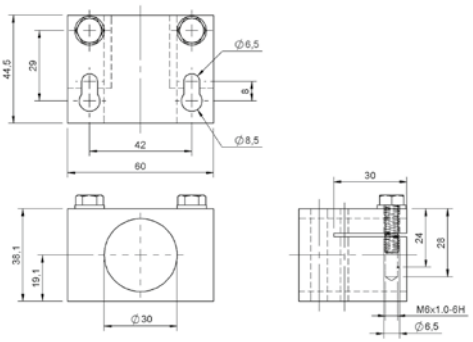


1) Mechanical closing system

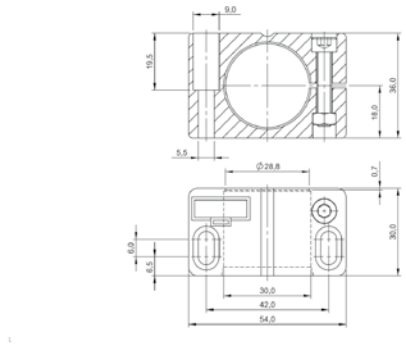
BAM00FE



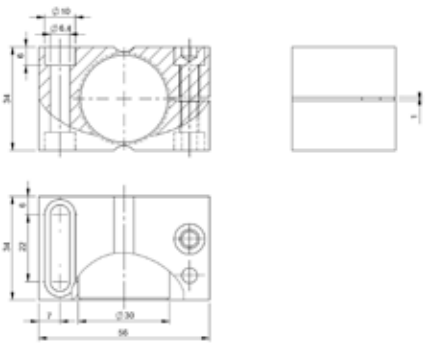
BAM00T3



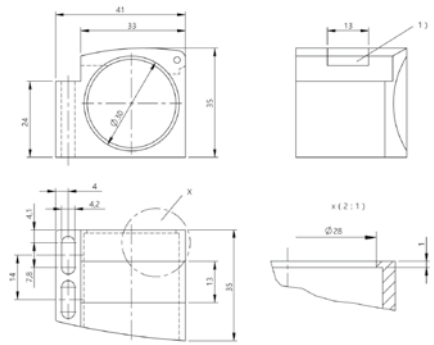
BAM00HR



BAM00HU

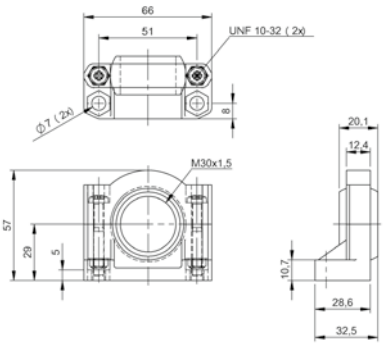


BAM00HW

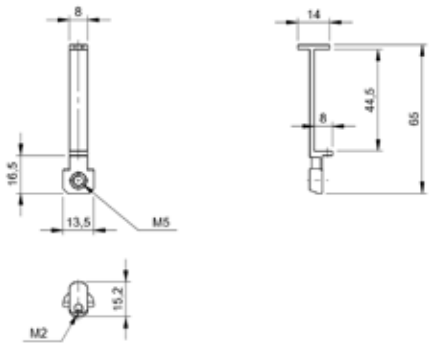


1) Mechanical closing system

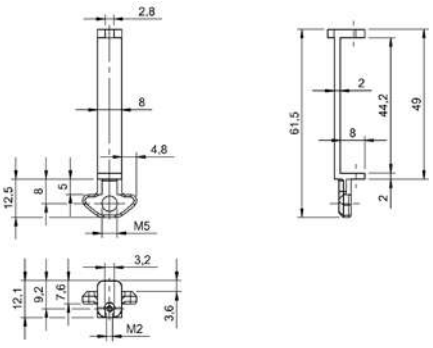
BAM00HY



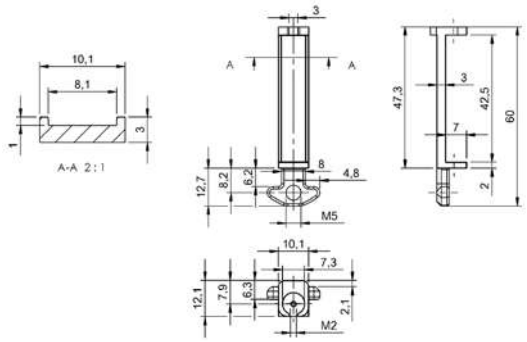
BAM00TN



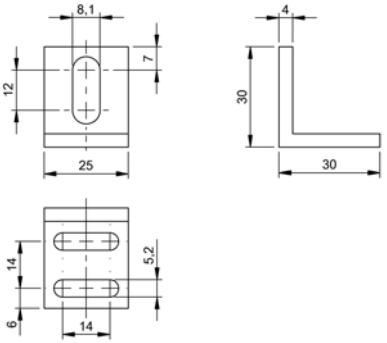
BAM02UE



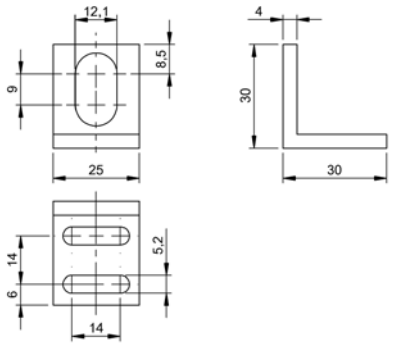
BAM00NJ



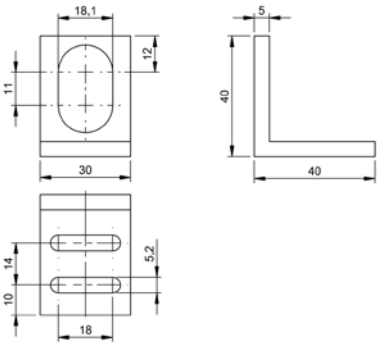
BAM01AU



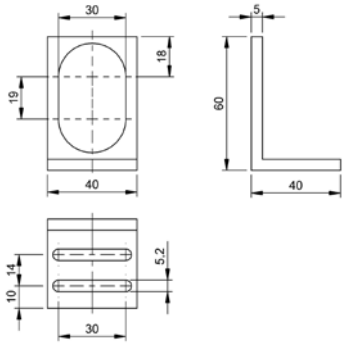
BAM009U



BAM00C0



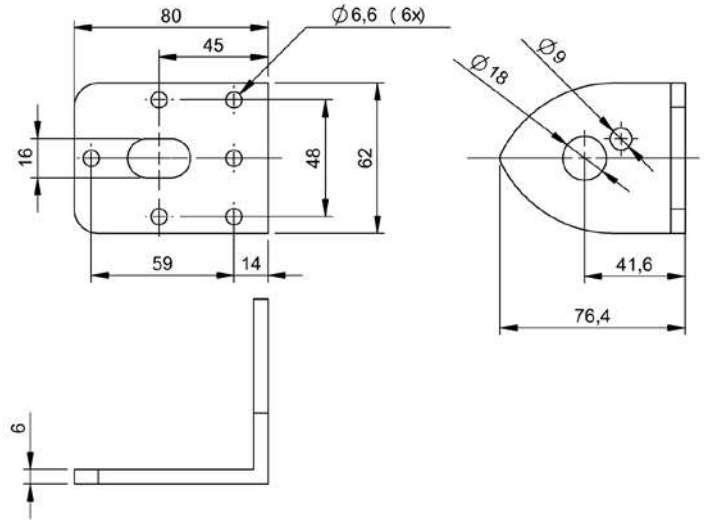
BAM00EY



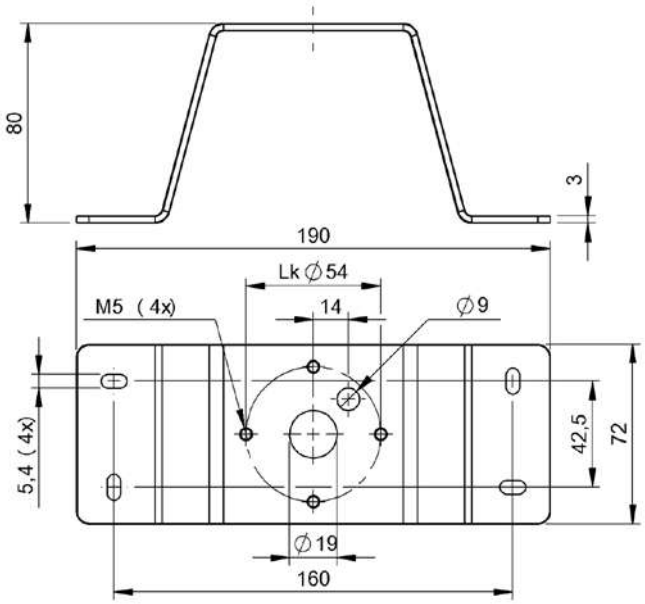
BAM00HH

	BAM0255 BAM MB-NI-016-800-1	**BAM026K** BAM MB-NI-017-100-1	
Principle of operation	holding SmartLight	holding SmartLight	
Use	for signal light Smartlight	for signal light Smartlight	
Material	Naturally anodized aluminum	Naturally anodized aluminum	
Dimension	80 x 6 x 62 mm	Ø 70 x 100 mm	
Mounting	Screws	Screws	
Productview	Page 490	Page 491	

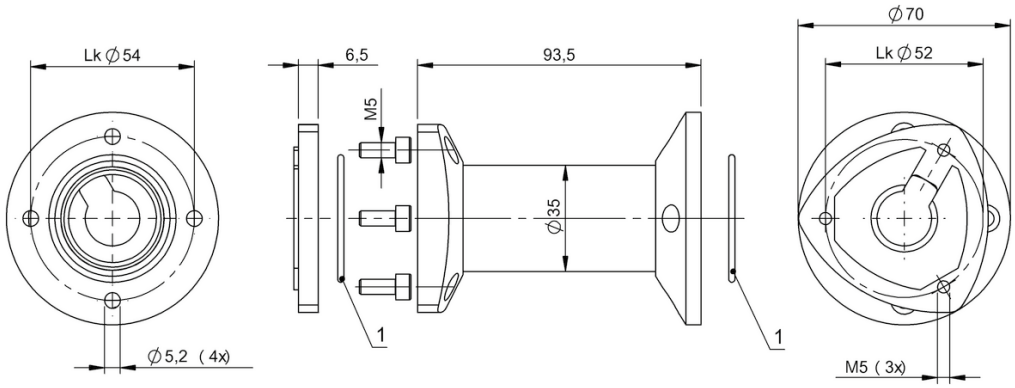
	BAM034C BAM MB-NI-017-250-1	BAM026L BAM MB-NI-017-400-1	BAM02M5 BAM MB-XA-025-D19,0-1	
	holding SmartLight	holding SmartLight	holding SmartLight	
	for signal light Smartlight	for signal light Smartlight	for signal light Smartlight	
	Naturally anodized aluminum	Naturally anodized aluminum	Naturally anodized aluminum	
	Ø 70 x 250 mm	Ø 70 x 400 mm	121 x 72 x 80 mm	
	Screws	Screws	Screws	
	Page 491	Page 491	Page 490	



BAM0255

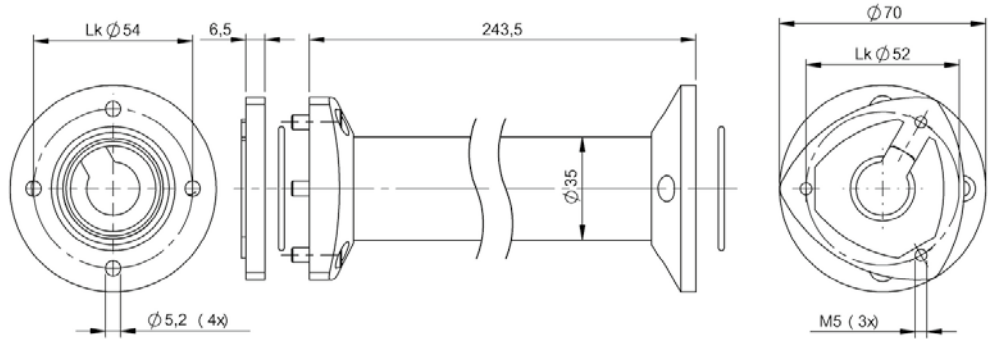


BAM02M5

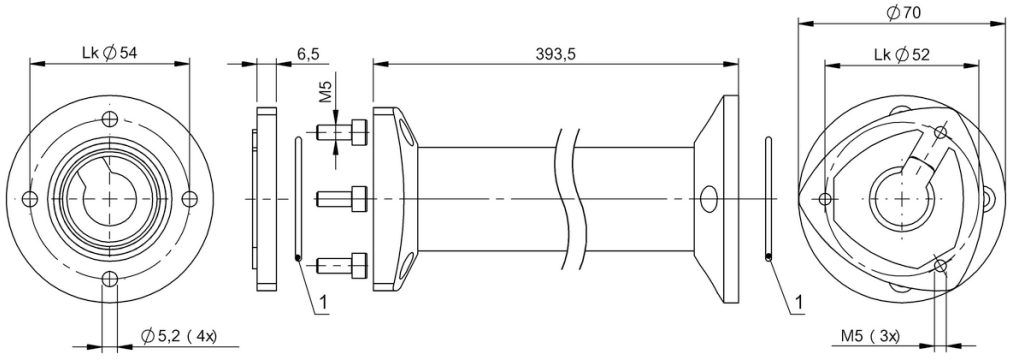


1) O-ring

BAM026K



BAM034C



1) O-ring

BAM026L

	BAM02J9 BAM MD-VS-002-0002	BAM02JA BAM MD-VS-002-0003	BAM02JC BAM MD-VS-002-0004	
Version	Holder	Stand	Positioning	
Application	for table or wall mount	Tripod holder with continous read function	Height adjustable positioning	
Use	for BVS HS-P	for BVS HS-P	for BVS HS-P	
Material	ABS	ABS powder coated Steel	ABS Steel	
Dimension	84 x 126 mm	98 x 318 x 150 mm	168 x 102 mm	
Mounting	Screws, Glue	Screws, Glue	hanging	
Productview	Page 494	Page 494	Page 494	

	BAM01YP BMS CS-M-S25-DX15-00	BAM02ZU BMS CU-M-S25-D030-01	BAM01YT BMS CUJ-M-S25-D045-00	
Version	Quick-change plate	Holder, quick-change plate	3D holder system	
Application	Adapter	for mounting profiles, for quick-change plate	for mounting profiles, with orientation in rotational position and angle orientation, for quick-change plate	
Use	for BVS …-E, for Smart-Camera BVS SC, for connection plate VESA 75/100, for 3D holding system, for holding of the quick-change plate	for BVS …-E, for Smart-Camera BVS SC	for BVS …-E, for Smart-Camera BVS SC	
Material	Naturally anodized aluminum	Naturally anodized aluminum	Naturally anodized aluminum	
Dimension	55 x 7.5 x 60 mm	15.1 x 60 x 60 mm	60 x 84 x 60 mm	
Mounting	Screws, terminals	Screws	Screws, terminals	
Productview	Page 495	Page 495	Page 495	

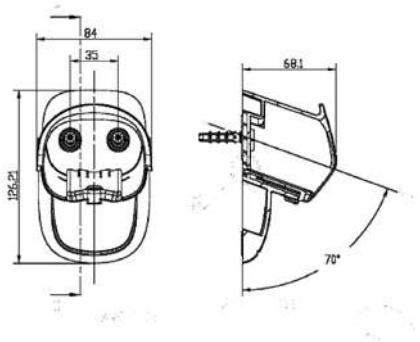




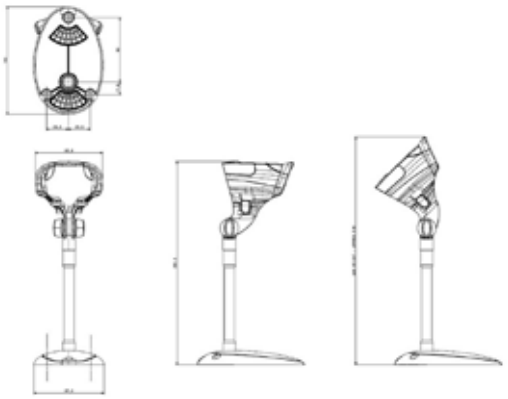
	BAM02Y8 BAM MD-VS-002-0005	BAM02Y9 BAM MD-VS-002-0006	BAM02ZW BAM MB-MS-038-B19-1	BAM01AC BAM MB-XA-003-B03-1	BAM01TK BMS CS-M-D12-IX13-01
	Stand	Holder for table/wall mount	Mounting brackets	Holder	Holder
	Tripod holder with continous read function	—	—	—	for protective housing BVS
	for BVS HS-Q	for BVS HS-Q	for BVS …-E, for SmartCamera BVS SC	for BVS …-E	for BVS …-E
	ABS Steel	ABS	Naturally anodized aluminum	Naturally anodized aluminum	Stainless steel (1.4301)
	100 × 160 mm	75 × 115 mm	3 x 60 x 80 mm	106 x 50 x 75 mm	172 x 34 x 65 mm
	Screws, Glue	Screws, Adhesive	Screws, terminals	Screws, Clamps	Screws, terminals
	Page 494	Page 494	Page 494	Page 494	Page 494



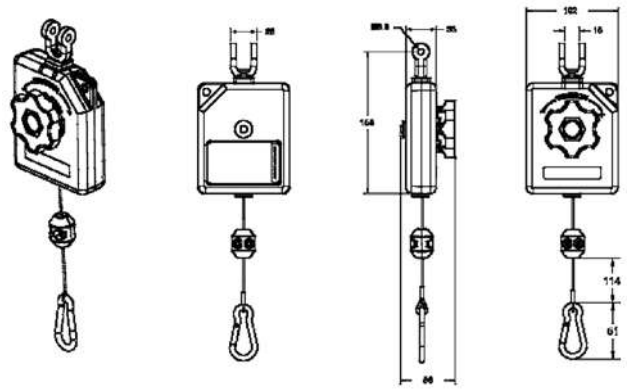

	BAM00WN BVS Z-MB-01	BAM02P7 BAM MB-VS-026-B14-1	BAM01AE BAM MB-XA-002-B02-1	BAM02ML BAM MC-XA-042-D20,0-1	
	Mounting brackets	Mounting brackets	Mounting brackets	Holder	
	for wall mount, for mounting system BMS	for ring light BAE	for mounting system BMS	for wall mount, for mounting profiles	
	for BVS …-E	for BVS SC-..	for line light BAE	for machine light Ø20 mm	
	Stainless steel	Naturally anodized aluminum	Naturally anodized aluminum	Naturally anodized aluminum	
	74 x 47 x 51 mm	110 x 3 x 64 mm	61 x 40 x 43 mm	15 x 29 x 35 mm	
	Screws, Clamps	Screws	Screws, terminals	Screws, terminals	
	Page 495	Page 495	Page 495	Page 459	



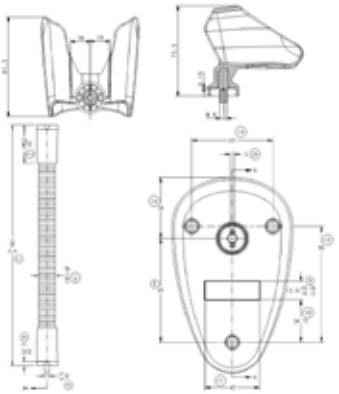
BAM02J9



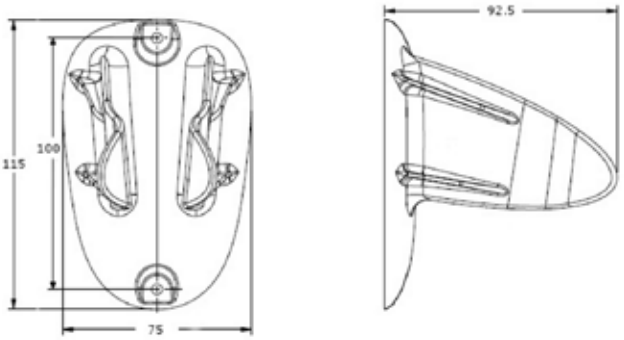
BAM02JA



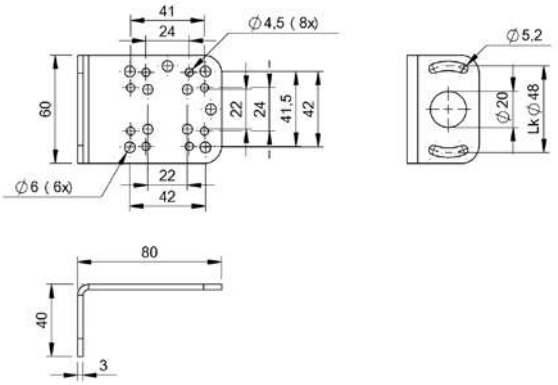
BAM02JC



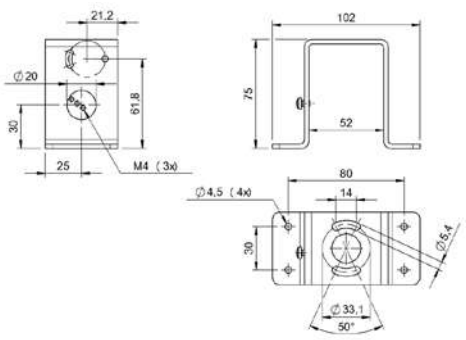
BAM02Y8



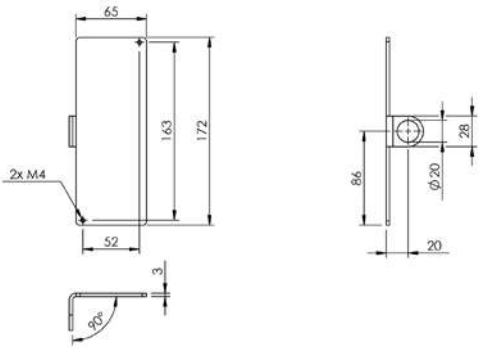
BAM02Y9



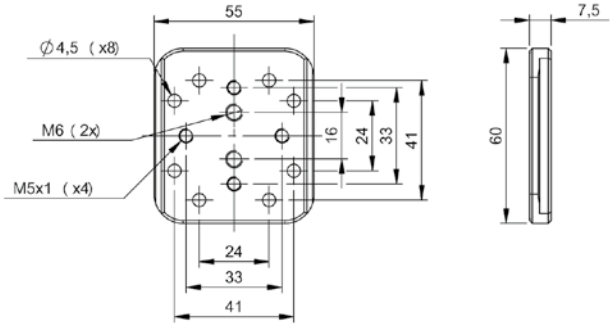
BAM02ZW



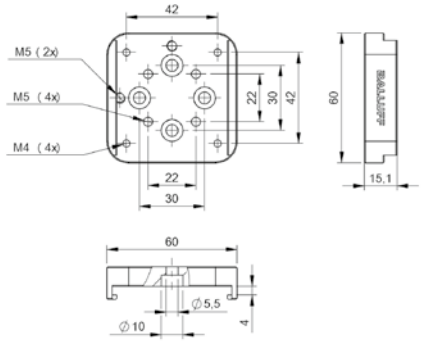
BAM01AC



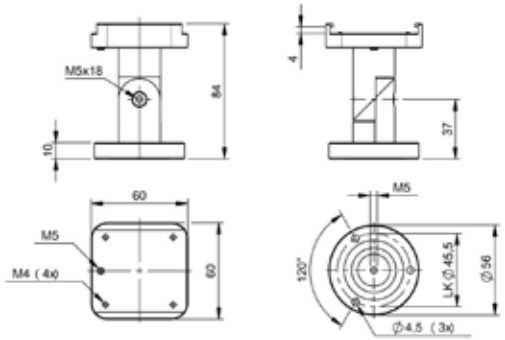
BAM01TK



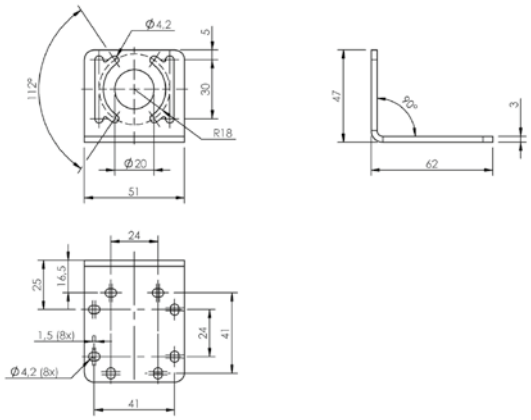
BAM01YP



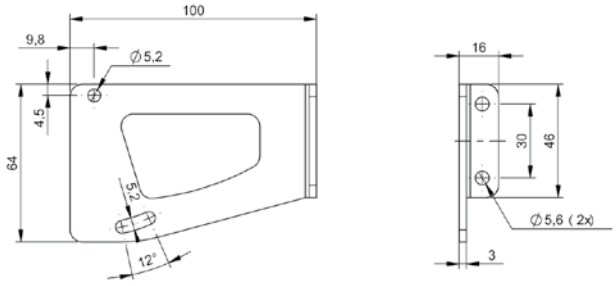
BAM02ZU



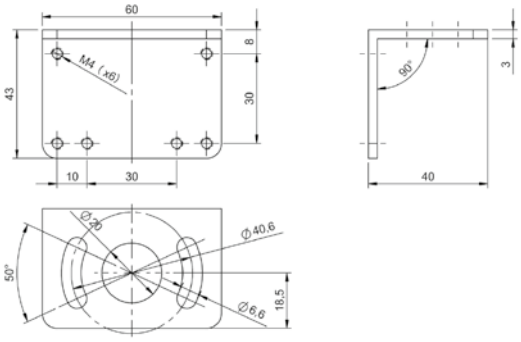
BAM01YT



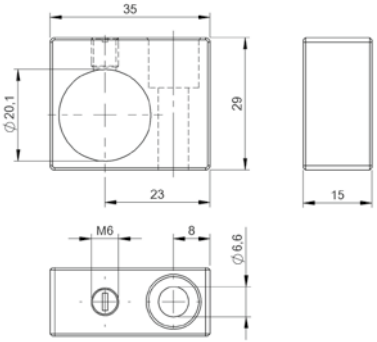
BAM00WN



BAM02P7



BAM01AE



BAM02ML



	BAM0127 BIS C-122-AD-1	BAM0128 BIS C-122-AD-2	BAM01LW BIS Z-SP-003	
Principle of operation	Adapter BIS	Adapter BIS	Spacer ring, piece	
Use	Mounting adapter for data carriers BIS C-122	Mounting adapter for data carriers BIS C-122	Mounting set and spacer for data carriers BIS U-100	
Material	PA 6	PA 6	PA GF	
Dimension	Ø 11.6 x 8 mm	Ø 11.6 x 6 mm	Ø 10 x 10 mm	
Mounting	Screws	—	Screws	
Ambient temperature	—	—	-40...70 °C	
Ambient temperature	—	—	-40...70 °C	
Productview	Page 500	Page 500	Page 500	



	BAM012H BIS L-203-ZH1	BAM012L BIS Z-HW-001	BAM01FT BIS Z-HW-002	
Principle of operation	Holding RFID system	Holding RFID system	Holding RFID system	
Use	Holder for data carriers BIS L-103/203	for processor units C/L/M-600x	Holder for mounting data carriers BIS M-107	
Material	POM	Aluminum (mounting bracket) PA 6 (rail holder)	PPS GF40	
Dimension	Ø 16 x 18 mm	100 × 50 mm	Ø 30 x 13.7 mm	
Mounting	Clamps	Mounting rail, DIN rail	Screws	
Ambient temperature	-25...85 °C	0...70 °C	0...70 °C	
Ambient temperature	-25...85 °C	0...70 °C	0...70 °C	
Productview	Page 501	Page 501	Page 501	

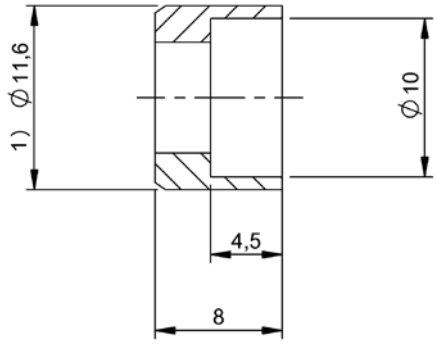
	BAM020R BIS Z-SP-004	BAM01MY BAM MB-XA-010-B07-4	BAM02PN BAM MB-XA-027-B15-4	BAM01Y3 BAM MC-XA-018-B04-4	BAM012E BIS C-108-MF-01
	Spacer ring, piece	Holding RFID system	Holding RFID system	Holding RFID system	Holding RFID system
	Mounting set and spacer for high-temperature data carriers	Mounting bracket for read/write heads for Bosch TS1 and TS2	Mounting bracket for BIS M-400x	Mounting bracket for read/write heads BIS VM-3xx	Mounting plate for BIS C-108
	Ceramic	Stainless steel (1.4301)	Stainless steel (1.4401)	Stainless steel (1.4310)	Aluminum
	Ø 25.4 x 25.4 mm	105 x 14 x 32 mm	86 x 2.5 x 35 mm	78.2 x 11.8 x 34.8 mm	100 × 5 mm
	Screws	Screw M4	Screws, terminals	Screws	Screws
	-40...240 °C	–	–	–	-30...70 °C
	-40...240 °C	–	–	–	-30...70 °C
	Page 500	Page 500	Page 500	Page 500	Page 500

	BAM01JK BIS Z-HW-003	BAM01KN BIS Z-HW-004	BAM0336 BIS Z-HW-008	BAM0337 BIS Z-HW-009	BAM012M BIS Z-MP-001
	Holding RFID system	Holding RFID system	Holding RFID system	Holding RFID system	Holding RFID system
	Holder for installing antennas BIS U-3xx	Fixing for signal converters BIS U-602x	Holder for mounting data carriers BIS M-135/138	Holder for mounting data carriers BIS M-134/137	Metal mounting plate for data carriers BIS M-15x
	Stainless steel (1.4571)	Aluminum, black	PPS, black	PPS, black	Stainless steel (1.4310)
	121 × 57 mm	106 x 43 x 4.6 mm	86 x 39.5 x 63 mm	86 x 39.5 x 63 mm	40 × 0.4 mm
	Screws	Screws	Screws	Screws	–
	–	–	-25...240 °C	-25...240 °C	-30...70 °C
	–	–	-25...240 °C	-25...240 °C	-30...70 °C
	Page 501	Page 501	Page 501	Page 501	Page 501



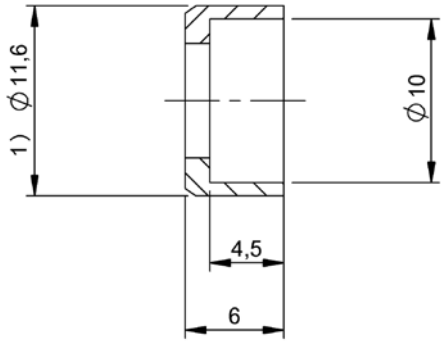
	BAM012N BIS Z-ZA-001	BAM012A BIS C-300-HG1	BAM012J BIS Z-HG-002	
Principle of operation	Access protection	Handle	Handle	
Use	Fixing for signal converters BIS U-602x	Socket for read/write heads Ø 14,5 mm	Socket for read/write heads Ø 18 mm	
Material	PA 6.6 black (nut) POM black (holder)	POM black	POM black	
Dimension	Ø 40 x 45 mm	Ø 14.5 x 120 mm	Ø 40 x 125 mm	
Mounting	Thread M30x1.5	—	—	
Ambient temperature	0...70 °C	0...70 °C	0...70 °C	
Ambient temperature	0...70 °C	0...70 °C	0...70 °C	
Productview	Page 502	Page 502	Page 502	

	BAM012K BIS Z-HG-003				
	Handle				
	Socket for read/write heads Ø 30 mm				
	POM black				
	Ø 40 x 125 mm				
	–				
	0...70 °C				
	0...70 °C				
	Page 502				



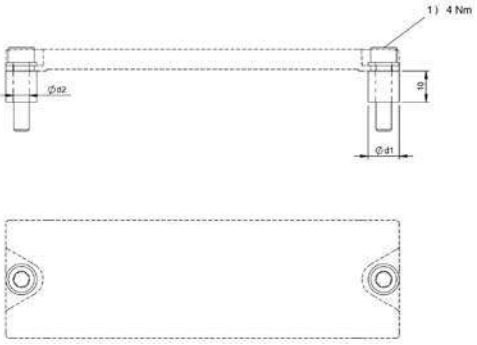
1) see remarks

BAM0127



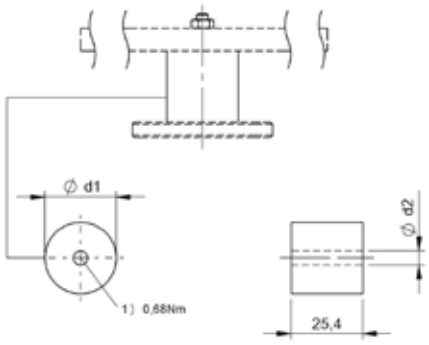
1) see remarks

BAM0128



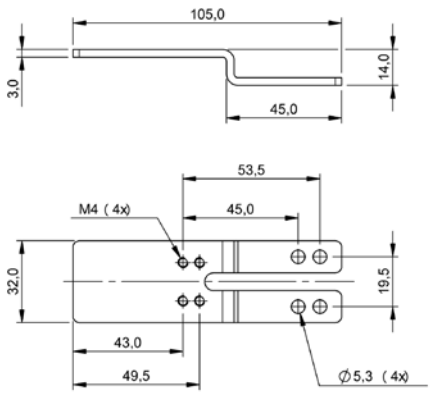
1) Tightening torque

BAM01LW

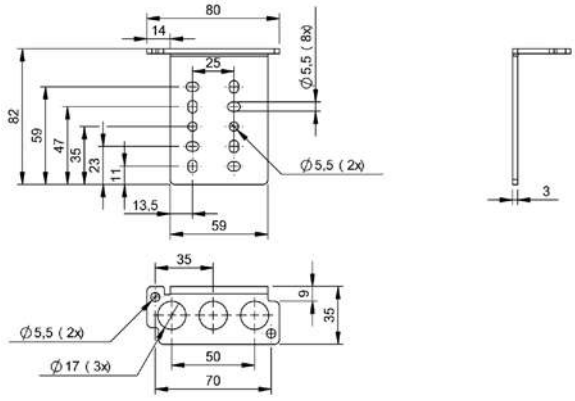


1) Tightening torque

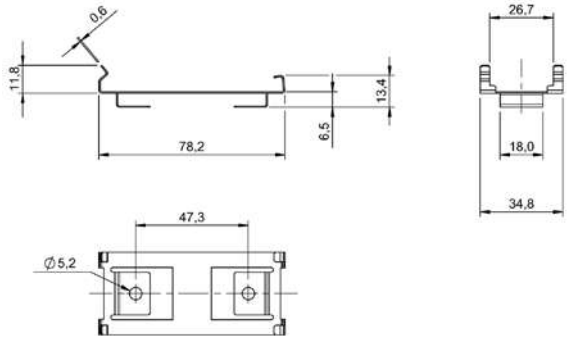
BAM020R



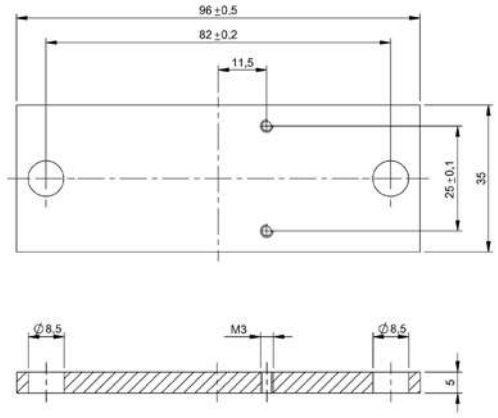
BAM01MY



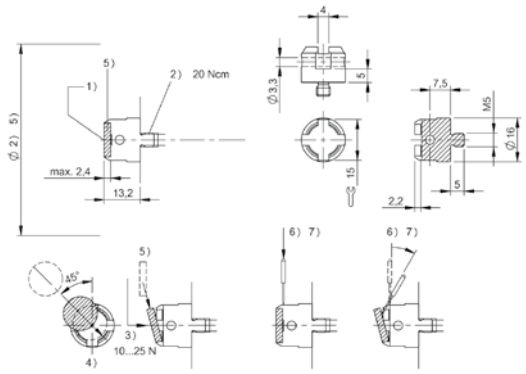
BAM02PN



BAM01Y3

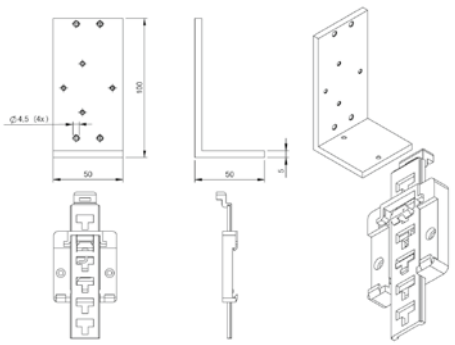


BAM012E

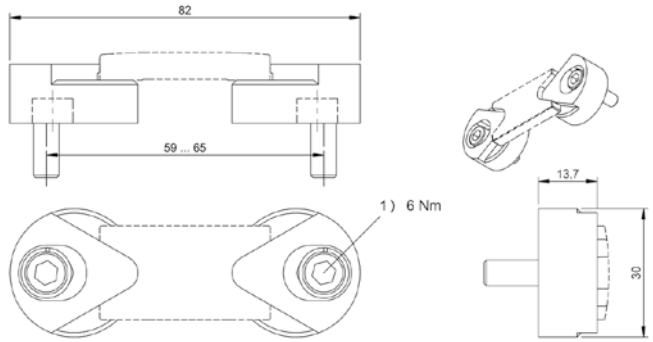


1) Sensing surface, 2) Tightening torque, 3) see remarks, 4) Data carrier installation, 5) Data carrier, 6) Caution: Protect eyes, 7) Replace data carrier

BAM012H

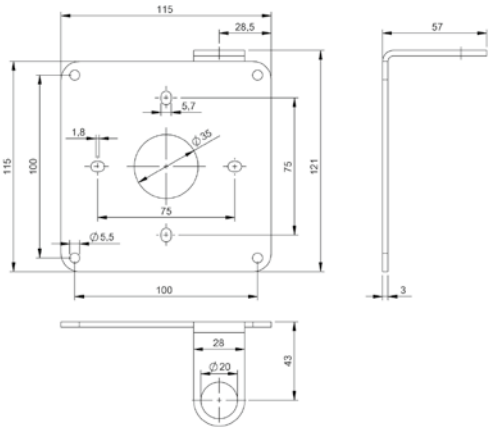


BAM012L

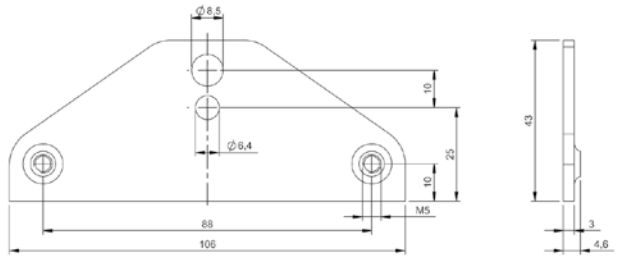


1) Tightening torque

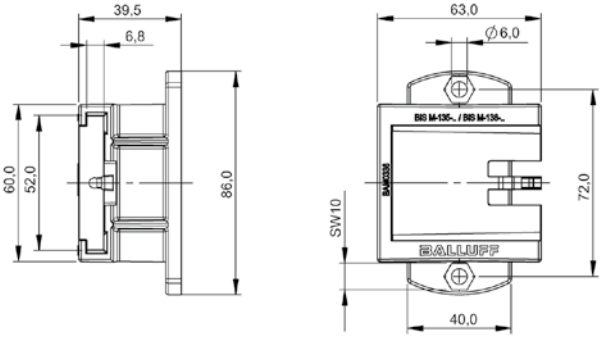
BAM01FT



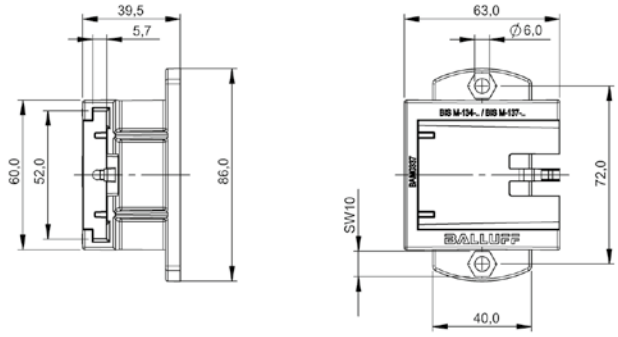
BAM01JK



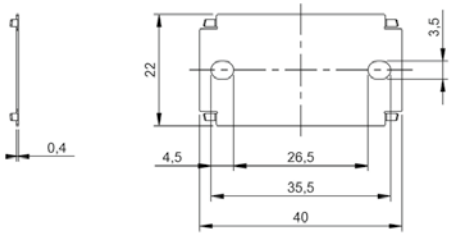
BAM01KN



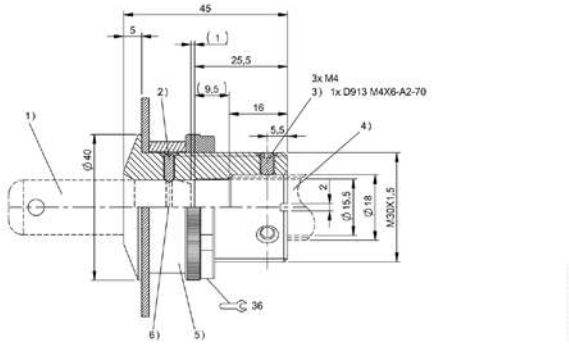
BAM0336



BAM0337

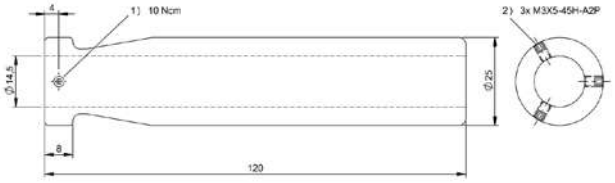


BAM012M



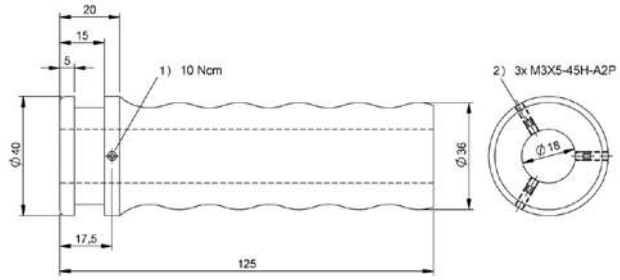
1) Data carrier, 2) Spring-loaded compression piece, 3) Threaded pin, 4) Read/write head, 5) Spacer ring, 6) Notch in data carrier

BAM012N



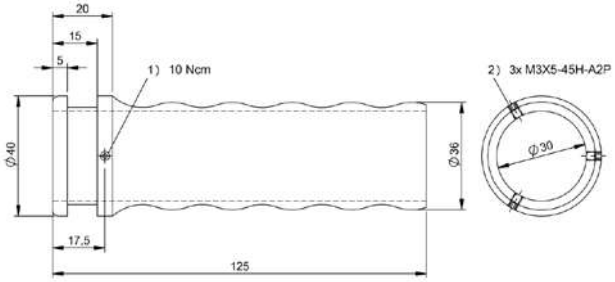
1) Tightening torque, 2) Threaded pin

BAM012A



1) Tightening torque, 2) Threaded pin

BAM012J



1) Tightening torque, 2) Threaded pin

BAM012K


	BAM02NM BAM BD-LG-003-0900	BAM02NN BAM BD-LG-003-1200	BAM02NP BAM BD-LG-003-1650	
Principle of operation	Tilted mirror	Tilted mirror	Tilted mirror	
Use	For floor mount of safety light curtain BLG	For floor mount of safety light curtain BLG	For floor mount of safety light curtain BLG	
Material	Glass painted yellow Steel	Glass painted yellow Steel	Glass painted yellow Steel	
Dimension	880 x 36 x 89 mm	1180 x 36 x 89 mm	1630 x 36 x 89 mm	
Mounting	Screws	Screws	Screws	
Productview	Page 508	Page 508	Page 508	



	BAM02NF BAM MB-LG-024-1000-1	BAM02NH BAM MB-LG-024-1200-1	BAM02NJ BAM MB-LG-024-1650-1	
Principle of operation	Holding Safety Light Curtains	Holding Safety Light Curtains	Holding Safety Light Curtains	
Use	For safety light curtain BLG	For safety light curtain BLG	For safety light curtain BLG	
Material	Steel painted yellow Aluminum	Steel painted yellow Aluminum	Steel painted yellow Aluminum	
Dimension	1018 x 195 x 195 mm	1218 x 195 x 195 mm	1668 x 195 x 195 mm	
Mounting	Screws	Screws	Screws	
Productview	Page 508	Page 509	Page 509	

BAM02NR BAM BD-LG-003-1900
Tilted mirror
For floor mount of safety light curtain BLG
Glass painted yellow Steel
1880 x 36 x 89 mm
Screws
Page 508

BAM02N6 BAM IA-XA-017-01
Accessories Safety Light Curtains
For safety light curtain BLG
Rubber, Shore hardness 57
Ø 25 x 20 mm
Screws
Page 508

BAM02N7 BAM IA-XA-017-02
Accessories Safety Light Curtains
For safety light curtain BLG
Rubber, Shore hardness 57
Ø 25 x 20 mm
Screws
Page 508

BAM02NC BAM MB-LG-023-B13-3
Accessories Safety Light Curtains
For safety light curtain BLG
Steel zinc plated
35 x 29.7 x 39.6 mm
Screws
Page 508

BAM02NE BAM MB-LG-024-0600-1
Holding Safety Light Curtains
For safety light curtain BLG
Steel painted yellow Aluminum
618 x 195 x 195 mm
Screws
Page 508

BAM02NK BAM MB-LG-024-1900-1
Holding Safety Light Curtains
For safety light curtain BLG
Steel painted yellow Aluminum
1918 x 195 x 195 mm
Screws
Page 509

BAM02N2 BAM MC-LG-036-T01-3
Accessories Safety Light Curtains
For safety light curtain BLG
Steel zinc plated
70 x 195 x 41 mm
Screws, terminals
Page 509

BAM02MZ BAM MC-LG-037-B07-3
Accessories Safety Light Curtains
For safety light curtain BLG
Steel zinc plated
34.5 x 37.8 x 30.7 mm
Screws, terminals
Page 509

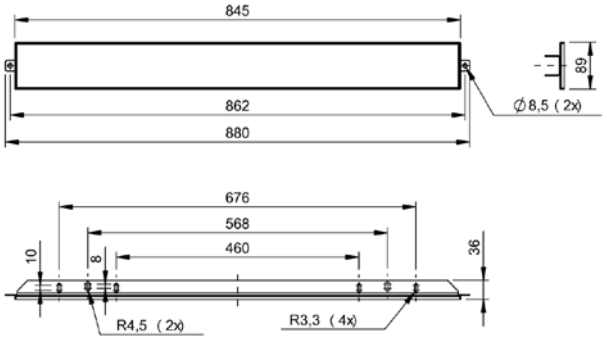
BAM02N0 BAM MC-LG-038-B07-01-3
Accessories Safety Light Curtains
For safety light curtain BLG
Anodized aluminum
34.5 x 195 x 12 mm
Screws
Page 509

BAM02N1 BAM MC-LG-038-B07-02-3
Accessories Safety Light Curtains
For safety light curtain BLG
Anodized aluminum
34.5 x 195 x 12 mm
Clamps
Page 509

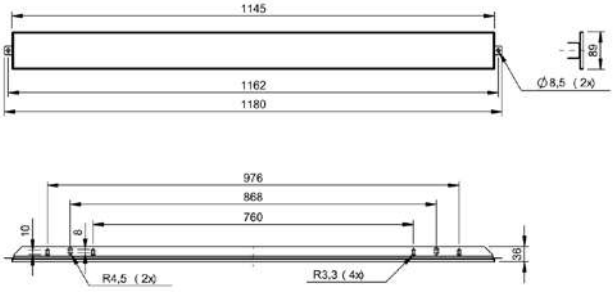


	BAM02N3 BAM MC-LG-040-B08-3	**BAM02N5** BAM MC-LG-041-B07-3-L	**BAM02N4** BAM MC-LG-041-B07-3-S	
Principle of operation	Accessories Safety Light Curtains	Accessories Safety Light Curtains	Accessories Safety Light Curtains	
Use	For safety light curtain BLG	For safety light curtain BLG	For safety light curtain BLG	
Material	Steel zinc plated	Steel zinc plated	Steel zinc plated	
Dimension	50 x 195 x 195 mm	34.5 x 30 x 26.5 mm	34.5 x 30 x 26.5 mm	
Mounting	Screws	Screws, terminals	Screws, terminals	
Productview	Page 509	Page 509	Page 509	

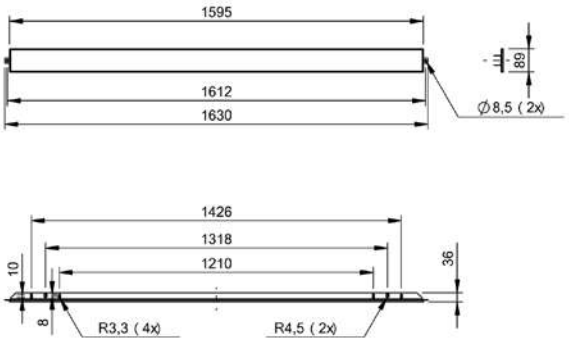
	BAM02P9 BAM TO-LG-011-14	BAM02PA BAM TO-LG-011-30			
	Test rod Safety Light Curtains	Test rod Safety Light Curtains			
	For safety light curtain BLG	For safety light curtain BLG			
	Aluminum anodized, black	Aluminum anodized, black			
	Ø 14 x 300 mm	Ø 30 x 300 mm			
	—	—			
	Page 510	Page 510			



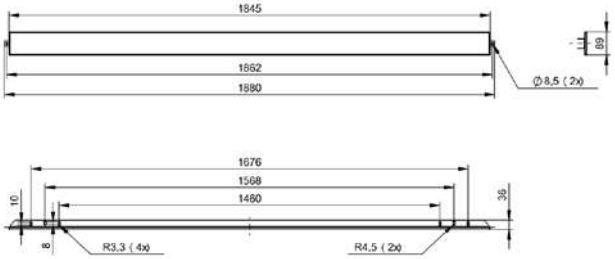
BAM02NM



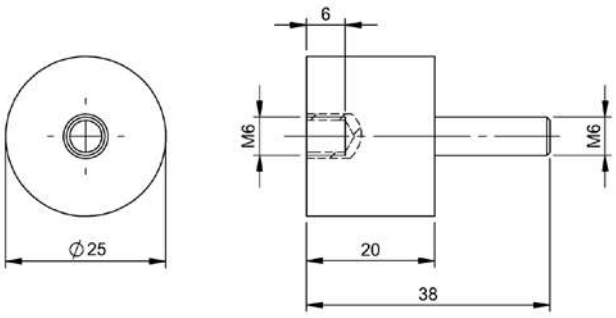
BAM02NN



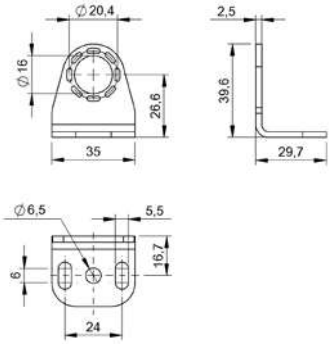
BAM02NP



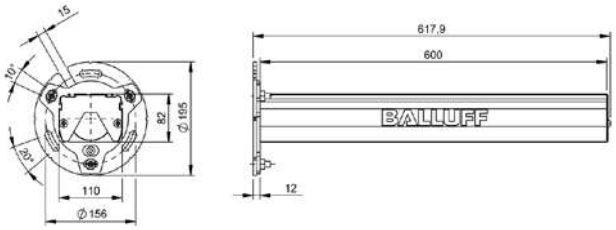
BAM02NR



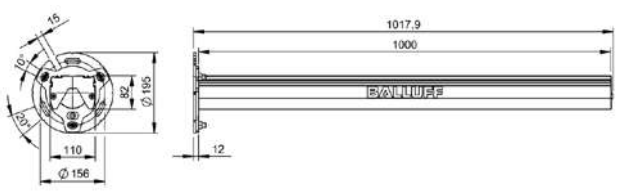
BAM02N6, BAM02N7



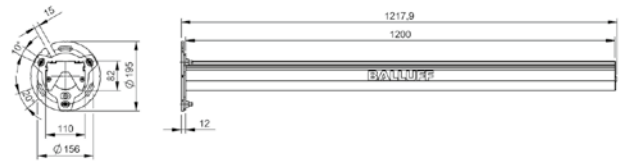
BAM02NC



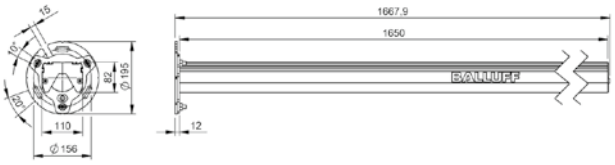
BAM02NE



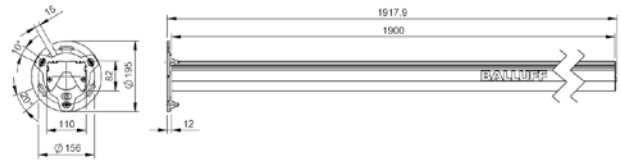
BAM02NF



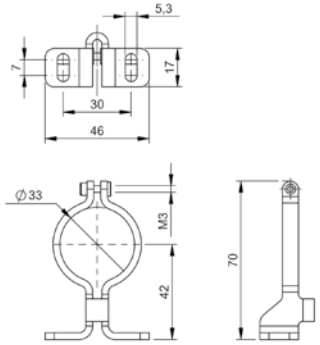
BAM02NH



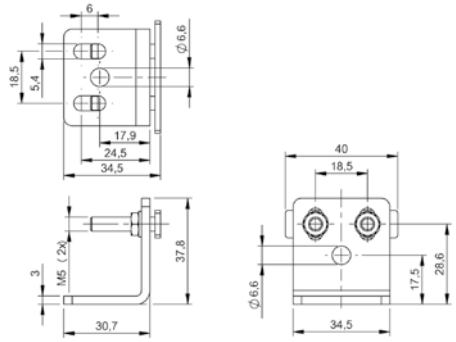
BAM02NJ



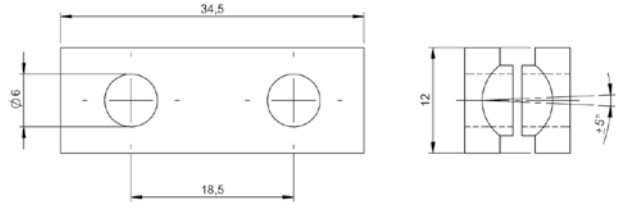
BAM02NK



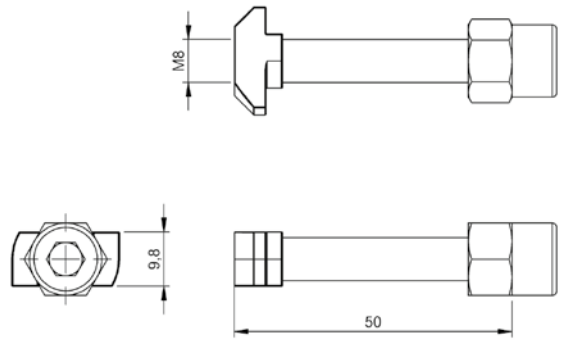
BAM02N2



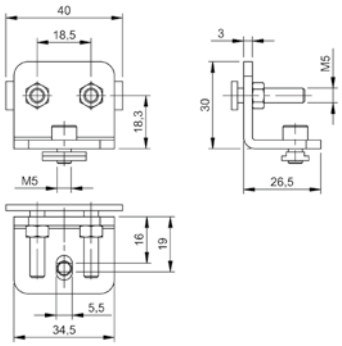
BAM02MZ



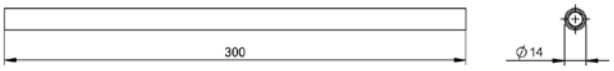
BAM02N0, BAM02N1



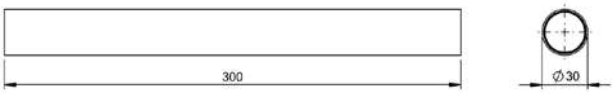
BAM02N3



BAM02N5, BAM02N4



BAM02P9



BAM02PA



	BAM02HE BAM MB-XA-021-B12-4	**BAM02HF** BAM MB-XA-022-B12-4	**BAM02UY** BAM MB-X0-028-B37-3	
Version	Mounting brackets	Mounting brackets	Mounting brackets	
Use	for BLA Light Array	for BLA Light Array	for photoelectric distance sensors BOD 37M	
Material	Stainless steel (1.4301)	Stainless steel (1.4301)	Steel Zinc plated	
Dimension	80 x 78 x 75 mm	80 x 38 x 75 mm	118 x 2.5 x 75 mm	
Mounting	Screws	Screws	Screws	
Productview	Page 518	Page 518	Page 518	



	BAM00T0 BOS 18,0-HW-3	**BAM00T2** BOS 18,0-HW-6	**BAM01YW** BAM MB-XA-013-Q08-4	
Version	Mounting brackets, 2 adjustable axes	Mounting brackets, 3 adjustable axes	Mounting brackets, 2 adjustable axes	
Use	for photoelectric sensors BOS 11K, for photoelectric sensors BOS 16K, for photoelectric sensors BOS 18	for photoelectric sensors BOS 11K, for photoelectric sensors BOS 16K, for photoelectric sensors BOS 18	for photoelectric sensors BOS Q08M	
Material	Steel Zinc plated	Steel Zinc plated	Stainless steel (1.4301)	
Dimension	25 x 43 x 32 mm	42 x 50 x 50 mm	50 x 14 x 18 mm	
Mounting	Screws	Screws	Screws	
Productview	Page 519	Page 519	Page 519	





	BAM037F BMS AD-M-005-D12/X01	BAM037H BMS AD-M-005-D12/X02	BAM037R BMS AD-M-005-D12/X03	BAM00PT BOS 11-HW-1	BAM00RY BOS 18,0-HW-1
	Adjusting unit	Adjusting unit	Adjusting unit	Mounting bracket	Mounting brackets, 2 adjustable axes
	for photoelectric sensors BOS 5K, for photoelectric sensors BOS 6K, for photoelectric sensors BOS R020	for photoelectric sensors BOS 21M, for photoelectric sensors BOS 23K, for photoelectric sensors BOS Q08, for photoelectric distance sensors BOD 24K	for sensors and fiber optics Ø2, for sensors and fiber optics Ø3, for sensors and fiber optics Ø4, for sensors and fiber optics Ø5, for photoelectric sensors BOH Q06, for photoelectric sensors BOH R002, for photoelectric sensors BOH R010, for photoelectric sensors BOH Z001	for photoelectric sensors BOS 11K, for photoelectric sensors BOS	for photoelectric sensors BOS 18
	Aluminum anodized, natural Nickel-plated brass	Aluminum anodized, natural Nickel-plated brass	Aluminum anodized, natural Nickel-plated brass	Stainless steel	Steel Zinc plated
	33 x 12.5 x 92 mm	50 x 12.5 x 116 mm	28 x 14.5 x 98 mm	32 x 45.5 x 66.6 mm	20 x 35 x 35 mm
	Screws, clamps	Screws, clamps	Screws, clamps	Screws	Screws
	Page 518	Page 518	Page 518	Page 518	Page 518





	BAM00T4 BOS 2-HW-1	BAM00T5 BOS 2-HW-2	BAM00T6 BOS 2-HW-3	BAM00U5 BOS 5-HW-1	BAM00U6 BOS 5-HW-2
	Mounting brackets, 3 adjustable axes	Mounting brackets, 2 adjustable axes	Mounting brackets, 2 adjustable axes	Mounting brackets, 2 adjustable axes	Mounting brackets, 1 adjustable axis
	for photoelectric sensors BOS 2K	for photoelectric sensors BOS 2K	for photoelectric sensors BOS 2K	for photoelectric sensors BOS 5K	for photoelectric sensors BOS 5K
	ABS	Steel Zinc plated	Steel Zinc plated	Stainless steel	Stainless steel
	17.5 x 25 x 44.7 mm	11 x 17 x 36 mm	11 x 24 x 18 mm	14 x 21.5 x 42.5 mm	21.5 x 55.2 x 12.7 mm
	Screws	Screws	Screws	Screws	Screws
	Page 519	Page 519	Page 519	Page 519	Page 519



	BAM00U7 BOS 5-HW-3	BAM00UF BOS 5-HW-9	BAM0227 BAM MB-XO-014-B10-4-BLS	
Version	Mounting brackets, 2 adjustable axes	Mounting bracket	Mounting brackets	
Use	for photoelectric sensors BOS 5K	for photoelectric sensors BOS 5K, for photoelectric sensors BOS	for photoelectric sensors BOS 6K	
Material	Stainless steel	Steel Zinc plated	Stainless steel (1.4301)	
Dimension	29 x 56 x 46 mm	29 x 56 x 65 mm	76.4 x 16.2 x 30 mm	
Mounting	Screws	Screws	Screws	
Productview	Page 520	Page 520	Page 520	



	BAM0305 BMS CS-M-D12-S6K-03	BAM00UH BOS 6-HW-1	BAM02ZE BAM MB-XO-032-B16-1-BR2	
Version	Holder	2 adjustable axes	Mounting brackets, 2 adjustable axes	
Use	for photoelectric sensors BOS 6K	for photoelectric sensors BOS 6K	for photoelectric sensors BOS 21M	
Material	Die-cast zinc Stainless steel (1.4301)	Steel Zinc plated	Aluminum anodized, natural	
Dimension	Ø 32 x 16 mm	14 x 30 x 20 mm	50 x 61 x 40 mm	
Mounting	Screws, clamps	Screw M3	Screws	
Productview	Page 521	Page 521	Page 521	





	BAM0228 BAM MB-XO-014-B10-4-RLS	BAM0225 BAM MB-XO-014-B10-4-RRR	BAM022A BAM MC-XO-030-6K-4	BAM0306 BMS CS-M-D12-FX18-02	BAM0304 BMS CS-M-D12-S6K-01
	Mounting brackets	Mounting brackets	Mounting brackets	Mounting block	Holder
	for photoelectric sensors BOS 6K	for photoelectric sensors BOS 6K	for photoelectric sensors BOS 6K	for holding rods with Ø12 mm, for photoelectric sensors BOS 23K	for photoelectric sensors BOS 6K
	Stainless steel (1.4301)	Stainless steel (1.4301)	Aluminum Anodized	Die-cast zinc	Die-cast zinc
	60 x 16.2 x 47 mm	60 x 33.2 x 32 mm	32 x 16.2 x 16 mm	12 x 24 x 37 mm	Ø 32 x 16 mm
	Screws	Screws	Screws	Screws, clamps	Screws, clamps
	Page 520	Page 520	Page 520	Page 520	Page 520





	BAM00T7 BOS 21-AD-1	BAM00T9 BOS 21-HW-1	BAM00TA BOS 21-HW-2	BAM01FK BAM MB-XO-006-B05-4	BAM01FM BAM MB-XO-007-B05-4
	Holder, 1 adjustable axis	Mounting brackets, 2 adjustable axes	Mounting brackets, 2 adjustable axes	Mounting brackets, 2 adjustable axes	Mounting brackets, 1 adjustable axis
	for photoelectric sensors BOS 25K, for photoelectric sensors BOS 26K, for photoelectric sensors BOS 21M, For BOS R-1 reflectors	for photoelectric sensors BOS 21M	for photoelectric sensors BOS 21M	for photoelectric sensors BOS 23K	for photoelectric sensors BOS 23K
	Aluminum Anodized	Steel Zinc plated	Steel Zinc plated	Stainless steel	Stainless steel (1.4301)
	50 x 48 x 30 mm	20 x 50 x 26.5 mm	25 x 28 x 40 mm	25 x 40 x 64.5 mm	44.3 x 58 x 65 mm
	Screws	Screws	Screws	Screws	Screws
	Page 521	Page 521	Page 521	Page 521	Page 521

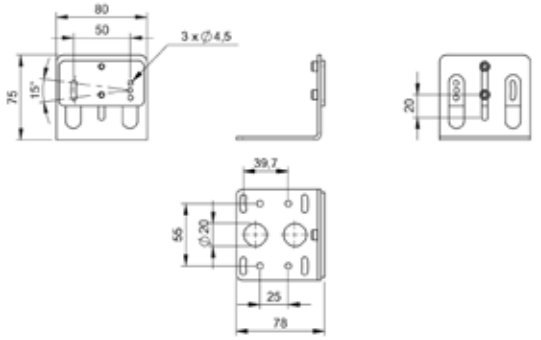


	BAM00TK BOS 26-HW-1	**BAM02KL** BMS CS-M-D12-B64K-12	**BAM003E** BMS AD-M-002-D12/D12	
Version	Mounting brackets, 2 adjustable axes	Mounting brackets	Adjusting unit	
Use	for photoelectric sensors BOS 26K	for photoelectric sensors BOS 64K	for sensors Ø12 mm	
Material	Steel Zinc plated	Aluminum Anodized	Stainless steel (1.4301)	
Dimension	19 x 48 x 47.6 mm	106 x 32 x 96 mm	57 x 45 x 50 mm	
Mounting	Screws	Screws	Screws, clamps	
Productview	Page 522	Page 522	Page 522	

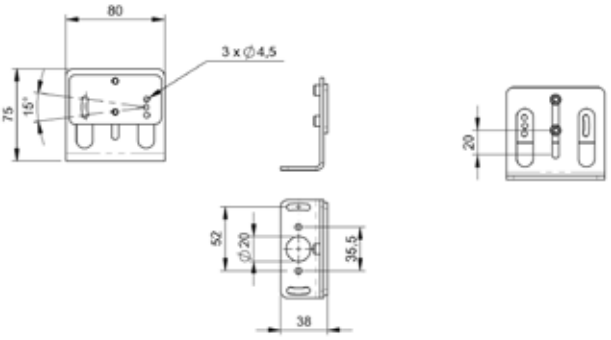




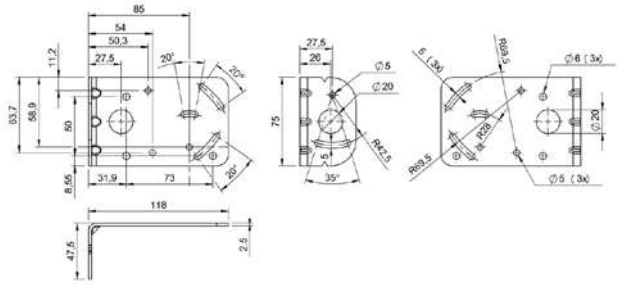
	BAM0038 BMS AD-M-002-D12/D18	BAM00U8 BOS 5-HW-4	BAM00U9 BOS 5-HW-5	BAM00UA BOS 5-HW-6	BAM027E BAM MC-XO-034-23K-4
	Adjusting unit	Mounting brackets, 1 adjustable axis	Mounting brackets, 1 adjustable axis	Mounting brackets, 1 adjustable axis	Adjusting unit
	for sensors Ø18 mm	for BOS R-25 reflectors, for BOS R-10 reflectors	for BOS R-26 reflectors	for BOS R-9 reflectors, for BOS R-22 reflectors	for photoelectric sensors BOS 23K
	Stainless steel (1.4301)	Steel Zinc plated	Steel Zinc plated	Steel Zinc plated	—
	57 x 45 x 50 mm	28 x 58 x 113 mm	20 x 35 x 44.2 mm	20 x 50 x 61 mm	52.5 x 42 x 50 mm
	—	Screws	Screws	Screws	Screw M4
	Page 522	Page 522	Page 522	Page 522	Page 522



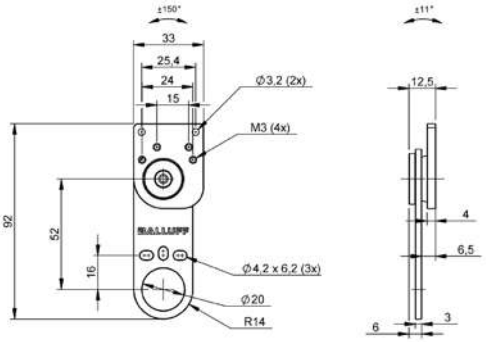
BAM02HE



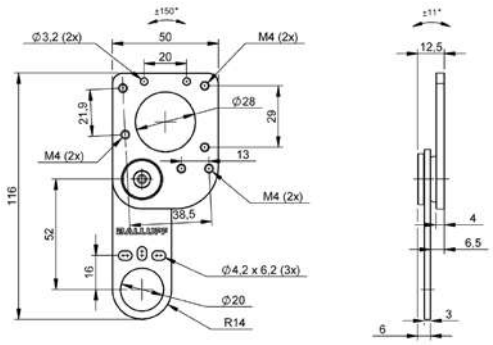
BAM02HF



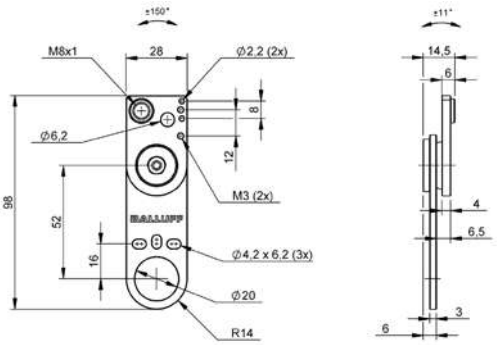
BAM02UY



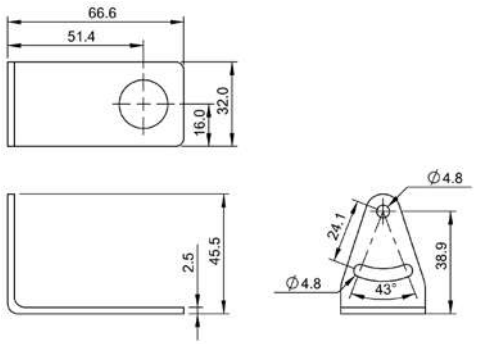
BAM037F



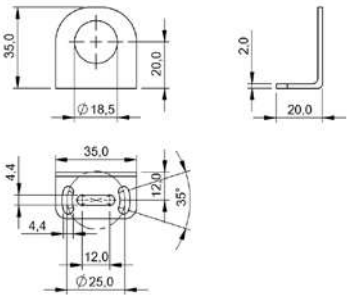
BAM037H



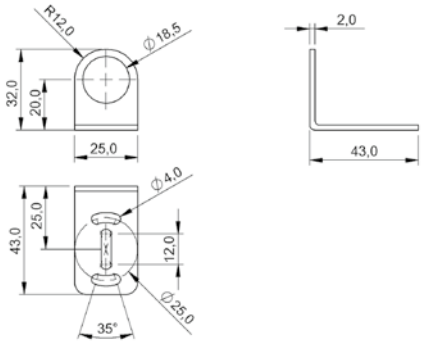
BAM037R



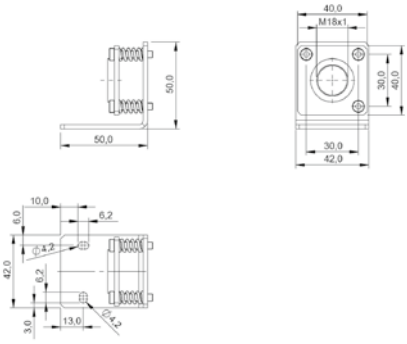
BAM00PT



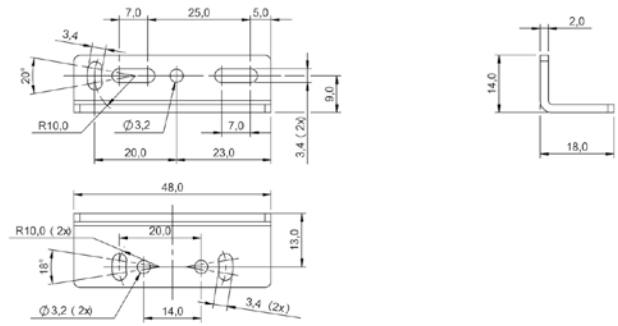
BAM00RY



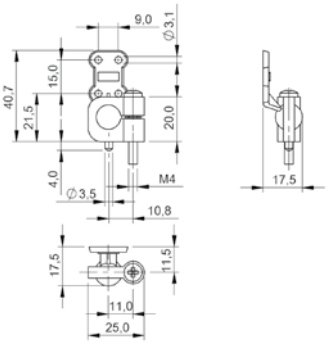
BAM00T0



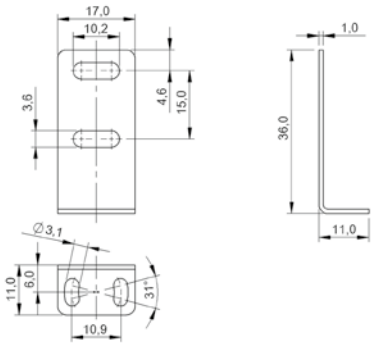
BAM00T2



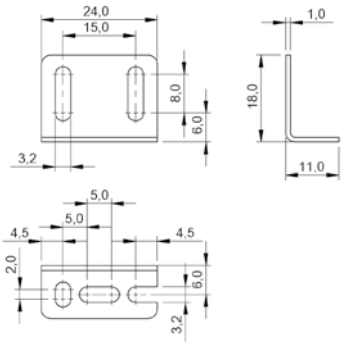
BAM01YW



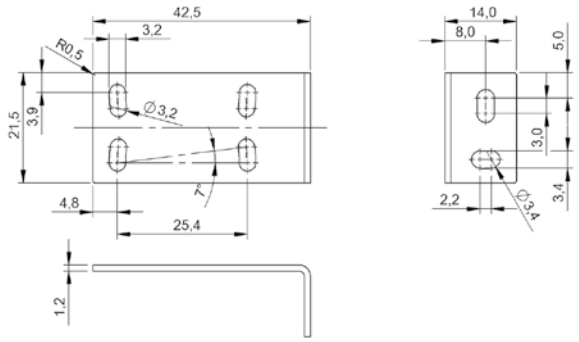
BAM00T4



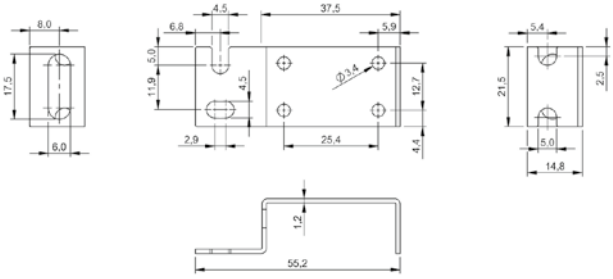
BAM00T5



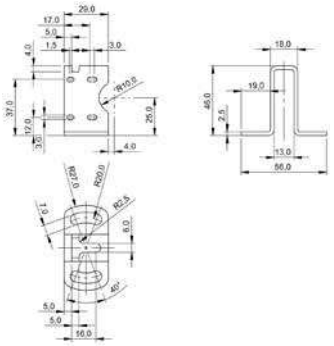
BAM00T6



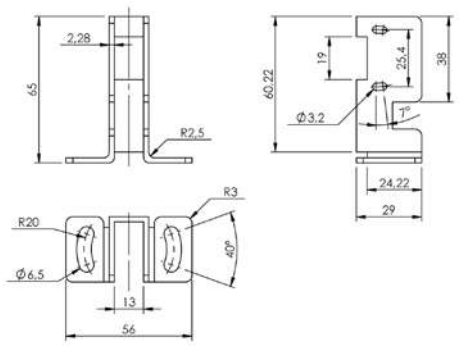
BAM00U5



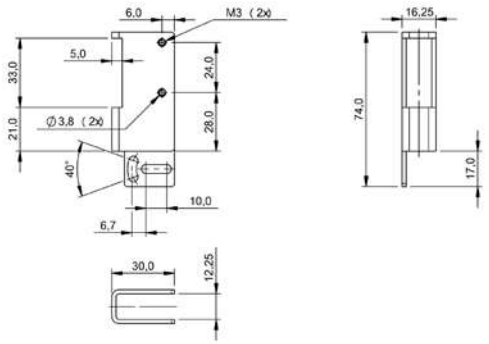
BAM00U6



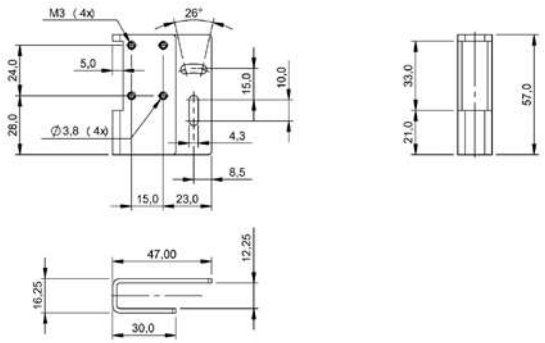
BAM00U7



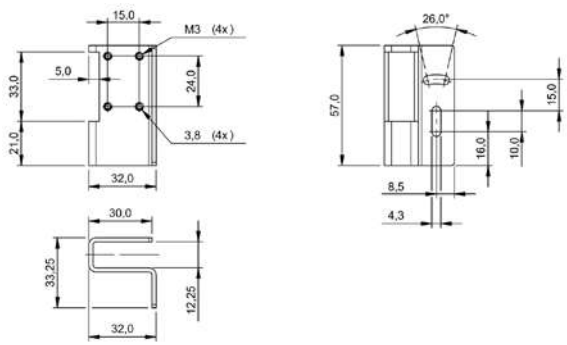
BAM00UF



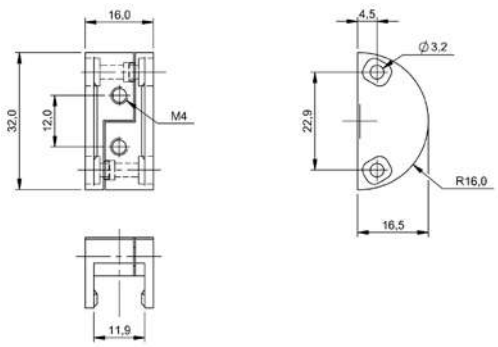
BAM0227



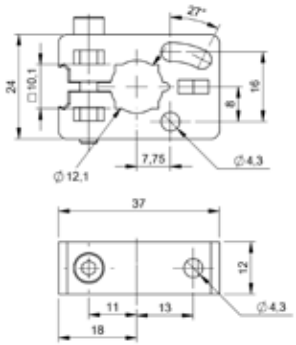
BAM0228



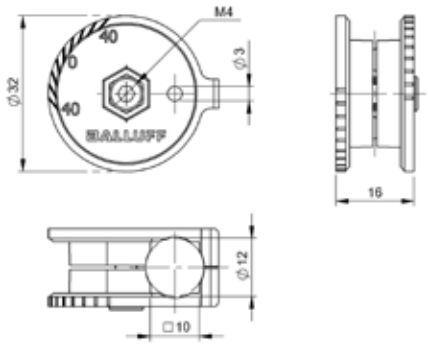
BAM0225



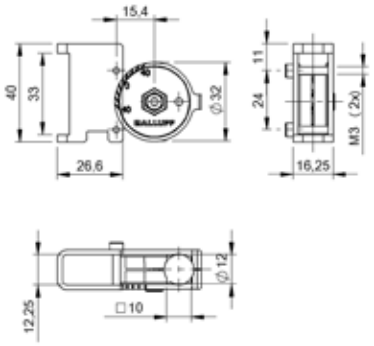
BAM022A



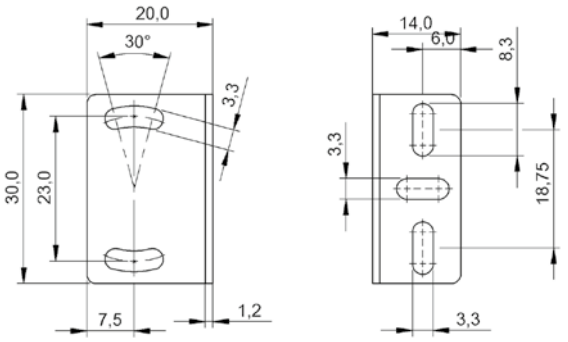
BAM0306



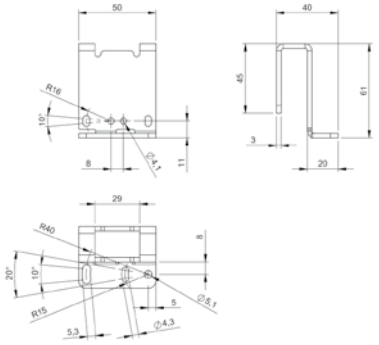
BAM0304



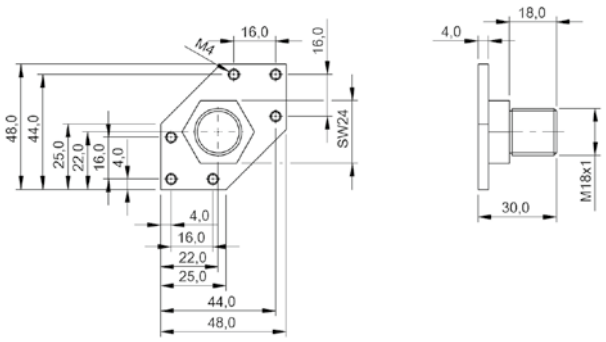
BAM0305



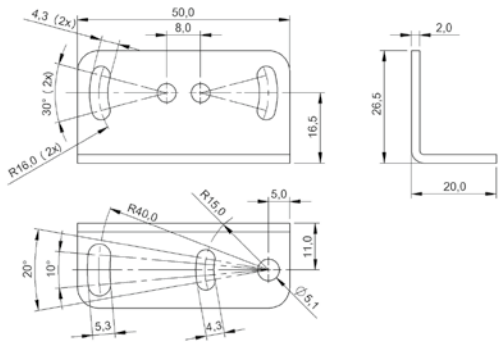
BAM00UH



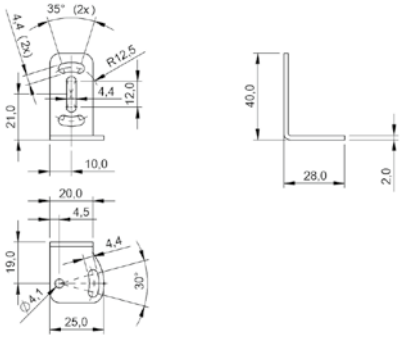
BAM02ZE



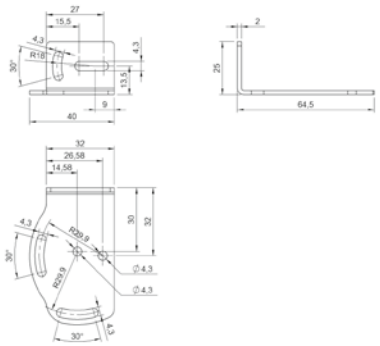
BAM00T7



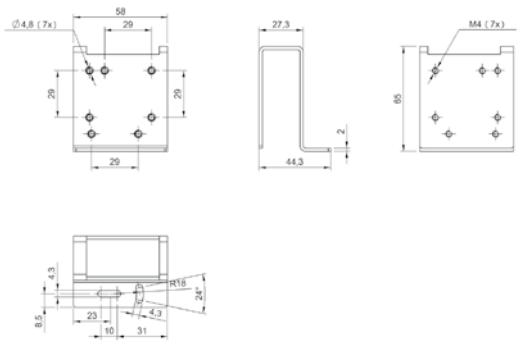
BAM00T9



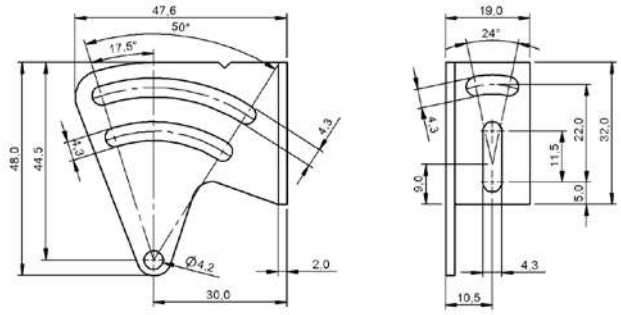
BAM00TA



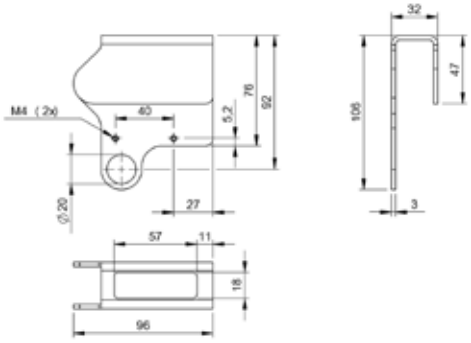
BAM01FK



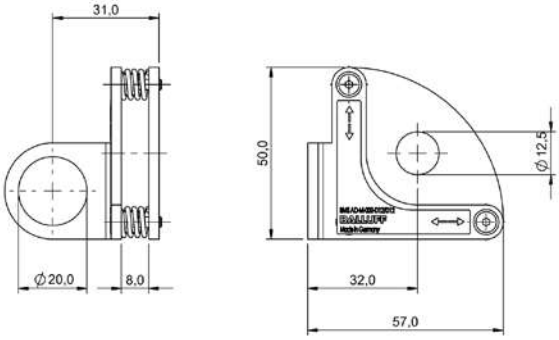
BAM01FM



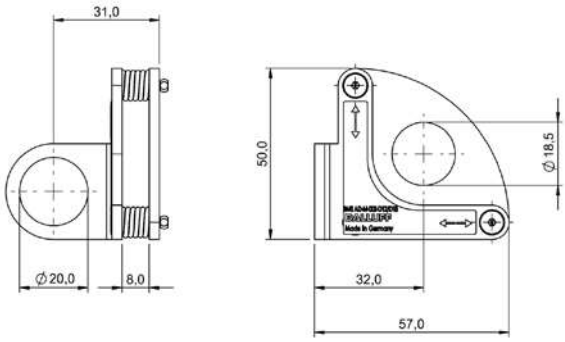
BAM00TK



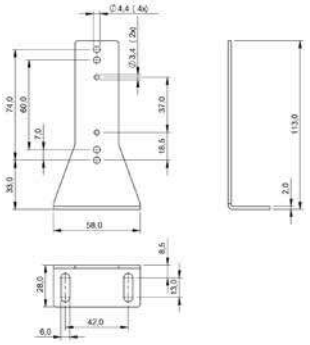
BAM02KL



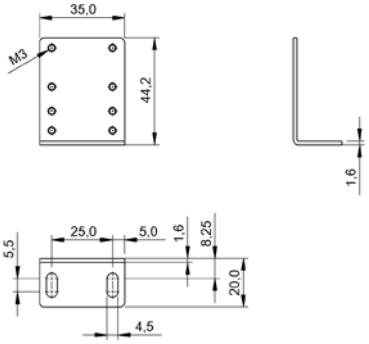
BAM003E



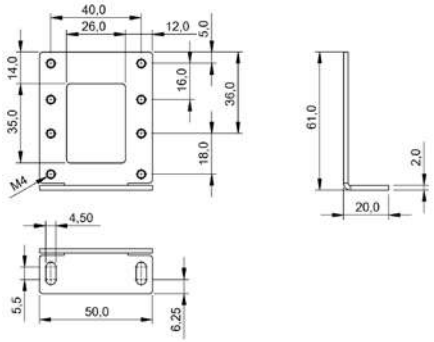
BAM0038



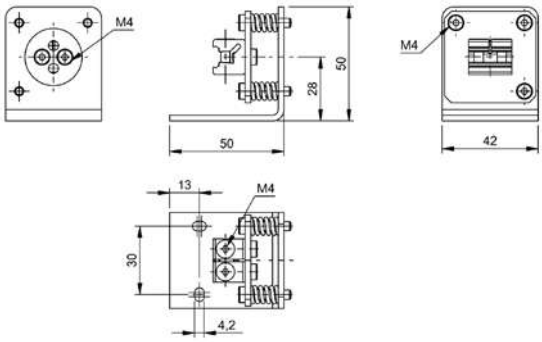
BAM00U8



BAM00U9



BAM00UA



BAM027E



	BAM01K6 BMF 103-HW-100	BAM01K7 BMF 103-HW-102	BAM00K9 BMF 103-HW-42	
Principle of operation	BMF mounting bracket	BMF mounting bracket	BMF mounting bracket	
Application	Pneumatic flat cylinder with integrated groove	Pneumatic flat cylinder with integrated groove	Pneumatic flat cylinder with integrated groove	
Use	for magnetic sensors BMF 103	for magnetic sensors BMF 103	for magnetic sensors BMF 103	
Material	Brass nickel plated	Brass nickel plated	Brass nickel plated	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
Productview	Page 528	Page 528	Page 528	



	BAM00L1 BMF 303-HW-31	BAM00L2 BMF 303-HW-33	BAM00L4 BMF 303-HW-40	
Principle of operation	BMF mounting bracket	BMF mounting bracket	BMF mounting bracket	
Application	Pneumatic cylinder with integrated groove	Pneumatic cylinder with integrated groove	Pneumatic cylinder with integrated groove	
Use	for magnetic sensors BMF 303	for magnetic sensors BMF 303	for magnetic sensors BMF 303	
Material	Nickel silver	Aluminum	Brass nickel plated	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
Productview	Page 529	Page 529	Page 529	





	BAM00KA BMF 103-HW-43	BAM00KN BMF 103-HW-85	BAM01K9 BMF 303-HW-101	BAM00KZ BMF 303-HW-28	BAM00L0 BMF 303-HW-30
	BMF mounting bracket	BMF mounting bracket	BMF mounting bracket	BMF mounting bracket	BMF mounting bracket
	Pneumatic flat cylinder with integrated groove	Pneumatic cylinder with integrated groove	Pneumatic cylinder with integrated groove	Pneumatic cylinder with integrated groove	Pneumatic cylinder with integrated groove
	for magnetic sensors BMF 103	for magnetic sensors BMF 103	for magnetic sensors BMF 303	for magnetic sensors BMF 303	for magnetic sensors BMF 303
	Brass nickel plated	Aluminum	Aluminum Anodized	Brass nickel plated	Brass nickel plated
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	Page 528	Page 528	Page 528	Page 528	Page 528





	BAM00L6 BMF 303-HW-51	BAM00L7 BMF 303-HW-59	BAM00L8 BMF 303-HW-60	BAM00LE BMF 303-HW-69	BAM00LF BMF 303-HW-80
	BMF mounting bracket	BMF mounting bracket	BMF mounting bracket	BMF mounting bracket	BMF mounting bracket
	Pneumatic cylinder with integrated groove, Holder suitable for 2 T slot dimension.	Pneumatic cylinder, round without groove or tie rod, Piston diameter 8 - 80 mm	Pneumatic cylinder with integrated groove, Used with BMF 303-HW-51, Holder suitable for 2 T slot dimension.	Pneumatic cylinder with integrated groove, Fabco Pancake cylinder	Pneumatic cylinder with integrated mounting rail
	for magnetic sensors BMF 303	for magnetic sensors BMF 303	for magnetic sensors BMF 303	for magnetic sensors BMF 303	for magnetic sensors BMF 303
	Aluminum Anodized	Aluminum	Aluminum	Aluminum	Aluminum Anodized
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	Page 529	Page 529	Page 529	Page 529	Page 529



	BAM01F0 BMF 303-HW-97	BAM01K8 BMF 305-HW-106	BAM00LJ BMF 305-HW-20	
Principle of operation	BMF mounting bracket	BMF mounting bracket	BMF mounting bracket	
Application	Pneumatic cylinder with integrated groove	Pneumatic cylinder with integrated groove	Pneumatic cylinder with integrated groove	
Use	for magnetic sensors BMF 303	for magnetic sensors BMF 305	for magnetic sensors BMF 305	
Material	Brass nickel plated	Aluminum Anodized	Brass nickel plated	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
Productview	Page 530	Page 530	Page 530	



	BAM01EZ BMF 305-HW-98	BAM01EY BMF 305-HW-99	BAM01M9 BMF 235-HW-109	
Principle of operation	BMF mounting bracket	BMF mounting bracket	BMF mounting bracket	
Application	Pneumatic cylinder with integrated groove	Pneumatic cylinder with integrated groove, Holder suitable for 2 T slot dimension.	Pneumatic cylinder with tie rods, Piston diameter: any	
Use	for magnetic sensors BMF 305	for magnetic sensors BMF 305	for magnetic sensors BMF 235	
Material	Brass nickel plated	Aluminum Anodized	Aluminum	
Ambient temperature	-40...85 °C	-40...85 °C	—	
Productview	Page 531	Page 531	Page 531	

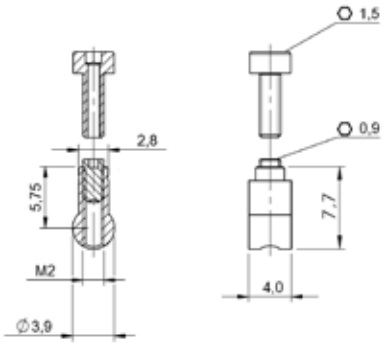




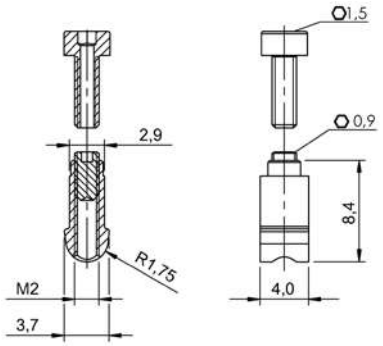
	BAM00LP BMF 305-HW-24	BAM00LT BMF 305-HW-26	BAM00LU BMF 305-HW-27	BAM00LW BMF 305-HW-32	BAM01C4 BMF 305-HW-92
	BMF mounting bracket	BMF mounting bracket	BMF mounting bracket	BMF mounting bracket	BMF mounting bracket
	Pneumatic cylinder, round without groove or tie rod, Piston diameter ≤8 - 80 mm	Pneumatic cylinder with integrated groove, Used with BMF 303-HW-51, Holder suitable for 2 T slot dimension., For slot dimensions see drawing	Pneumatic cylinder with integrated mounting rail	Pneumatic cylinder with integrated groove	Pneumatic cylinder with integrated groove
	for magnetic sensors BMF 305	for magnetic sensors BMF 305	for magnetic sensors BMF 305	for magnetic sensors BMF 305	for magnetic sensors BMF 305
	Brass nickel plated	Aluminum Anodized	Aluminum Anodized	Aluminum Anodized	Aluminum Anodized
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	Page 530	Page 530	Page 530	Page 530	Page 530



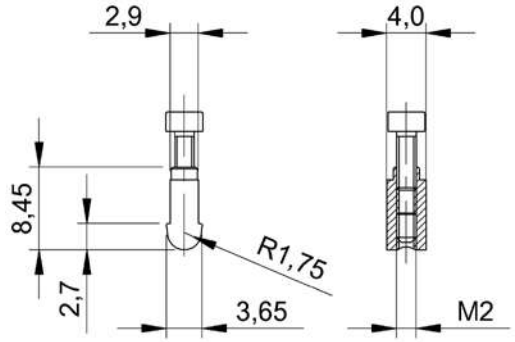

	BAM01MA BMF 235-HW-110	BAM01MC BMF 235-HW-111	BAM01Y9 BMF 307-HW-112	BAM00KR BMF 10E-HW-19	
	BMF mounting bracket	BMF mounting bracket	BMF mounting bracket	BMF mounting bracket	
	Pneumatic cylinder with tie rods, Piston diameter: any	Pneumatic cylinder with tie rods, Piston diameter: any	Pneumatic cylinder, round without groove or tie rod, Piston diameter ≤8 - 110 mm	Pneumatic cylinder, round without groove or tie rod, Piston diameter 8 - 63 mm	
	for magnetic sensors BMF 235	for magnetic sensors BMF 235	for magnetic sensors BMF 307, for magnetic sensors BMF 235	for magnetic sensors BMF 10E	
	Aluminum	Aluminum	Aluminum	Stainless steel (1.4305)	
	—	—	-40...85 °C	-40...85 °C	
	Page 531	Page 531	Page 531	Page 531	



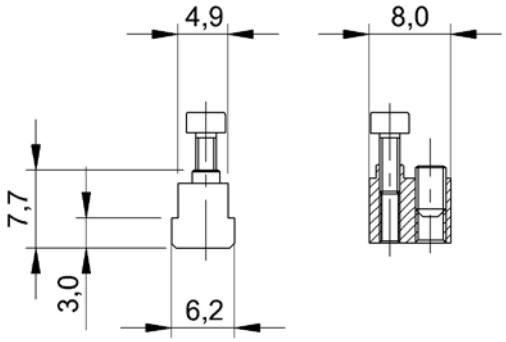
BAM01K6



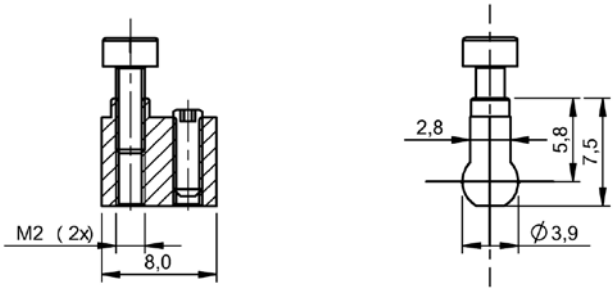
BAM01K7



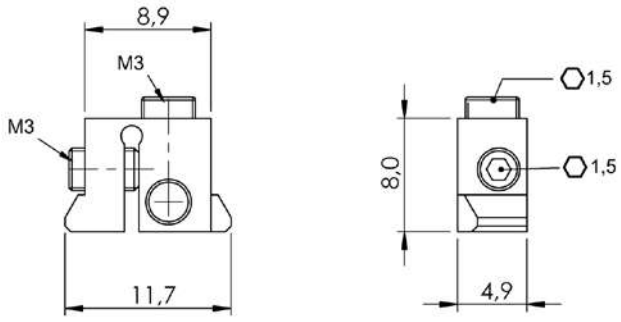
BAM00K9



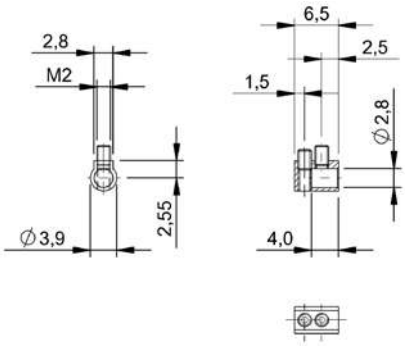
BAM00KA



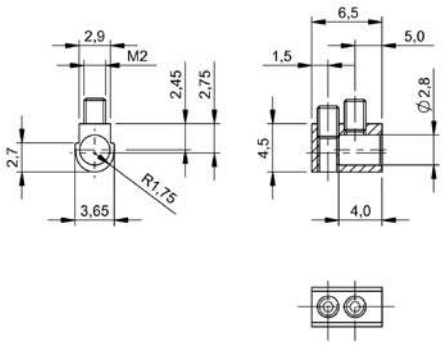
BAM00KN



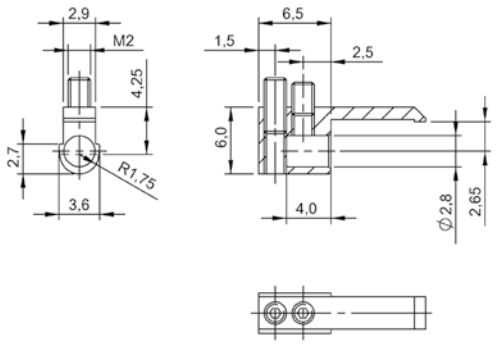
BAM01K9



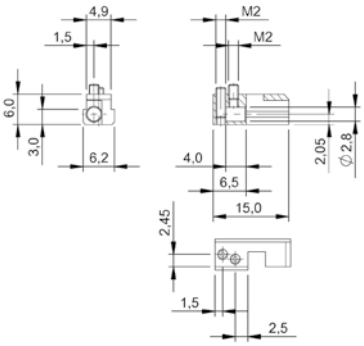
BAM00KZ



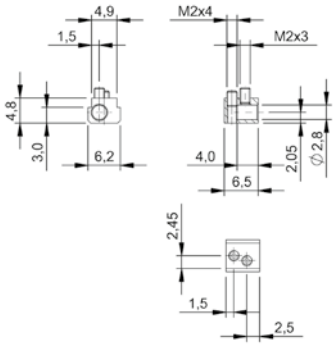
BAM00L0



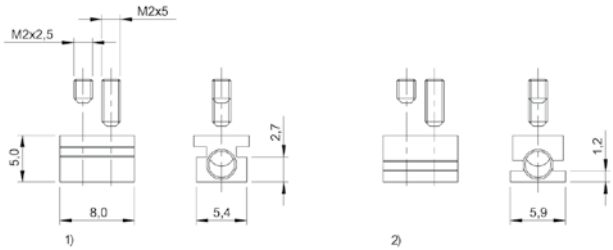
BAM00L1



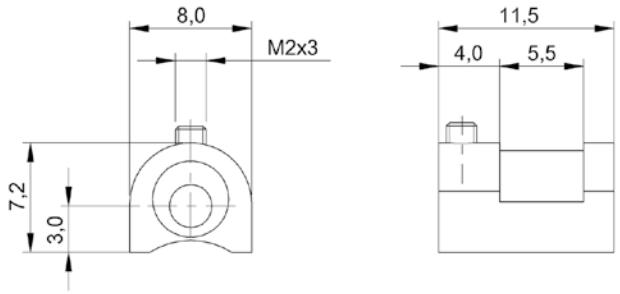
BAM00L2



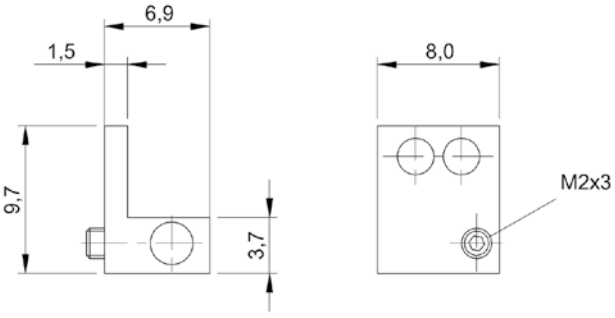
BAM00L4



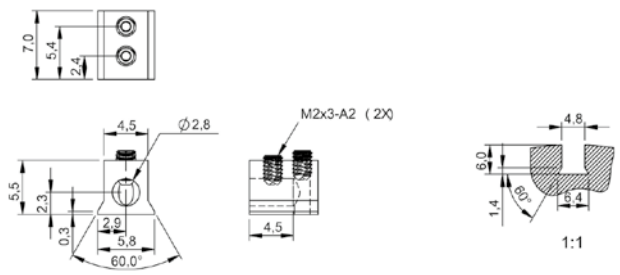
BAM00L6



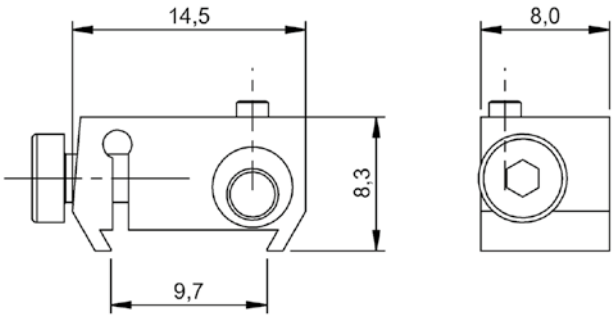
BAM00L7



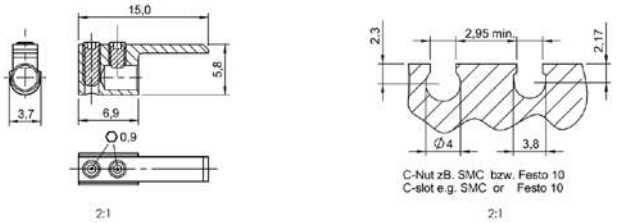
BAM00L8



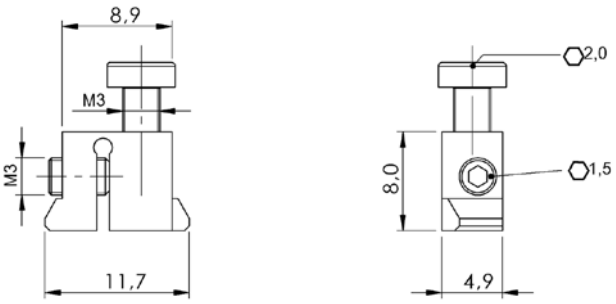
BAM00LE



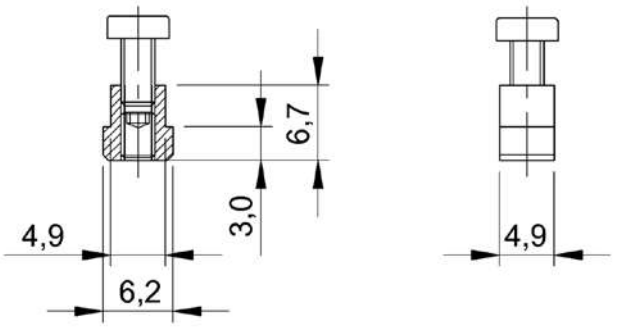
BAM00LF



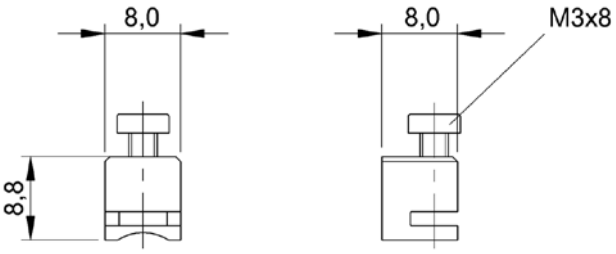
BAM01F0



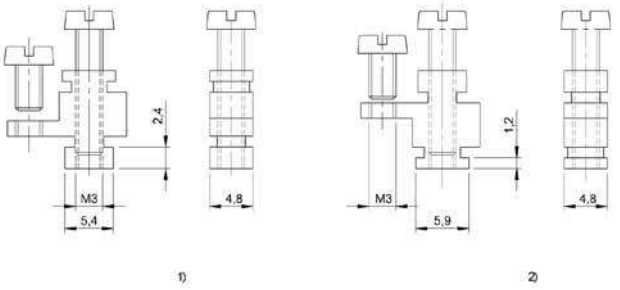
BAM01K8



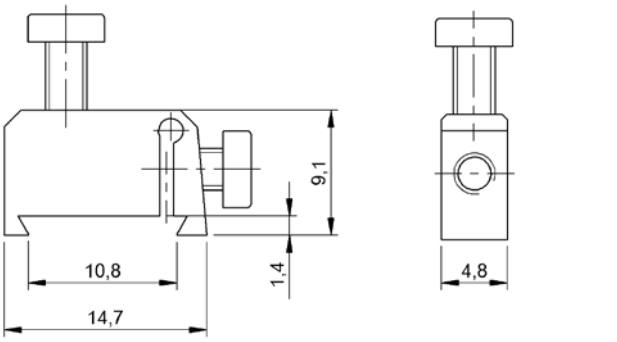
BAM00LJ



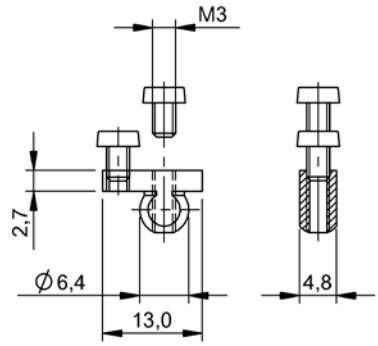
BAM00LP



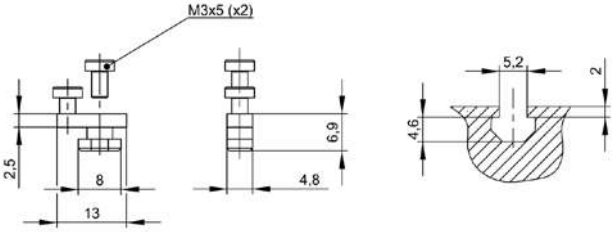
BAM00LT



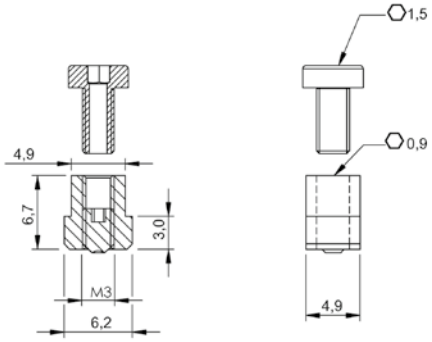
BAM00LU



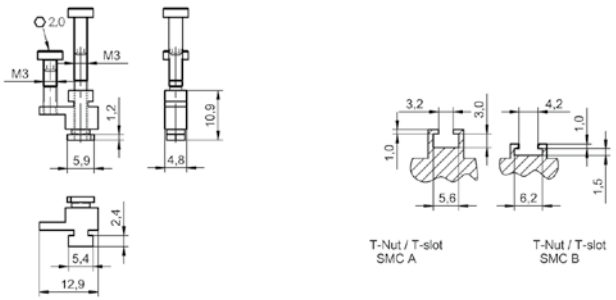
BAM00LW



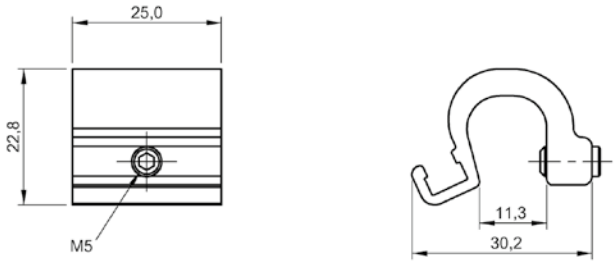
BAM01C4



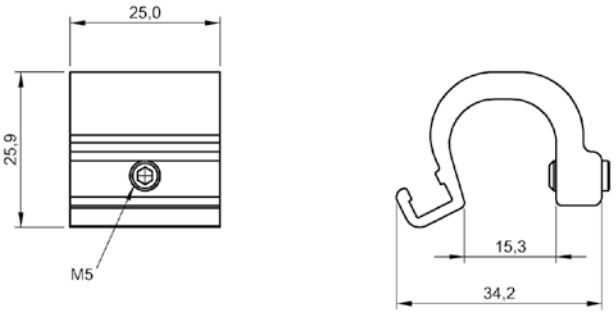
BAM01EZ



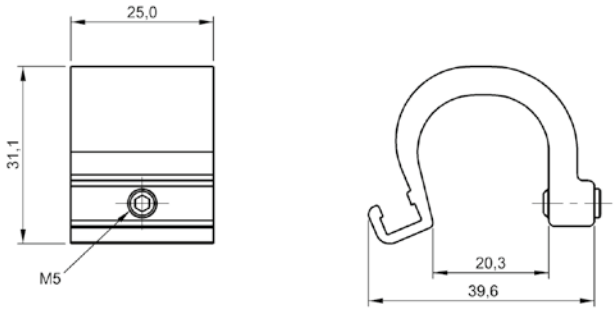
BAM01EY



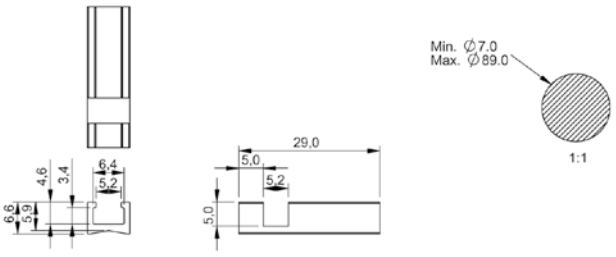
BAM01M9



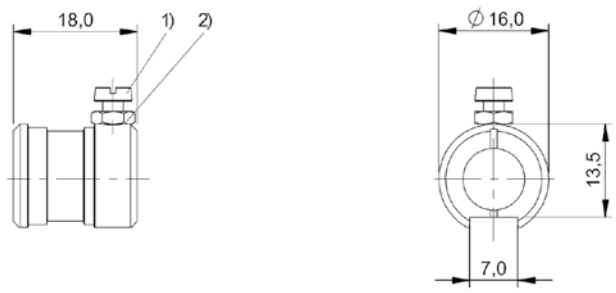
BAM01MA



BAM01MC



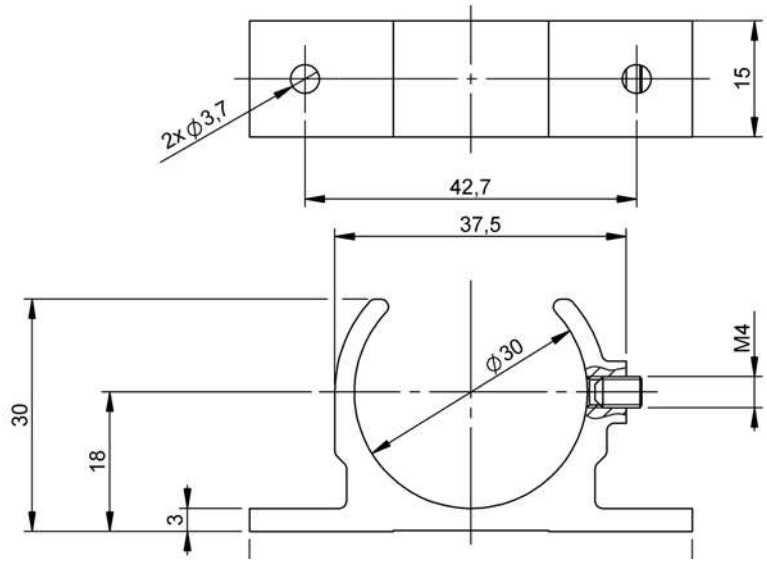
BAM01Y9



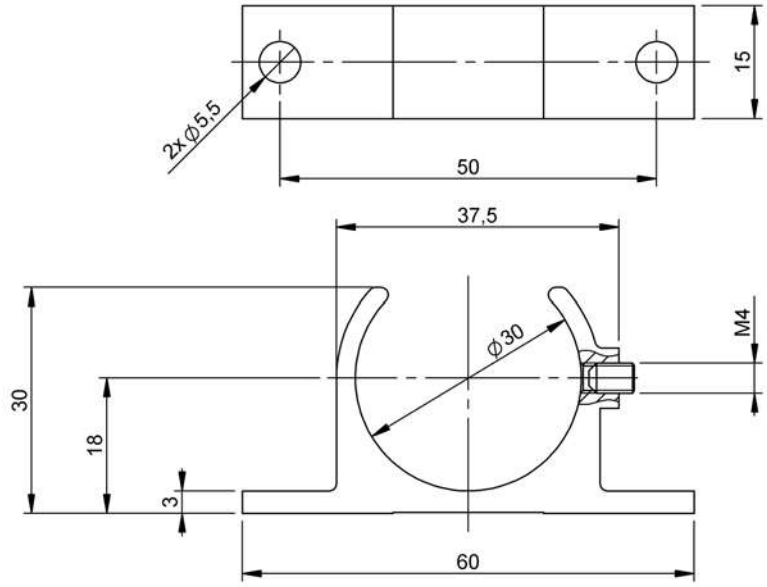
BAM00KR

	BAM010W BTL6-A-MF01-A-43	
Principle of operation	BTL control arm	
Material	Aluminum anodized	
Mounting	Through-hole 3.7 mm (2x)	
Productview	Page 534	

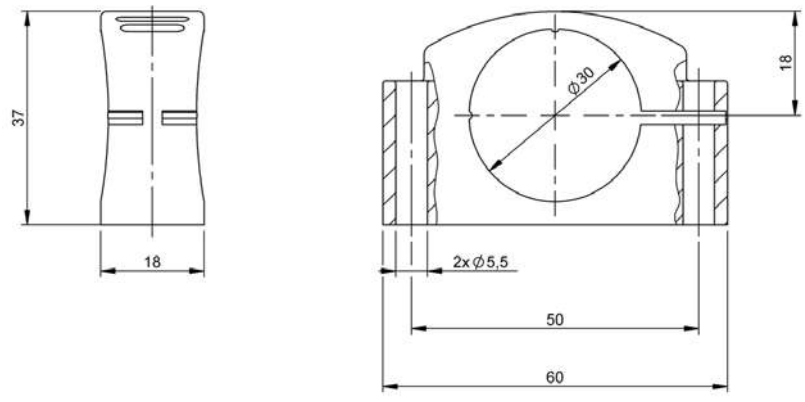
	BAM010Y BTL6-A-MF01-A-50	**BAM0110** BTL6-A-MF03-K-50	**BAM01N3** BTL6-A-MF07-A-PF/M5
	BTL control arm	BTL control arm	BTL control arm
	Aluminum anodized	PA anodized	Aluminum anodized
	Through-hole 5.5 mm (2x)	Through-hole 5.5 mm (2x)	2x cylinder head screw ISO 4762 M5x25
	Page 534	Page 534	Page 535



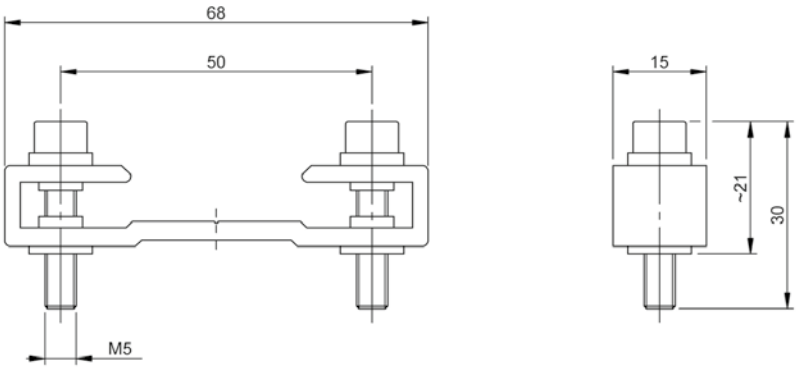
BAM010W



BAM010Y



BAM0110



BAM01N3



	BAM009K BES 08-DM-1	BAM01WF BAM MC-XA-021-M5-4	BAM01WR BAM MC-XA-021-M8-3	
Principle of operation	Sealing element	General installation accessories	General installation accessories	
Use	For sealing of pressure rated sensors M8	For M05 sensors	For M08 sensors	
Material	PA phosphated	Stainless steel	Galvanized steel	
Ambient temperature	-40...110 °C	—	—	
Productview	Page 538	Page 538	Page 538	



	BAM01WJ BAM MC-XA-021-M18-4	BAM01WL BAM MC-XA-021-M18-A	BAM01W5 BAM MC-XA-021-M30-2	
Principle of operation	General installation accessories	General installation accessories	General installation accessories	
Use	For M18 sensors	For M18 sensors	For M30 sensors	
Material	Stainless steel	PA	Brass nickel plated	
Ambient temperature	—	-30...85 °C	—	
Productview	Page 538	Page 538	Page 538	

BAM033A BAM MC-XA-021-M8-4-01
General installation accessories
For M08 sensors
Steel
—
Page 538

BAM01W3 BAM MC-XA-021-M12-2
General installation accessories
For M12 sensors
Brass nickel plated
—
Page 538

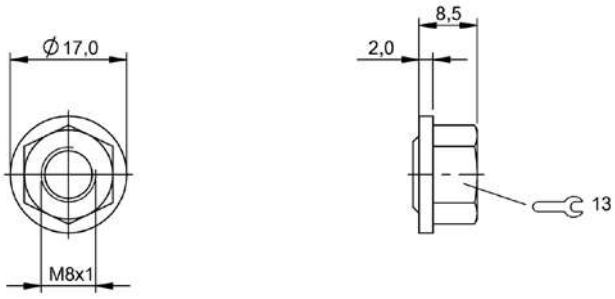
BAM01WH BAM MC-XA-021-M12-4
General installation accessories
For M12 sensors
Stainless steel
—
Page 538

BAM01W6 BAM MC-XA-021-M16-2
General installation accessories
For M16 sensors
Galvanized brass
—
Page 538

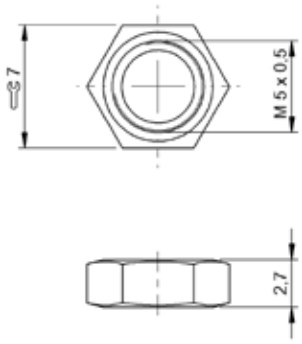
BAM01W4 BAM MC-XA-021-M18-2
General installation accessories
For M18 sensors
Brass nickel plated
—
Page 538

BAM01WK BAM MC-XA-021-M30-4
General installation accessories
For M30 sensors
Stainless steel
—
Page 538

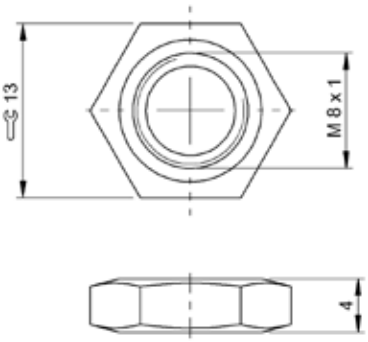
BAM01WM BAM MC-XA-021-M30-A
General installation accessories
For M30 sensors
PA
-30...85 °C
Page 539



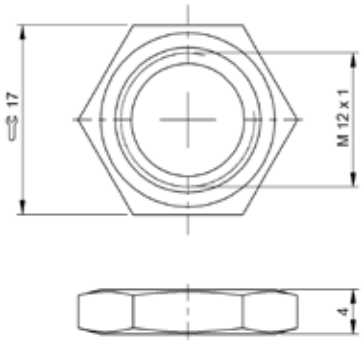
BAM009K



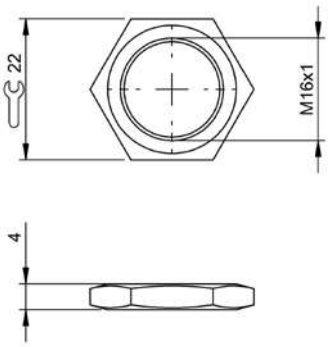
BAM01WF



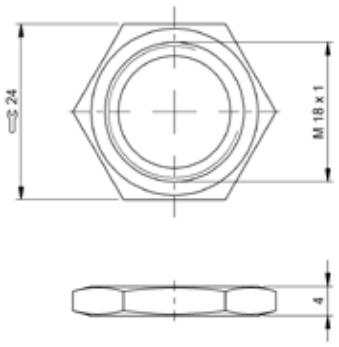
BAM01WR, BAM033A



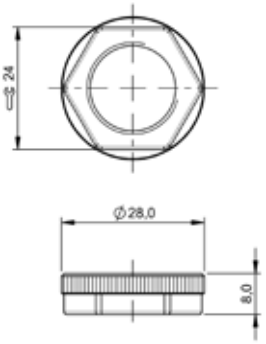
BAM01W3, BAM01WH



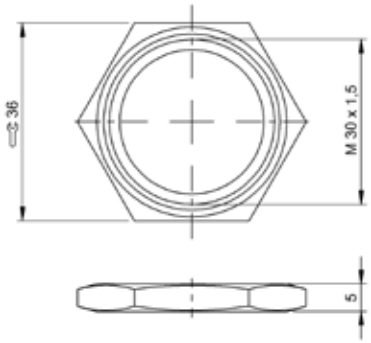
BAM01W6



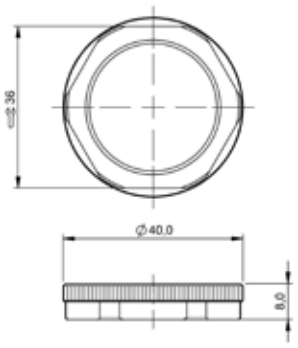
BAM01W4, BAM01WJ



BAM01WL



BAM01W5, BAM01WK



BAM01WM

MECHANICAL ACCESSORIES

With simple assembly and installation, our great selection of high-quality accessories supports you in optimally embedding sensors in machines and systems. The wide Balluff product range offers the optimum gear for nearly every application.

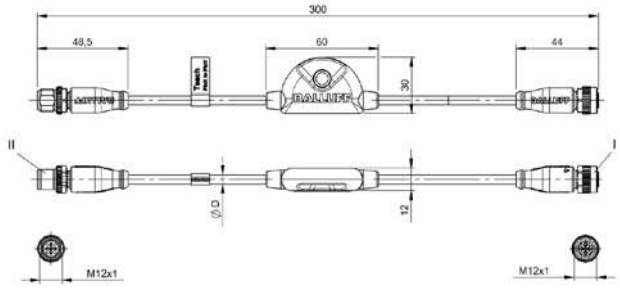

BALLUFF
BALLUFF

	BAE00E5 BAE PD-US-004-S04	BAE00E6 BAE PD-US-004-S92	
Principle of operation	Teach adapter	Teach adapter	
Use	for ultrasonic sensors BUS	for ultrasonic sensors BUS	
Teach function	Pin3 to Pin2	Pin3 to Pin5	
Connection 1	M12x1-Female, 5-pole	M12x1-Female, 5-pole	
Connection 2	M12x1-Male, 5-pole	M12x1-Male, 5-pole	
Dimension	12 x 30 x 300 mm	12 x 30 x 300 mm	
Material	PA	PA	
Ambient temperature	-25...80 °C	-25...80 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE	CE	
Productview	Page 544	Page 544	

	BAM00ZL BAM TO-CC-001-M3-0,4/8,0	BAM033L BAM TO-CC-001-M4-0,6/12,0/18,0	
Principle of operation	Torque handle	Torque handle	
Use	for M8 connector	BNI M12	
Material	Stainless steel	Stainless steel	
Productview	Page 544	Page 544	

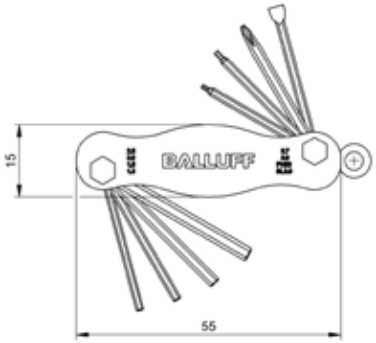
BAE00MR BAE PD-US-007-S92	BAM000E BFO CT	BAM02RY BAM TO-XA-013-01	BAM00ZN BAM TO-CC-001-A3-1,5/24,0
Teach adapter	Cutter template	Tool set	Torque handle
for ultrasonic sensors BUS	for photoelectric fiber optics BFO	for installation	for connectors 7/8“
Pin1 to Pin5	—	—	—
M12x1-Female, 5-pole	—	—	—
M12x1-Male, 5-pole	—	—	—
12 x 30 x 300 mm	21 x 8 x 53 mm	10 x 15 x 55 mm	—
PA	Plastic	Plastic	Stainless steel
-25...80 °C	—	—	—
IP67	—	—	—
CE	—	—	—
Page 544	Page 544	Page 544	Page 544

BAM0291 BAM TO-XA-009-A-0,7-2,0			
Hex key set			
for installation			
Stainless steel Plastic			
Page 544			

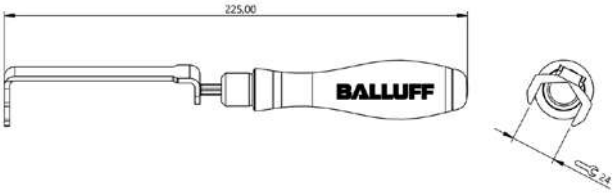


BAE00E5, BAE00E6, BAE00MR

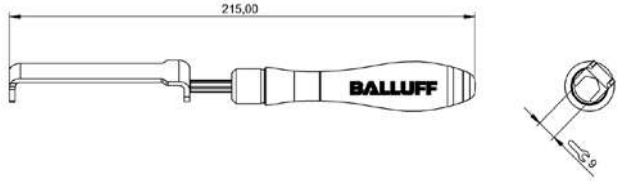
BAM000E



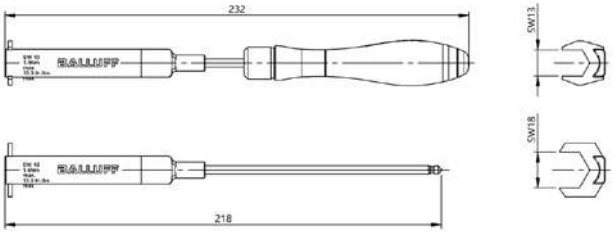
BAM02RY



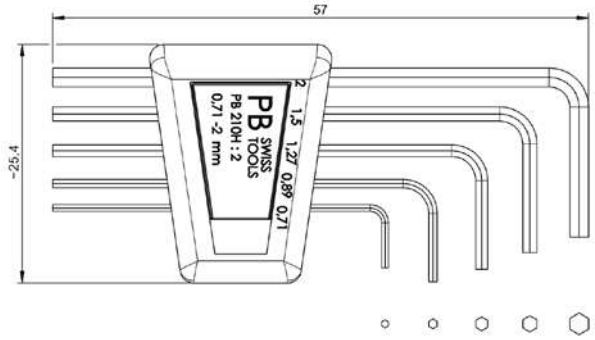
BAM00ZN



BAM00ZL



BAM033L



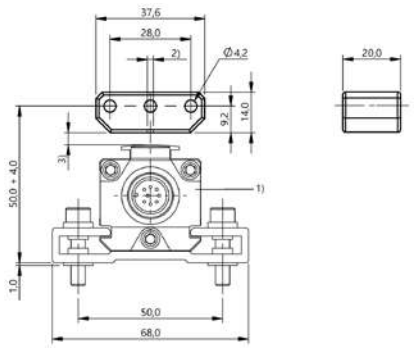
BAM0291

	BAM014M BTL5-P-3800-2	BAM014P BTL5-P-4500-1	
Principle of operation	BTL magnets, profile style	BTL magnets, profile style	
Version	floating	floating	
Material	POM	POM	
Dimension	37.6 x 14 x 20 mm	45 x 40 x 28 mm	
Distance min. to BTL	0.1 mm	0.1 mm	
Distance max. to BTL	4 mm	2 mm	
Ambient temperature	-40...85 °C	-40...60 °C	
Productview	Page 548	Page 548	

	BAM014K BTL5-M-2814-1S	BAM014L BTL5-N-2814-1S	
Principle of operation	BTL magnets, profile style	BTL magnets, profile style	
Version	captive	captive	
Material	Aluminum Iglidur J	Aluminum Iglidur J	
Dimension	28 x 20.5 x 41 mm	28 x 23 x 41 mm	
Distance min. to BTL	—	—	
Distance max. to BTL	—	—	
Ambient temperature	-40...85 °C	-40...85 °C	
Productview	Page 548	Page 548	

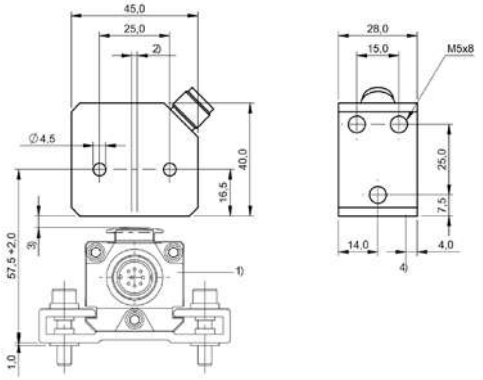
	BAM014T BTL5-P-5500-2	BAM014W BTL6-A-3800-2	BAM014Z BTL6-A-3801-2	BAM014H BTL5-F-2814-1S
	BTL magnets, profile style	BTL magnets, profile style	BTL magnets, profile style	BTL magnets, profile style
	floating	floating	floating	captive
	POM	POM	POM	Iglidur J
	55 x 20 x 21 mm	37.6 x 29 x 21 mm	37.6 x 18.3 x 21 mm	28 x 29.9 x 40 mm
	5.0 mm	4.0 mm	4.0 mm	–
	15 mm	8 mm	8 mm	–
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	Page 548	Page 548	Page 548	Page 548

	BAM01FC BTL5-T-2814-1S			
	BTL magnets, profile style			
	captive			
	Iglidur J			
	28 x 16.5 x 40 mm			
	–			
	–			
	-40...85 °C			
	Page 549			



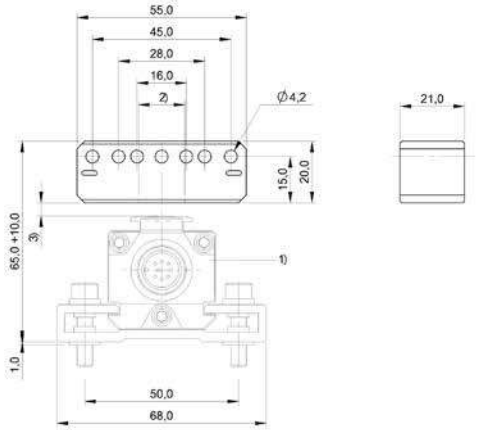
1) not included in scope of delivery, 2) Lateral offset, 3) Distance to BTL

BAM014M



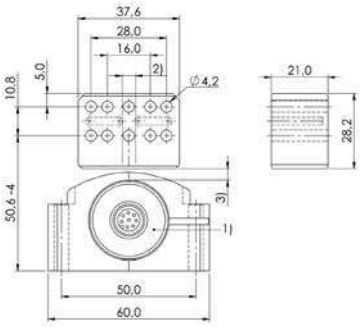
1) not included in scope of delivery, 2) Lateral offset, 3) Distance to BTL, 4)Null point offset for measuring range

BAM014P



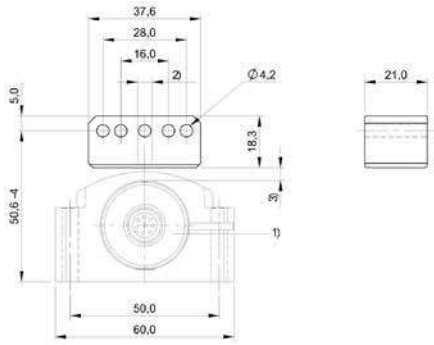
1) not included in scope of delivery, 2) Lateral offset, 3) Distance to BTL

BAM014T



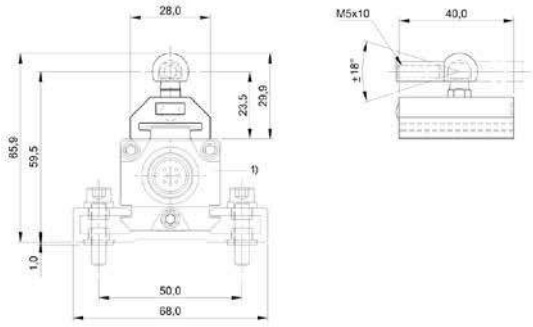
1) not included in scope of delivery, 2) Lateral offset, 3) Distance to BTL

BAM014W



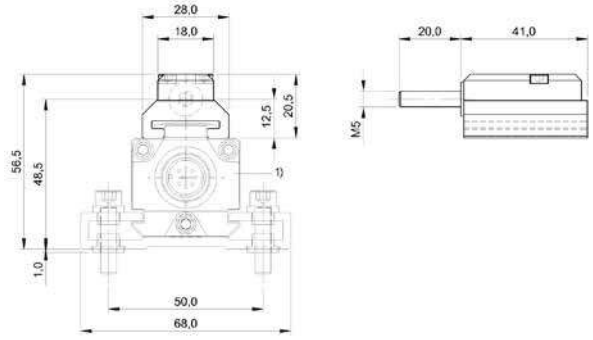
1) not included in scope of delivery, 2) Lateral offset, 3) Distance to BTL

BAM014Z



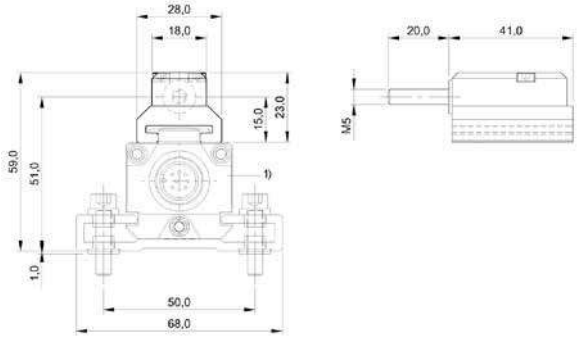
1) not included in scope of delivery

BAM014H



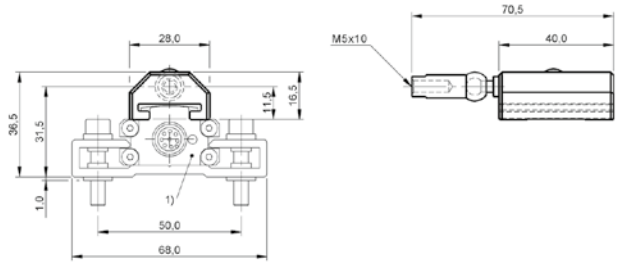
1) not included in scope of delivery

BAM014K



1) not included in scope of delivery

BAM014L



1) not included in scope of delivery

BAM01FC

	BAM01A2 BTL-S-3112-4Z	BAM01KA BTL-S-3112-4Z-SA10	
Principle of operation	BTL magnet, float	BTL magnet, float	
Version	—	—	
Material	Stainless steel (1.4404)	Stainless steel (1.4404)	
Dimension	Ø 31 x 69 mm	Ø 31 x 69 mm	
Inside diameter	11.7 mm	11.7 mm	
Ambient temperature	-20...130 °C	-20...130 °C	
Productview	Page 554	Page 554	

	BAM0147 BTL2-S-4414-4Z-EX	BAM0148 BTL2-S-4414-4Z01-EX	
Principle of operation	BTL magnet, float	BTL magnet, float	
Version	Ex	Ex	
Material	Stainless steel (1.4404)	Stainless steel (1.4404)	
Dimension	Ø 44 x 49 mm	Ø 44 x 49 mm	
Inside diameter	13.0 mm	13.0 mm	
Ambient temperature	-20...120 °C	-20...120 °C	
Productview	Page 554	Page 554	

BAM024J BTL2-S-3212-4Z
BTL magnet, float
—
Stainless steel (1.4404)
Ø 32 x 53 mm
11.7 mm
-20...120 °C
Page 554

BAM0146 BTL2-S-4414-4Z
BTL magnet, float
—
Stainless steel (1.4404)
Ø 44 x 49 mm
13.0 mm
-20...120 °C
Page 554

BAM0149 BTL2-S-5113-4K
BTL magnet, float
—
Stainless steel (1.4404)
Ø 50.9 x 52 mm
13.0 mm
-20...120 °C
Page 554

BAM014C BTL2-S-6216-8P
BTL magnet, float
—
Stainless steel (1.4541)
Ø 62 x 80 mm
16.0 mm
-20...120 °C
Page 554

BAM014A BTL2-S-5113-4K-EX
BTL magnet, float
Ex
Stainless steel (1.4404)
Ø 50.9 x 52 mm
13.0 mm
-20...120 °C
Page 555

BAM014E BTL2-S-6216-8P-EX
BTL magnet, float
Ex
Stainless steel (1.4541)
Ø 62 x 80 mm
16.0 mm
-20...120 °C
Page 555

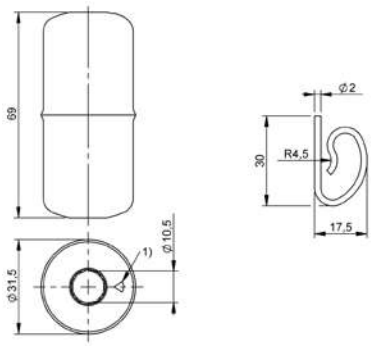
BAM013H BTL-P-0814-GR-PAF
BTL magnet, rod
—
PA 6
Ø 17.2 x 5 mm
14.0 mm
-40...60 °C
Page 555

BAM013J BTL-P-1012-4R
BTL magnet, rod
—
Aluminum
Ø 25 x 8 mm
12.0 mm
-40...100 °C
Page 555

	BAM013K BTL-P-1012-4R-PA	BAM013L BTL-P-1013-4R	
Principle of operation	BTL magnet, rod	BTL magnet, rod	
Version	—	—	
Material	PA	Aluminum	
Dimension	Ø 25 x 8 mm	Ø 32 x 8 mm	
Inside diameter	12.0 mm	13.0 mm	
Ambient temperature	-40...100 °C	-40...100 °C	
Productview	Page 555	Page 555	

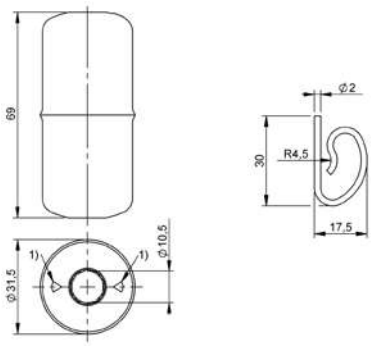



	BAM013M BTL-P-1013-4R-PA	BAM013P BTL-P-1013-4S	BAM013R BTL-P-1014-2R	BAM013Y BTL-P-1028-15R
	BTL magnet, rod	BTL magnet, rod	BTL magnet, rod	BTL magnet, rod
	–	–	–	–
	PA	Aluminum	Aluminum	Aluminum
	Ø 32 x 8 mm	Ø 32 x 8 mm	Ø 21.9 x 8 mm	Ø 65 x 8 mm
	13.0 mm	13.0 mm	13.5 mm	28.0 mm
	-40...100 °C	-40...100 °C	-40...100 °C	-40...85 °C
	Page 555	Page 555	Page 555	Page 555



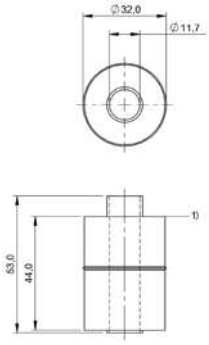
1) Designation for upper side

BAM01A2



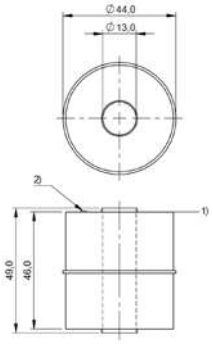
1) Designation for upper side

BAM01KA



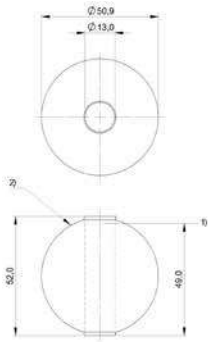
1) Reference point

BAM024J



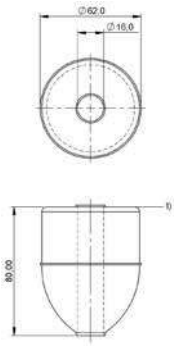
1) Reference point, 2) Designation for upper side

BAM0146



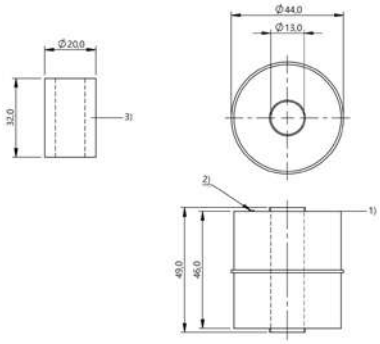
1) Reference point, 2) Designation for upper side

BAM0149



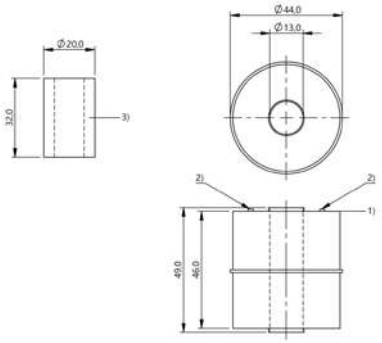
1) Reference point

BAM014C



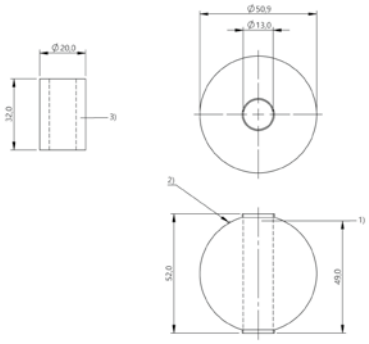
1) Reference point, 2) Designation for upper side, 3) Spacer

BAM0147



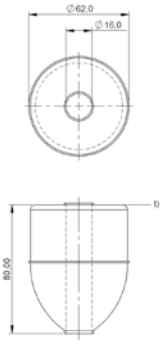
1) Reference point, 2) Designation for upper side, 3) Spacer

BAM0148



1) Reference point, 2) Designation for upper side, 3) Spacer

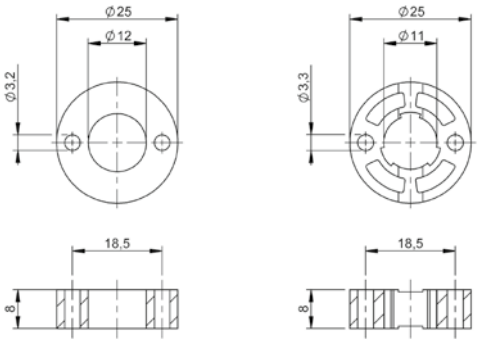
BAM014A



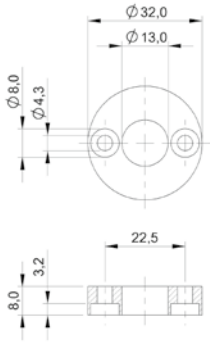
1) Reference point

BAM014E

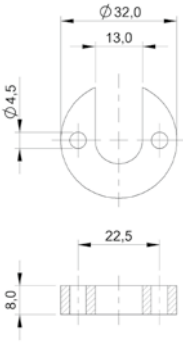
BAM013H



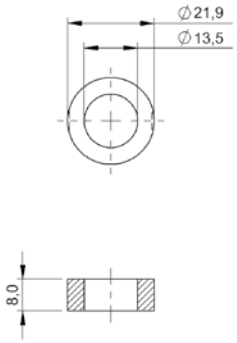
BAM013J, BAM013K



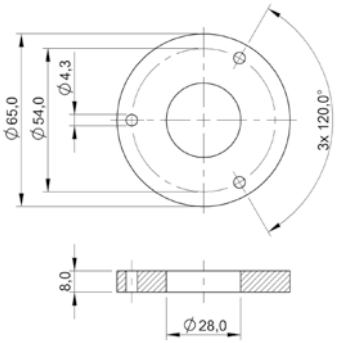
BAM013L, BAM013M



BAM013P



BAM013R



BAM013Y

	BAM032U BAM IA-MS-030-A5	BAM01JT BAM IA-XA-003-4x5-Y	
Principle of operation	—	—	
Version	Info pouch A5, magnetic	Label plates	
Use	For label holder	For the marking of network module	
Material	PET	ABS (white)	
Dimension	3 x 225 x 163 mm	133 x 1 x 83 mm	
Mounting	magnetic	Clamps	
Ambient temperature	-30...120 °C	—	
Productview	Page 558	Page 558	

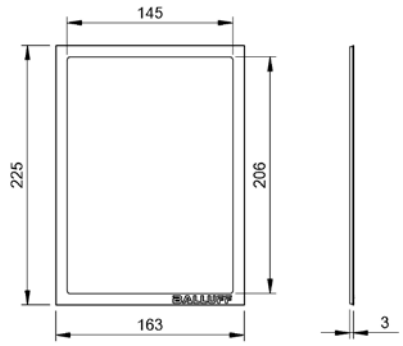
Page 558

	BAM01HJ BAM AP-US-002-M18-0	BAM0270 BAM TG-ID-016-A01	
Principle of operation	—	Actuator	
Version	Focusing attachment	Actuator	
Use	For ultrasonic sensors BUS	For locking fixture BID	
Material	POM	Stainless steel	
Dimension	Ø 25 x 80 mm	17 x 32 x 48 mm	
Mounting	Thread M18x1	Screw M5	
Ambient temperature	—	—	
Productview	Page 558	Page 558	

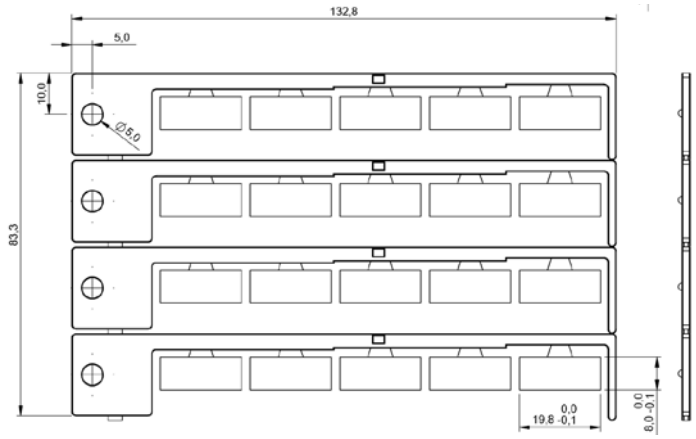



	BAM032W BAM IA-XA-023-01	BAE00EF BTL7-A-CB02-K	BAE00E1 BTL7-A-CB02-S115	BAE00EC BTL7-A-CB02-S32
	—	Calibration box	Calibration box	Calibration box
	Label plates	—	—	—
	For signaling and display units	For magnetostrictive sensors BTL	For magnetostrictive sensors BTL	For magnetostrictive sensors BTL
	Anodized aluminum Die-cast zinc Galvanized steel PP	ABS	ABS	ABS
	41 x 300 x 187 mm	61 x 25 x 732 mm	61 x 25 x 732 mm	61 x 25 x 732 mm
	Clamps, Screw M5	—	—	—
	—	0...50 °C	0...50 °C	0...50 °C
	Page 558	Page 558	Page 558	Page 542

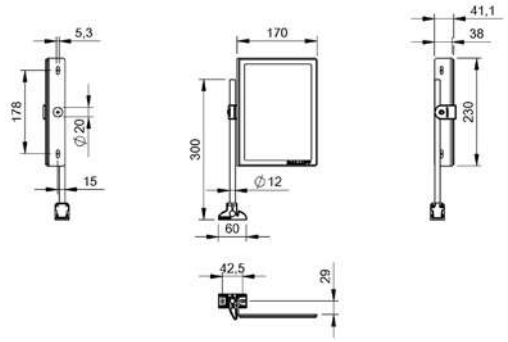

	BAM0271 BAM TG-ID-016-H01	BAM0272 BAM TG-ID-016-H02		
	Actuator	Actuator		
	Actuator	Actuator		
	For locking fixture BID	For locking fixture BID		
	Aluminum	Aluminum		
	145 x 72 x 113 mm	145 x 94 x 113 mm		
	Screw M5	Screw M5		
	—	—		
	Page 559	Page 559		



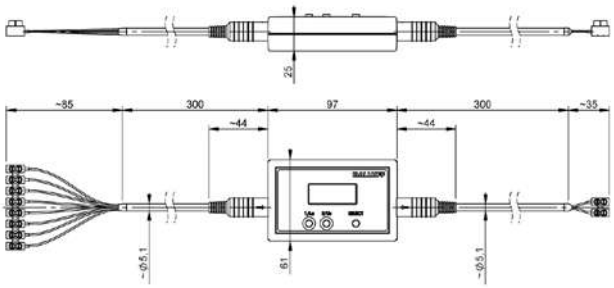
BAM032U



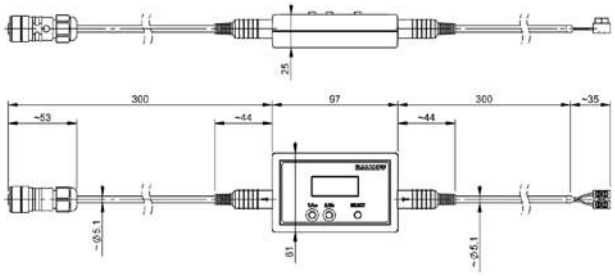
BAM01JT



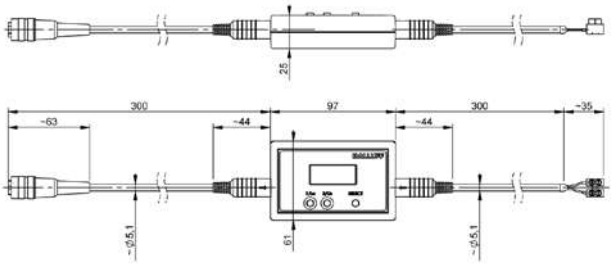
BAM032W



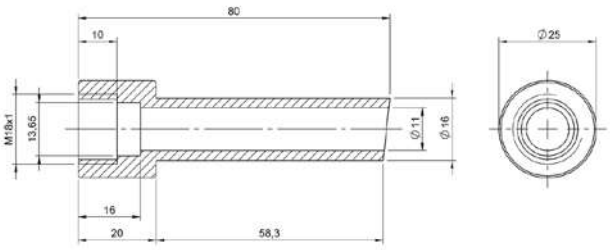
BAE00EF



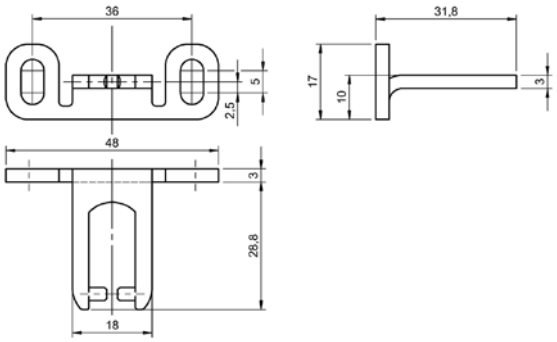
BAE00E1



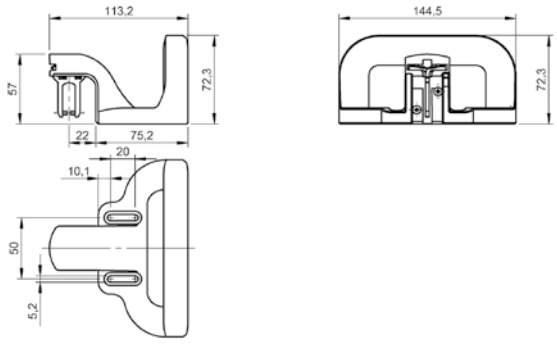
BAE00EC



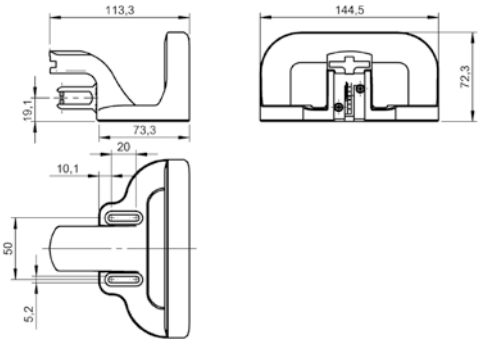
BAM01HJ



BAM0270



BAM0271



BAM0272

Optimum lighting conditions for your application

LIGHTING FOR VISION SYSTEMS AND MACHINES

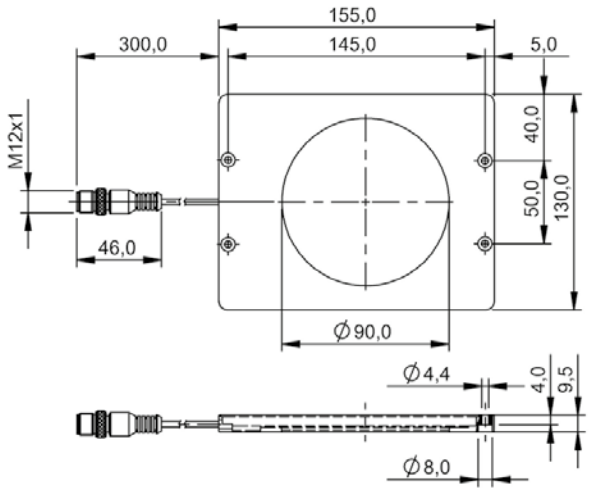
Balluff offers a wide range of rugged lights for your various installation spaces and tasks: for optimal lighting conditions in image processing and for machine lighting.

The energy-saving and long-lasting LED technology impresses with its homogeneous optical properties. Moreover, Balluff lighting options guarantee eye safety in accordance with IEC 62471. You can select between red light, white light, infrared light or laser variants.

The most important benefits

- Highest quality (extensive EMC tests, high protection class)
- Easy and fast assembly
- Simple startup
- Rugged, long service life

	BAE00AM BAE LX-VS-DR090
Connection	Cable with connector, M12x1 connector, 4-pin, 0.30 m
Version	Dark field light
Dimension	130 x 9.5 x 155 mm
Rated operating voltage Ue DC	24 V
Current draw max.	416 mA
Operating mode	Normal
Material	Aluminum anodized, black PMMA
Illumination area	Ø 90 mm
Light type	LED, red light
Wave length	617 nm
Illuminence (0.1 m)	2250 Lux
Ambient temperature	-10...55 °C
Approval/Conformity	CE, EAC
Protection degree	IP40



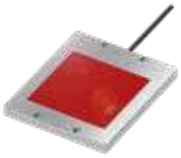
BAE00AM

	BAE00KR BAE LX-VS-HI050	BAE00FR BAE LX-VS-HI100	
Connection	Cable with connector, M12x1 connector, 4-pin, 0.30 m	Cable with connector, M12x1 connector, 4-pin, 0.30 m	
Version	Background light	Background light	
Dimension	80 x 9.5 x 105 mm	130 x 12 x 155 mm	
Rated operating voltage Ue DC	24 V	24 V	
Current draw max.	375 mA	500 mA	
Operating mode	Normal	Normal	
Digital inputs	Trigger	Trigger	
Material	Aluminum anodized, black Glass PMMA	Aluminum anodized, black Glass PMMA	
Illumination area	50 x 50 mm	100 x 100 mm	
Light type	LED infrared	LED infrared	
Wave length	875 nm	875 nm	
Illuminence (0.1 m)	—	—	
Beam angle	35 ° x 35 °	55° x 55°	
Ambient temperature	-10...55 °C	-10...55 °C	
Approval/Conformity	CE, EAC	CE, EAC	
Protection degree	IP54	IP54	
Productview	Page 568	Page 568	

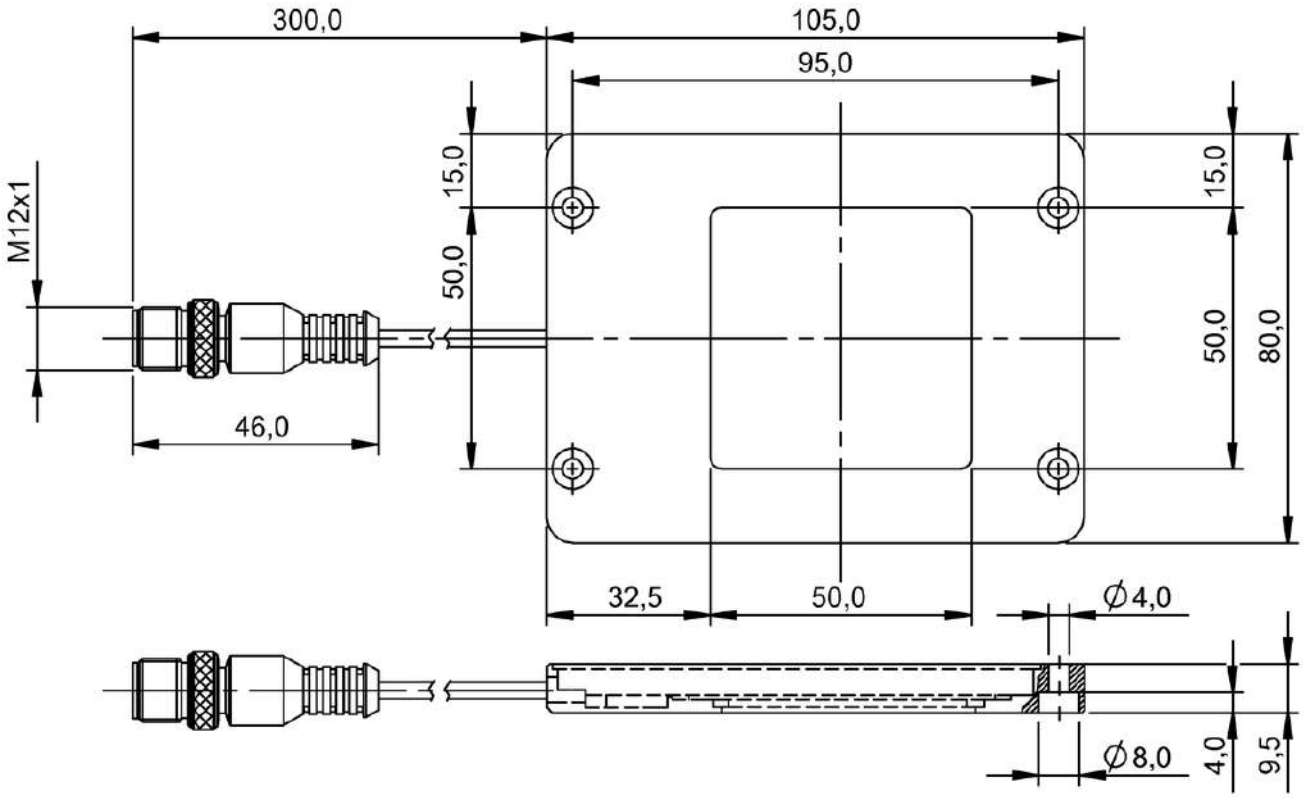



	BAE00KP BAE LX-VS-HI150	BAE00JE BAE LX-VS-HI200	BAE00WM BAE LX-VS-HI300	BAE000E BAE LX-VS-HR025
	Cable with connector, M12x1 connector, 4-pin, 0.30 m	Cable with connector, M12x1 connector, 4-pin, 0.30 m	Cable with connector, M12x1 connector, 4-pin, 0.30 m	Cable with connector, M12x1 connector, 4-pin, 0.30 m
	Background light	Background light	Background light	Background light
	130 x 9.5 x 205 mm	180 x 9.5 x 255 mm	255 x 9.5 x 330 mm	43 x 9.5 x 64.5 mm
	24 V	24 V	24 V	24 V
	830 mA	708 mA	1500 mA	208 mA
	Normal	Normal	Normal	Normal
	Trigger	Trigger	Trigger	–
	Aluminum anodized, black Glass PMMA	Aluminum anodized, black Glass PMMA	Aluminum anodized, black Glass PMMA	Aluminum anodized, black Glass PMMA
	150 x 100 mm	200 x 150 mm	300 x 200 mm	25 x 25 mm
	LED infrared	LED infrared	LED infrared	LED, red light
	875 nm	875 nm	875 nm	617 nm
	–	–	–	350 Lux
	80 ° x 60 °	100 ° x 80 °	–	40 ° x 40 °
	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C
	CE, EAC	CE, EAC	CE, EAC	CE, EAC
	IP54	IP54	IP54	IP54
	Page 569	Page 569	Page 570	Page 570

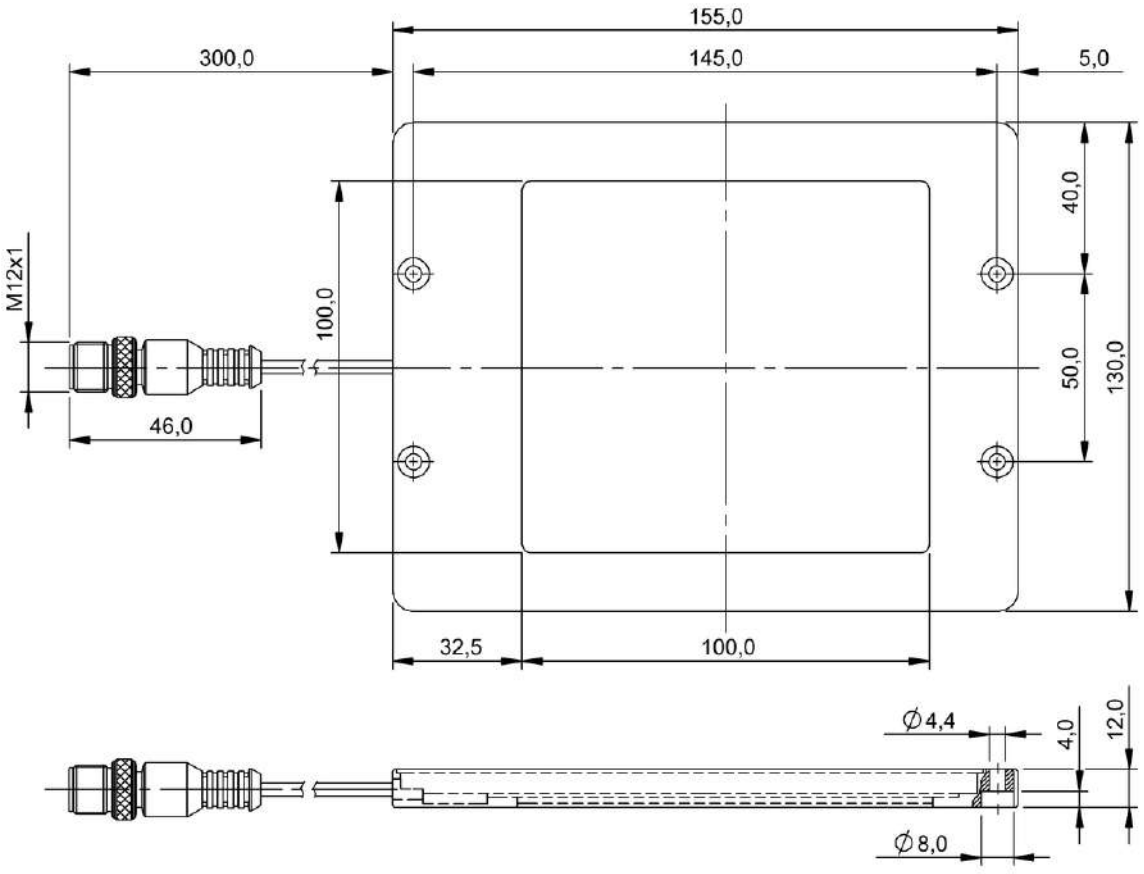
	BAE000F BAE LX-VS-HR050	BAE000H BAE LX-VS-HR100	
Connection	Cable with connector, M12x1 connector, 4-pin, 0.30 m	Cable with connector, M12x1 connector, 4-pin, 0.30 m	
Version	Background light	Background light	
Dimension	80 x 9.5 x 105 mm	130 x 12 x 155 mm	
Rated operating voltage Ue DC	24 V	24 V	
Current draw max.	250 mA	416 mA	
Operating mode	Normal	Normal	
Digital inputs	Trigger	Trigger	
Material	Aluminum anodized, black Glass PMMA	Aluminum anodized, black Glass PMMA	
Illumination area	50 x 50 mm	100 x 100 mm	
Light type	LED, red light	LED, red light	
Wave length	617 nm	617 nm	
Illuminence (0.1 m)	1250 Lux	3700 Lux	
Beam angle	42 ° x 42 °	55° x 55°	
Ambient temperature	-10...55 °C	-10...55 °C	
Approval/Conformity	CE, EAC	CE, EAC	
Protection degree	IP54	IP54	
Productview	Page 568	Page 568	



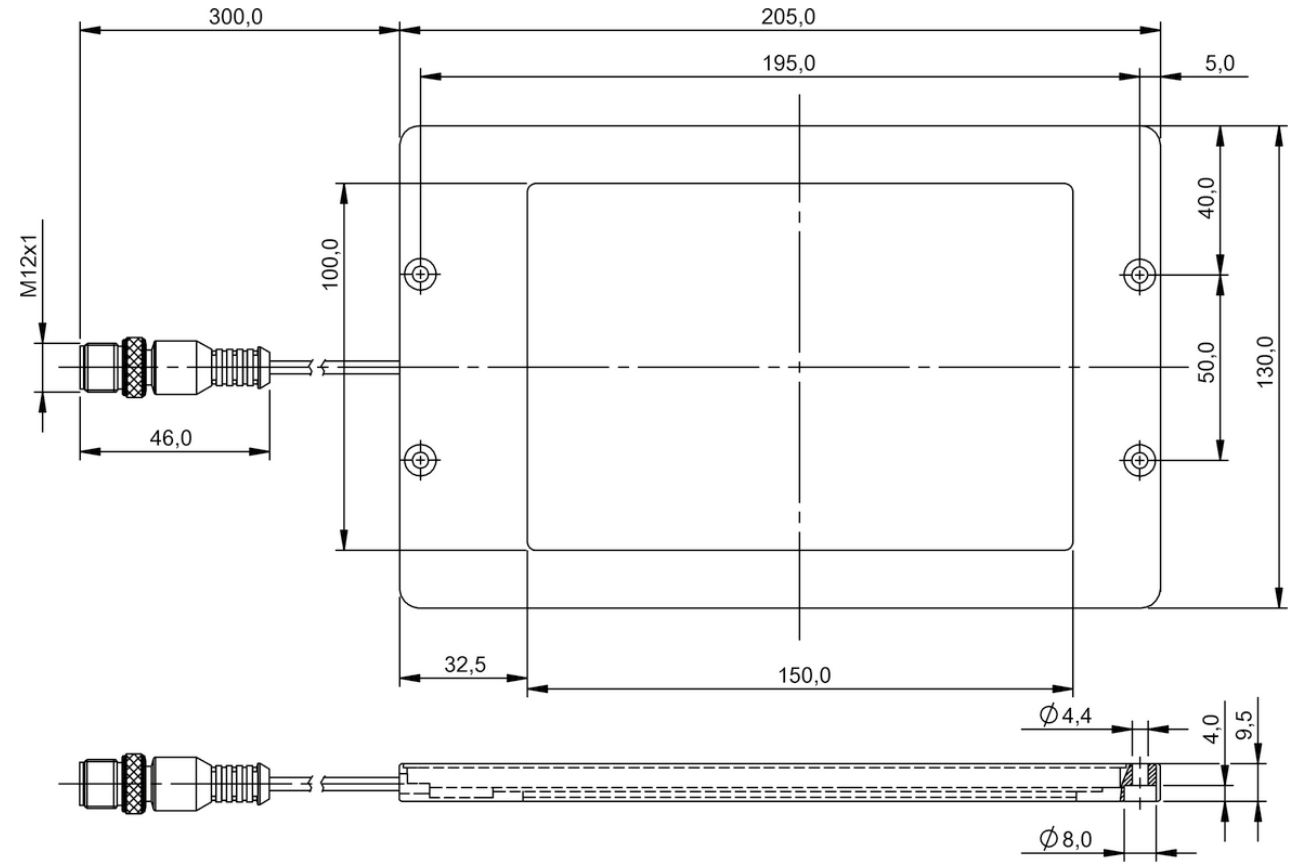
	BAE00JF BAE LX-VS-HR100-E	BAE00C5 BAE LX-VS-HR150	BAE00JC BAE LX-VS-HR200	BAE00MU BAE LX-VS-HR300
	Cable with connector, M12x1 connector, 4-pin	Cable with connector, M12x1 connector, 4-pin, 0.30 m	Cable with connector, M12x1 connector, 4-pin, 0.30 m	Cable with connector, M12x1 connector, 4-pin, 0.30 m
	Background light	Background light	Background light	Background light
	130 x 12 x 155 mm	130 x 9.5 x 205 mm	180 x 9.5 x 255 mm	255 x 9.5 x 330 mm
	24 V	24 V	24 V	24 V
	416 mA	500 mA	625 mA	1000 mA
	Normal	Normal	Normal	Normal
	Trigger	Trigger	Trigger	Trigger
	Stainless steel (1.4301) Glass PMMA	Aluminum anodized, black Glass PMMA	Aluminum anodized, black Glass PMMA	Aluminum anodized, black Glass PMMA
	100 x 100 mm	150 x 100 mm	200 x 150 mm	300 x 200 mm
	LED, red light	LED, red light	LED, red light	LED, red light
	617 nm	617 nm	617 nm	617 nm
	3700 Lux	4800 Lux	5100 Lux	4750 Lux
	55° x 55°	80 ° x 60 °	100 ° x 80 °	—
	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C
	CE, EAC	CE, EAC	CE, EAC	CE, EAC
	IP69K	IP54	IP54	IP54
	Page 568	Page 569	Page 569	Page 570



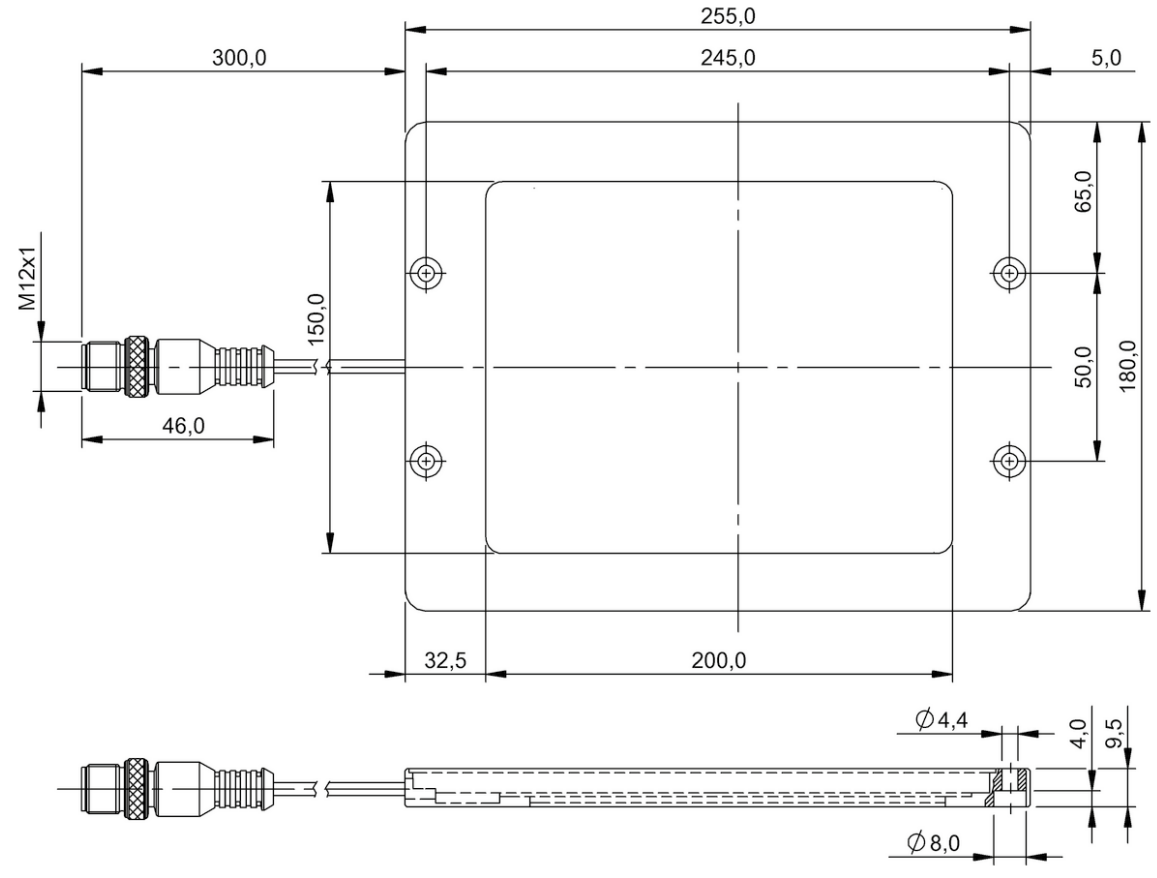
BAE00KR, BAE000F



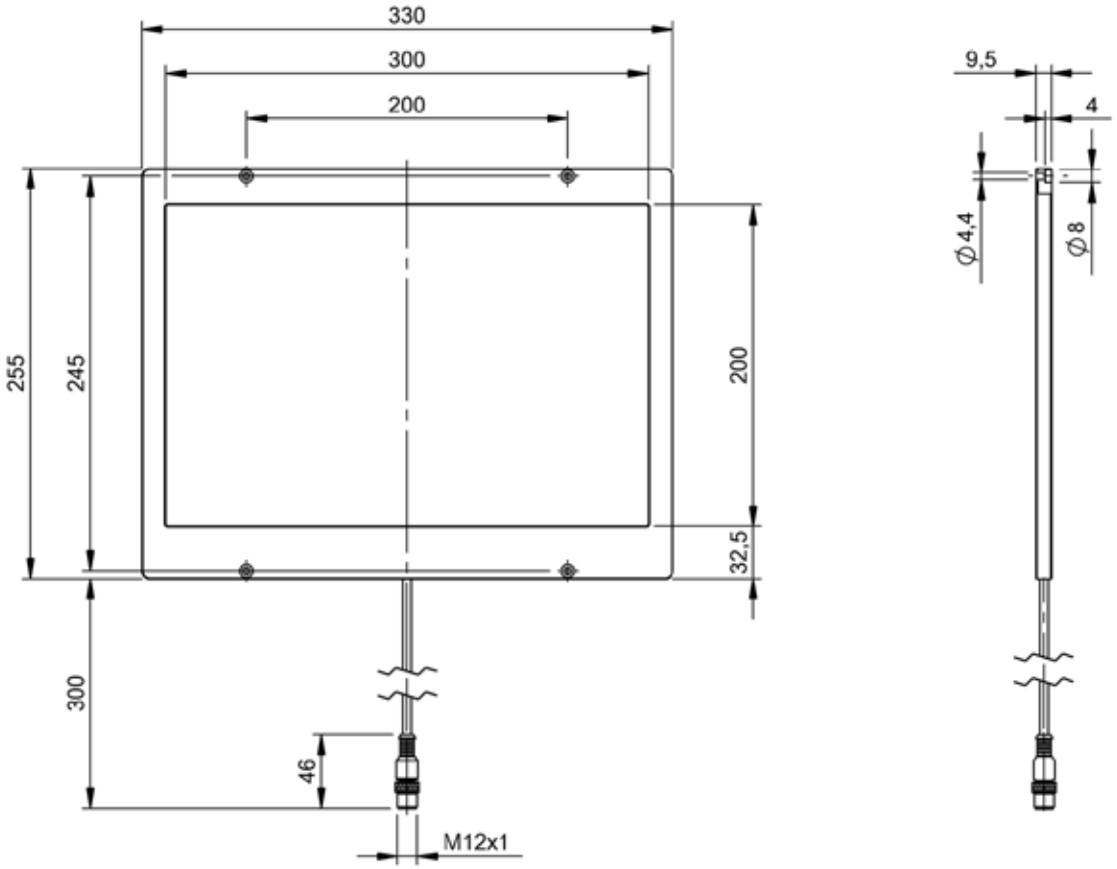
BAE00FR, BAE000H, BAE00JF



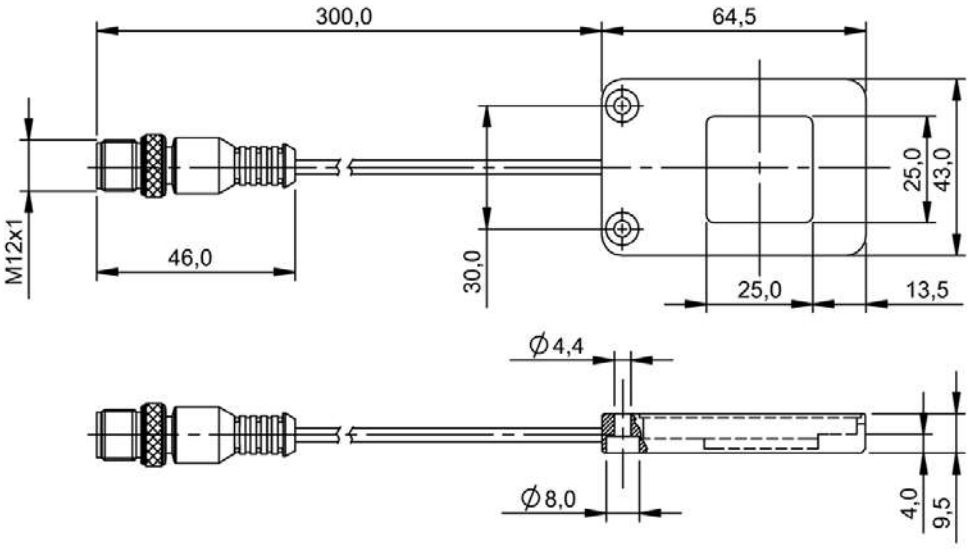
BAE00KP, BAE00C5



BAE00JE, BAE00JC



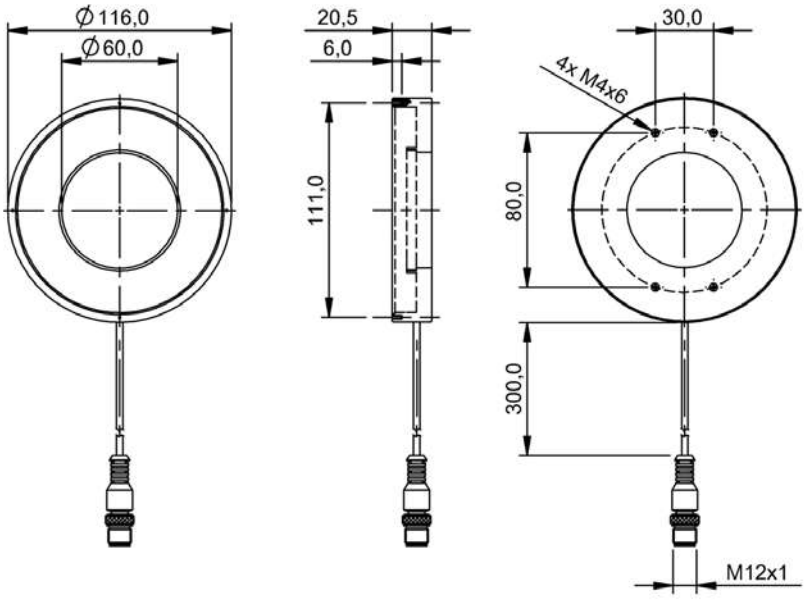
BAE00WM, BAE00MU



BAE000E

	BAE000K BAE LX-VS-RI100	
Connection	Cable with connector, M12x1 connector, 4-pin, 0.30 m	
Version	Ring light	
Dimension	Ø 116 x 20.5 mm	
Rated operating voltage Ue DC	24 V	
Current draw max.	750 mA, 1370 mA (Boost mode)	
Operating mode	Normal, Boost	
Material	Aluminum anodized, black Glass	
Illumination area	Ø 100 mm/Ø 60 mm	
Light type	LED infrared	
Wave length	875 nm	
Illuminence (0.1 m)	—	
Beam angle	30 °	
Ambient temperature	-10...55 °C	
Approval/Conformity	CE, EAC	
Protection degree	IP54	
Productview	Page 574	

	BAE000J BAE LX-VS-RR100	BAE00AN BAE LX-VS-RW100
	Cable with connector, M12x1 connector, 4-pin, 0.30 m	Cable with connector, M12x1 connector, 4-pin, 0.30 m
	Ring light	Ring light
	Ø 116 x 20.5 mm	Ø 116 x 20.5 mm
	24 V	24 V
	830 mA, 1370 mA (Boost mode)	410 mA, 830 mA (Boost mode)
	Normal, Boost	Normal, Boost
	Aluminum anodized, black Glass	Aluminum anodized, black Glass
	Ø 100 mm/Ø 60 mm	Ø 100 mm/Ø 60 mm
	LED, red light	LED white light
	617 nm	–
	19000 Lux 32500 Lux (Boost mode)	8500 Lux 16100 Lux (Boost mode)
	30 °	30 °
	-10...55 °C	-10...55 °C
	CE, EAC	CE, EAC
	IP54	IP54
	Page 574	Page 574

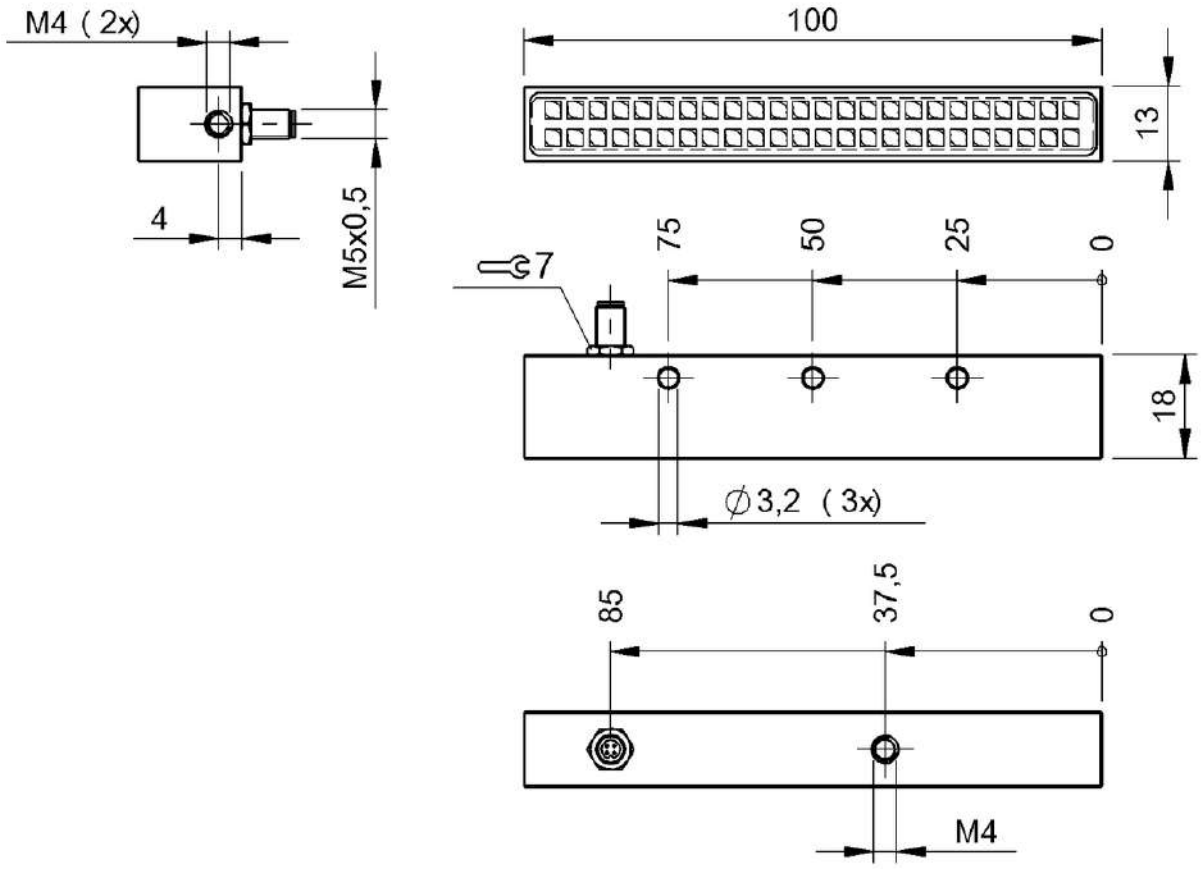


BAE000K, BAE000J, BAE00AN

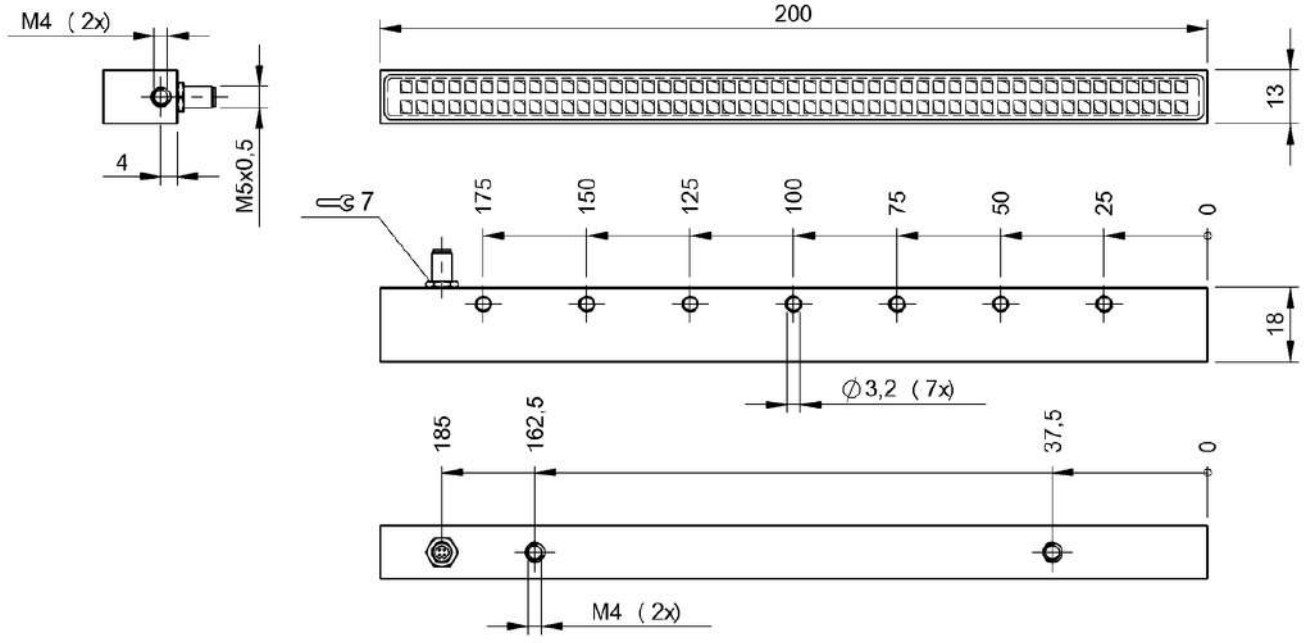
	BAE00NU BAE LX-VS-LI100-S26	BAE00NZ BAE LX-VS-LI200-S26	
Connection	Connector, M5x0.5 plug, 4-pin, 0.30 m	Connector, M5x0.5 plug, 4-pin, 0.30 m	
Version	Strip light	Strip light	
Dimension	13 x 100 x 18 mm	13 x 200 x 18 mm	
Rated operating voltage Ue DC	24 V	24 V	
Current draw max.	170 mA, 375 mA (Boost mode)	290 mA, 710 mA (Boost mode)	
Operating mode	Normal, Boost	Normal, Boost	
Digital inputs	Trigger	Trigger	
Material	Aluminum anodized, black Glass	Aluminum anodized, black Glass	
Illumination area	95 x 10 mm	195 x 10 mm	
Light type	LED infrared	LED infrared	
Wave length	875 nm	875 nm	
Illuminence (0.1 m)	—	—	
Color temperature	—	—	
Beam angle	75 ° x 30 °	115 ° x 35 °	
Ambient temperature	-10...55 °C	-10...55 °C	
Approval/Conformity	CE, EAC	CE, EAC	
Protection degree	IP54	IP54	
Productview	Page 578	Page 578	




	BAE00NT BAE LX-VS-LR100-S26	BAE00NY BAE LX-VS-LR200-S26	BAE00NW BAE LX-VS-LW100-S26	BAE00P0 BAE LX-VS-LW200-S26
	Connector, M5x0.5 plug, 4-pin, 0.30 m	Connector, M5x0.5 plug, 4-pin, 0.30 m	Connector, M5x0.5 plug, 4-pin, 0.30 m	Connector, M5x0.5 plug, 4-pin, 0.30 m
	Strip light	Strip light	Strip light	Strip light
	13 x 100 x 18 mm	13 x 200 x 18 mm	13 x 100 x 18 mm	13 x 200 x 18 mm
	24 V	24 V	24 V	24 V
	170 mA, 375 mA (Boost mode)	290 mA, 710 mA (Boost mode)	125 mA, 250 mA (Boost mode)	170 mA, 450 mA (Boost mode)
	Normal, Boost	Normal, Boost	Normal, Boost	Normal, Boost
	Trigger	Trigger	Trigger	Trigger
	Aluminum anodized, black Glass	Aluminum anodized, black Glass	Aluminum anodized, black Glass	Aluminum anodized, black Glass
	95 x 10 mm	195 x 10 mm	95 x 10 mm	195 x 10 mm
	LED, red light	LED, red light	LED white light	LED white light
	617 nm	617 nm	—	—
	6400 Lux 13500 Lux (Boost mode)	7150 Lux 15100 Lux (Boost mode)	2800 Lux 6200 Lux (Boost mode)	3000 Lux 7850 Lux (Boost mode)
	—	—	5600 K	5600 K
	75 ° x 30 °	115 ° x 35 °	80 ° x 35 °	120 ° x 40 °
	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C
	CE, EAC	CE, EAC	CE, EAC	CE, EAC
	IP54	IP54	IP54	IP54
	Page 578	Page 578	Page 578	Page 578



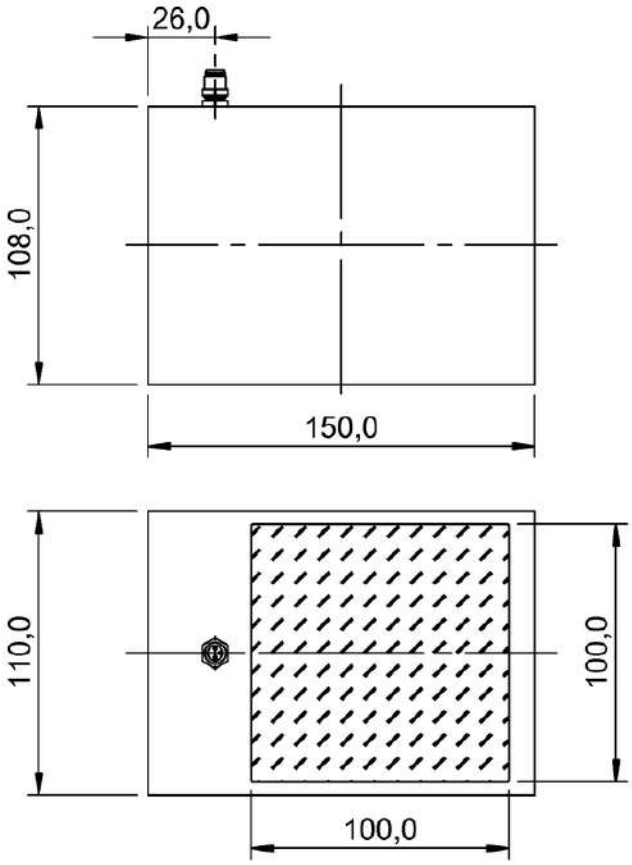
BAE00NU, BAE00NT, BAE00NW

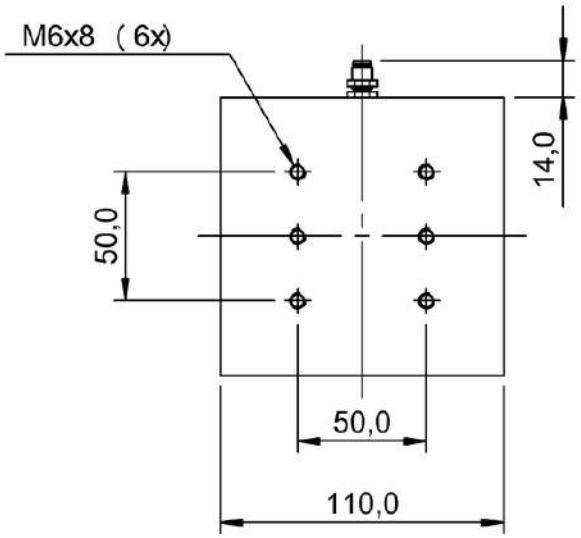


BAE00NZ, BAE00NY, BAE00P0

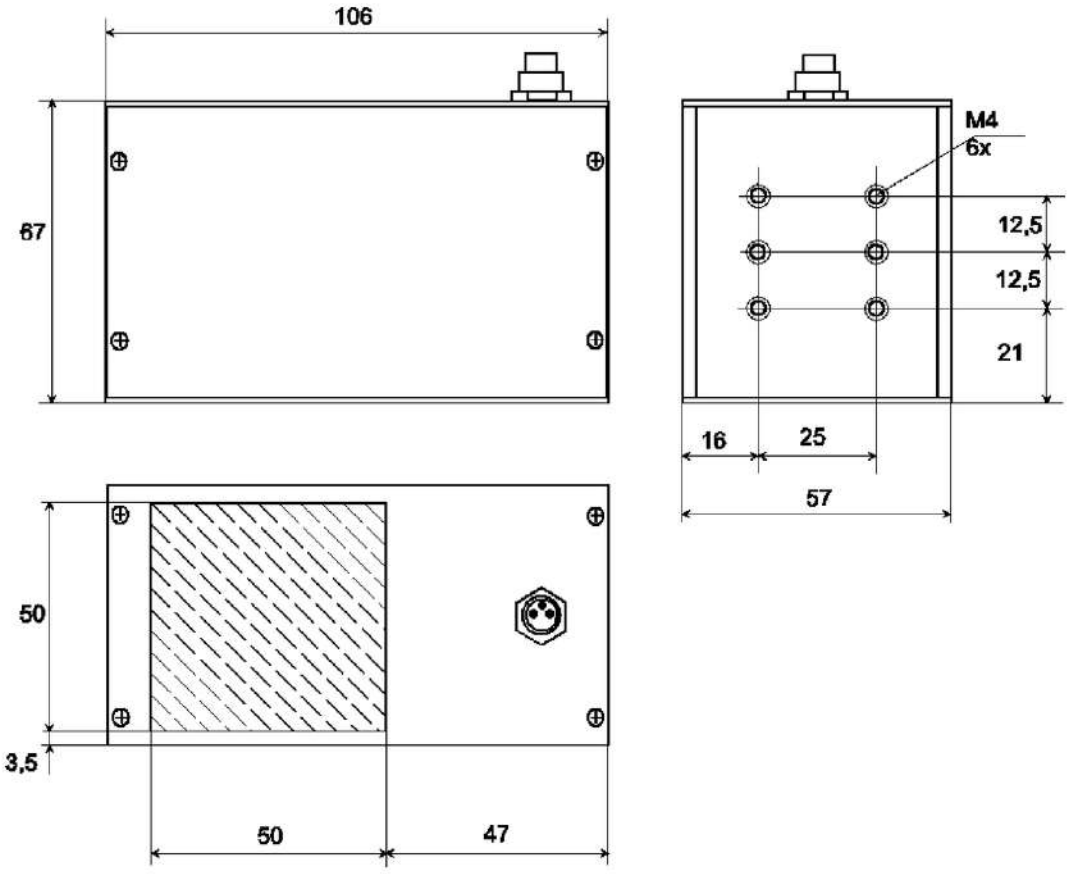
Connection	
Version	
Dimension	
Rated operating voltage Ue DC	
Current draw max.	
Operating mode	
Material	
Illumination area	
Light type	
Wave length	
Illuminence (0.1 m)	
Beam angle	
Ambient temperature	
Approval/Conformity	
Protection degree	
Productview	

	BAE00JA BAE LX-VS-OR100	BAE00J9 BAE LX-VS-OR50
	Connector, M8x1 connector, 3-pin	Connector, M8x1 connector, 3-pin
	Coax lighting	Coax lighting
	150 x 110 x 108 mm	106 x 57 x 67 mm
	24 V	24 V
	625 mA	250 mA
	Normal	Normal
	Aluminum anodized, black Glass	Aluminum anodized, black Glass
	100 x 100 mm	50 x 50 mm
	LED, red light	LED, red light
	630 nm	630 nm
	3550 Lux	1150 Lux
	105 ° x 105 °	30 ° x 30 °
	-10...55 °C	-10...55 °C
	CE, EAC	CE, EAC
	IP54	IP54
	Page 582	Page 582





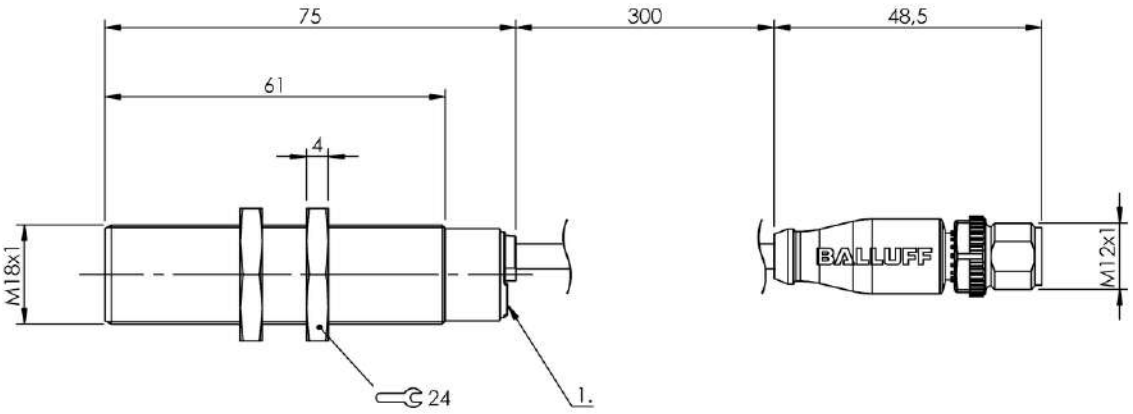
BAE00JA



BAE00J9

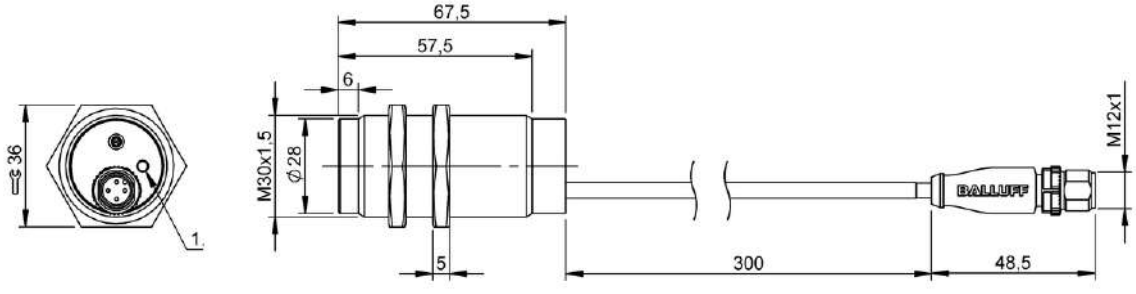
	BAE00H1 BAE LX-VS-SI018	BAE011K BAE LX-VS-SI030A	
Connection	Cable with connector, M12x1-Male, 4-pin, 0.30 m	Cable with connector, M12x1-Male, 4-pin, 0.3 m	
Version	Spotlight	Spotlight	
Dimension	Ø 18 x 75 mm	Ø 30 x 67.5 mm	
Rated operating voltage Ue DC	24 V	24 V	
Current draw max.	83 mA	300 mA	
Operating mode	Normal	Normal, Boost	
Digital inputs	Trigger	Trigger	
Material	Stainless steel (1.4301) Brass Glass	Stainless steel (1.4301) Brass PC	
Illumination area	Ø 15.4 mm	Ø 25 mm	
Light type	LED infrared	LED infrared	
Wave length	875 nm	850 nm	
Illuminence (0.1 m)	—	—	
Beam angle	—	10 °	
Ambient temperature	-25...75 °C	-10...50 °C	
Approval/Conformity	CE, EAC, WEEE	CE, EAC, WEEE	
IP rating	IP67	IP67	
Productview	Page 586	Page 586	

	BAE00KF BAE LX-VS-SR012	BAE00H0 BAE LX-VS-SR018	BAE011L BAE LX-VS-SR030A	BAE011M BAE LX-VS-SW030A
	Cable with connector, M12x1-Male, 4-pin, 0.30 m	Cable with connector, M12x1-Male, 4-pin, 0.30 m	Cable with connector, M12x1-Male, 4-pin, 0.3 m	Cable with connector, M12x1-Male, 4-pin, 0.3 m
	Spotlight	Spotlight	Spotlight	Spotlight
	Ø 12 x 41.5 mm	Ø 18 x 75 mm	Ø 30 x 67.5 mm	Ø 30 x 67.5 mm
	24 V	24 V	24 V	24 V
	83 mA	83 mA	300 mA	300 mA
	Normal	Normal	Normal, Boost	Normal, Boost
	Trigger	Trigger	Trigger	Trigger
	Stainless steel (1.4301) PC	Stainless steel (1.4301) Brass Glass	Stainless steel (1.4301) Brass PC	Stainless steel (1.4301) Brass PC
	Ø 9 mm	Ø 15.4 mm	Ø 25 mm	Ø 25 mm
	LED, red light	LED, red light	LED, red light	LED white light
	617 nm	617 nm	625 nm	—
	600 Lux	10500 Lux	1100 Lux 190000 Lux (Boost mode)	1200 Lux 200000 Lux (Boost mode)
	20 °	15 °	10 °	10 °
	-10...50 °C	-10...50 °C	-10...50 °C	-10...50 °C
	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE
	IP67	IP67	IP67	IP67
	Page 587	Page 586	Page 586	Page 586



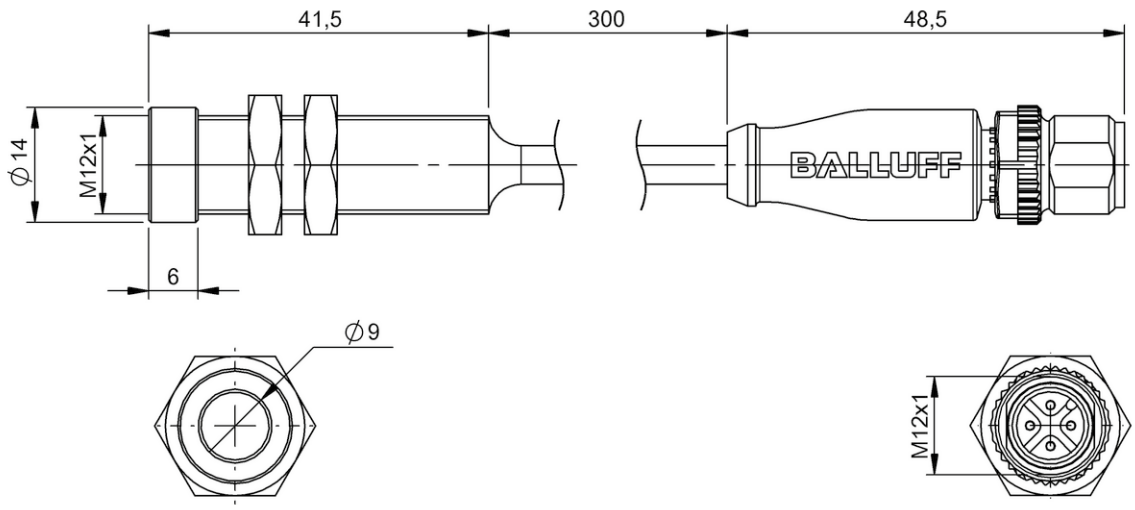
1) Power green

BAE00H1, BAE00H0



1) Power green

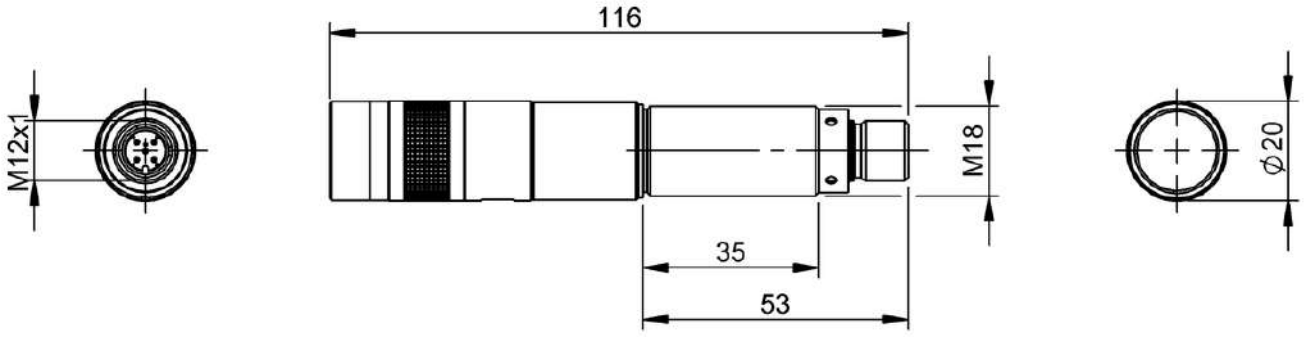
BAE011K, BAE011L, BAE011M



BAE00KF

	BAE010A BAE LX-X0-PL018-E-C1-S103	BAE0104 BAE LX-X0-PL018-E-L1-S103	
Connection	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	
Version	Laser modules	Laser modules	
Dimension	Ø 20 x 116 mm	Ø 20 x 116 mm	
Operating voltage Ub	5...30 VDC	5...30 VDC	
Digital inputs	Trigger	Trigger	
Material	Stainless steel Glass Nickel-plated brass nuts	Stainless steel Glass Nickel-plated brass nuts	
Projection type	Cross	Line, homogeneous	
Opening angle min.	30° x 30°	45°	
Light type	Laser red light	Laser red light	
Wave length	635 nm	640 nm	
Laser class per IEC 60825-1	1M	2M	
Ambient temperature	-10...50 °C	-10...50 °C	
Approval/Conformity	CE, EAC	CE, EAC	
Protection degree	IP67	IP67	
Productview	Page 590	Page 590	

	BAE0106 BAE LX-X0-PL018-E-L3-S103	BAE0107 BAE LX-X0-PL018-E-L7-S103	BAE0108 BAE LX-X0-PL018-E-L8-S103	BAE0109 BAE LX-X0-PL018-E-P1-S103
	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin
	Laser modules	Laser modules	Laser modules	Laser modules
	Ø 20 x 116 mm	Ø 20 x 116 mm	Ø 20 x 116 mm	Ø 20 x 116 mm
	5...30 VDC	9...30 VDC	9...30 VDC	5...30 VDC
	Trigger	Trigger	Trigger	Trigger
	Stainless steel Glass Nickel-plated brass nuts	Stainless steel Glass Nickel-plated brass nuts	Stainless steel Glass Nickel-plated brass nuts	Stainless steel Glass Nickel-plated brass nuts
	Line, homogeneous	Line, homogeneous	Line, homogeneous	Point, elliptical
	20°	45°	45°	–
	Laser red light	Laser, blue light	Laser green light	Laser red light
	640 nm	450 nm	520 nm	635 nm
	2M	2M	2M	2
	-10...50 °C	-10...50 °C	-10...50 °C	-10...50 °C
	CE, EAC	CE, EAC	CE, EAC	CE, EAC
	IP67	IP67	IP67	IP67
	Page 590	Page 590	Page 590	Page 590



BAE010A, BAE0104, BAE0106, BAE0107, BAE0108, BAE0109

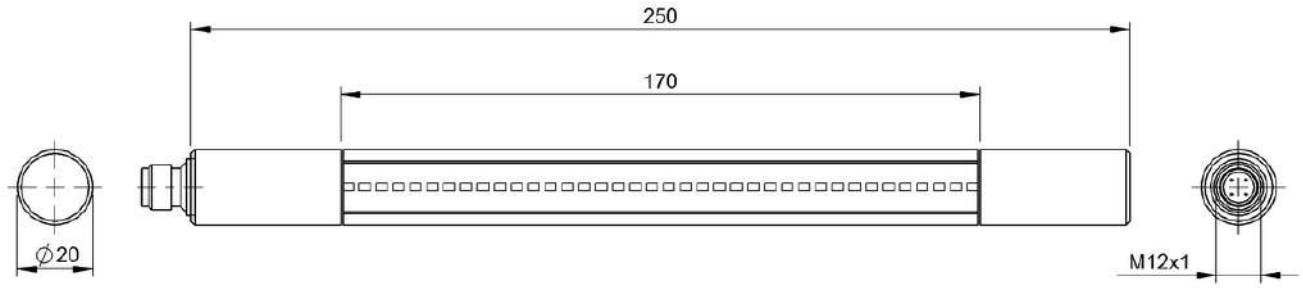
	BAE00W8 BAE LX-XA-BW0170-S4	BAE011E BAE LX-XA-BW0170A-S4	
Connection	Connector, M12x1-Male	Connector, M12x1-Male, 4-pin	
Version	Machine light	Machine light	
Dimension	Ø 20 x 250 mm	Ø 45 x 210 mm	
Rated operating voltage Ue DC	24 V	24 V	
Housing material primary	Aluminum	Aluminum	
Housing material secondary	PMMA	Borosilicate crown glass	
Illumination area	170 x 14 mm	170 x 42 mm	
Beam angle	120 °	120 °	
Light type	LED white light	LED white light diffuse	
Light intensity	410 lm	900 lm	
Color temperature	4000 K	5000 K	
Ambient temperature	-25...60 °C	-20...40 °C	
Approval/Conformity	CE, EAC, cULus, WEEE	CE, EAC, UL Listed, WEEE	
IP rating	IP69K	IP67	
Productview	Page 596	Page 596	



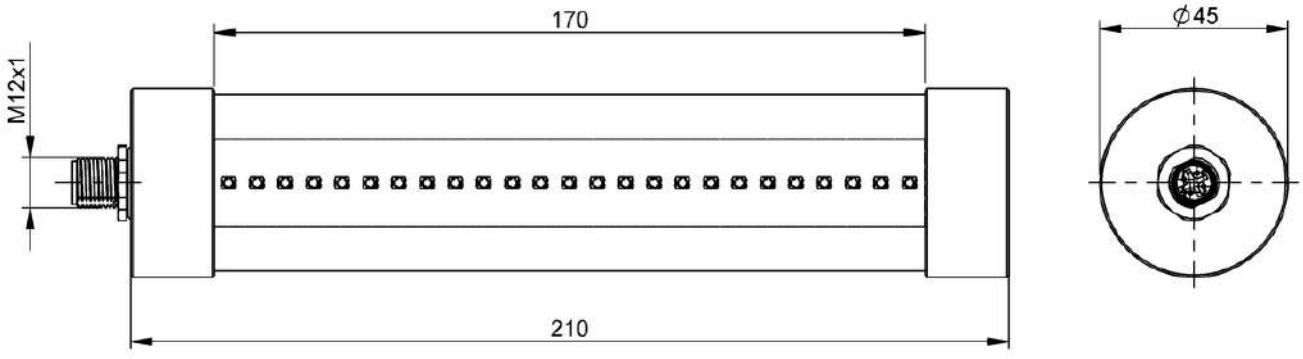

	BAE00W9 BAE LX-XA-BW0278-S4	BAE00WA BAE LX-XA-BW0332-S4	BAE00ZM BAE LX-XA-BW0380A-S4	BAE00Y4 BAE LX-XA-BW0530-S4
	Connector, M12x1-Male	Connector, M12x1-Male	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male
	Machine light	Machine light	Machine light	Machine light
	Ø 20 x 358 mm	Ø 20 x 432 mm	Ø 45 x 420 mm	Ø 20 x 610 mm
	24 V	24 V	24 V	24 V
	Aluminum	Aluminum	Aluminum	Aluminum
	PMMA	PMMA	Borosilicate crown glass	PMMA
	278 x 14 mm	332 x 14 mm	380 x 42 mm	530 x 14 mm
	120 °	120 °	120 °	120 °
	LED white light	LED white light	LED white light diffuse	LED white light
	654 lm	746 lm	1800 lm	1256 lm
	4000 K	4000 K	5000 K	4000 K
	-25...60 °C	-25...60 °C	-20...40 °C	-25...60 °C
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	IP69K	IP69K	IP67	IP69K
	Page 597	Page 597	Page 598	Page 598

	BAE00ZN BAE LX-XA-BW0560A-S4	BAE00Y5 BAE LX-XA-BW0710-S4	
Connection	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male	
Version	Machine light	Machine light	
Dimension	Ø 45 x 600 mm	Ø 20 x 790 mm	
Rated operating voltage Ue DC	24 V	24 V	
Housing material primary	Aluminum	Aluminum	
Housing material secondary	Borosilicate crown glass	PMMA	
Illumination area	560 x 42 mm	710 x 14 mm	
Beam angle	120 °	120 °	
Light type	LED white light diffuse	LED white light	
Light intensity	2700 lm	1661 lm	
Color temperature	5000 K	4000 K	
Ambient temperature	-20...40 °C	-25...60 °C	
Approval/Conformity	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	
IP rating	IP67	IP69K	
Productview	Page 599	Page 599	

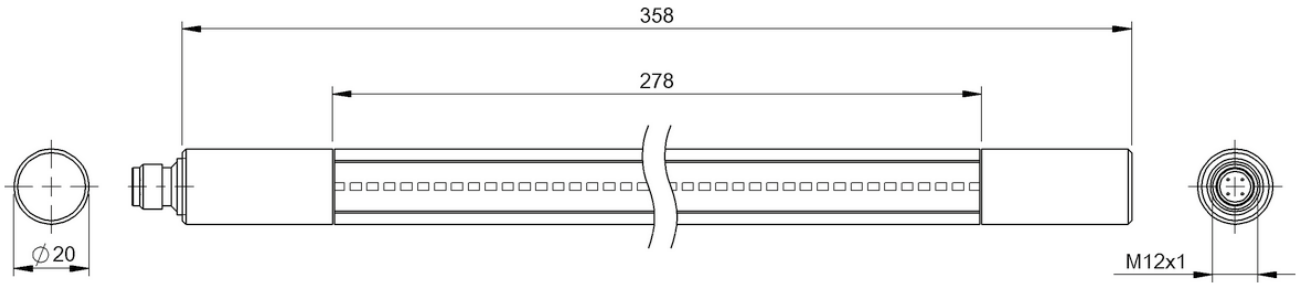
	BAE00ZP BAE LX-XA-BW0760A-S4	BAE00ZR BAE LX-XA-BW0960A-S4	BAE00Y6 BAE LX-XA-BW1016-S4	BAE00ZT BAE LX-XA-BW1160A-S4
	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Male	Connector, M12x1-Male, 4-pin
	Machine light	Machine light	Machine light	Machine light
	Ø 45 x 800 mm	Ø 45 x 1000 mm	Ø 20 x 1096 mm	Ø 45 x 1200 mm
	24 V	24 V	24 V	24 V
	Aluminum	Aluminum	Aluminum	Aluminum
	Borosilicate crown glass	Borosilicate crown glass	Borosilicate crown glass	Borosilicate crown glass
	760 x 42 mm	960 x 42 mm	1016 x 14 mm	1160 x 42 mm
	120 °	120 °	120 °	120 °
	LED white light diffuse	LED white light diffuse	LED white light	LED white light diffuse
	3600 lm	4500 lm	2268 lm	5400 lm
	5000 K	5000 K	4000 K	5000 K
	-20...40 °C	-20...40 °C	-25...60 °C	-20...40 °C
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	IP67	IP67	IP69K	IP67
	Page 600	Page 600	Page 601	Page 601



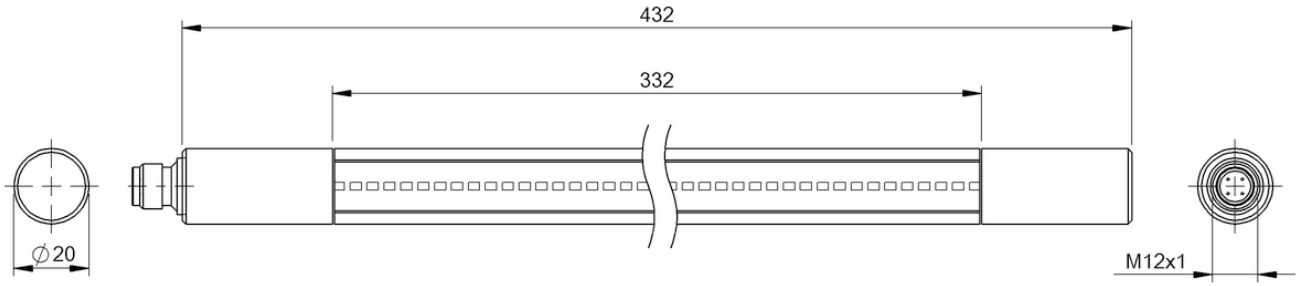
BAE00W8



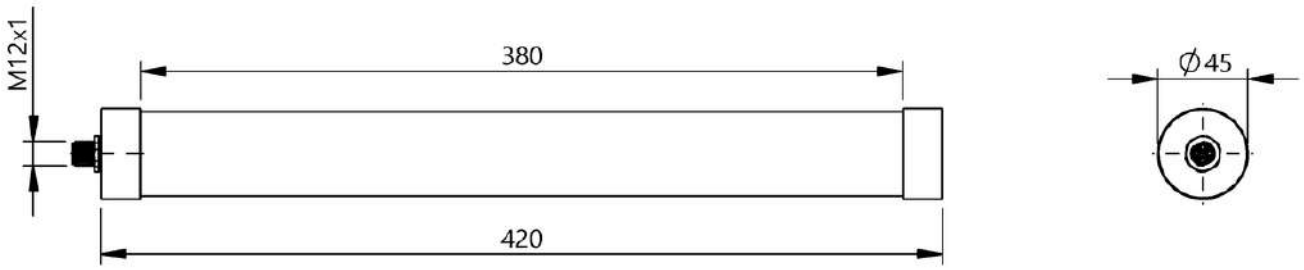
BAE011E



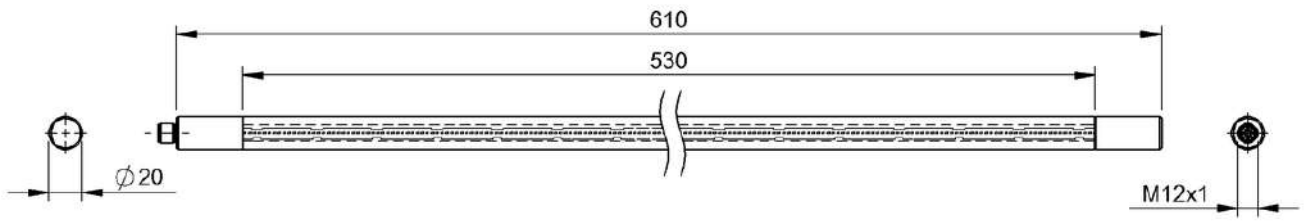
BAE00W9



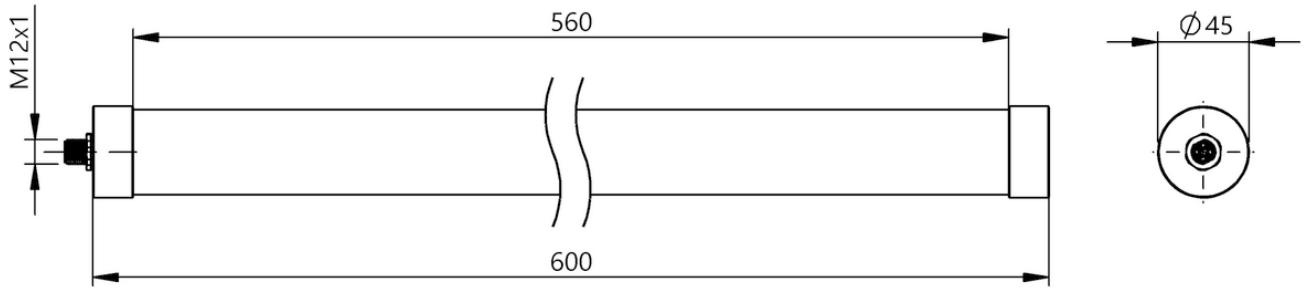
BAE00WA



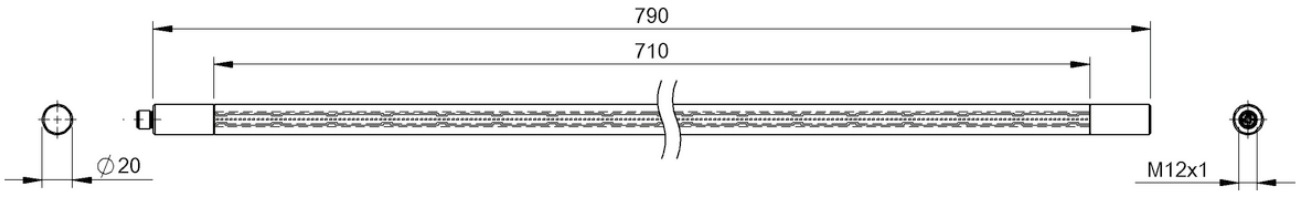
BAE00ZM



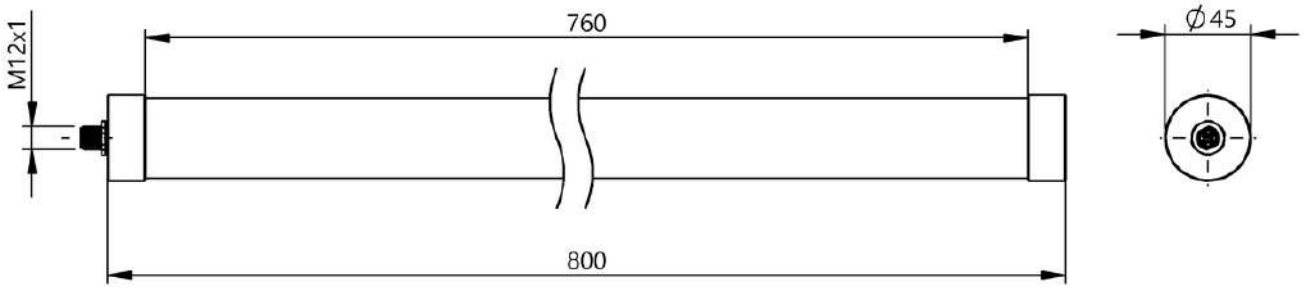
BAE00Y4



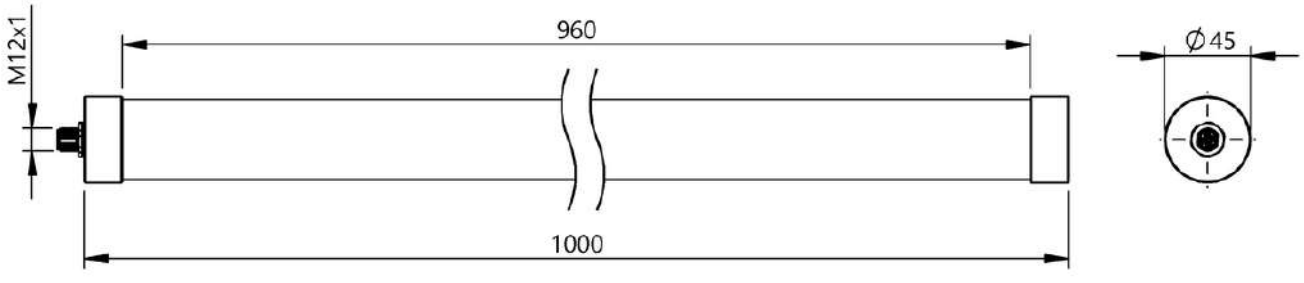
BAE00ZN



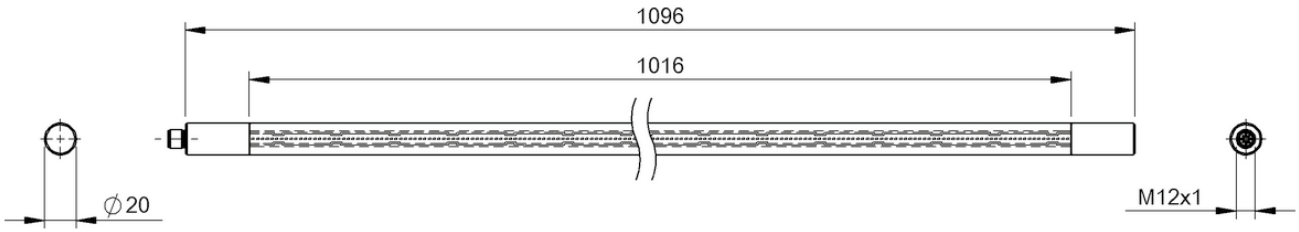
BAE00Y5



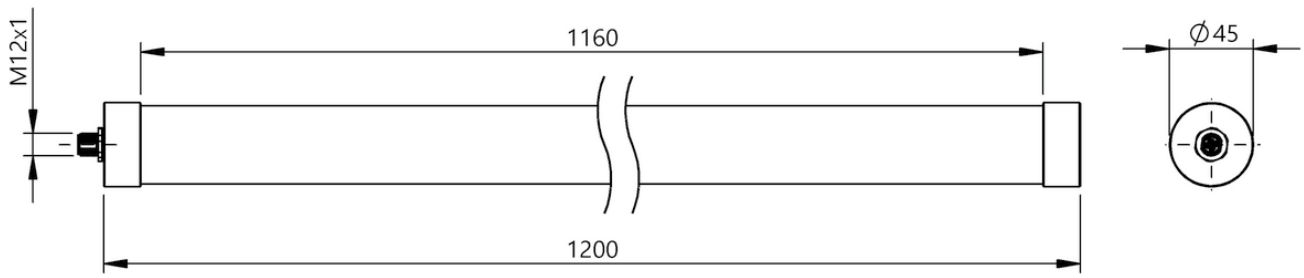
BAE00ZP



BAE00ZR



BAE00Y6



BAE00ZT

Efficiently transport signals with signal converters

SIGNAL CONVERTERS AND COMMUNICATION ADAPTERS

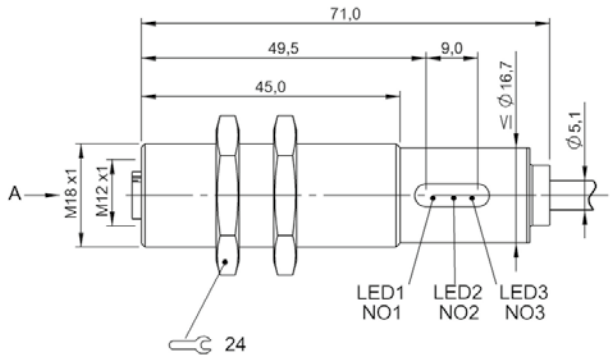
Our signal converters store an incoming signal in a specific format and output it in a different format.

Frequently, such modules are used in the conversion of analog signals into digital signals or vice versa. Likewise, you can convert different communication protocols using signal converters.

The most important benefits

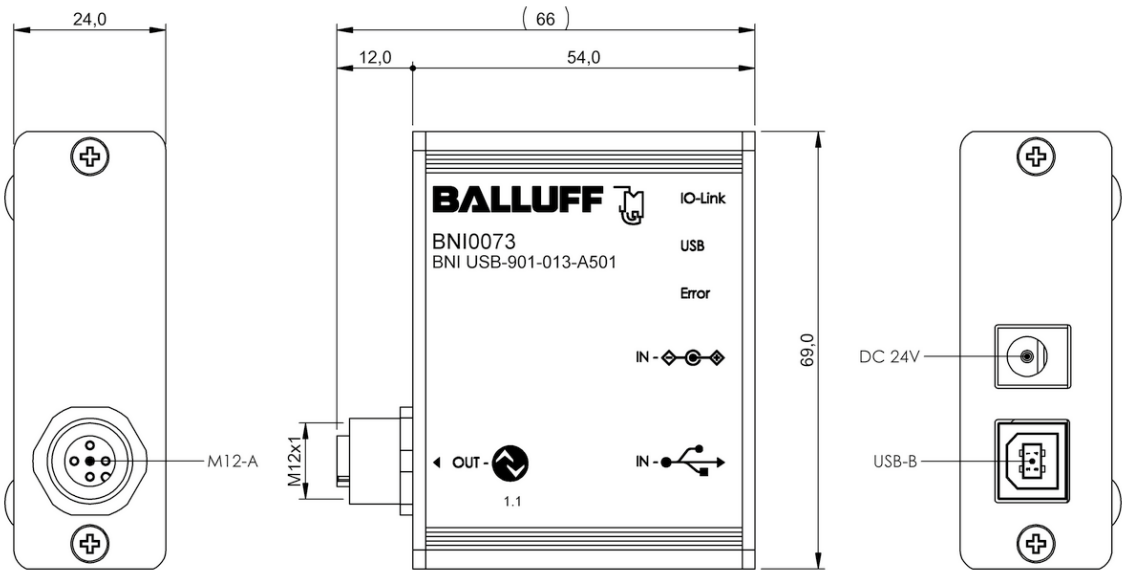
- Easy installation
- Installation in the control cabinet or directly on the sensor
- Adaptation of the output signal to the application
- Mixing of different signals on an assembly possible
- Cost reduction potential

	BAE0070 BES 516-615-PS-1-PU-05
Principle of operation	Signal converter
Additional text	For direct installation
Connection	Cable
Connection for sensor	M12x1-Female, 5-pole, A-coded
Analog inputs	Analog, voltage (0…10 V)
Switching output	3x PNP normally open (NO)
Material	Brass nickel plated
Ambient temperature	-10...70 °C
Protection degree	IP67
Approval/Conformity	CE


71,0
49,5
9,0
45,0
Ø16,7
Ø5,1
A
M18 x1
M12 x1
LED1
NO1
LED2
NO2
LED3
NO3
24

BAE0070

	BNI0073 BNI USB-901-013-A501
Interface	IO-Link 1.1
Dimension	66 x 24 x 69 mm
Material	Aluminum
Ambient temperature	-5...55 °C
Protection degree	IP21
Approval/Conformity	CE


24,0
66
12,0
54,0
BALLUFF
IO-Link
BNI0073
BNI USB-901-013-A501
USB
Error
IN -
69,0
DC 24V
M12-A
M12x1
OUT -
1.1
IN -
USB-B

BNI0073

	BNI00C9 BNI IOL-717-002-E023	BNI00C8 BNI IOL-725-002-E023	
Version	Analog converter	Analog converter	
Interface	IO-Link 1.1	IO-Link 1.1	
Function	—	—	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	
Digital inputs	—	—	
Analog inputs	Analog, voltage/Analog, current/ analog, temperature (0…10 V/-10…10 V/0…5 V/-5…5 V/5...10 V/4…20 mA/0…20 mA/Pt100/ Pt1000)	—	
Analog outputs	—	Analog, voltage/Analog, current (0…10 V/-10…10 V/0…5 V/-5…5 V/5...10 V/4…20 mA/0…20 mA)	
Configurable inputs/outputs	yes	yes	
Resolution	≤ 16 bits	≤ 16 bits	
Connection	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Connection for sensor	M12x1-Female, 5-pole, A-coded	M12x1-Female, 5-pole, A-coded	
Housing material	Stainless steel (1.4305) PTFE	Stainless steel (1.4305) PTFE	
Dimension	Ø 18 x 135.5 mm	Ø 18 x 135.5 mm	
Ambient temperature	-5...70 °C	-5...70 °C	
Protection degree	IP67 when threaded in	IP67 when threaded in	
Approval/Conformity	CE	CE	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	10 ms	10 ms	
Process data in	3 bytes	—	
Process data out	—	2 bytes	
Productview	Page 614	Page 614	

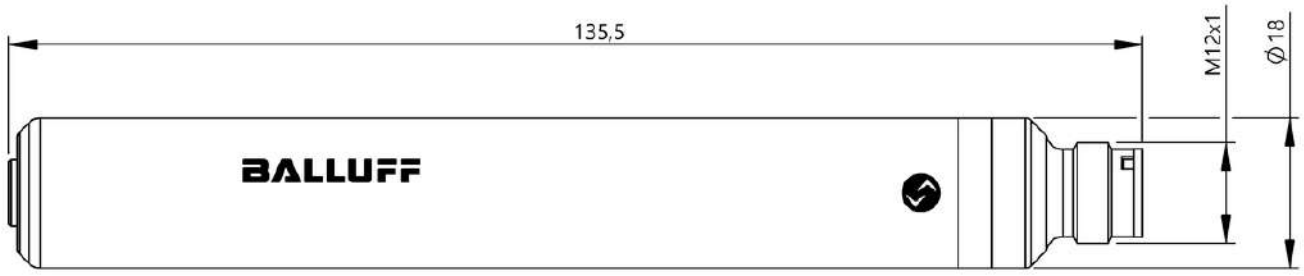
	BNI00C6 BNI IOL-730-002-E023	BNI00C7 BNI IOL-740-002-E023	BNI00C1 BNI IOL-760-002-E066	BNI0041 BNI IOL-712-000-K023
	Analog converter	Analog converter	RS232 converter	Analog converter
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1, RS232	IO-Link 1.0
	—	—	—	—
	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
	—	—	4x PNP, Type 3	—
	Analog, voltage/Analog, current/ analog, temperature (0…10 V/-10…10 V/0…5 V/-5…5 V/5...10 V/4…20 mA/0…20 mA/Pt100/ Pt1000/Thermocouple Type J/Thermocouple Type K)	Analog, temperature (Pt100/ Pt1000/Thermocouple Type J /Thermocouple Type K)	—	Analog, current (0…20 mA)
	Analog, voltage/Analog, current (0…10 V/-10…10 V/0…5 V/-5…5 V/5...10 V/4…20 mA/0…20 mA)	—	—	—
	yes	yes	no	no
	≤ 16 bits	≤ 16 bits	—	≤ 14 bits
	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1 connector, 4-pin	M12x1-Male, 4-pole, A-coded
	M12x1-Female, 5-pole, A-coded	M12x1-Female, 5-pole, A-coded	M12x1-Female, 8-pole, A-coded	M12x1-Female, 4-pole, A-coded
	Stainless steel (1.4305) PTFE	Stainless steel (1.4305) PTFE	Stainless steel (1.4305) PTFE	PA
	Ø 18 x 135.5 mm	Ø 18 x 135.5 mm	Ø 18 x 118 mm	14.2 x 50.4 x 40 mm
	-5...70 °C	-5...70 °C	-5...55 °C	-5...70 °C
	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in
	CE	CE	CE	CE
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	10 ms	10 ms	35.2 ms	3 ms
	3 bytes	3 bytes	32 bytes	2 bytes
	2 bytes	—	32 bytes	—
	Page 614	Page 614	Page 614	Page 615

	BNI0042 BNI IOL-714-000-K023	BNI004T BNI IOL-716-000-K023	
Version	Analog converter	Analog converter	
Interface	IO-Link 1.0	IO-Link 1.0	
Function	—	—	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	
Digital inputs	—	—	
Analog inputs	Analog, voltage (0…10 V)	Analog, Temperature (Pt100)	
Analog outputs	—	—	
Configurable inputs/outputs	no	no	
Resolution	≤ 14 bits	≤ 14 bits	
Connection	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Connection for sensor	M12x1-Female, 4-pole, A-coded	M12x1-Female, 4-pole, A-coded	
Housing material	PA	PA	
Dimension	14.2 x 50.4 x 40 mm	14.2 x 50.4 x 40 mm	
Ambient temperature	-5...70 °C	-5...70 °C	
Protection degree	IP67 when threaded in	IP67 when threaded in	
Approval/Conformity	CE	CE	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	3 ms	12 ms	
Process data in	2 bytes	2 bytes	
Process data out	—	—	
Productview	Page 615	Page 615	

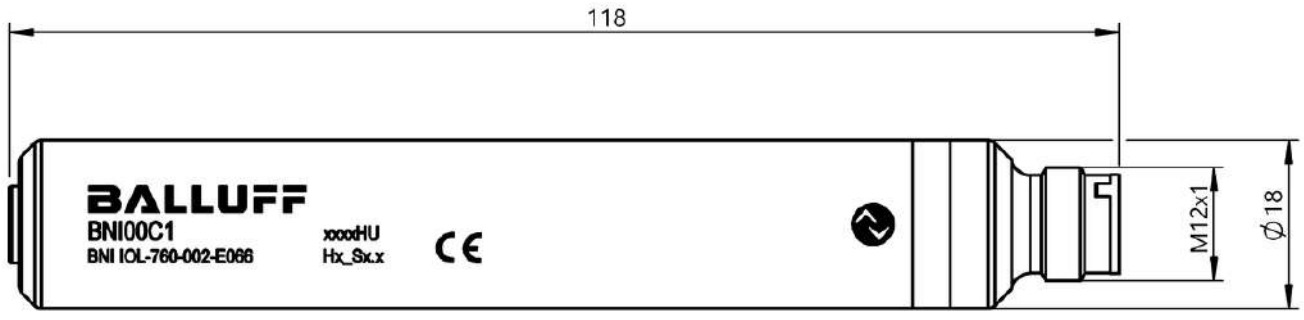
	BNI004C BNI IOL-722-000-K023	BNI004E BNI IOL-724-000-K023	BAE0073 BES 516-IV 2	BAE002E BOS S-C01
	Analog converter	Analog converter	—	—
	IO-Link 1.0	IO-Link 1.0	—	—
	—	—	Pulse lengthening	Part counter (1 pulse per part), Divider (1 pul. per x parts), Switching amplifier up to 400 mA, Flip flop (on/off switch), Switching inverter (NO/NC)
	18...30.2 VDC	18...30.2 VDC	10...30 VDC	10...30 VDC
	—	—	PNP/NPN	PNP
	—	—	—	—
	Analog, current (4…20 mA)	Analog, voltage (0…10 V)	—	—
	no	no	—	—
	≤ 14 bits	≤ 14 bits	—	—
	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	Screw terminal	Connector, M12x1
	M12x1-Female, 4-pole, A-coded	M12x1-Female, 4-pole, A-coded	4-pole	M12x1-Female, 4-pole
	PA	PA	Plastic	PBT PA
	14.2 x 50.4 x 40 mm	14.2 x 50.4 x 40 mm	58 x 90 x 17.5 mm	Ø 20 x 60 mm
	-5...70 °C	-5...70 °C	0...60 °C	0...60 °C
	IP67 when threaded in	IP67 when threaded in	IP20, IP40	IP67
	CE	CE	CE	CE
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	—	—
	12 ms	12 ms	—	—
	2 bytes	2 bytes	—	—
	2 bytes	2 bytes	—	—
	Page 615	Page 615	Page 615	Page 616

	BAE002H BOS S-F01	BAE002J BOS S-F02	
Function	Switching amplifier up to 400 mA, Output converter (PNP/NPN), Switching inverter (NO/NC)	Switching amplifier up to 400 mA, Output converter (PNP/NPN), Switching inverter (NO/NC)	
Operating voltage Ub	10...30 VDC	10...30 VDC	
Digital inputs	PNP	NPN	
Connection	Connector, M12x1	Connector, M12x1	
Connection for sensor	M12x1-Female, 4-pole	M12x1-Female, 4-pole	
Housing material	PBT PA	PBT PA	
Dimension	Ø 20 x 60 mm	Ø 20 x 60 mm	
Ambient temperature	0...60 °C	0...60 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE	CE	
Productview	Page 616	Page 616	

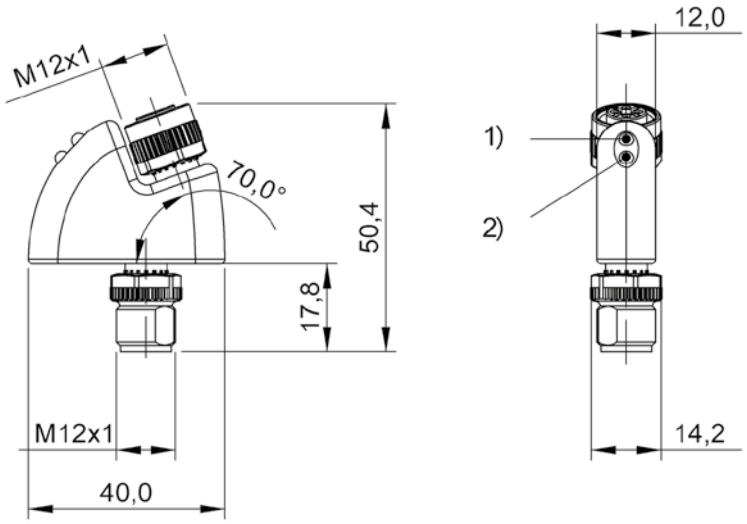
	BAE002K BOS S-M01	BAE002L BOS S-M02	BAE002M BOS S-T01	BAE002N BOS S-T02
	Frequency monitor up to 1 kHz, Switching amplifier up to 400 mA	Frequency monitor up to 1 kHz, Switching amplifier up to 400 mA	Switching amplifier up to 400 mA, Timer on/off delay	Switching amplifier up to 400 mA, Timer on/off delay
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
	PNP	NPN	PNP	NPN
	Connector, M12x1	Connector, M12x1	Connector, M12x1	Connector, M12x1
	M12x1-Female, 4-pole	M12x1-Female, 4-pole	M12x1-Female, 4-pole	M12x1-Female, 4-pole
	PBT PA	PBT PA	PBT PA	PBT PA
	Ø 20 x 60 mm	Ø 20 x 60 mm	Ø 20 x 60 mm	Ø 20 x 60 mm
	0...60 °C	0...60 °C	0...60 °C	0...60 °C
	IP67	IP67	IP67	IP67
	CE	CE	CE	CE
	Page 616	Page 616	Page 616	Page 616



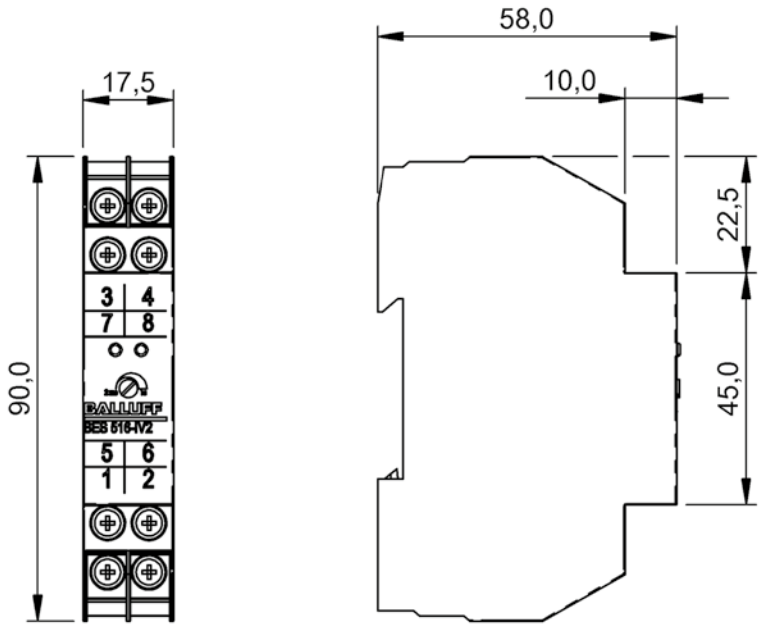
BNI00C9, BNI00C8, BNI00C6, BNI00C7



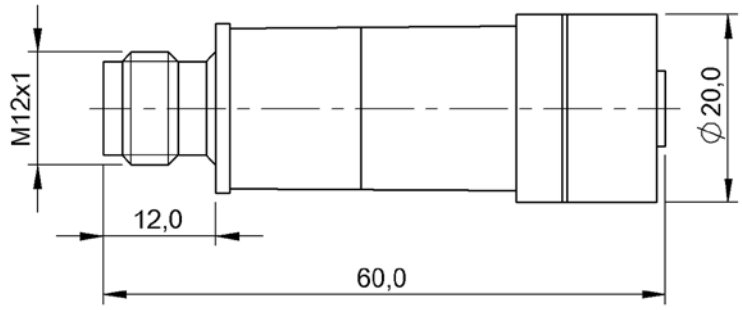
BNI00C1



BNI0041, BNI0042, BNI004T, BNI004C, BNI004E



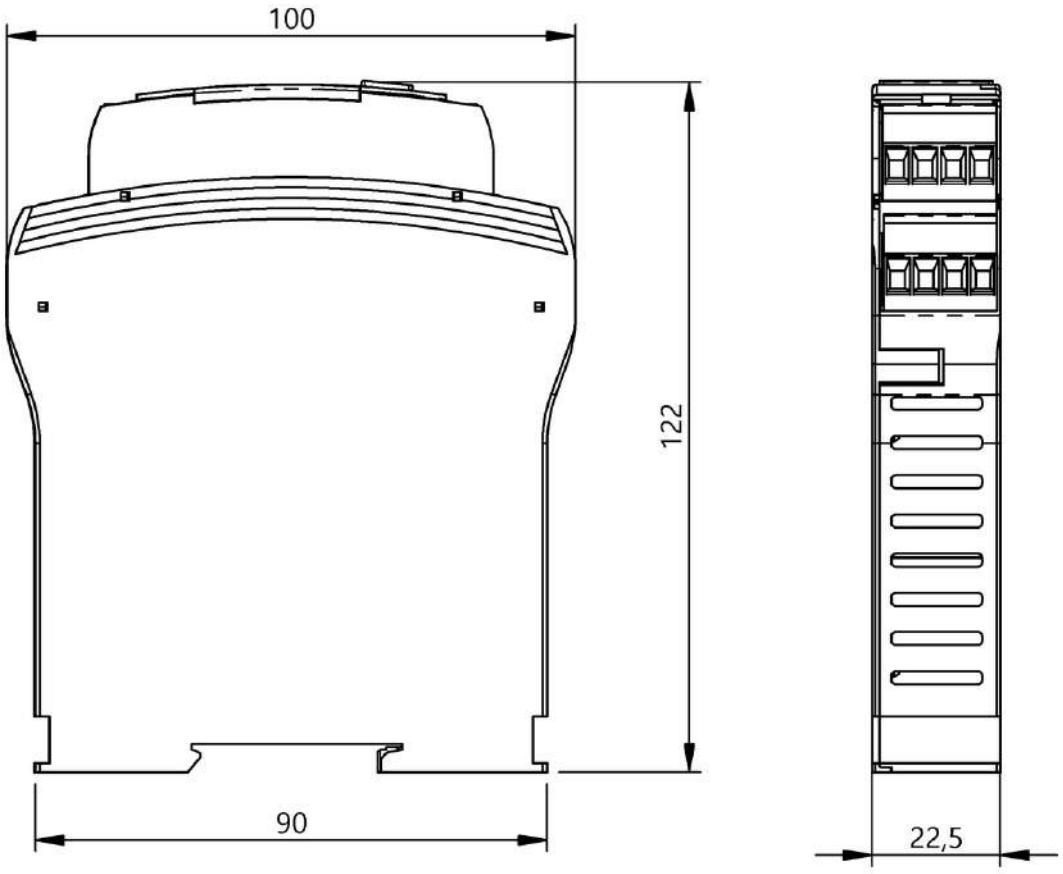
BAE0073



BAE002E, BAE002H, BAE002J, BAE002K, BAE002L, BAE002M, BAE002N

	BAE00ZU BAE SA-XE-051-XR	
Use	—	
Operating voltage Ub	21.6...26.4 VDC	
Ambient temperature	-20...60 °C	
Protection degree	IP20	
Approval/Conformity	CE, EAC	
Productview	Page 620	

	BAE00ZY BAE SA-XE-052-XR	BAE00ZW BAE SA-XE-053-XR
	—	—
	103.5...126.5 VAC	207...253 VAC
	-20...60 °C	-20...60 °C
	IP20	IP20
	CE, EAC	CE, EAC
	Page 620	Page 620

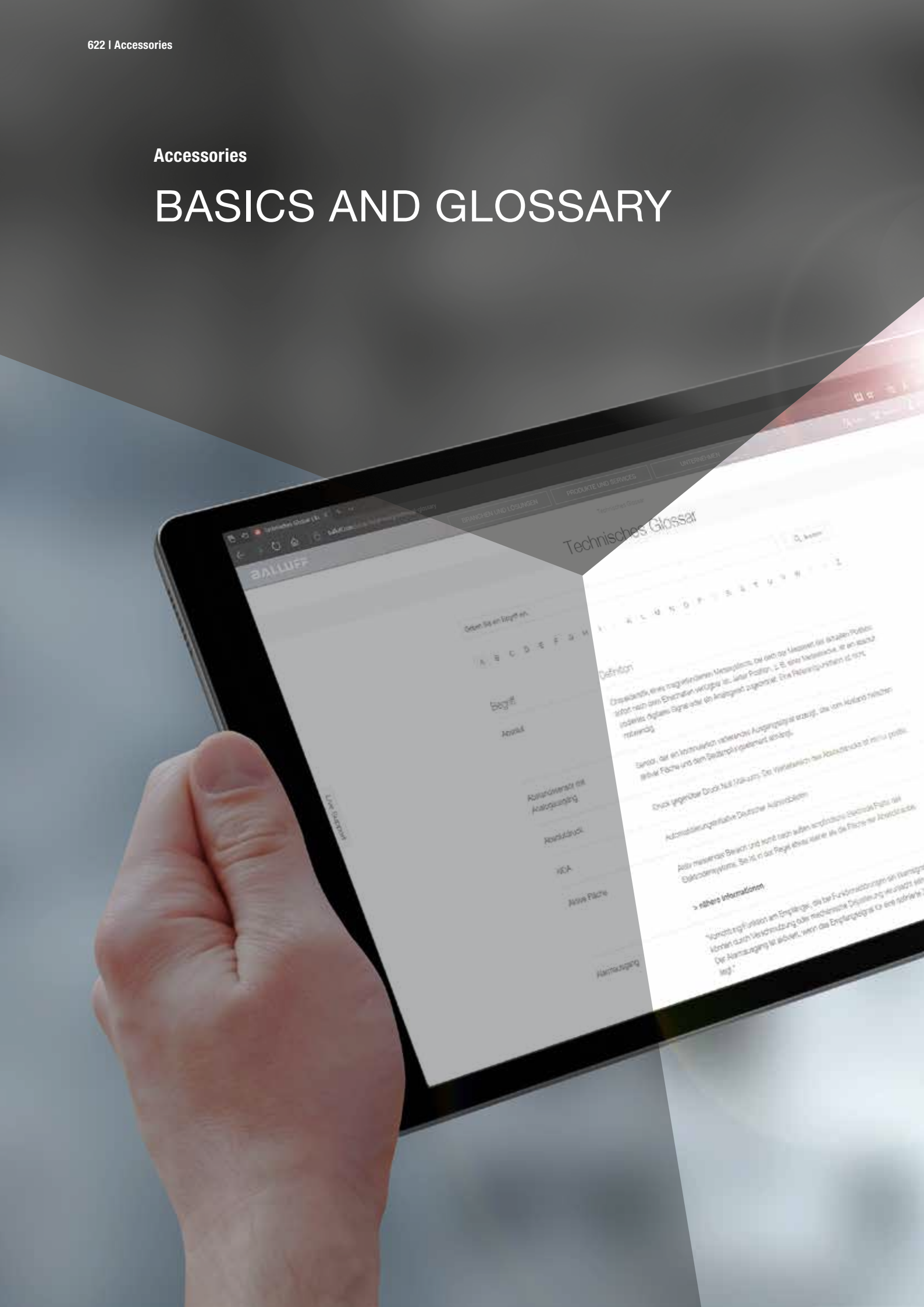


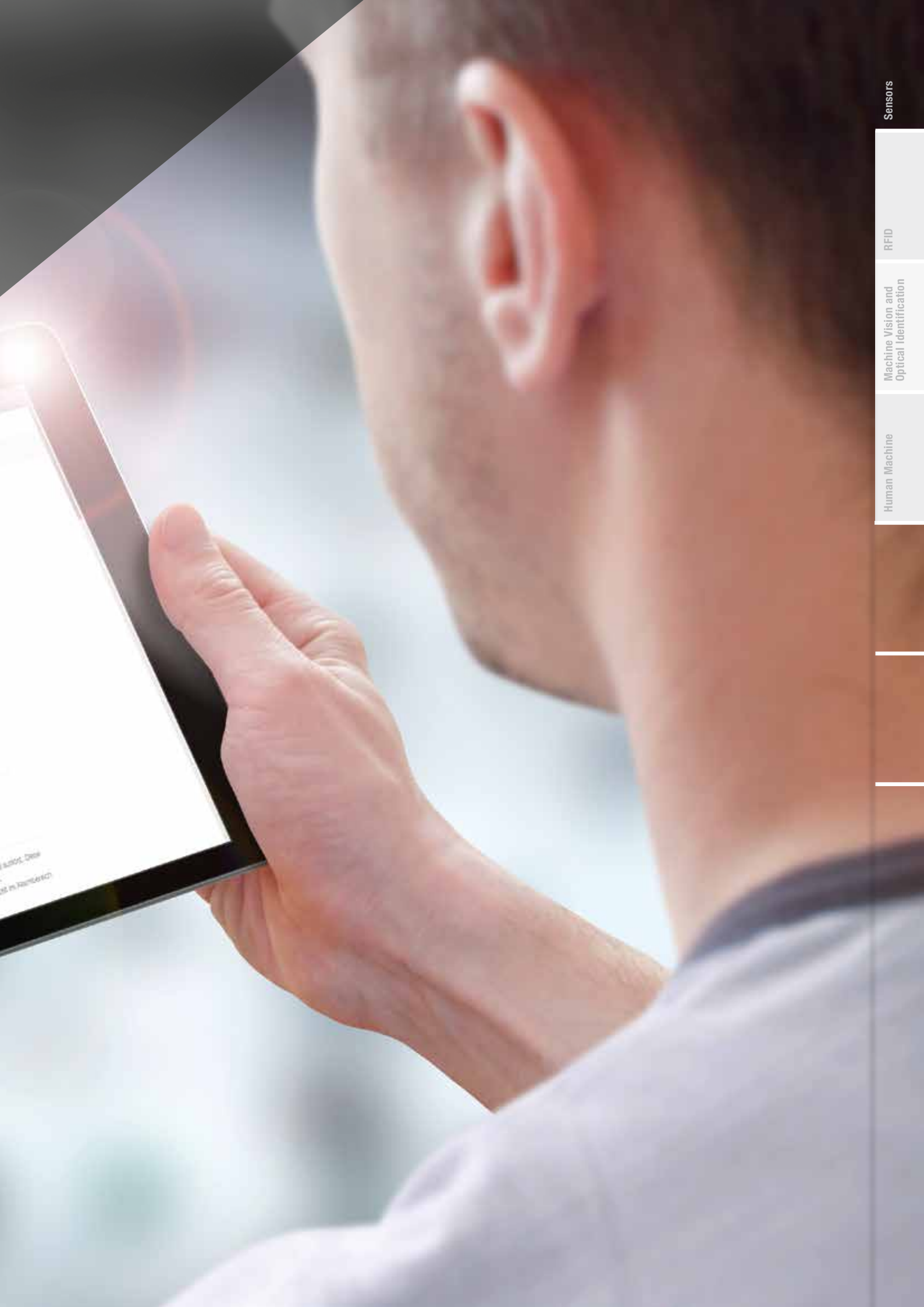
1) Sensing surface

BAE00ZU, BAE00ZY, BAE00ZW

Accessories

BASICS AND GLOSSARY





FASTENERS

Mounting of mounting clamps

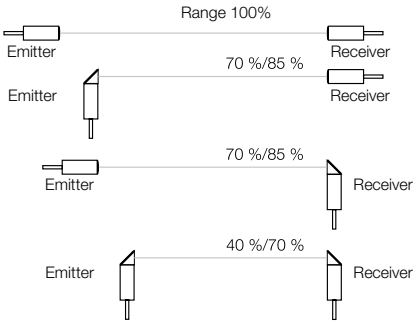
Small sensors or fiber optics are used in compact systems. In some situations, they are the only option. Tight spaces under demanding conditions often make positioning of the miniature sensors difficult. The mounting clamps demonstrate their diversity by holding a range of different sensors and fiber optics. They are extremely stable, variable and flexible. With just a few work steps, sensors and fiber optics can be mounted on housings or base plates.

- Mounting clamps for smooth sensors and fiber optics: Ø 3 mm, Ø 4 mm, Ø 6.5 mm, Ø 8 mm
- Simple and economical mounting
- Minimal wall thickness for internal threaded bore: 2 mm

ACCESSORIES FOR PHOTOELECTRIC SENSORS

Deflection heads, suitable combinations

All BOS 18 photoelectric sensors can be equipped with a 90° deflection head. The table shows the appropriate deflection head for each switch type and indicates the corresponding reduction factor (RF) to apply to the range. With a through-beam sensor, the emitter and the receiver can be equipped with a 90° deflection head. Each deflection head reduces the range by approx. 15...50 %.



Diagonal mirrors

When using the diagonal mirror, the sensing range is reduced by 30% for the M12 diffuse and M12 through-beam sensors. Not suitable for retroreflective sensors.

LIGHTS

What should the distance between the light and the component be?

The intensity of illumination on an object decreases quadratically with the working distance. Therefore objects that are farther away appear darker than closer objects. A bright object should be inspected, for example, once at a distance of 10 cm and once at 100 cm. The brightness of the object at 10 cm is 100 times greater than at a distance of 100 cm. Select the optimum distance between the light source, sensor and target object. In order to prevent saturation, make sure that the brightness of the light source is correct.

How should reflective components be illuminated?

When inspecting highly reflective surfaces, the sensor must be mounted with extreme care. If necessary, attach an external light to a suitable bracket in order to maximize the contrast between the object to be detected and the background.

How can the illumination of the part to be inspected be kept constant?

Avoid fluctuations in brightness due to ambient light, sunlight or other external light sources. These fluctuations are the most frequent cause of errors in image processing and are often difficult to identify. Errors can be limited by decreasing the exposure time of the sensor. External lighting may be required in addition to the light inside the sensor. Alternative solutions include covers or any kind of physical screen that specifically controls the light within the inspection area.

How should the field of view be illuminated?

The entire image area should be illuminated as evenly as possible. Avoid extremely bright points or dark areas. The component features you wish to inspect should, however, contrast as much as possible and show up clearly on the background. If you want to check for the presence of a certain feature, you can illuminate the component so that a clear shadow is cast upon the function to be identified. The Vision Sensor can then detect the feature.

MATERIALS

Material	Use and characteristics
PLASTICS	
ABS Acrylnitrile-Butadiene-Styrene	Impact-resistant, stiff, limited chemical resistance. Some types flame-retardant. Housing material.
AES/CP Acrylnitrile-Ethylene-Propylene-Styrene	Impact-resistant, stiff, limited chemical resistance. Housing material.
EP Epoxy resin	Duromer, molded plastic material, highest mechanical strength and temperature resistance. Very good dimensional stability. Cannot be melted.
Epoxy resin - hollow glass spheres	Hollow glass spheres can be treated with epoxy resins. They are used for manufacturing converters with low density and high pressure rating.
FEP Tetrafluorethylene-perfluorpropylene	High temperature resistance up to 180 °C, insulation material for cable.
LCP Liquid Crystalline Polymer	High mechanical strength and temperature resistance. Very good chemical resistance. Inherently non-flammable.
PA Polyamide	High impact resistance, good chemical resistance.
PA 6, PA 66, PA mod., PA 12 Polyamide	Good mechanical strength. Temperature resistance. PA 12 approved for food industry applications.
PA transp. Transparent polyamide	Transparent, hard, inflexible. Good chemical resistance.
PBT Polybutylene terephtalate	High mechanical strength and temperature resistance. Some types flame-retardant. Good chemical resistance. Good oil resistance.
PC Polycarbonate	Clear, hard, elastic and impact resistant. Good temperature resistance. Limited chemical resistance.
PEEK Polyetheretherketone	Thermoplastic. Very high strength and temperature resistance. Good chemical resistance. Can be sterilized, good resistance to ionizing radiation.
PEI Polyetherimide	High mechanical strength and good temperature resistance. Good chemical resistance even with many solvents. Transparent with amber-yellow inherent color (not pigmented).
PET Polyethylene terephtalate	High resistance to breakage, good dimensional stability. Frequently used in the food industry.
PMMA Polymethylmethacrylate	Clear, transparent, hard, scratch-resistant, UV-resistant, mainly for optical applications.
POM Polyoxymethylene	High impact resistance, good mechanical strength. Good chemical resistance.
PP Polypropylene	Very good electrical properties. Impact resistant, tough, mechanically resilient. Very low water uptake. Good to very good chemical resistance.
PPE Polyphenylene ether	Tough, inflexible, high mechanical strength over a wide temperature range. Good chemical resistance. Good hot water resistance.
PSU Polysulfone	High temperature resistance, high impact resistance, good chemical resistance, FDA approved (food grade).
PTFE Polytetrafluoroethylene	Best temperature and chemical resistance, FDA approved (food grade).
PUR Polyurethane	Elastic, abrasion-resistant, impact-resistant. Good resistance to oils, greases, solvents (used for gaskets and cable jackets).
PVC Polyvinyl chloride	Good mechanical strength and chemical resistance (cable).
PVDF Polyvinylidene fluoride	Thermoplastic. High mechanical strength and temperature resistance. Good chemical resistance (similar to PTFE).

Material	Use and characteristics
METAL	
Al Wrought aluminum alloy	Standard-aluminum for machined cutting. Can be anodized. Material for housings and mounting components.
CuZn Brass	Standard-housing material with surface protection.
Stainless steel	Excellent corrosion resistance and strength. Quality 1.4034, 1.4104: Standard-material; quality 1.4305, 1.4301: Standard-material for the food industry; quality 1.4401, 1.4404, 1.4571: With increased requirements on chemical resistance at elevated temperatures for the food industry.
GD-Al die-cast-aluminum	Low specific gravity. Good strength and resistance. Some types can be anodized.
GD-Zn die-cast-zinc	Good resistance and strength. Usually with protective surface coating.
OTHER	
Glass	Good chemical resistance and strength. Used primarily in optical applications (lenses, cover lenses).
Ceramic	Very good strength and chemical resistance. Electrically insulating. Excellent temperature resistance.

Connectivity

		BCC M313 ...
Connection		M8 female, A-coded
Version		straight
Rated voltage	No LED	60 V AC/DC
	with LED	30 V DC
Rated current		4 A
Degree of protection	unshielded	IP67, IP69K
	shielded	IP67
unshielded, no LED		BCC M313-0000-10-001-_ _ _ _ _ _①-_ _ _②
unshielded, 2 × PNP-LED		BCC M313-0000-10-004-_ _ _ _ _ _①-_ _ _②
unshielded, 2 × NPN-LED		–
shielded, no LED		BCC M313-0000-10-036-_ _ _ _ _ _①-_ _ _②
Approval/Conformity		CE, UL, EAC
For drawing see page		148

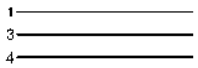
M8 female

PIN 1: brown
PIN 3: blue
PIN 4: black

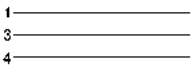
M8 male

PIN 1: brown
PIN 3: blue
PIN 4: black

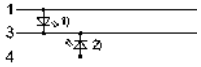
unshielded, no LED



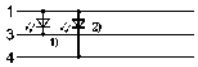
unshielded, no LED



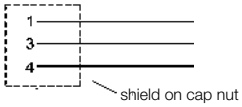
unshielded, 2 × PNP-LED*



unshielded, 2 × NPN-LED*



shielded, no LED



* 1) LED green = Power
2) LED yellow = Function

	BCC M313 ...	BCC M323 ...	BCC M323 ...
	M8 male, A-coded	M8 female, A-coded	M8 male, A-coded
	straight	angled	angled
	60 V AC/DC	60 V AC/DC	60 V AC/DC
	–	30 V DC	–
	4 A	4 A	4 A
	IP67, IP69K	IP67, IP69K	IP67, IP69K
		IP67	
	BCC M313-0000-20-001-_ _ _ _ _ _①-_ _ _②	BCC M323-0000-10-001-_ _ _ _ _ _①-_ _ _②	BCC M323-0000-20-001-_ _ _ _ _ _①-_ _ _②
	–	BCC M323-0000-10-004-_ _ _ _ _ _①-_ _ _②	–
	–	BCC M323-0000-10-006-_ _ _ _ _ _①-_ _ _②	–
	–	BCC M323-0000-10-036-_ _ _ _ _ _①-_ _ _②	–
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	148	148	148

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PX0334	PUR	Black	3 × 0.34 mm²	–50...+90 °C	–25...+90 °C
VX8334	PVC	Gray	3 × 0.34 mm²	–40...+105 °C	–5...+105 °C
EX43T2	TPE	Yellow	3 × AWG22	–50...+105 °C	–25...+105 °C
VX43T2	PVC	Yellow	3 × AWG22	–40...+105 °C	–5...+105 °C
SHIELDED					
PS0334	PUR	Black	3 × 0.34 mm²	–50...+90 °C	–25...+90 °C
VS8334	PVC	Gray	3 × 0.34 mm²	–40...+105 °C	–5...+105 °C

②	Cable length
CONNECTION CABLE	
020	2 m
050	5 m
100	10 m

Other cable lengths on request!

AVAILABLE AS BULK CABLE

	Order code	Part number	Cable length
PX0334	BCC0AC7	BCC 0000-0000-00-000-PX0334-10X	100 m
VX8334	BCC0C15	BCC 0000-0000-00-000-VX8334-10X	100 m
EX43T2	BCC0AEC	BCC 0000-0000-00-001-EX43T2-10X	100 m
VX43T2	BCC0AE7	BCC 0000-0000-00-001-VX43T2-10X	100 m

		BCC M415 ...	
Connection		M12 female, A-coded	
Version		straight	
Rated voltage	No LED	250 V AC/DC	
	with LED	30 V DC	
Rated current		4 A	
Degree of protection	unshielded	IP67, IP68, IP69K	
	shielded	IP67	
unshielded, no LED, N.O. signal		BCC M415-0000-1A-001-_ _ _ _ _ _①-_ _ _②	
unshielded, 2 × PNP-LED, N.O. signal		BCC M415-0000-1A-004-_ _ _ _ _ _①-_ _ _②	
unshielded, 2 × NPN-LED, N.O. signal		–	
shielded, no LED, N.O. signal		BCC M415-0000-1A-036-_ _ _ _ _ _①-_ _ _②	
unshielded, no LED, N.C. signal		BCC M415-0000-1A-002-_ _ _ _ _ _①-_ _ _②	
unshielded, 2 × PNP-LED, N.C. signal		BCC M415-0000-1A-005-_ _ _ _ _ _①-_ _ _②	
shielded, no LED, N.C. signal		BCC M415-0000-1A-037-_ _ _ _ _ _①-_ _ _②	
Approval/Conformity		CE, UL, EAC	
For drawing see page		148	

M12 female, N.O. signal

PIN 1: brown
PIN 3: blue
PIN 4: black

M12 female, N.C. signal

PIN 1: brown
PIN 2: black
PIN 3: blue

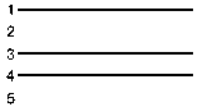
M12 male, N.O. signal

PIN 1: brown
PIN 3: blue
PIN 4: black

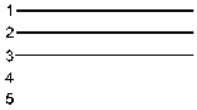
M12 male, N.C. signal

PIN 1: brown
PIN 2: black
PIN 3: blue

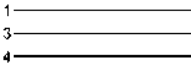
unshielded, no LED



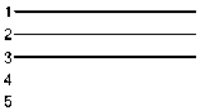
unshielded, no LED



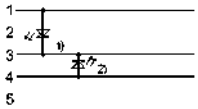
unshielded, no LED



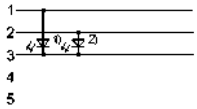
unshielded, no LED



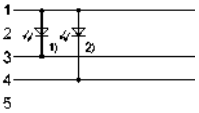
unshielded, 2 × PNP-LED*



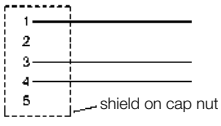
unshielded, 2 × PNP-LED*



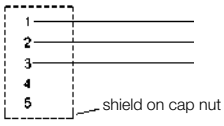
unshielded, 2 × NPN-LED*



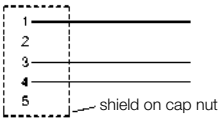
shielded, no LED



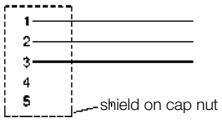
shielded, no LED



shielded, no LED



shielded, no LED



	BCC M413 ...	BCC M425 ...	BCC M413 ...
	M12 male, A-coded	M12 female, A-coded	M12 male, A-coded
	straight	angled	angled
	250 V AC/DC	250 V AC/DC	250 V AC/DC
	–	30 V DC	–
	4 A	4 A	4 A
	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K
	IP67	IP67	IP67
	BCC M413-0000-2A-001-_ _ _ _ _ _①-_ _ _②	BCC M425-0000-1A-001-_ _ _ _ _ _①-_ _ _②	BCC M423-0000-2A-001-_ _ _ _ _ _①-_ _ _②
	–	BCC M425-0000-1A-004-_ _ _ _ _ _①-_ _ _②	–
	–	BCC M425-0000-1A-006-_ _ _ _ _ _①-_ _ _②	–
	BCC M413-0000-2A-036-_ _ _ _ _ _①-_ _ _②	BCC M425-0000-1A-036-_ _ _ _ _ _①-_ _ _②	BCC M423-0000-2A-036-_ _ _ _ _ _①-_ _ _②
	BCC M413-0000-2A-002-_ _ _ _ _ _①-_ _ _②	BCC M425-0000-1A-002-_ _ _ _ _ _①-_ _ _②	–
	–	BCC M425-0000-1A-005-_ _ _ _ _ _①-_ _ _②	–
	BCC M413-0000-2A-037-_ _ _ _ _ _①-_ _ _②	BCC M425-0000-1A-037-_ _ _ _ _ _①-_ _ _②	–
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	149	149	149

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PX0334	PUR	Black	3 × 0.34 mm²	–50...+90 °C	–25...+90 °C
VX8334	PVC	Gray	3 × 0.34 mm²	–40...+105 °C	–5...+105 °C
EX43T2	TPE	Yellow	3 × AWG22	–50...+105 °C	–25...+105 °C
VX43T2	PVC	Yellow	3 × AWG22	–40...+105 °C	–5...+105 °C
SHIELDED					
PS0334	PUR	Black	3 × 0.34 mm²	–50...+90 °C	–25...+90 °C
VS8334	PVC	Gray	3 × 0.34 mm²	–40...+105 °C	–5...+105 °C

②	Cable length
CONNECTION CABLE	
020	2 m
050	5 m
100	10 m

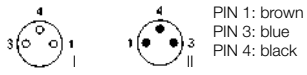
Other cable lengths on request!

AVAILABLE AS BULK CABLE

	Order code	Part number	Cable length
PX0334	BCC0AC7	BCC 0000-0000-00-000-PX0334-10X	100 m
VX8334	BCC0C15	BCC 0000-0000-00-000-VX8334-10X	100 m
EX43T2	BCC0AEC	BCC 0000-0000-00-001-EX43T2-10X	100 m
VX43T2	BCC0AE7	BCC 0000-0000-00-001-VX43T2-10X	100 m

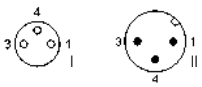
	BCC M313-M313 ...	
Connection	M8 female, A-coded/ M8 male, A-coded	
Version	straight/straight	
Rated voltage	60 V AC/DC	
Rated current	4 A	
Degree of protection	IP67, IP69K/IP67, IP69K	
unshielded, no LED	BCC M313-M313-30-300-_ _ _ _ _ _①-_ _ _②	
unshielded, no LED, N.O. signal	–	
Approval/Conformity	CE, UL, EAC	
For drawing see page	149	

M8 female/M8 male



PIN 1: brown
PIN 3: blue
PIN 4: black

M8 female/M12 male, N.O. signal



PIN 1: brown
PIN 3: blue
PIN 4: black

unshielded, no LED

unshielded, no LED

	BCC M313-M323 ...	BCC M313-M413 ...	BCC M313-M423 ...
	M8 female, A-coded/ M8 male, A-coded	M8 female, A-coded/ M12 male, A-coded	M8 female, A-coded/ M12 male, A-coded
	straight/angled	straight/straight	straight/angled
	60 V AC/DC	60 V AC/DC	60 V AC/DC
	4 A	4 A	4 A
	IP67, IP69K/IP67, IP69K	IP67, IP69K/IP67, IP68, IP69K	IP67, IP69K/IP67, IP68, IP69K
	BCC M313-M323-30-300-_ _ _ _ _ _①-_ _ _②	–	–
	–	BCC M313-M413-3E-300-_ _ _ _ _ _①-_ _ _②	BCC M313-M423-3E-300-_ _ _ _ _ _①-_ _ _②
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	149	150	150

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PX0334	PUR	Black	3 × 0.34 mm²	–50...+90 °C	–25...+90 °C
VX8334	PVC	Gray	3 × 0.34 mm²	–40...+105 °C	–5...+105 °C
EX43T2	TPE	Yellow	3 × AWG22	–50...+105 °C	–25...+105 °C
VX43T2	PVC	Yellow	3 × AWG22	–40...+105 °C	–5...+105 °C

②	Cable length
CABLE	
003	0.3 m
006	0.6 m
010	1 m
015	1.5 m
020	2 m
050	5 m

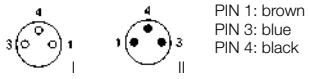
Other cable lengths on request!

AVAILABLE AS BULK CABLE

	Order code	Part number	Cable length
PX0334	BCC0AC7	BCC 0000-0000-00-000-PX0334-10X	100 m
VX8334	BCC0C15	BCC 0000-0000-00-000-VX8334-10X	100 m
EX43T2	BCC0AEC	BCC 0000-0000-00-001-EX43T2-10X	100 m
VX43T2	BCC0AE7	BCC 0000-0000-00-001-VX43T2-10X	100 m

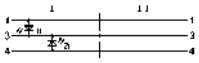
		BCC M323-M313 ...	
Connection		M8 female, A-coded/ M8 male, A-coded	
Version		angled/straight	
Rated voltage	No LED	60 V AC/DC	
	with LED	30 V DC	
Rated current		4 A	
Degree of protection		IP67, IP69K/IP67, IP69K	
unshielded, no LED		BCC M323-M313-30-300-_ _ _ _ _ _①-_ _ _②	
unshielded, 2 × PNP-LED		BCC M323-M313-30-602-_ _ _ _ _ _①-_ _ _②	
unshielded, no LED, N.O. signal		–	
unshielded, PNP-LED, N.O. signal		–	
Approval/Conformity		CE, UL, EAC	
For drawing see page		150	

M8 female/M8 male

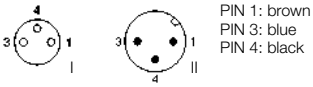


unshielded, no LED

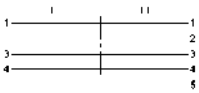
unshielded, 2 × PNP-LED*



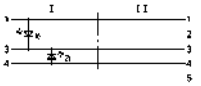
M8 female/M12 male, N.O. signal



unshielded, no LED



unshielded, 2 × PNP-LED*



* [1] LED green = Power
[2] LED yellow = Function

	BCC M323-M323 ...	BCC M323-M413 ...	BCC M323-M423 ...
	M8 female, A-coded/ M8 male, A-coded	M8 female, A-coded/ M12 male, A-coded	M8 female, A-coded/ M12 male, A-coded
	angled/angled	angled/straight	angled/angled
	60 V AC/DC	60 V AC/DC	60 V AC/DC
	–	30 V DC	–
	4 A	4 A	4 A
	IP67, IP69K/IP67, IP69K	IP67, IP69K/IP67, IP68, IP69K	IP67, IP69K/IP67, IP68, IP69K
	BCC M323-M323-30-300-_ _ _ _ _ _①-_ _ _②	–	–
	–	–	–
	–	BCC M323-M413-3E-300-_ _ _ _ _ _①-_ _ _②	BCC M323-M423-3E-300-_ _ _ _ _ _①-_ _ _②
	–	BCC M323-M413-3E-602-_ _ _ _ _ _①-_ _ _②	–
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	150	150	150

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PX0334	PUR	Black	3 × 0.34 mm²	–50...+90 °C	–25...+90 °C
VX8334	PVC	Gray	3 × 0.34 mm²	–40...+105 °C	–5...+105 °C
EX43T2	TPE	Yellow	3 × AWG22	–50...+105 °C	–25...+105 °C
VX43T2	PVC	Yellow	3 × AWG22	–40...+105 °C	–5...+105 °C

②	Cable length
CABLE	
003	0.3 m
006	0.6 m
010	1 m
015	1.5 m
020	2 m
050	5 m

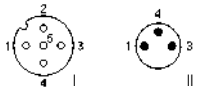
Other cable lengths on request!

AVAILABLE AS BULK CABLE

	Order code	Part number	Cable length
PX0334	BCC0AC7	BCC 0000-0000-00-000-PX0334-10X	100 m
VX8334	BCC0C15	BCC 0000-0000-00-000-VX8334-10X	100 m
EX43T2	BCC0AEC	BCC 0000-0000-00-001-EX43T2-10X	100 m
VX43T2	BCC0AE7	BCC 0000-0000-00-001-VX43T2-10X	100 m

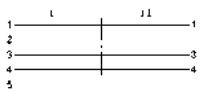
	BCC M415-M313 ...	
Connection	M12 female, A-coded/ M8 male, A-coded	
Version	straight/straight	
Rated voltage	60 V AC/DC	
Rated current	4 A	
Degree of protection	IP67, IP68, IP69K/IP67, IP69K	
unshielded, no LED, N.O. signal	BCC M415-M313-3F-300-_ _ _ _ _ _①-_ _ _②	
Approval/Conformity	CE, UL, EAC	
For drawing see page	150	

M12 female/M8 male,
N.O. signal

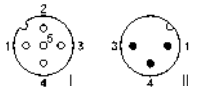


PIN 1: brown
PIN 3: blue
PIN 4: black

unshielded, no LED

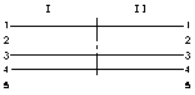


M12 female/M12 male,
N.O. signal



PIN 1: brown
PIN 3: blue
PIN 4: black

unshielded, no LED



	BCC M415-M323 ...	BCC M415-M413 ...	BCC M415-M423 ...
	M12 female, A-coded/ M8 male, A-coded	M12 female, A-coded/ M12 male, A-coded	M12 female, A-coded/ M12 male, A-coded
	straight/angled	straight/straight	straight/angled
	60 V AC/DC	250 V AC/DC	250 V AC/DC
	4 A	4 A	4 A
	IP67, IP68, IP69K/IP67, IP69K	IP67, IP68, IP69K/IP67, IP68, IP69K	IP67, IP68, IP69K/IP67, IP68, IP69K
	BCC M415-M323-3F-300-_ _ _ _ _ _①-_ _ _②	BCC M415-M413-3A-300-_ _ _ _ _ _①-_ _ _②	BCC M415-M423-3A-300-_ _ _ _ _ _①-_ _ _②
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	150	151	151

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PX0334	PUR	Black	3 × 0.34 mm²	–50...+90 °C	–25...+90 °C
VX8334	PVC	Gray	3 × 0.34 mm²	–40...+105 °C	–5...+105 °C
EX43T2	TPE	Yellow	3 × AWG22	–50...+105 °C	–25...+105 °C
VX43T2	PVC	Yellow	3 × AWG22	–40...+105 °C	–5...+105 °C

②	Cable length
CABLE	
003	0.3 m
006	0.6 m
010	1 m
015	1.5 m
020	2 m
050	5 m

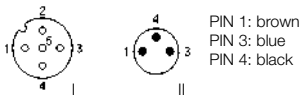
Other cable lengths on request!

AVAILABLE AS BULK CABLE

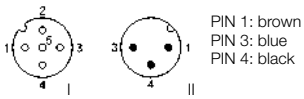
	Order code	Part number	Cable length
PX0334	BCC0AC7	BCC 0000-0000-00-000-PX0334-10X	100 m
VX8334	BCC0C15	BCC 0000-0000-00-000-VX8334-10X	100 m
EX43T2	BCC0AEC	BCC 0000-0000-00-001-EX43T2-10X	100 m
VX43T2	BCC0AE7	BCC 0000-0000-00-001-VX43T2-10X	100 m

		BCC M425-M313 ...
Connection		M12 female, A-coded/ M8 male, A-coded
Version		angled/straight
Rated voltage	No LED	60 V AC/DC
	with LED	30 V DC
Rated current		4 A
Degree of protection		IP67, IP68, IP69K/IP67, IP69K
unshielded, no LED, N.O. signal		BCC M425-M313-3F-300-_ _ _ _ _ _①-_ _ _②
unshielded, 2 × PNP-LED, N.O. signal		BCC M425-M313-3F-602-_ _ _ _ _ _①-_ _ _②
Approval/Conformity		CE, UL, EAC
For drawing see page		151

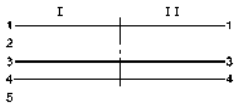
M12 female/M8 male,
N.O. signal



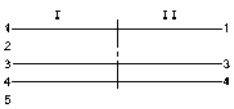
M12 female/M12 male,
N.O. signal



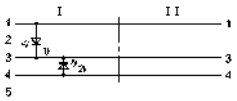
unshielded, no LED



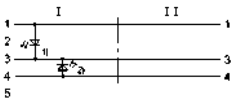
unshielded, no LED



unshielded, 2 × PNP-LED*



unshielded, 2 × PNP-LED*



* 1) LED green = Power
2) LED yellow = Function

	BCC M425-M323 ...	BCC M425-M413 ...	BCC M425-M423 ...
	M12 female, A-coded/ M8 male, A-coded	M12 female, A-coded/ M12 male, A-coded	M12 female, A-coded/ M12 male, A-coded
	angled/angled	angled/straight	angled/angled
	60 V AC/DC	250 V AC/DC	250 V AC/DC
	30 V DC	30 V DC	–
	4 A	4 A	4 A
	IP67, IP68, IP69K/IP67, IP69K	IP67, IP68, IP69K/IP67, IP68, IP69K	IP67, IP68, IP69K/IP67, IP68, IP69K
	BCC M425-M323-3F-300-_ _ _ _ _ _①-_ _ _②	BCC M425-M413-3A-300-_ _ _ _ _ _①-_ _ _②	BCC M425-M423-3A-300-_ _ _ _ _ _①-_ _ _②
	BCC M425-M323-3F-602-_ _ _ _ _ _①-_ _ _②	BCC M425-M413-3A-602-_ _ _ _ _ _①-_ _ _②	–
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	151	151	151

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PX0334	PUR	Black	3 × 0.34 mm²	–50...+90 °C	–25...+90 °C
VX8334	PVC	Gray	3 × 0.34 mm²	–40...+105 °C	–5...+105 °C
EX43T2	TPE	Yellow	3 × AWG22	–50...+105 °C	–25...+105 °C
VX43T2	PVC	Yellow	3 × AWG22	–40...+105 °C	–5...+105 °C

②	Cable length
CABLE	
003	0.3 m
006	0.6 m
010	1 m
015	1.5 m
020	2 m
050	5 m

Other cable lengths on request!

AVAILABLE AS BULK CABLE

	Order code	Part number	Cable length
PX0334	BCC0AC7	BCC 0000-0000-00-000-PX0334-10X	100 m
VX8334	BCC0C15	BCC 0000-0000-00-000-VX8334-10X	100 m
EX43T2	BCC0AEC	BCC 0000-0000-00-001-EX43T2-10X	100 m
VX43T2	BCC0AE7	BCC 0000-0000-00-001-VX43T2-10X	100 m

		BCC M314 ...	
Connection		M8 female, A-coded	
Version		straight	
Rated voltage	No LED	60 V AC/DC	
	with LED	–	
Rated current		4 A	
Degree of protection	unshielded	IP67, IP69K	
	shielded	IP67	
unshielded, no LED		BCC M314-0000-10-003-_ _ _ _ _ _①-_ _ _②	
unshielded, 2 × PNP-LED		–	
shielded, no LED		BCC M314-0000-10-014-_ _ _ _ _ _①-_ _ _②	
Approval/Conformity		CE, UL, EAC	
For drawing see page		151	

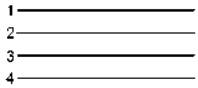
M8 female

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

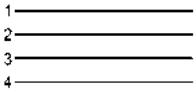
M8 male

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

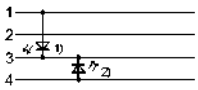
unshielded, no LED



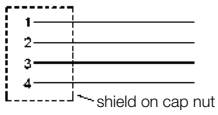
unshielded, no LED



unshielded, 2 × PNP-LED*



shielded, no LED



* 1) LED green = Power
2) LED yellow = Function

	BCC M314 ...	BCC M324 ...	BCC M324 ...
	M8 male, A-coded	M8 female, A-coded	M8 male, A-coded
	straight	angled	angled
	60 V AC/DC	60 V AC/DC	60 V AC/DC
	–	30 V DC	–
	4 A	4 A	4 A
	IP67, IP69K	IP67, IP69K	IP67, IP69K
	–	IP67	–
	BCC M314-0000-20-003-_ _ _ _ _ _①-_ _ _②	BCC M324-0000-10-003-_ _ _ _ _ _①-_ _ _②	BCC M324-0000-20-003-_ _ _ _ _ _①-_ _ _②
	–	BCC M324-0000-10-008-_ _ _ _ _ _①-_ _ _②	–
	–	BCC M324-0000-10-014-_ _ _ _ _ _①-_ _ _②	–
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	151	152	152

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PX0434	PUR	Black	4 × 0.34 mm²	–50...+90 °C	–25...+90 °C
VX8434	PVC	Gray	4 × 0.34 mm²	–40...+105 °C	–5...+105 °C
EX44T2	TPE	Yellow	4 × AWG22	–50...+105 °C	–25...+105 °C
VX44T2	PVC	Yellow	4 × AWG22	–40...+105 °C	–5...+105 °C
SHIELDED					
PS0434	PUR	Black	4 × 0.34 mm²	–50...+90 °C	–25...+90 °C
VS8434	PVC	Gray	4 × 0.34 mm²	–40...+105 °C	–5...+105 °C

②	Cable length
CONNECTION CABLE	
020	2 m
050	5 m
100	10 m

Other cable lengths on request!

AVAILABLE AS BULK CABLE

	Order code	Part number	Cable length
PX0434	BCC0AC8	BCC 0000-0000-00-000-PX0434-10X	100 m
VX8434	BCC0C14	BCC 0000-0000-00-000-VX8434-10X	100 m
EX44T2	BCC0AEE	BCC 0000-0000-00-003-EX44T2-10X	100 m
VX44T2	BCC0AE8	BCC 0000-0000-00-003-VX44T2-10X	100 m

		BCC M415 ...	
Connection		M12 female, A-coded	
Version		straight	
Rated voltage	No LED	250 V AC/DC	
	with LED	30 V DC	
Rated current		4 A	
Degree of protection	unshielded	IP67, IP68, IP69K	
	shielded	IP67	
unshielded, no LED		BCC M415-0000-1A-003-_ _ _ _ _ _①-_ _ _②	
unshielded, 2 × PNP-LED		BCC M415-0000-1A-008-_ _ _ _ _ _①-_ _ _②	
unshielded, 3 × PNP-LED		BCC M415-0000-1A-010-_ _ _ _ _ _①-_ _ _②	
shielded, no LED		BCC M415-0000-1A-014-_ _ _ _ _ _①-_ _ _②	
Approval/Conformity		CE, UL, EAC	
For drawing see page		152	

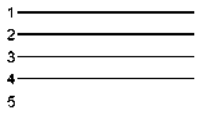
M12 female

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

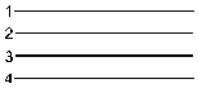
M12 male

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

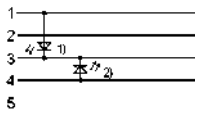
unshielded, no LED



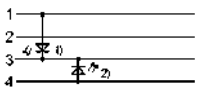
unshielded, no LED



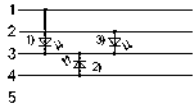
unshielded, 2 × PNP-LED*



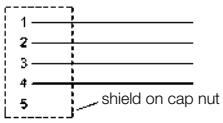
unshielded, 2 × PNP-LED*



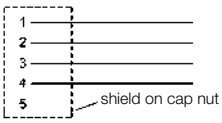
unshielded, 3 × PNP-LED*



shielded, no LED



shielded, no LED



* 1) LED green = Power
2) LED yellow = Function
3) LED white = Function

	BCC M414 ...	BCC M425 ...	BCC M424 ...
	M12 male, A-coded	M12 female, A-coded	M12 female, A-coded
	straight	angled	angled
	250 V AC/DC	250 V AC/DC	250 V AC/DC
	–	30 V DC	30 V DC
	4 A	4 A	4 A
	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K
	IP67	IP67	IP67
	BCC M414-0000-2A-003-_ _ _ _ _ _①-_ _ _②	BCC M425-0000-1A-003-_ _ _ _ _ _①-_ _ _②	BCC M424-0000-2A-003-_ _ _ _ _ _①-_ _ _②
	–	BCC M425-0000-1A-008-_ _ _ _ _ _①-_ _ _②	BCC M424-0000-2A-008-_ _ _ _ _ _①-_ _ _②
	–	BCC M425-0000-1A-010-_ _ _ _ _ _①-_ _ _②	–
	BCC M414-0000-2A-014-_ _ _ _ _ _①-_ _ _②	BCC M425-0000-1A-014-_ _ _ _ _ _①-_ _ _②	BCC M424-0000-2A-014-_ _ _ _ _ _①-_ _ _②
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	152	153	153

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PX0434	PUR	Black	4 × 0.34 mm²	–50...+90 °C	–25...+90 °C
VX8434	PVC	Gray	4 × 0.34 mm²	–40...+105 °C	–5...+105 °C
EX44T2	TPE	Yellow	4 × AWG22	–50...+105 °C	–25...+105 °C
VX44T2	PVC	Yellow	4 × AWG22	–40...+105 °C	–5...+105 °C
SHIELDED					
PS0434	PUR	Black	4 × 0.34 mm²	–50...+90 °C	–25...+90 °C
VS8434	PVC	Gray	4 × 0.34 mm²	–40...+105 °C	–5...+105 °C

②	Cable length
CONNECTION CABLE	
020	2 m
050	5 m
100	10 m

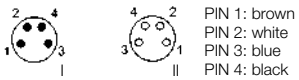
Other cable lengths on request!

AVAILABLE AS BULK CABLE

	Order code	Part number	Cable length
PX0434	BCC0AC8	BCC 0000-0000-00-000-PX0434-10X	100 m
VX8434	BCC0C14	BCC 0000-0000-00-000-VX8434-10X	100 m
EX44T2	BCC0AEE	BCC 0000-0000-00-003-EX44T2-10X	100 m
VX44T2	BCC0AE8	BCC 0000-0000-00-003-VX44T2-10X	100 m

	BCC M314-M314 ...	
Connection	M8 female, A-coded/ M8 male, A-coded	
Version	straight/straight	
Rated voltage	60 V AC/DC	
Rated current	4 A	
Degree of protection	IP67, IP69K/IP67, IP69K	
unshielded, no LED	BCC M314-M314-30-304-_ _ _ _ _ _①-_ _ _②	
Approval/Conformity	CE, UL, EAC	
For drawing see page	153	

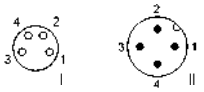
M8 female/M8 male



PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

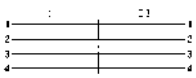
unshielded, no LED

M8 female/M12 male



PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

unshielded, no LED



	BCC M314-M324 ...	BCC M314-M414 ...	BCC M314-M424 ...
	M8 female, A-coded/ M8 male, A-coded	M8 female, A-coded/ M12 male, A-coded	M8 female, A-coded/ M12 male, A-coded
	straight/angled	straight/straight	straight/angled
	60 V AC/DC	60 V AC/DC	60 V AC/DC
	4 A	4 A	4 A
	IP67, IP69K/IP67, IP69K	IP67, IP69K/IP67, IP68, IP69K	IP67, IP69K/IP67, IP68, IP69K
	BCC M314-M324-30-304-_ _ _ _ _ _①-_ _ _②	BCC M314-M414-3E-304-_ _ _ _ _ _①-_ _ _②	BCC M314-M424-3E-304-_ _ _ _ _ _①-_ _ _②
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	163	153	153

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PX0434	PUR	Black	4 × 0.34 mm²	–50...+90 °C	–25...+90 °C
VX8434	PVC	Gray	4 × 0.34 mm²	–40...+105 °C	–5...+105 °C
EX44T2	TPE	Yellow	4 × AWG22	–50...+105 °C	–25...+105 °C
VX44T2	PVC	Yellow	4 × AWG22	–40...+105 °C	–5...+105 °C

②	Cable length
CABLE	
003	0.3 m
006	0.6 m
010	1 m
015	1.5 m
020	2 m
050	5 m

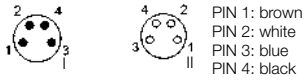
Other cable lengths on request!

AVAILABLE AS BULK CABLE

	Order code	Part number	Cable length
PX0434	BCC0AC8	BCC 0000-0000-00-000-PX0434-10X	100 m
VX8434	BCC0C14	BCC 0000-0000-00-000-VX8434-10X	100 m
EX44T2	BCC0AEE	BCC 0000-0000-00-003-EX44T2-10X	100 m
VX44T2	BCC0AE8	BCC 0000-0000-00-003-VX44T2-10X	100 m

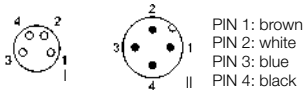
	BCC M324-M314 ...	
Connection	M8 female, A-coded/ M8 male, A-coded	
Version	angled/straight	
Rated voltage	60 V AC/DC	
Rated current	4 A	
Degree of protection	IP67, IP69K/IP67, IP69K	
unshielded, no LED	BCC M324-M314-30-304-_ _ _ _ _ _①-_ _ _②	
Approval/Conformity	CE, UL, EAC	
For drawing see page	154	

M8 female/M8 male



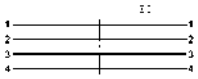
PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

M8 female/M12 male



PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

unshielded, no LED



unshielded, no LED

	BCC M324-M324 ...	BCC M324-M414 ...	BCC M324-M424 ...
	M8 female, A-coded/ M8 male, A-coded	M8 female, A-coded/ M12 male, A-coded	M8 female, A-coded/ M12 male, A-coded
	angled/angled	angled/straight	angled/angled
	60 V AC/DC	60 V AC/DC	60 V AC/DC
	4 A	4 A	4 A
	IP67, IP69K/IP67, IP69K	IP67, IP69K/IP67, IP68, IP69K	IP67, IP69K/IP67, IP68, IP69K
	BCC M324-M324-30-304-_ _ _ _ _ _①-_ _ _②	BCC M324-M414-3E-304-_ _ _ _ _ _①-_ _ _②	BCC M324-M424-3E-304-_ _ _ _ _ _①-_ _ _②
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	154	154	154

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PX0434	PUR	Black	4 × 0.34 mm²	–50...+90 °C	–25...+90 °C
VX8434	PVC	Gray	4 × 0.34 mm²	–40...+105 °C	–5...+105 °C
EX44T2	TPE	Yellow	4 × AWG22	–50...+105 °C	–25...+105 °C
VX44T2	PVC	Yellow	4 × AWG22	–40...+105 °C	–5...+105 °C

②	Cable length
CABLE	
003	0.3 m
006	0.6 m
010	1 m
015	1.5 m
020	2 m
050	5 m

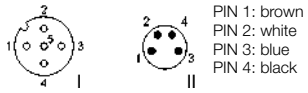
Other cable lengths on request!

AVAILABLE AS BULK CABLE

	Order code	Part number	Cable length
PX0434	BCC0AC8	BCC 0000-0000-00-000-PX0434-10X	100 m
VX8434	BCC0C14	BCC 0000-0000-00-000-VX8434-10X	100 m
EX44T2	BCC0AEE	BCC 0000-0000-00-003-EX44T2-10X	100 m
VX44T2	BCC0AE8	BCC 0000-0000-00-003-VX44T2-10X	100 m

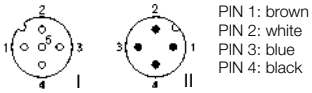
		BCC M415-M314 ...	
Connection		M12 female, A-coded/ M8 male, A-coded	
Version		straight/straight	
Rated voltage	No LED	60 V AC/DC	
	with LED	–	
Rated current		4 A	
Degree of protection	unshielded	IP67, IP68, IP69K/IP67, IP69K	
	shielded	–	
unshielded, no LED		BCC M415-M314-3F-304-_ _ _ _ _ _①-_ _ _②	
unshielded, 2 × PNP-LED		–	
shielded, no LED		–	
Approval/Conformity		CE, UL, EAC	
For drawing see page		154	

M12 female/M8 male

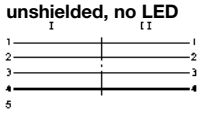


unshielded, no LED

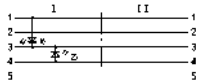
M12 female/M12 male



unshielded, no LED

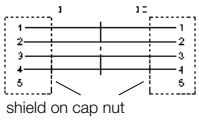


unshielded, 2 × PNP-LED*



* [1] LED green = Power
[2] LED yellow = Function

shielded, no LED



	BCC M415-M324 ...	BCC M415-M414 ...	BCC M415-M424 ...
	M12 female, A-coded/ M8 male, A-coded	M12 female, A-coded/ M12 male, A-coded	M12 female, A-coded/ M12 male, A-coded
	straight/angled	straight/straight	straight/angled
	60 V AC/DC	250 V AC/DC	250 V AC/DC
	–	30 V DC	–
	4 A	4 A	4 A
	IP67, IP68, IP69K/IP67, IP69K	IP67, IP68, IP69K/IP67, IP68, IP69K	IP67, IP68, IP69K/IP67, IP68, IP69K
	–	IP67/IP67	–
	BCC M415-M324-3F-304-_ _ _ _ _ _①-_ _ _②	BCC M415-M414-3A-304-_ _ _ _ _ _①-_ _ _②	BCC M415-M424-3A-304-_ _ _ _ _ _①-_ _ _②
	–	BCC M415-M414-3A-606-_ _ _ _ _ _①-_ _ _②	–
	–	BCC M415-M414-3A-305-PS0434①-_ _ _②	–
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	154	154	155

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PX0434	PUR	Black	4 × 0.34 mm²	–50...+90 °C	–25...+90 °C
VX8434	PVC	Gray	4 × 0.34 mm²	–40...+105 °C	–5...+105 °C
EX44T2	TPE	Yellow	4 × AWG22	–50...+105 °C	–25...+105 °C
VX44T2	PVC	Yellow	4 × AWG22	–40...+105 °C	–5...+105 °C
SHIELDED					
PS0434	PUR	Black	4 × 0.34 mm²	–50...+90 °C	–25...+90 °C

②	Cable length
CABLE	
003	0.3 m
006	0.6 m
010	1 m
015	1.5 m
020	2 m
050	5 m

Other cable lengths on request!

AVAILABLE AS BULK CABLE

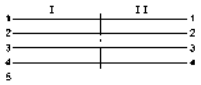
	Order code	Part number	Cable length
PX0434	BCC0AC8	BCC 0000-0000-00-000-PX0434-10X	100 m
VX8434	BCC0C14	BCC 0000-0000-00-000-VX8434-10X	100 m
EX44T2	BCC0AEE	BCC 0000-0000-00-003-EX44T2-10X	100 m
VX44T2	BCC0AE8	BCC 0000-0000-00-003-VX44T2-10X	100 m

		BCC M425-M314 ...	
Connection		M12 female, A-coded/ M8 male, A-coded	
Version		angled/straight	
Rated voltage	No LED	60 V AC/DC	
	with LED	–	
Rated current		4 A	
Degree of protection		IP67, IP68, IP69K/IP67, IP69K	
unshielded, no LED		BCC M425-M314-3F-304-_ _ _ _ _ _①-_ _ _②	
unshielded, 2 × PNP-LED		–	
Approval/Conformity		CE, UL, EAC	
For drawing see page		155	

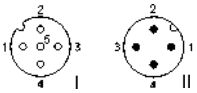
M12 female/M8 male

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

unshielded, no LED

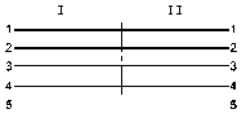


M12 female/M12 male

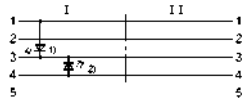


PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

unshielded, no LED



unshielded, 2 × PNP-LED*



* 1) LED green = Power
2) LED yellow = Function

	BCC M425-M324 ...	BCC M425-M414 ...	BCC M425-M424 ...
	M12 female, A-coded/ M8 male, A-coded	M12 female, A-coded/ M12 male, A-coded	M12 female, A-coded/ M12 male, A-coded
	angled/angled	angled/straight	angled/angled
	60 V AC/DC	250 V AC/DC	250 V AC/DC
	–	30 V DC	–
	4 A	4 A	4 A
	IP67, IP68, IP69K/IP67, IP69K	IP67, IP68, IP69K/IP67, IP68, IP69K	IP67, IP68, IP69K/IP67, IP68, IP69K
	BCC M425-M324-3F-304-_ _ _ _ _ _①-_ _ _②	BCC M425-M414-3A-304-_ _ _ _ _ _①-_ _ _②	BCC M425-M424-3A-304-_ _ _ _ _ _①-_ _ _②
	–	BCC M425-M414-3A-606-_ _ _ _ _ _①-_ _ _②	–
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	155	155	155

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PX0434	PUR	Black	4 × 0.34 mm²	–50...+90 °C	–25...+90 °C
VX8434	PVC	Gray	4 × 0.34 mm²	–40...+105 °C	–5...+105 °C
EX44T2	TPE	Yellow	4 × AWG22	–50...+105 °C	–25...+105 °C
VX44T2	PVC	Yellow	4 × AWG22	–40...+105 °C	–5...+105 °C

②	Cable length
CABLE	
003	0.3 m
006	0.6 m
010	1 m
015	1.5 m
020	2 m
050	5 m

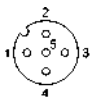
Other cable lengths on request!

AVAILABLE AS BULK CABLE

	Order code	Part number	Cable length
PX0434	BCC0AC8	BCC 0000-0000-00-000-PX0434-10X	100 m
VX8434	BCC0C14	BCC 0000-0000-00-000-VX8434-10X	100 m
EX44T2	BCC0AEE	BCC 0000-0000-00-003-EX44T2-10X	100 m
VX44T2	BCC0AE8	BCC 0000-0000-00-003-VX44T2-10X	100 m

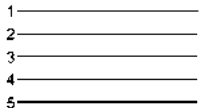
		BCC M415 ...
Connection		M12 female, A-coded
Version		straight
Rated voltage	No LED	60 V AC/DC
	with LED	–
Rated current		4 A
Degree of protection		IP67, IP68, IP69K
unshielded, no LED, no PE		BCC M415-0000-1A-017-PX0534①-_ _ _②
unshielded, no LED, with PE		BCC M415-0000-1A-034-PX0534①-_ _ _②
unshielded, 3 × PNP-LED, no PE		–
unshielded, 3 × PNP-LED, with PE		–
Approval/Conformity		CE, UL, EAC
For drawing see page		155

M12 female, no PE

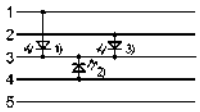


PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black
PIN 5: gray

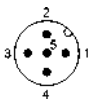
unshielded, no LED



unshielded, 3 × PNP-LED*

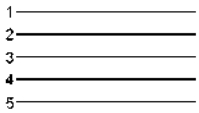


M12 male, no PE

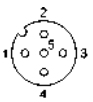


PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black
PIN 5: gray

unshielded, no LED

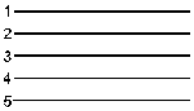


M12 female, with PE

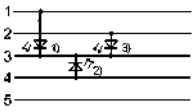


PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black
PIN 5: green/yellow

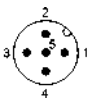
unshielded, no LED



unshielded, 3 × PNP-LED*

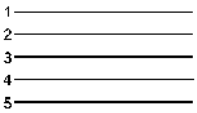


M12 male, with PE



PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black
PIN 5: green/yellow

unshielded, no LED



* 1) LED green = Power
2) LED yellow = Function
3) LED white = Function

	BCC M415 ...	BCC M425 ...
	M12 male, A-coded	M12 female, A-coded
	straight	angled
	60 V AC/DC	60 V AC/DC
	–	30 V DC
	4 A	4 A
	IP67, IP68, IP69K	IP67, IP68, IP69K
	BCC M415-0000-2A-017-PX0534①-_ _ _②	BCC M425-0000-1A-017-PX0534①-_ _ _②
	BCC M415-0000-2A-034-PX0534①-_ _ _②	BCC M425-0000-1A-034-PX0534①-_ _ _②
	–	BCC M425-0000-1A-039-PX0534①-_ _ _②
	–	BCC M425-0000-1A-040-PX0534①-_ _ _②
	CE, UL, EAC	CE, UL, EAC
	155	155

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PX0534	PUR	Black	5 × 0.34 mm²	–50...+90 °C	–25...+90 °C

②	Cable length
CONNECTION CABLE	
020	2 m
050	5 m
100	10 m

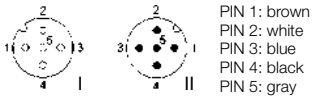
Other cable lengths on request!

AVAILABLE AS BULK CABLE

	Order code	Part number	Cable length
PX0534	BCC0AC9	BCC 0000-0000-00-000-PX0534-10X	100 m

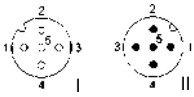
		BCC M415-M415 ...
Connection		M12 female, A-coded/ M12 male, A-coded
Version		straight/straight
Rated voltage	No LED	60 V AC/DC
	with LED	–
Rated current		4 A
Degree of protection	unshielded	IP67, IP68, IP69K/IP67, IP68, IP69K
	shielded	IP67/IP67
unshielded, no LED, no PE		BCC M415-M415-3A-312-PX0534①-_ _ _②
unshielded, no LED, with PE		BCC M415-M415-3A-313-PX0534①-_ _ _②
unshielded, 3 × PNP-LED, no PE		–
unshielded, 3 × PNP-LED, with PE		–
shielded, no LED, with PE		BCC M415-M415-3A-315-PS0534①-_ _ _②
Approval/Conformity		CE, UL, EAC
For drawing see page		156

M12 female/M12 male, no PE



PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black
PIN 5: gray

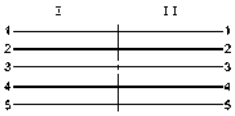
M12 female/M12 male, with PE



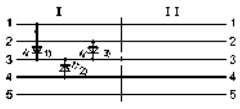
PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black
PIN 5: green/yellow

unshielded, no LED

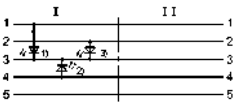
unshielded, no LED



unshielded, 3 × PNP-LED*

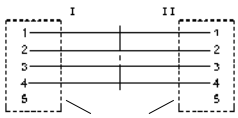


unshielded, 3 × PNP-LED*



* 1) LED green = Power
2) LED yellow = Function
3) LED white = Function

shielded, no LED



	BCC M425-M415 ...	BCC M425 ...
	M12 female, A-coded/ M12 male, A-coded	M12 female, A-coded/ M12 male, A-coded
	angled/straight	angled/angled
	60 V AC/DC	–
	30 V DC	30 V DC
	4 A	4 A
	IP67, IP68, IP69K/IP67, IP68, IP69K	IP67, IP68, IP69K/IP67, IP68, IP69K
	–	–
	BCC M425-M415-3A-312-PX0534①-_ _ _②	–
	BCC M425-M415-3A-313-PX0534①-_ _ _②	–
	BCC M425-M415-3A-660-PX0534①-_ _ _②	BCC M425-M425-3A-660-PX0534①-_ _ _②
	BCC M425-M415-3A-661-PX0534①-_ _ _②	BCC M425-M425-3A-661-PX0534①-_ _ _②
	–	–
	CE, UL, EAC	CE, UL, EAC
	156	156

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PX0534	PUR		5 × 0.34 mm²	–50...+90 °C	–25...+90 °C
SHIELDED					
PS0534	PUR		5 × 0.34 mm²	–50...+90 °C	–25...+90 °C

②	Cable length
CABLE	
003	0.3 m
006	0.6 m
010	1 m
015	1.5 m
020	2 m
050	5 m

Other cable lengths on request!

AVAILABLE AS BULK CABLE

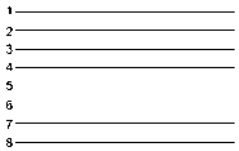
	Order code	Part number	Cable length
PX0534	BCC0AC9	BCC 0000-0000-00-000-PX0534-10X	100 m

		BCC M418 ...	BCC M418 ...	
Connection		M12 female, A-coded	M12 male, A-coded	
Version		straight	straight	
Rated voltage		30 V AC/DC	30 V AC/DC	
Rated current		2 A	2 A	
Degree of protection	unshielded	IP67, IP68, IP69K	IP67, IP68, IP69K	
	shielded	IP67	–	
unshielded, no LED, junction block wiring		BCC M418-0000-1A-044-PX0825①-_ _ _②	BCC M418-0000-2A-044-PX0825①-_ _ _②	
unshielded, no LED, sensor wiring		BCC M418-0000-1A-069-PX0825①-_ _ _②	–	
shielded, no LED, sensor wiring		BCC M418-0000-1A-046-PS0825①-_ _ _②	–	
Approval/Conformity		CE, UL, EAC	CE, UL, EAC	
For drawing see page		156	156	

M12 female, junction block wiring

PIN 1: white
PIN 2: green
PIN 3: yellow
PIN 4: gray
PIN 5: brown
PIN 6: pink
PIN 7: blue
PIN 8: red

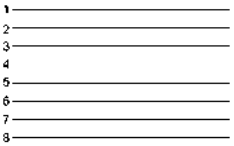
unshielded, no LED



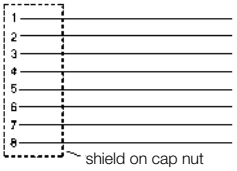
M12 female, sensor wiring

PIN 1: white
PIN 2: brown
PIN 3: green
PIN 4: yellow
PIN 5: gray
PIN 6: pink
PIN 7: blue
PIN 8: red

unshielded, no LED



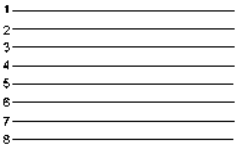
shielded, no LED



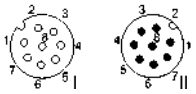
M12 male, junction block wiring

PIN 1: white
PIN 2: green
PIN 3: yellow
PIN 4: gray
PIN 5: brown
PIN 6: pink
PIN 7: blue
PIN 8: red

unshielded, no LED

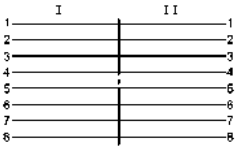


M12 female/M12 male, junction block wiring



PIN 1: white
PIN 2: green
PIN 3: yellow
PIN 4: gray
PIN 5: brown
PIN 6: pink
PIN 7: blue
PIN 8: red

unshielded, no LED



	BCC M428 ...	BCC M428 ...	BCC M418-M418 ...
	M12 female, A-coded	M12 male, A-coded	M12 female, A-coded/ M12 male, A-coded
	angled	angled	straight/straight
	30 V AC/DC	30 V AC/DC	30 V AC/DC
	2 A	2 A	2 A
	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K/IP67, IP68, IP69K
	IP67		
	BCC M428-0000-1A-044-PX0825①-_ _ _②	BCC M428-0000-2A-044-PX0825①-_ _ _②	BCC M418-M418-3A-342-PX0825①-_ _ _②
	BCC M428-0000-1A-069-PX0825①-_ _ _②	–	–
	BCC M428-0000-1A-046-PS0825①-_ _ _②	–	–
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	156, 157	157	157

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PX0825	PUR	Black	8 × 0.25 mm^2	–50...+80 °C	–25...+80 °C
SHIELDED					
PS0825	PUR	Black	8 × 0.25 mm^2	–50...+90 °C	–25...+90 °C

②	Cable length
CONNECTION CABLE	
020	2 m
050	5 m
100	10 m
CABLE	
003	0.3 m
006	0.6 m
010	1 m
015	1.5 m
020	2 m
050	5 m

Other cable lengths on request!

	BCC M41C ...	BCC M41C ...	
Connection	M12 female, A-coded	M12 male, A-coded	
Version	straight	straight	
Rated voltage	30 V AC/DC	30 V AC/DC	
Rated current	1.5 A	1.5 A	
Degree of protection	IP67, IP68, IP69K	IP67, IP68, IP69K	
unshielded, no LED	BCC M41C-0000-1A-049-PX0C25 ①-_ _ _②	BCC M41C-0000-2A-049-PX0C25①-_ _ _②	
Approval/Conformity	CE, UL, EAC	CE, UL, EAC	
For drawing see page	157	157	

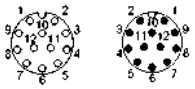
M12 female

PIN 1: brown
PIN 2: blue
PIN 3: white
PIN 4: green
PIN 5: pink
PIN 6: yellow
PIN 7: black
PIN 8: gray
PIN 9: red
PIN 10: purple
PIN 11: gray/pink
PIN 12: red/blue

M12 male

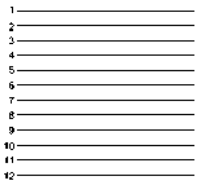
PIN 1: brown
PIN 2: blue
PIN 3: white
PIN 4: green
PIN 5: pink
PIN 6: yellow
PIN 7: black
PIN 8: gray
PIN 9: red
PIN 10: purple
PIN 11: gray/pink
PIN 12: red/blue

M12 female/M12 male

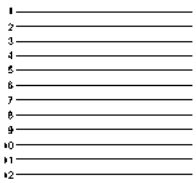


PIN 1: brown
PIN 2: blue
PIN 3: white
PIN 4: green
PIN 5: pink
PIN 6: yellow
PIN 7: black
PIN 8: gray
PIN 9: red
PIN 10: purple
PIN 11: gray/pink
PIN 12: red/blue

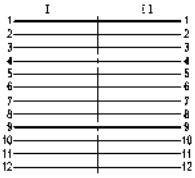
unshielded, no LED



unshielded, no LED



unshielded, no LED



	BCC M42C ...	BCC M42C ...	BCC M41C-M41C ...
	M12 female, A-coded	M12 male, A-coded	M12 female, A-coded/ M12 male, A-coded
	angled	angled	straight/straight
	30 V AC/DC	30 V AC/DC	30 V AC/DC
	1.5 A	1.5 A	1.5 A
	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K/IP67, IP68, IP69K
	BCC M42C-0000-1A-049-PX0C25①-_ _ _②	BCC M42C-0000-2A-049-PX0C25①-_ _ _②	BCC M41C-M41C-3A-325-PX0C25①-_ _ _②
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	158	157	157

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PX0C25	PUR	Black	12 × 0.25 mm^2	–50...+80 °C	–25...+80 °C

②	Cable length
CONNECTION CABLE	
020	2 m
050	5 m
100	10 m
CABLE	
003	0.3 m
006	0.6 m
010	1 m
020	2 m
050	5 m

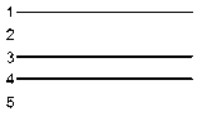
Other cable lengths on request!

Connection	
Version	
Rated voltage	
Rated current	
Degree of protection	
unshielded, no LED, 3-conductor, N.O. signal	
unshielded, no LED, 4-conductor	
Approval/Conformity	
For drawing see page	

M12 female, 3-conductor, N.O. signal

PIN 1: brown
PIN 3: blue
PIN 4: black

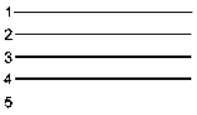
unshielded, no LED



M12 female, 4-conductor

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

unshielded, no LED



	BCC M415 ...	BCC M425 ...
	M12 female, A-coded	M12 female, A-coded
	straight	angled
	250 V AC/DC	250 V AC/DC
	4 A	4 A
	IP67, IP68, IP69K	IP67, IP68, IP69K
	BCC M415-0000-1A-001-PH0334①-_ _ _②	BCC M425-0000-1A-001-PH0334①-_ _ _②
	BCC M415-0000-1A-003-PH0434①-_ _ _②	BCC M425-0000-1A-003-PH0434①-_ _ _②
	CE, UL, EAC	CE, UL, EAC
	158	158

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PH0334	PUR	Black	3 × 0.34 mm²	–40...+120 °C	
PH0434	PUR	Black	4 × 0.34 mm²	–40...+120 °C	

②	Cable length
CONNECTION CABLE	
020	2 m
050	5 m
100	10 m

Other cable lengths on request!

AVAILABLE AS BULK CABLE

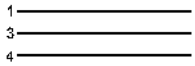
	Order code	Part number	Cable length
PH0434	BCC0H6E	BCC 0000-0000-00-000-PH0434-10X	100 m

		BCC M313 ... BCC M314 ...
Connection		M8 female, A-coded
Version		straight
Rated voltage	No LED	60 V AC/DC
	with LED	–
Rated current		4 A
Degree of protection		IP67, IP69K
unshielded, no LED, 3-conductor		BCC M313-0000-10-001-PW3334①-_ _ _②
unshielded, no LED, 3-conductor, N.O. signal		–
unshielded, 2 × PNP-LED, 3-conductor, N.O. signal		–
unshielded, no LED, 4-conductor		BCC M314-0000-10-003-PW3434①-_ _ _②
unshielded, 3 × PNP-LED, 4-conductor		–
unshielded, 3 × PNP-LED, 5-conductor, with PE		–
Approval/Conformity		CE, EAC
For drawing see page		158

M8 female, 3-conductor

PIN 1: brown
PIN 3: blue
PIN 4: black

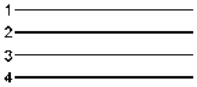
unshielded, no LED



M8 female, 4-conductor

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

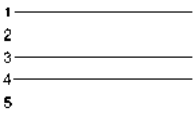
unshielded, no LED



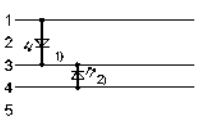
M12 female, 3-conductor, N.O. signal

PIN 1: brown
PIN 3: blue
PIN 4: black

unshielded, no LED



unshielded, 2 × PNP-LED

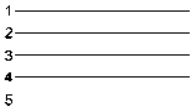


* [1] LED green = Power
[2] LED yellow = Function
[3] LED red = Function

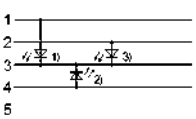
M12 female, 4-conductor

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

unshielded, no LED



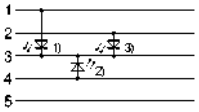
unshielded, 3 × PNP-LED



M12 female, 5-conductor, with PE

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black
PIN 5: green/yellow

unshielded, 3 × PNP-LED





	BCC M323 ... BCC M324 ...	BCC M415 ...	BCC M425 ...
	M8 female, A-coded	M12 female, A-coded	M12 female, A-coded
	angled	straight	angled
	60 V AC/DC	250 V AC/DC	250 V AC/DC
	–	–	30 V DC
	4 A	4 A	4 A
	IP67, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K
	BCC M323-0000-10-001-PW3334①-_ _ _②	–	–
	–	–	BCC M425-0000-1A-001-PW3334①-_ _ _②
	–	–	BCC M425-0000-1A-004-PW3334①-_ _ _②
	BCC M324-0000-10-003-PW3434①-_ _ _②	BCC M415-0000-1A-003-PW3434①-_ _ _②	BCC M425-0000-1A-003-PW3434①-_ _ _②
	–	–	BCC M425-0000-1A-099-PW3434①-_ _ _②
	–	–	BCC M425-0000-1A-100-PW3534①-_ _ _②
	CE, EAC	CE, UL, EAC	CE, UL, EAC
	158	158	158

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PW3334	PUR	Orange	3 × 0.34 mm²	–50...+90 °C	–25...+90 °C
PW3434	PUR	Orange	4 × 0.34 mm²	–50...+90 °C	–25...+90 °C
PW3534	PUR	Orange	5 × 0.34 mm²	–50...+90 °C	–25...+90 °C

②	Cable length
CONNECTION CABLE	
020	2 m
050	5 m
100	10 m

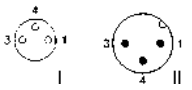
Other cable lengths on request!

AVAILABLE AS BULK CABLE

	Order code	Part number	Cable length
PW3334	BCC0C1A	BCC 0000-0000-00-000-PW3334-10X	100 m
PW3434	BCC0C19	BCC 0000-0000-00-000-PW3434-10X	100 m
PW3534	BCC0C1F	BCC 0000-0000-00-003-PW3534-10X	100 m

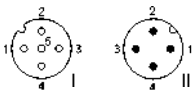
		BCC M323-M413 ...
Connection		M8 female, A-coded/ M12 male, A-coded
Version		angled/straight
Rated voltage	No LED	–
	with LED	30 V DC
Rated current		4 A
Degree of protection		IP67, IP69K/IP67, IP68, IP69K
unshielded, 2 × PNP-LED, 3-conductor		BCC M323-M413-3E-602-PW3334①-_ _ _②
unshielded, 2 × PNP-LED, 3-conductor, N.O. signal		–
unshielded, no LED, 4-conductor		–
unshielded, 3 × PNP-LED, 4-conductor		–
unshielded, no LED, 5-conductor, with PE		–
unshielded, 3 × PNP-LED, 5-conductor, with PE		–
Approval/Conformity		CE, EAC
For drawing see page		159

M8 female/M12 male, 3-conductor



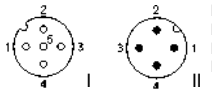
PIN 1: brown
PIN 3: blue
PIN 4: black

M12 female/M12 male, 3-conductor, N.O. signal



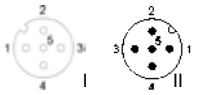
PIN 1: brown
PIN 3: blue
PIN 4: black

M12 female/M12 male, 4-wire



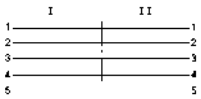
PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

M12 female/M12 male, 5-conductor, with PE



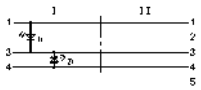
PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black
PIN 5: green/yellow

unshielded, no LED

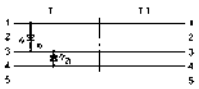


unshielded, no LED

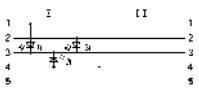
unshielded, 2 × PNP-LED*



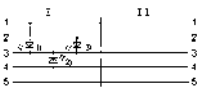
unshielded, 2 × PNP-LED*



unshielded, 3 × PNP-LED*



unshielded, 3 × PNP-LED*



* [1] LED green = Power
[2] LED yellow = Function
[3] LED red = Function

	BCC M415-M414... BCC M415-M415...	BCC M425-M413... BCC M425-M414... BCC M425-M415...
	M12 female, A-coded/ M12 male, A-coded	M12 female, A-coded/ M12 male, A-coded
	straight/straight	angled/straight
	250 V AC/DC	250 V AC/DC
	30 V DC	30 V DC
	4 A	4 A
	IP67, IP68, IP69K/IP67, IP68, IP69K	IP67, IP68, IP69K/IP67, IP68, IP69K
	–	–
	–	BCC M425-M413-3A-602-PW3334①-_ _ _②
	BCC M415-M414-3A-304-PW3434①-_ _ _②	BCC M425-M414-3A-304-PW3434①-_ _ _②
		BCC M425-M414-3A-691-PW3434①-_ _ _②
	BCC M415-M415-3A-313-PW3534①-_ _ _②	BCC M425-M415-3A-313-PW3534①-_ _ _②
	–	BCC M425-M415-3A-692-PW3534①-_ _ _②
	CE, UL, EAC	CE, UL, EAC
	159	159

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PW3334	PUR	Orange	3 × 0.34 mm²	–50...+90 °C	–25...+90 °C
PW3434	PUR	Orange	4 × 0.34 mm²	–50...+90 °C	–25...+90 °C
PW3534	PUR	Orange	5 × 0.34 mm²	–50...+90 °C	–25...+90 °C

②	Cable length
CABLE	
003	0.3 m
006	0.6 m
010	1 m
015	1.5 m
020	2 m
050	5 m

Other cable lengths on request!

AVAILABLE AS BULK CABLE

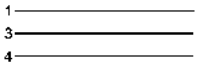
	Order code	Part number	Cable length
PW3334	BCC0C1A	BCC 0000-0000-00-000-PW3334-10X	100 m
PW3434	BCC0C19	BCC 0000-0000-00-000-PW3434-10X	100 m
PW3534	BCC0C1F	BCC 0000-0000-00-003-PW3534-10X	100 m

	BCC W313 ... BCC W314 ...	
Connection	M8 female, A-coded	
Version	straight	
Rated voltage	60 V AC/DC	
Rated current	4 A	
Degree of protection	IP65	
unshielded, no LED, 3-conductor	BCC W313-0000-10-001-BW8334①-_ _ _②	
unshielded, no LED, 4-conductor	BCC W314-0000-10-003-BW8434①-_ _ _②	
Approval/Conformity	CE, UL, EAC	
For drawing see page	159	

M8 female, 3-conductor

PIN 1: brown
PIN 3: blue
PIN 4: black

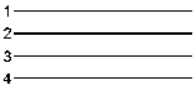
unshielded, no LED



M8 female, 4-conductor

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

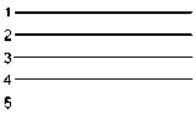
unshielded, no LED



M12 female, 4-conductor

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

unshielded, no LED





	BCC W323 ... BCC W324 ...	BCC W415 ...	BCC W425 ...
	M8 female, A-coded	M12 female, A-coded	M12 female, A-coded
	angled	straight	angled
	60 V AC/DC	250 V AC/DC	250 V AC/DC
	4 A	4 A	4 A
	IP65	IP65	IP65
	BCC W323-0000-10-001-BW8334①-_ _ _②	–	–
	BCC W324-0000-10-003-BW8434①-_ _ _②	BCC W415-0000-1A-003-BW8434①-_ _ _②	BCC W425-0000-1A-003-BW8434①-_ _ _②
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	159	159	159

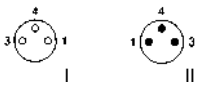
①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
BW8334	TPE	Gray	3 × 0.34 mm²	–50...+130 °C	–40...+125 °C
BW8434	TPE	Gray	4 × 0.34 mm²	–50...+130 °C	–40...+125 °C

②	Cable length
CONNECTION CABLE	
020	2 m
050	5 m

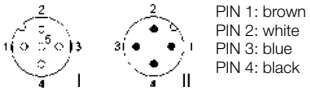
Other cable lengths on request!

	BCC W313-W313 ...	
Connection	M8 female, A-coded/ M8 male, A-coded	
Version	straight/straight	
Rated voltage	60 V AC/DC	
Rated current	4 A	
Degree of protection	IP65/IP65	
unshielded, no LED, 3-conductor	BCC W313-W313-30-300-BW8334①-_ _ _②	
unshielded, no LED, 4-conductor	–	
Approval/Conformity	CE, UL, EAC	
For drawing see page	159	

M8 female/M8 male, 3-wire

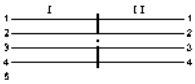


M12 female/M12 male, 4-wire



unshielded, no LED

unshielded, no LED



	BCC W415-W414 ...	BCC W425-W414 ...
	M12 female, A-coded/ M12 male, A-coded	M12 female, A-coded/ M12 male, A-coded
	straight/straight	angled/straight
	250 V AC/DC	250 V AC/DC
	4 A	4 A
	IP65/IP65	IP65/IP65
	–	–
	BCC W415-W414-3A-304-BW8434①-_ _ _②	BCC W425-W414-3A-304-BW8434①-_ _ _②
	CE, UL, EAC	CE, UL, EAC
	159	159

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
BW8334	TPE	Gray	3 × 0.34 mm²	–50...+130 °C	–40...+125 °C
BW8434	TPE	Gray	4 × 0.34 mm²	–50...+130 °C	–40...+125 °C

②	Cable length
CABLE	
003	0.3 m
006	0.6 m
010	1 m
015	1.5 m
020	2 m
050	5 m

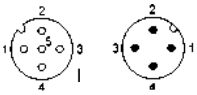
Other cable lengths on request!

	BCC W415 ...	
Connection	M12 female, A-coded	
Version	straight	
Rated voltage	250 V AC/DC	
Rated current	4 A	
Degree of protection	IP65	
unshielded, no LED	BCC W415-0000-1A-003-SW0434①-_ _ _②	
unshielded, 3 × PNP-LED	–	
Approval/Conformity	CE, UL, EAC	
For drawing see page	160	

M12 female

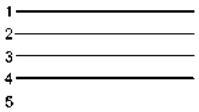
PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

M12 female/M12 male

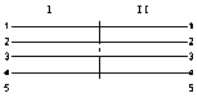


PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

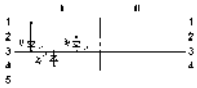
unshielded, no LED



unshielded, no LED



unshielded, 3 × PNP-LED



* [1] LED green = Power
[2] LED yellow = Function
[3] LED red = Function

	BCC W425 ...	BCC W415 ... BCC W414 ...	BCC W425 ... BCC W414 ...
	M12 female, A-coded	M12 female, A-coded/ M12 male, A-coded	M12 female, A-coded/ M12, A-coded, male
	angled	straight/straight	angled/straight
	250 V AC/DC	250 V AC/DC	250 V AC/DC
	4 A	4 A	4 A
	IP65	IP65/IP65	IP65/IP65
	BCC W425-0000-1A-003-SW0434①-_ _ _②	BCC W415-W414-3A-304-SW0434①-_ _ _②	BCC W425-W414-3A-304-SW0434①-_ _ _②
	–	BCC W415-W414-3A-650-SW0434①-_ _ _②	BCC W425-W414-3A-650-SW0434①-_ _ _②
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	160	160	160

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
SW0434	Silicone	Black	4 × 0.34 mm²	–40...+200 °C	–25...+200 °C

②	Cable length
CONNECTION CABLE	
020	2 m
050	5 m
100	10 m
CABLE	
003	0.3 m
006	0.6 m
010	1 m
015	1.5 m
020	2 m
050	5 m

Other cable lengths on request!

AVAILABLE AS BULK CABLE

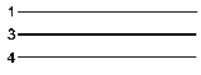
	Order code	Part number	Cable length
SW0434	BCC0HA8	BCC 0000-0000-00-003-SW0434-10X	100 m

		BCC W313 ... BCC W314 ...	
Connection		M8 female, A-coded	
Version		straight	
Rated voltage	No LED	60 V AC/DC	
Rated current		4 A	
Degree of protection	unshielded	IP65	
unshielded, no LED, 3-conductor		BCC W313-0000-10-001-TW0334①-_ _ _②	
unshielded, no LED, 4-conductor		BCC W314-0000-10-003-TW0434①-_ _ _②	
Approval/Conformity		CE, UL, EAC	
For drawing see page		160	

M8 female, 3-conductor

PIN 1: brown
PIN 3: blue
PIN 4: black

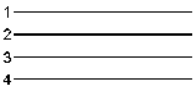
unshielded, no LED



M8 female, 4-conductor

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

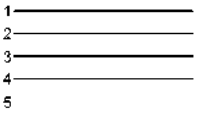
unshielded, no LED



M12 female, 4-conductor

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

unshielded, no LED



	BCC W323 ... BCC W324 ...	BCC W415 ...	BCC W425 ...
	M8 female, A-coded	M12 female, A-coded	M12 female, A-coded
	angled	straight	angled
	60 V AC/DC	250 V AC/DC	250 V AC/DC
	4 A	4 A	4 A
	IP65	IP65	IP65
	BCC W323-0000-10-001-TW0334①-_ _ _②	–	–
	BCC W324-0000-10-003-TW0434①-_ _ _②	BCC W415-0000-1A-003-TW0434①-_ _ _②	BCC W425-0000-1A-003-TW0434①-_ _ _②
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	161	161	161

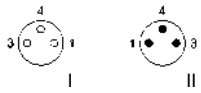
①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
TW0334	FEP	Black	3 × 0.34 mm²	–100...+200 °C	–
TW0434	FEP	Black	4 × 0.34 mm²	–100...+200 °C	–

②	Cable length
CONNECTION CABLE	
020	2 m
050	5 m
100	10 m

Other cable lengths on request!

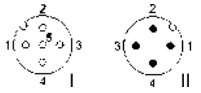
		BCC W313-W313 ...
Connection		M8 female, A-coded/ M8 male, A-coded
Version		straight/straight
Rated voltage	No LED	60 V AC/DC
	with LED	–
Rated current		4 A
Degree of protection	unshielded	IP65/IP65
unshielded, no LED, 3-conductor		BCC W313-W313-30-300-TW0334①-_ _ _②
unshielded, no LED, 4-conductor		–
unshielded, 3 × PNP-LED, 4-conductor		–
Approval/Conformity		CE, UL, EAC
For drawing see page		161

M8 female/M8 male, 3-wire



PIN 1: brown
PIN 3: blue
PIN 4: black

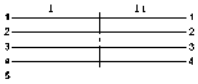
M12 female/M12 male, 4-wire



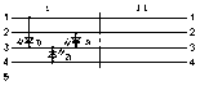
PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

unshielded, no LED

unshielded, no LED



unshielded, 3 × PNP-LED



* [1] LED green = Power
[2] LED yellow = Function
[3] LED white = Function

	BCC W415-W414 ...	BCC W425-W414 ...
	M12 female, A-coded/ M12 male, A-coded	M12 female, A-coded/ M12 male, A-coded
	straight/straight	angled/straight
	250 V AC/DC	250 V AC/DC
	30 V DC	30 V DC
	4 A	4 A
	IP65/IP65	IP65/IP65
	–	–
	BCC W415-W414-3A-304-TW0434①-_ _ _②	BCC W425-W414-3A-304-TW0434①-_ _ _②
	BCC W415-W414-3A-650-TW0434①-_ _ _②	BCC W425-W414-3A-650-TW0434①-_ _ _②
	CE, UL, EAC	CE, UL, EAC
	161	161

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
TW0334	FEP	Black	3 × 0.34 mm²	–100...+200 °C	–
TW0434	FEP	Black	4 × 0.34 mm²	–100...+200 °C	–

②	Cable length
CABLE	
003	0.3 m
006	0.6 m
010	1 m
015	1.5 m
020	2 m
050	5 m

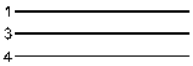
Other cable lengths on request!

		BCC W313 ... BCC W314 ...	
Connection		M8 female, A-coded	
Version		straight	
Rated voltage	No LED	60 V AC/DC	
Rated current		4 A	
Degree of protection	unshielded	IP65	
unshielded, no LED, 3-conductor		BCC W313-0000-10-001-MW8334①-_ _ _②	
unshielded, no LED, 4-conductor		BCC W314-0000-10-003-MW8434①-_ _ _②	
Approval/Conformity		CE, UL, EAC	
For drawing see page		161, 162	

M8 female, 3-conductor

PIN 1: brown
PIN 3: blue
PIN 4: black

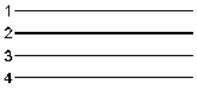
unshielded, no LED



M8 female, 4-conductor

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

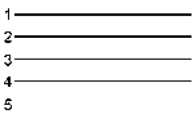
unshielded, no LED



M12 female, 4-conductor

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

unshielded, no LED



	BCC W323 ... BCC W324 ...	BCC W415 ...	BCC W425 ...
	M8 female, A-coded	M12 female, A-coded	M12 female, A-coded
	angled	straight	angled
	60 V AC/DC	250 V AC/DC	250 V AC/DC
	4 A	4 A	4 A
	IP65	IP65	IP65
	BCC W323-0000-10-001-MW8334①-_ _ _②	–	–
	BCC W324-0000-10-003-MW8434①-_ _ _②	BCC W415-0000-1A-003-MW8434①-_ _ _②	BCC W425-0000-1A-003-MW8434①-_ _ _②
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	162	162	162

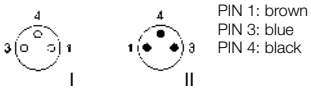
①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
MW8334	V2A, metal braided	–	3 × 0.34 mm^2	–50...+90 °C	–25...+90 °C
MW8434	V2A, metal braided	–	4 × 0.34 mm^2	–50...+90 °C	–25...+90 °C

②	Cable length
CONNECTION CABLE	
006	0.6 m
010	1 m
020	2 m
050	5 m

Other cable lengths on request!

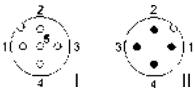
		BCC W313-W313 ...	
Connection		M8 female, A-coded/ M8 male, A-coded	
Version		straight/straight	
Rated voltage	No LED	60 V AC/DC	
Rated current		4 A	
Degree of protection	unshielded	IP65/IP65	
unshielded, no LED, 3-conductor		BCC W313-W313-30-300-MW8334①-_ _ _②	
unshielded, no LED, 4-conductor		–	
Approval/Conformity		CE, UL, EAC	
For drawing see page		162	

M8 female/M8 male, 3-wire



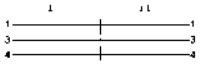
PIN 1: brown
PIN 3: blue
PIN 4: black

M12 female/M12 male, 4-wire

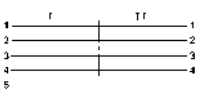


PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

unshielded, no LED



unshielded, no LED



	BCC W323-W313 ...	BCC W415-W414 ...	BCC W425-W414 ...
	M8 female, A-coded/ M8 male, A-coded	M12 female, A-coded/ M12 male, A-coded	M12 female, A-coded/ M12 male, A-coded
	angled/straight	straight/straight	angled/straight
	60 V AC/DC	250 V AC/DC	250 V AC/DC
	4 A	4 A	4 A
	IP65/IP65	IP65/IP65	IP65/IP65
	BCC W323-W313-30-300-MW8334①-_ _ _②	–	–
	–	BCC W415-W414-3A-304-MW8434①-_ _ _②	BCC W425-W414-3A-304-MW8434①-_ _ _②
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	162	162	162

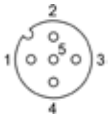
①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
MW8334	V2A, metal braided	–	3 × 0.34 mm²	–50...+90 °C	–25...+90 °C
MW8434	V2A, metal braided	–	4 × 0.34 mm²	–50...+90 °C	–25...+90 °C

②	Cable length
CABLE	
003	0.3 m
006	0.6 m
010	1 m
015	1.5 m
020	2 m
050	5 m

Other cable lengths on request!

	BCC S4B5 ...	
Connection	M12x1 female, A-coded	
Version	straight	
Rated voltage	250 V AC/DC	
Rated current	4 A	
Degree of protection	IP67, IP69K	
unshielded, no LED 4-conductor	BCC S4B5-0000-1A-003-YX8434-_ _ _①-C009	
unshielded, no LED 5-conductor no PE		
unshielded, no LED 5-conductor with PE		
Approval/Conformity	CE, EAC, ECOLAB, WEEE	
For drawing see page	164	

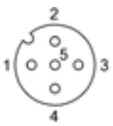
M12 female, 4-conductor



PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

unshielded, no LED

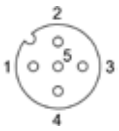
M12 female, 5-conductor, no PE



PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black
PIN 5: grey

unshielded, no LED

M12 female, 5-conductor with PE



PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black
PIN 5: green/yellow



	BCC S4C5 ...	BCC S4B5 ...	BCC S4C5 ...
	M12x1 female, A-coded	M12x1 female, A-coded	M12x1 female, A-coded
	angled	straight	angled
	250 V AC/DC	250 V AC/DC	250 VDC / 250 VAC
	4 A	4 A	4 A
	IP67, IP69K	IP67, IP69K	IP67, IP69K
	BCC S4C5-0000-1A-003-YX8434-_ _ _①-C00		
		BCC S4B5-0000-1A-017-YX8534-_ _ _①-C009	BCC S4C5-0000-1A-017-YX8534-_ _ _①-C009
		BCC S4B5-0000-1A-034-YX8534-_ _ _①-C009	
	CE, EAC, ECOLAB, WEEE	CE, EAC, ECOLAB, WEEE	CE, EAC, ECOLAB, WEEE
	164	164	164

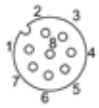
	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature fiexed
UNSHIELDED					
YX8434	TPE-V	grey	4 × 0.34 mm²	–50...+105 °C	–25...+105 °C
YX8435	TPE-V	grey	5 × 0.34 mm²	–50...+105 °C	–25...+105 °C

①	Cable length
CONNECTION CABLE	
020	2 m
050	5 m
100	10 m
150	15 m
200	20 m

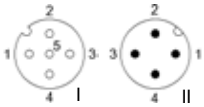
Other cable lengths on request!

	BCC S4B8 ...	
Connection	M12x1 female, A-coded	
Version	straight	
Rated voltage	30 V AC/DC	
Rated current	2 A	
Degree of protection	IP67, IP69K	
Unshielded, no LED 4-conductor		
Unshielded, no LED 5-conductor mit PE		
Unshielded, no LED 8-conductor	BCC S4B8-0000-1A-045-YX8825-_ _ _①-C009	
Approval/Conformity	CE, EAC, ECOLAB, WEEE	
For drawing see page	164	

M12 female



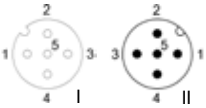
M12 female/M12 male, 4-conductor



PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

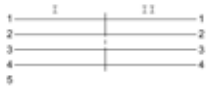
Unshielded. no LED 8-conductor

M12 female/M12 male, 5-conductor with PE

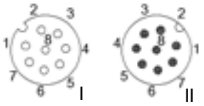


PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black
PIN 5: grün/gelb

Unshielded. no LED 4-conductor



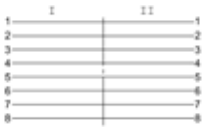
M12 female/M12-Stecke, 8-conductor



PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black
PIN 5: grey
PIN 6: pink
PIN 7: violett
PIN 8: orange

Unshielded, no LED 5-conductor mit PE

Unshielded, no LED 8-conductor



	BCC S4B5 - S4B4 ...	BCC S4B5 - S4B5 ...	BCC S4B8 - S4B8 ...
	M12, A female, A-coded M12, A male, A-coded	M12, A female, A-coded M12, A male, A-coded	M12, A female, A-coded M12, A male, A-coded
	straight/straight	straight/straight	straight/straight
	250 V AC/DC	60 V AC/DC	30 V AC/DC
	4 A	4 A	2 A
	IP67, IP69K	IP67, IP69K	IP67, IP69K
	BCC S4B5-S4B4-3A-304-YX8434-_ _ _①-C009		
		BCC S4B5-S4B5-3A-313-YX8534-_ _ _①-C009	
			BCC S4B8-S4B8-3A-321-YX8825-_ _ _①-C009
	CE, EAC, ECOLAB, WEEE	CE, EAC, ECOLAB, WEEE	CE, EAC, ECOLAB, WEEE
	164	164	164

	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature fiexed
UNSHIELDED					
YX8434	TPE-V	grey	4 × 0.34 mm²	–50...+105 °C	–25...+105 °C
YX8534	TPE-V	grey	5 × 0.34 mm²	–50...+105 °C	–25...+105 °C
YX8825	TPE-V	grey	8 × 0,25 mm²	–50...+105 °C	–25...+105 °C

①	Cable length
CONNECTION CABLE	
020	2 m
050	5 m
100	10 m
150	15 m
CABLE	
0.6	0.6 m
020	2 m
050	5 m
100	10 m
150	15 m

Other cable lengths on request!

	BCC M414 ...	
Connection	M12x1 female, L-coded	
Version	straight	
Rated voltage	50 V DC / 60 V AC	
Rated current	16 A	
Degree of protection	IP65, IP67, IP69k	
unshielded no FE	BCC M414-0000-1L-003-PX04A5-_ _ _①	
Approval/Conformity	UL,CE, EAC, WEEE	
For drawing see page	168	

M12 female no FE

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

M12 male no FE

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black

unshielded no FE

	BCC M424 ...	BCC M415 ...	BCC M425 ...
	M12x1 female, L-coded	M12x1 male, L-coded	M12x1 male, L-coded
	angled	Sstraight	angled
	50 V DC / 60 V AC	50 V DC / 60 V AC	50 V DC / 60 V AC
	16 A	16 A	16 A
	IP65, IP67, IP69k	IP65, IP67, IP69k	IP65, IP67, IP69k
	BCC M424-0000-1L-003-PX04A5-_ _ _①	BCC M415-0000-2L-003-PX04A5-_ _ _①	BCC M425-0000-2L-003-PX04A5-_ _ _①
	UL, CE, EAC, WEEE	UL, CE, EAC, WEEE	UL, CE, EAC, WEEE
	168	168	168

	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature fiexed
UNSHIELDED					
PX04A5	PUR	black	4 × 1.5 mm^2	–50...+80 °C	–20...+80 °C

①	Cable length
CONNECTION CABLE	
020	2 m
050	5 m
100	10 m

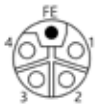
Other cable lengths on request!

AVAILABLE AS BULK CABLE

	Order code	Part number	Cable length
PX04A5	BCC0ACF	BCC 0000-0000-00-000-PX04A5-10X	100 m

	BCC M415 ...	
Connection	M12x1 female, L-coded	
Version	straight	
Rated voltage	50 V DC / 60 V AC	
Rated current	16 A	
Degree of protection	IP65, IP67, IP69k	
unshielded with FE	BCC M415-0000-1L-150-PX85A5-5-_ _ _①	
Approval/Conformity	UL, CE, EAC, WEEE	
For drawing see page	168	

M12 female with FE



PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black
PIN 5: pink

M12 male with FE

PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black
PIN 5: pink

unshielded with FE

	BCC M425 ...	BCC M415 ...	BCC M425 ...
	M12x1 female, L-coded	M12x1 male, L-coded	M12x1 male, L-coded
	angled	straight	angled
	50 V DC / 60 V AC	50 V DC / 60 V AC	50 V DC / 60 V AC
	16 A	16 A	16 A
	IP65, IP67, IP69k	IP65, IP67, IP69k	IP65, IP67, IP69k
	BCC M425-0000-1L-150-PX85A5-_ _ _①	BCC M415-0000-2L-150-PX85A5-_ _ _①	BCC M425-0000-2L-150-PX85A5-_ _ _①
	UL, CE, EAC, WEEE	UL, CE, EAC, WEEE	UL, CE, EAC, WEEE
	168	168	168

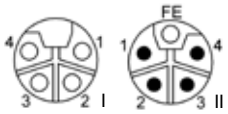
	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature fiexed
UNSHIELDED					
PX85A5	PUR	grey	5 × 1.5 mm^2	–50...+80 °C	–20...+80 °C

①	Cable length
CONNECTION CABLE	
020	2 m
050	5 m
100	10 m

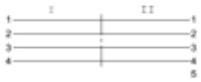
Other cable lengths on request!

	BCC M414-M415 ...	
Connection	M12x1 female, L-coded M12x1 male, L-coded	
Version	straight/straight	
Rated voltage	50 V DC / 60 V AC	
Rated current	16 A	
Degree of protection	IP65, IP67, IP69k	
unshielded no FE	BCC M414-M415-3L-304-PX04A5-_ _ _①	
Approval/Conformity	UL, CE, EAC, WEEE	
For drawing see page	169	

M12 female/M12 male no FE



unshielded no FE



BCC M424-M425 ...		
M12x1 female, L-coded M12x1 male, L-coded		
angled/angled		
50 V DC / 60 V AC		
16 A		
IP65, IP67, IP69k		
BCC M424-M425-3L-304-PX04A5-_ _ _①		
UL, CE, EAC, WEEE		
169		

	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature fiexed
UNSHIELDED					
PX04A5	PUR	black	4 × 1.5 mm²	–50...+80 °C	–20...+80 °C

①	Cable length
CONNECTION CABLE	
006	0.6 m
020	2 m
050	5 m
100	10 m
150	15 m

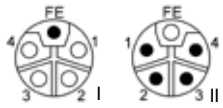
Other cable lengths on request!

AVAILABLE AS BULK CABLE

	Order code	Part number	Cable length
PX04A5	BCC0ACF	BCC 0000-0000-00-000-PX04A5-10X	100 m

	BCC M415-5M415 ...	
Connection	M12x1 female, L-coded M12x1 male, L-coded	
Version	straight/straight	
Rated voltage	50 V DC / 60 V AC	
Rated current	16 A	
Degree of protection	IP65, IP67, IP69k	
Unshielded with FE	BCC M415-M415-3L-386-PX85A5-_ _ _①	
Approval/Conformity	UL, CE, EAC, WEEE	
For drawing see page	169	

M12 female/M12 male



PIN 1: brown
PIN 2: white
PIN 3: blue
PIN 4: black
PIN 5: pink

unshielded with FE

	BCC M415-M425 ...	BCC M425-M415 ...	BCC M425 ...
	M12x1 female, L-coded M12x1 male, L-coded	M12x1 female, L-coded M12x1 male, L-coded	M12x1 female, L-coded M12x1 male, L-coded
	straight/angled	straight/angled	angled/angled
	50 V DC / 60 V AC	50 V DC / 60 V AC	50 V DC / 60 V AC
	16 A	16 A	16 A
	IP65, IP67, IP69k	IP65, IP67, IP69k	IP65, IP67, IP69k
	BCC M415-M425-3L-386-PX85A5-_ _ _①	BCC M425-M415-3L-386-PX85A5-_ _ _①	BCC M425-M425-3L-386-PX85A5-_ _ _①
	UL, CE, EAC, WEEE	UL, CE, EAC, WEEE	UL, CE, EAC, WEEE
	169	169	169

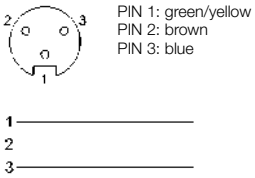
	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature fiexed
UNSHIELDED					
PX8A5	PUR	grey	5 × 1.5 mm^2	–50...+80 °C	–20...+80 °C

①	Cable length
CONNECTION CABLE	
006	0.6 m
020	2 m
050	5 m
100	10 m
150	15 m

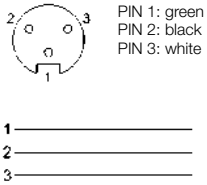
Other cable lengths on request!

	BCC A313 ...	BCC A313 ...	
Connection	7/8“ female	7/8“ male	
Version	straight	straight	
Rated voltage	300 V AC/DC	300 V AC/DC	
Rated current	13 A	13 A	
Degree of protection	IP67, IP68	IP67, IP68	
unshielded, with PE	BCC A313-0000-10-097-PX03A5①-_ _ _②	–	
unshielded, no PE	BCC A313-0000-10-071-VX43W6①-_ _ _②	BCC A313-0000-20-071-VX43W6①-_ _ _②	
Approval/Conformity	CE, UL, EAC	CE, UL, EAC	
For drawing see page	163	163	

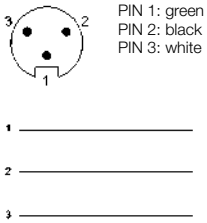
7/8“ female, with PE



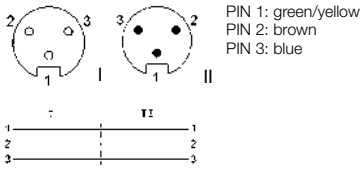
7/8“ female, no PE



7/8“ male, no PE



7/8“ female/7/8“ male, with PE



	BCC A323 ...	BCC A323 ...	BCC A313-A313 ...
	7/8“ female	7/8“ male	7/8“ female/ 7/8“ male
	angled	angled	straight/straight
	300 V AC/DC	300 V AC/DC	300 V AC/DC
	13 A	13 A	13 A
	IP67, IP68	IP67, IP68	IP67, IP68
	BCC A323-0000-10-097-PX03A5①-_ _ _②	–	BCC A313-A313-30-365-PX03A5①-_ _ _②
	BCC A323-0000-10-071-VX43W6①-_ _ _②	BCC A323-0000-20-071-VX43W6①-_ _ _②	–
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	163	163	163

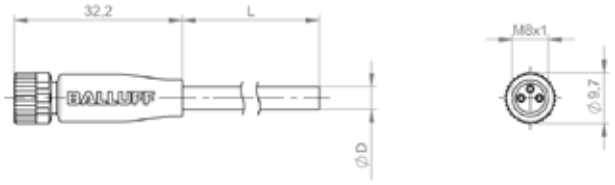
①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED					
PX03A5	PUR	Black	3 × 1.5 mm^2	–40...+80 °C	–20...+80 °C
VX43W6	PVC	Yellow	3 × AWG16	–40...+105 °C	–

②	Cable length
CONNECTION CABLE	
020	2 m
050	5 m
100	10 m
CABLE	
006	0.6 m
020	2 m
050	5 m
100	10 m

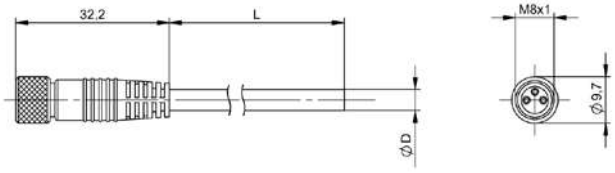
Other cable lengths on request!

AVAILABLE AS BULK CABLE

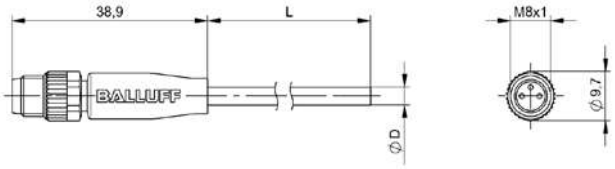
	Order code	Part number	Cable length
VX43W6	BCC0AEF	BCC 0000-0000-00-071-VX43W6-10X	100 m



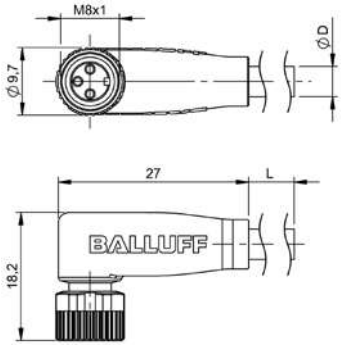
BCC M313-0000-10-001-...
BCC M313-0000-10-004-...



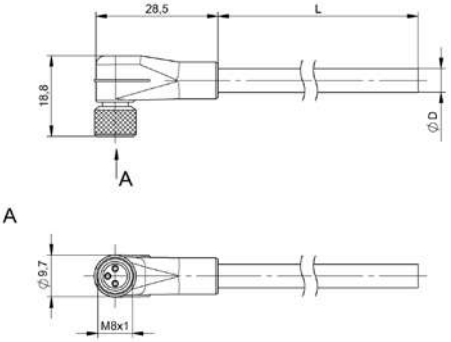
BCC M313-0000-10-036-...



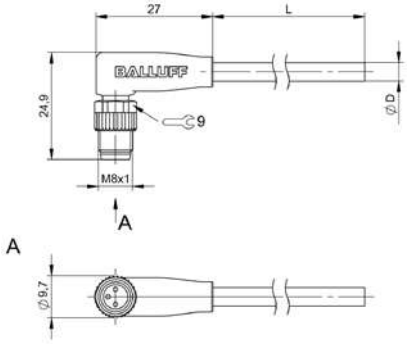
BCC M313-0000-20-001-...



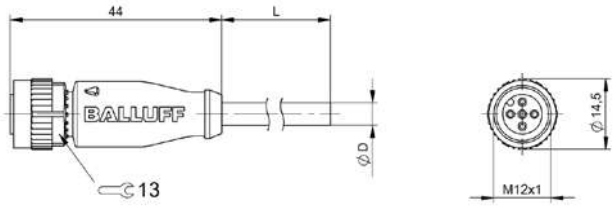
BCC M323-0000-10-001-...
BCC M323-0000-10-004-...
BCC M323-0000-10-006-...



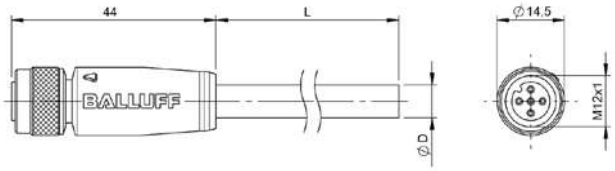
BCC M323-0000-10-036-...



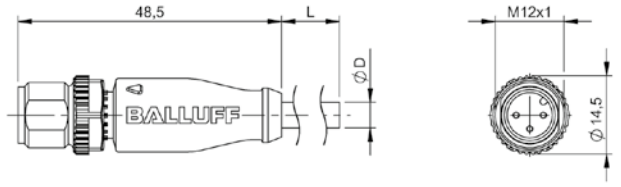
BCC M323-0000-20-001-...



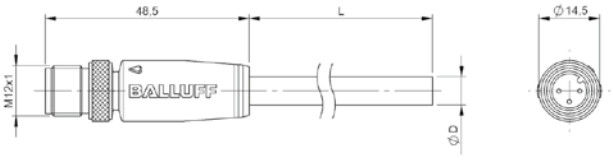
BCC M415-0000-1A-001-...
BCC M415-0000-1A-004-...
BCC M415-0000-1A-002-...
BCC M415-0000-1A-005-...



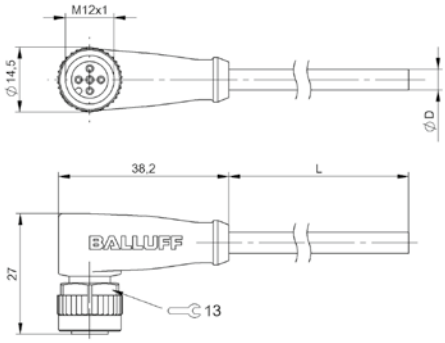
BCC M415-0000-1A-036-...
BCC M415-0000-1A-037-...



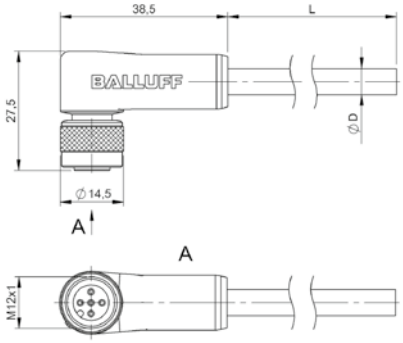
BCC M413-0000-2A-001-...
BCC M413-0000-2A-002-...



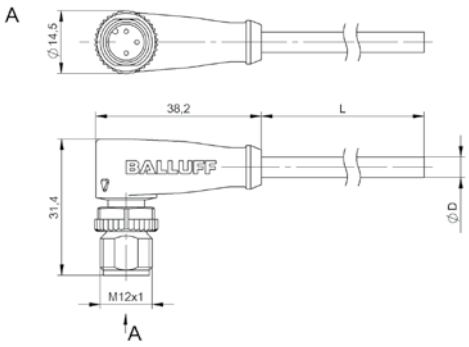
BCC M413-0000-2A-036-...
BCC M413-0000-2A-037-...



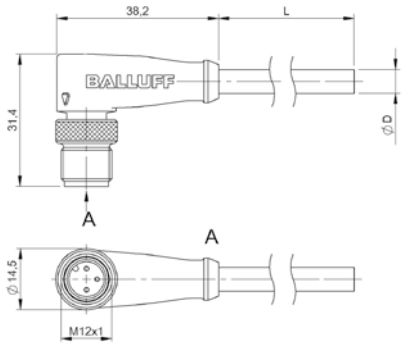
BCC M425-0000-1A-001-...
BCC M425-0000-1A-004-...
BCC M425-0000-1A-006-...
BCC M425-0000-1A-002-...
BCC M425-0000-1A-005-...



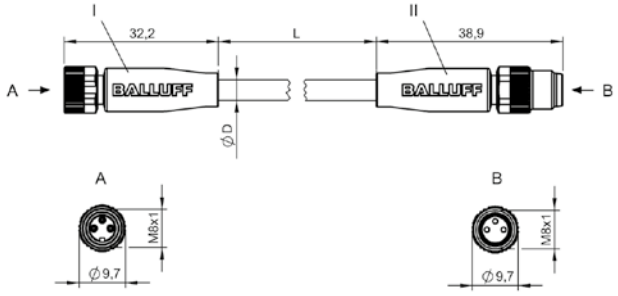
BCC M425-0000-1A-036-...
BCC M425-0000-1A-037-...



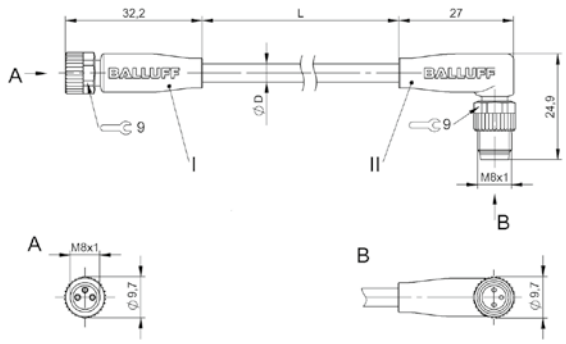
BCC M423-0000-2A-001-...



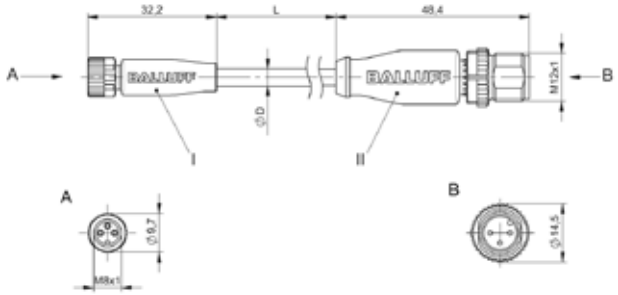
BCC M423-0000-2A-036-...



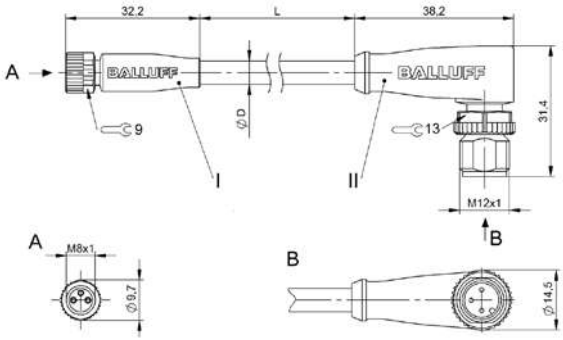
BCC M313-M313-30-300-...



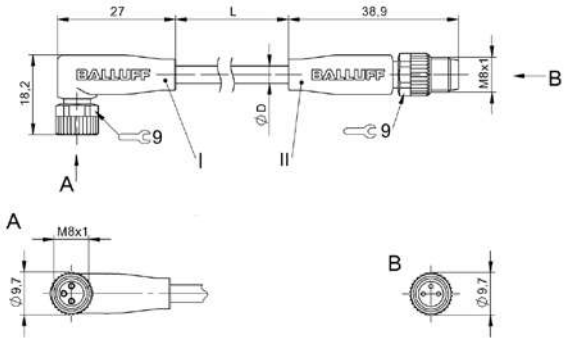
BCC M313-M323-30-300-...



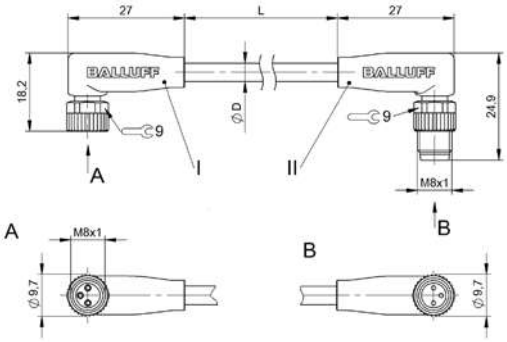
BCC M313-M413-3E-300-...



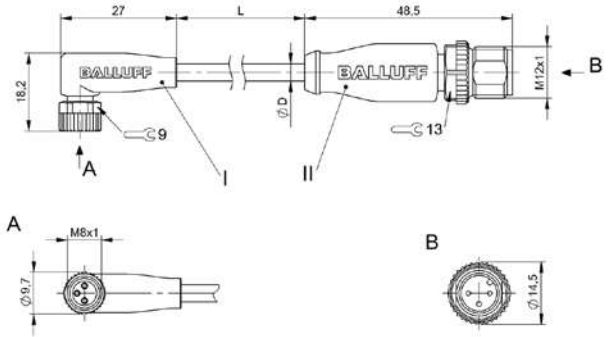
BCC M313-M423-3E-300-...



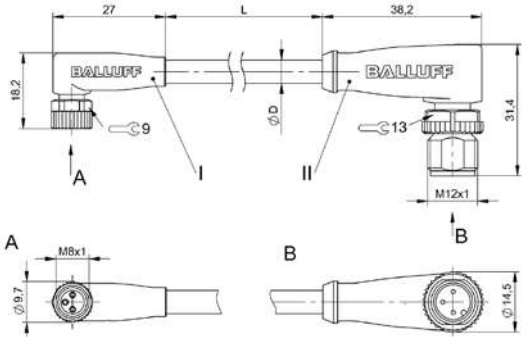
BCC M323-M313-30-300-...
BCC M323-M313-30-602-...



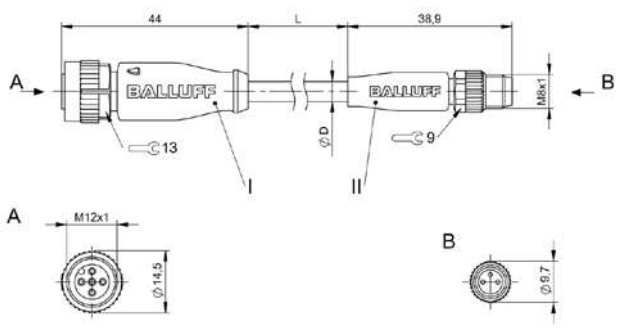
BCC M323-M323-30-300-...



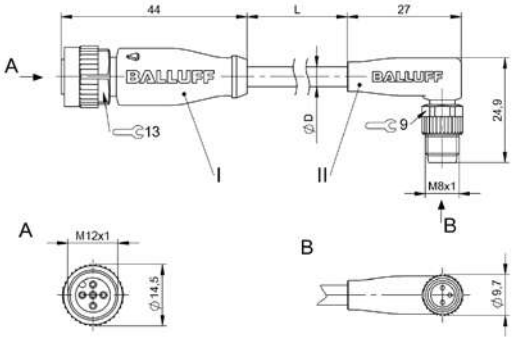
BCC M323-M413-3E-300-...
BCC M323-M413-3E-602-...



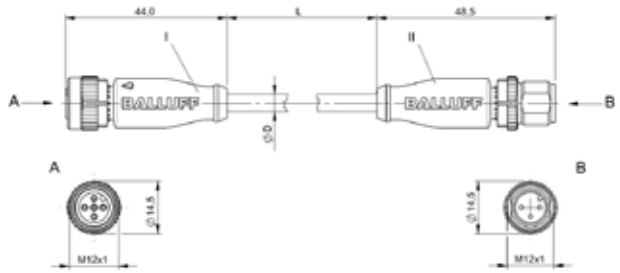
BCC M323-M423-3E-300-...



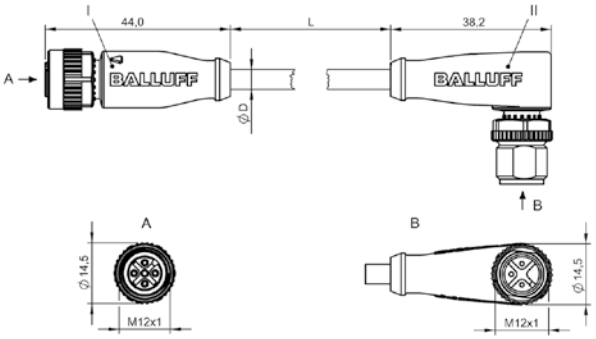
BCC M415-M313-3F-300-...



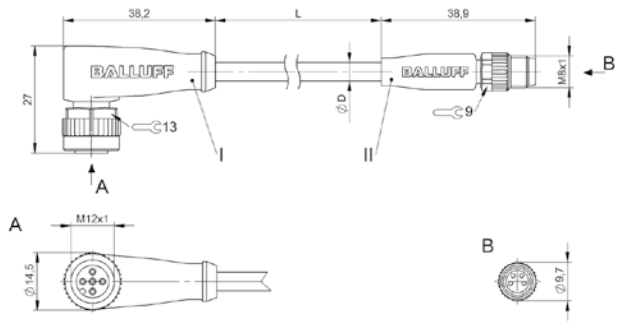
BCC M415-M323-3F-300-...



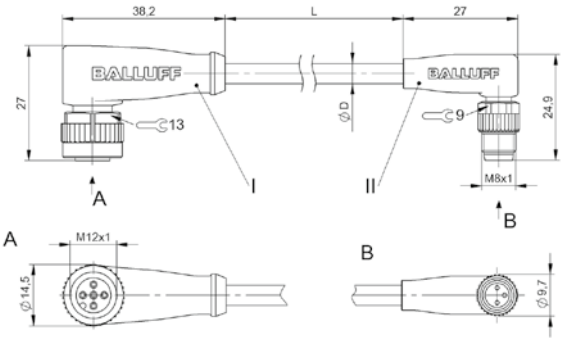
BCC M415-M413-3A-300-...



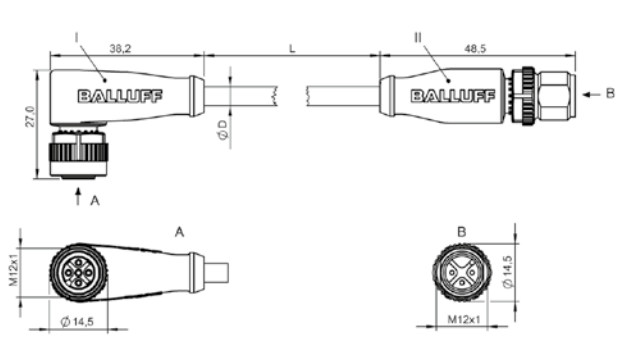
BCC M415-M423-3A-300-...



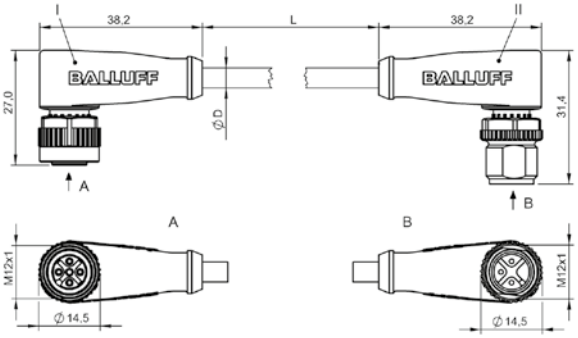
BCC M425-M313-3F-300-...
BCC M425-M313-3F-602-...



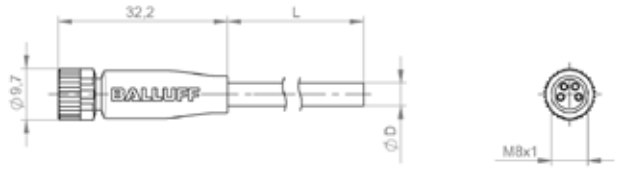
BCC M425-M323-3F-300-...
BCC M425-M323-3F-602-...



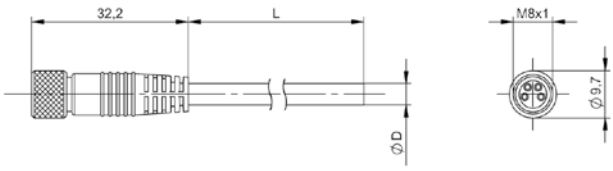
BCC M425-M413-3A-300-...
BCC M425-M413-3A-602-...



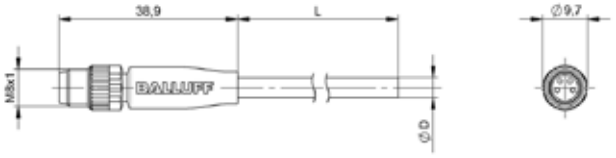
BCC M425-M423-3A-300-...



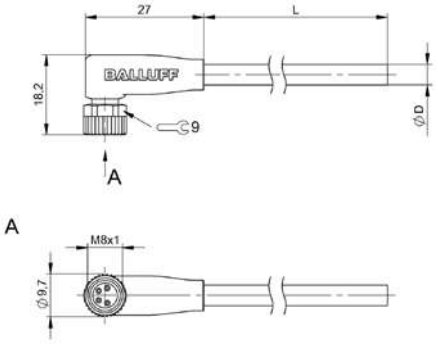
BCC M314-0000-10-003-...



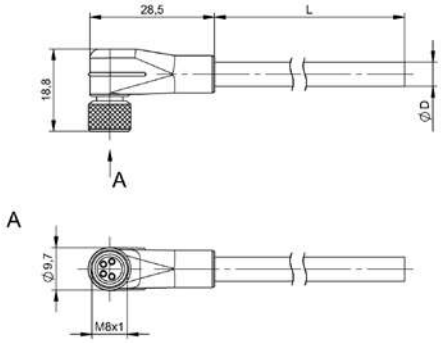
BCC M314-0000-10-014-...



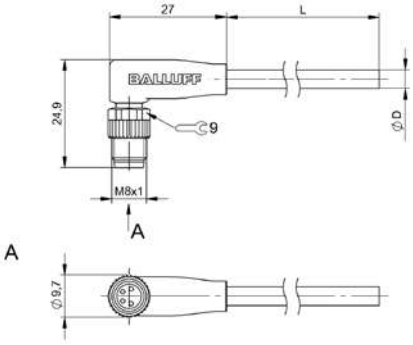
BCC M314-0000-20-003-...



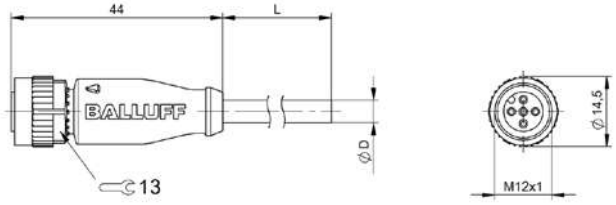
BCC M324-0000-10-003-...
BCC M324-0000-10-008-...



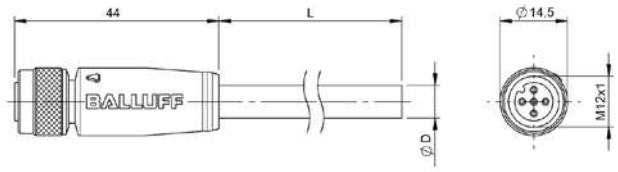
BCC M324-0000-10-014-...



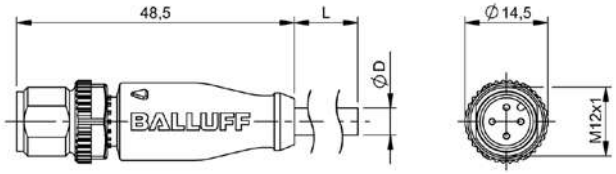
BCC M324-0000-20-003-...



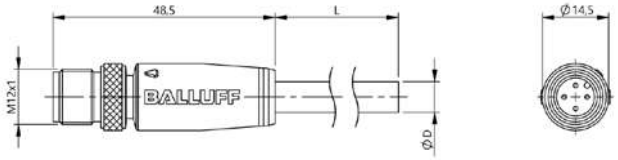
BCC M415-0000-1A-003-...
BCC M415-0000-1A-008-...
BCC M415-0000-1A-010-...



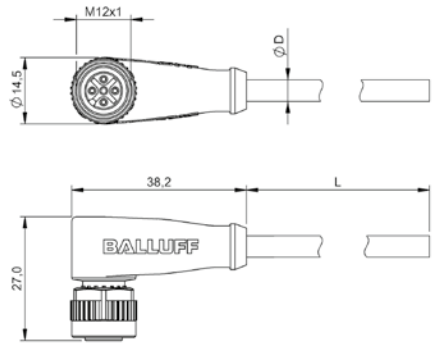
BCC M415-0000-1A-014-...



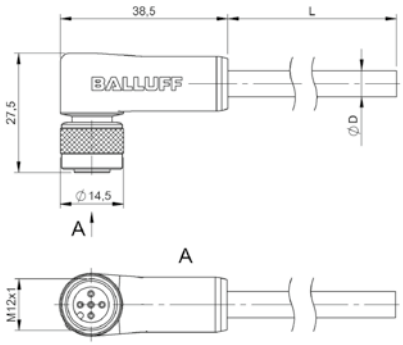
BCC M414-0000-2A-003-...



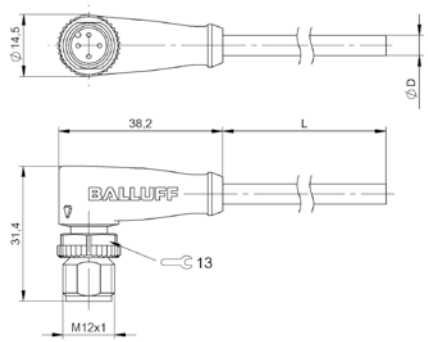
BCC M414-0000-2A-014-...



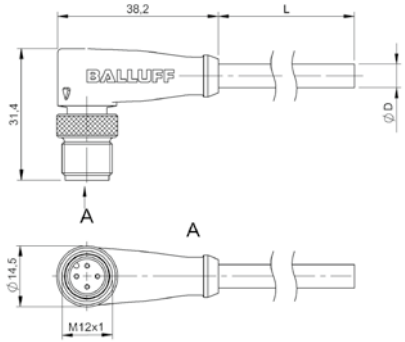
BCC M425-0000-1A-003-...
BCC M425-0000-1A-008-...
BCC M425-0000-1A-010-...



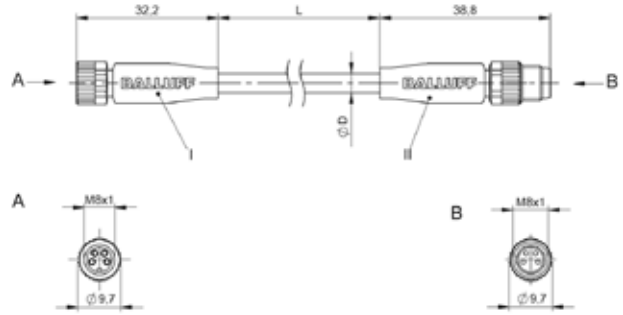
BCC M425-0000-1A-014-...



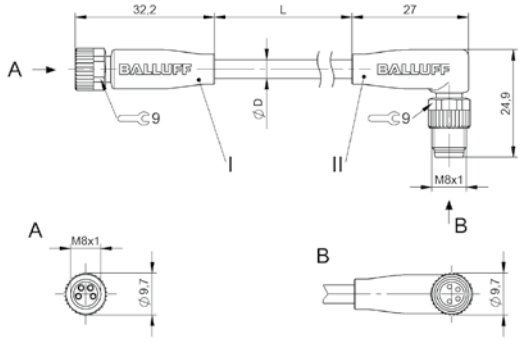
BCC M424-0000-2A-003-...
BCC M424-0000-2A-008-...



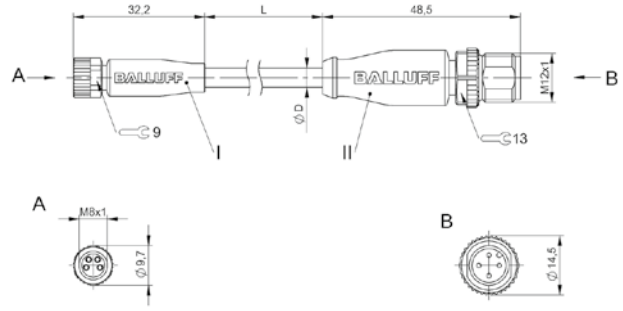
BCC M424-0000-2A-014-...



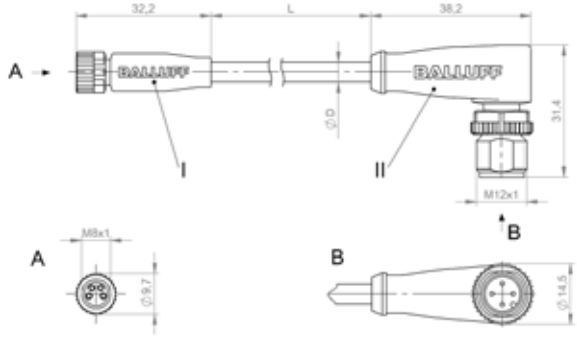
BCC M314-M314-30-304-...



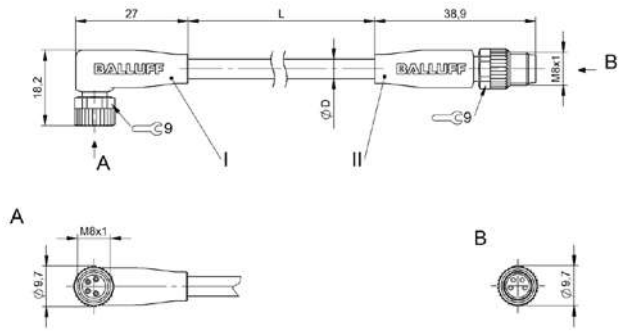
BCC M314-M324-30-304-...



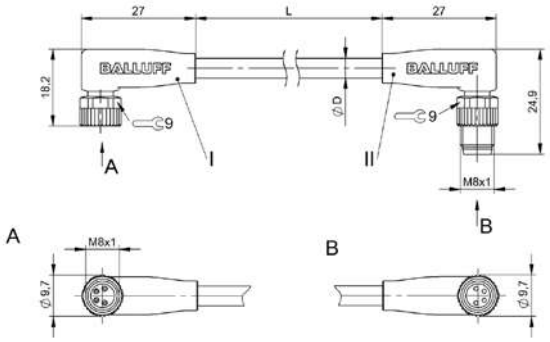
BCC M314-M414-3E-304-...



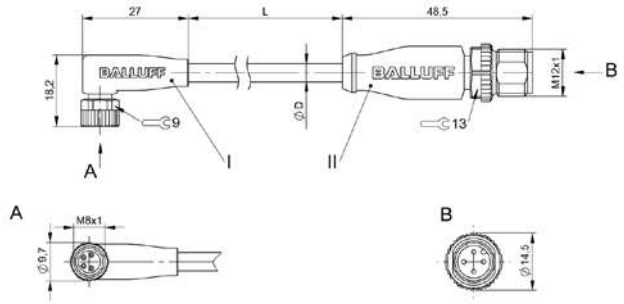
BCC M314-M424-3E-304-...



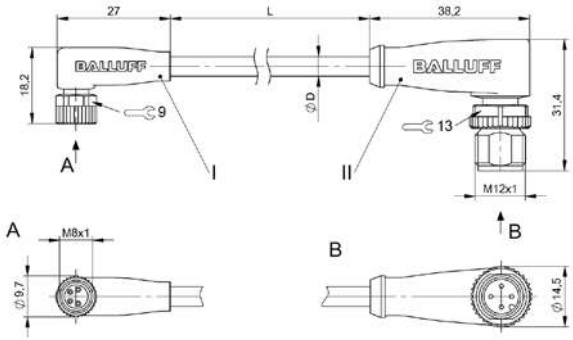
BCC M324-M314-30-304-...



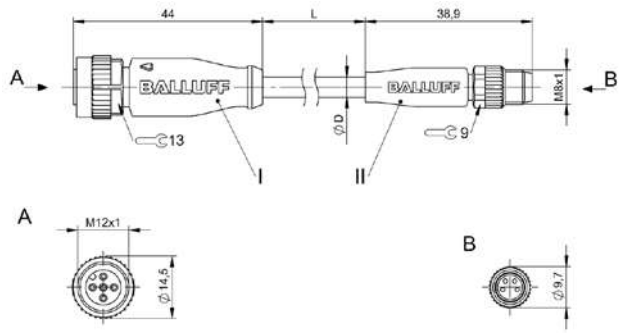
BCC M324-M324-30-304-...



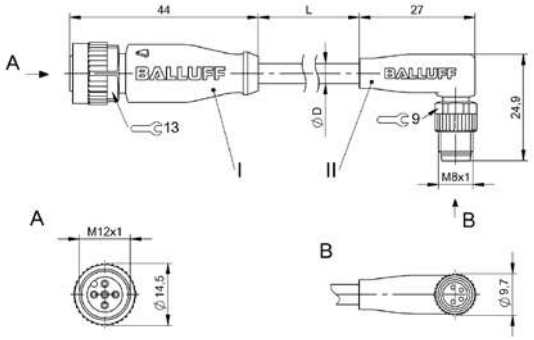
BCC M324-M414-3E-304-...



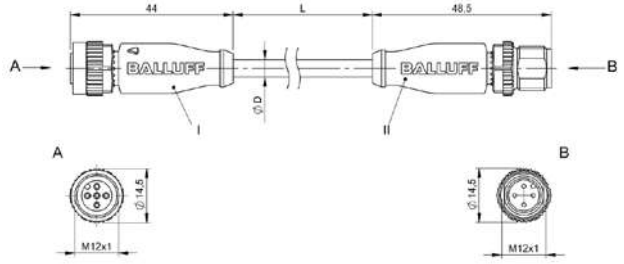
BCC M324-M424-3E-304-...



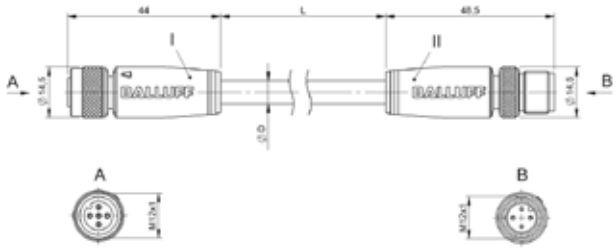
BCC M415-M314-3F-304-...



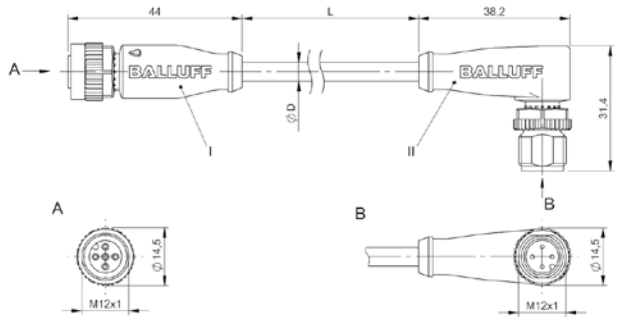
BCC M415-M324-3F-304-...



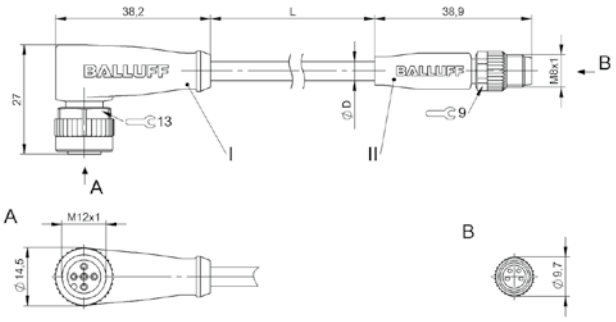
BCC M415-M414-3A-304-...
BCC M415-M414-3A-606-...



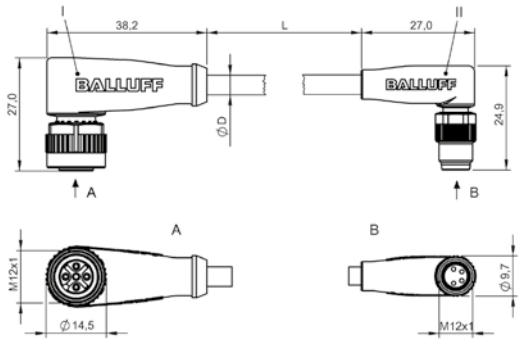
BCC M415-M414-3A-305-PS0434-...



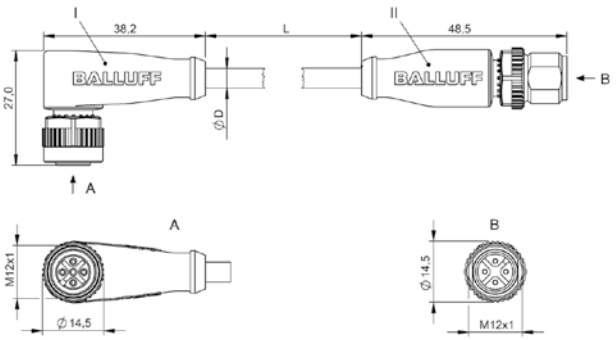
BCC M415-M424-3A-304-...



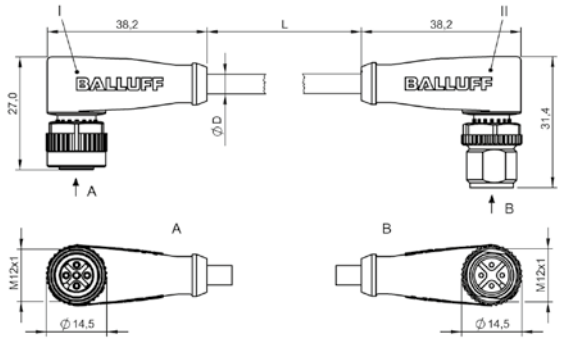
BCC M425-M314-3F-304-...



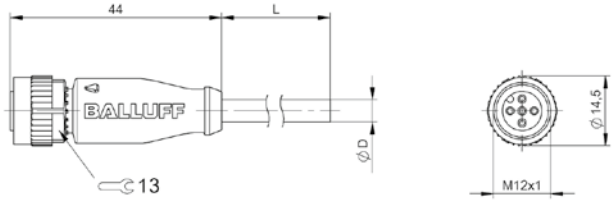
BCC M425-M324-3F-304-...



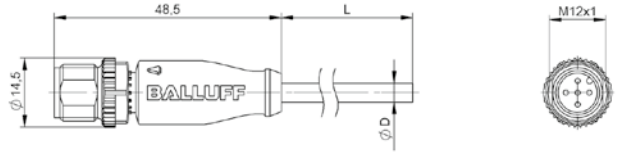
BCC M425-M414-3A-304-...
BCC M425-M414-3A-606-...



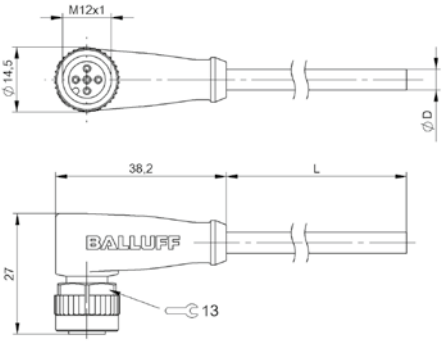
BCC M425-M424-3A-304-...



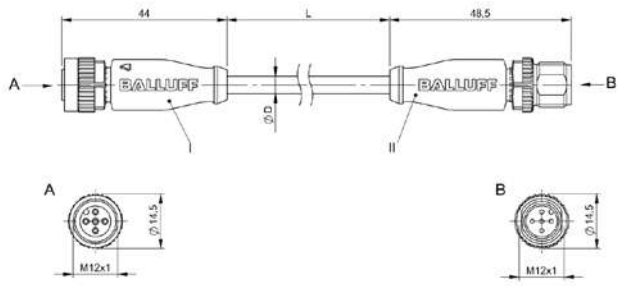
BCC M415-0000-1A-017-PX0534-...
BCC M415-0000-1A-034-PX0534-...



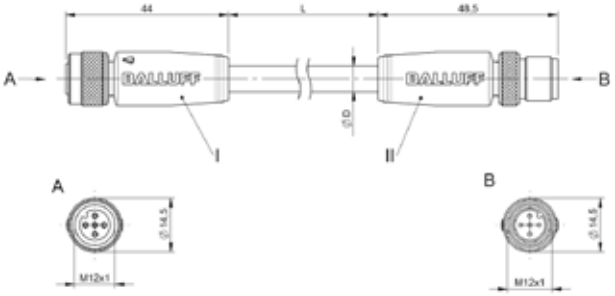
BCC M415-0000-2A-017-PX0534-...
BCC M415-0000-2A-034-PX0534-...



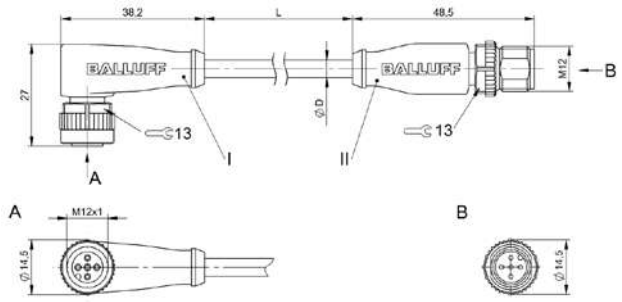
BCC M425-0000-1A-017-PX0534-...
BCC M425-0000-1A-034-PX0534-...
BCC M425-0000-1A-039-PX0534-...
BCC M425-0000-1A-040-PX0534-...



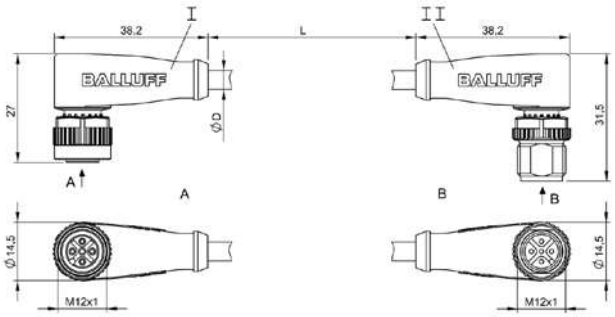
BCC M415-M415-3A-312-PX0534-...
BCC M415-M415-3A-313-PX0534-...



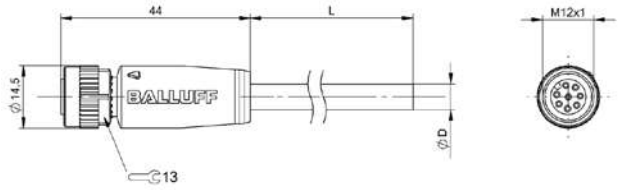
BCC M415-M415-3A-315-PS0534-...



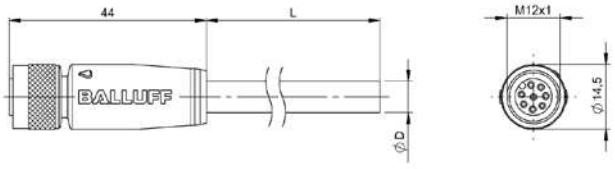
BCC M425-M415-3A-312-PX0534-...
BCC M425-M415-3A-313-PX0534-...
BCC M425-M415-3A-660-PX0534-...
BCC M425-M415-3A-661-PX0534-...



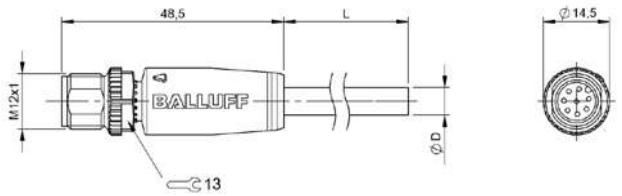
BCC M425-M425-3A-660-PX0534-...
BCC M425-M425-3A-661-PX0534-...



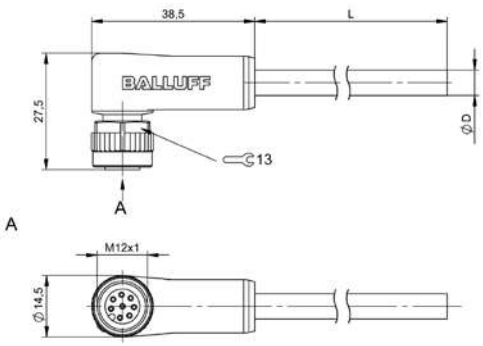
BCC M418-0000-1A-044-PX0825-...
BCC M418-0000-1A-069-PX0825-...



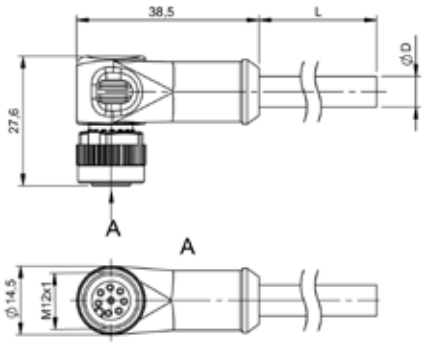
BCC M418-0000-1A-046-PS0825-...



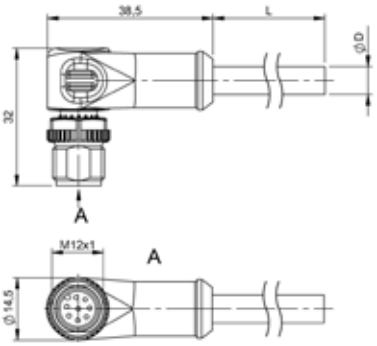
BCC M418-0000-2A-044-PX0825-...



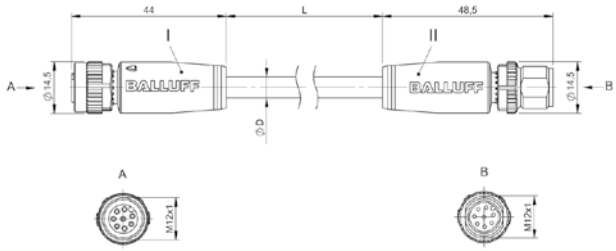
BCC M428-0000-1A-044-PX0825-...
BCC M428-0000-1A-069-PX0825-...



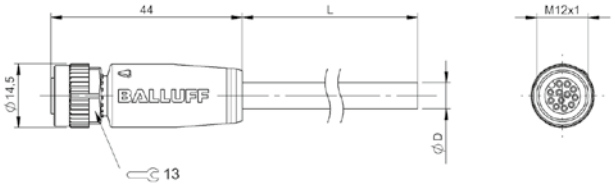
BCC M428-0000-1A-046-PS0825-...



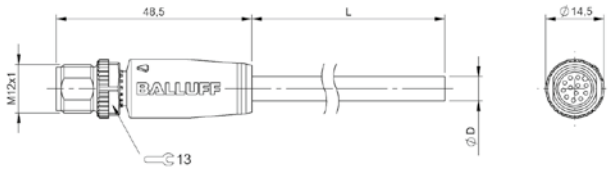
BCC M428-0000-2A-044-PX0825-...



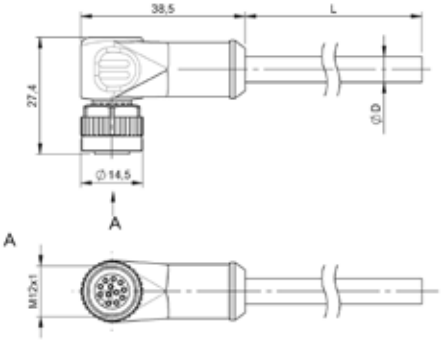
BCC M418-M418-3A-342-PX0825-...



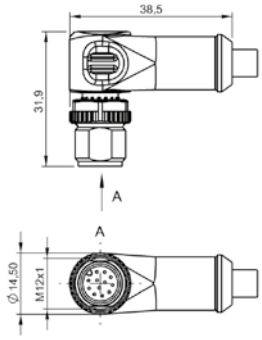
BCC M41C-0000-1A-049-PX0C25-...



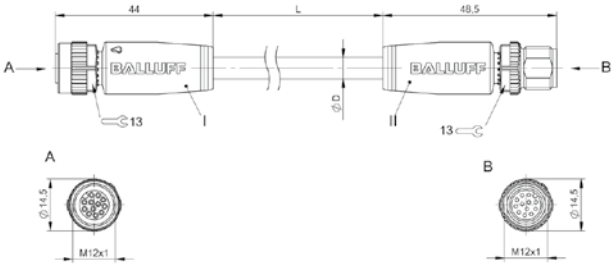
BCC M41C-0000-2A-049-PX0C25-...



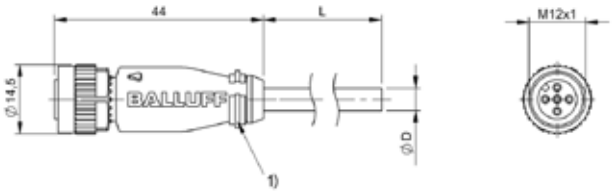
BCC M42C-0000-1A-049-PX0C25-...



BCC M42C-0000-2A-049-PX0C25-...

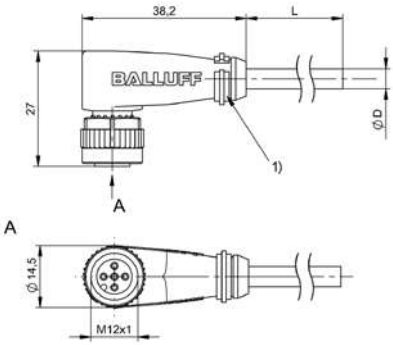


BCC M41C-M41C-3A-325-PX0C25-...



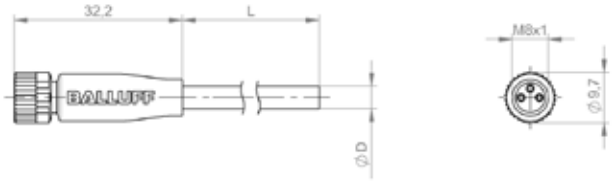
1) White identification clip

BCC M415-0000-1A-001-PH0334-...
BCC M415-0000-1A-003-PH0434-...

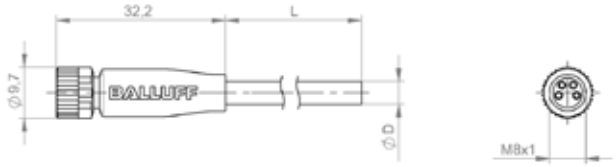


1) White identification clip

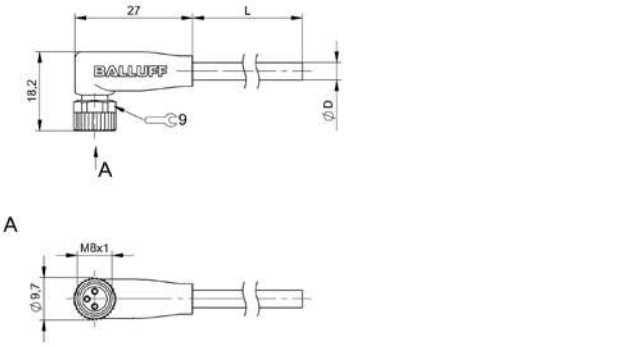
BCC M425-0000-1A-001-PH0334-...
BCC M425-0000-1A-003-PH0434-...



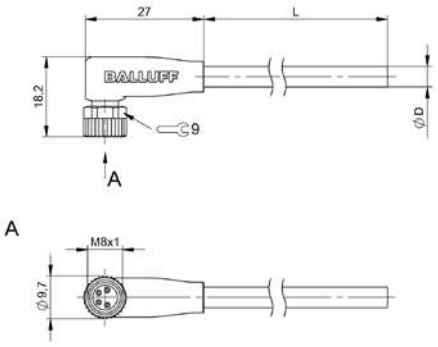
BCC M313-0000-10-001-PW3334-...



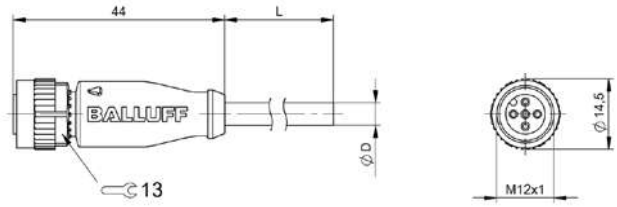
BCC M314-0000-10-003-PW3434-...



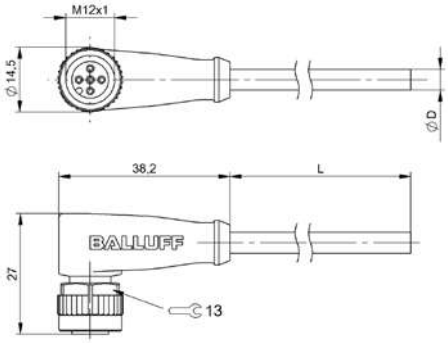
BCC M323-0000-10-001-PW3334-...



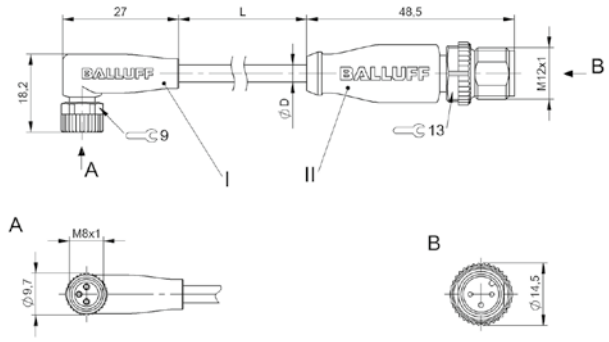
BCC M324-0000-10-003-PW3434-...



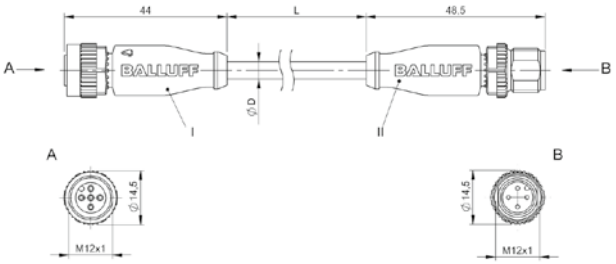
BCC M415-0000-1A-003-PW3434-...



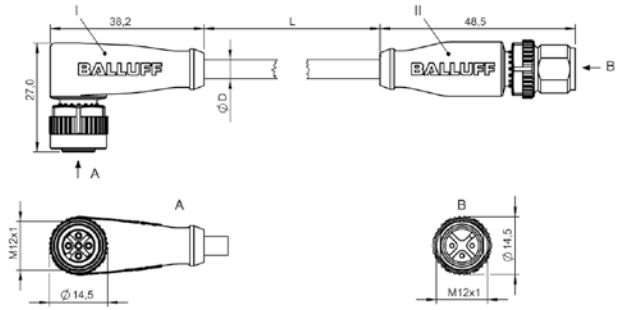
BCC M425-0000-1A-001-PW3334-...
BCC M425-0000-1A-004-PW3334-...
BCC M425-0000-1A-003-PW3434-...
BCC M425-0000-1A-099-PW3434-...
BCC M425-0000-1A-100-PW3534-...



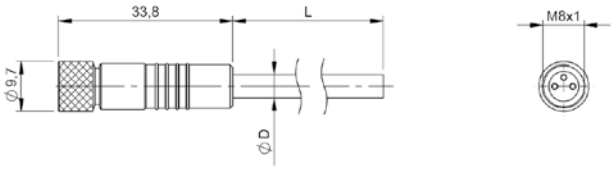
BCC M323-M413-3E-602-PW3334-...



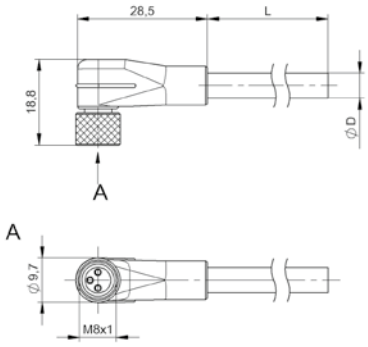
BCC M415-M414-3A-304-PW3434-...
BCC M415-M415-3A-313-PW3534-...



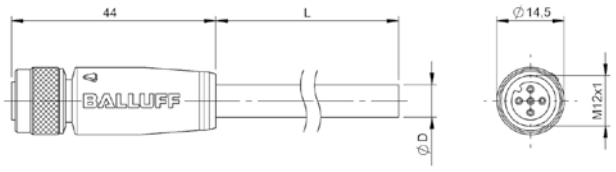
BCC M425-M413-3A-602-PW3334-...
BCC M425-M414-3A-304-PW3434-...
BCC M425-M414-3A-691-PW3434-...
BCC M425-M415-3A-313-PW3534-...
BCC M425-M415-3A-692-PW3534-...



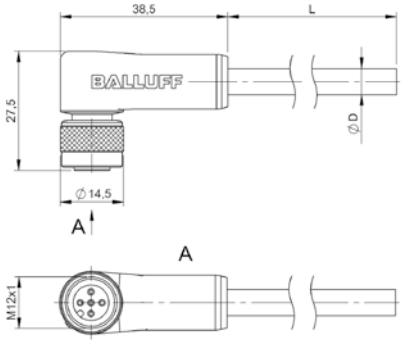
BCC W313-0000-10-001-BW8334-...
BCC W314-0000-10-003-BW8434-...



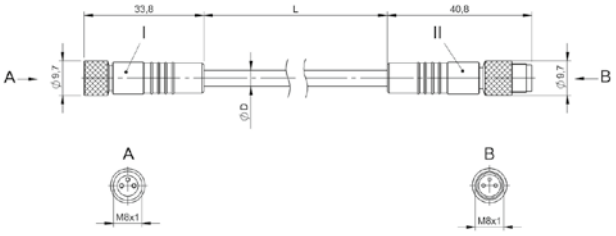
BCC W323-0000-10-001-BW8334-...
BCC W324-0000-10-003-BW8434-...



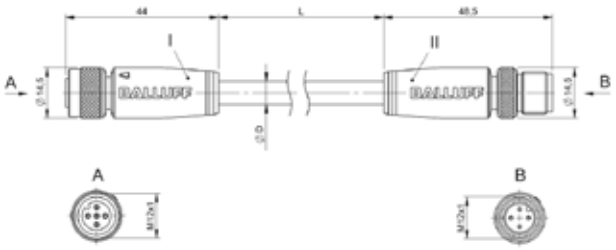
BCC W415-0000-1A-003-BW8434-...



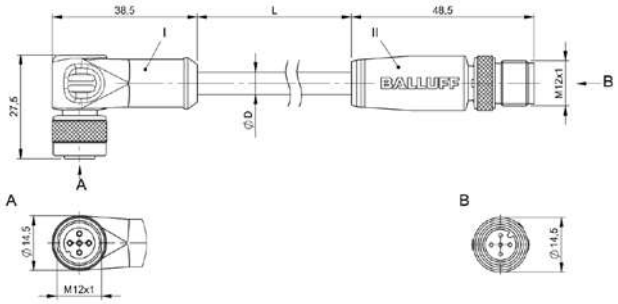
BCC W425-0000-1A-003-BW8434-...



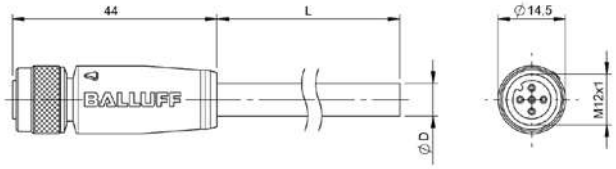
BCC W313-W313-30-300-BW8334-...



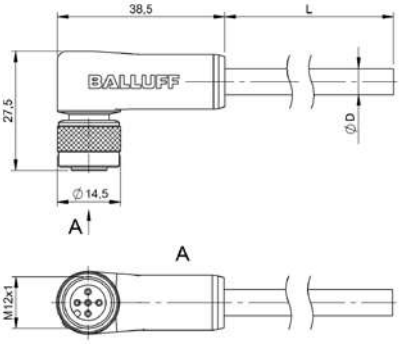
BCC W415-W414-3A-304-BW8434-...



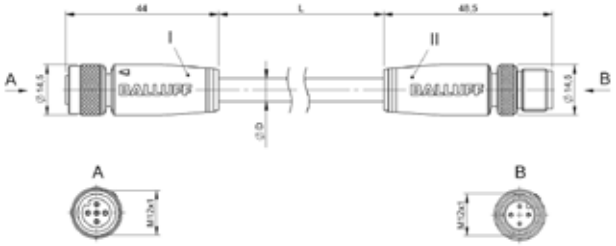
BCC W425-W414-3A-304-BW8434-...



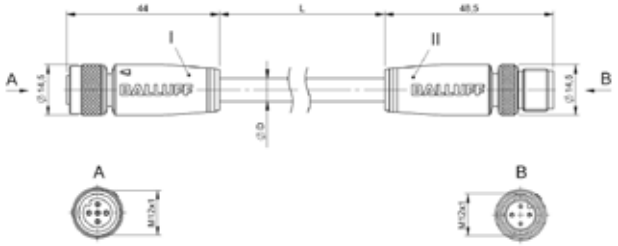
BCC W415-0000-1A-003-SW0434-...



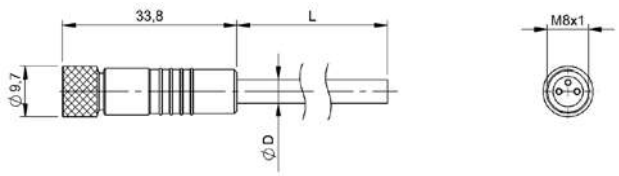
BCC W425-0000-1A-003-SW0434-...



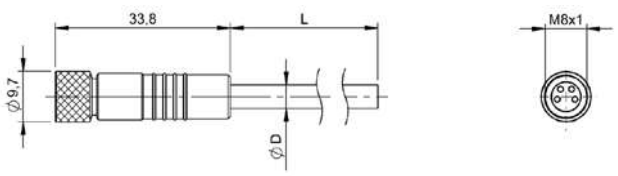
BCC W415-W414-3A-304-SW0434-...
BCC W415-W414-3A-650-SW0434-...



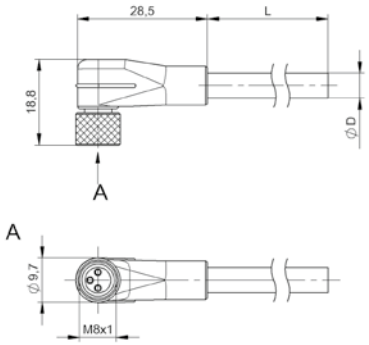
BCC W425-W414-3A-304-SW0434-...
BCC W425-W414-3A-650-SW0434-...



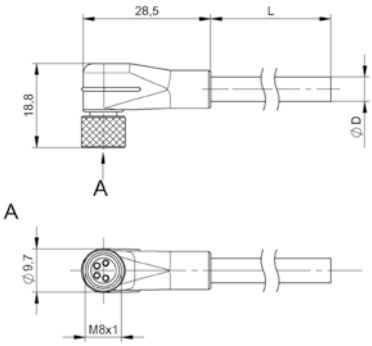
BCC W313-0000-10-001-TW0334-...



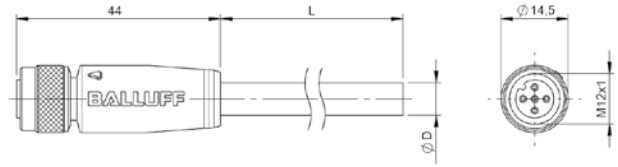
BCC W314-0000-10-003-TW0434-...



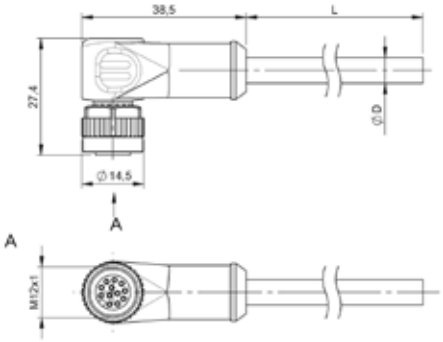
BCC W323-0000-10-001-TW0334-...



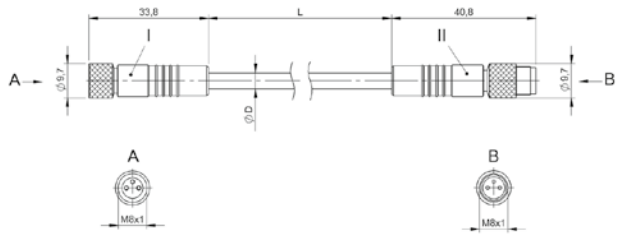
BCC W324-0000-10-003-TW0434-...



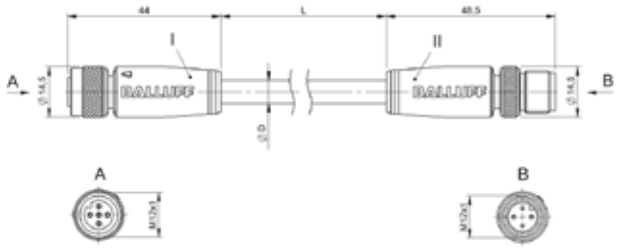
BCC W415-0000-1A-003-TW0434-...



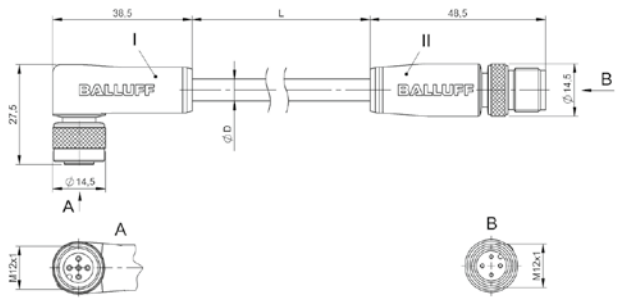
BCC W425-0000-1A-003-TW0434-...



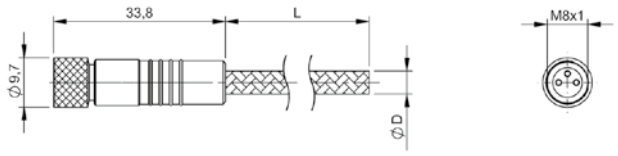
BCC W313-W313-30-300-TW0334-...



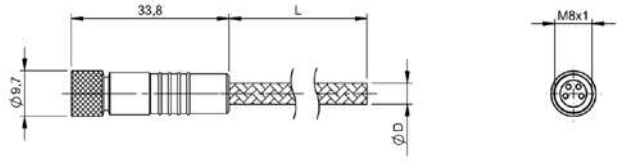
BCC W415-W414-3A-304-TW0434-...
BCC W415-W414-3A-650-TW0434-...



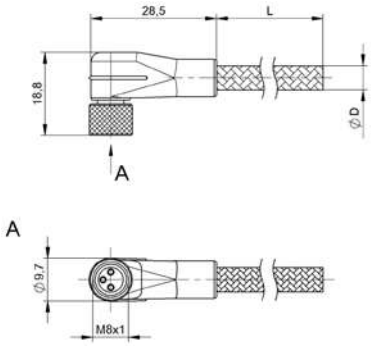
BCC W425-W414-3A-304-TW0434-...
BCC W425-W414-3A-650-TW0434-...



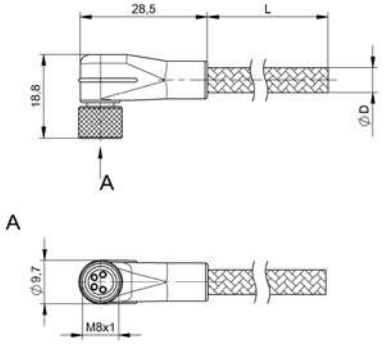
BCC W313-0000-10-001-MW8334-...



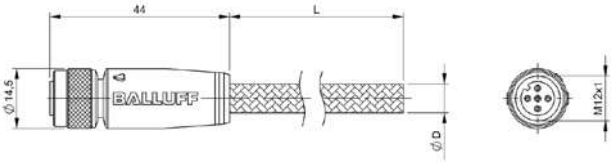
BCC W314-0000-10-003-MW8434-...



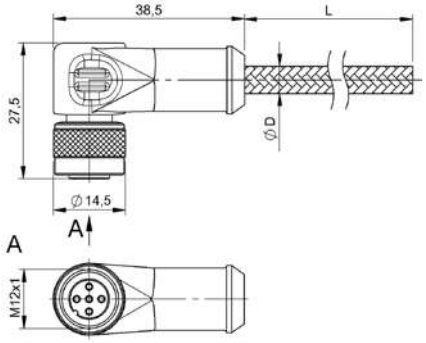
BCC W323-0000-10-001-MW8334-...



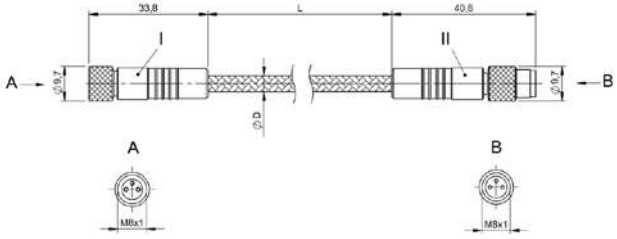
BCC W324-0000-10-003-MW8434-...



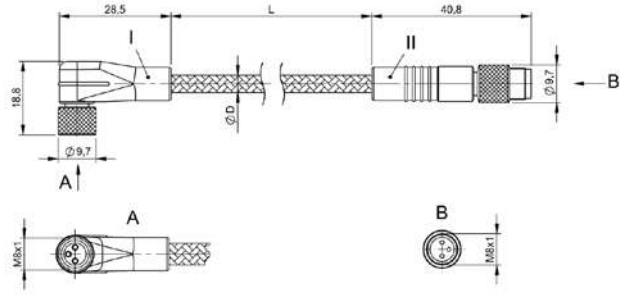
BCC W415-0000-1A-003-MW8434-...



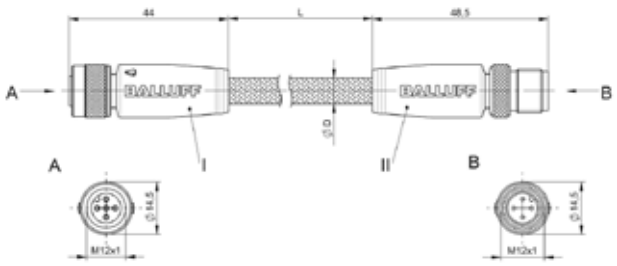
BCC W425-0000-1A-003-MW8434-...



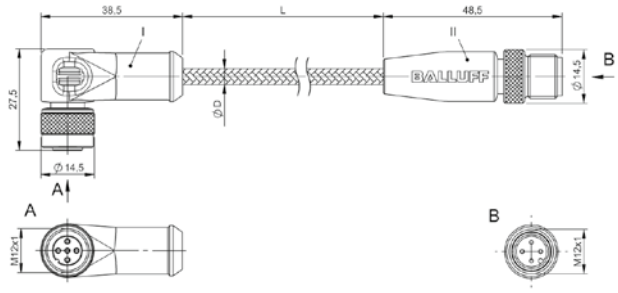
BCC W313-W313-30-300-MW8334-...



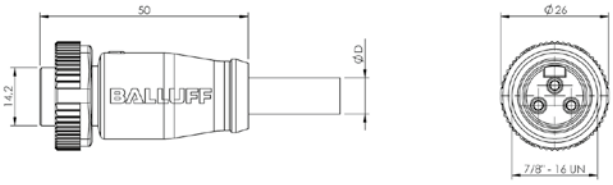
BCC W323-W313-30-300-MW8334-...



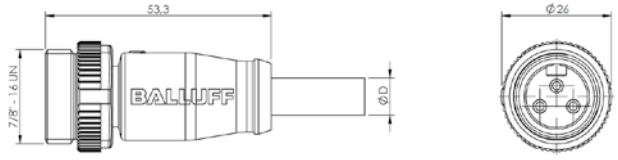
BCC W415-W414-3A-304-MW8434-...



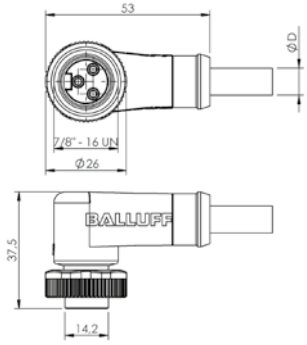
BCC W425-W414-3A-304-MW8434-...



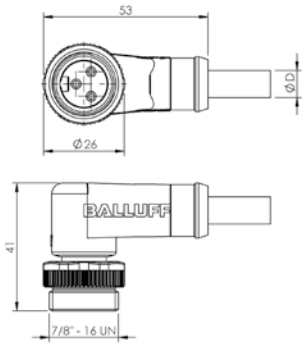
BCC A313-0000-10-097-PX03A5-...
BCC A313-0000-10-071-VX43W6-...



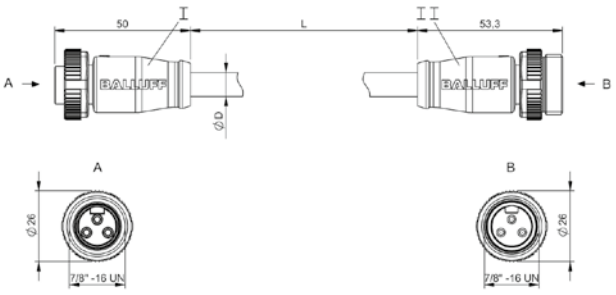
BCC A313-0000-20-071-VX43W6-...



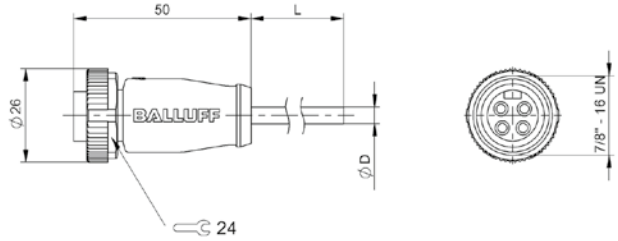
BCC A323-0000-10-097-PX03A5-...
BCC A323-0000-10-071-VX43W6-...



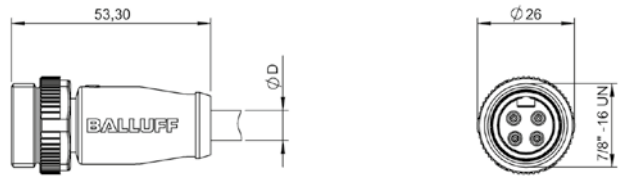
BCC A323-0000-20-071-VX43W6-...



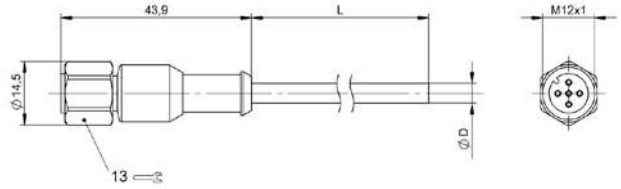
BCC A313-A313-30-365-PX03A5-...



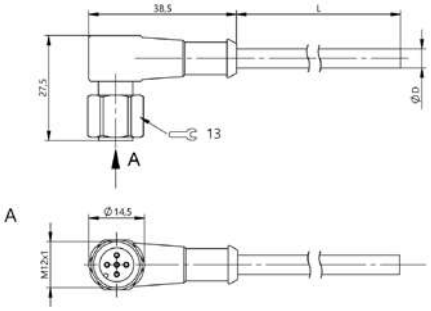
BCC A314-0000-10-003-...



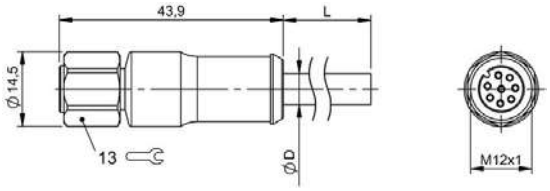
BCC A314-0000-20-003-...



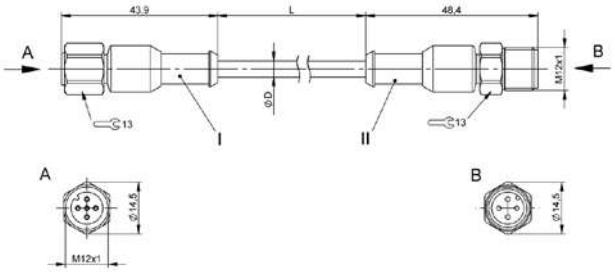
BCC S4B5-0000-1A-003-YX8434-...
BCC S4B5-0000-1A-017-YX8534-...
BCC S4B5-0000-1A-034-YX8534-...



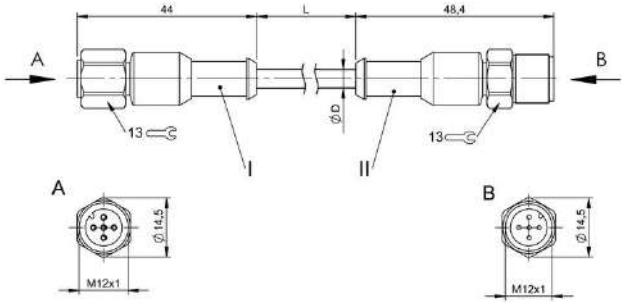
BCC S4C5-0000-1A-003-YX8434-...
BCC S4B5-0000-1A-017-YX8534-...



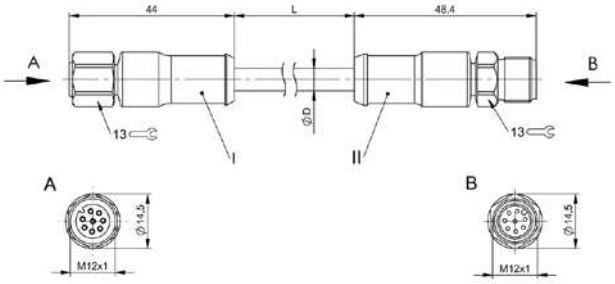
BCC S4B8-0000-1A-045-YX8825...



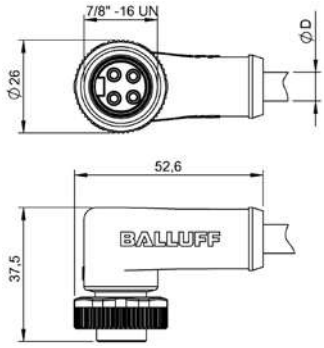
BCC S4B5-S4B4-3A-304-YX8434-...



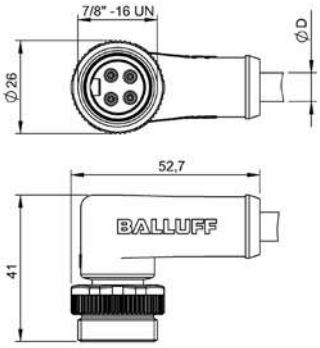
BCC S4B5-S4B5-3A-313-YX8534-...



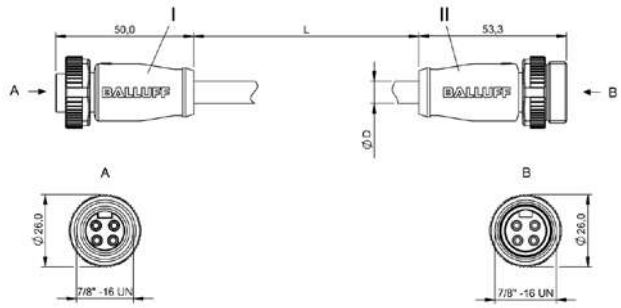
BCC S4B8-S4B8-3A-321-YX8825-...



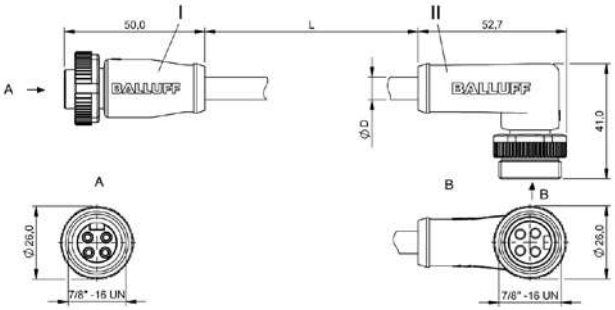
BCC A324-0000-10-003-...



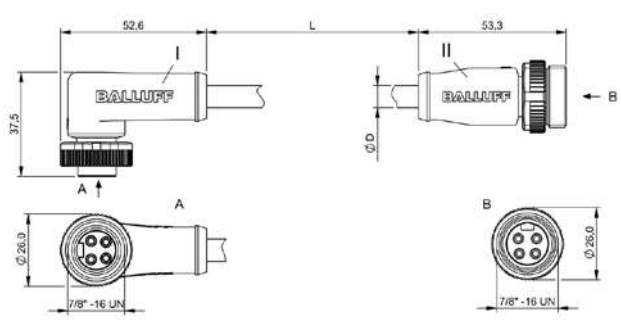
BCC A324-0000-20-003-...



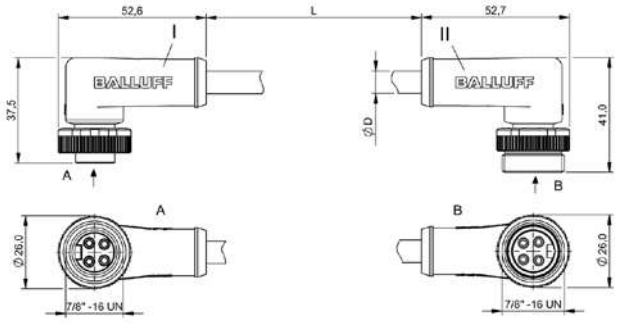
BCC A314-A314-30-304-...



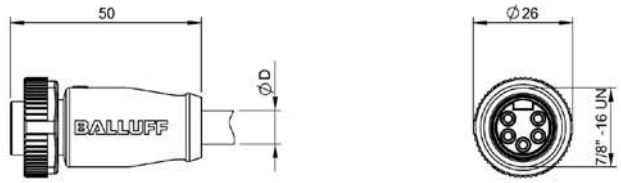
BCC A314-A324-30-304-...



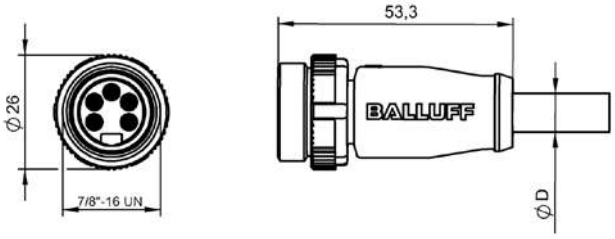
BCC A324-A314-30-304-...



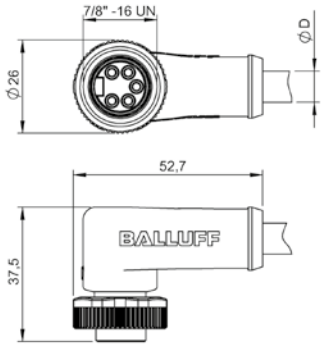
BCC A324-A324-30-304-...



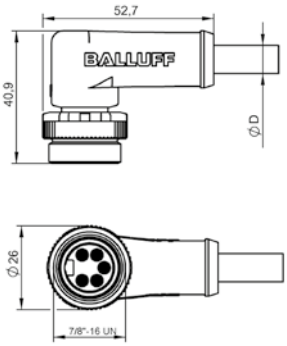
BCC A315-0000-10-063-...



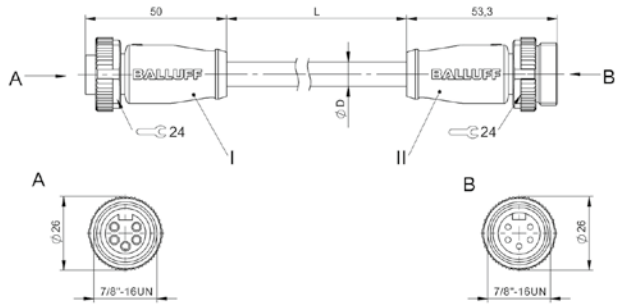
BCC A315-0000-20-063-...



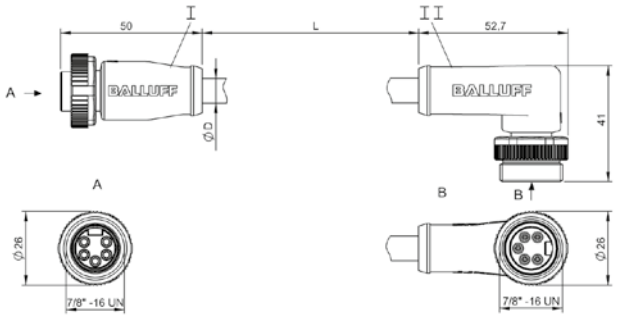
BCC A325-0000-10-063-...



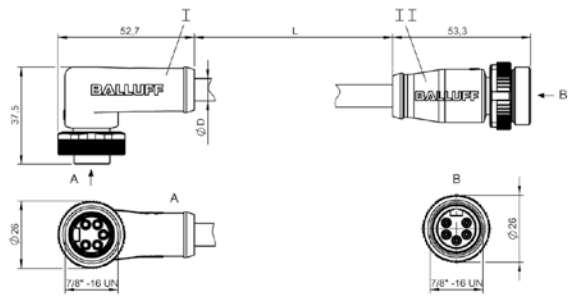
BCC A325-0000-20-063-...



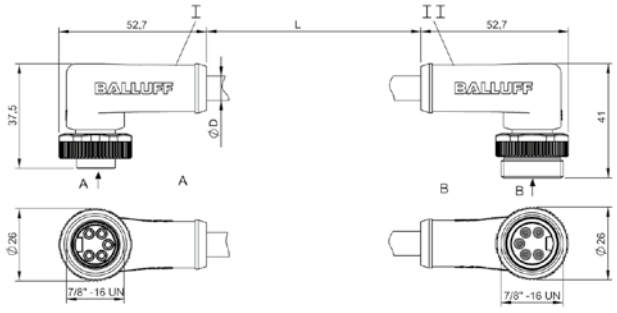
BCC A315-A315-30-335-...



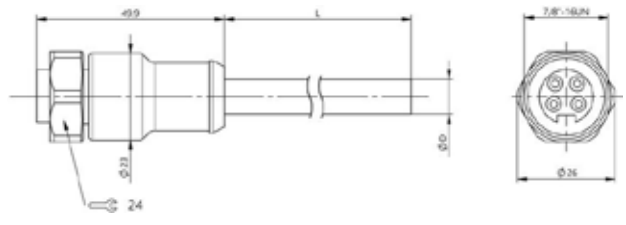
BCC A315-A325-30-335-...



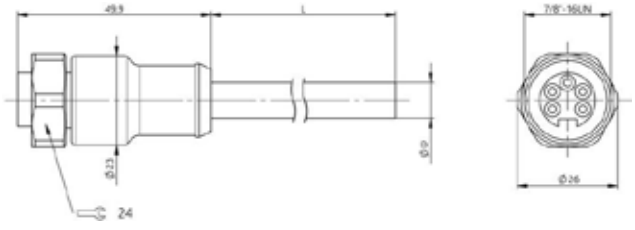
BCC A325-A315-30-335-...



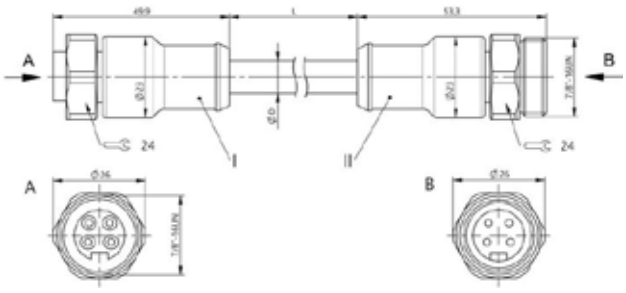
BCC A325-A325-30-335-...



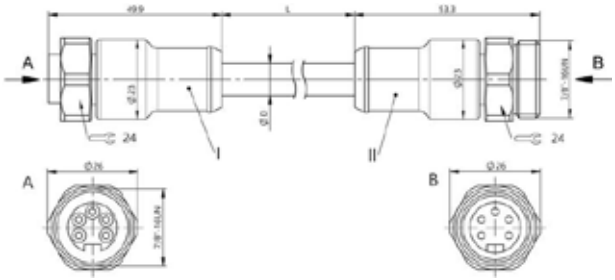
BCC C3B4-0000-10-003-YX84A5...



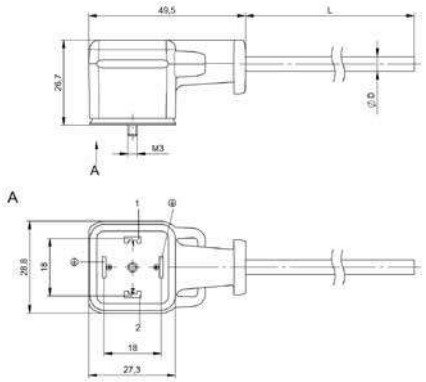
BCC C3B5-0000-10-063-YX85A5-...



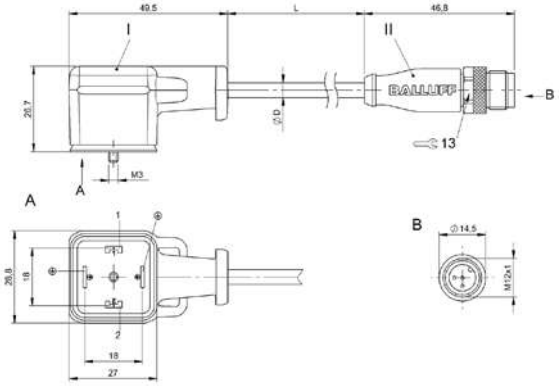
BCC C3B4-C3B4-30-304-YX84A5-...



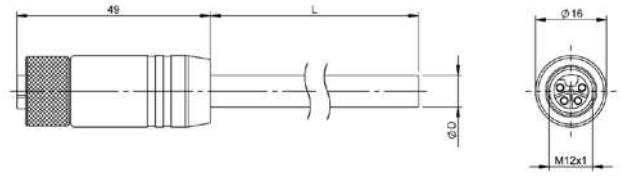
BCC C3B5-C3B5-30-335-YX85A5...



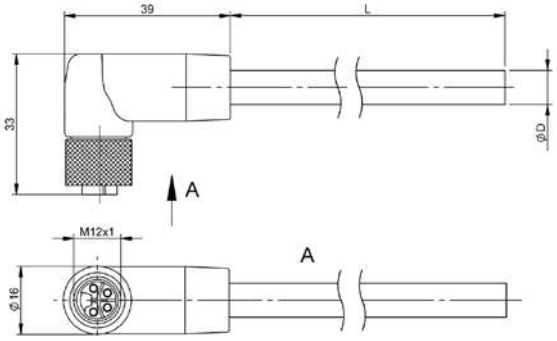
BCC VA04-0000-10-054-...
BCC VA04-0000-10-053-...



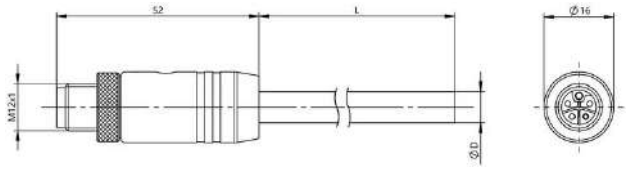
BCC VA04-M413-3E-664-...



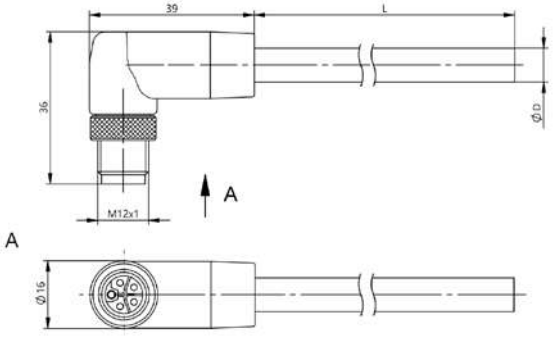
BCC M414-0000-1L-003-PX04A5...



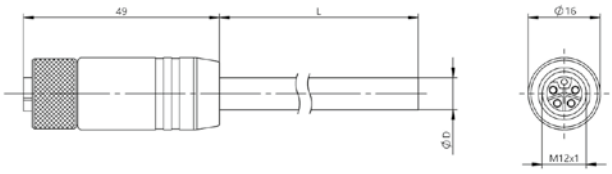
BCC M424-0000-1L-003-PX04A5-...



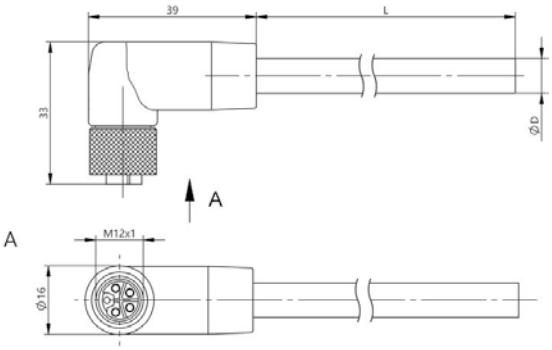
BCC M415-0000-2L-003-PX04A5...
BCC M415-0000-2L-150-PX85A5...



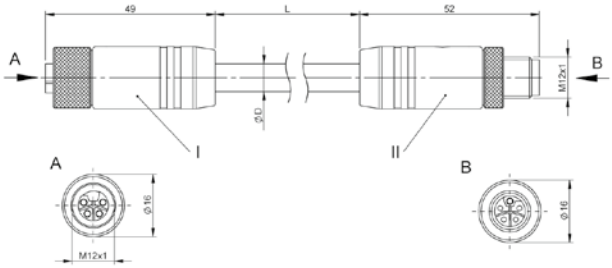
BCC M425-0000-2L-003-PX04A5...
BCC M425-0000-2L-150-PX85A5...



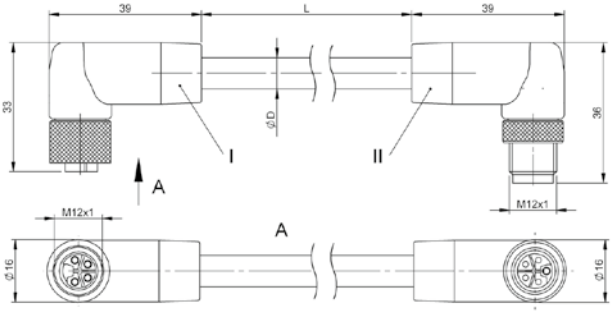
BCC M415-0000-1L-150-PX85A5...



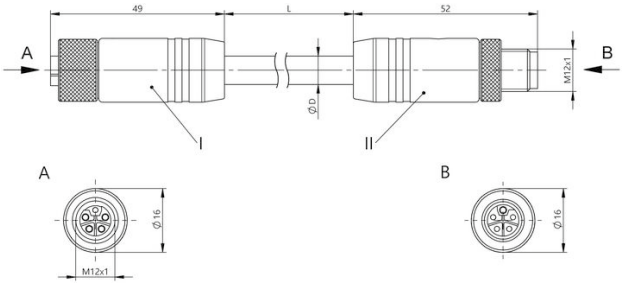
BCC M425-0000-1L-150-PX85A5...



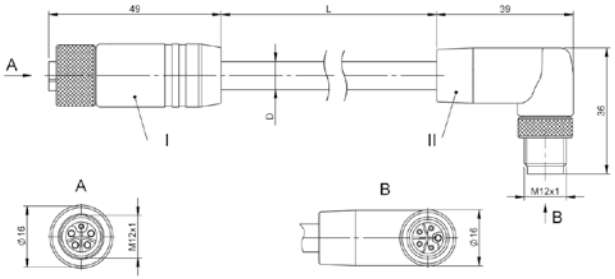
BCC M414-M415-3L-304-PX04A5...



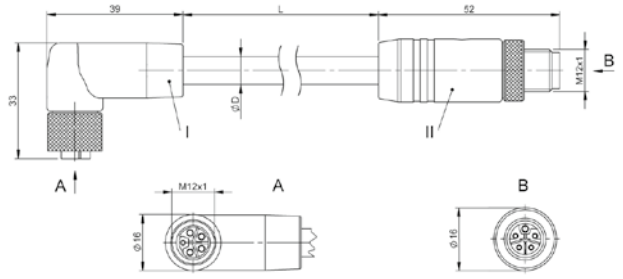
BCC M424-M425-3L-304-PX04A5...



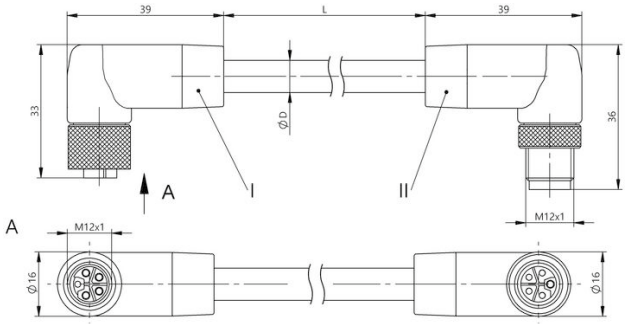
BCC M415-M415-3L-386-PX85A5...



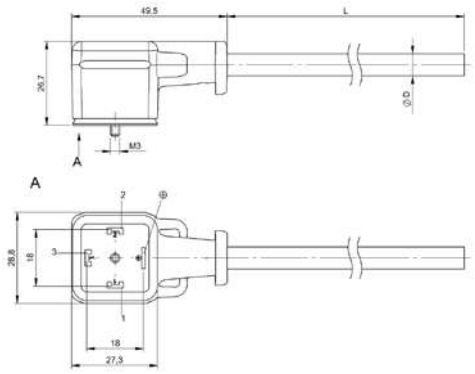
BCC M415-M425-3L-386-PX85A5...



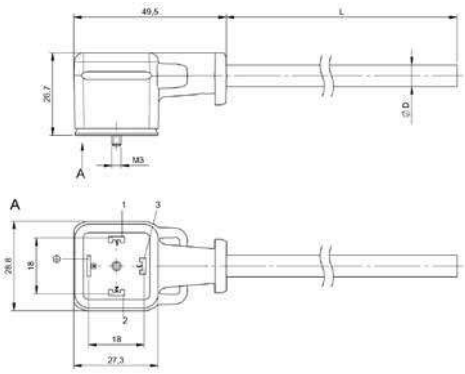
BCC M425-M415-3L-386-PX85A5...



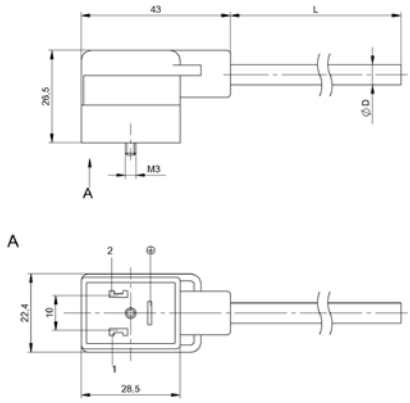
BCC M425-M425-3L-386-PX85A5...



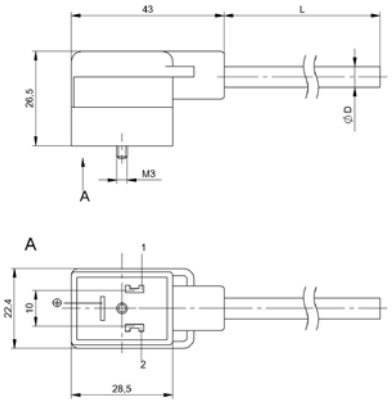
BCC PA04-0000-10-070-PX0550-...



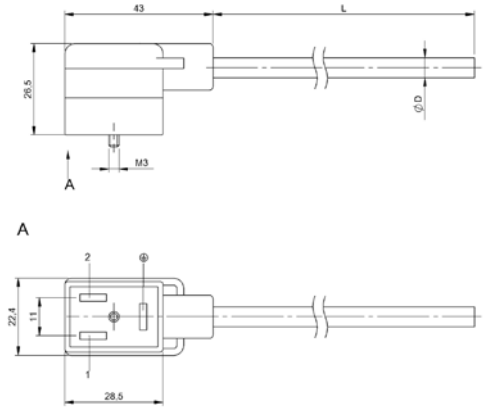
BCC PA24-0000-10-070-PX0550-...



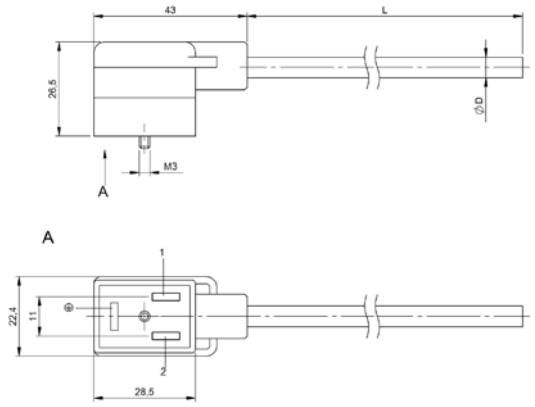
BCC VB03-0000-10-055-...



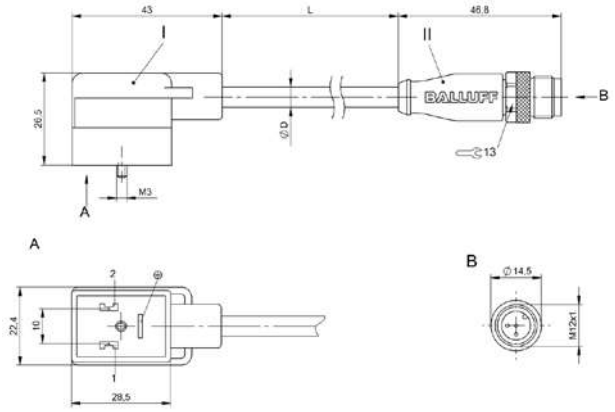
BCC VB23-0000-10-055-...



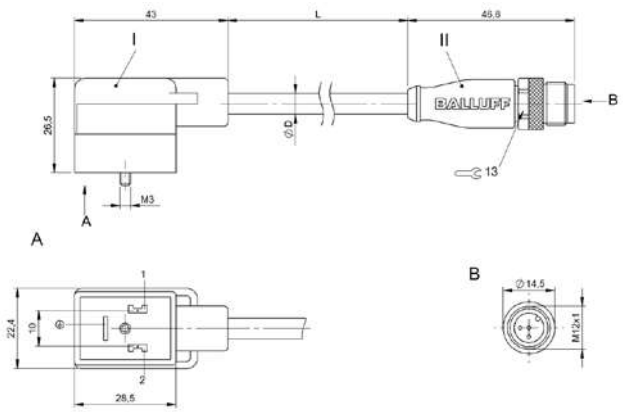
BCC VB43-0000-10-055-...



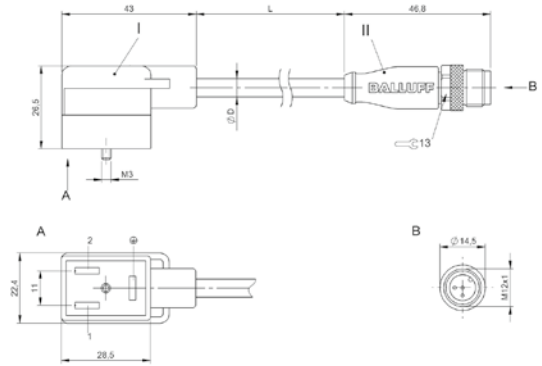
BCC VB63-0000-10-055-...



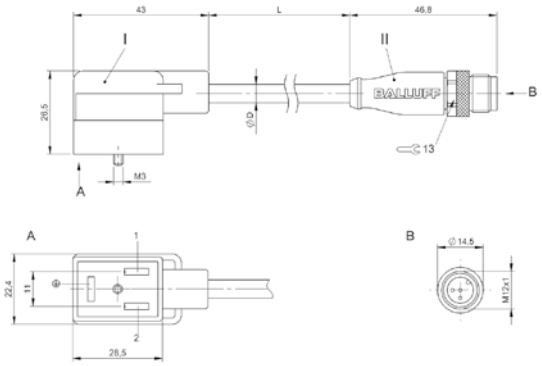
BCC VB03-M413-3E-666-PX0350-...



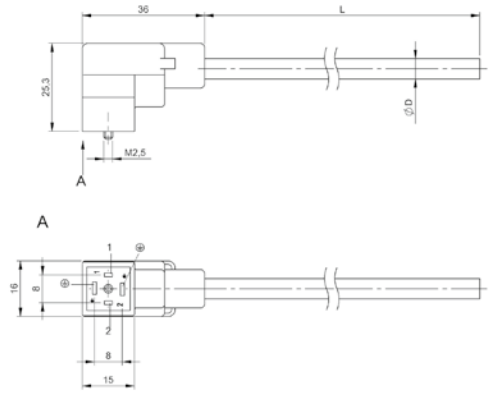
BCC VB23-M413-3E-666-PX0350-...



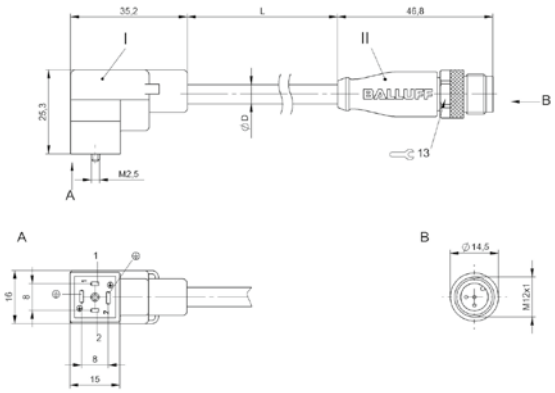
BCC VB43-M413-3E-666-PX0350-...



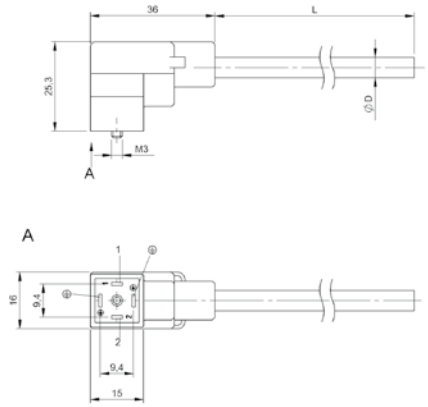
BCC VB63-M413-3E-666-PX0350-...



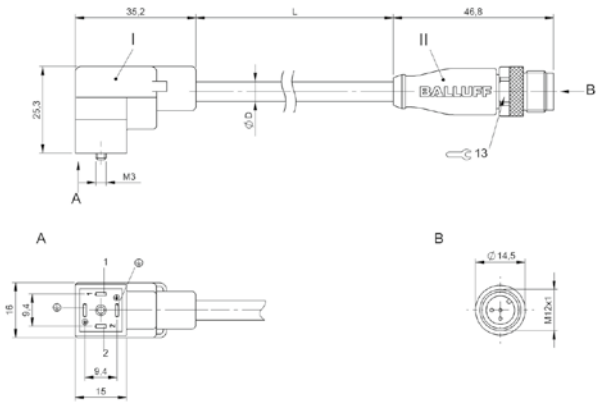
BCC VC04-0000-10-053-...



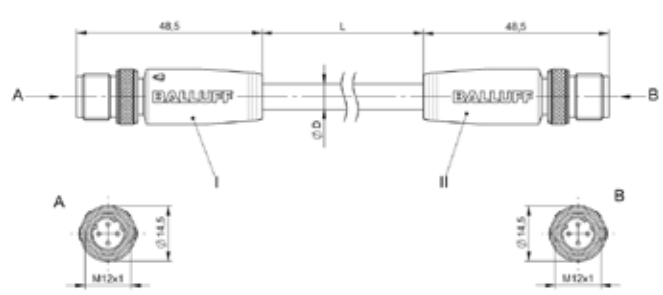
BCC VC04-M413-3E-664-PX0350-...



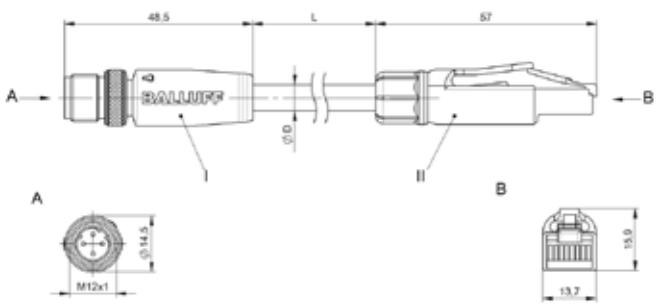
BCC VC44-0000-10-053-...



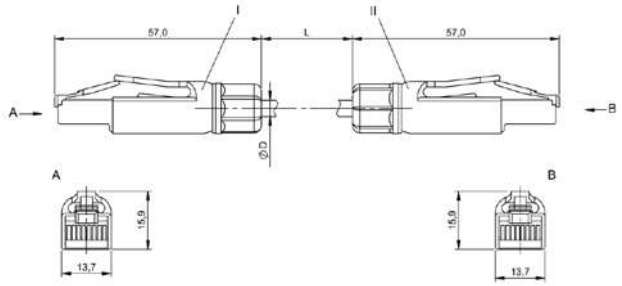
BCC VC44-M413-3E-664-PX0350-...



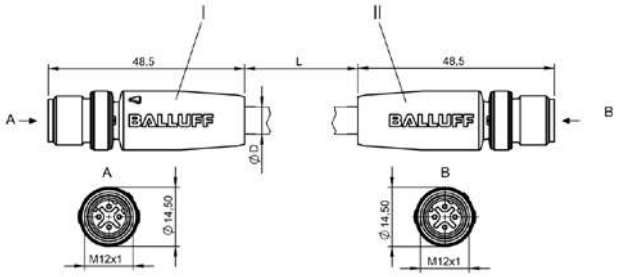
BCC M414-M414-6D-331-PS54N2-...



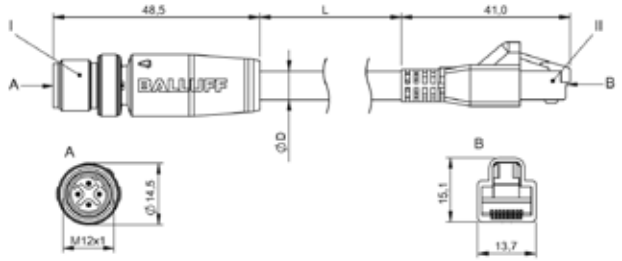
BCC M414-E834-8G-668-PS54N2-...



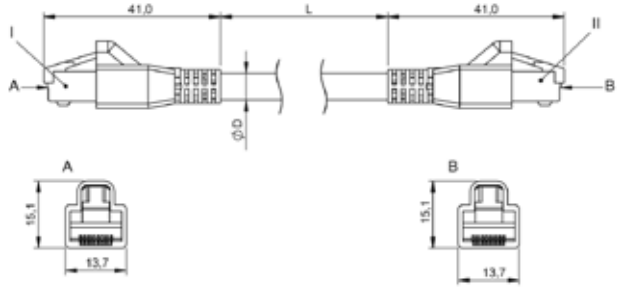
BCC E834-E834-90-334-PS54N2-...



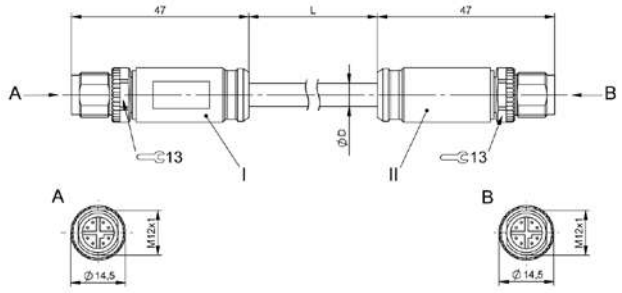
BCC M414-M414-6D-338-ES64N9-...



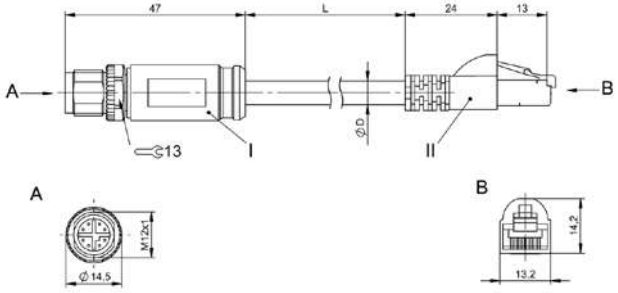
BCC M414-E894-8G-672-ES64N9-...



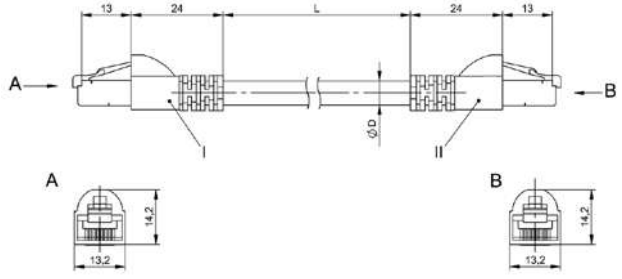
BCC E894-E894-90-339-ES64N9-...



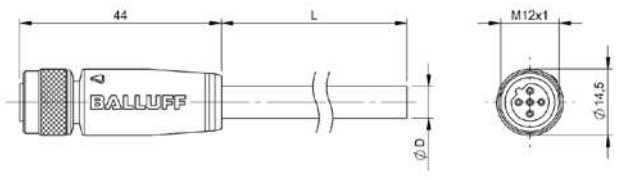
BCC M418-M418-6X-378-PS58N9-...



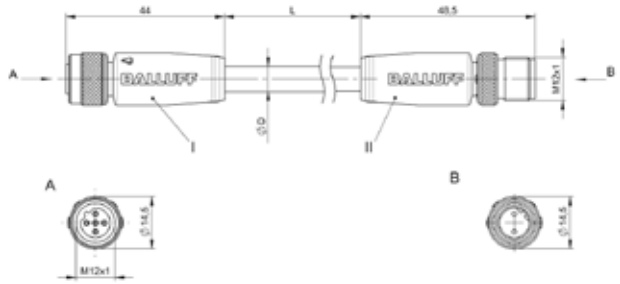
BCC M418-E818-8X0-723-PS58N9-...



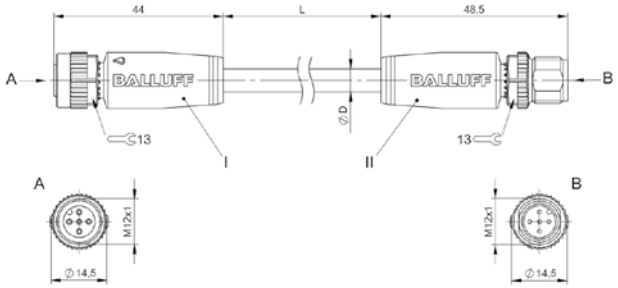
BCC E818-E818-90-377-PS58N9-...



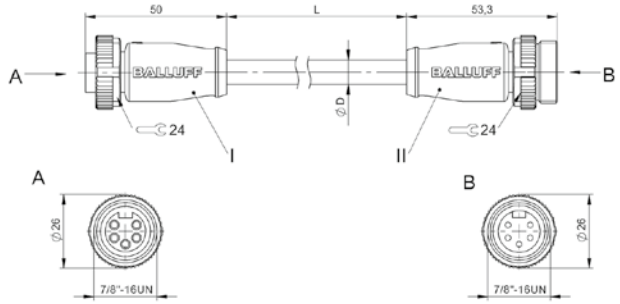
BCC M415-0000-1B-031-PS72N1-...



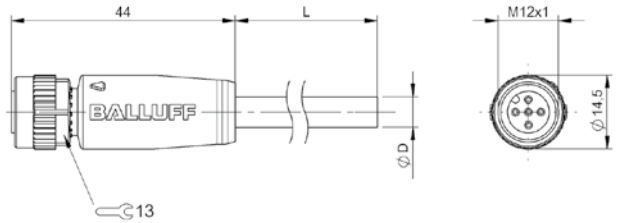
BCC M415-M412-3B-329-PS72N1-...



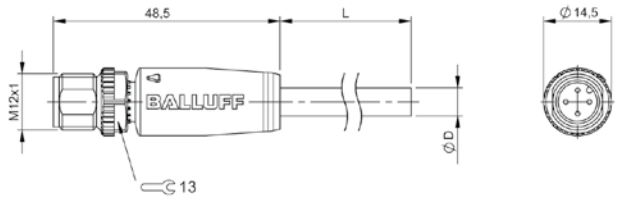
BCC M415-M415-3A-330-...



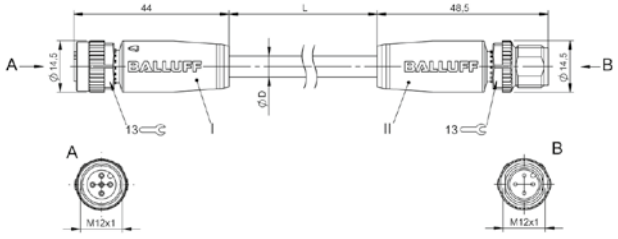
BCC A315-A315-30-330-...



BCC M415-0000-1A-068-VS24N7-...

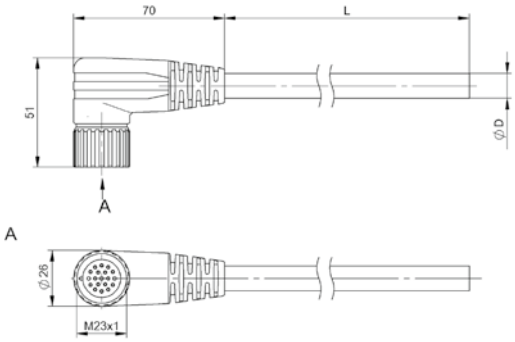


BCC M414-0000-2A-068-VS24N7-...

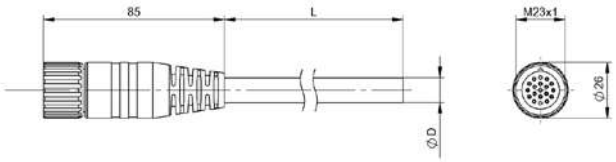


BCC M415-M414-3A-337-VS24N7-...

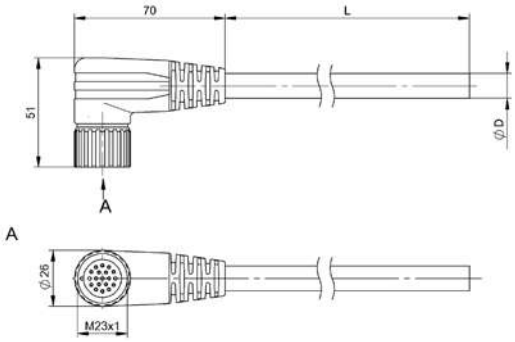
BCC M61C-0000-10-065-PX0BP4-...



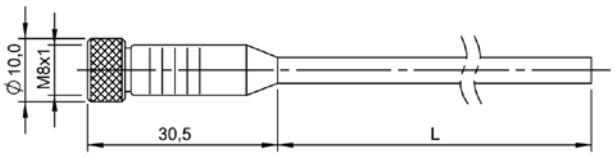
BCC M62C-0000-10-065-PX0BP4-...



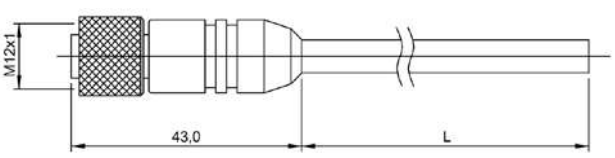
BCC M61L-0000-10-022-PX0LP4-...



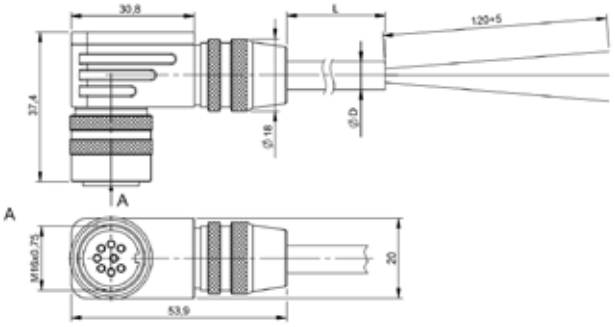
BCC M62L-0000-10-022-PX0LP4-...



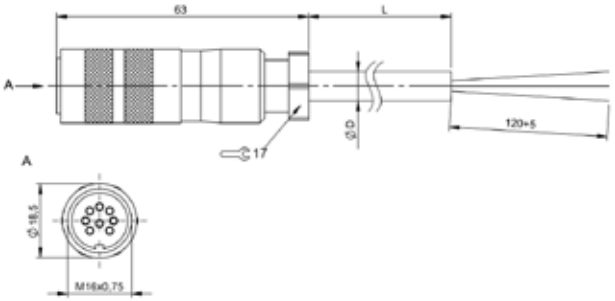
BCC0069, BCC006A, BCC006C



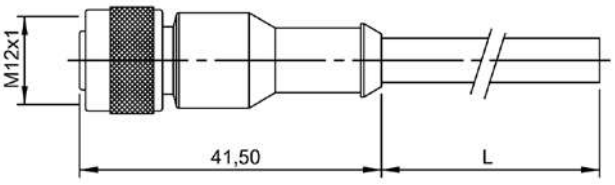
BCC0098, BCC0099, BCC009A



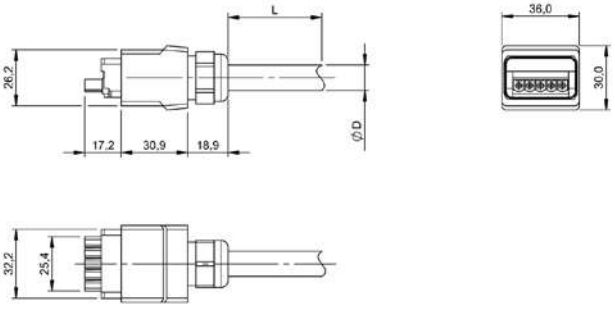
, BCC00UR, BCC00UU, BCC00UW



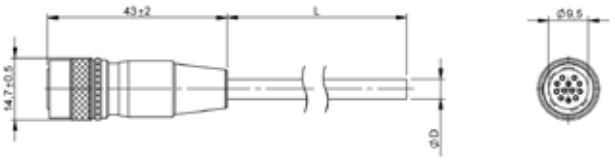
BCC00TU, BCC00TY, BCC00TZ



BCC00YE, BCC00YF, BCC00YH



BCC0F4J, BCC0F4K, BCC0F4L



BCC0KL6, BCC0KL7, BCC0KL8

Robust splitters for rapid, reliable connections

Y-SPLITTERS

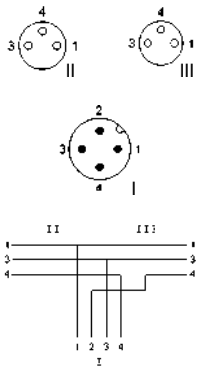
With our Y-splitters, you can collect, connect and split two signals in the field. Our comprehensive program offers robust and industrial-grade Y-splitters with various designs.
All splitters ensure a rapid and reliable connection.

The most important benefits

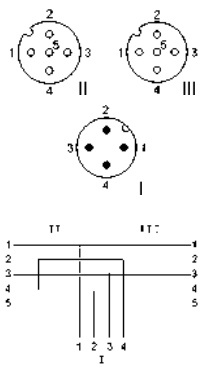
- Connecting different lines
- Comprehensive product range
- Various designs
- Reliable and rapid connection
- High dust and water protection
- Robust and industrial grade

	BCC M414-M313-M313 ...	
Connection	M12 male, A-coded/ M8 female, A-coded/ M8 female, A-coded	
Version	straight/straight/straight	
Rated voltage	60 V AC/DC	
Rated current	4 A	
Degree of protection	IP67/IP67, IP69K/IP67, IP69K	
PUR, black	BCC M414-M313-M313-U2026-_ _ _②	
PVC, yellow	BCC M414-M313-M313-U2012-_ _ _②	
TPE, yellow	–	
Approval/Conformity	CE, EAC	
For drawing see page	182	

M12 male/
M8 female/
M8 female



M12 male/
M12 female/
M12 female



	BCC M414-M323-M323 ...	BCC M414-M415-M415 ...	BCC M414-M425-M425 ...
	M12 male, A-coded/ M8 female, A-coded/ M8 female, A-coded	M12 male, A-coded/ M12 female, A-coded/ M12 female, A-coded	M12 male, A-coded/ M12 female, A-coded/ M12 female, A-coded
	straight/angled/angled	straight/straight/straight	straight/angled/angled
	60 V AC/DC	250 V AC/DC	250 V AC/DC
	4 A	4 A	4 A
	IP67/IP67, IP69K/IP67, IP69K	IP67/IP67, IP68, IP69K/IP67, IP68, IP69K	IP67/IP67, IP68, IP69K/IP67, IP68, IP69K
	–	BCC M414-M415-M415-U2028-_ _ _②	BCC M414-M425-M425-U2028-_ _ _②
	BCC M414-M323-M323-U2012-_ _ _②	BCC M414-M415-M415-U2010-_ _ _②	BCC M414-M425-M425-U2010-_ _ _②
	–	BCC M414-M415-M415-U2002-_ _ _②	BCC M414-M425-M425-U2002-_ _ _②
	CE, EAC	EAC	EAC
	182	182	182

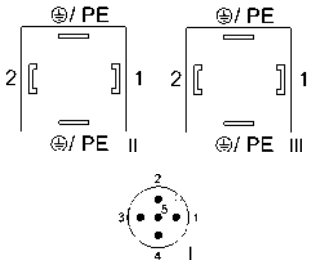
Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED				
PUR	Black	3 × 0.34 mm^2	–50...+90 °C	–25...+90 °C
PVC	Yellow	3 × AWG22	–40...+105 °C	–5...+105 °C
TPE	Yellow	3 × AWG22	–50...+90 °C	–25...+105 °C

②	Cable length
003	0.3 m
006	0.6 m
010	1 m
020	2 m
050	5 m

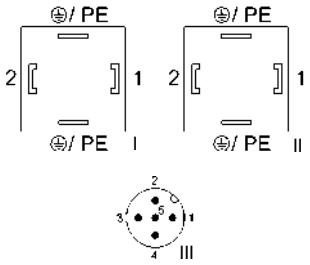
Other cable lengths on request!

Connection		
Version		
Rated voltage	No LED	
	with LED	
Rated current		
Degree of protection		
No protection circuit, no LED		
With suppressor diode, with PNP-LED		
Approval/Conformity		
For drawing see page		

M12 male/
DIN A, 18 mm/
DIN A, 18 mm

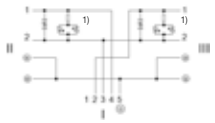


DIN A, 18 mm/
DIN A, 18 mm/
M12 male

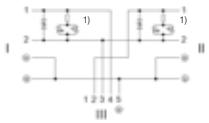


No protection circuit,
no LED

With suppressor dio-
de, with PNP-LED*



With suppressor dio-
de, with PNP-LED*



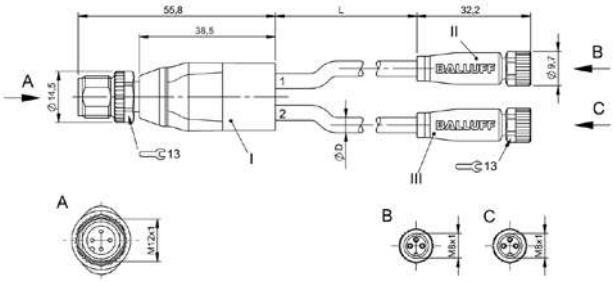
* 1) LED yellow

	BCC M415-VA04-VA04 ...	BCC VA04-VA04-M415 ...
	M12 male, A-coded/ DIN A, 18 mm, 0°/180°, female/ DIN A, 18 mm, 0°/180°, female	DIN A, 18 mm, 0°/180°, female/ DIN A, 18 mm, 0°/180°, female/ M12 male, A-coded
	straight/angled/angled	angled/angled/straight
	60 V AC/DC	–
	30 V AC/DC	30 V AC/DC
	4 A	4 A
	IP67/IP67/IP67	IP67/IP67/IP67
	BCC M415-VA04-VA04-U2005-_ _ _②	–
	BCC M415-VA04-VA04-U2004-_ _ _②	BCC VA04-VA04-M415-T4075-_ _ _②
	CE, EAC	CE, EAC
	182	183

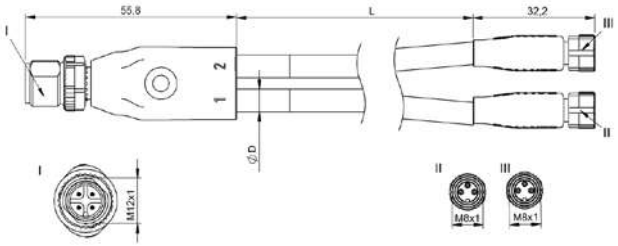
Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
UNSHIELDED				
PUR	Black	3 × 0.5 mm²	–50...–80 °C	–25...+80 °C

②	Cable length
BCC M415-VA04-VA04 ...	
005	0.5 m
010	1 m
BCC VA04-VA04-M415 ...	
002	0.2 m
004	0.4 m

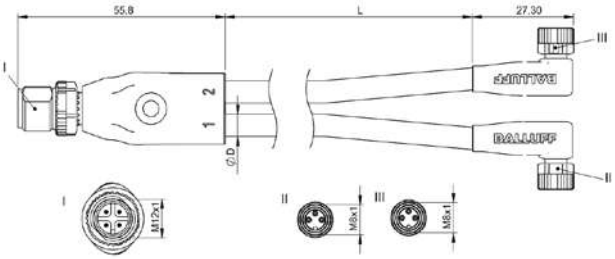
Other cable lengths on request!



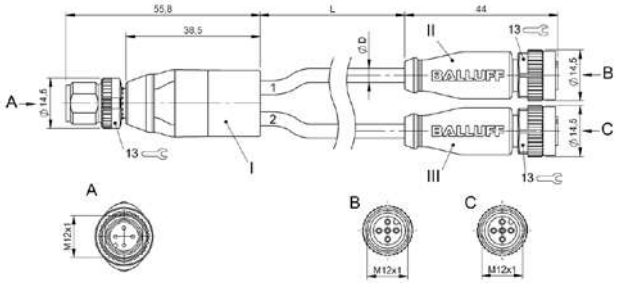
BCC M414-M313-M313-U2026-...



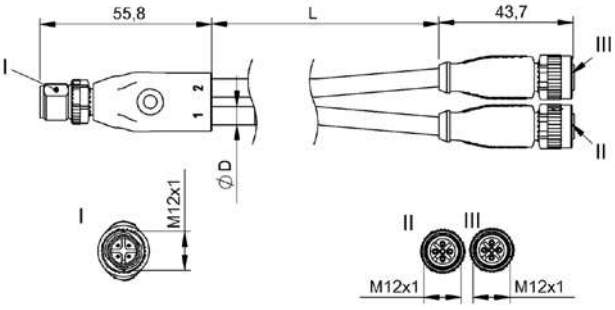
BCC M414-M313-M313-U2012-...



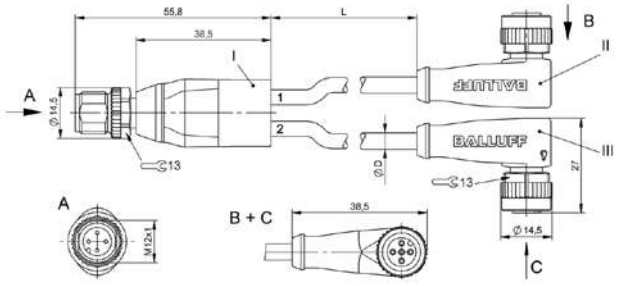
BCC M414-M323-M323-U2012-...



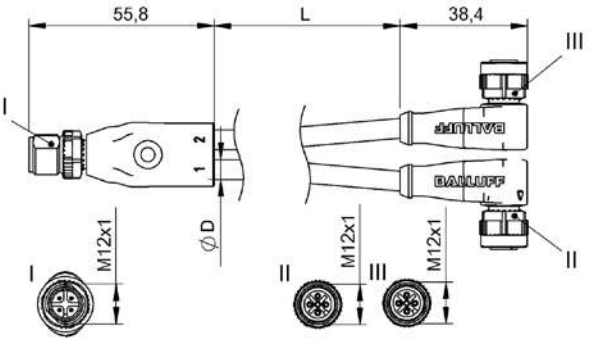
BCC M414-M415-M415-U2028-...



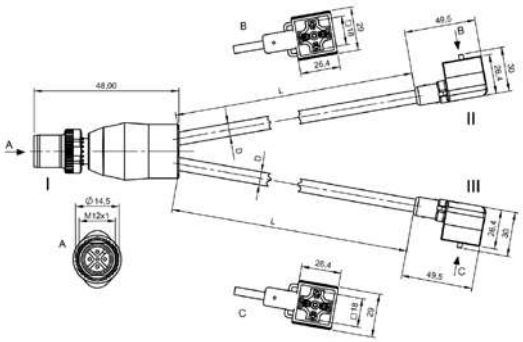
BCC M414-M415-M415-U2010-...
BCC M414-M415-M415-U2002-...



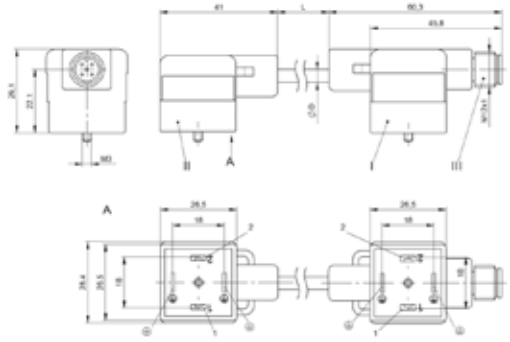
BCC M414-M425-M425-U2028-...



BCC M414-M425-M425-U2010-...
BCC M414-M425-M425-U2002-...



BCC M415-VA04-VA04-U2004-...
BCC M415-VA04-VA04-U2005-...



BCC VA04-VA04-M415-T4075-...

Splitters without wires ensure secure connection

TEES

For reliable gathering, connecting and distributing two signals Balluff provides a wide range of tees. Our solutions are distinguished by their small, narrow and compact design and are available in different form factors.

Our wide product offering includes tees with M8, M12 and 7/8“ connection, which are appropriate for 3-, 4- and 5-wire cables. Different protective circuits and variants without, with one or with two mounting holes offer you great flexibility.

The most important benefits

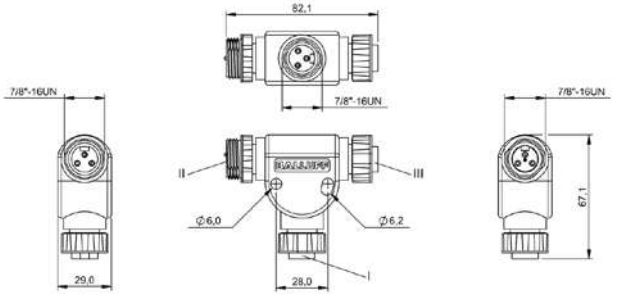
- Small, narrow and compact
- Extensive product range with various designs
- For reliable, fast connecting
- Robust and industrial grade
- Resistant to shocks and vibration
- Protection type IP67, optional IP68
- High-quality materials
- Bright LEDs
- Flexibly applicable – various wirings, variants without, with one or with two mounting holes

	BCC0AA5 BCC A313-A313-A313-T0021-000	
Connection 1	7/8“-16 UN-Female, 3-pole	
Connection 2	7/8“-16 UN-Female, 3-pole	
Connection 3	7/8“-16 UN-Male, 3-pole	
Operating voltage Ub	300 VDC / 300 VAC	
Rated current (40 °C)	9.0 A	
Protection degree	IP67	
Ambient temperature	-25...80 °C	
Approval/Conformity	EAC	
Productview	Page 196	

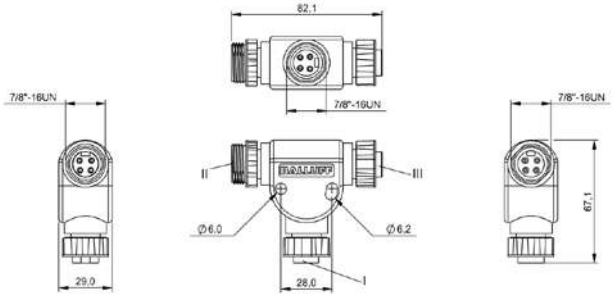
	BCC0AA6 BCC A314-A314-A314-T0022-000	BCC0AA7 BCC A315-A315-A315-T0023-000	BCC0F5C BCC M314-M313-M313-U0056-000
	7/8“-16 UN-Female, 4-pole	7/8“-16 UN-Female, 5-pole	M8x1-Male, 4-pole, A-coded
	7/8“-16 UN-Female, 4-pole	7/8“-16 UN-Female, 5-pole	M8x1-Female, 3-pole, A-coded
	7/8“-16 UN-Male, 4-pole	7/8“-16 UN-Male, 5-pole	M8x1-Female, 3-pole, A-coded
	300 VDC / 300 VAC	300 VDC / 300 VAC	60 VDC / 60 VAC
	9.0 A	9.0 A	4.0 A
	IP67	IP67	IP68
	-25...80 °C	-25...80 °C	-25...85 °C
	EAC	EAC	EAC
	Page 196	Page 196	Page 196

	BCC09JC BCC M415-M313-M313-U0014-000	
Connection 1	M12x1-Male, 4-pole, A-coded	
Connection 2	M8x1-Female, 3-pole, A-coded	
Connection 3	M8x1-Female, 3-pole, A-coded	
Operating voltage Ub	60 VDC / 60 VAC	
Rated current (40 °C)	4.0 A	
Protection degree	IP67	
Ambient temperature	-25...80 °C	
Approval/Conformity	EAC	
Productview	Page 196	

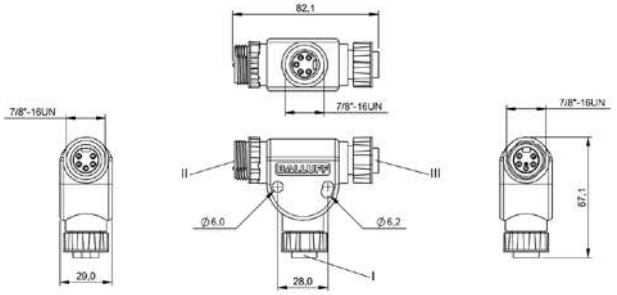
	BCC089P BCC M415-M415-M415-U0003-000	BCC08CA BCC M415-M415-M415-U0007-000	BCC09MU BCC M415-M415-M415-U0016-000
	M12x1-Male, 5-pole, A-coded	M12x1-Female, 5-pole, A-coded	M12x1-Male, 5-pole, A-coded
	M12x1-Female, 4-pole, A-coded	M12x1-Male, 5-pole, A-coded	M12x1-Female, 5-pole, A-coded
	M12x1-Female, 4-pole, A-coded	M12x1-Female, 5-pole, A-coded	M12x1-Female, 5-pole, A-coded
	125 VDC / 125 VAC	60 VDC / 60 VAC	125 VDC / 125 VAC
	4.0 A	4.0 A	4.0 A
	IP67	IP67	IP67
	-25...80 °C	-25...90 °C	-20...80 °C
	cURus, EAC	EAC	cURus, EAC
	Page 196	Page 196	Page 196



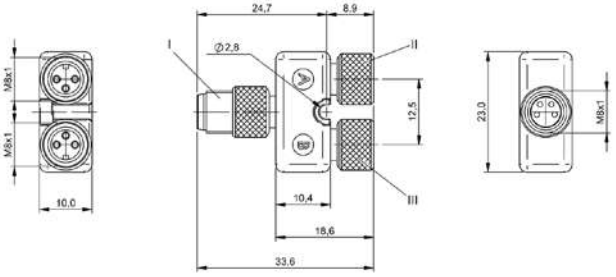
BCC0AA5



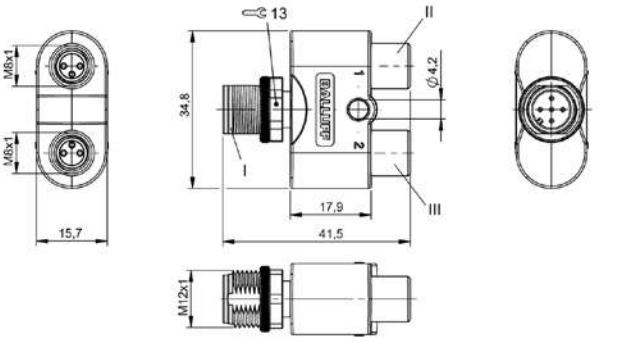
BCC0AA6



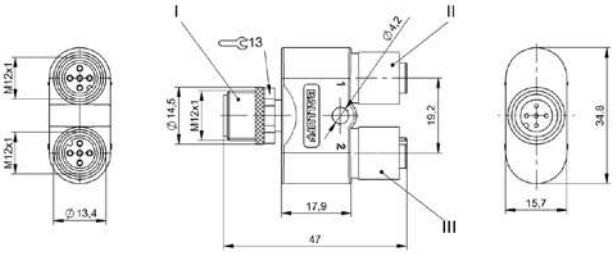
BCC0AA7



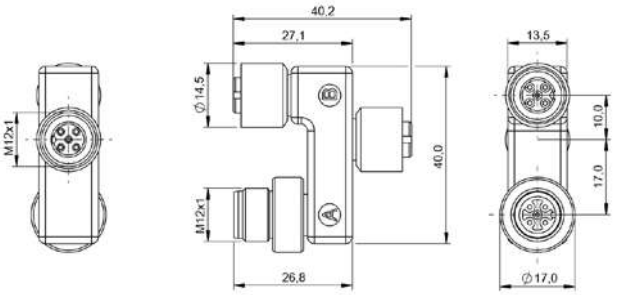
BCC0F5C



BCC09JC



BCC089P, BCC09MU



BCC08CA

The right connector for every industry

FIELD ATTACHABLES

Balluff offers you an extensive product range of field attachables for the secure transmission of signals, data and power. From various designs and housing materials, you can select exactly the product that fits your application.
All plug connectors are extremely robust and industrial grade.

The most important benefits

- Large selection for every industry
- Various designs
- Various housing materials
- Secure transmission of signals, data and power
- Robust and industrial grade

	BCC0AT9 BCC A333-0000-10-000-61X3A5-000	
Connection	7/8“-16 UN-Female, straight, 3-pole	
Number of connectable contacts	3	
Connection cross-section	0.14...1.5 mm²	
Type of wire mounting	Screw terminals	
Cable diameter D	8...10 mm	
Operating voltage Ub	600 VDC / 600 VAC	
Rated current (40 °C)	9.0 A	
Protection degree	IP67	
Ambient temperature	-25...85 °C	
Approval/Conformity	EAC, cURus	
Productview	Page 244	

	BCC0ATA BCC A333-0000-10-000-71X3A5-000	BCC0ATC BCC A333-0000-20-000-61X3A5-000	BCC0ATE BCC A333-0000-20-000-71X3A5-000
	7/8“-16 UN-Female, straight, 3-pole	7/8“-16 UN-Male, straight, 3-pole	7/8“-16 UN-Male, straight, 3-pole
	3	3	3
	0.14...1.5 mm²	0.14...1.5 mm²	0.14...1.5 mm²
	Screw terminals	Screw terminals	Screw terminals
	10...12 mm	8...10 mm	10...12 mm
	600 VDC / 600 VAC	600 VDC / 600 VAC	600 VDC / 600 VAC
	9.0 A	9.0 A	9.0 A
	IP67	IP67	IP67
	-25...85 °C	-25...85 °C	-25...85 °C
	EAC, cURus	EAC, cURus	EAC, cURus
	Page 244	Page 244	Page 244

	BCC0706 BCC A334-0000-10-000-51X4A5-000	
Connection	7/8“-16 UN-Female, straight, 4-pole	
Number of connectable contacts	4	
Connection cross-section	0.14...1.5 mm²	
Type of wire mounting	Screw terminals	
Cable diameter D	6...8 mm	
Operating voltage Ub	600 VDC / 600 VAC	
Rated current (40 °C)	9.0 A	
Protection degree	IP67	
Ambient temperature	-25...85 °C	
Approval/Conformity	EAC, cURus	
Productview	Page 244	

	BCC0707 BCC A334-0000-10-000-61X4A5-000	BCC0708 BCC A334-0000-10-000-71X4A5-000	BCC0709 BCC A334-0000-20-000-51X4A5-000
	7/8“-16 UN-Female, straight, 4-pole	7/8“-16 UN-Female, straight, 4-pole	7/8“-16 UN-Male, straight, 4-pole
	4	4	4
	0.14...1.5 mm²	0.14...1.5 mm²	0.14...1.5 mm²
	Screw terminals	Screw terminals	Screw terminals
	8...10 mm	10...12 mm	6...8 mm
	600 VDC / 600 VAC	600 VDC / 600 VAC	600 VDC / 600 VAC
	9.0 A	9.0 A	9.0 A
	IP67	IP67	IP67
	-25...85 °C	-25...85 °C	-25...85 °C
	EAC, cURus	EAC, cURus	EAC, cURus
	Page 244	Page 244	Page 244

	BCC070A BCC A334-0000-20-000-61X4A5-000	
Connection	7/8“-16 UN-Male, straight, 4-pole	
Number of connectable contacts	4	
Connection cross-section	0.14...1.5 mm²	
Type of wire mounting	Screw terminals	
Cable diameter D	8...10 mm	
Operating voltage Ub	600 VDC / 600 VAC	
Rated current (40 °C)	9.0 A	
Protection degree	IP67	
Ambient temperature	-25...85 °C	
Approval/Conformity	EAC, cURus	
Productview	Page 245	

	BCC070C BCC A334-0000-20-000-71X4A5-000	BCC070E BCC A335-0000-10-000-51X5A5-000	BCC070F BCC A335-0000-10-000-61X5A5-000
	7/8“-16 UN-Male, straight, 4-pole	7/8“-16 UN-Female, straight, 5-pole	7/8“-16 UN-Female, straight, 5-pole
	4	5	5
	0.14...1.5 mm²	0.14...1.5 mm²	0.14...1.5 mm²
	Screw terminals	Screw terminals	Screw terminals
	10...12 mm	6...8 mm	8...10 mm
	600 VDC / 600 VAC	600 VDC / 600 VAC	600 VDC / 600 VAC
	9.0 A	9.0 A	9.0 A
	IP67	IP67	IP67
	-25...85 °C	-25...85 °C	-25...85 °C
	EAC, cURus	EAC, cURus	EAC, cURus
	Page 245	Page 245	Page 245

	BCC070H BCC A335-0000-10-000-71X5A5-000	
Connection	7/8“-16 UN-Female, straight, 5-pole	
Number of connectable contacts	5	
Connection cross-section	0.14...1.5 mm²	
Type of wire mounting	Screw terminals	
Cable diameter D	10...12 mm	
Operating voltage Ub	600 VDC / 600 VAC	
Rated current (40 °C)	9.0 A	
Protection degree	IP67	
Ambient temperature	-25...85 °C	
Approval/Conformity	EAC, cURus	
Productview	Page 245	

	BCC0ATH BCC A335-0000-10-000-81X5A5-000	BCC070J BCC A335-0000-20-000-51X5A5-000	BCC070K BCC A335-0000-20-000-61X5A5-000
	7/8“-16 UN-Female, straight, 5-pole	7/8“-16 UN-Male, straight, 5-pole	7/8“-16 UN-Male, straight, 5-pole
	5	5	5
	0.14...1.5 mm²	0.14...1.5 mm²	0.14...1.5 mm²
	Screw terminals	Screw terminals	Screw terminals
	12...14 mm	6...8 mm	8...10 mm
	600 VDC / 600 VAC	600 VDC / 600 VAC	600 VDC / 600 VAC
	9.0 A	9.0 A	9.0 A
	IP67	IP67	IP67
	-25...85 °C	-25...85 °C	-25...85 °C
	EAC, cURus	EAC, cURus	EAC, cURus
	Page 245	Page 245	Page 245

	BCC070L BCC A335-0000-20-000-71X5A5-000	
Connection	7/8“-16 UN-Male, straight, 5-pole	
Number of connectable contacts	5	
Connection cross-section	0.14...1.5 mm²	
Type of wire mounting	Screw terminals	
Cable diameter D	10...12 mm	
Operating voltage Ub	600 VDC / 600 VAC	
Rated current (40 °C)	9.0 A	
Protection degree	IP67	
Ambient temperature	-25...85 °C	
Approval/Conformity	EAC, cURus	
Productview	Page 245	

	BCC0ATF BCC A335-0000-20-000-81X5A5-000	BCC0HLN BCC M333-0000-10-000-13X325-000	BCC0HLU BCC M333-0000-10-000-13X350-000
	7/8“-16 UN-Male, straight, 5-pole	M8x1-Female, straight, 3-pole, A-coded	M8x1-Female, straight, 3-pole, A-coded
	5	3	3
	0.14...1.5 mm²	0.08...0.25 mm²	0.25...0.5 mm²
	Screw terminals	Insulation displacement connector technology	Insulation displacement connector technology
	12...14 mm	2.5...5.2 mm	2.5...5.2 mm
	600 VDC / 600 VAC	60 VDC / 60 VAC	60 VDC / 60 VAC
	9.0 A	4.0 A	4.0 A
	IP67	IP67	IP67
	-25...85 °C	-25...85 °C	-25...85 °C
	EAC, cURus	EAC	EAC
	Page 245	Page 246	Page 246

	BCC06Z1 BCC M333-0000-10-000-31X350-000	
Connection	M8x1-Female, straight, 3-pole, A-coded	
Number of connectable contacts	3	
Connection cross-section	0.14...0.5 mm²	
Type of wire mounting	Screw terminals	
Cable diameter D	3.5...5 mm	
Operating voltage Ub	60 VDC / 60 VAC	
Rated current (40 °C)	4.0 A	
Protection degree	IP67	
Ambient temperature	-25...85 °C	
Approval/Conformity	EAC, cULus	
Productview	Page 246	

	BCC02HC BKS-S111-RT13	BCC0HLP BCC M333-0000-20-000-13X325-000	
	M8x1-Female, straight, 3-pole, A-coded	M8x1-Male, straight, 3-pole, A-coded	
	3	3	
	0.14...0.34 mm²	0.08...0.25 mm²	
	Insulation displacement connector technology	Insulation displacement connector technology	
	2.5...5.1 mm	2.5...5.2 mm	
	32 VDC / 32 VAC	60 VDC / 60 VAC	
	4.0 A	4.0 A	
	IP67	IP67	
	-40...85 °C	-25...85 °C	
	cURus, EAC	EAC	
	Page 246	Page 246	

	BCC0HLW BCC M333-0000-20-000-13X350-000	
Connection	M8x1-Male, straight, 3-pole, A-coded	
Number of connectable contacts	3	
Connection cross-section	0.25...0.5 mm²	
Type of wire mounting	Insulation displacement connector technology	
Cable diameter D	2.5...5.2 mm	
Operating voltage Ub	60 VDC / 60 VAC	
Rated current (40 °C)	4.0 A	
Protection degree	IP67	
Ambient temperature	-25...85 °C	
Approval/Conformity	EAC	
Productview	Page 246	

	BCC0E7N BCC M333-0000-20-000-31X350-000-C027	BCC02HE BKS-S113-RT13	BCC0HLR BCC M334-0000-10-000-13X425-000
	M8x1-Male, straight, 3-pole, A-coded	M8x1-Male, straight, 3-pole, A-coded	M8x1-Female, straight, 4-pole, A-coded
	3	3	4
	0.14...0.5 mm²	0.14...0.34 mm²	0.08...0.25 mm²
	Screw terminals	Insulation displacement connector technology	Insulation displacement connector technology
	2.2...3.5 mm	2.5...5.1 mm	2.5...5.2 mm
	60 VDC / 60 VAC	32 VDC / 32 VAC	30 VDC / 30 VAC
	4.0 A	4.0 A	4.0 A
	IP67	IP67	IP67
	-25...85 °C	-40...85 °C	-25...85 °C
	EAC	cURus, EAC	EAC
	Page 246	Page 246	Page 246

	BCC0HLY BCC M334-0000-10-000-13X450-000	
Connection	M8x1-Female, straight, 4-pole, A-coded	
Number of connectable contacts	4	
Connection cross-section	0.25...0.5 mm²	
Type of wire mounting	Insulation displacement connector technology	
Cable diameter D	2.5...5.2 mm	
Operating voltage Ub	30 VDC / 30 VAC	
Rated current (40 °C)	4.0 A	
Protection degree	IP67	
Ambient temperature	-25...85 °C	
Approval/Conformity	EAC	
Productview	Page 247	

	BCC06Z5 BCC M334-0000-10-000-31X450-000	BCC02HF BKS-S216-RT14	BCC0HLT BCC M334-0000-20-000-13X425-000
	M8x1-Female, straight, 4-pole, A-coded	M8x1-Female, straight, 4-pole, A-coded	M8x1-Male, straight, 4-pole, A-coded
	4	4	4
	0.14...0.5 mm²	0.14...0.34 mm²	0.08...0.25 mm²
	Screw terminals	Insulation displacement connector technology	Insulation displacement connector technology
	3.5...5 mm	2.5...5.1 mm	2.5...5.2 mm
	60 VDC / 60 VAC	32 VDC / 32 VAC	30 VDC / 30 VAC
	4.0 A	4.0 A	4.0 A
	IP67	IP67	IP67
	-25...85 °C	-40...85 °C	-25...85 °C
	EAC, cULus	cURus, EAC	EAC
	Page 247	Page 247	Page 247

	BCC0HLZ BCC M334-0000-20-000-13X450-000	
Connection	M8x1-Male, straight, 4-pole, A-coded	
Number of connectable contacts	4	
Connection cross-section	0.25...0.5 mm²	
Type of wire mounting	Insulation displacement connector technology	
Cable diameter D	2.5...5.2 mm	
Operating voltage Ub	30 VDC / 30 VAC	
Rated current (40 °C)	4.0 A	
Protection degree	IP67	
Ambient temperature	-25...85 °C	
Approval/Conformity	EAC	
Productview	Page 247	

	BCC06Z7 BCC M334-0000-20-000-31X450-000	BCC02HH BKS-S218-RT14	BCC06M4 BCC M434-0000-2A-000-41X475-000
	M8x1-Male, straight, 4-pole, A-coded	M8x1-Male, straight, 4-pole, A-coded	M12x1-Male, straight, 4-pole, A-coded
	4	4	4
	0.14...0.5 mm²	0.14...0.34 mm²	0.14...0.75 mm²
	Screw terminals	Insulation displacement connector technology	Screw terminals
	3.5...5 mm	2.5...5.1 mm	4...6 mm
	60 VDC / 60 VAC	32 VDC / 32 VAC	250 VDC / 250 VAC
	4.0 A	4.0 A	4.0 A
	IP67	IP67	IP67
	-25...85 °C	-40...85 °C	-25...85 °C
	EAC, cULus	cURus, EAC	cURus, EAC
	Page 247	Page 247	Page 247

	BCC08C0 BCC M434-0000-2A-000-43X434-000	
Connection	M12x1-Male, straight, 4-pole, A-coded	
Number of connectable contacts	4	
Connection cross-section	0.14...0.34 mm²	
Type of wire mounting	Insulation displacement connector technology	
Cable diameter D	3.5...6 mm	
Operating voltage Ub	125 VDC / 125 VAC	
Rated current (40 °C)	4.0 A	
Protection degree	IP67	
Ambient temperature	-25...80 °C	
Approval/Conformity	EAC	
Productview	Page 248	

	BCC0F9M BCC M434-0000-2A-000-45X450-000	BCC06F7 BCC M434-0000-2A-000-51X475-000	BCC06Y5 BCC M434-0000-2A-000-55X450-000
	M12x1-Male, straight, 4-pole, A-coded	M12x1-Male, straight, 4-pole, A-coded	M12x1-Male, straight, 4-pole, A-coded
	4	4	4
	0.14...0.5 mm²	0.14...0.75 mm²	0.14...0.5 mm²
	Spring clamp terminals	Screw terminals	Spring clamp terminals
	4...6 mm	6...8 mm	6...8 mm
	250 VDC / 250 VAC	250 VDC / 250 VAC	250 VDC / 250 VAC
	4.0 A	4.0 A	4.0 A
	IP67	IP67	IP67
	-25...85 °C	-25...85 °C	-25...85 °C
	EAC	cURus, EAC	EAC
	Page 248	Page 248	Page 248

	BCC0869 BCC M474-0000-2A-000-01X475-000	
Connection	M12x1-Male, straight, 4-pole, A-coded	
Number of connectable contacts	4	
Connection cross-section	0.14...0.75 mm²	
Type of wire mounting	Screw terminals	
Cable diameter D	5...8 mm	
Operating voltage Ub	250 VDC / 250 VAC	
Rated current (40 °C)	4.0 A	
Protection degree	IP67	
Ambient temperature	-25...85 °C	
Approval/Conformity	EAC	
Productview	Page 248	

	BCC02H9 BKS-S109-RT14	BCC06ZC BCC M444-0000-2A-000-41X475-000	BCC06ZE BCC M444-0000-2A-000-51X475-000
	M12x1-Male, straight, 4-pole, A-coded	M12x1-Male, angled, 4-pole, A-coded	M12x1-Male, angled, 4-pole, A-coded
	4	4	4
	0.14...0.34 mm²	0.14...0.75 mm²	0.14...0.75 mm²
	Insulation displacement connector technology	Screw terminals	Screw terminals
	2.9...5.1 mm	4...6 mm	6...8 mm
	32 VDC / 32 VAC	250 VDC / 250 VAC	250 VDC / 250 VAC
	4.0 A	4.0 A	4.0 A
	IP67	IP67	IP67
	-40...85 °C	-25...85 °C	-25...85 °C
	cURus, EAC	cURus, EAC	cURus, EAC
	Page 248	Page 248	Page 248

	BCC02H7 BKS-S 77-RT04	
Connection	M12x1-Male, angled, 4-pole, A-coded	
Number of connectable contacts	4	
Connection cross-section	0.25...0.5 mm²	
Type of wire mounting	Insulation displacement connector technology	
Cable diameter D	4...5.1 mm	
Operating voltage Ub	32 VDC / 32 VAC	
Rated current (40 °C)	4.0 A	
Protection degree	IP67	
Ambient temperature	-40...85 °C	
Approval/Conformity	cURus, EAC	
Productview	Page 248	

	BCC06Z9 BCC M435-0000-1A-000-41X475-000	BCC06ZF BCC M435-0000-1A-000-41X575-000	BCC06ZY BCC M435-0000-1A-000-43X434-000
	M12x1-Female, straight, 5-pole, A-coded	M12x1-Female, straight, 5-pole, A-coded	M12x1-Female, straight, 5-pole, A-coded
	4	5	4
	0.14...0.75 mm²	0.14...0.75 mm²	0.14...0.34 mm²
	Screw terminals	Screw terminals	Insulation displacement connector technology
	4...6 mm	4...6 mm	3.5...6 mm
	250 VDC / 250 VAC	125 VDC / 125 VAC	250 VDC / 250 VAC
	4.0 A	4.0 A	4.0 A
	IP67	IP67	IP67
	-25...85 °C	-25...85 °C	-40...80 °C
	cURus, EAC	cURus, EAC	EAC
	Page 248	Page 248	Page 249

	BCC0F9N BCC M435-0000-1A-000-45X450-000	
Connection	M12x1-Female, straight, 5-pole, A-coded	
Number of connectable contacts	4	
Connection cross-section	0.14...0.5 mm²	
Type of wire mounting	Spring clamp terminals	
Cable diameter D	4...6 mm	
Operating voltage Ub	250 VDC / 250 VAC	
Rated current (40 °C)	4.0 A	
Protection degree	IP67	
Ambient temperature	-25...85 °C	
Approval/Conformity	EAC	
Productview	Page 248	

	BCC06F6 BCC M435-0000-1A-000-51X475-000	BCC06W9 BCC M435-0000-1A-000-51X575-000	BCC06Y6 BCC M435-0000-1A-000-55X450-000
	M12x1-Female, straight, 5-pole, A-coded	M12x1-Female, straight, 5-pole, A-coded	M12x1-Female, straight, 5-pole, A-coded
	4	5	4
	0.14...0.75 mm²	0.14...0.75 mm²	0.14...0.5 mm²
	Screw terminals	Screw terminals	Spring clamp terminals
	6...8 mm	6...8 mm	6...8 mm
	250 VDC / 250 VAC	125 VDC / 125 VAC	250 VDC / 250 VAC
	4.0 A	4.0 A	4.0 A
	IP67	IP67	IP67
	-25...85 °C	-25...85 °C	-25...85 °C
	cURus, EAC	cURus, EAC	EAC
	Page 249	Page 249	Page 249

	BCC09JP BCC M435-0000-1A-000-A1X575-000	
Connection	M12x1-Female, straight, 5-pole, A-coded	
Number of connectable contacts	5	
Connection cross-section	0.14...0.75 mm²	
Type of wire mounting	Screw terminals	
Cable diameter D	2.1...3 mm	
Operating voltage Ub	125 VDC / 125 VAC	
Rated current (40 °C)	4.0 A	
Protection degree	IP67	
Ambient temperature	-25...85 °C	
Approval/Conformity	cURus, EAC	
Productview	Page 249	

	BCC06ZM BCC M475-0000-1A-000-01X475-000	BCC06ZN BCC M475-0000-1A-000-01X575-000	BCC02H8 BKS-S107-RT14
	M12x1-Female, straight, 5-pole, A-coded	M12x1-Female, straight, 5-pole, A-coded	M12x1-Female, straight, 5-pole, A-coded
	4	5	4
	0.14...0.75 mm²	0.14...0.75 mm²	0.14...0.34 mm²
	Screw terminals	Screw terminals	Insulation displacement connector technology
	5...8 mm	5...8 mm	2.9...5.1 mm
	250 VDC / 250 VAC	125 VDC / 125 VAC	32 VDC / 32 VAC
	4.0 A	4.0 A	4.0 A
	IP67	IP67	IP67
	-25...85 °C	-25...85 °C	-40...85 °C
	EAC	cURus, EAC	cURus, EAC
	Page 249	Page 249	Page 249

	BCC06YA BCC M435-0000-2A-000-41X575-000	
Connection	M12x1-Male, straight, 5-pole, A-coded	
Number of connectable contacts	5	
Connection cross-section	0.14...0.75 mm²	
Type of wire mounting	Screw terminals	
Cable diameter D	4...6 mm	
Operating voltage Ub	125 VDC / 125 VAC	
Rated current (40 °C)	4.0 A	
Protection degree	IP67	
Ambient temperature	-25...85 °C	
Approval/Conformity	cURus, EAC	
Productview	Page 249	

	BCC06EY BCC M435-0000-2A-000-51X575-000	BCC09JW BCC M435-0000-2A-000-A1X575-000	BCC086A BCC M475-0000-2A-000-01X575-000
	M12x1-Male, straight, 5-pole, A-coded	M12x1-Male, straight, 5-pole, A-coded	M12x1-Male, straight, 5-pole, A-coded
	5	5	5
	0.14...0.75 mm²	0.14...0.75 mm²	0.14...0.75 mm²
	Screw terminals	Screw terminals	Screw terminals
	6...8 mm	2.1...3 mm	5...8 mm
	125 VDC / 125 VAC	125 VDC / 125 VAC	250 VDC / 250 VAC
	4.0 A	4.0 A	4.0 A
	IP67	IP67	IP67
	-25...85 °C	-25...85 °C	-25...85 °C
	cURus, EAC	cURus, EAC	cURus, EAC
	Page 249	Page 249	Page 250

	BCC06ZA BCC M445-0000-1A-000-41X475-000	
Connection	M12x1-Female, angled, 5-pole, A-coded	
Number of connectable contacts	4	
Connection cross-section	0.14...0.75 mm²	
Type of wire mounting	Screw terminals	
Cable diameter D	4...6 mm	
Operating voltage Ub	250 VDC / 250 VAC	
Rated current (40 °C)	4.0 A	
Protection degree	IP67	
Ambient temperature	-40...85 °C	
Approval/Conformity	EAC	
Productview	Page 250	

	BCC06ZH BCC M445-0000-1A-000-41X575-000	BCC06Y8 BCC M445-0000-1A-000-51X475-000	BCC06ZJ BCC M445-0000-1A-000-51X575-000
	M12x1-Female, angled, 5-pole, A-coded	M12x1-Female, angled, 5-pole, A-coded	M12x1-Female, angled, 5-pole, A-coded
	5	4	5
	0.14...0.75 mm²	0.14...0.75 mm²	0.14...0.75 mm²
	Screw terminals	Screw terminals	Screw terminals
	4...6 mm	6...8 mm	6...8 mm
	125 VDC / 125 VAC	250 VDC / 250 VAC	125 VDC / 125 VAC
	4.0 A	4.0 A	4.0 A
	IP67	IP67	IP67
	-40...85 °C	-40...85 °C	-40...85 °C
	cURus, EAC	cURus, EAC	cURus, EAC
	Page 250	Page 250	Page 250

	BCC02H6 BKS-S 76-RT04	
Connection	M12x1-Female, angled, 5-pole, A-coded	
Number of connectable contacts	4	
Connection cross-section	0.25...0.5 mm²	
Type of wire mounting	Insulation displacement connector technology	
Cable diameter D	4...5.1 mm	
Operating voltage Ub	32 VDC / 32 VAC	
Rated current (40 °C)	4.0 A	
Protection degree	IP67	
Ambient temperature	-40...85 °C	
Approval/Conformity	cURus, EAC	
Productview	Page 250	

	BCC06ZK BCC M445-0000-2A-000-41X575-000	BCC06ZL BCC M445-0000-2A-000-51X575-000	BCC0A03 BCC M438-0000-1A-000-51X850-000
	M12x1-Male, angled, 5-pole, A-coded	M12x1-Male, angled, 5-pole, A-coded	M12x1-Female, straight, 8-pole, A-coded
	5	5	8
	0.14...0.75 mm²	0.14...0.75 mm²	0.14...0.5 mm²
	Screw terminals	Screw terminals	Screw terminals
	4...6 mm	6...8 mm	6...8 mm
	125 VDC / 125 VAC	125 VDC / 125 VAC	60 VDC / 60 VAC
	4.0 A	4.0 A	2.0 A
	IP67	IP67	IP67
	-40...85 °C	-40...85 °C	-25...85 °C
	cURus, EAC	cURus, EAC	cURus, EAC
	Page 250	Page 250	Page 251

	BCC04MC BCC M478-0000-1A-000-43X834-000	
Connection	M12x1-Female, straight, 8-pole, A-coded	
Number of connectable contacts	8	
Connection cross-section	0.14...0.34 mm²	
Type of wire mounting	Insulation displacement connector technology	
Cable diameter D	4...8 mm	
Operating voltage Ub	30 VDC / 30 VAC	
Rated current (40 °C)	1.75 A	
Protection degree	IP67	
Ambient temperature	-25...85 °C	
Approval/Conformity	EAC	
Productview	Page 251	

	BCC0A04 BCC M438-0000-2A-000-51X850-000	BCC0HAH BCC M478-0000-2A-000-41X850-000	BCC04ME BCC M488-0000-1A-000-43X834-000
	M12x1-Male, straight, 8-pole, A-coded	M12x1-Male, straight, 8-pole, A-coded	M12x1-Female, angled, 8-pole, A-coded
	8	8	8
	0.14...0.5 mm²	0.14...0.5 mm²	0.14...0.34 mm²
	Screw terminals	Screw terminals	Insulation displacement connector technology
	6...8 mm	4...6 mm	4...8 mm
	60 VDC / 60 VAC	30 VDC / 30 VAC	30 VDC / 30 VAC
	2.0 A	2.0 A	1.75 A
	IP67	IP67	IP67
	-25...85 °C	-25...85 °C	-25...85 °C
	cURus, EAC	EAC	EAC
	Page 251	Page 251	Page 251

	BCC0KR4 BCC M488-0000-2A-000-01X850-000	
Connection	M12x1-Male, angled, 8-pole, A-coded	
Number of connectable contacts	8	
Connection cross-section	0.14...0.5 mm²	
Type of wire mounting	Screw terminals	
Cable diameter D	5...8 mm	
Operating voltage Ub	30 VDC / 30 VAC	
Rated current (40 °C)	2.0 A	
Protection degree	IP67	
Ambient temperature	-40...85 °C	
Approval/Conformity	EAC	
Productview	Page 251	

	BCC0A05 BCC M43C-0000-1A-000-54XC25-000	BCC0A06 BCC M43C-0000-2A-000-54XC25-000	BCC0715 BCC M475-0000-1B-000-01X575-000
	M12x1-Female, straight, 12-pole, A-coded	M12x1-Male, straight, 12-pole, A-coded	M12x1-Female, straight, 5-pole, B-coded
	12	12	5
	0.14...0.25 mm²	0.14...0.25 mm²	0.14...0.75 mm²
	Solder connections	Solder connections	Screw terminals
	6...8 mm	6...8 mm	5...8 mm
	30 VDC / 30 VAC	30 VDC / 30 VAC	250 VDC / 250 VAC
	1.0 A	1.0 A	4.0 A
	IP67	IP67	IP67
	-25...85 °C	-25...85 °C	-25...85 °C
	cURus, EAC	cURus, EAC	cURus, EAC
	Page 251	Page 251	Page 252

	BCC0714 BCC M475-0000-2B-000-01X575-000	
Connection	M12x1-Male, straight, 5-pole, B-coded	
Number of connectable contacts	5	
Connection cross-section	0.14...0.75 mm²	
Type of wire mounting	Screw terminals	
Cable diameter D	5...8 mm	
Operating voltage Ub	250 VDC / 250 VAC	
Rated current (40 °C)	4.0 A	
Protection degree	IP67	
Ambient temperature	-25...85 °C	
Approval/Conformity	cURus, EAC	
Productview	Page 252	

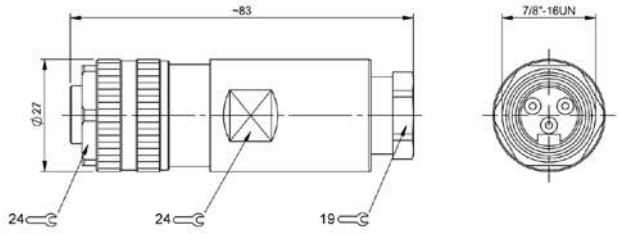
	BCC0717 BCC M485-0000-1B-000-01X575-000	BCC0716 BCC M485-0000-2B-000-01X575-000	BCC03Y1 BCC M474-0000-1D-000-51X475-000
	M12x1-Female, angled, 5-pole, B-coded	M12x1-Male, angled, 5-pole, B-coded	M12x1-Female, straight, 4-pole, D-coded
	5	5	4
	0.14...0.75 mm²	0.14...0.75 mm²	0.14...0.75 mm²
	Screw terminals	Screw terminals	Screw terminals
	5...8 mm	5...8 mm	5...8 mm
	250 VDC / 250 VAC	250 VDC / 250 VAC	250 VDC / 250 VAC
	4.0 A	4.0 A	4.0 A
	IP67	IP67	IP67
	-25...85 °C	-25...85 °C	-25...85 °C
	cURus, EAC	cURus, EAC	cURus, EAC
	Page 252	Page 252	Page 252

	BCC03WZ BCC M474-0000-2D-000-51X475-000	
Connection	M12x1-Male, straight, 4-pole, D-coded	
Number of connectable contacts	4	
Connection cross-section	0.14...0.75 mm²	
Type of wire mounting	Screw terminals	
Cable diameter D	5...8 mm	
Operating voltage Ub	250 VDC / 250 VAC	
Rated current (40 °C)	4.0 A	
Protection degree	IP67	
Ambient temperature	-25...85 °C	
Approval/Conformity	cURus, EAC	
Productview	Page 252	

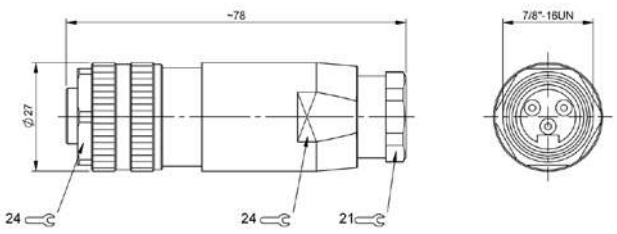
	BCC03Y2 BCC M484-0000-1D-000-51X475-000	BCC03Y0 BCC M484-0000-2D-000-51X475-000	BCC0HTL BCC M478-0000-2X-000-E3X8T2-000
	M12x1-Female, angled, 4-pole, D-coded	M12x1-Male, angled, 4-pole, D-coded	M12x1-Male, straight, 8-pole, X-coded
	4	4	8
	0.14...0.75 mm²	0.14...0.75 mm²	0.14...0.34 mm²
	Screw terminals	Screw terminals	Insulation displacement connector technology
	5...8 mm	5...8 mm	5.5...9 mm
	250 VDC / 250 VAC	250 VDC / 250 VAC	60 VDC / 50 VAC
	4.0 A	4.0 A	0.5 A
	IP67	IP67	IP67
	-25...85 °C	-25...85 °C	-40...85 °C
	cURus, EAC	cURus, EAC	cULus, EAC
	Page 252	Page 252	Page 252

	BCC00TT BKS-S 32M-00	
Connection	M16x0.75-Female, straight, 8-pole	
Number of connectable contacts	8	
Connection cross-section	0.14...0.75 mm²	
Type of wire mounting	Solder connections	
Cable diameter D	6...8 mm	
Operating voltage Ub	60 VDC / 60 VAC	
Rated current (40 °C)	5.0 A	
Protection degree	IP67	
Ambient temperature	-40...95 °C	
Approval/Conformity	EAC	
Productview	Page 253	

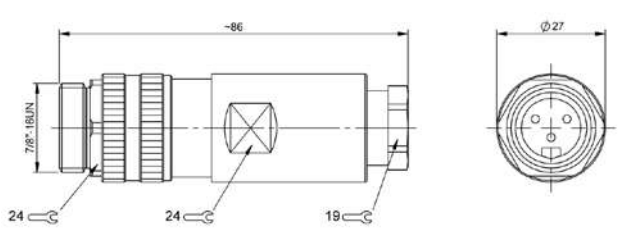
	BCC00UP BKS-S 33M-00	BCC06FH BCC E834-0000-20-000-53X4T2-000	
	M16x0.75-Female, angled, 8-pole	RJ45-Male, straight, 4-pole	
	8	4	
	0.14...0.75 mm²	0.2...0.34 mm²	
	Solder connections	Insulation displacement connector technology	
	6...8 mm	6.1...6.9 mm	
	60 VDC / 60 VAC	125 VDC / 125 VAC	
	5.0 A	1.0 A	
	IP67	IP20	
	-40...95 °C	-40...70 °C	
	EAC	cURus, EAC	
	Page 253	Page 253	



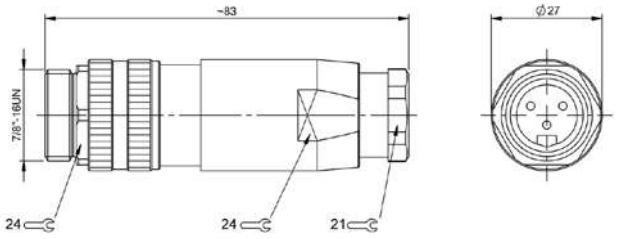
BCC0AT9



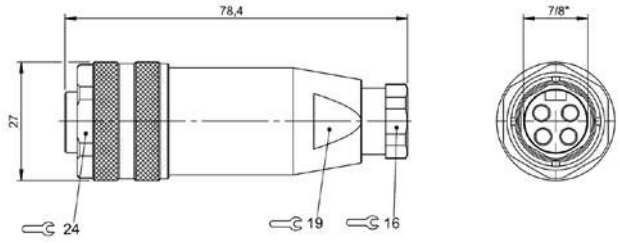
BCC0ATA



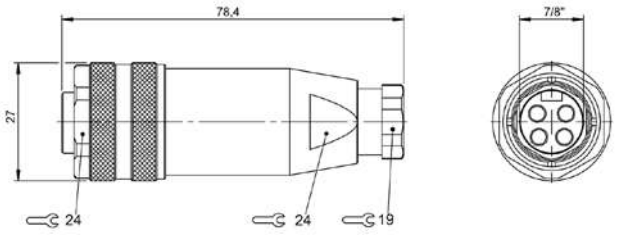
BCC0ATC



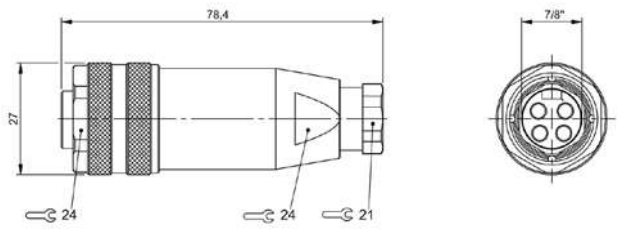
BCC0ATE



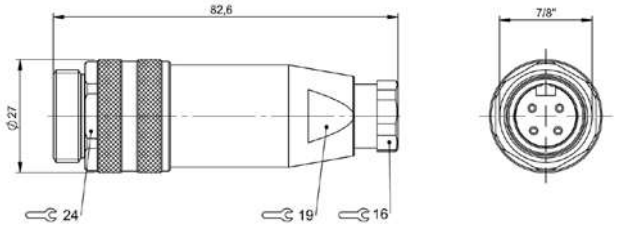
BCC0706



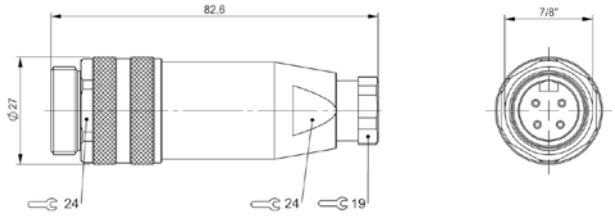
BCC0707



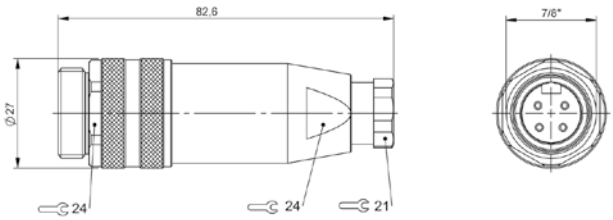
BCC0708



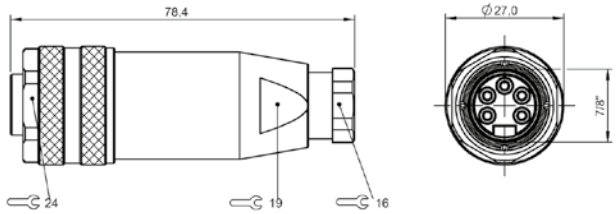
BCC0709



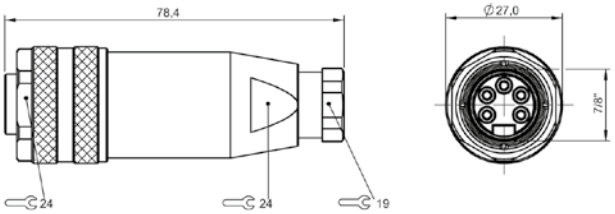
BCC070A



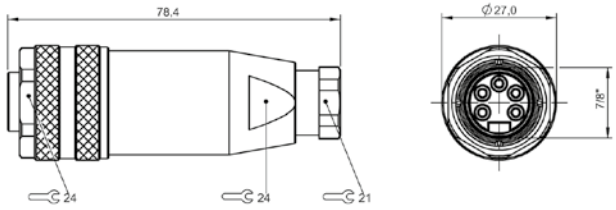
BCC070C



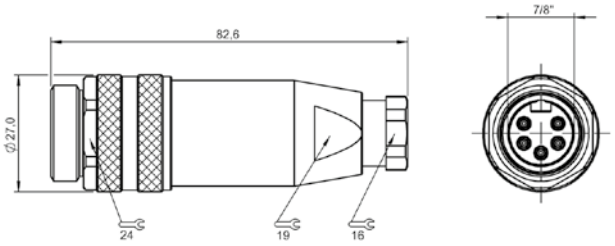
BCC070E



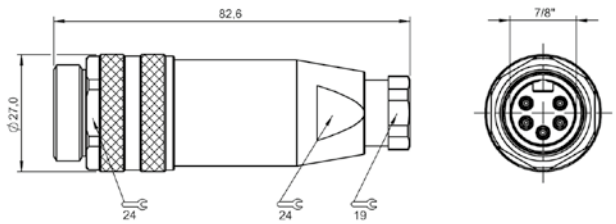
BCC070F



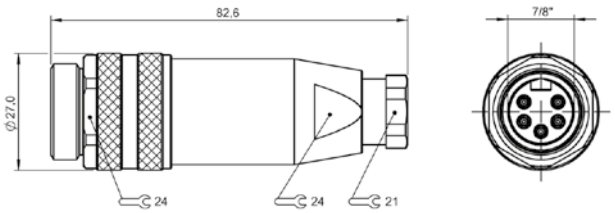
BCC070H, BCC0ATH



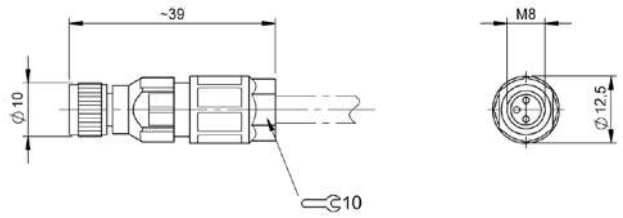
BCC070J



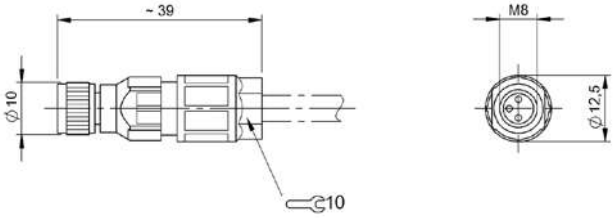
BCC070K



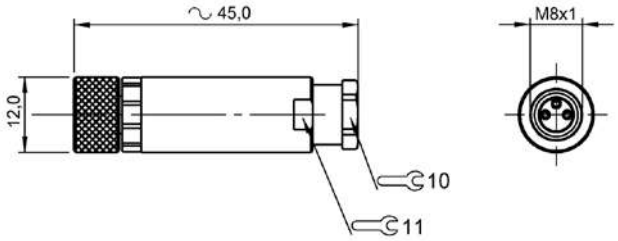
BCC070L, BCC0ATF



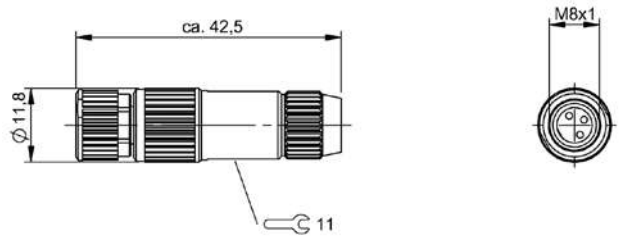
BCC0HLN



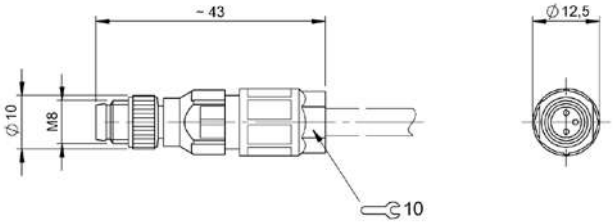
BCC0HLU



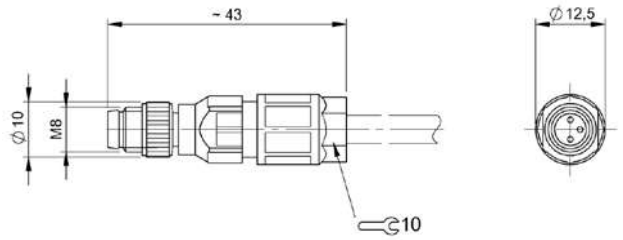
BCC06Z1



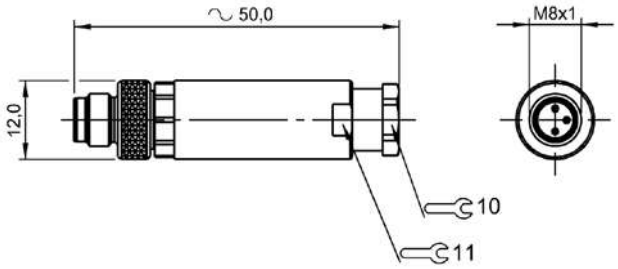
BCC02HC, BCC02HF



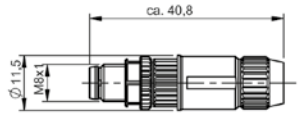
BCC0HLP



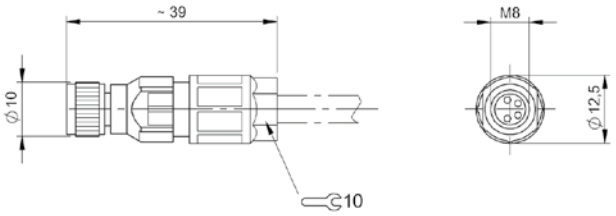
BCC0HLW



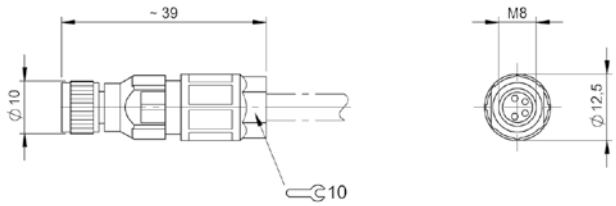
BCC0E7N



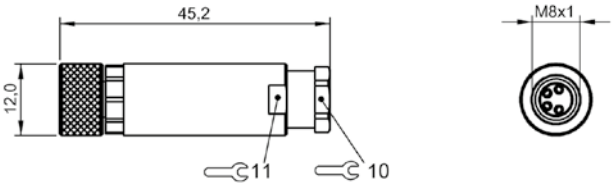
BCC02HE, BCC02HH



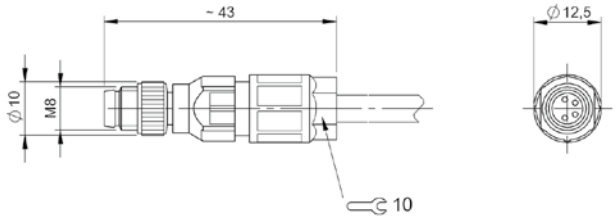
BCC0HLR



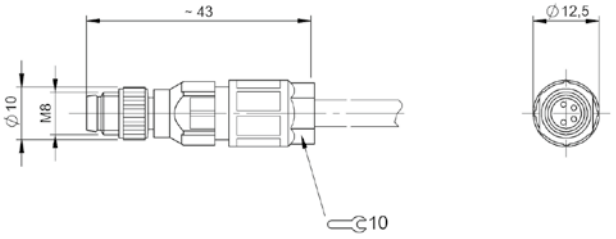
BCC0HLY



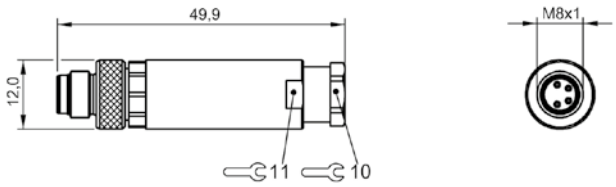
BCC06Z5



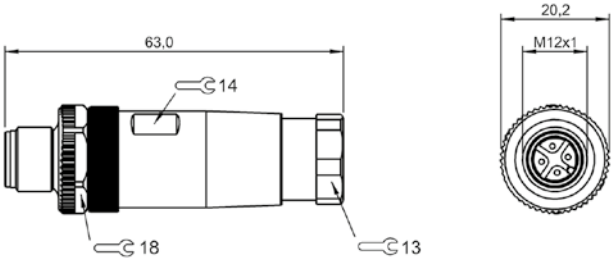
BCC0HLT



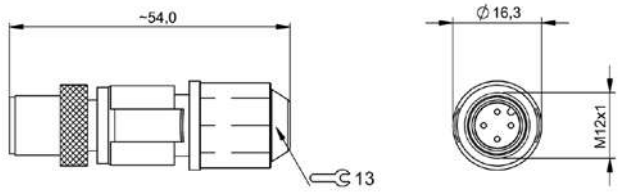
BCC0HLZ



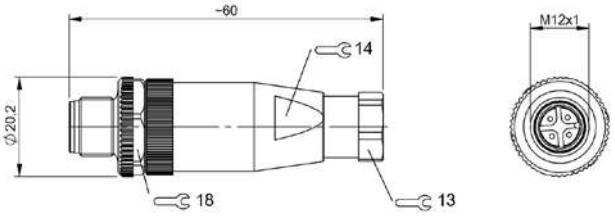
BCC06Z7



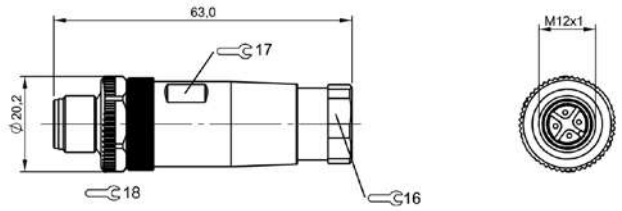
BCC06M4



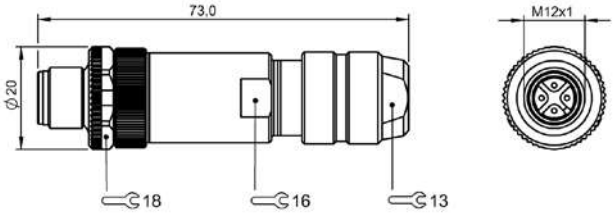
BCC08C0



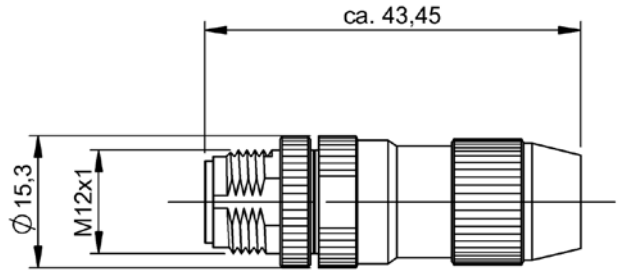
BCC0F9M



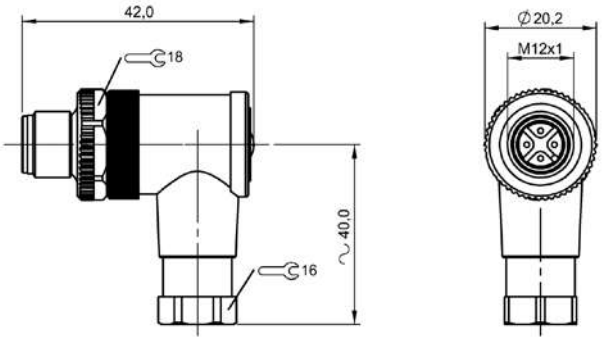
BCC06F7, BCC06Y5



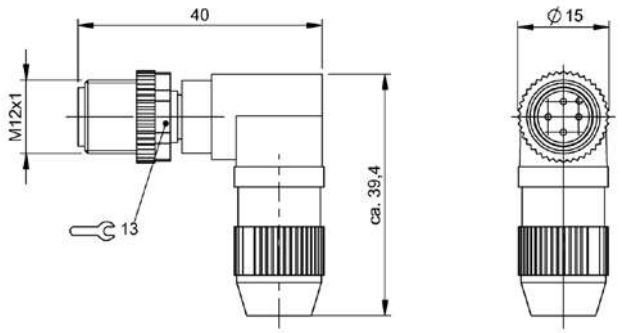
BCC0869



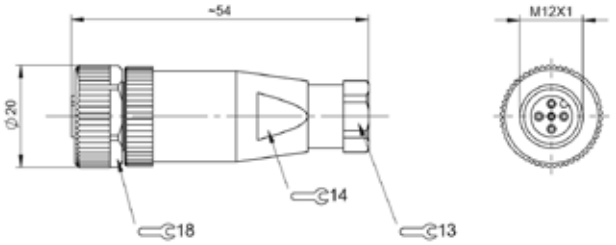
BCC02H9



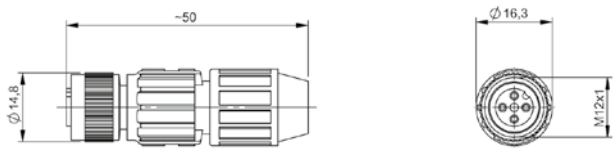
BCC06ZC, BCC06ZE



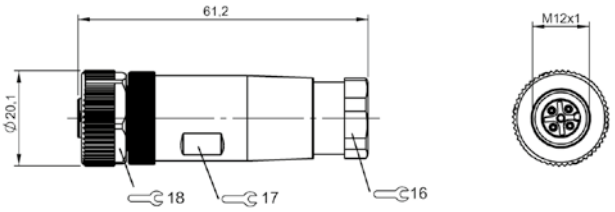
BCC02H7



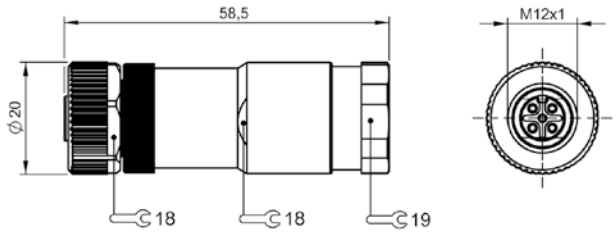
BCC06Z9, BCC06ZF, BCC0F9N



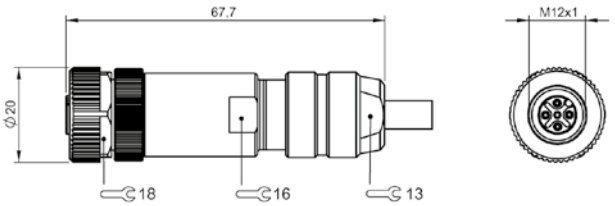
BCC06ZY



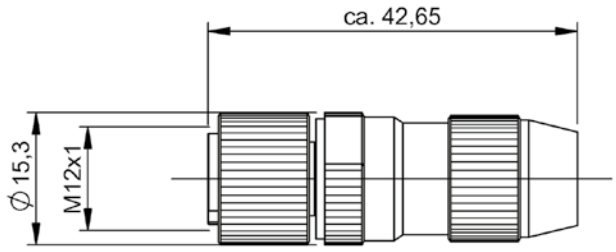
BCC06F6, BCC06W9, BCC06Y6



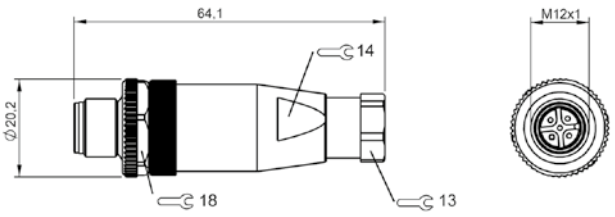
BCC09JP



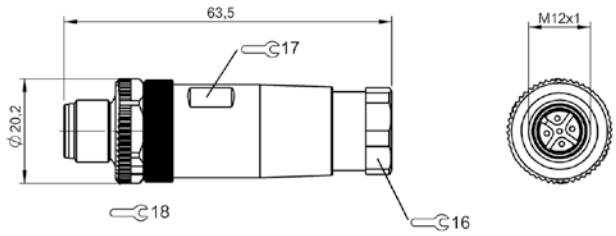
BCC06ZM, BCC06ZN



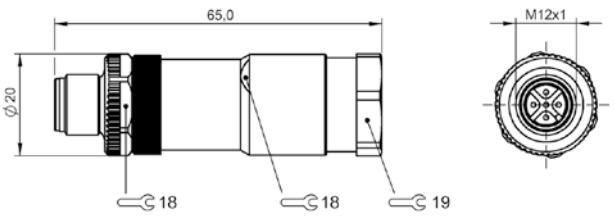
BCC02H8



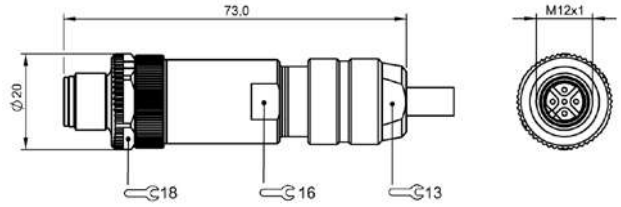
BCC06YA



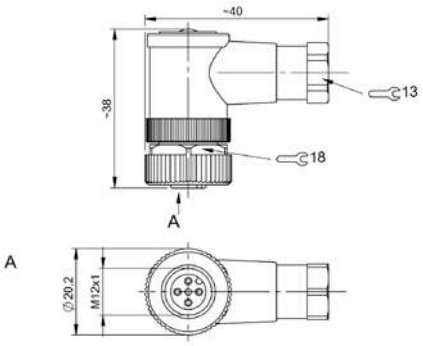
BCC06EY



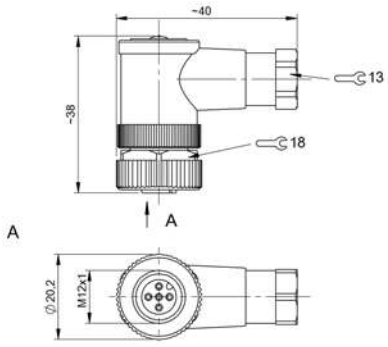
BCC09JW



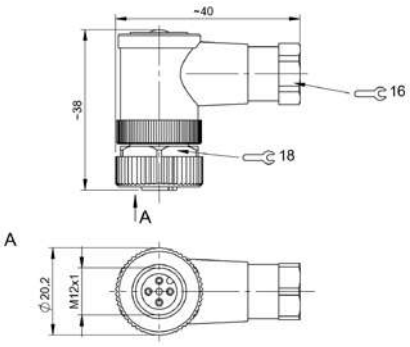
BCC086A



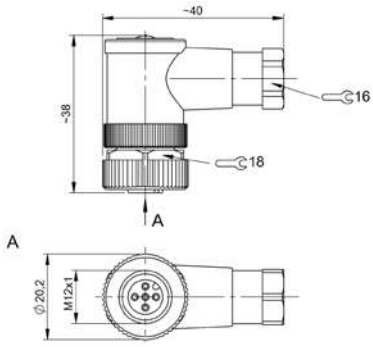
BCC06ZA



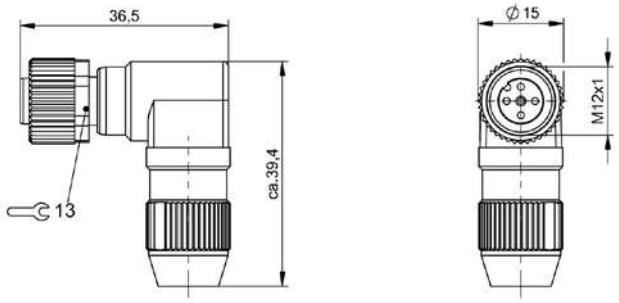
BCC06ZH



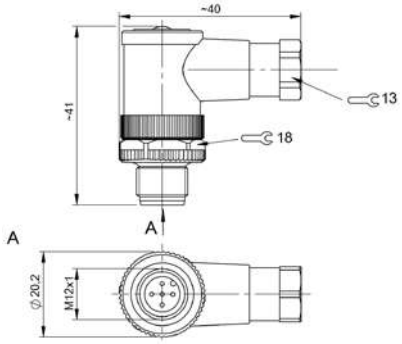
BCC06Y8



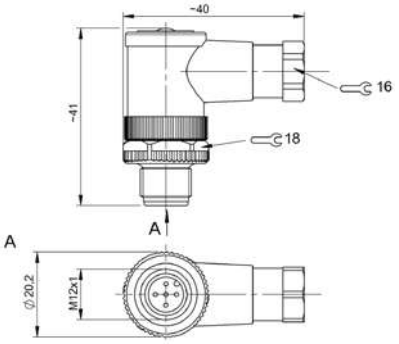
BCC06ZJ



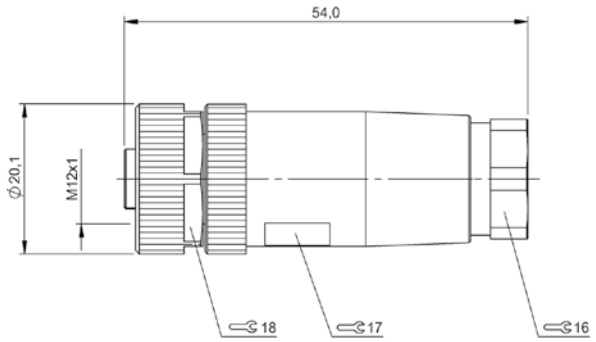
BCC02H6



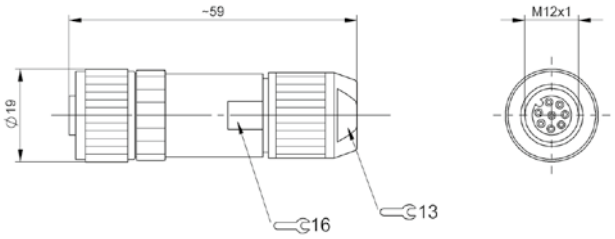
BCC06ZK



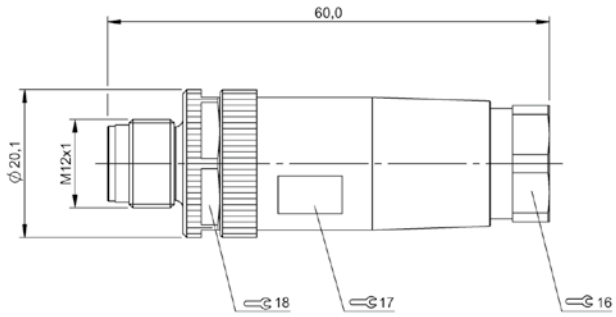
BCC06ZL



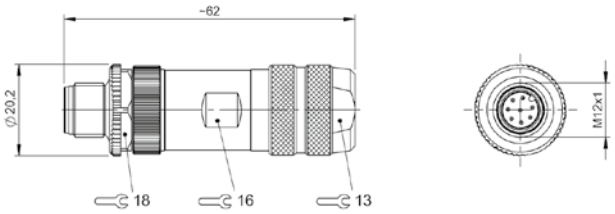
BCC0A03



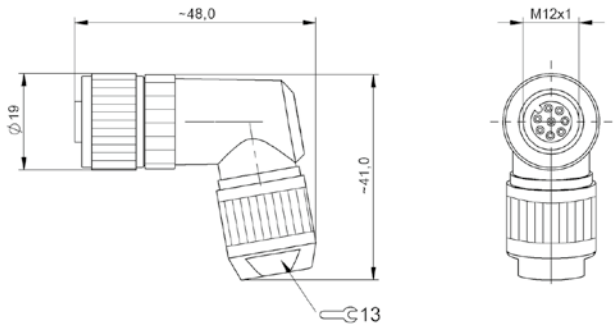
BCC04MC



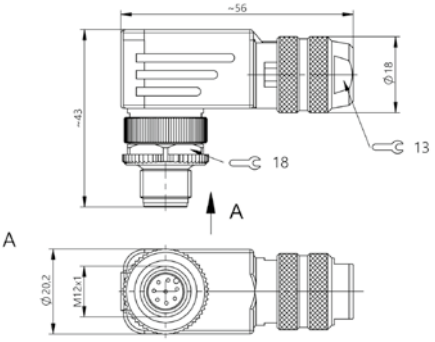
BCC0A04



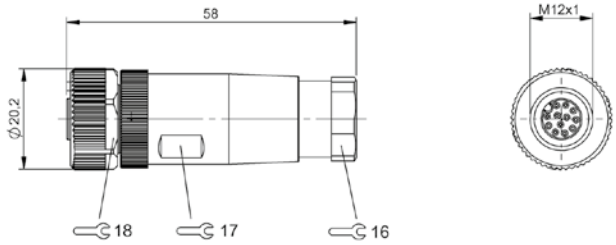
BCC0HAH



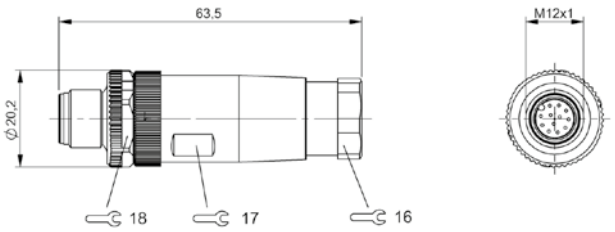
BCC04ME



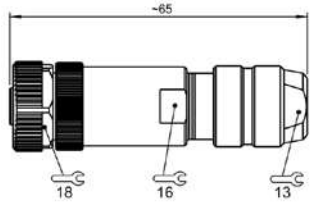
BCC0KR4



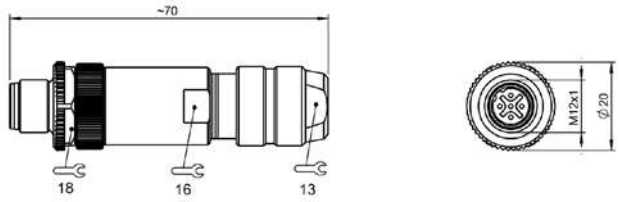
BCC0A05



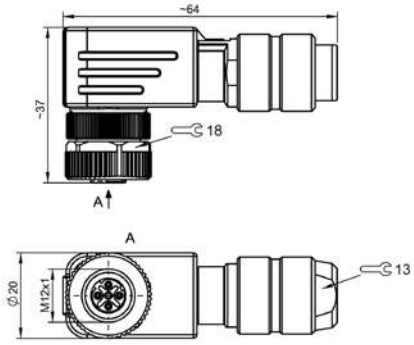
BCC0A06



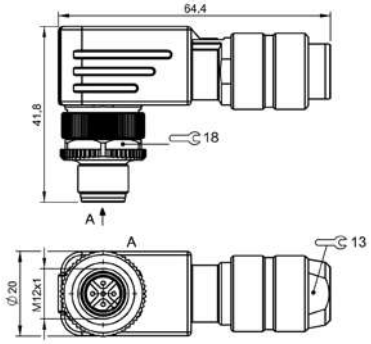
BCC0715



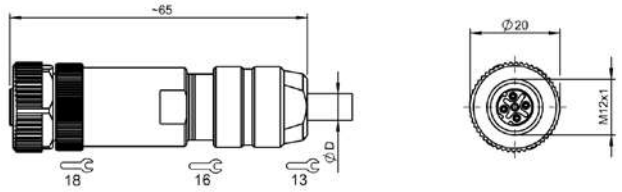
BCC0714



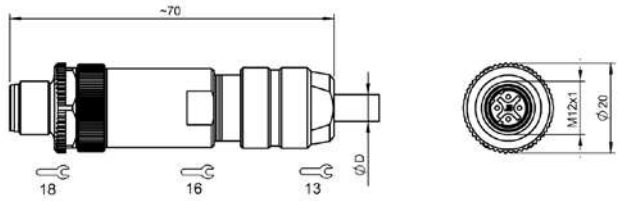
BCC0717, BCC03Y2



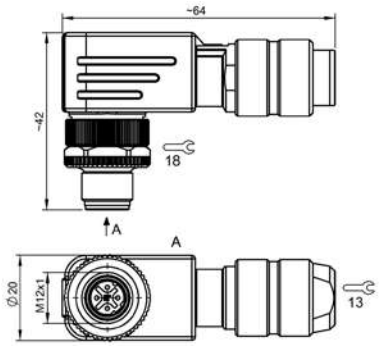
BCC0716



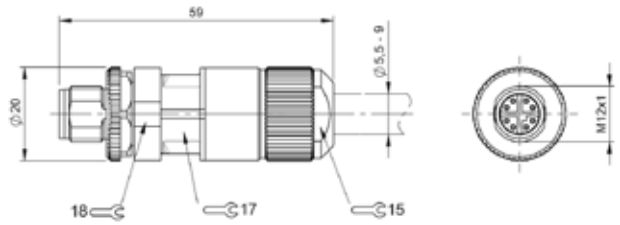
BCC03Y1



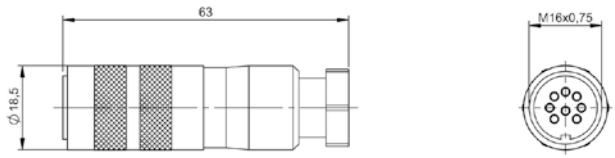
BCC03WZ



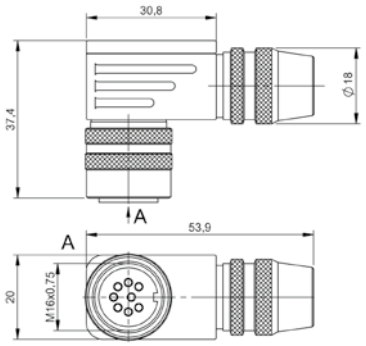
BCC03Y0



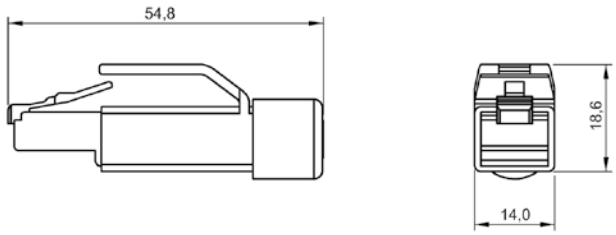
BCC0HTL



BCC00TT



BCC00UP



BCC06FH

Rugged for optimized connecting

BULKHEADS

We offer you an extensive product range of bulkheads. Our plug connectors RJ45 and M12 (A-, B- and D-coded) in various designs are exceptionally robust, resistant to shock and vibration.

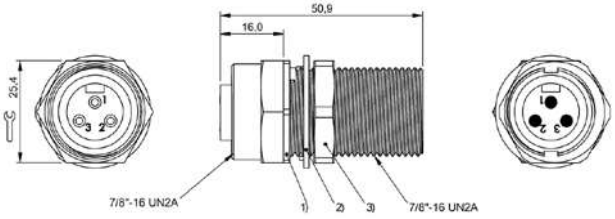
High dust and water protection and high-quality materials distinguish connectors from Balluff. They ensure a reliable and rapid connection through the control cabinet wall or other housings.

The most important benefits

- High dust and water protection
- Extensive product range with various designs
- For reliable, fast connecting
- Robust and industrial grade
- High-quality materials

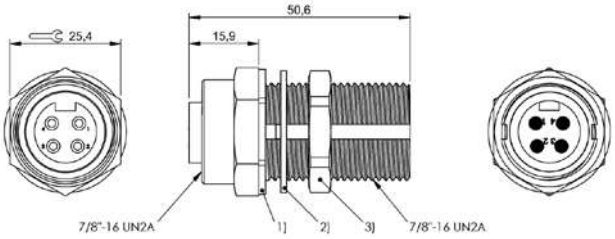
	BCC0A7M BCC A353-A353-30-RN036-000	BCC0723 BCC A354-A354-30-RN011-000	
Connection 1	7/8“-Female, straight, 3-pole	7/8“-Female, straight, 4-pole	
Connection 2	7/8“-16 UN2A-Male, straight, 3-pole	7/8“-16 UN2A-Male, straight, 4-pole	
Mounting	7/8“-16UN2A	7/8“-16UN2A	
Operating voltage Ub	600 VDC / 600 VAC	600 VDC / 600 VAC	
Rated current (40 °C)	13.0 A	10.0 A	
Protection degree	IP67	IP67	
Ambient temperature	-40...105 °C	-40...105 °C	
Approval/Conformity	cULus, EAC	cULus, EAC	
Productview	Page 260	Page 260	

	BCC0A7N BCC A355-A355-30-RN037-000	BCC06YP BCC M454-M454-5D-RM002-000	BCC085F BCC M414-E814-BG-RM013-000	BCC085H BCC M424-E814-BG-RM013-000
	7/8“-Female, straight, 5-pole	M12x1-Female, straight, 4-pole, D-coded	M12x1-Female, straight, 4-pole, D-coded	M12x1-Female, angled, 4-pole, D-coded
	7/8“-16 UN2A-Male, straight, 5-pole	M12x1-Female, straight, 4-pole, D-coded	RJ45-Female, straight, 4-pole	RJ45-Female, straight, 4-pole
	7/8“-16UN2A	M16x1.5	M16x1.5	M16x1.5
	600 VDC / 600 VAC	60 VDC / 60 VAC	60 VDC / 60 VAC	60 VDC / 60 VAC
	8.0 A	4.0 A	0.5 A	0.5 A
	IP67	IP67/IP67	IP20	IP20
	-40...105 °C	-25...80 °C	-20...80 °C	-20...80 °C
	cULus, EAC	EAC	EAC	EAC
	Page 260	Page 260	Page 260	Page 260

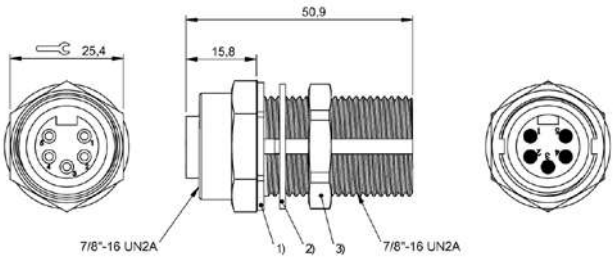


1) Locknut, 2) Washer, 3) O-ring

BCC0A7M

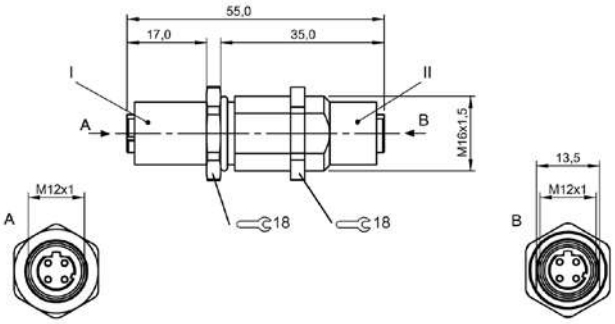


BCC0723

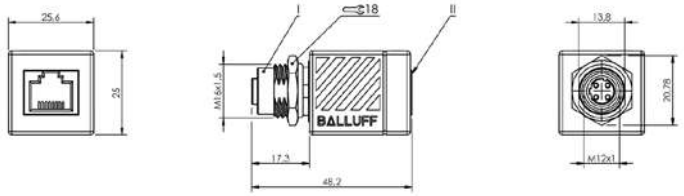


1) Locknut, 2) Washer, 3) O-ring

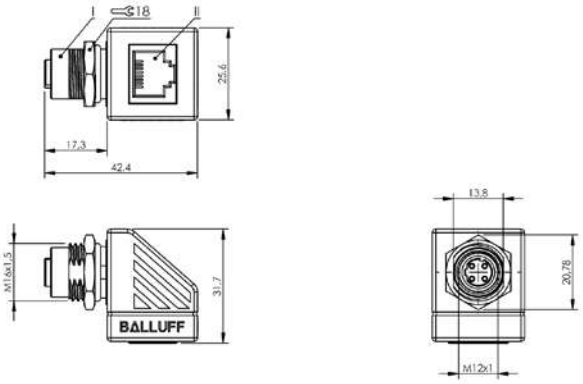
BCC0A7N



BCC06YP



BCC085F



BCC085H

Rugged for secure connections

RECEPTACLES

With Balluff you can select from a wide, flexibly applicable product range of receptacles in M8 and M12 sizes. You can get the connectors in 3-, 4-, 5-, 8- and 12-pin versions. All connectors are made of rugged metal, comply with IP67 and are resistant to shock and vibration.

The most important benefits

- With socket and plug
- Robust metal designs
- Resistant to shocks and vibration
- High-quality materials
- Protection class IP67
- Different strand lengths available
- Wide range of products
- Flexible in application

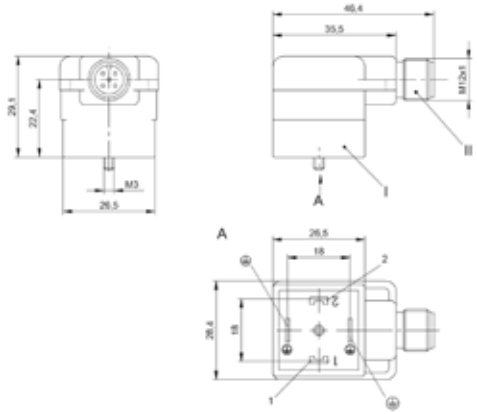
Problem solvers in installation technology

ADAPTERS

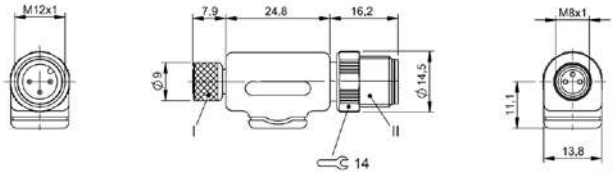
The extensive range of adapters from Balluff helps you to connect different plug connector designs quickly and reliably.
We offer many solutions, all of which are rugged and industrial grade for the highest possible level of flexibility.

The most important benefits

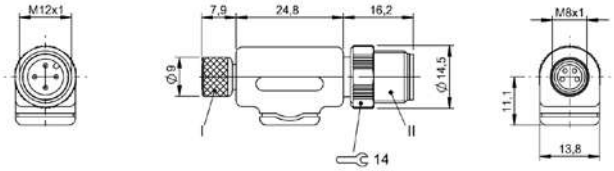
- Robust, industrial grade
- For reliable, fast connecting
- Additional flexibility



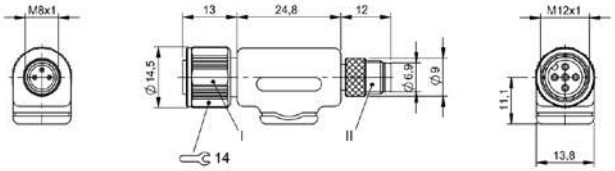
BCC0HKZ



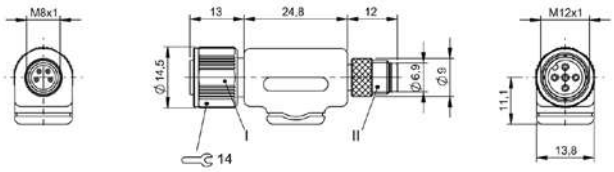
BCC0F47



BCC0F2Y



BCC0F2T



BCC0F2U

Matched to your bus system

TERMINATING RESISTORS

At Balluff you will always find the right terminating resistor. This is because we offer terminating resistors for all standard commercial bus systems: Profibus, Devicenet and CC-Link. Our broad product range includes both standard and custom components.

Available in various form factors and in molded versions.
All products are best suited for rugged use in the industrial environment. Rugged, noise-resistant and extremely reliable, they contribute to the high production quality of your systems.

The most important benefits

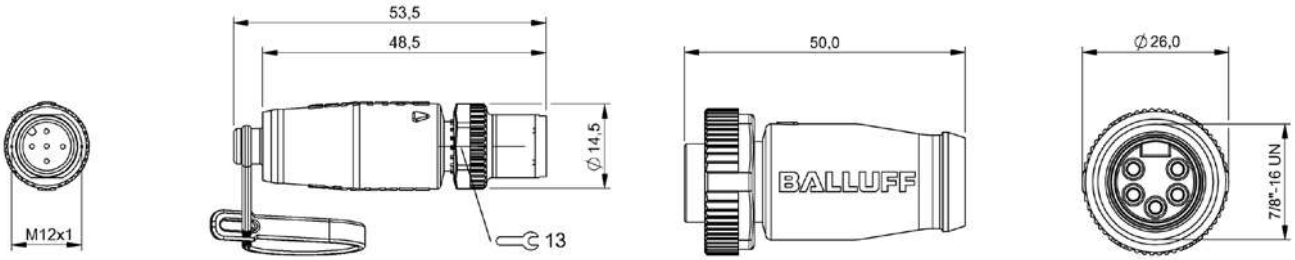
- Robust, immune to faults
- Resistant to shocks and vibration
- Industrial grade
- IP67, optionally IP68
- High-quality materials
- Reliable
- Various designs
- Suitable for all standard commercially available field bus systems
- Supports high manufacturing quality

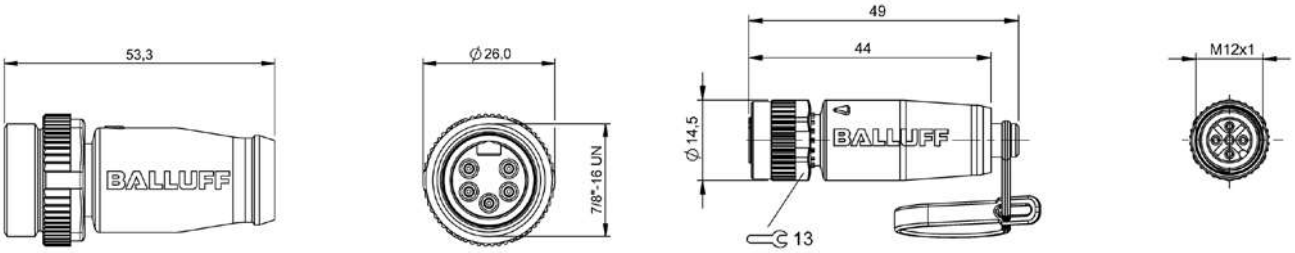


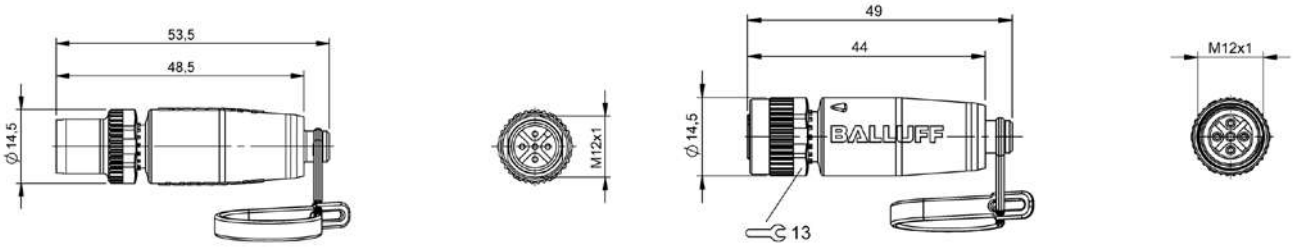
	BCC06Y4 BCC M415-0000-2A-R03	**BCC0A0A** BCC A315-0000-1A-R04	**BCC0A09** BCC A315-0000-2A-R04	
Interface	CC-Link	DeviceNet	DeviceNet	
Connection	M12x1-Male, straight, 5-pole, A-coded	7/8“-Female, straight, 5-pole	7/8“-Male, straight, 5-pole	
Function indicator	—	—	—	
Protection degree	IP68	IP68	IP68	
Ambient temperature	-20...80 °C	-20...80 °C	-20...80 °C	
Approval/Conformity	EAC	EAC	EAC	
Productview	Page 294	Page 294	Page 294	

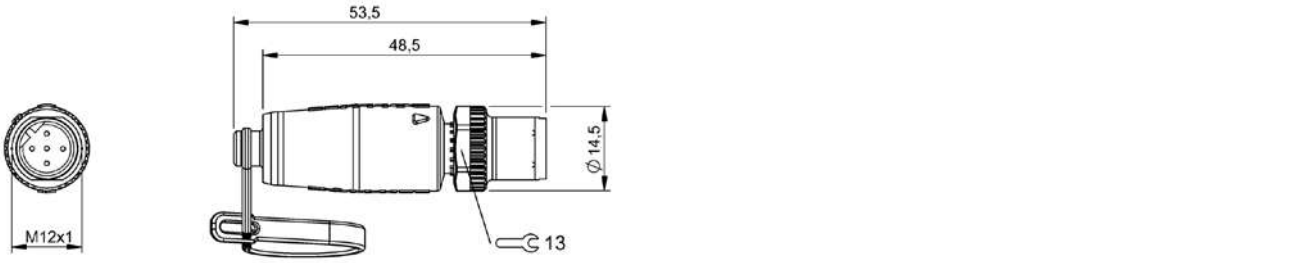



	BCC0A08 BCC M415-0000-1A-R04	**BCC09MR** BCC M415-0000-2A-R04	**BCC0C6E** BCC M415-0000-1B-R01	**BCC0718** BCC M415-0000-2B-R01	
	DeviceNet	DeviceNet	Profibus	Profibus	
	M12x1-Female, straight, 5-pole, A-coded	M12x1-Male, straight, 5-pole, A-coded	M12x1-Female, straight, 5-pole, B-coded	M12x1-Male, straight, 5-pole, B-coded	
	—	—	—	—	
	IP68	IP68	IP68	IP68	
	-40...90 °C	-40...90 °C	-40...90 °C	-20...80 °C	
	EAC	EAC	EAC	EAC	
	Page 294	Page 294	Page 294	Page 294	


53,5
48,5
50,0
Ø 26,0
Ø 14,5
M12x1
13
BALLUFF
7/8"-16 UN


53,3
Ø 26,0
49
44
M12x1
Ø 14,5
BALLUFF
7/8"-16 UN
13


53,5
48,5
49
44
M12x1
Ø 14,5
M12x1
BALLUFF
13


53,5
48,5
Ø 14,5
M12x1
13

**Universal use,
even under harsh conditions**

JUNCTION BLOCKS

Junction blocks from Balluff connect sensors and actuators to the controller. They are especially suited for all applications where coolants and lubricants are used and also are ideal for harsh conditions. The fully encapsulated housing offers a high degree of media resistance and an outstanding resistance to shock and vibrations.

The most important benefits

- Easy connections
- Low space requirements
- High media resistance and precision fit with metal screw inserts
- Flexible mounting options

		BPI 4M3 ...
Connection		Cable
Version		M8, 4x
Rated voltage	No LED	60 V AC/DC
	with LED	30 V DC
Rated current, port		3 A
Total current max.		8 A
Degree of protection		IP67
3-pin, no LED		BPI 4M3030-5K-B0-KPX60①-_ _ _②
3-pin, PNP-LED		BPI 4M303P-5K-B0-KPX60①-_ _ _②
3-pin, NPN-LED		-
4-pin, no LED		BPI 4M3040-5K-B0-KPXA0①-_ _ _②
4-pin, PNP-LED		BPI 4M304P-5K-B0-KPXA0①-_ _ _②
4-pin, NPN-LED		-
Approval/Conformity		CE, UL, EAC
For drawing see page		312

	BPI 6M3 ...	BPI 8M3 ...	BPI AM3 ...
	Cable	Cable	Cable
	M8, 6x	M8, 8x	M8, 10x
	60 V AC/DC	60 V AC/DC	60 V AC/DC
	30 V DC	30 V DC	30 V DC
	3 A	3 A	3 A
	8 A	8 A	8 A
	IP67	IP67	IP67
	BPI 6M3030-5K-B0-KPX80①-_ _ _②	BPI 8M3030-5K-B0-KPXA0①-_ _ _②	BPI AM3030-5K-B0-KPXC0①-_ _ _②
	BPI 6M303P-5K-B0-KPX80①-_ _ _②	BPI 8M303P-5K-B0-KPXA0①-_ _ _②	BPI AM303P-5K-B0-KPXC0①-_ _ _②
	-	-	-
	BPI 6M3040-5K-B0-KPXE0①-_ _ _②	BPI 8M3040-5K-B0-KPXK0①-_ _ _②	BPI AM3040-5K-B0-KPXP0①-_ _ _②
	BPI 6M304P-5K-B0-KPXE0①-_ _ _②	BPI 8M304P-5K-B0-KPXK0①-_ _ _②	BPI AM304P-5K-B0-KPXP0①-_ _ _②
	-	-	-
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	312, 313	313	314

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
KPX60	PUR	Black	2 × 0.75 mm² 4 × 0.34 mm²	–25...+80 °C	–5...+80 °C
KPX80	PUR	Black	2 × 0.75 mm² 6 × 0.34 mm²	–25...+80 °C	–5...+80 °C
KPXA0	PUR	Black	2 × 0.75 mm² 8 × 0.34 mm²	–25...+80 °C	–5...+80 °C
KPXC0	PUR	Black	2 × 0.75 mm² 10 × 0.34 mm²	–25...+80 °C	–5...+80 °C
KPXE0	PUR	Black	2 × 0.75 mm² 12 × 0.34 mm²	–25...+80 °C	–5...+80 °C
KPXK0	PUR	Black	2 × 0.75 mm² 16 × 0.34 mm²	–25...+80 °C	–5...+80 °C
KPXP0	PUR	Black	2 × 0.75 mm² 20 × 0.34 mm²	–25...+80 °C	–5...+80 °C

②	Cable length
030	3 m
050	5 m
100	10 m
150	15 m

Other cable lengths on request!

		BPI 4M3 ...
Connection		Male, M12, 8-pin
Version		M8, 4x
Rated voltage	No LED	30 V AC/DC
	with LED	30 V DC
Rated current, port		2 A
Total current max.		2 A
Degree of protection		IP67
Ambient temperature		–25...+80 °C
3-pin, no LED		BPI 4M3030-5K-B0-SM48T
3-pin, PNP-LED		BPI 4M303P-5K-B0-SM48T
3-pin, NPN-LED		-
4-pin, no LED		–
4-pin, PNP-LED		–
4-pin, NPN-LED		–
Approval/Conformity		CE, UL, EAC
For drawing see page		314

	BPI 4M3 ...	BPI 6M3 ...	BPI 6M3 ...
	Male, M12, 12-pin	Male, M12, 8-pin	Male, M12, 12-pin
	M8, 4x	M8, 6x	M8, 6x
	30 V AC/DC	30 V AC/DC	30 V AC/DC
	30 V DC	30 V DC	30 V DC
	1.5 A	2 A	1.5 A
	1.5 A	2 A	1.5 A
	IP67	IP67	IP67
	–25...+80 °C	–25...+80 °C	–25...+80 °C
	BPI 4M3030-5K-B0-SM4CT	BPI 6M3030-5K-B0-SM48T	BPI 6M3030-5K-B0-SM4CT
	BPI 4M303P-5K-B0-SM4CT	BPI 6M303P-5K-B0-SM48T	BPI 6M303P-5K-B0-SM4CT
	-	-	-
	BPI 4M3040-5K-B0-SM4CT	–	–
	BPI 4M304P-5K-B0-SM4CT	–	–
	-	–	–
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	314	315	316

Connection		
Version		
Rated voltage	No LED	
	with LED	
Rated current, port		
Total current max.		
Degree of protection		
Ambient temperature		
3-pin, no LED		
3-pin, PNP-LED		
3-pin, NPN-LED		
Approval/Conformity		
For drawing see page		

	BPI 8M3 ...	BPI AM3 ...
	Male, M12, 12-pin	Male, M12, 12-pin
	M8, 8x	M8, 10x
	30 V AC/DC	30 V AC/DC
	30 V DC	30 V DC
	1.5 A	1.5 A
	1.5 A	1.5 A
	IP67	IP67
	–25...+80 °C	–25...+80 °C
	BPI 8M3030-5K-B0-SM4CT	BPI AM3030-5K-B0-SM4CT
	BPI 8M303P-5K-B0-SM4CT	BPI AM303P-5K-B0-SM4CT
	-	-
	CE, UL, EAC	CE, UL, EAC
	316	316

Connection		
Version		
Rated voltage	No LED	
	with LED	
Rated current, port		
Total current max.		
Degree of protection		
3-pin + PE, no LED		
3-pin + PE, PNP-LED		
3-pin + PE, NPN-LED		
4-pin + PE, no LED		
4-pin + PE, PNP-LED		
4-pin + PE, NPN-LED		
Approval/Conformity		
For drawing see page		

	BPI 4M4 ...	BPI 8M4 ...
	Cable	Cable
	M12, 4x	M12, 8x
	60 V AC/DC	60 V AC/DC
	30 V DC	30 V DC
	4 A	4 A
	8 A	8 A
	IP67	IP67
	BPI 4M4A40-2K-B0-KPX70①-_ _ _②	BPI 8M4A40-2K-B0-KPXB0①-_ _ _②
	BPI 4M4A4P-2K-B0-KPX70①-_ _ _②	BPI 8M4A4P-2K-B0-KPXB0①-_ _ _②
	-	-
	BPI 4M4A50-2K-B0-KPXB0①-_ _ _②	BPI 8M4A50-2K-B0-KPXL0①-_ _ _②
	BPI 4M4A5P-2K-B0-KPXB0①-_ _ _②	BPI 8M4A5P-2K-B0-KPXL0①-_ _ _②
	-f	-
	CE, UL, EAC	CE, UL, EAC
	317	317

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
KPX70	PUR	Black	3 × 1.0 mm² 4 × 0.34 mm²	–25...+80 °C	–5...+80 °C
KPXB0	PUR	Black	3 × 1.0 mm² 8 × 0.34 mm²	–25...+80 °C	–5...+80 °C
KPXL0	PUR	Black	3 × 1.0 mm² 19 × 0.34 mm²	–25...+80 °C	–5...+80 °C

②	Cable length
030	3 m
050	5 m
100	10 m
150	15 m

Other cable lengths on request!

		BPI 4M4 ...	
Connection		Male, M23, 12-pin	
Version		M12, 4x	
Rated voltage	No LED	60 V AC/DC	
	with LED	30 V DC	
Rated current, port		4 A	
Total current max.		8 A	
Degree of protection		IP67	
Ambient temperature		–25...+80 °C	
3-pin + PE, no LED		BPI 4M4A40-2K-B0-SM6CT	
3-pin + PE, PNP-LED		BPI 4M4A4P-2K-B0-SM6CT	
3-pin + PE, NPN-LED		-	
4-pin + PE, no LED		–	
4-pin + PE, PNP-LED		–	
4-pin + PE, NPN-LED		–	
Approval/Conformity		CE, UL, EAC	
For drawing see page		317	

	BPI 4M4 ...	BPI 8M4 ...	BPI 8M4 ...
	Male, M23, 19-pin	Male, M23, 12-pin	Male, M23, 19-pin
	M12, 4x	M12, 8x	M12, 8x
	60 V AC/DC	60 V AC/DC	60 V AC/DC
	30 V DC	30 V DC	30 V DC
	4 A	4 A	4 A
	8 A	8 A	8 A
	IP67	IP67	IP67
	–25...+80 °C	–25...+80 °C	–25...+80 °C
	–	BPI 8M4A40-2K-B0-SM6CT	–
	–	BPI 8M4A4P-2K-B0-SM6CT	–
	–	-	–
	BPI 4M4A50-2K-B0-SM6LT	–	BPI 8M4A50-2K-B0-SM6LT
	BPI 4M4A5P-2K-B0-SM6LT	–	BPI 8M4A5P-2K-B0-SM6LT
	-	–	-
	CE, UL, EAC	CE, UL, EAC	CE, UL, EAC
	318	318	318

Connection	
Version	
Rated voltage	
Rated current, port	
Total current max.	
Degree of protection	
Ambient temperature	
3-pin with PE, PNP-LED	
4-pin with PE, PNP-LED	
Approval/Conformity	
For drawing see page	

	BPI 4M4 ...	BPI 8M4 ...
	Hood	Hood
	M12, 4x	M12, 8x
	30 V DC	30 V DC
	4 A	4 A
	8 A	8 A
	IP67	IP67
	–25...+80 °C	–25...+80 °C
	BPI 4M4A4P-2K-00-TPS9	BPI 8M4A4P-2K-00-TPSE
	BPI 4M4A5P-2K-00-TPSG	BPI 8M4A5P-2K-00-TPSN
	CE, EAC	CE, EAC
	319	319

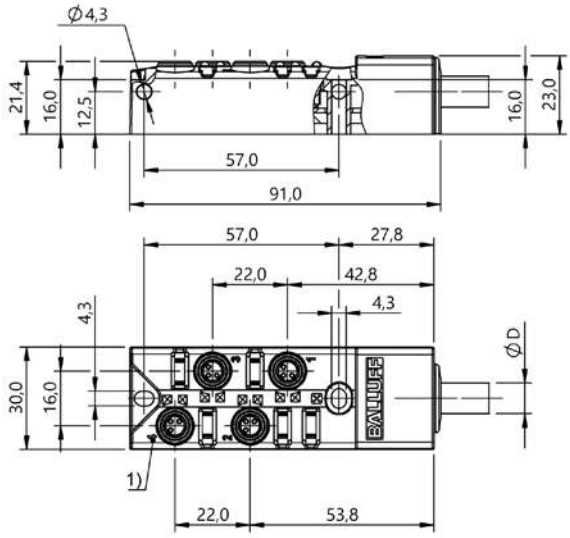
	BPI 4M4 ...	BPI XXXX ...	
Connection	Hood	Hood with cable for base module without hood	
Version	M12, 4x	4-way	
Rated voltage	30 V DC	–	
Rated current, port	4 A	–	
Total current max.	8 A	–	
Degree of protection	IP67	–	
Ambient temperature	–25...+80 °C	–	
3-pin with PE, PNP-LED	BPI 4M4A4P-2K-00-TP09	–	
4-pin with PE, PNP-LED	BPI 4M4A5P-2K-00-TP0G	–	
3-pin with PE, no potential isolation	–	BPI T009-K-00-KPX70①-_ _ _②	
4-pin with PE, no potential isolation	–	BPI T00G-K-00-KPXB0①-_ _ _②	
4-pin with PE, with potential isolation	–	BPI T00G-K-00-KPXD0①-_ _ _②	
Universal	–	–	
Approval/Conformity	CE, EAC	CE, EAC	
For drawing see page	319	320	

	BPI 8M4 ...	BPI XXX ...	BPI XXX ...
	Hood	Hood with cable for base module without hood	Hood without cable for base module without hood
	M12, 8x	8-way	Universal
	30 V DC	–	–
	4 A	–	–
	8 A	–	–
	IP67	–	–
	–25...+80 °C	–	–
	BPI 8M4A4P-2K-00-TP0E	–	–
	BPI 8M4A5P-2K-00-TP0N	–	–
	–	BPI T00E-K-00-KPXB0①-_ _ _②	–
	–	BPI T00N-K-00-KPXL0①-_ _ _②	–
	–	BPI T00N-K-00-KPXN0①-_ _ _②	–
	–	–	BPI T0SN-K-00
	CE, EAC	CE, EAC	CE, EAC
	320	320	320

①	Material	Color	Number of conductors × conductor cross-section	Cable temperature fixed in place	Cable temperature flexed
KPX70	PUR	Black	3 × 1.0 mm² 4 × 0.34 mm²	–25...+80 °C	–5...+80 °C
KPXB0	PUR	Black	3 × 1.0 mm² 8 × 0.34 mm²	–25...+80 °C	–5...+80 °C
KPXL0	PUR	Black	3 × 1.0 mm² 19 × 0.34 mm²	–25...+80 °C	–5...+80 °C
KPXD0	PUR	Black	5 × 1.0 mm² 8 × 0.34 mm²	–25...+80 °C	–5...+80 °C
KPXN0	PUR	Black	5 × 1.0 mm² 19 × 0.34 mm²	–25...+80 °C	–5...+80 °C

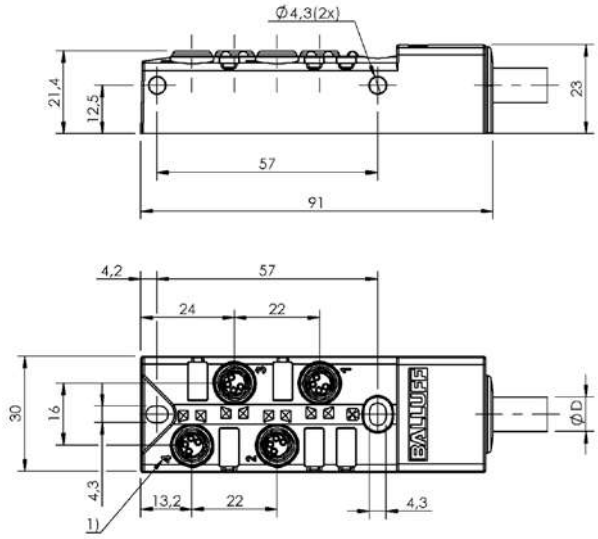
②	Cable length
030	3 m
050	5 m
100	10 m
150	15 m

Other cable lengths on request!



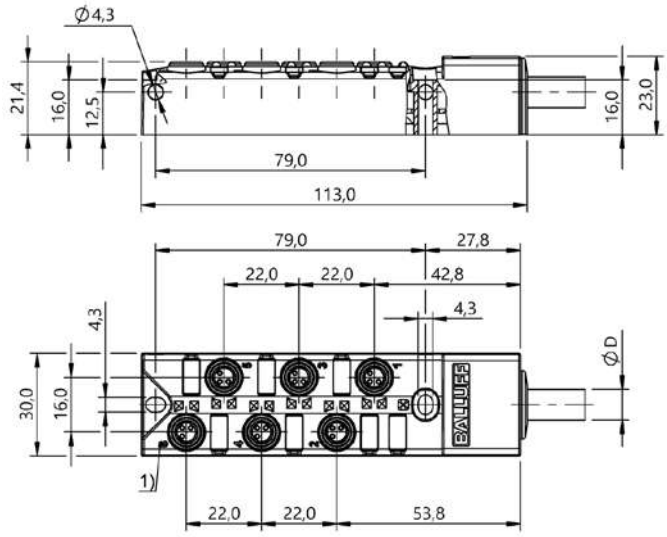
1) Slot numbering

BPI 4M3030-5K-B0-KPX60-...
BPI 4M303P-5K-B0-KPX60-...
BPI 4M303N-5K-B0-KPX60-...



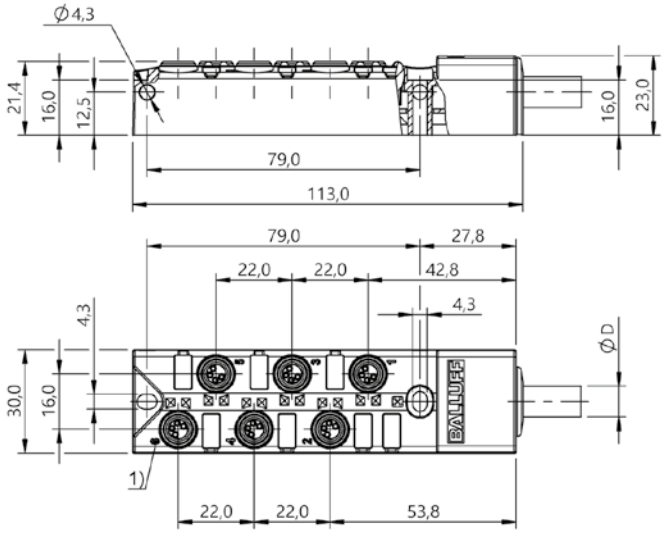
1) Slot numbering

BPI 4M3040-5K-B0-KPXA0-...
BPI 4M304P-5K-B0-KPXA0-...
BPI 4M304N-5K-B0-KPXA0-...



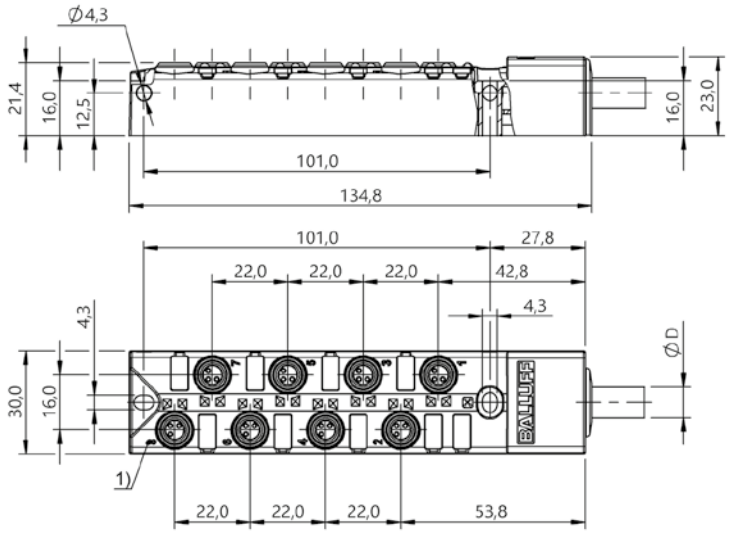
1) Slot numbering

BPI 6M3030-5K-B0-KPX80-...
BPI 6M303P-5K-B0-KPX80-...
BPI 6M303N-5K-B0-KPX80-...



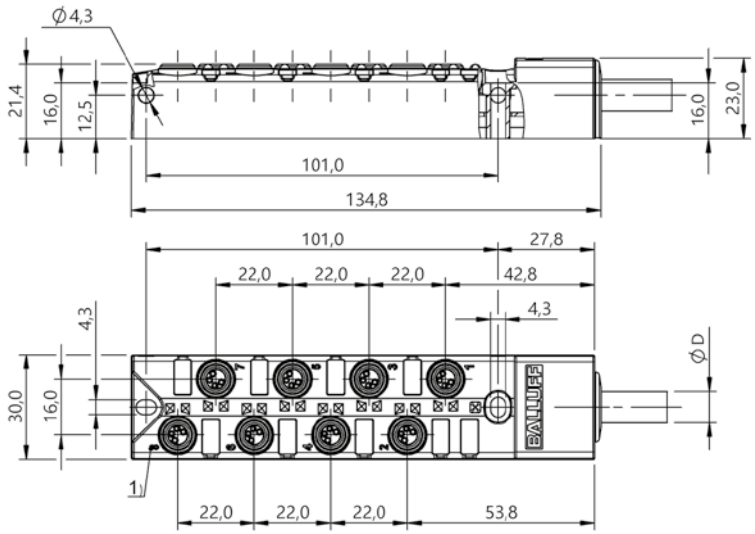
1) Slot numbering

BPI 6M3040-5K-B0-KPXE0-...
BPI 6M304P-5K-B0-KPXE0-...
BPI 6M304N-5K-B0-KPXE0-...



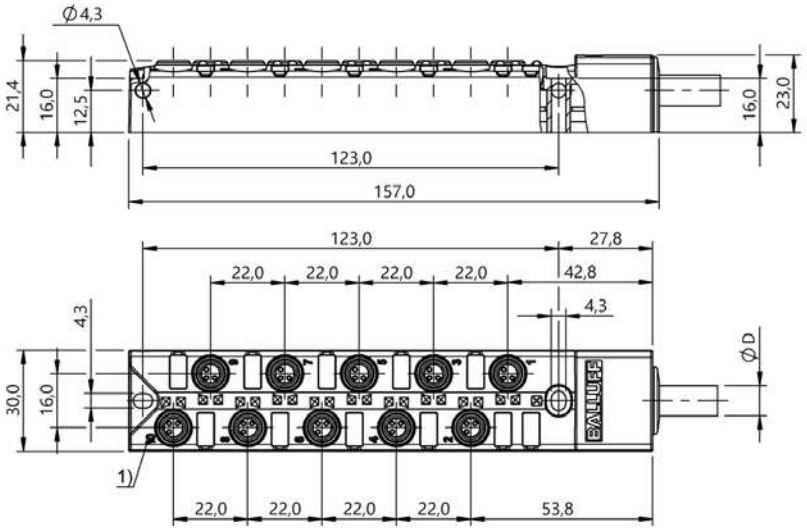
1) Slot numbering

BPI 8M3030-5K-B0-KPXA0-...
BPI 8M303P-5K-B0-KPXA0-...
BPI 8M303N-5K-B0-KPXA0-...



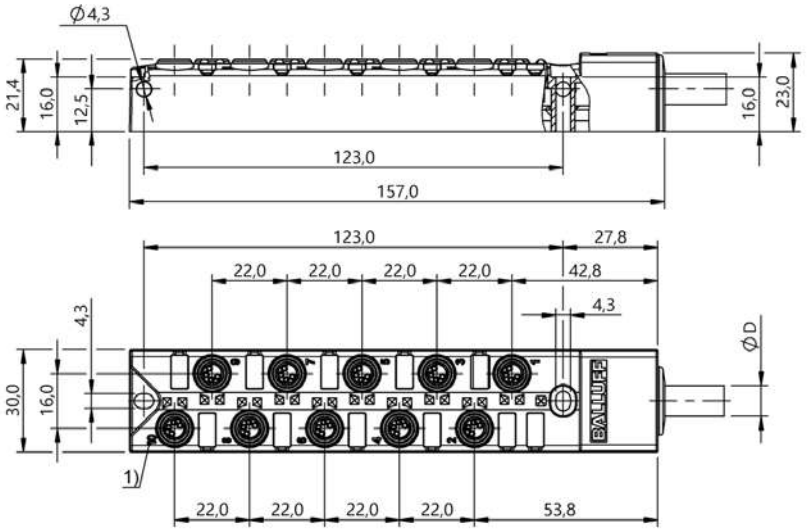
1) Slot numbering

BPI 8M3040-5K-B0-KPXK0-...
BPI 8M304P-5K-B0-KPXK0-...
BPI 8M304N-5K-B0-KPXK0-...



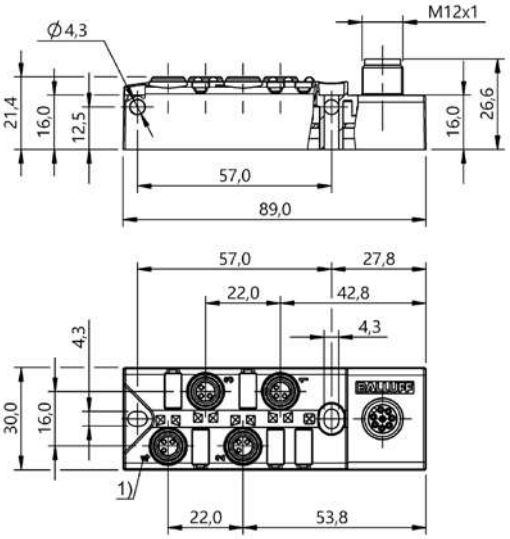
1) Slot numbering

BPI AM3030-5K-B0-KPXC0-...
BPI AM303P-5K-B0-KPXC0-...
BPI AM303N-5K-B0-KPXC0-...



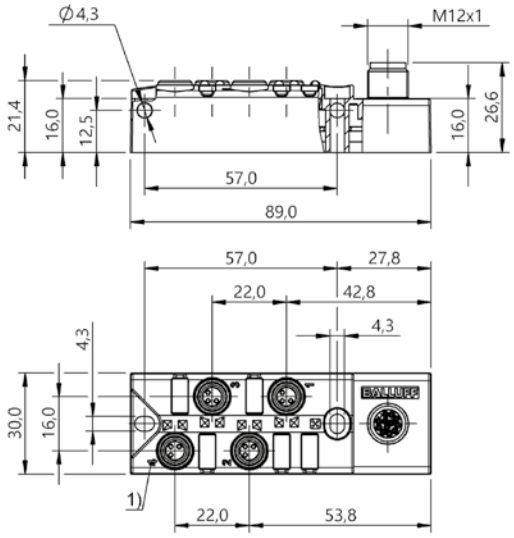
1) Slot numbering

BPI AM3040-5K-B0-KPXP0-...
BPI AM304P-5K-B0-KPXP0-...
BPI AM304N-5K-B0-KPXP0-...



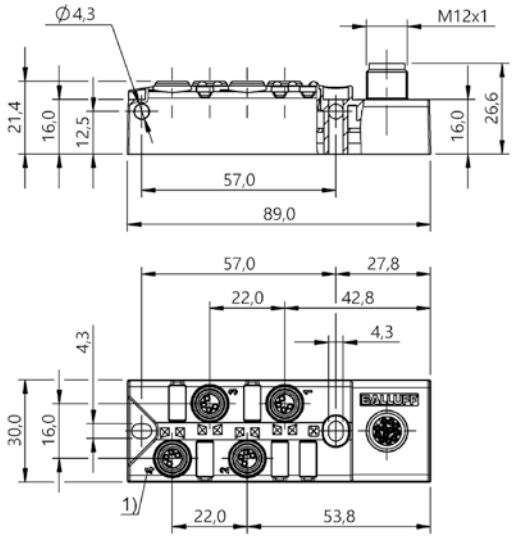
1) Slot numbering

BPI 4M3030-5K-B0-SM48T
BPI 4M303P-5K-B0-SM48T



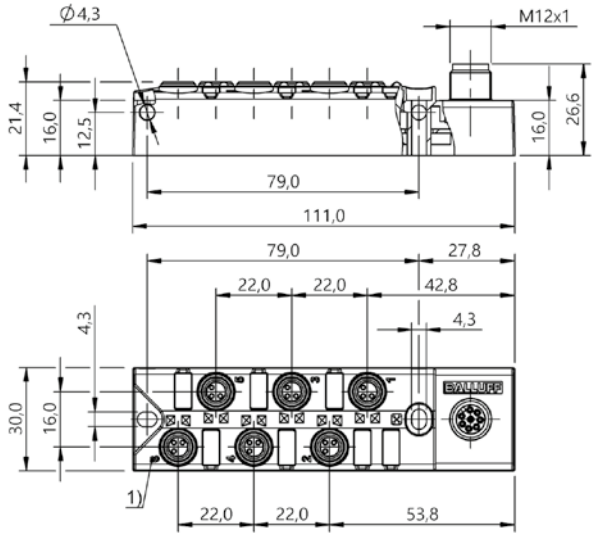
1) Slot numbering

BPI 4M3030-5K-B0-SM4CT
BPI 4M303P-5K-B0-SM4CT



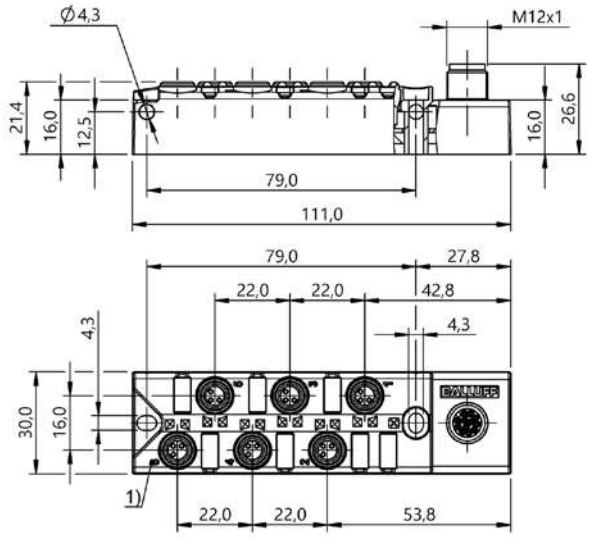
1) Slot numbering

BPI 4M3040-5K-B0-SM4CT
BPI 4M304P-5K-B0-SM4CT



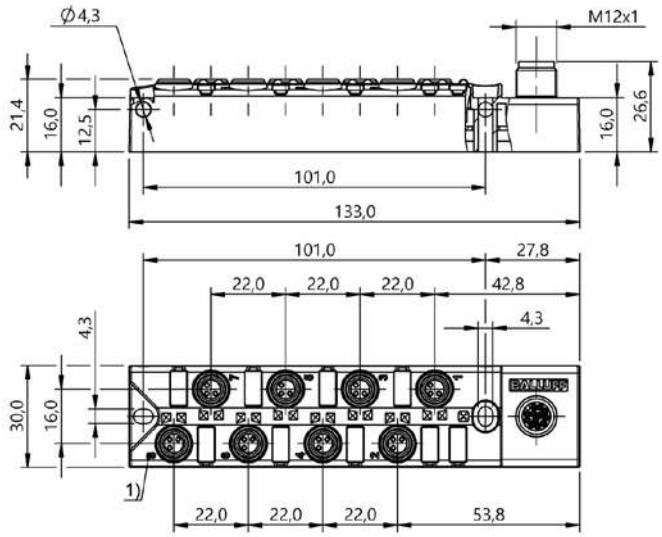
1) Slot numbering

BPI 6M3030-5K-B0-SM48T
BPI 6M303P-5K-B0-SM48T



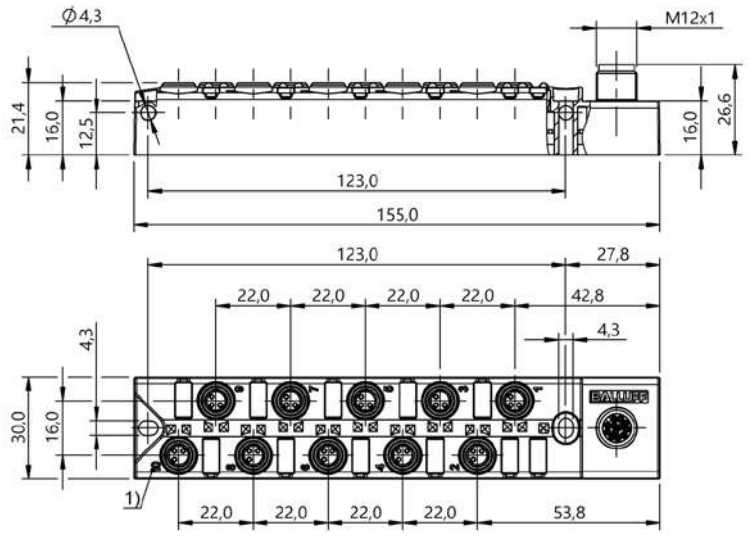
1) Slot numbering

BPI 6M3030-5K-B0-SM4CT
BPI 6M303P-5K-B0-SM4CT



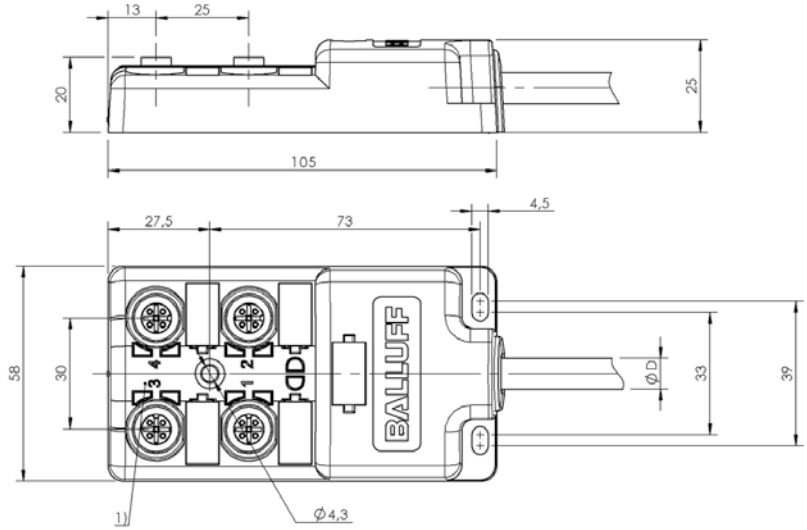
1) Slot numbering

BPI 8M3030-5K-B0-SM4CT
BPI 8M303P-5K-B0-SM4CT



1) Slot numbering

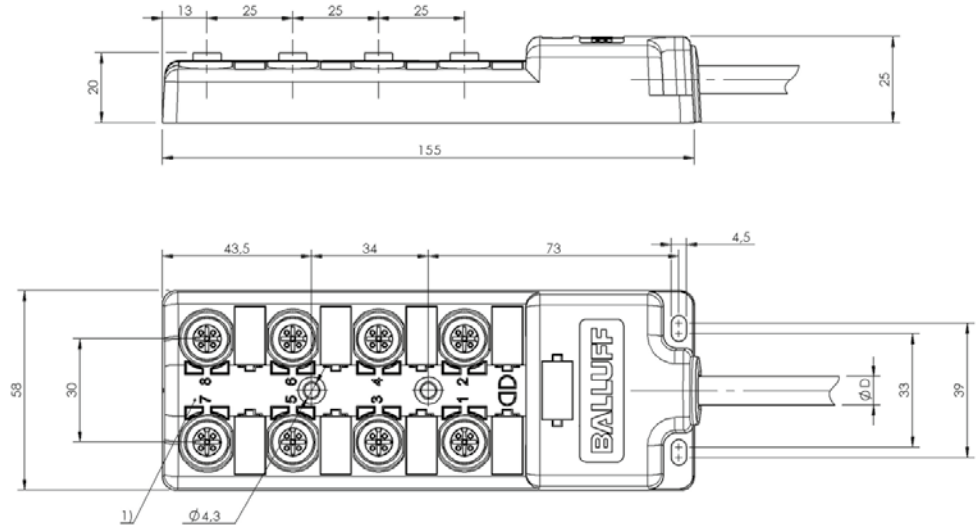
BPI AM3030-5K-B0-SM4CT
BPI AM303P-5K-B0-SM4CT



1) Slot numbering

BPI 4M4A40-2K-B0-KPX70-...
BPI 4M4A4P-2K-B0-KPX70-...
BPI 4M4A4N-2K-B0-KPX70-...

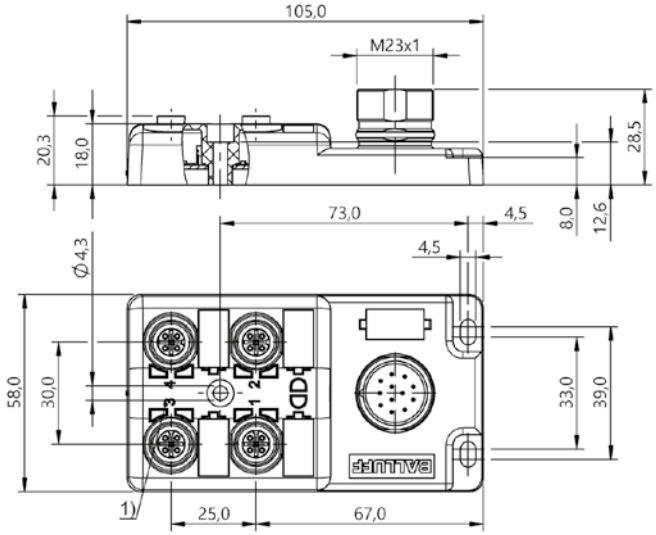
BPI 4M4A50-2K-B0-KPXB0-...
BPI 4M4A5P-2K-B0-KPXB0-...
BPI 4M4A5N-2K-B0-KPXB0-...



1) Slot numbering

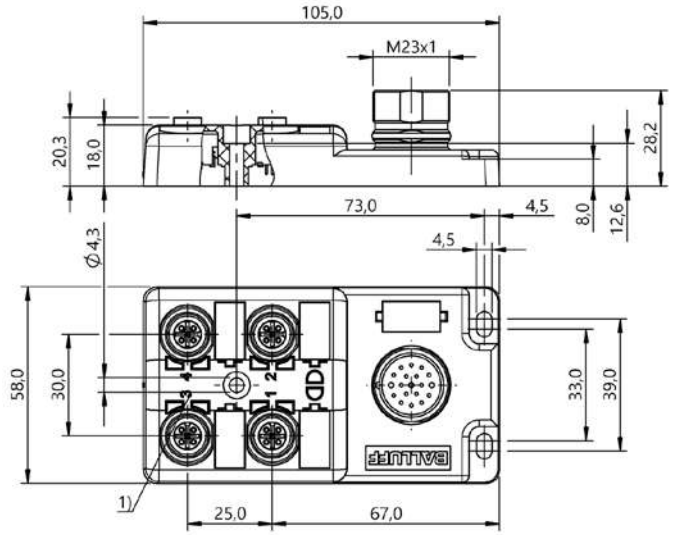
BPI 8M4A40-2K-B0-KPXB0-...
BPI 8M4A4P-2K-B0-KPXB0-...
BPI 8M4A4N-2K-B0-KPXB0-...

BPI 8M4A50-2K-B0-KPXL0-...
BPI 8M4A5P-2K-B0-KPXL0-...
BPI 8M4A5N-2K-B0-KPXL0-...



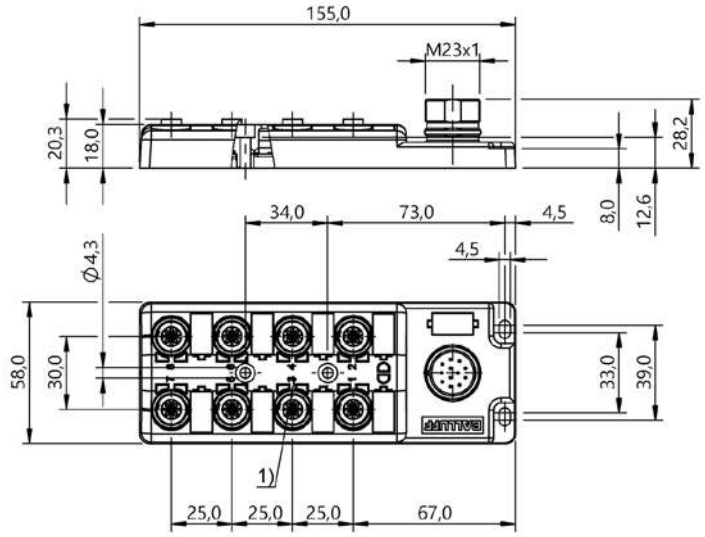
1) Slot numbering

BPI 4M4A40-2K-B0-SM6CT
BPI 4M4A4P-2K-B0-SM6CT



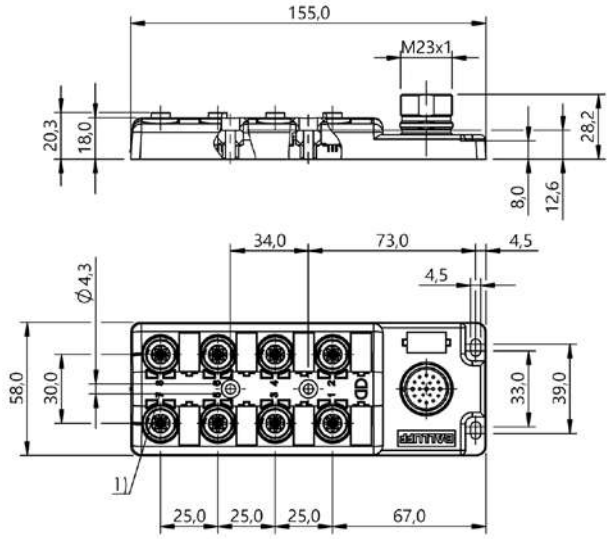
1) Slot numbering

BPI 4M4A50-2K-B0-SM6LT
BPI 4M4A5P-2K-B0-SM6LT



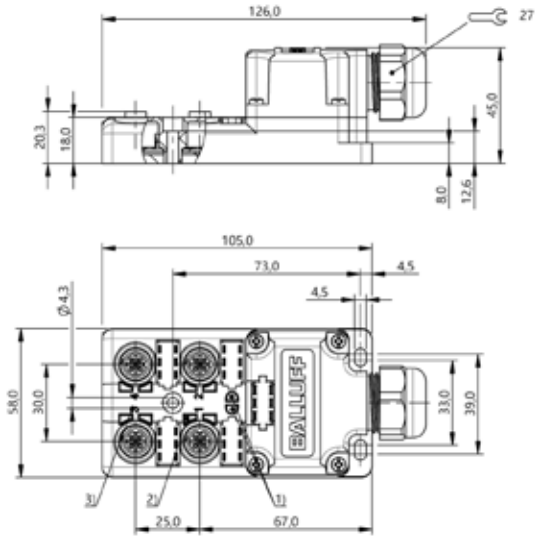
1) Slot numbering

BPI 8M4A40-2K-B0-SM6CT
BPI 8M4A4P-2K-B0-SM6CT



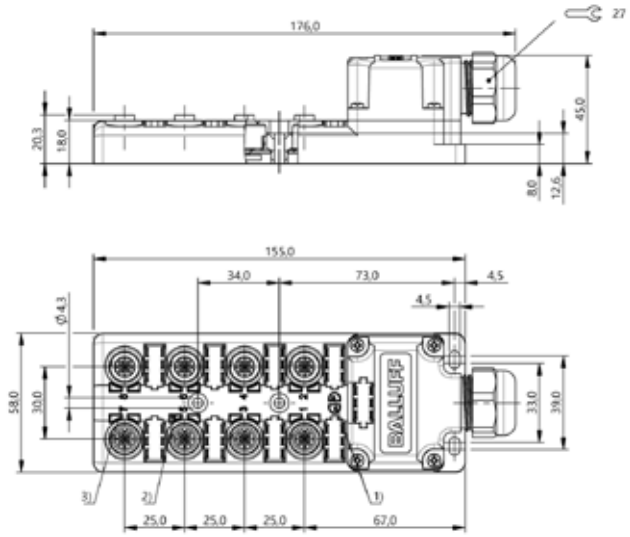
1) Slot numbering

BPI 8M4A50-2K-B0-SM6LT
BPI 8M4A5P-2K-B0-SM6LT



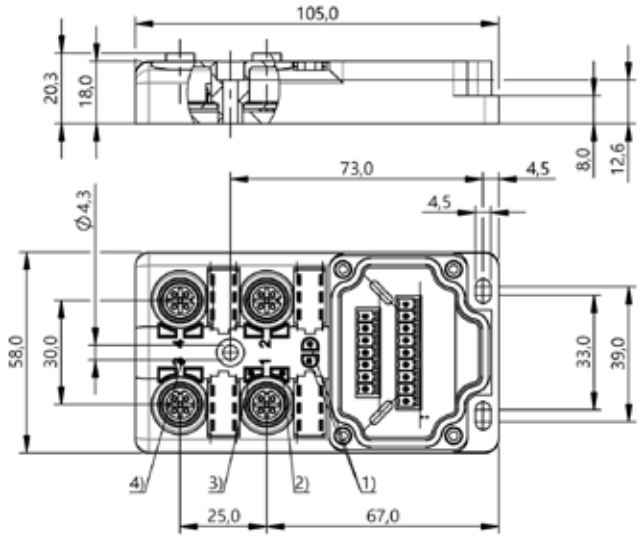
1) Power indicator
2) LED yellow for S1 on PIN 4
3) Slot numbering

BPI 4M4A4P-2K-00-TPS9
BPI 4M4A5P-2K-00-TPSG



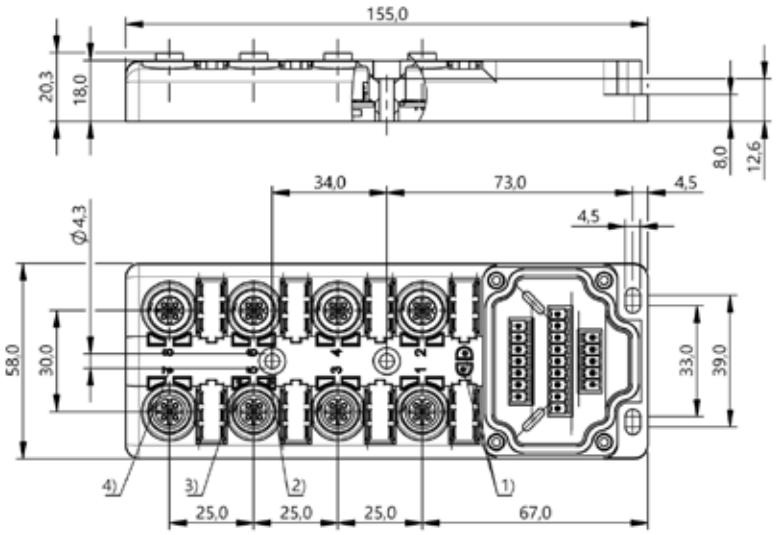
1) Power indicator
2) LED yellow for S1 on PIN 4
3) Slot numbering

BPI 8M4A4P-2K-00-TPSE
BPI 8M4A5P-2K-00-TPSN



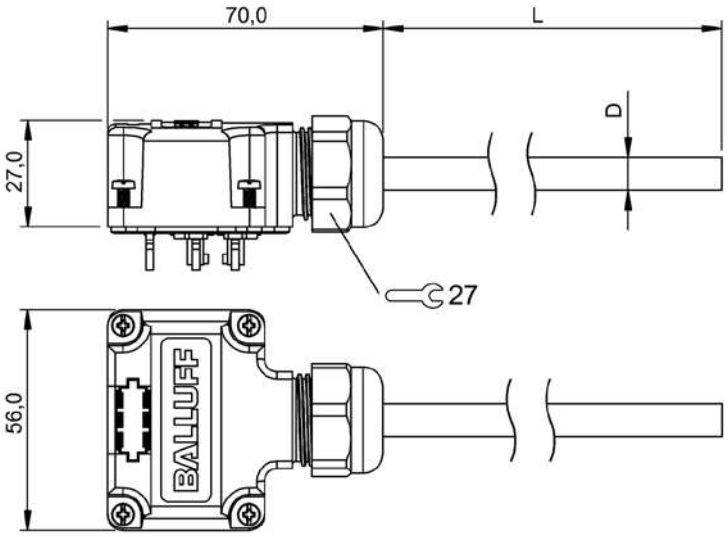
1) Power indicator
2) LED yellow for S1 on PIN 4
3) Slot numbering

BPI 4M4A4P-2K-00-TP09
BPI 4M4A5P-2K-00-TP0G

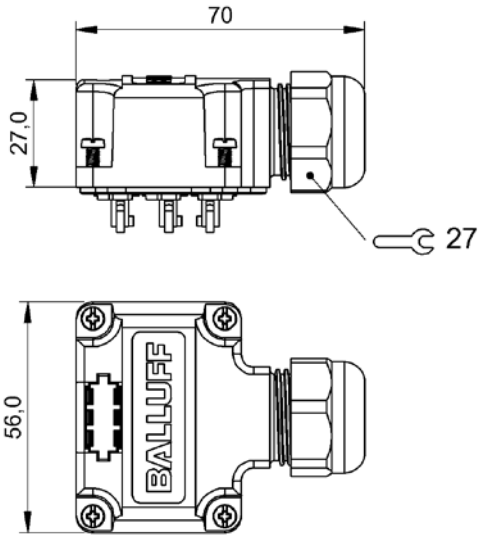


1) Power indicator
2) LED yellow for S1 on PIN 4
3) Slot numbering

BPI 8M4A4P-2K-00-TP0E
BPI 8M4A5P-2K-00-TP0N



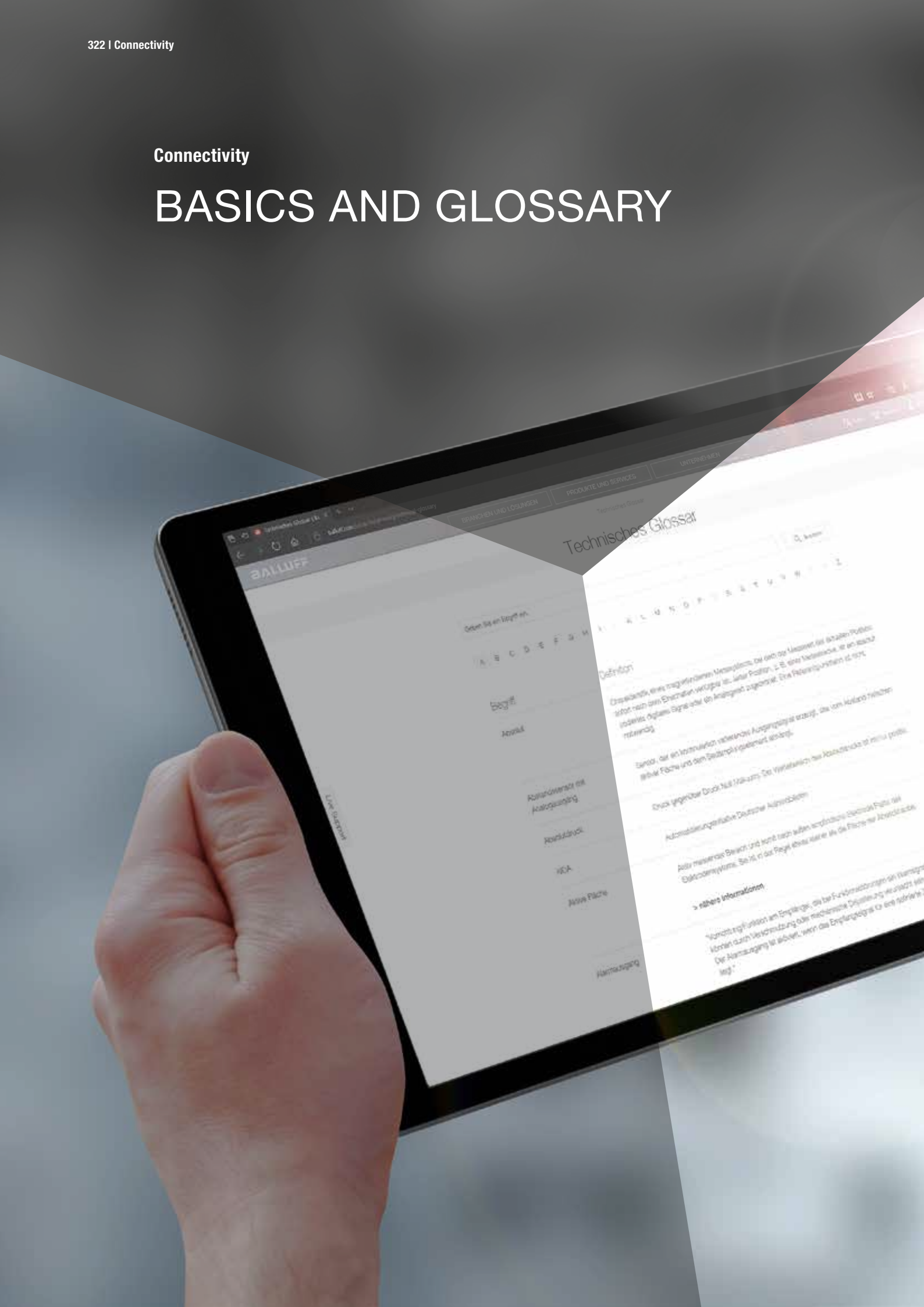
BPI T009-K-00-KPX70-...
BPI T00G-K-00-KPXB0-...
BPI T00G-K-00-KPXD0-...
BPI T00E-K-00-KPXB0-...
BPI T00N-K-00-KPXL0-...
BPI T00N-K-00-KPXN0-...



BPI T0SN-K-00

Connectivity

BASICS AND GLOSSARY



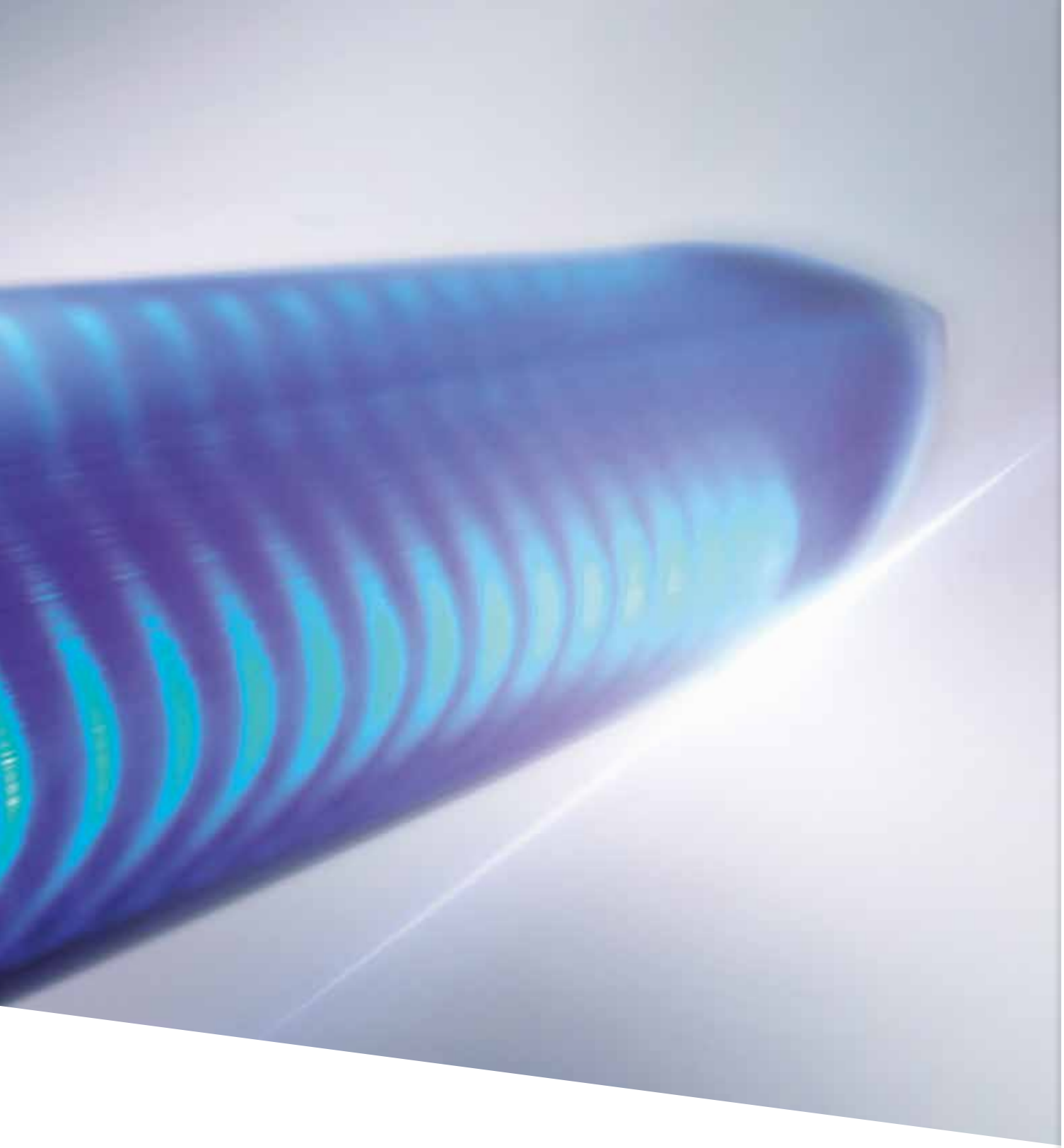
Connection	Indication of the form factor, coding and plug type
Wire fastening	How the connection of the leads in the plug is accomplished
Rated voltage	The maximum value of the electrical voltage in normal operation
Rated current	The electrical amperage which is assigned to an electrical device for a specified operating condition
Power-on indicator	Function indicator
Piercing technology	Piercing technology is a contact method where piercing connectors penetrate the insulation, move between the wires of the cable, and thus establish a secure contact with the cable
HDC cables	Cables for special applications, e.g. welding areas
Cable break	Interruption of the cable between the device and the controller due to mechanical damage
Cross-section	Cross-section of the cable, e.g. copper in mm^2 or AWG (American Wire Gauge)
Solder connections	Connection technique in which the conductor and connector are soldered together
Insulation displacement connection technology	Connection technique in which the conductor and connector are connected by means of a displacement contact through the wire insulation
Screw terminals	Connection technique in which the conductor and connector are connector by means of a clamp

Human Machine Interfaces

All the information you need at a glance

HUMAN MACHINE INTERFACES

innovating automation



With our signaling and display devices, you know at all times what/where things stand with production and exactly where a tool is located.
You can reliably monitor the state of machines and systems and display the sensor output signals.

Your Balluff solutions

- Signaling and display devices
- Monitors
- Displays

Capture operating status with displays and SmartLight

SIGNALING AND DISPLAY DEVICES

Our displays and the SmartLight LED stack light display physical variables. They allow you to know the operating status of your machine at a glance. The displays give you the choice between analog, SSI and pulse inputs. The SmartLight visualizes progressions and trends, with the special advantage that you can correlate different colors and modes without any mechanical modifications. Through the IO-Link interface, it is easy to install and configure.

The most important benefits

- Flexible
- Easy to install
- Displays for analog, SSI or pulse input signal
- SmartLight with IO-Link and individually correlated colors and modes



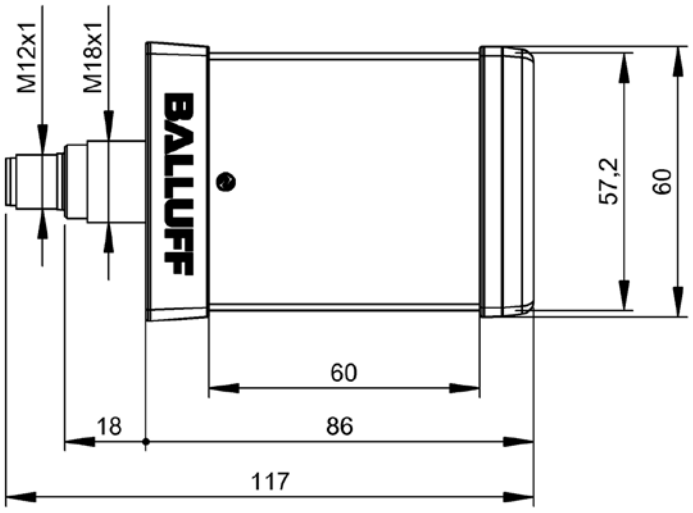
	BNI007T BNI IOL-800-000-Z036	BNI0087 BNI IOL-800-000-Z037	BNI007F BNI IOL-801-000-Z036	
Principle of operation	Indicator light	Indicator light with sound module	Indicator light	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection	M12x1 connector, 4-pin	M12x1 connector, 4-pin	M12x1 connector, 4-pin	
Segments, number max.	1	1	3	
Predefined colors	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable	
Function indicator	Runlight Mode, Segment Mode, Flexi-Mode	Runlight Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	
Volume max.	—	95 dB/m	—	
Setting	Function indicator	Function indicator, Volume	Function indicator	
Additional function	—	—	—	
Dimension	60 x 60 x 117 mm	60 x 60 x 138.5 mm	60 x 60 x 213 mm	
Housing material	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc	
Mounting	Screws M18	Screws M18	Screws M18	
Ambient temperature	-5...50 °C	-5...50 °C	-5...50 °C	
Protection degree	IP65	IP30	IP65	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	5 ms	5 ms	5 ms	
Process data in	—	—	—	
Process data out	1 bytes	1 bytes	2 bytes	
Productview	Page 570	Page 570	Page 570	



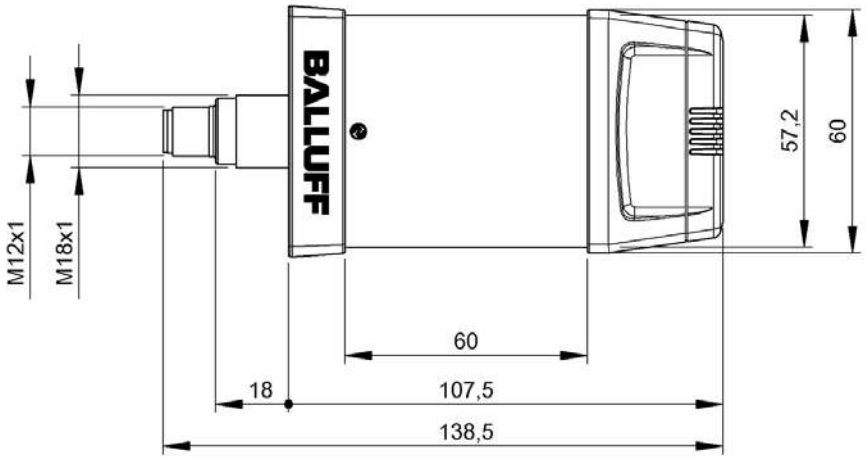


	BNI0088 BNI IOL-801-102-Z036	BNI0086 BNI IOL-801-000-Z037	BNI008A BNI IOL-801-102-Z037	BNI0072 BNI IOL-802-000-Z036	BNI0082 BNI IOL-802-102-Z036
	Indicator light	Indicator light with sound module	Indicator light with sound module	Indicator light	Indicator light
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
	M12x1 connector, 4-pin	M12x1 connector, 4-pin	M12x1 connector, 4-pin	M12x1 connector, 4-pin	M12x1 connector, 4-pin
	3	3	3	5	5
	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable
	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode
	—	95 dB/m	95 dB/m	—	—
	Function indicator	Function indicator, Volume	Function indicator, Volume	Function indicator	Function indicator
	Expanded process data	—	Expanded process data	—	Expanded process data
	60 x 60 x 213 mm	60 x 60 x 234.5 mm	60 x 60 x 234.5 mm	60 x 60 x 309 mm	60 x 60 x 309 mm
	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc
	Screws M18	Screws M18	Screws M18	Screws M18	Screws M18
	-5...50 °C	-5...50 °C	-5...50 °C	-5...50 °C	-5...50 °C
	IP65	IP30	IP30	IP65	IP65
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	7.2 ms	5 ms	7.2 ms	5 ms	7.2 ms
	1 bytes	—	1 bytes	—	1 bytes
	8 bytes	3 bytes	8 bytes	3 bytes	8 bytes
	Page 571	Page 571	Page 571	Page 571	Page 571

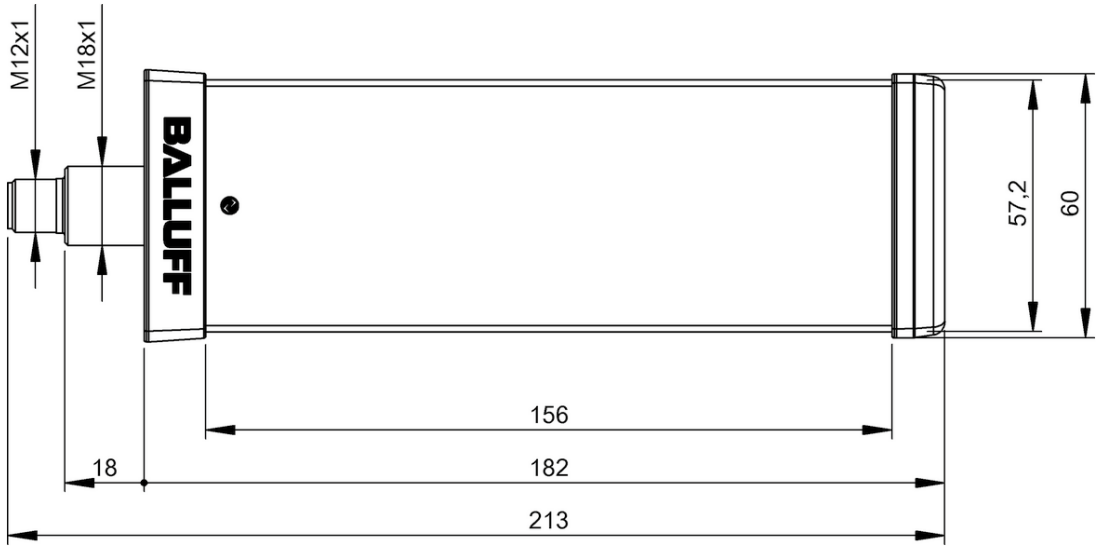
	BNI0083 BNI IOL-802-000-Z037	BNI0085 BNI IOL-802-102-Z037		
Principle of operation	Indicator light with sound module	Indicator light with sound module		
Interface	IO-Link 1.1	IO-Link 1.1		
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC		
Connection	M12x1 connector, 4-pin	M12x1 connector, 4-pin		
Segments, number max.	5	5		
Predefined colors	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable		
Function indicator	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode		
Volume max.	95 dB/m	95 dB/m		
Setting	Function indicator, Volume	Function indicator, Volume		
Additional function	—	Expanded process data		
Dimension	60 x 60 x 330.5 mm	60 x 60 x 330.5 mm		
Housing material	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc		
Mounting	Screws M18	Screws M18		
Ambient temperature	-5...50 °C	-5...50 °C		
Protection degree	IP30	IP30		
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)		
Process data cycle min.	5 ms	7.2 ms		
Process data in	—	1 bytes		
Process data out	3 bytes	8 bytes		
Productview	Page 572	Page 572		



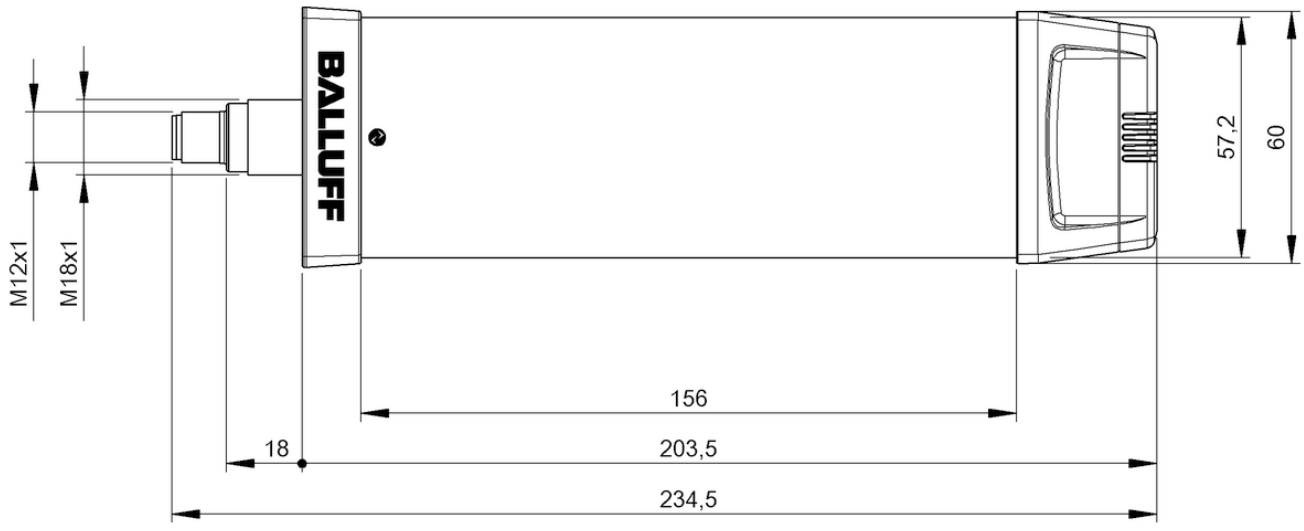
BNI007T



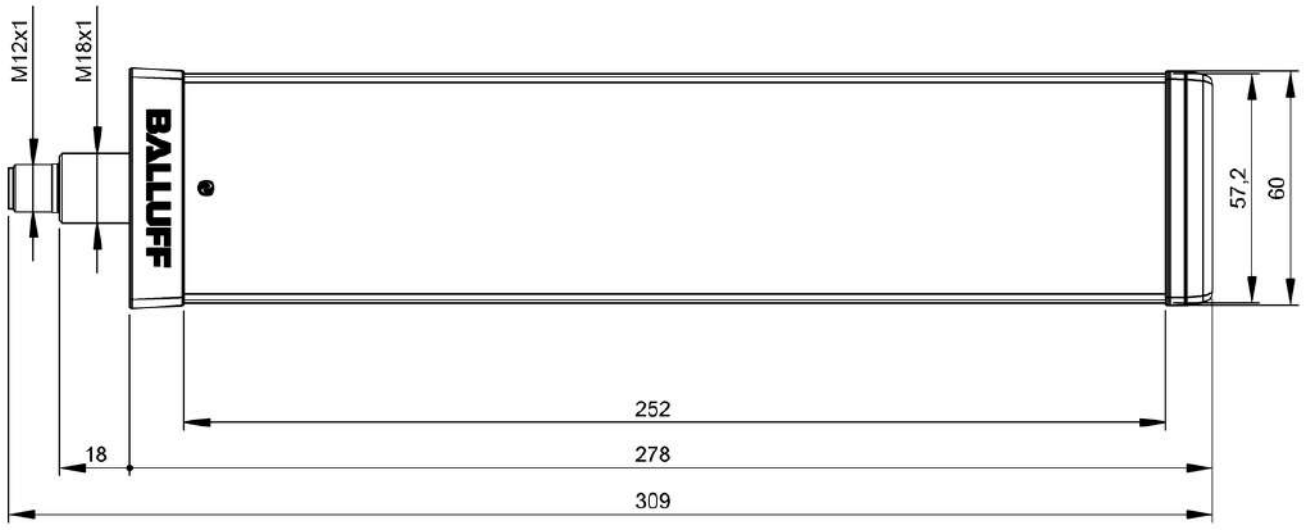
BNI0087



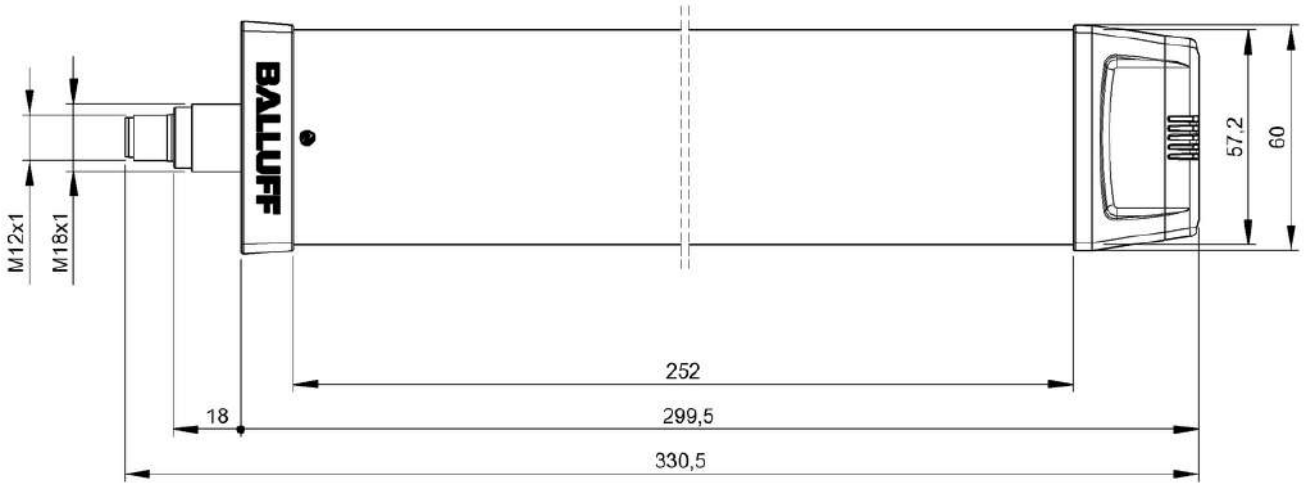
BNI007F, BNI0088



BNI0086, BNI008A



BNI0072, BNI0082



BNI0083, BNI0085

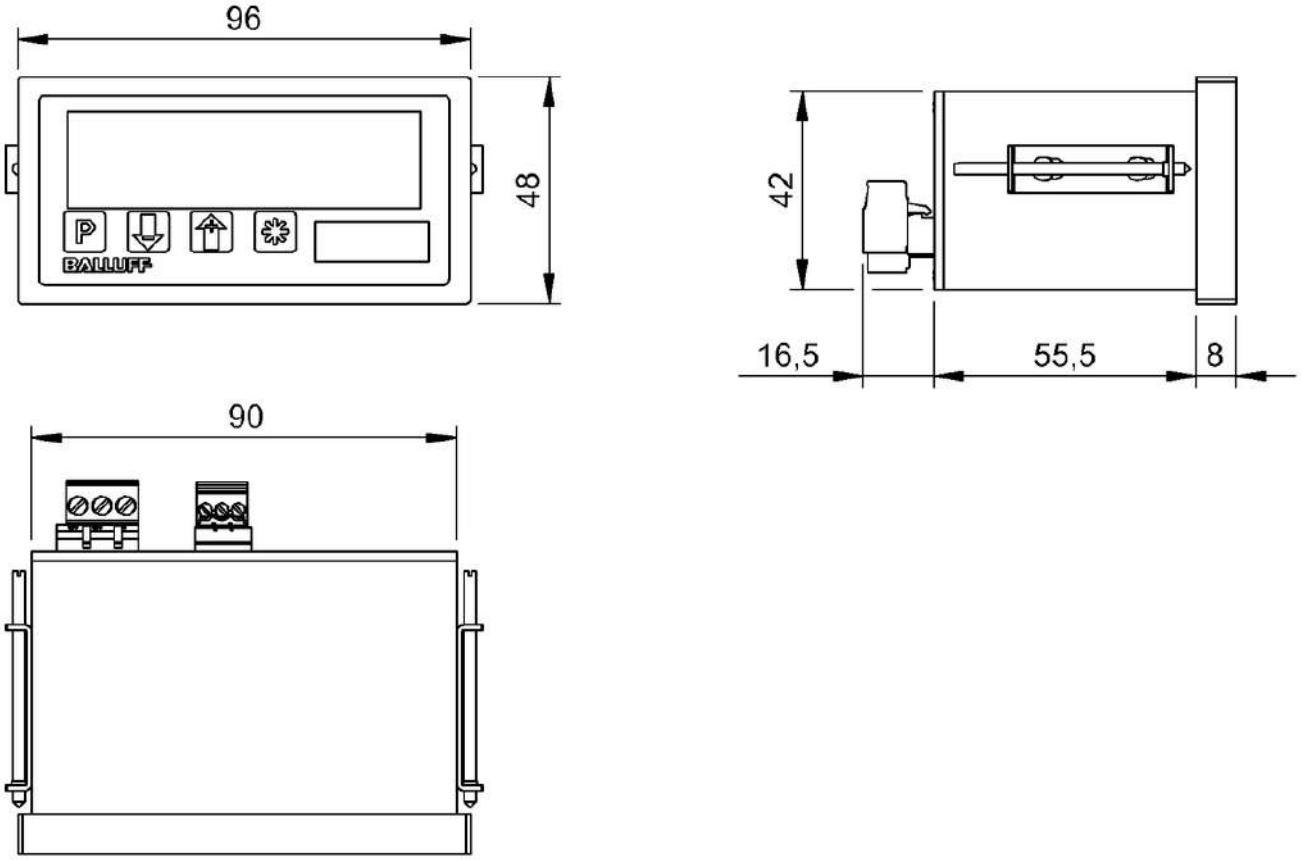
BNI00CZ, BNI00E0



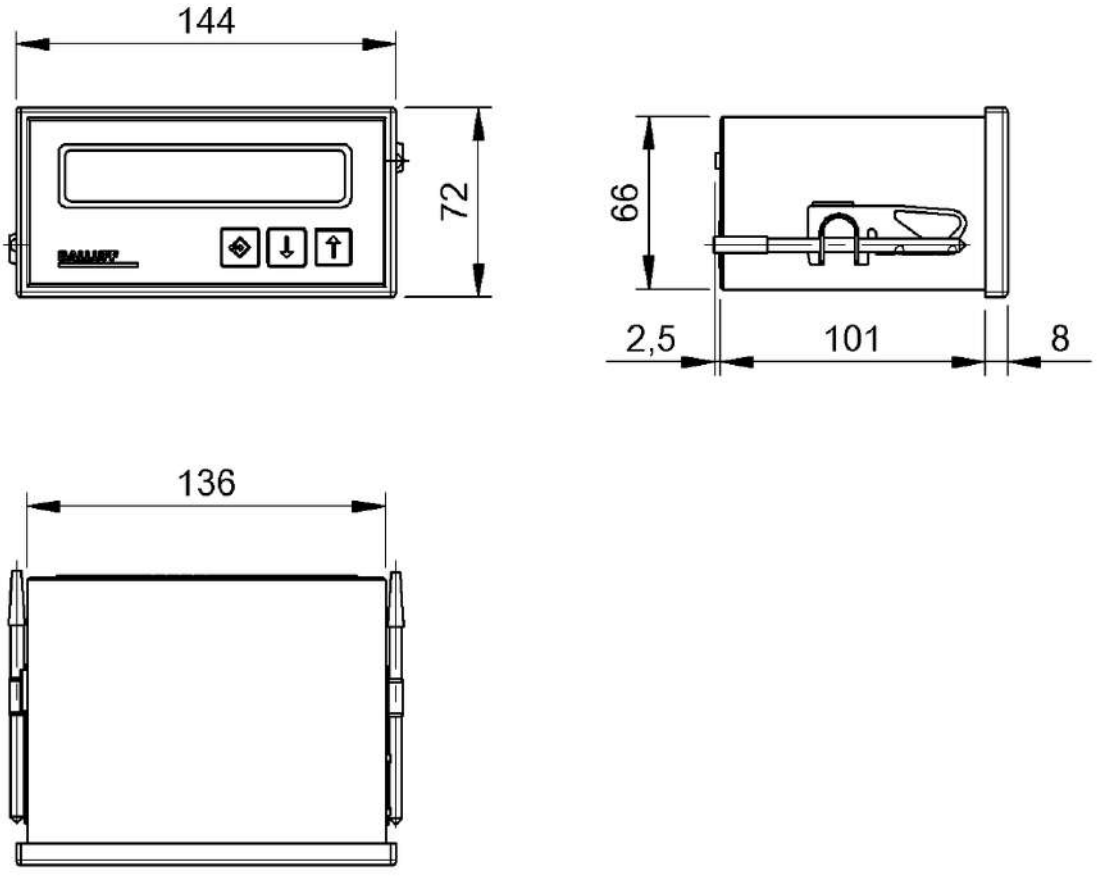
	BAE006K BDD-UM 3023	BAE0067 BDD-AM 10-1-P	BAE0069 BDD-AM 10-1-SSD	
Function	Analog value display	display module	display module	
Display	4 characters, red, LED 7-segment	7 1/2 characters, red, LED 7-segment	7 1/2 characters, red, LED 7-segment	
Dimension	72 x 48 x 96 mm	112 x 72 x 144 mm	112 x 72 x 144 mm	
Principle of operation	Display unit	Display unit	Display unit	
Rated input voltage	18…36 V DC	10…32 V DC	10…32 V DC	
Inputs, number	1	2	2	
Analog inputs	Analog, voltage/ Analog, current (0…10 V/ 0…20 mA/4…20 mA)	—	—	
Interface port 01	—	Digital pulse	SSI	
Interface, note Port 01	—	—	—	
Resolution	≤ 12 bits	—	—	
Cycle time min.	200 ms	—	—	
Digital outputs	—	2x Relay	2x Relay	
Analog output	Analog, voltage/Analog, current	—	—	
Rated output voltage DC	—	24 V	24 V	
Output current max.	—	2 A	2 A	
Encoder supply	—	5 V/24 V, max 300 mA	5 V/24 V, max 300 mA	
Housing material primary	Plastic	Plastic	Plastic	
Ambient temperature	0...60 °C	0...50 °C	0...50 °C	
IP rating of housing front	IP54	IP64	IP64	
Approval/Conformity	CE	CE	CE	
Productview	Page 676	Page 676	Page 677	



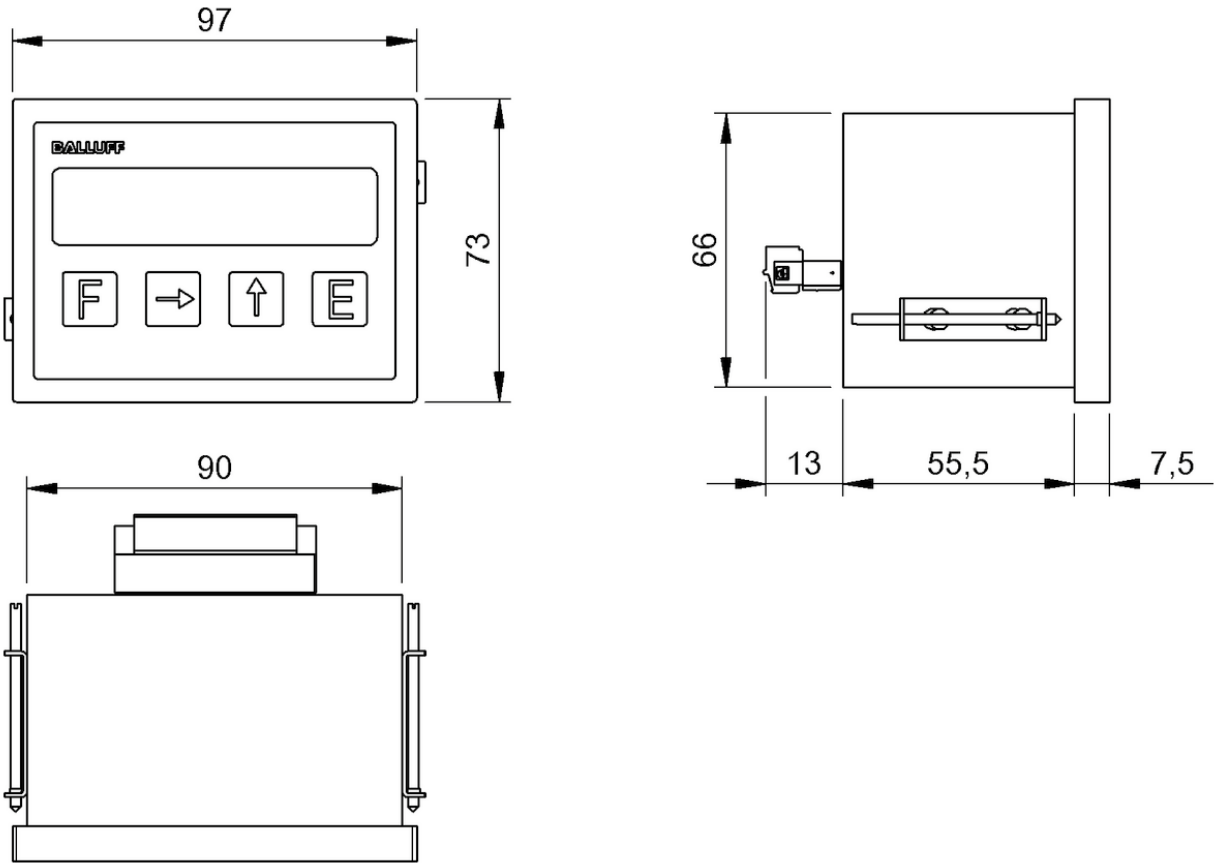

	BAE004H BDD 610-R3Q3-0-51-N-00	BAE004J BDD 610-R3Q3-0-53-N-00	BAE004K BDD 611-R3Q4-0-52-N-00	BAE00EH BAE PD-VS-002-E	
	Single-axis counter	Single-axis counter	Single-axis counter	Data transfer to/from PC, Manage user profiles, Manage sensor data, Find sensors in the network, Manage inspections, Change inspections, display inspections	
	6 characters, red, LED 7-segment	6 characters, red, LED 7-segment	6 characters, red, LED 7-segment	Software menus- LCD sensor images - LCD inspections - LCD sensor data - LCD Output 1 active - LED orange Output 2 active - LED orange supply voltage - LED green connection with LAN - LED green sensor search - LED green system menu - LED green setup menu - LED green monitor mode - LED green	
	76 x 73 x 97 mm	76 x 73 x 97 mm	76 x 73 x 97 mm	96 x 104 x 42.5 mm	
	Display unit	Display unit	Display unit	Programming Device	
	24 V DC ± 10 %	24 V DC ± 10 %	24 V DC ± 10 %	24 V DC ± 10 %	
	2	2	4	–	
	–	–	–	–	
	–	–	–	Ethernet 10/100 Base T	
	A, B	A, B	A, $\bar{A}$, B, $\bar{B}$, Z, $\bar{Z}$, A, B, Z	Ethernet Rx+/Ethernet Rx-	
	–	–	–	–	
	–	10 µs	250 ns	–	
	–	2x PNP	2x PNP	–	
	–	–	–	–	
	–	24 V	24 V	–	
	–	600 mA	450 mA	–	
	24 V, max 500 mA	24 V, max 500 mA	5 V/24 V, max 150 mA	–	
	Plastic	Plastic	Plastic	ABS	
	0...40 °C	0...40 °C	0...40 °C	-10...55 °C	
	IP42	IP42	IP42	IP40	
	CE	CE	CE	CE	
	Page 677	Page 677	Page 677	Page 678	



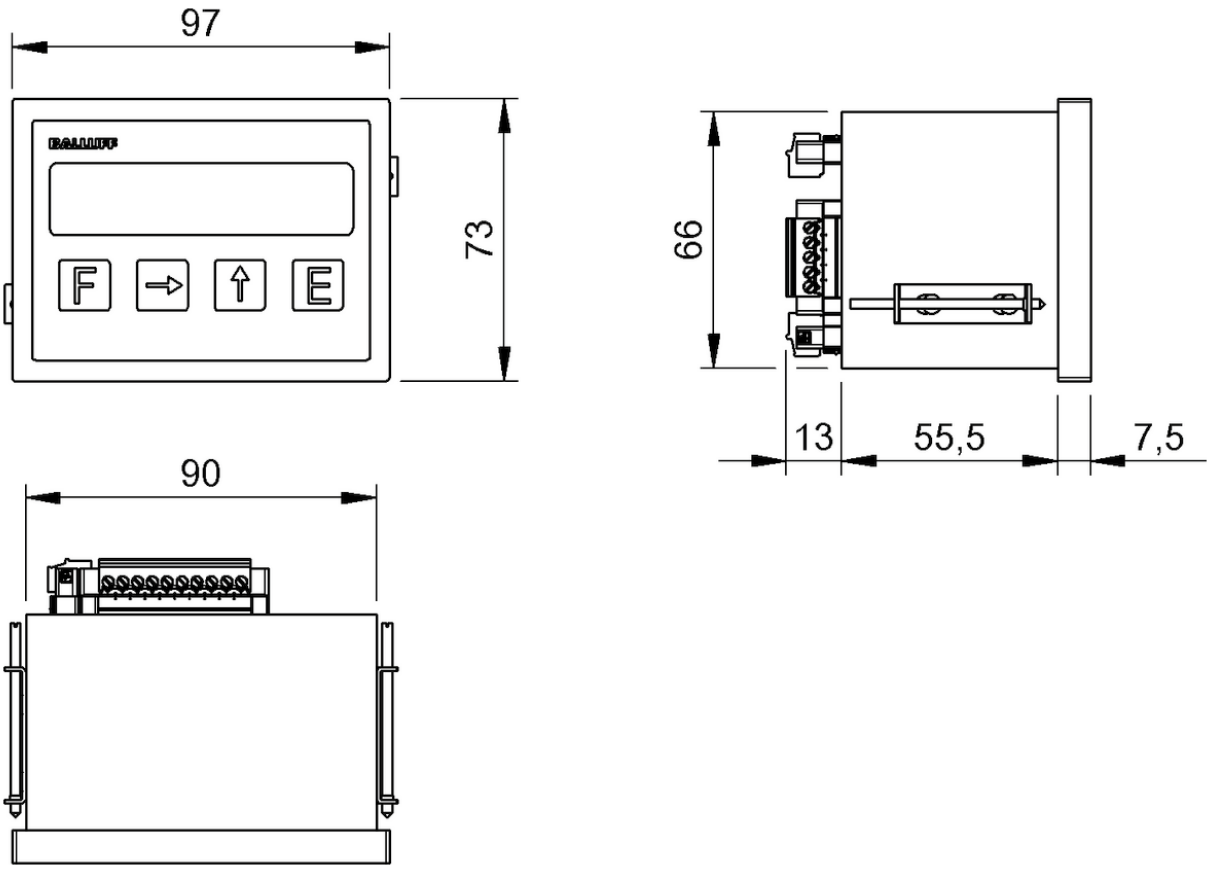
BAE006K



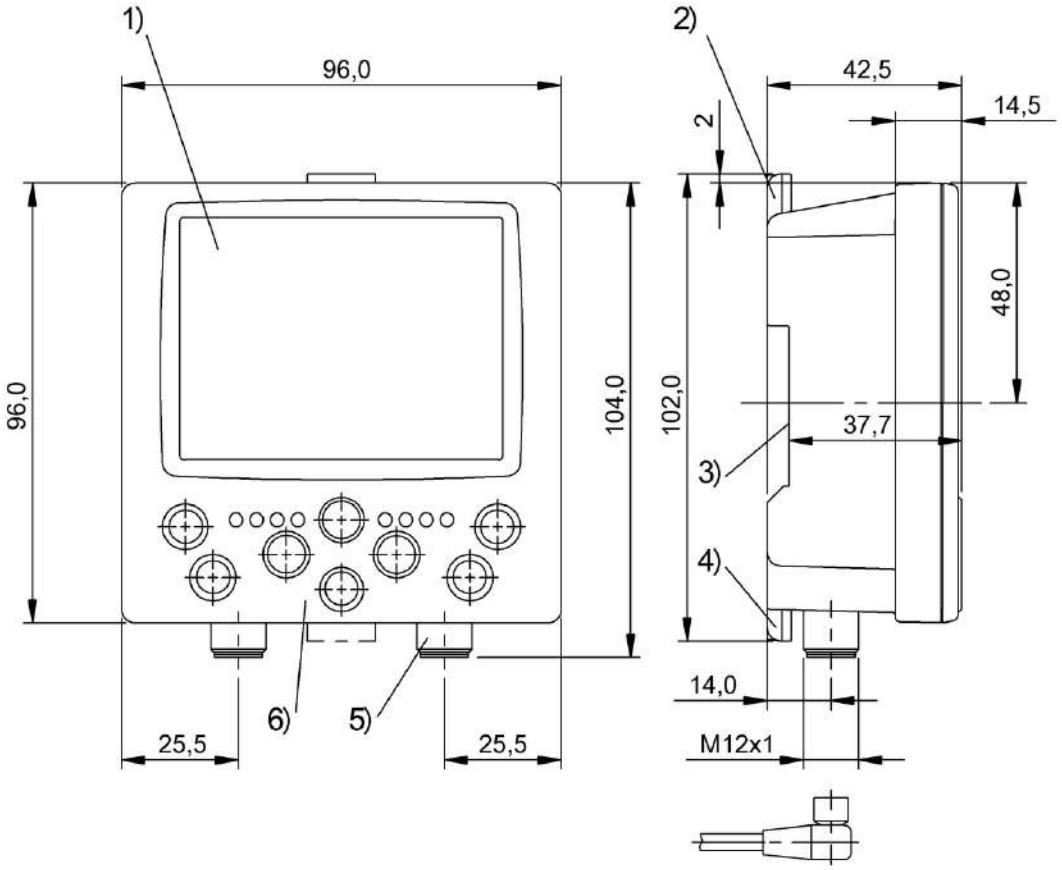
BAE0067, BAE0069



BAE004H, BAE004J



BAE004K



1) Color screen 3.5“, 2) Latch, 3) For DIN rail 35mm, 4) Latch, 5) Connection BVS/LAN, 6) Display and control panel

BAE00EH

	BAE00WC BAE PD-VS-011-01
Short description	Touchpanel PC
Supported operating systems	Windows 10 (32/64 bit)
CPU	—
Working memory	—
Hard drive	—
Dimension	310 x 56 x 240 mm
Mounting	VESA 100 mm
Display	12.1“
Ambient temperature	10...40 °C
Approval/Conformity	CE

INDUSTRIAL NETWORKING

Extraordinary parameter settings and diagnostics capabilities

NETWORK BLOCKS

Balluff has developed a new generation of network modules for perfect linking of sensors and actuators. The system features highly versatile parameter settings and diagnostics possibilities that can be carried out via display, LEDs and an integrated Web server.

The status LEDs on the modules are large, bright and easy to read and interpret. This saves you time in setup, maintenance or troubleshooting. With an output current of up to 2 A, the Balluff network modules are capable of driving almost any load. Each output also offers overload protection with LED indicator and a memory feature for easy troubleshooting. The rugged, full-jacket enclosure also withstands high mechanical loads.

Features

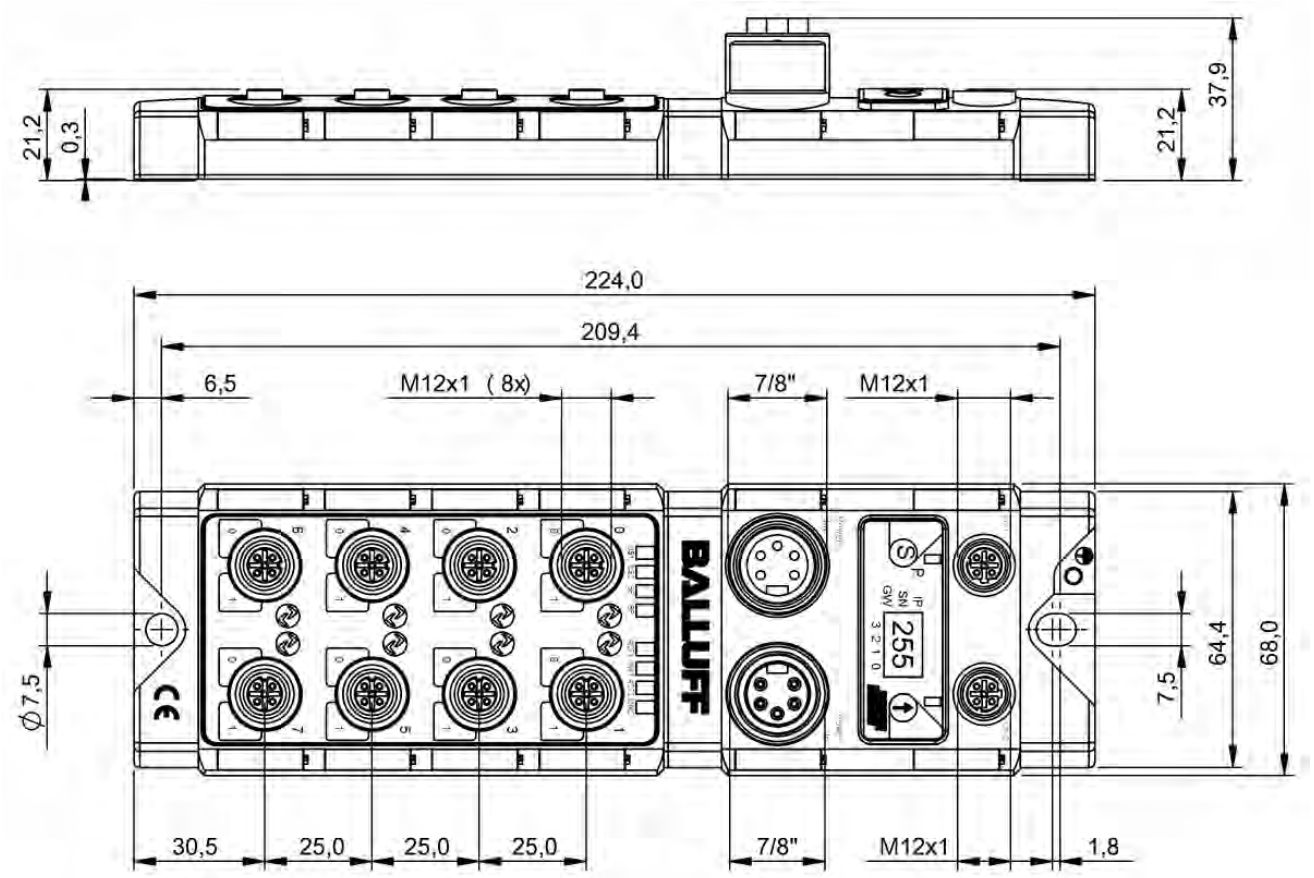
- High performance in all networks
- Faster, simpler connection
- Reliable even in harsh environments, shock and vibration resistant
- IP67 design and rugged full-jacket enclosure
- Integrated Web server
- Line topology construction

	BNI005H BNI PNT-508-105-Z015	**BNI007M** BNI PNT-509-105-Z033	**BNI004U** BNI PNT-502-105-Z015	
Interface	Profinet I/O	Profinet I/O	Profinet I/O	
Fast Start-Up (FSU)	yes	yes	yes	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	
Connection (COM 2)	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	
Connection (supply voltage IN)	7/8“-Male, 5-pin	7/8“-Male, 5-pin	7/8“-Male, 5-pin	
Connection (supply voltage OUT)	7/8“-Female, 5-pin	—	7/8“-Female, 5-pin	
Connection slots	8x M12x1-Female, 5-pin, A-coded	16x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	
Digital inputs	16x PNP, Type 3	32x PNP, Type 3	16x PNP, Type 3	
Digital outputs	16x PNP	32x PNP	16x PNP	
Configurable inputs/outputs	yes	yes	yes	
Output current max.	2 A	2 A	2 A	
Current sum US, sensor	9.0 A	9.0 A	9.0 A	
Current sum UA, actuator	9.0 A	9.0 A	9.0 A	
Housing material	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting	
Dimension	68 x 37.9 x 224 mm	68 x 37.9 x 334 mm	68 x 37.9 x 224 mm	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
IP rating	IP67	IP67	IP67	
Auxiliary interfaces	8x IO-Link	8x IO-Link 8x IO-Link	4x IO-Link	
IO-Link version	1.1	1.1	1.1	
Port-class	Type A	Type A	Type A	
Productview	Seite 102	Seite 102	Seite 103	

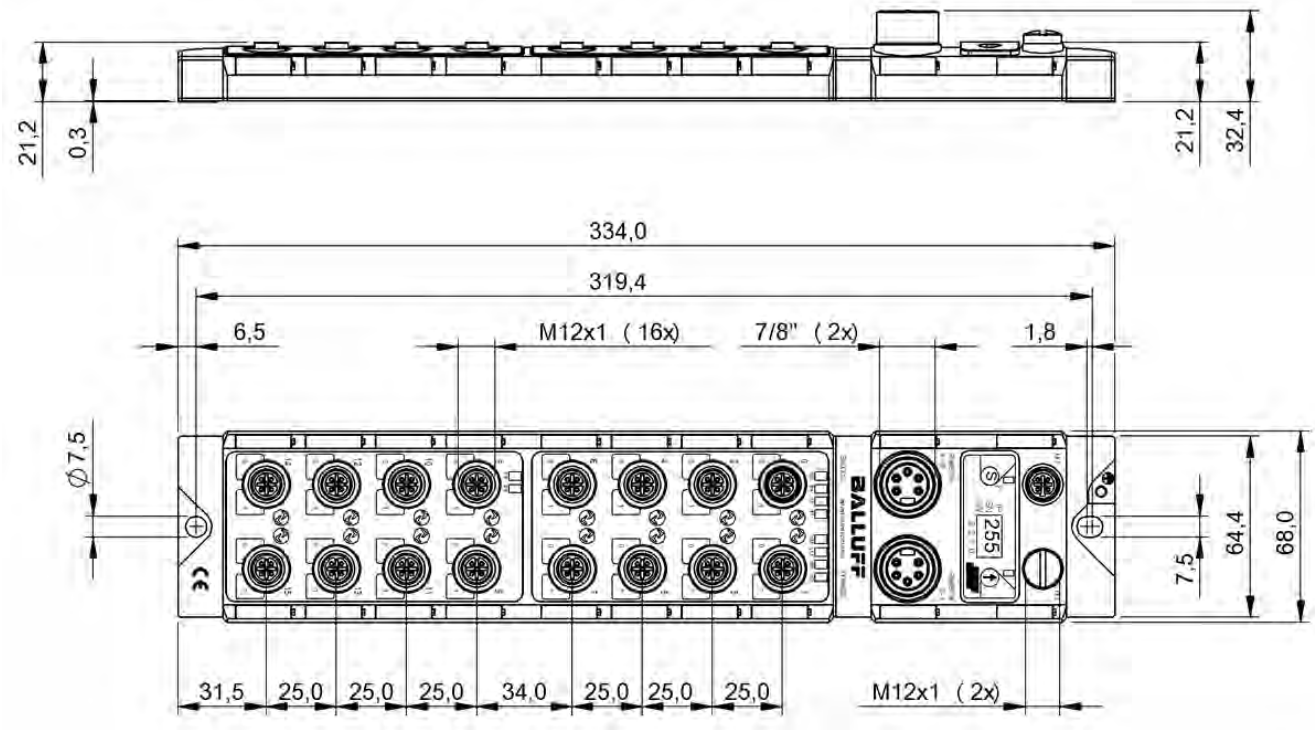




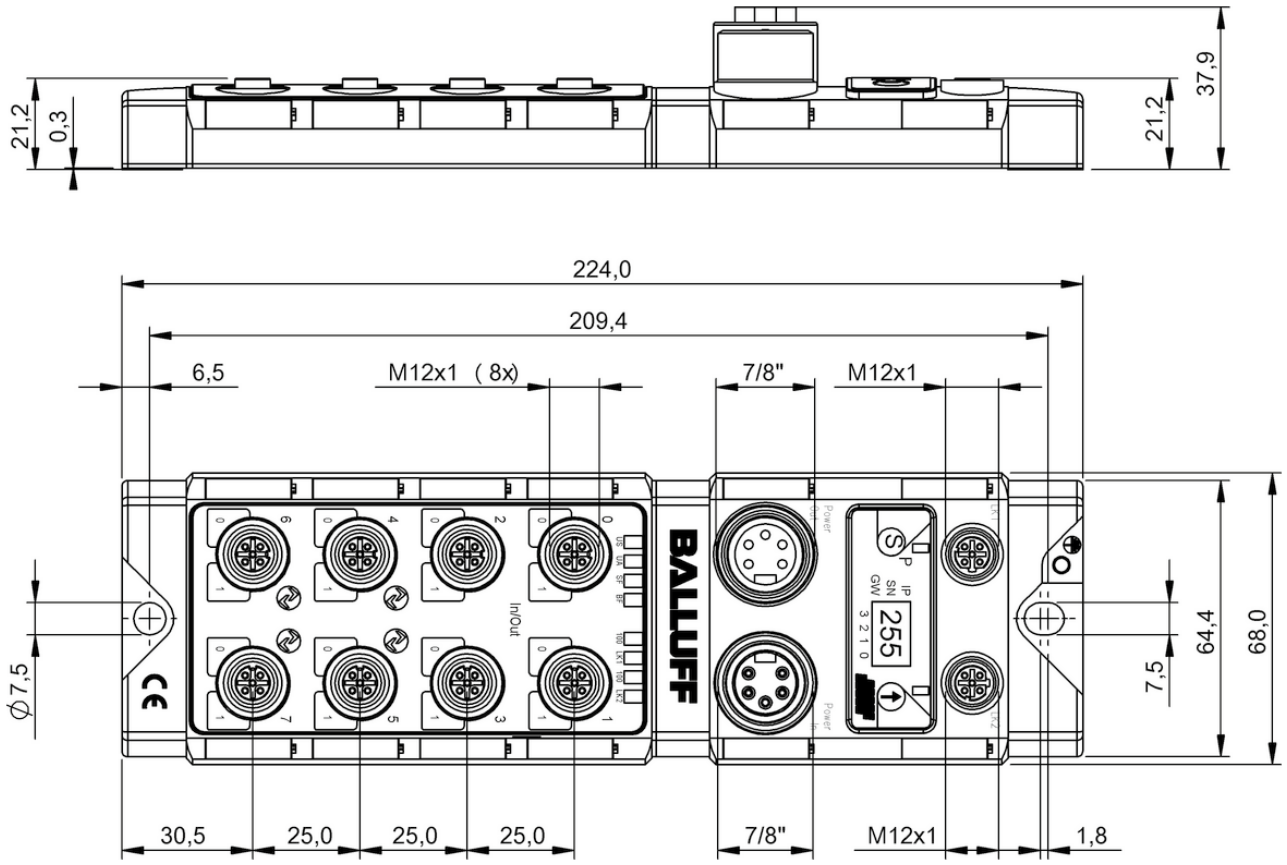
	BNI006C BNI PNT-502-102-Z015	BNI0092 BNI PNT-507-005-Z040	BNI00A9 BNI PNT-527-005-Z040	BNI0052 BNI PNT-302-105-Z015	BNI0053 BNI PNT-104-105-Z015
	Profinet I/O	Profinet I/O	Profinet I/O	Profinet I/O	Profinet I/O
	yes	yes	yes	yes	yes
	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded
	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded
	7/8“-Male, 5-pin	7/8“-Male, 5-pin	7/8“-Male, 5-pin	7/8“-Male, 5-pin	7/8“-Male, 5-pin
	7/8“-Female, 5-pin	—	—	7/8“-Female, 5-pin	7/8“-Female, 5-pin
	8x M12x1-Female, 5-pin, A-coded	4x M12x1-Female, 5-pin, A-coded	4x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded
	16x PNP, Type 3	8x PNP, Type 3	4x PNP, Type 3	16x PNP, Type 2	16x PNP, Type 2
	16x PNP	8x PNP	—	16x PNP	—
	yes	yes	no	yes	no
	2 A	2 A	—	2 A	—
	9.0 A	9.0 A	9.0 A	9.0 A	9.0 A
	9.0 A	9.0 A	9.0 A	9.0 A	—
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	68 x 37.9 x 224 mm	37 x 32.6 x 224 mm	37 x 32.6 x 224 mm	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm
	-5...70 °C	-40...70 °C	-40...70 °C	-5...70 °C	-5...70 °C
	IP67	IP67	IP67	IP67	IP67
	4x IO-Link	4x IO-Link	4x IO-Link	—	—
	1.1	1.1	1.1	—	—
	Type A	Type A	Type B	—	—
	Seite 103	Seite 104	Seite 104	Seite 105	Seite 105



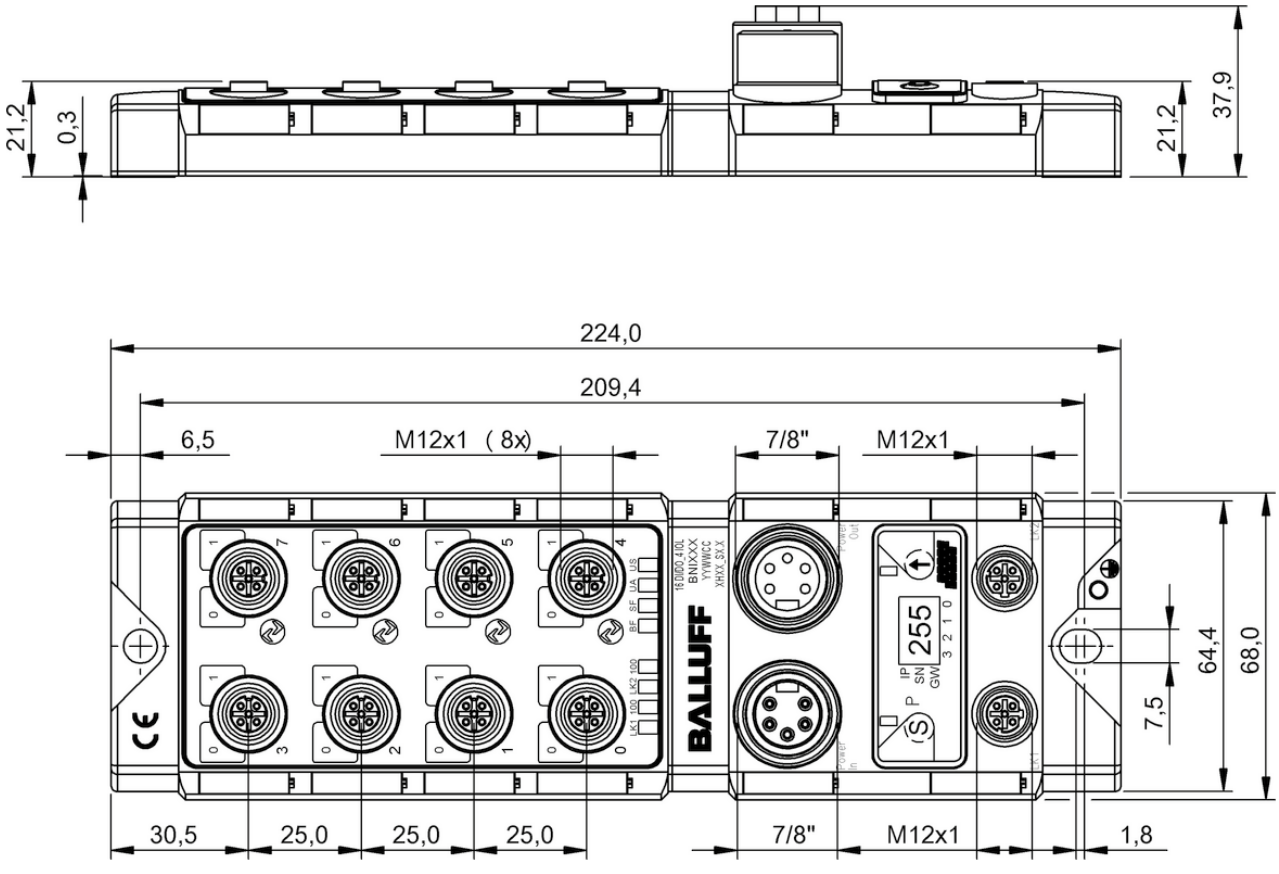
BNI005H



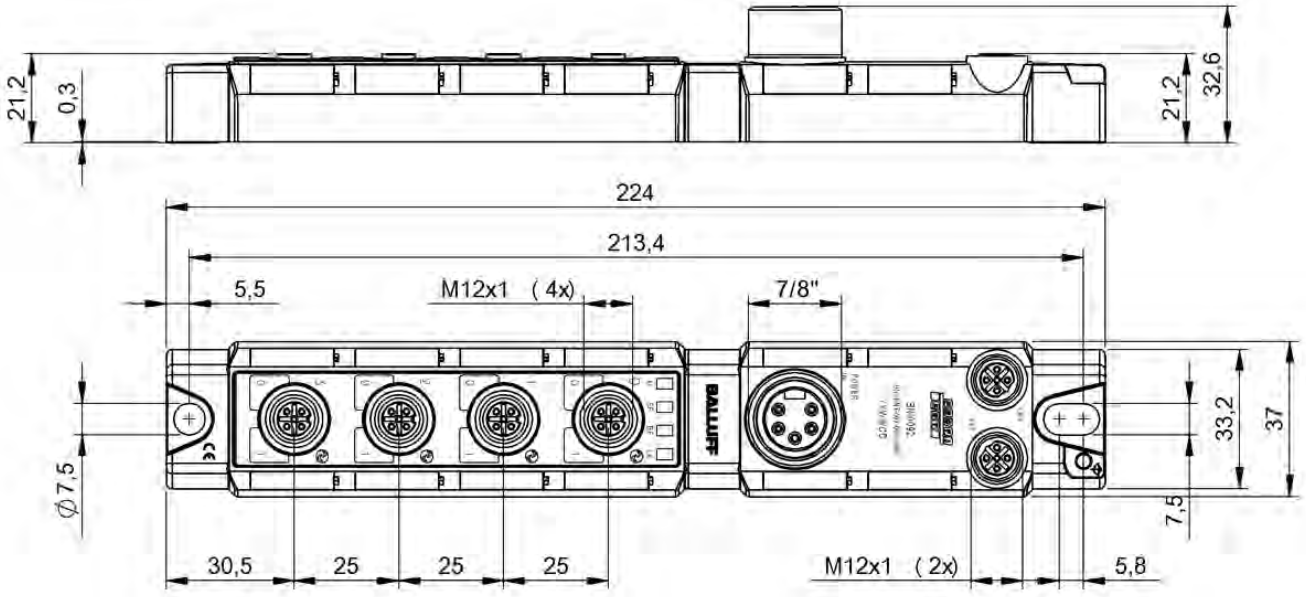
BNI007M



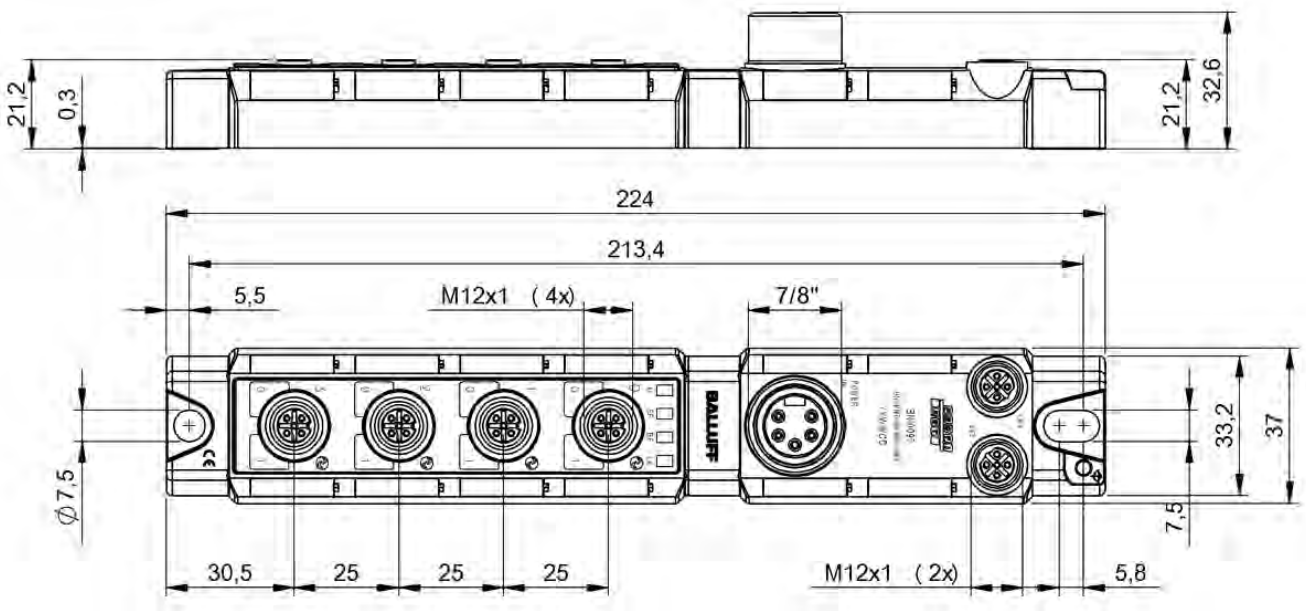
BNI004U



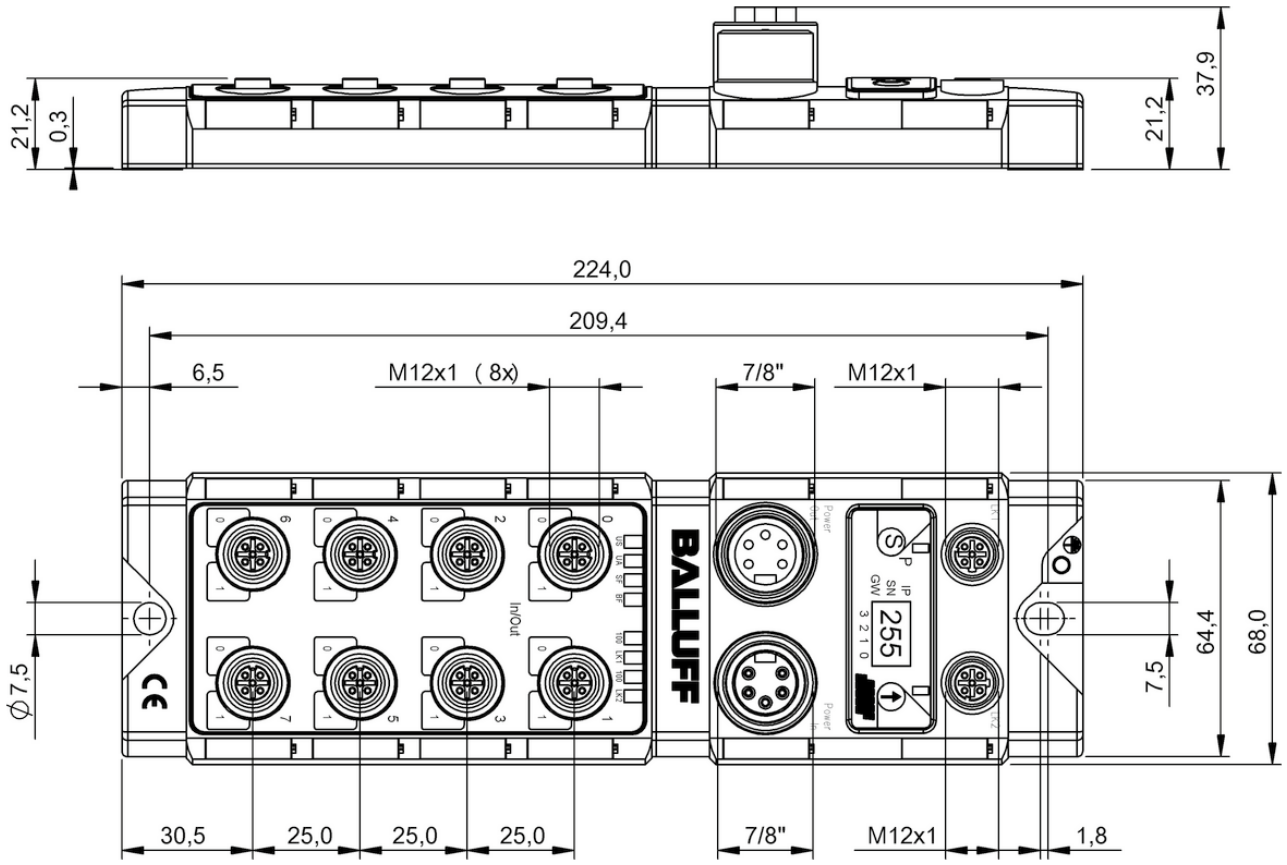
BNI006C



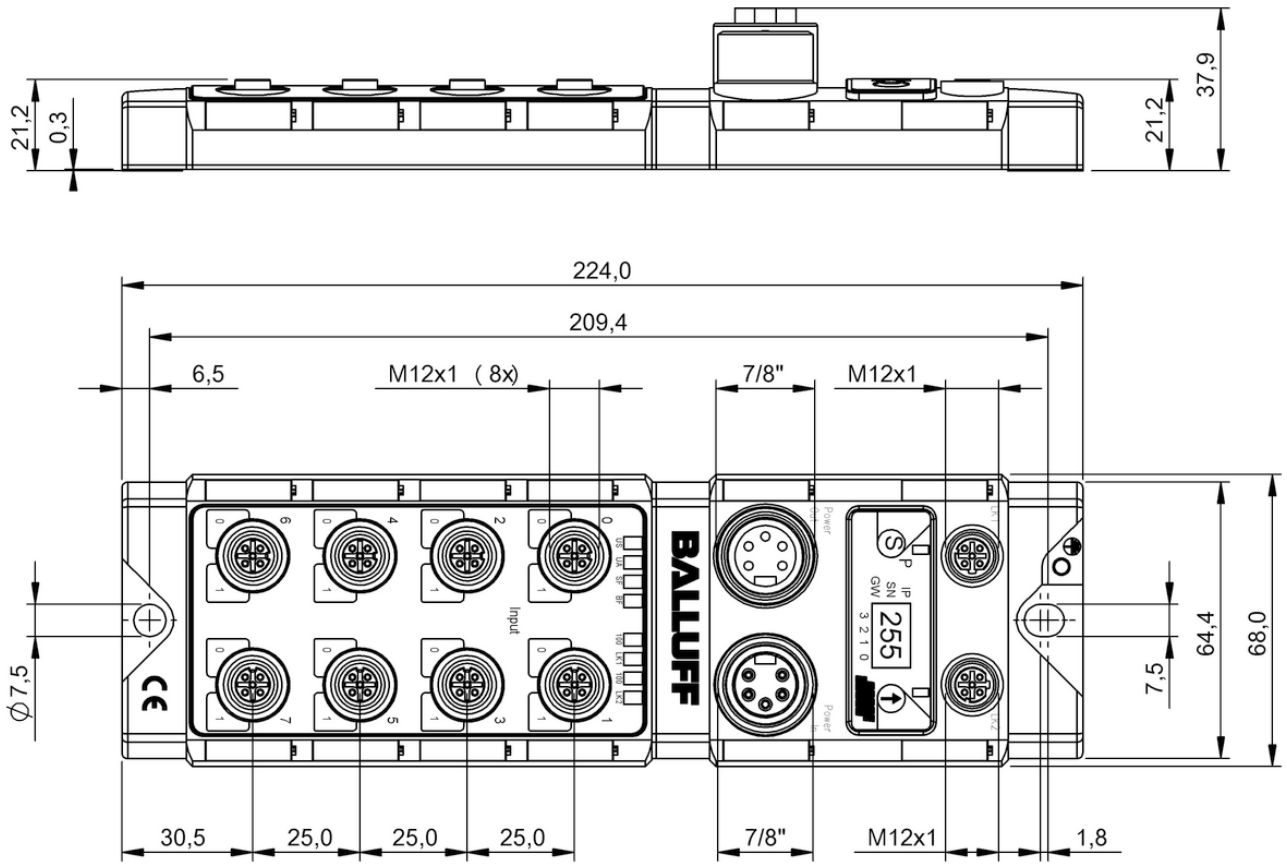
BNI0092



BNI00A9



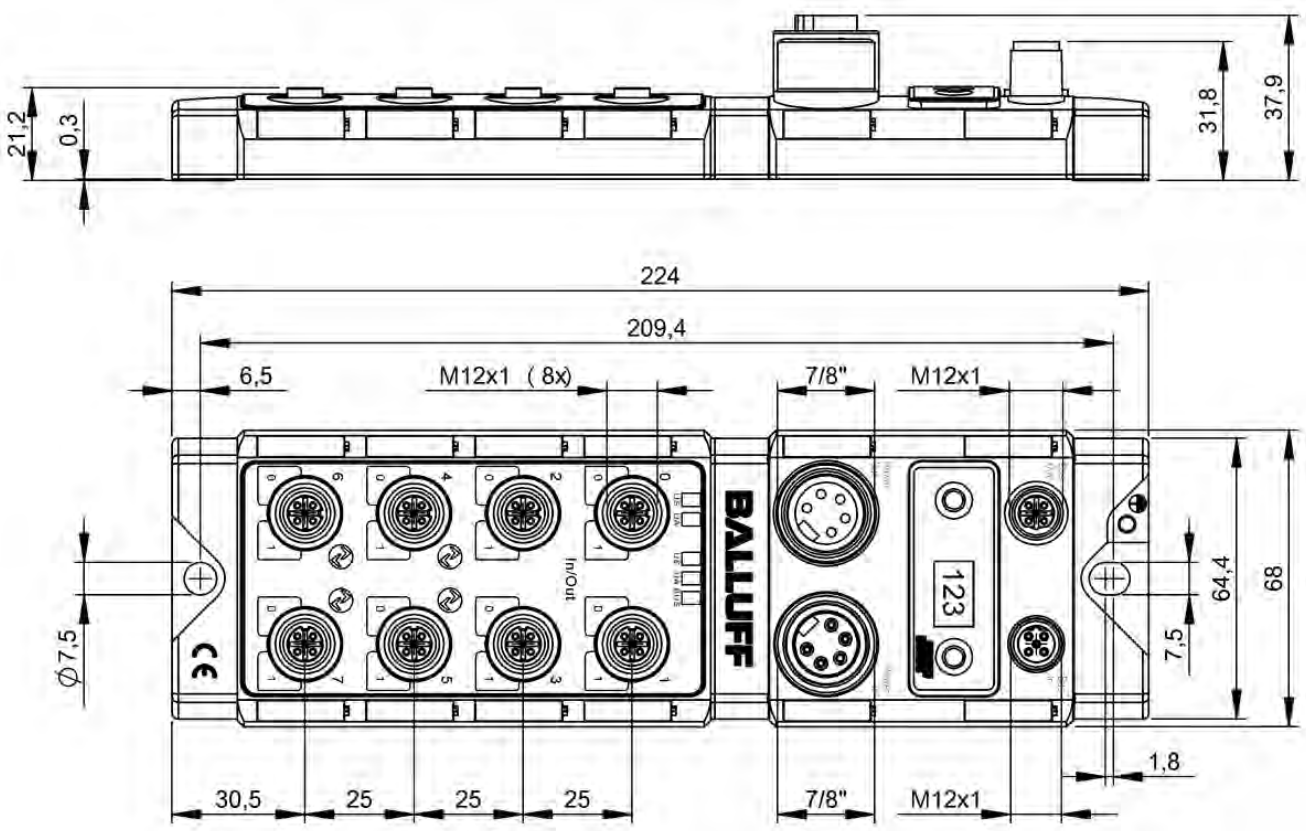
BNI0052



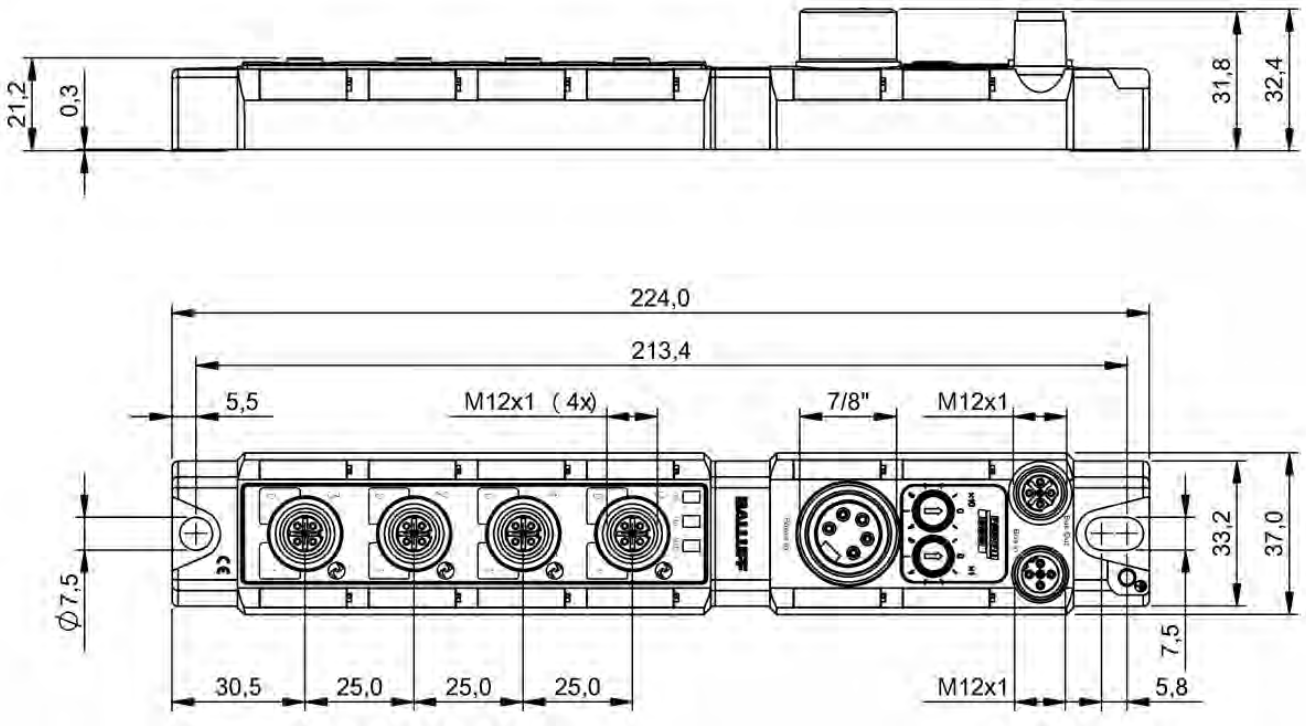
BNI0053

	BNI005R BNI PBS-502-101-Z001	
Interface	Profibus DP EN 50170	
Operating voltage Ub	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 5-pin, B-coded	
Connection (COM 2)	M12x1-Female, 5-pin, B-coded	
Connection (supply voltage IN)	7/8“-Male, 5-pin	
Connection (supply voltage OUT)	7/8“-Female, 5-pin	
Connection slots	8x M12x1-Female, 5-pin, A-coded	
Digital inputs	16x PNP, Type 2	
Digital outputs	16x PNP	
Configurable inputs/outputs	yes	
cal_current_load_capacity_max	2 A	
Current sum US, sensor	9.0 A	
Current sum UA, actuator	9.0 A	
Housing material	Zinc, Die casting	
Dimension	68 x 37.9 x 224 mm	
Ambient temperature	-5...70 °C	
IP rating	IP67	
Auxiliary interfaces	4x IO-Link	
IO-Link version	1.1	
Port-class	Type A	
Productview	Seite 108	

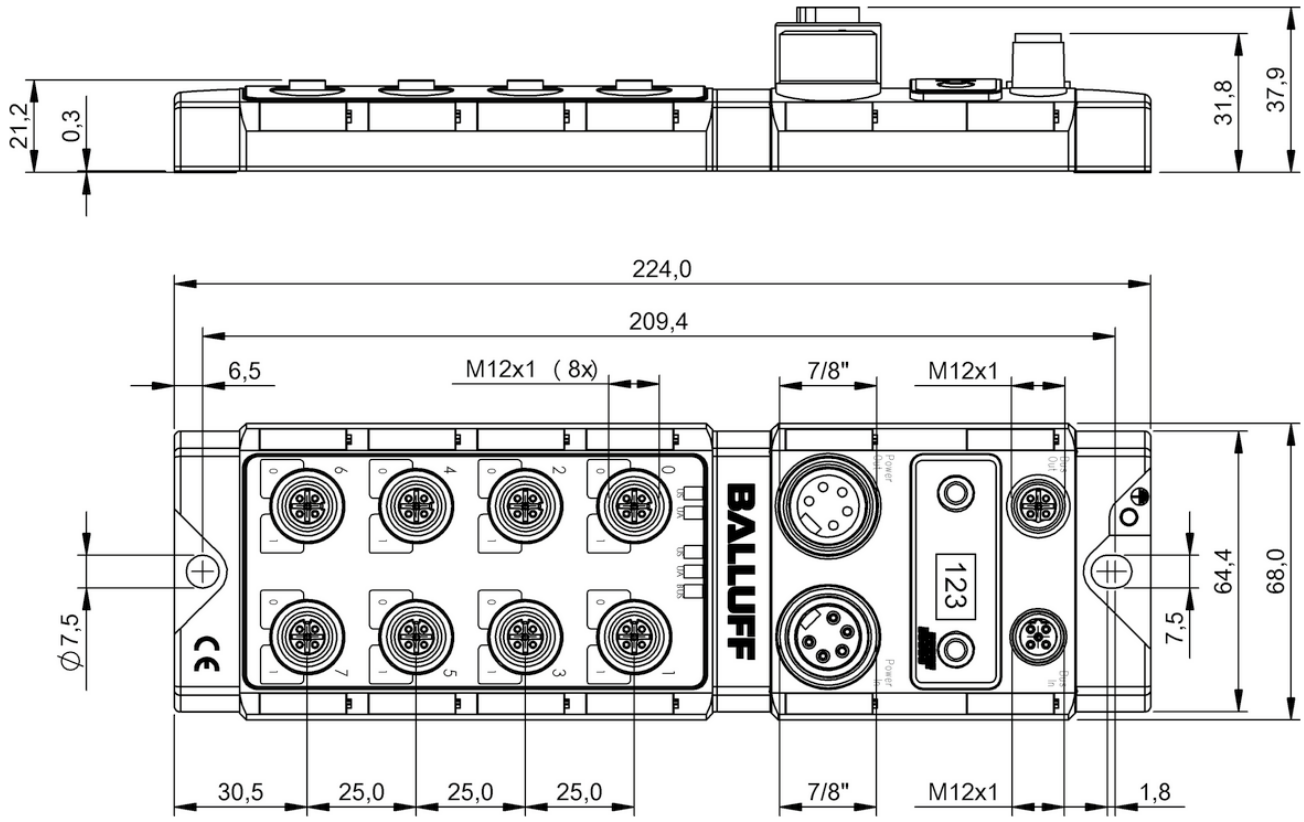
BNI004N BNI PBS-507-002-Z011	BNI0047 BNI PBS-302-101-Z001	BNI005C BNI PBS-104-101-Z001
Profibus DP EN 50170	Profibus DP EN 50170	Profibus DP EN 50170
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
M12x1-Male, 5-pin, B-coded	M12x1-Male, 5-pin, B-coded	M12x1-Male, 5-pin, B-coded
M12x1-Female, 5-pin, B-coded	M12x1-Female, 5-pin, B-coded	M12x1-Female, 5-pin, B-coded
7/8“-Male, 5-pin	7/8“-Male, 5-pin	7/8“-Male, 5-pin
—	7/8“-Female, 5-pin	7/8“-Female, 5-pin
4x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded
8x PNP, Type 2	16x PNP, Type 2	16x PNP, Type 2
8x PNP	16x PNP	—
yes	yes	no
2 A	2 A	—
9.0 A	9.0 A	9.0 A
9.0 A	9.0 A	—
Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
37 x 32.4 x 224 mm	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm
-5...70 °C	-5...70 °C	-5...70 °C
IP67	IP67	IP67
4x IO-Link	—	—
1.1	—	—
Type A	—	—
Seite 108	Seite 109	Seite 109



BNI005R



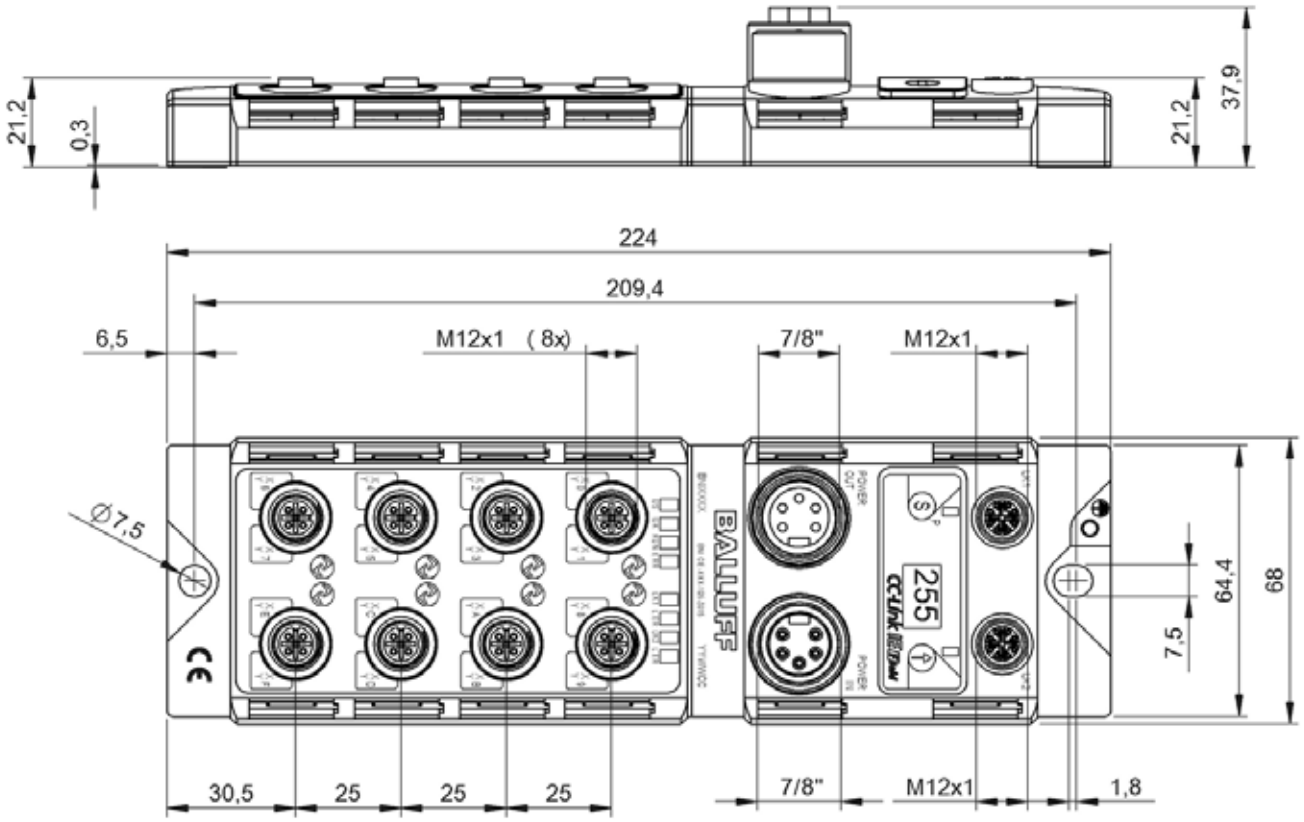
BNI004N



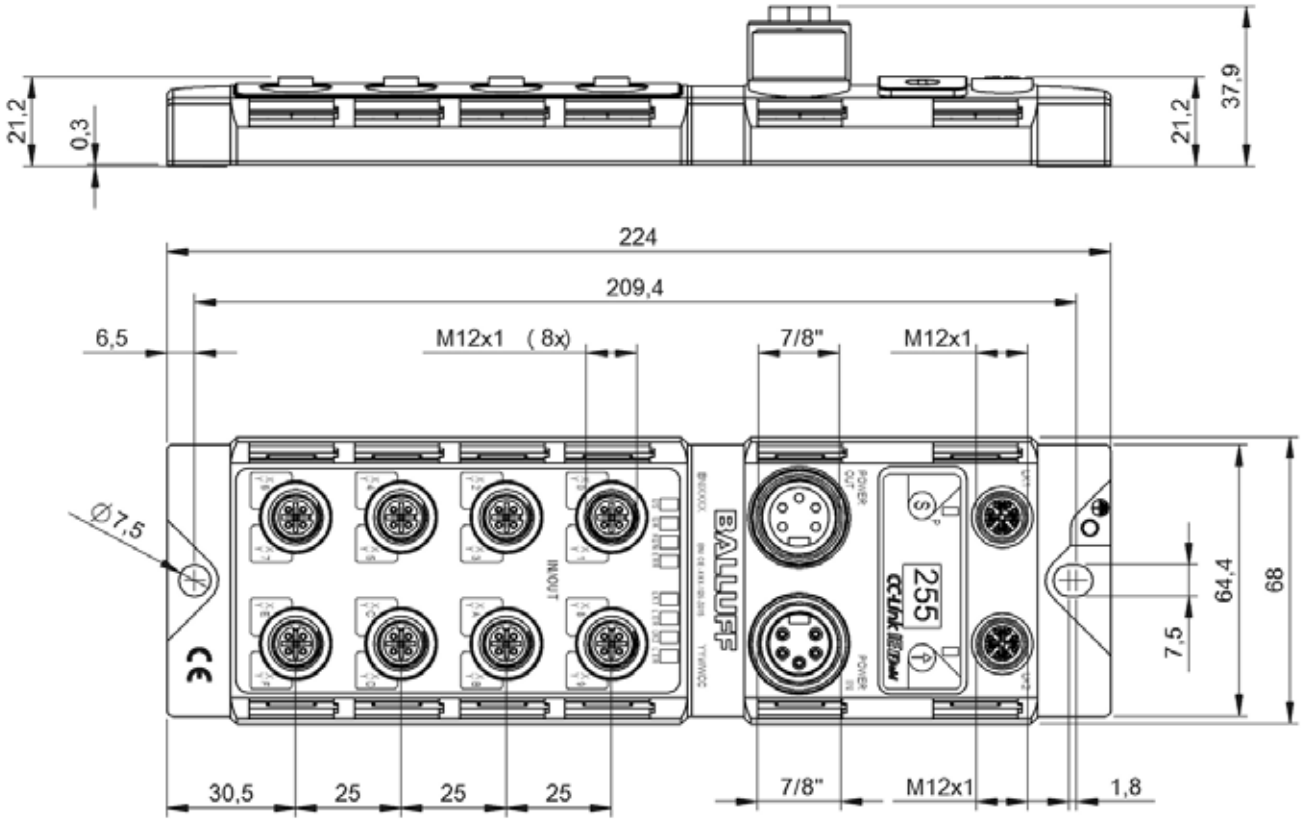
BNI0047, BNI005C

Interface	
Fast Start-Up (FSU)	
Operating voltage Ub	
Connection (COM 1)	
Connection (COM 2)	
Connection (supply voltage IN)	
Connection (supply voltage OUT)	
Connection slots	
Digital inputs	
Digital outputs	
Configurable inputs/outputs	
Output current max.	
Current sum US, sensor	
Current sum UA, actuator	
Housing material	
Dimension	
Ambient temperature	
IP rating	
Auxiliary interfaces	
IO-Link version	
Port-class	
Productview	

	BNI008C BNI CIE-508-105-Z015	BNI0095 BNI CIE-302-105-Z015
	CC-Link IE Field V0	CC-Link IE Field V0
	—	—
	18...30.2 VDC	18...30.2 VDC
	M12x1-Female, 8-pin, X-coded	M12x1-Female, 8-pin, X-coded
	M12x1-Female, 8-pin, X-coded	M12x1-Female, 8-pin, X-coded
	7/8“-Male, 5-pin	7/8“-Male, 5-pin
	7/8“-Female, 5-pin	7/8“-Female, 5-pin
	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded
	16x PNP, Type 3	16x PNP, Type 3
	16x PNP	16x PNP
	yes	yes
	2 A	2 A
	9.0 A	9.0 A
	9.0 A	9.0 A
	Zinc, Die casting	Zinc, Die casting
	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm
	-5...70 °C	-5...70 °C
	IP67	IP67
	8x IO-Link	—
	1.1	—
	Type A	—
	Seite 112	Seite 112



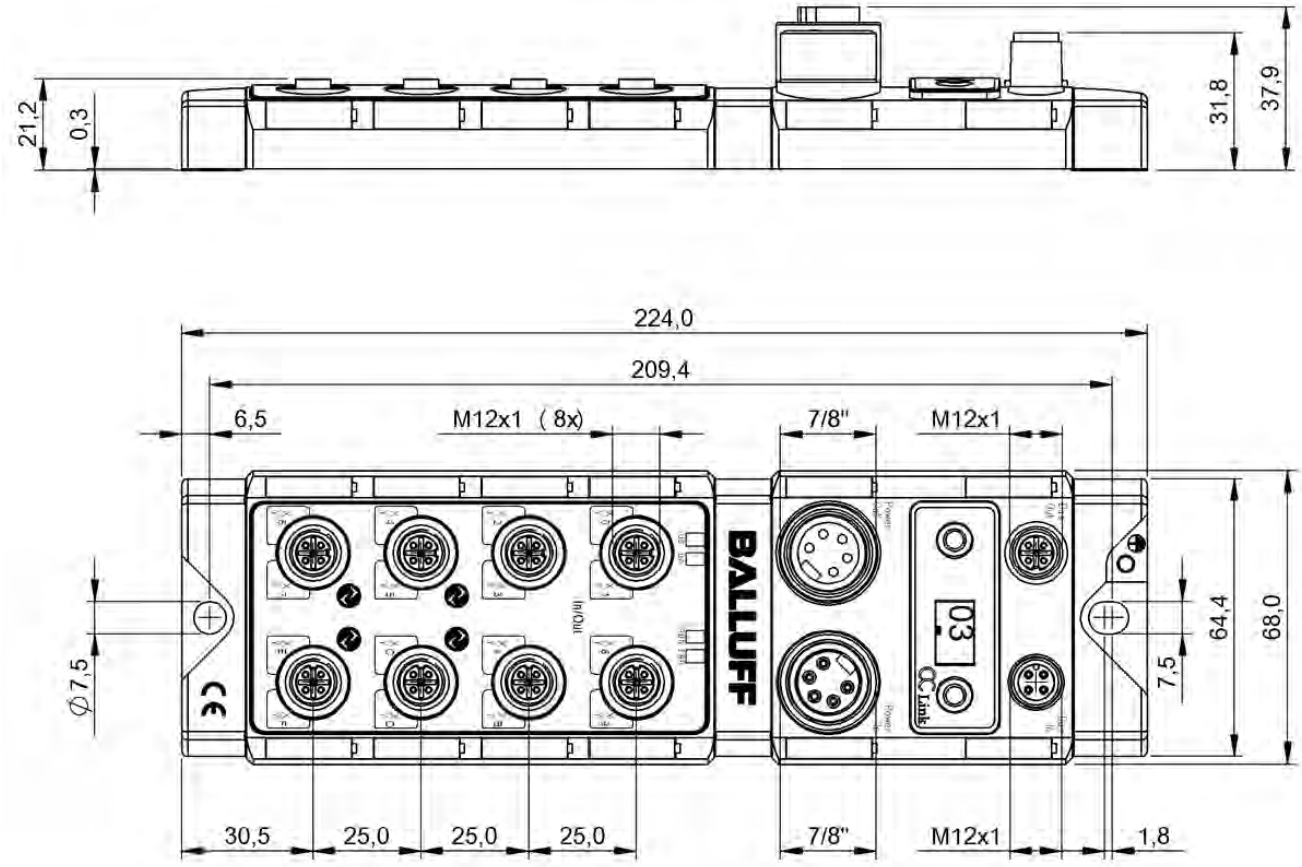
BNI008C



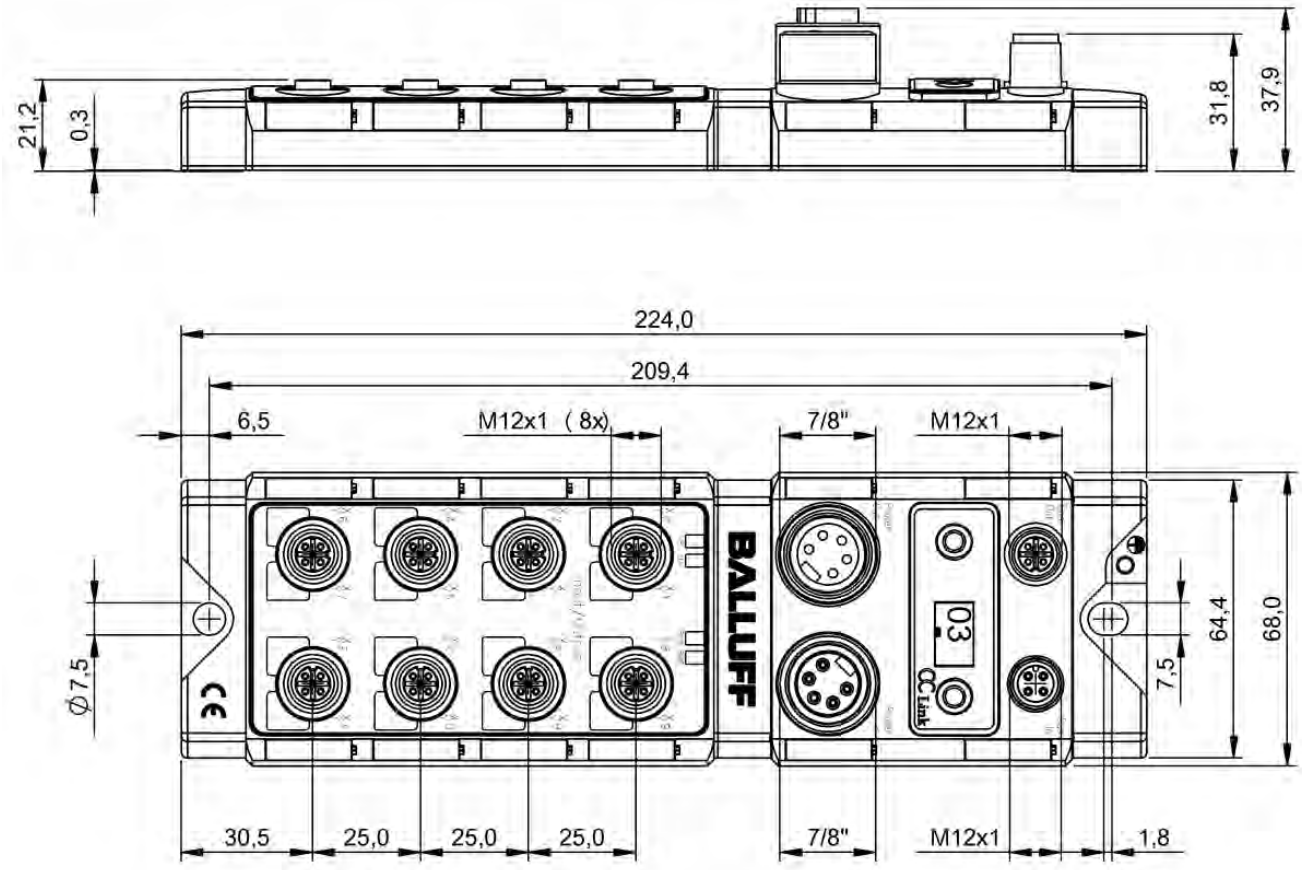
BNI0095

Interface	
Fast Start-Up (FSU)	
Operating voltage Ub	
Connection (COM 1)	
Connection (COM 2)	
Connection (supply voltage IN)	
Connection (supply voltage OUT)	
Connection slots	
Digital inputs	
Digital outputs	
Configurable inputs/outputs	
Output current max.	
Current sum US, sensor	
Current sum UA, actuator	
Housing material	
Dimension	
Ambient temperature	
IP rating	
Auxiliary interfaces	
IO-Link version	
Port-class	
Productview	

BNI0040 BNI CCL-502-100-Z001	BNI002A BNI CCL-302-100-Z001
CC-Link V1.1	CC-Link V1.1
—	—
18...30.2 VDC	18...30.2 VDC
M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded
M12x1-Female, 4-pin, A-coded	M12x1-Female, 4-pin, A-coded
7/8“-Male, 5-pin	7/8“-Male, 5-pin
7/8“-Female, 5-pin	7/8“-Female, 5-pin
8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded
16x PNP, Type 2	16x PNP, Type 2
16x PNP	16x PNP
yes	yes
2 A	2 A
9.0 A	9.0 A
9.0 A	9.0 A
Zinc, Die casting	Zinc, Die casting
68 x 37.9 x 224 mm	68 x 37.9 x 224 mm
-5...70 °C	-5...55 °C
IP67	IP67
4x IO-Link	—
1.1	—
Type A	—
Seite 118	Seite 118



BNI0040



BNI002A

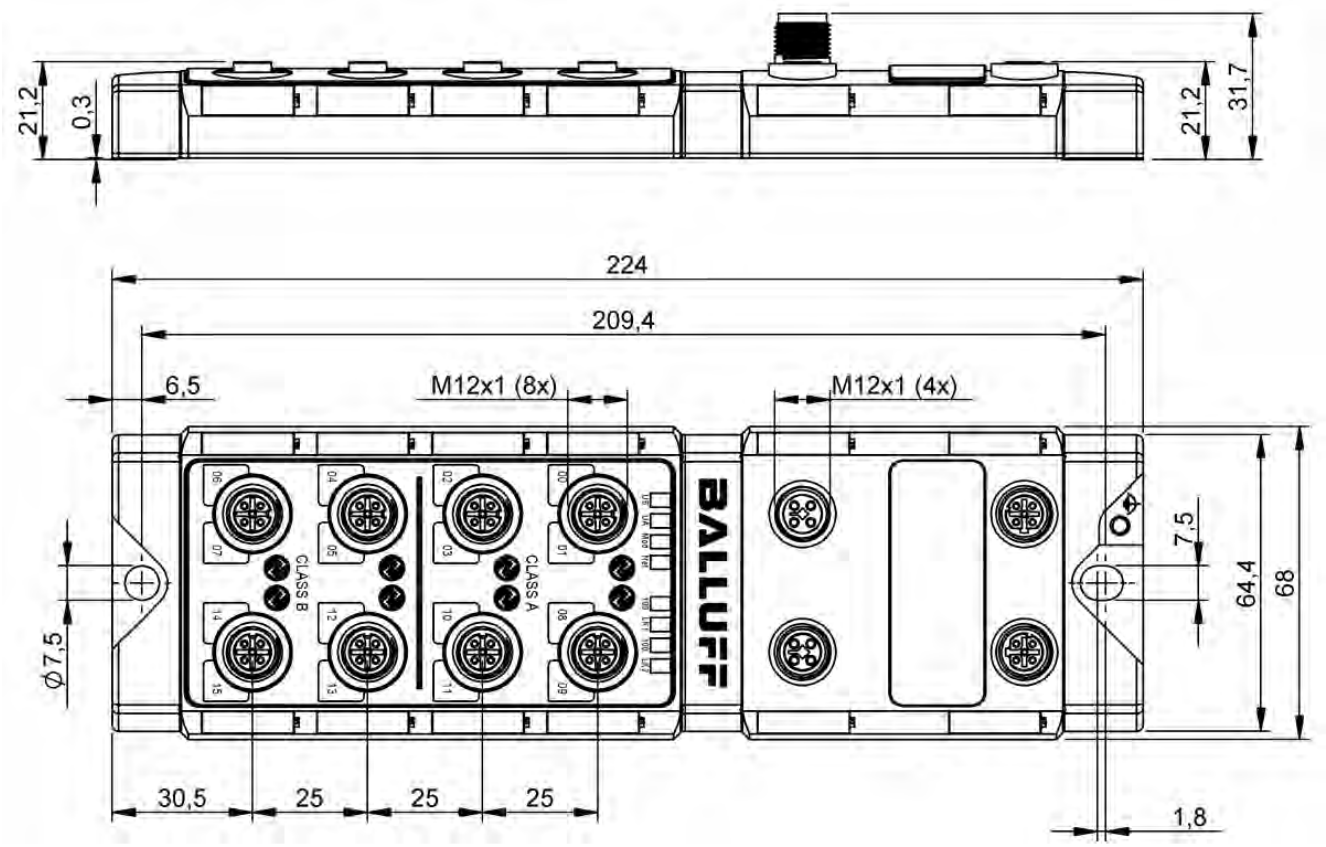
	BNI006A BNI EIP-508-105-Z015	BNI004A BNI EIP-502-105-Z015	
Interface	Ethernet/IP	Ethernet/IP	
Fast Start-Up (FSU)	—	—	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	
Connection (COM 2)	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	
Connection (supply voltage IN)	7/8“-Male, 4-pin	7/8“-Male, 4-pin	
Connection (supply voltage OUT)	7/8“-Female, 4-pin	7/8“-Female, 4-pin	
Connection slots	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	
Digital inputs	16x PNP, Type 3	16x PNP, Type 2	
Digital outputs	16x PNP	16x PNP	
Configurable inputs/outputs	yes	yes	
Output current max.	2 A	2 A	
Current sum US, sensor	9.0 A	9.0 A	
Current sum UA, actuator	9.0 A	9.0 A	
Housing material	Zinc, Die casting	Zinc, Die casting	
Dimension	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	
Ambient temperature	-5...70 °C	-5...70 °C	
IP rating	IP67	IP67	
Auxiliary interfaces	8x IO-Link	4x IO-Link	
IO-Link version	1.1	1.1	
Port-class	Type A	Type A	
Productview	Seite 124	Seite 125	

	BNI009T BNI EIP-507-005-Z040	BNI00AA BNI EIP-527-005-Z040	BNI004F BNI EIP-302-105-Z015	
	Ethernet/IP	Ethernet/IP	Ethernet/IP	
	—	—	—	
	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	
	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	
	7/8“-Male, 4-pin	7/8“-Male, 4-pin	7/8“-Male, 4-pin	
	—	—	7/8“-Female, 4-pin	
	4x M12x1-Female, 5-pin, A-coded	4x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	
	8x PNP, Type 3	4x PNP, Type 3	16x PNP, Type 2	
	8x PNP	—	16x PNP	
	yes	no	yes	
	2 A	—	2 A	
	9.0 A	9.0 A	9.0 A	
	9.0 A	9.0 A	9.0 A	
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting	
	37 x 32.6 x 224 mm	37 x 32.6 x 224 mm	68 x 37.9 x 224 mm	
	-40...70 °C	-40...70 °C	-5...70 °C	
	IP67	IP67	IP67	
	4x IO-Link	4x IO-Link	—	
	1.1	1.1	—	
	Type A	Type B	—	
	Seite 125	Seite 125	Seite 126	

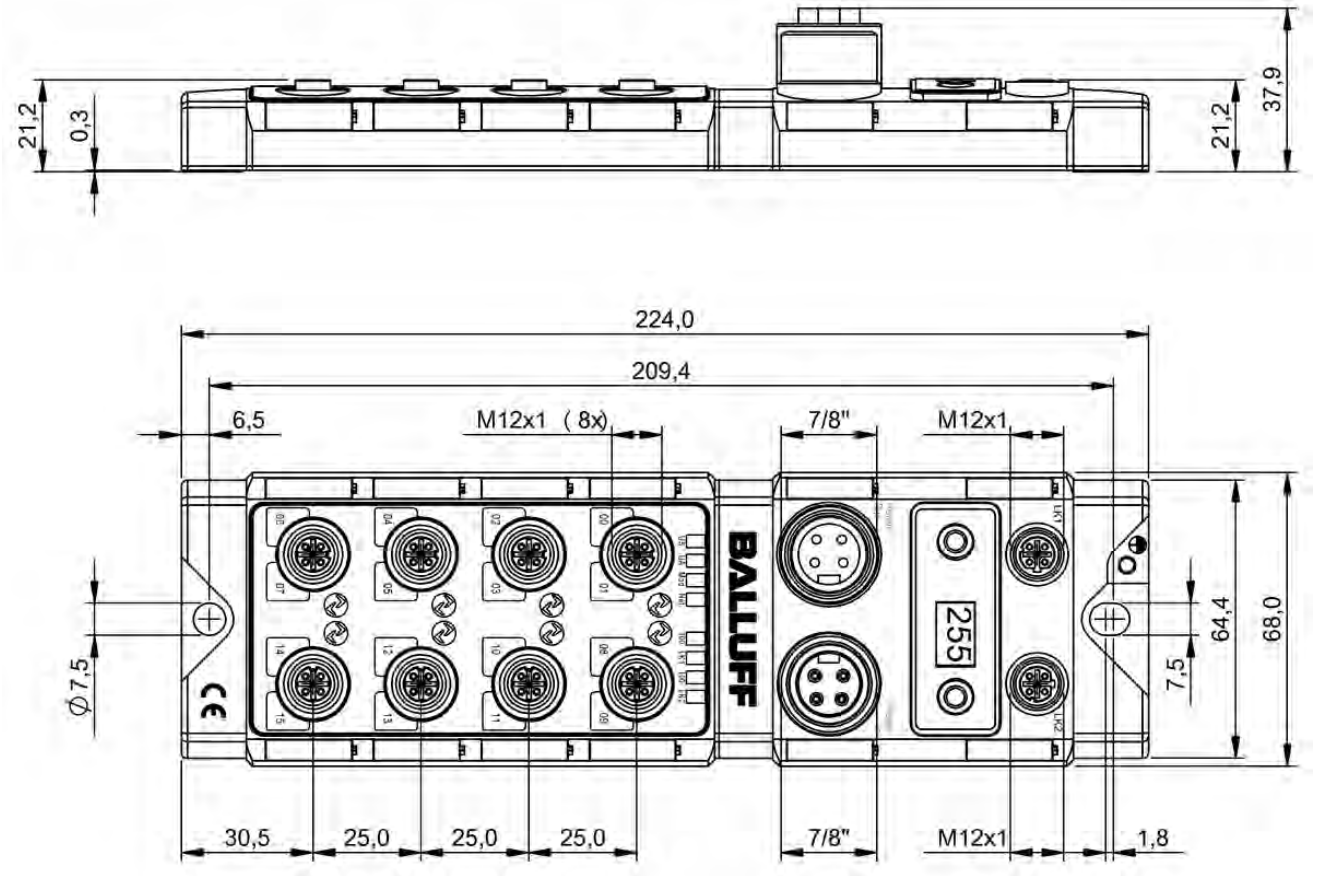
	BNI004M BNI EIP-104-105-Z015	BNI008M BNI EIP-508-105-R015	
Interface	Ethernet/IP	Ethernet/IP	
Fast Start-Up (FSU)	—	—	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	
Connection (COM 2)	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	
Connection (supply voltage IN)	7/8“-Male, 4-pin	7/8“-Male, 4-pin	
Connection (supply voltage OUT)	7/8“-Female, 4-pin	7/8“-Female, 4-pin	
Connection slots	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	
Digital inputs	16x PNP, Type 2	16x PNP, Type 3	
Digital outputs	—	16x PNP	
Configurable inputs/outputs	no	yes	
Output current max.	—	2 A	
Current sum US, sensor	9.0 A	9.0 A	
Current sum UA, actuator	—	9.0 A	
Housing material	Zinc, Die casting	PPS	
Dimension	68 x 37.9 x 224 mm	68 x 42.9 x 226 mm	
Ambient temperature	-5...70 °C	-5...70 °C	
IP rating	IP67	IP67	
Auxiliary interfaces	—	8x IO-Link	
IO-Link version	—	1.1	
Port-class	—	Type A	
Productview	Seite 126	Seite 127	



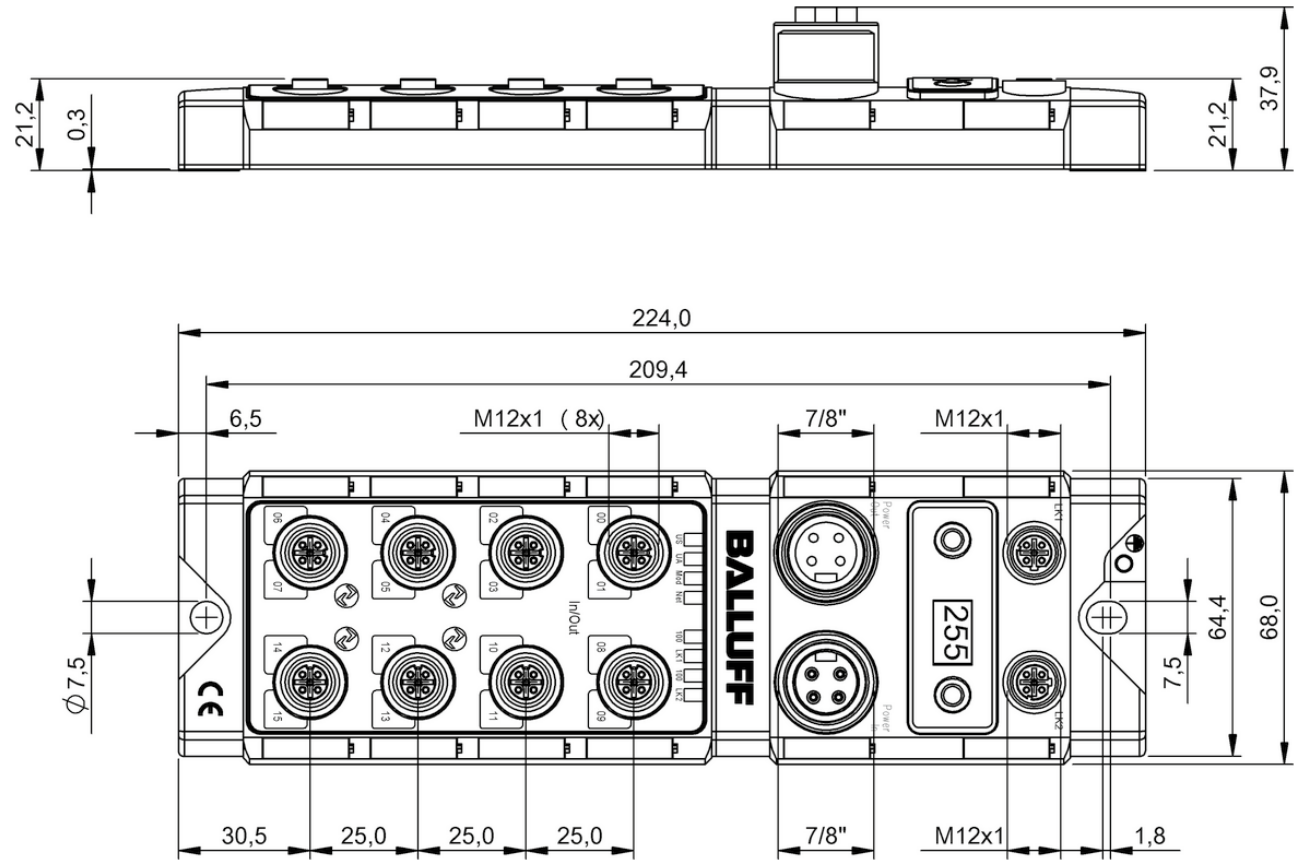

	BNI00CY BNI EIP-538-105-R015	BNI008Z BNI EIP-502-105-R015	BNI008P BNI EIP-302-105-R015	BNI008Y BNI EIP-104-105-R015
	Ethernet/IP	Ethernet/IP	Ethernet/IP	Ethernet/IP
	—	—	—	—
	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded
	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded	M12x1-Female, 4-pin, D-coded
	7/8“-Male, 4-pin	7/8“-Male, 4-pin	7/8“-Male, 4-pin	7/8“-Male, 4-pin
	7/8“-Female, 4-pin	7/8“-Female, 4-pin	7/8“-Female, 4-pin	7/8“-Female, 4-pin
	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded
	12x PNP, Type 3	16x PNP, Type 3	16x PNP, Type 3	16x PNP, Type 3
	8x PNP	16x PNP	16x PNP	—
	yes	yes	yes	no
	2 A	2 A	2 A	—
	9.0 A	9.0 A	9.0 A	9.0 A
	9.0 A	9.0 A	9.0 A	—
	PPS	PPS	PPS	PPS
	68 x 42.9 x 226 mm	68 x 42.9 x 226 mm	68 x 42.9 x 226 mm	68 x 42.9 x 226 mm
	-5...70 °C	-5...70 °C	-5...70 °C	-5...70 °C
	IP67	IP67	IP67	IP67
	8x IO-Link	4x IO-Link	—	—
	1.1	1.1	—	—
	Type A (4x) + Type B (4x)	Type A	—	—
	Seite 127	Seite 128	Seite 128	Seite 129



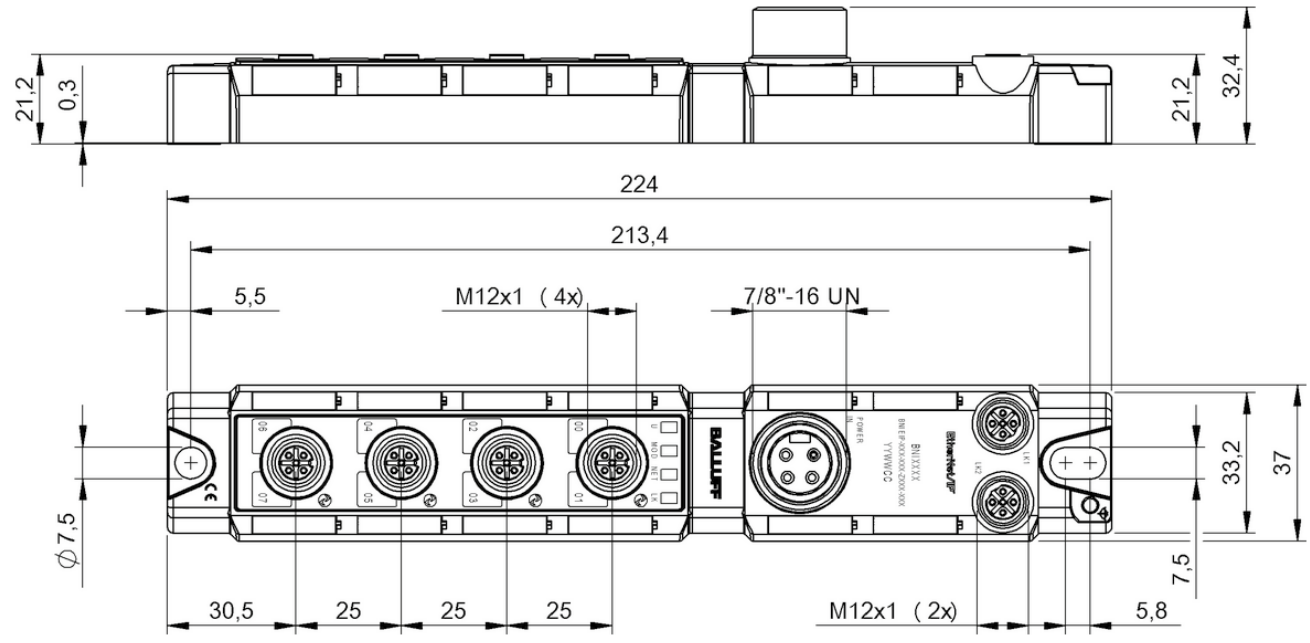
BNI00E1



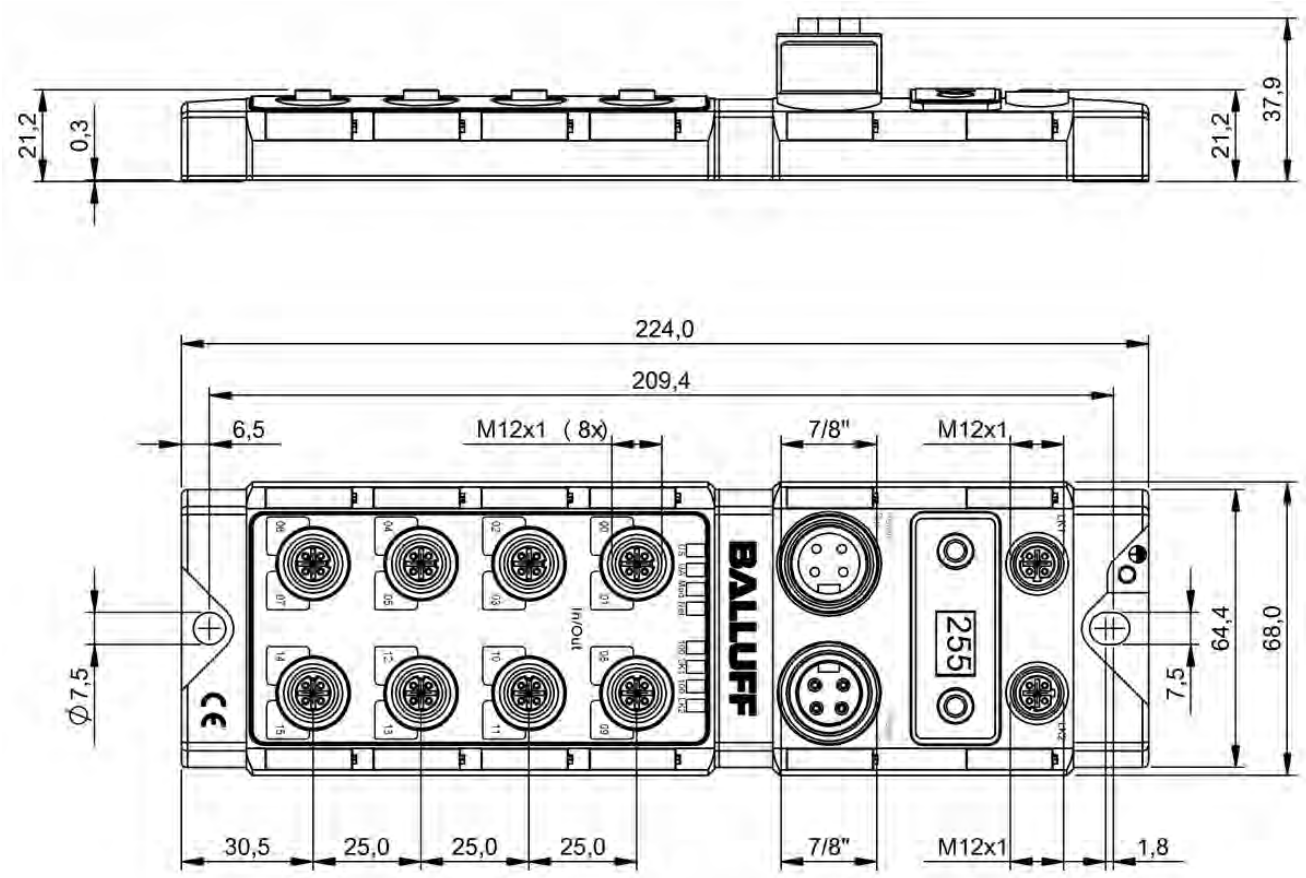
BNI006A



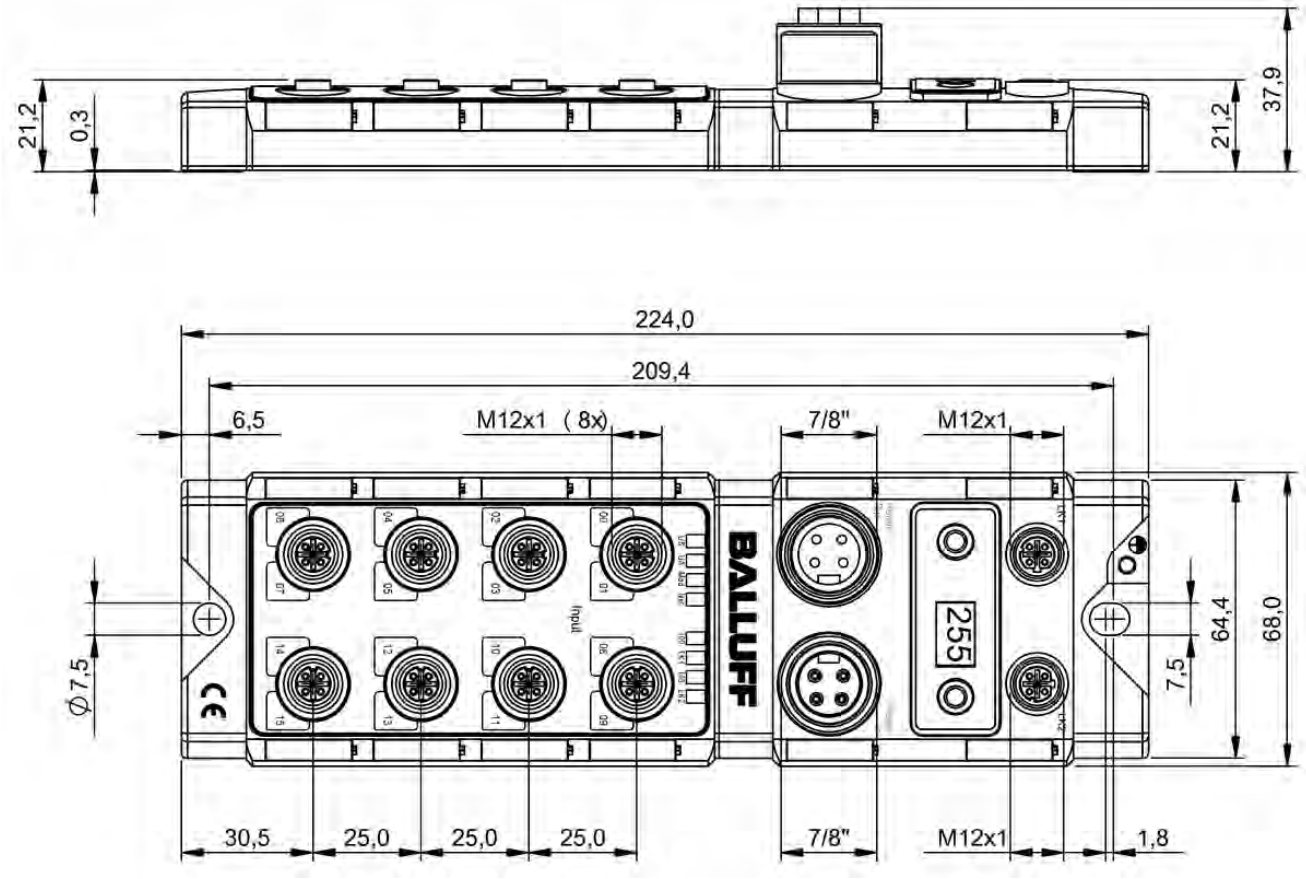
BNI004A



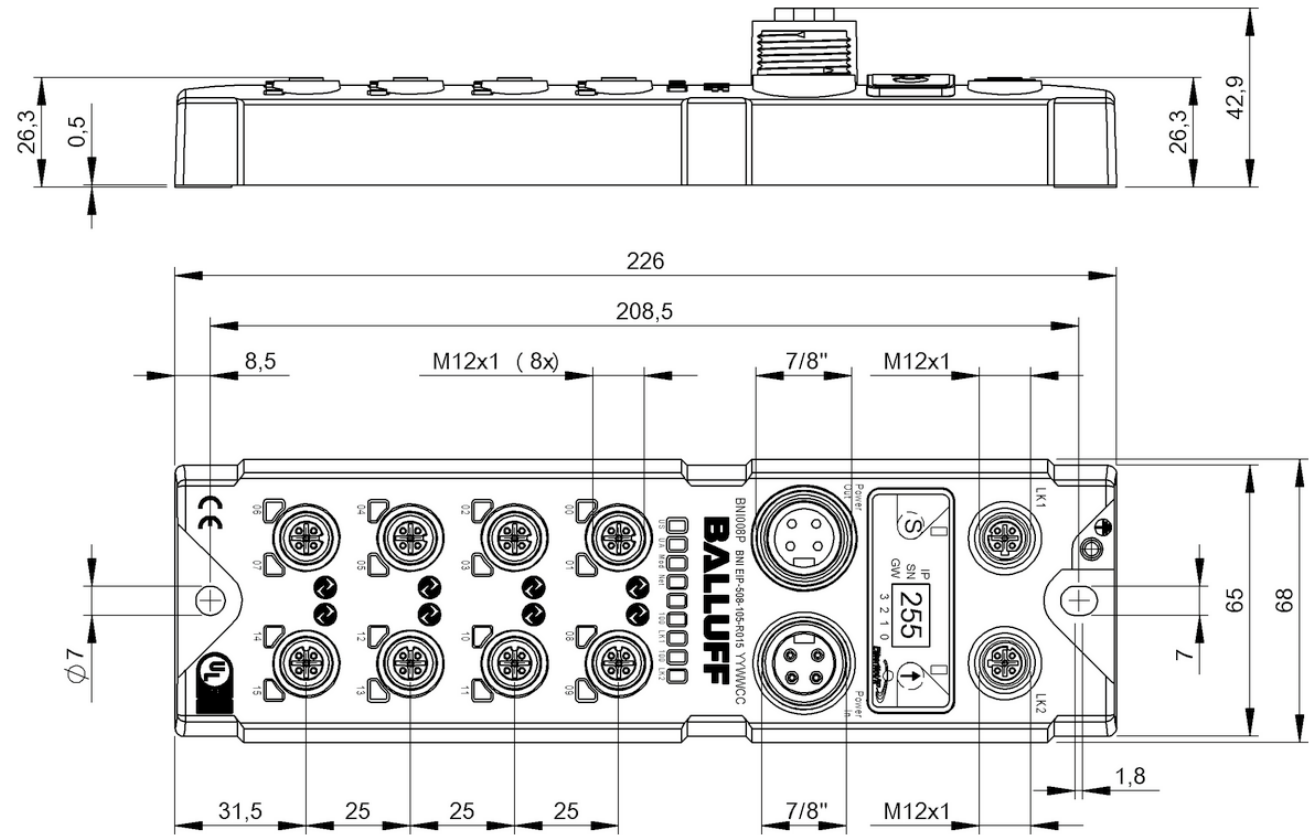
BNI009T, BNI00AA



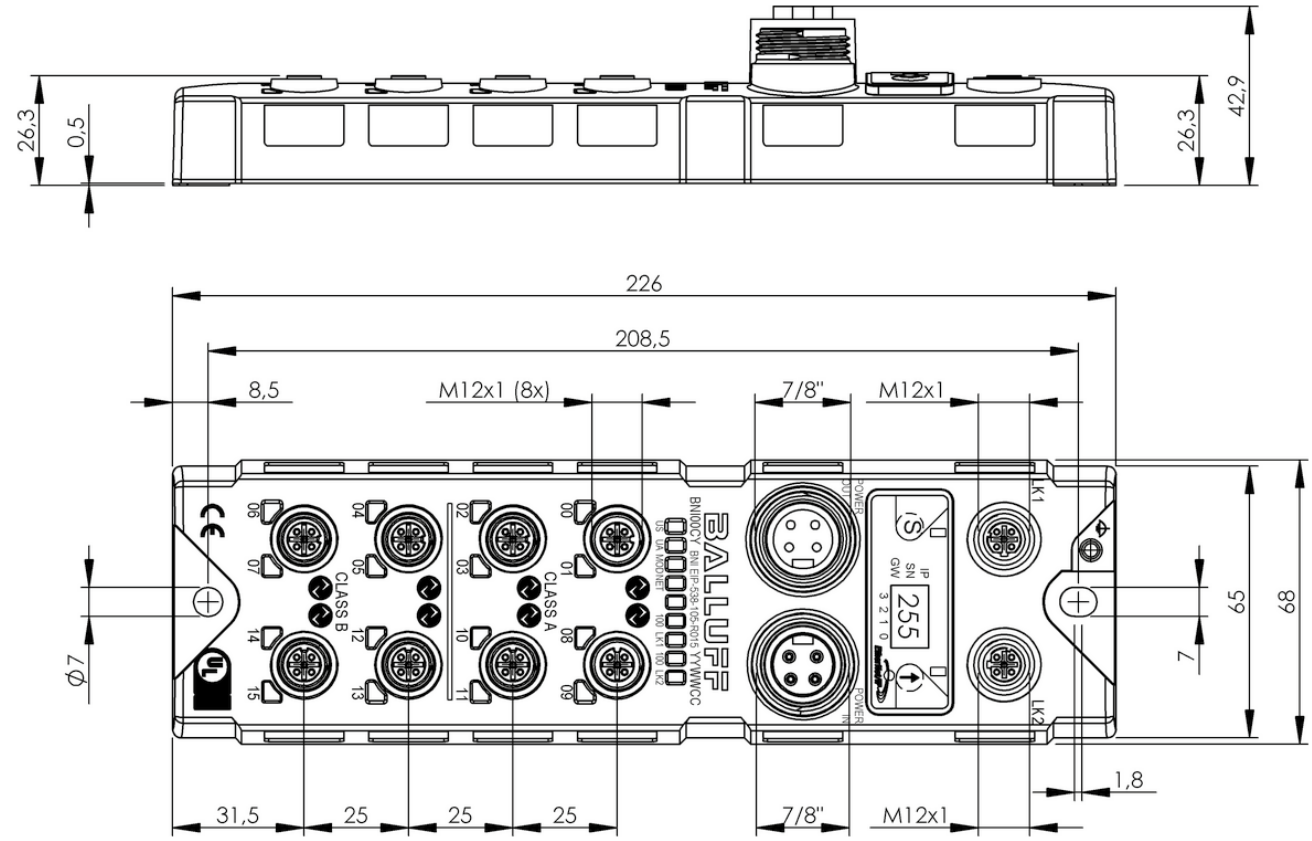
BNI004F



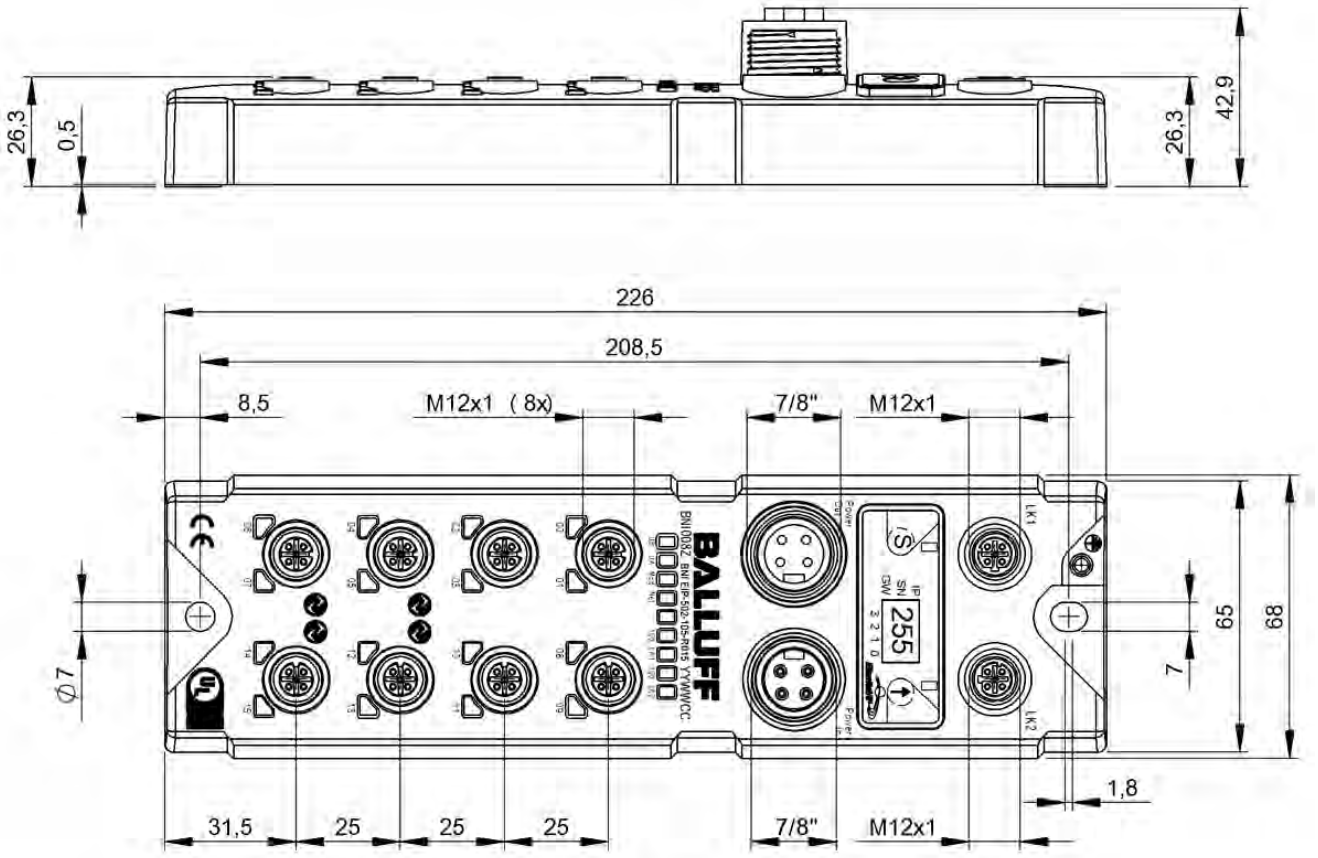
BNI004M



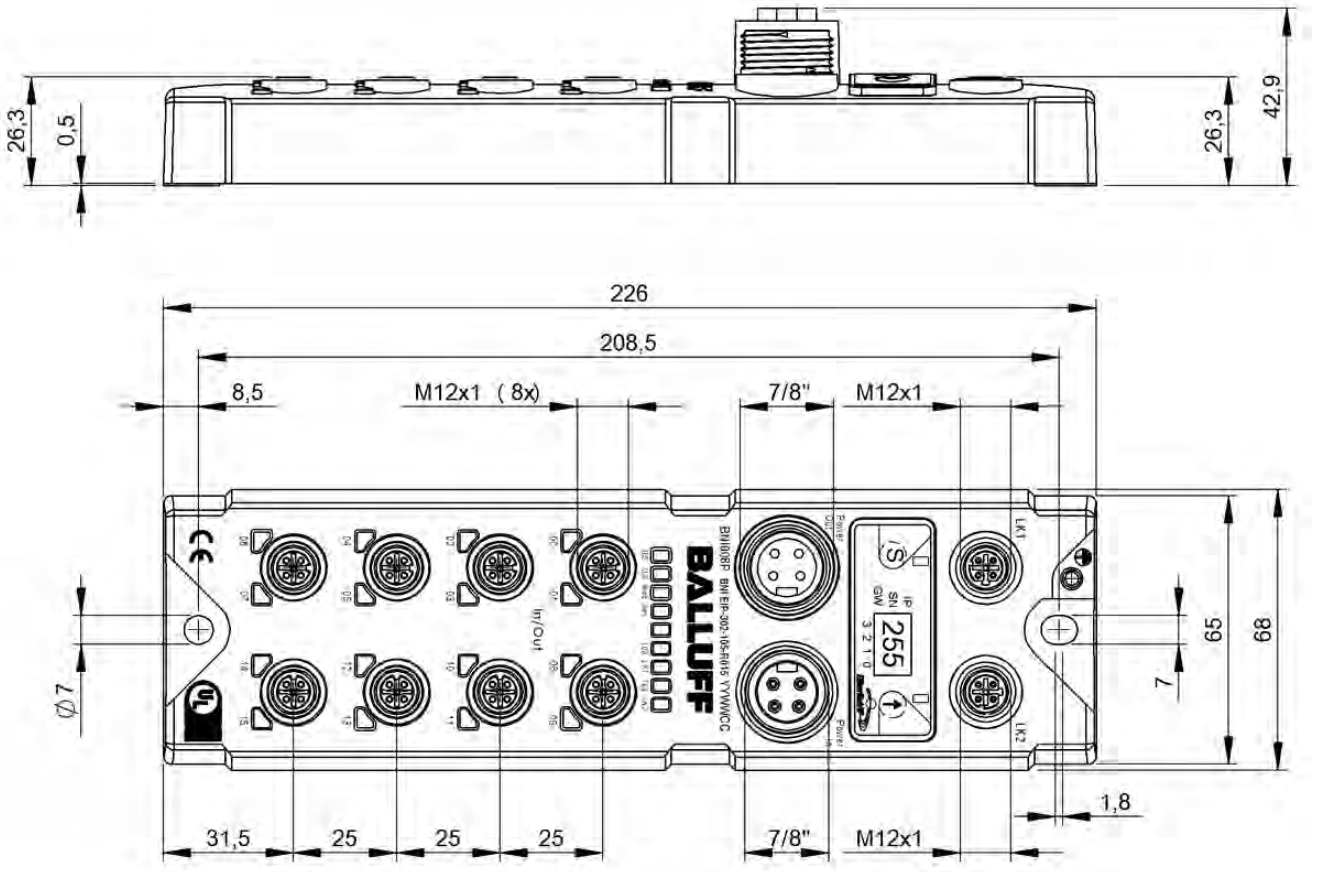
BNI008M



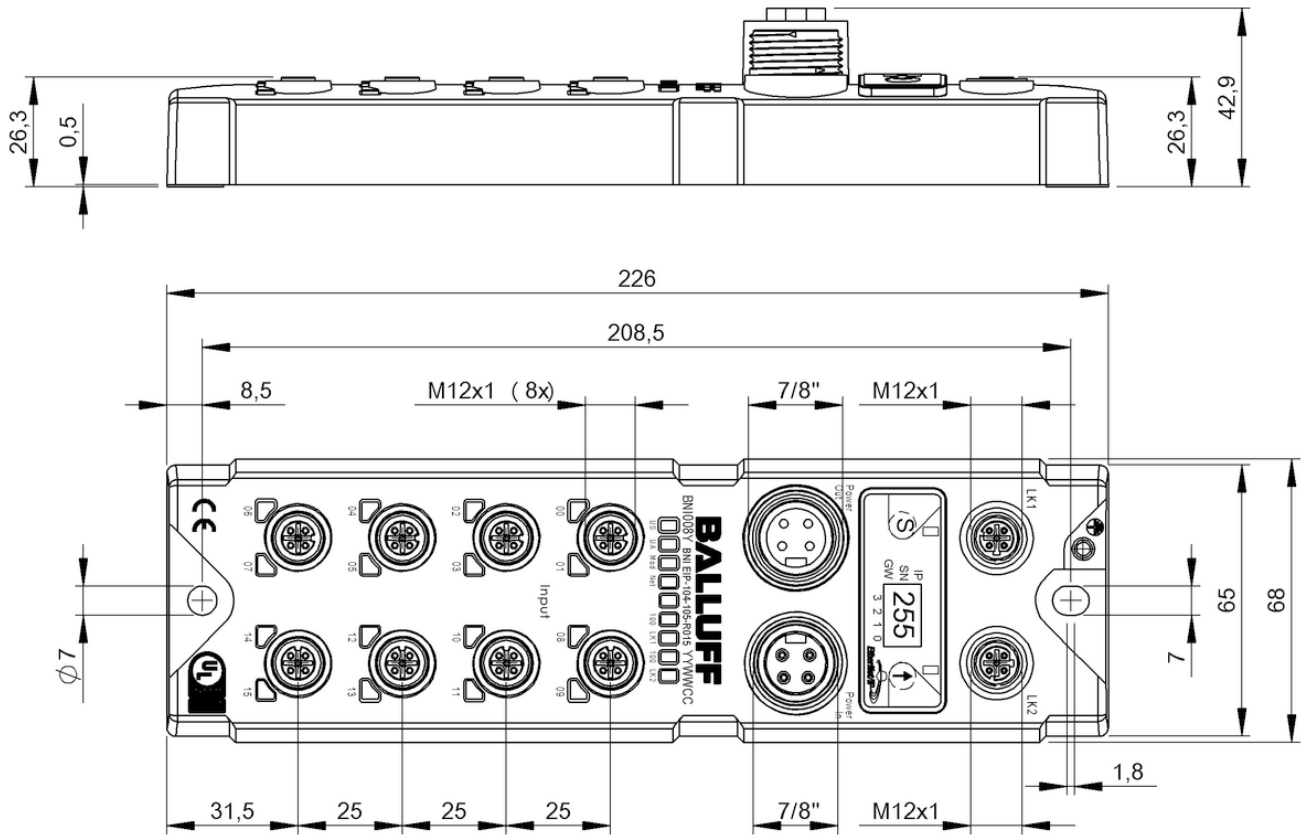
BNI00CY



BNI008Z



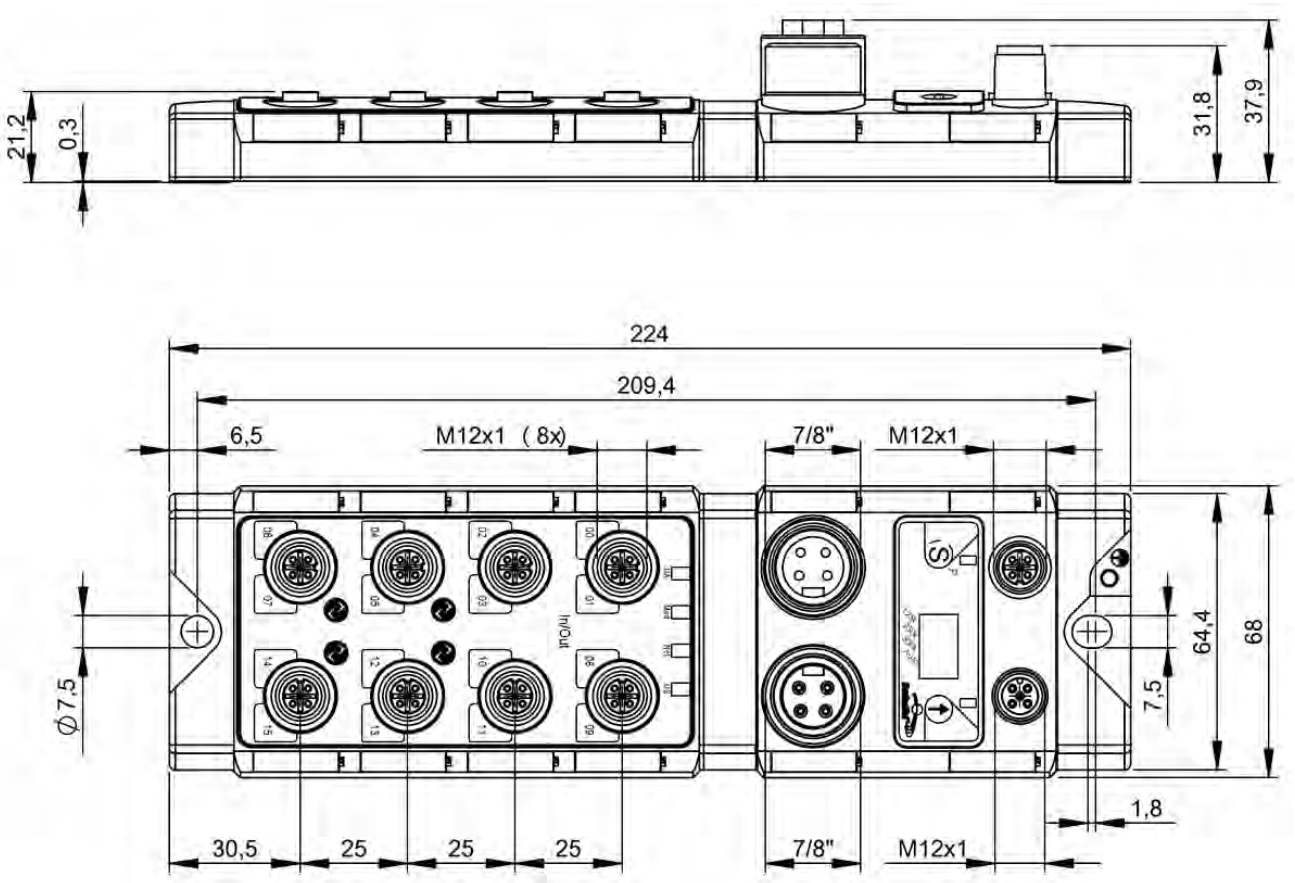
BNI008P


26,3
0,5
26,3
42,9
226
208,5
8,5
M12x1 (8x)
7/8"
M12x1
BALLUFF
BNI008Y BNI EIP-104-105-R015 YYWWCC
Input
Power Out
Power In
LK1
LK2
IP
SN
GW
255
65
68
7
ϕ 7
1,8
31,5
25
25
25
7/8"
M12x1

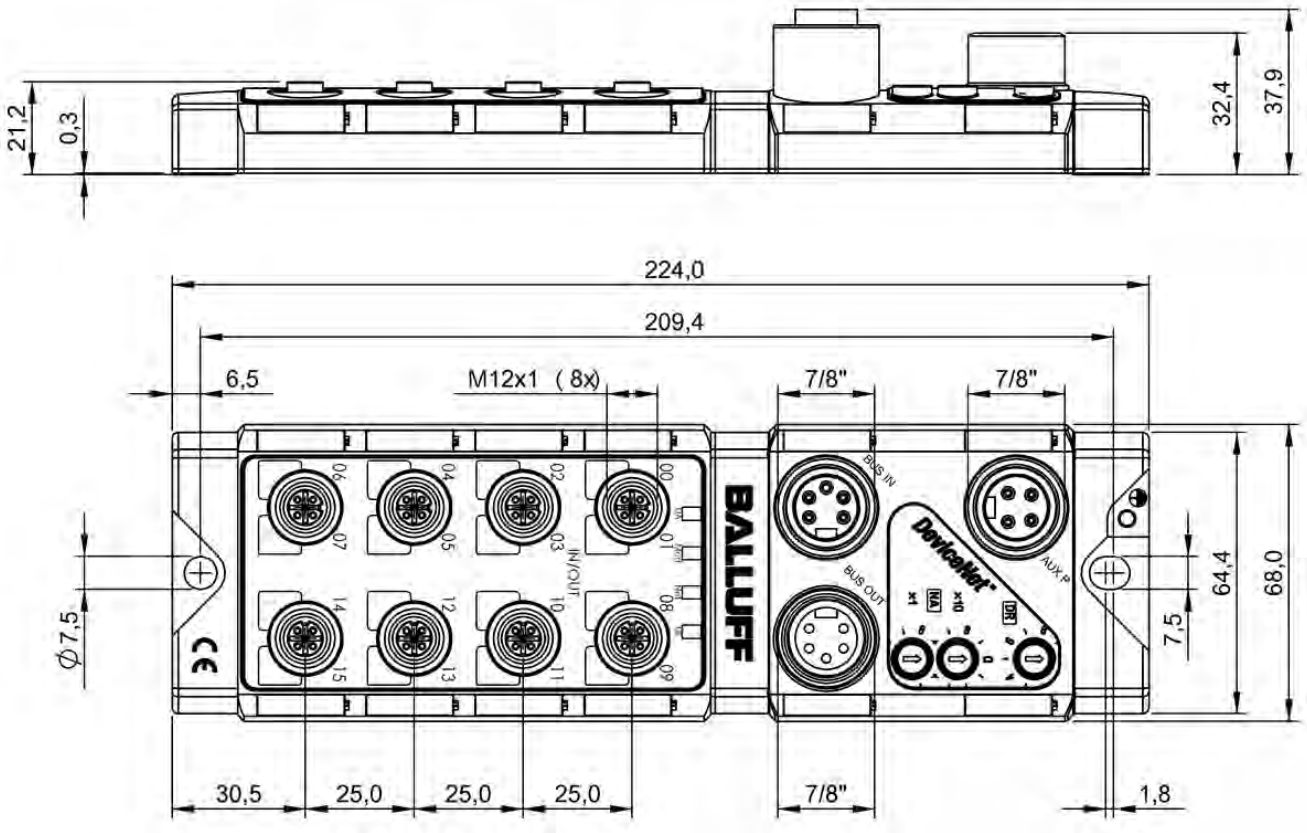
BNI008Y

	BNI005A BNI DNT-502-100-Z001	
Interface	DeviceNet	
Fast Start-Up (FSU)	—	
Operating voltage Ub	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 5-pin, A-coded	
Connection (COM 2)	M12x1-Female, 5-pin, A-coded	
Connection (supply voltage IN)	7/8“-Male, 4-pin	
Connection (supply voltage OUT)	7/8“-Female, 4-pin	
Connection slots	8x M12x1-Female, 5-pin, A-coded	
Digital inputs	16x PNP, Type 2	
Digital outputs	16x PNP	
Configurable inputs/outputs	yes	
Output current max.	2 A	
Current sum US, sensor	9.0 A	
Current sum UA, actuator	9.0 A	
Housing material	Zinc, Die casting	
Dimension	68 x 37.9 x 224 mm	
Ambient temperature	-5...70 °C	
IP rating	IP67	
Auxiliary interfaces	4x IO-Link	
IO-Link version	1.1	
Port-class	Type A	
Productview	Seite 132	

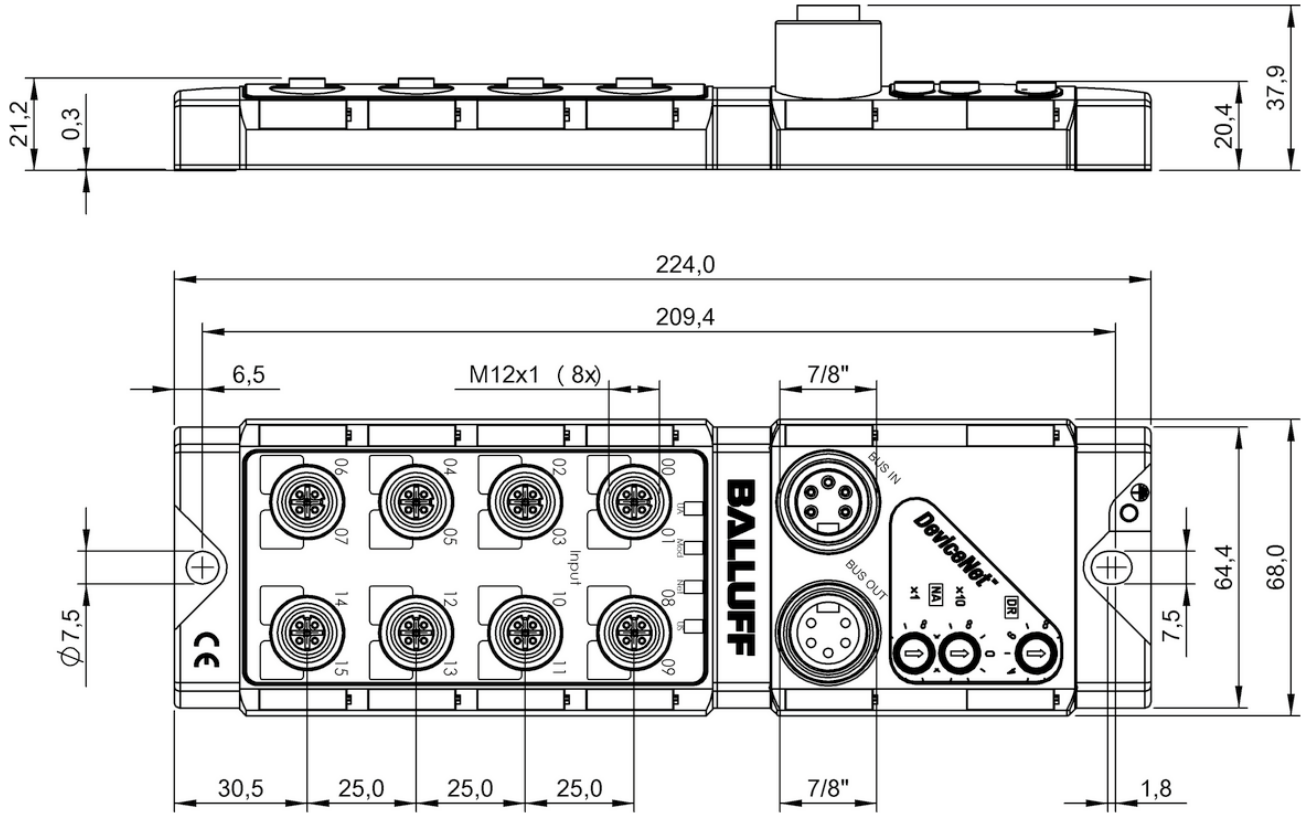
BNI0003 BNI DNT-302-000-Z005	BNI0001 BNI DNT-104-000-Z004
DeviceNet	DeviceNet
—	—
18...30.2 VDC	18...30.2 VDC
7/8“-Male, 5-pin	7/8“-Male, 5-pin
7/8“-Female, 5-pin	7/8“-Female, 5-pin
7/8“-Male, 4-pin	7/8“-Male, 4-pin
—	—
8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded
16x PNP, Type 2	16x PNP, Type 2
16x PNP	—
yes	no
2 A	—
9.0 A	9.0 A
9.0 A	—
Zinc, Die casting	Zinc, Die casting
68 x 37.9 x 224 mm	68 x 37.9 x 224 mm
-5...70 °C	-5...70 °C
IP67	IP67
—	—
—	—
—	—
Seite 132	Seite 133



BNI005A



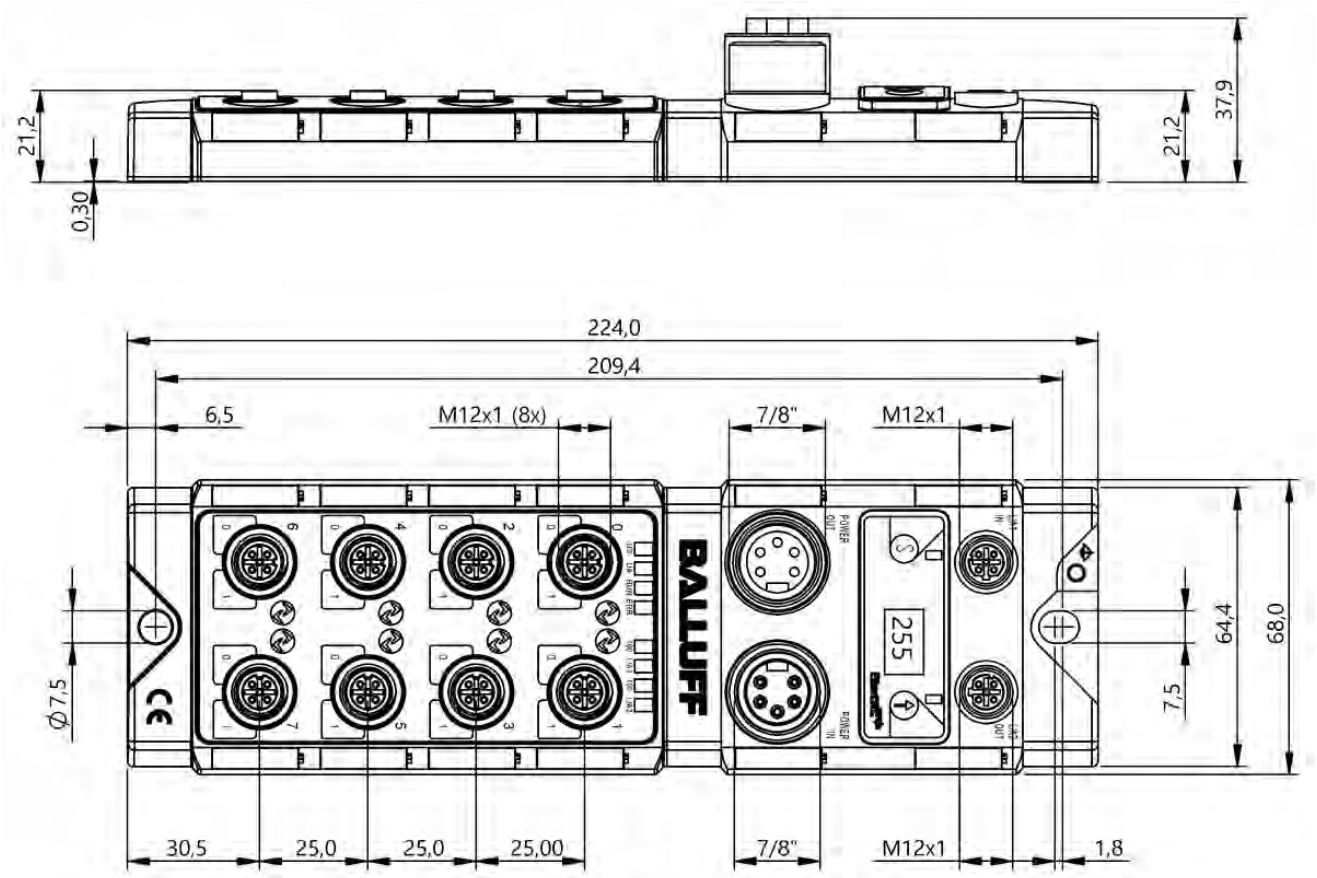
BNI0003


21,2
0,3
37,9
20,4
224,0
209,4
6,5
M12x1 (8x)
7/8"
BUS IN
BUS OUT
DeviceNet
BALLUFF
Input
64,4
68,0
7,5
ϕ7,5
30,5
25,0
25,0
25,0
7/8"
1,8

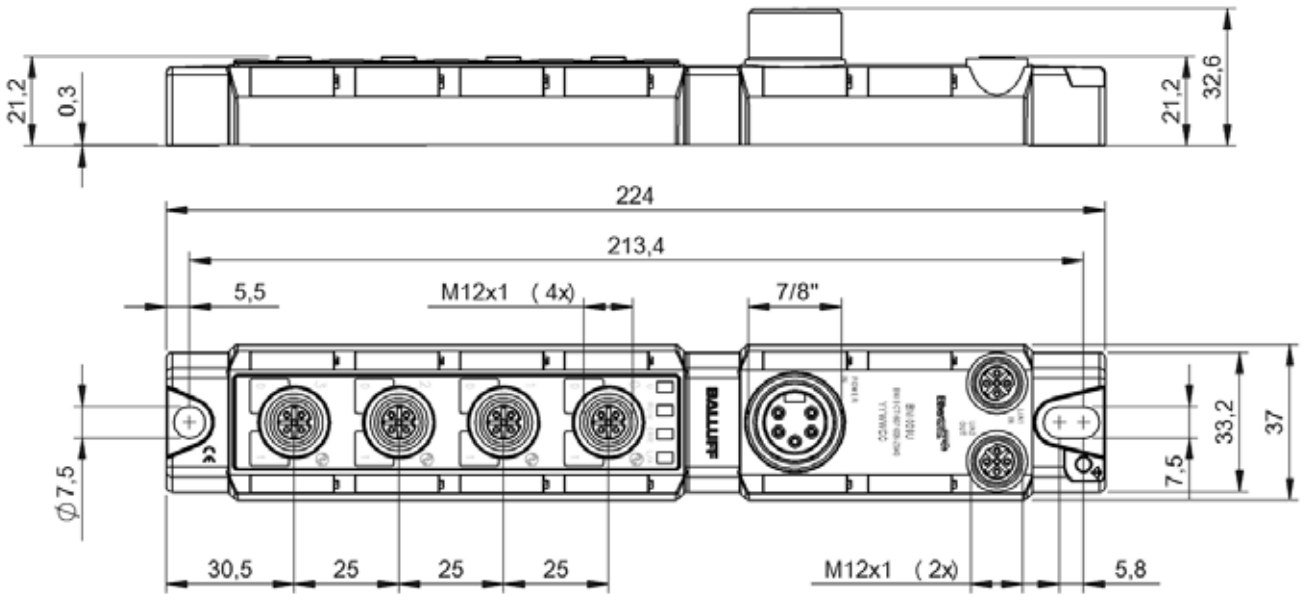
BNI0001

Interface	
Fast Start-Up (FSU)	
Operating voltage Ub	
Connection (COM 1)	
Connection (COM 2)	
Connection (supply voltage IN)	
Connection (supply voltage OUT)	
Connection slots	
Digital inputs	
Digital outputs	
Configurable inputs/outputs	
Output current max.	
Current sum US, sensor	
Current sum UA, actuator	
Housing material	
Dimension	
Ambient temperature	
IP rating	
Auxiliary interfaces	
IO-Link version	
Port-class	
Productview	

BNI0077 BNI ECT-508-105-Z015	BNI009U BNI ECT-507-005-Z040
EtherCAT	EtherCAT
—	—
18...30.2 VDC	18...30.2 VDC
M12x1-Female, 5-pin, D-coded	M12x1-Female, 5-pin, D-coded
M12x1-Female, 5-pin, D-coded	M12x1-Female, 5-pin, D-coded
7/8“-Male, 5-pin	7/8“-Male, 5-pin
7/8“-Female, 5-pin	—
8x M12x1-Female, 5-pin, A-coded	4x M12x1-Female, 5-pin, A-coded
16x PNP, Type 2	8x PNP, Type 3
16x PNP	8x PNP
yes	yes
2 A	2 A
9.0 A	9.0 A
9.0 A	9.0 A
Zinc, Die casting	Zinc, Die casting
68 x 37.9 x 224 mm	37 x 32.6 x 224 mm
-5...70 °C	-40...70 °C
IP67	IP67
8x IO-Link	4x IO-Link
1.1	1.1
Type A	Type A
Seite 136	Seite 136



BNI0077



BNI009U

System solutions for efficient network design

SWITCHES

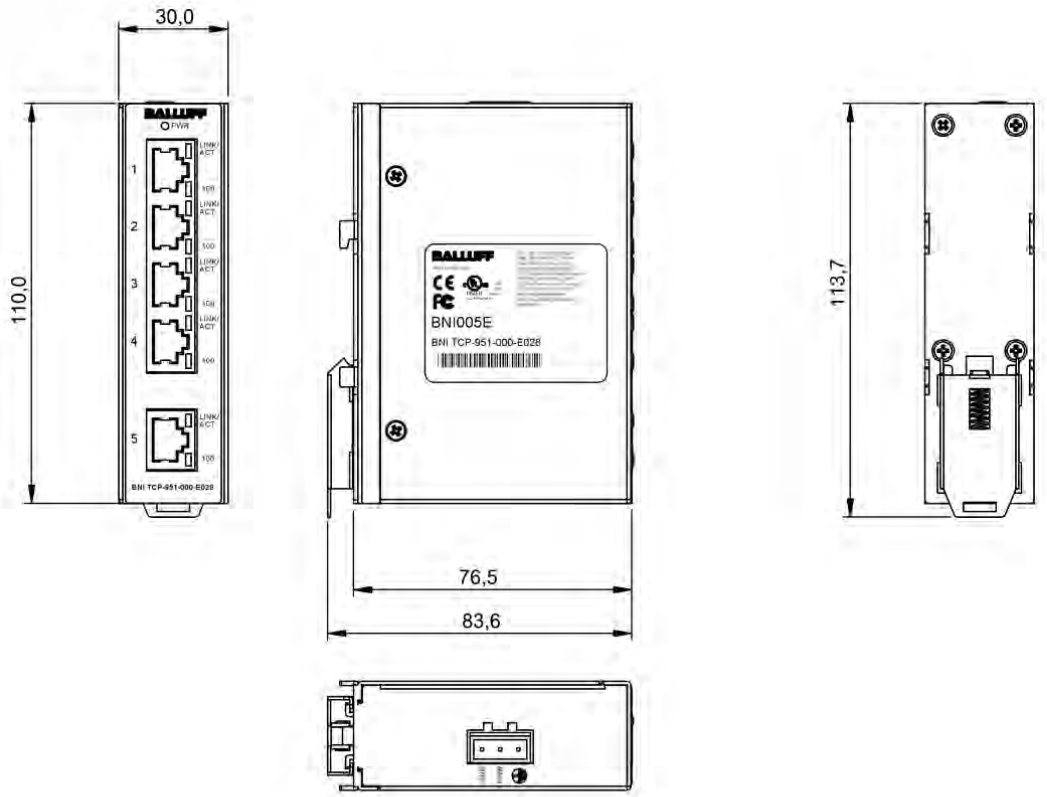
Ethernet-based network systems are increasingly gaining significance in industrial automation. To enable you to easily link all Ethernet system components with Ethernet, Balluff provides you with a complete system. We offer you a multiplicity of Ethernet-based systems and network components for machine and system outfitting, including Profinet and Ethernet/IP. This means optimum infrastructure for complex networks.

Features

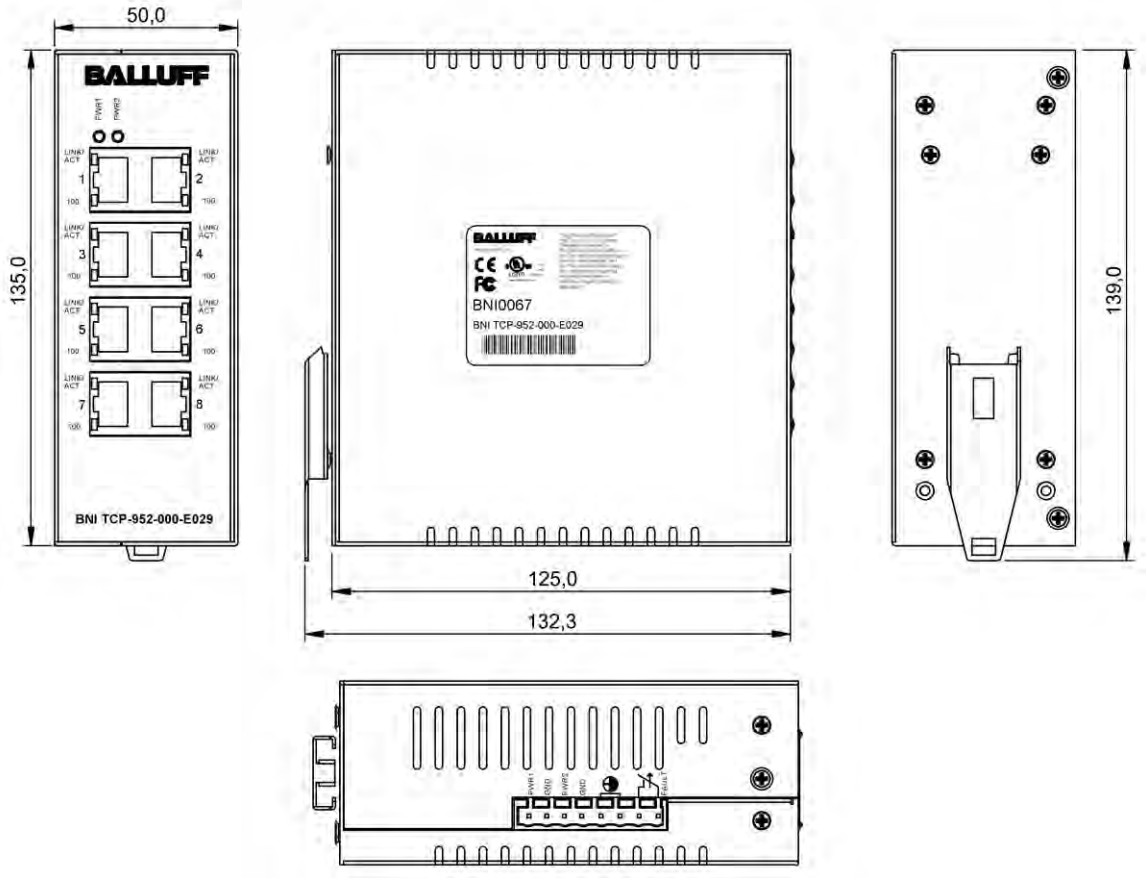
- Variety of Ethernet-based systems and network components
- Complete system for linking Ethernet system components with Ethernet

	BNI005E BNI TCP-951-000-E028	
Principle of operation	Active splitter	
Dimension	30 x 76.5 x 110 mm	
Mounting	DIN rail mount	
Housing material	Steel, coated	
Interface	Ethernet TCP/IP 10Base-T/100Base-TX	
Operating voltage Ub	12...48 VDC	
Connection slots	5x RJ45-Female, 8-pole	
Ambient temperature	-10...60 °C	
Protection degree	IP30	
Productview	Seite 142	

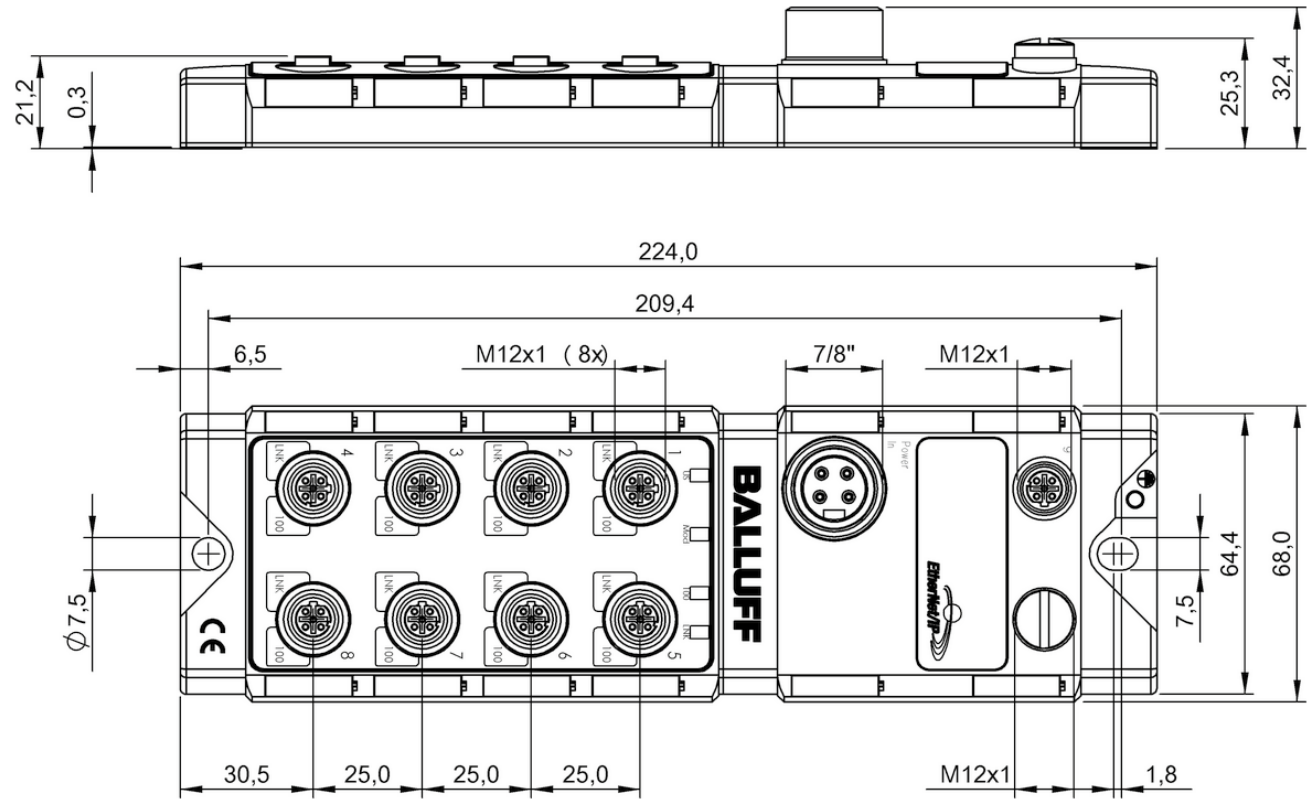
BNI0067 BNI TCP-952-000-E029	BNI000F BNI EIP-950-000-Z009
Active splitter	Active splitter
50 x 76.5 x 135 mm	68 x 32.4 x 224 mm
DIN rail mount	2-hole screw mount
Steel, coated	Zinc, die-cast
Ethernet TCP/IP 10Base-T/100Base-TX	Ethernet TCP/IP 10Base-T/100Base-TX
12...48 VDC	18...30.2 VDC
8x RJ45-Female, 8-pole	8x M12x1-Female, 4-pole, D-coded
-20...60 °C	-5...55 °C
IP30	IP67
Seite 142	Seite 143



BNI005E



BNI0067


21,2
0,3
25,3
32,4
224,0
209,4
6,5
M12x1 (8x)
7/8"
M12x1
BALLUFF
EtherNet/IP
ϕ7,5
64,4
68,0
7,5
30,5
25,0
25,0
25,0
M12x1
1,8

BNI000F

**Reliable signal transmission,
even under extreme conditions**

I/O MODULES

I/O modules from Balluff connect binary and analog sensors and actuators to the control level via a bus. By using our modules you can significantly reduce the number of cables required. The Balluff I/O modules also offer additional functions for signal preprocessing and expanded diagnostic options. Various form factors and connection technologies provide solutions for a wide range of requirements – even under extreme ambient conditions.

Features

- Simple to install
- Efficient configuration
- Continuous diagnostics
- Individual solutions through a variety of designs and connection techniques
- Suitable for use under extreme conditions



	BNI0093 BNI IOL-309-002-Z019	BNI0099 BNI IOL-102-002-Z019	BNI00AU BNI IOL-302-002-Z046	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	
Connection (supply voltage IN)	—	—	—	
Connection slots	8x M8x1-Female, 3-pin	8x M8x1-Female, 3-pin	16x M8x1-Female, 3-pin	
Digital inputs	8x PNP, Type 3	8x PNP, Type 3	16x PNP, Type 3	
Digital outputs	8x PNP	—	16x PNP	
Analog inputs	—	—	—	
Configurable inputs/outputs	yes	no	yes	
Extension port	yes	yes	yes	
Single-channel monitoring	—	—	—	
Additional function	—	—	—	
Current sum US, sensor	4 A	4 A	4 A	
Current sum UA, actuator	4 A	—	4 A	
Switching current	8x 300 mA	—	16x 300 mA	
Housing material	Zinc, Die casting, nickel plated	Zinc, Die casting	Zinc, Die casting, nickel plated	
Dimension	30 x 32.8 x 132 mm	30 x 32.8 x 132 mm	30 x 32.8 x 220 mm	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
IP rating	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	3.5 ms	3.2 ms	4.0 ms	
Process data IN	1 bytes	1 bytes	2 bytes	
Process data OUT	1 bytes	—	2 bytes	
Productview	Seite 158	Seite 158	Seite 158	





	BNI00AY BNI IOL-104-002-Z046	BNI000R BNI IOL-102-000-K019	BNI001Y BNI IOL-102-S01-K019	BNI0021 BNI IOL-104-000-K021	BNI0022 BNI IOL-104-S01-K021
	IO-Link 1.1	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0
	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded
	—	—	—	—	—
	16x M8x1-Female, 3-pin	8x M8x1-Female, 3-pin	8x M8x1-Female, 3-pin	8x M8x1-Female, 4-pin	8x M8x1-Female, 4-pin
	16x PNP, Type 3	8x PNP, Type 2	8x PNP, Type 2	16x PNP, Type 2	16x PNP, Type 2
	—	—	—	—	—
	—	—	—	—	—
	no	no	no	no	no
	yes	—	—	—	—
	—	—	yes	—	yes
	—	—	—	—	—
	4 A	4 A	4 A	4 A	4 A
	—	—	—	—	—
	—	—	—	—	—
	Zinc, Die casting, nickel plated	PBT, GF	PBT, GF	PBT, GF	PBT, GF
	30 x 32.8 x 220 mm	30 x 24 x 129.5 mm	30 x 24 x 129.5 mm	30 x 24 x 129.5 mm	30 x 24 x 129.5 mm
	-5...70 °C	-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C
	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	3.5 ms	2.5 ms	2.5 ms	2.5 ms	10 ms
	2 bytes	1 bytes	2 bytes	2 bytes	4 bytes
	—	—	—	—	—
	Seite 159	Seite 159	Seite 159	Seite 160	Seite 160

	BNI000P BNI IOL-101-000-K018	BNI001W BNI IOL-101-S01-K018	BNI00CN BNI IOL-302-S02-Z012	
Interface	IO-Link 1.0	IO-Link 1.0	IO-Link 1.1	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	
Connection (supply voltage IN)	—	—	—	
Connection slots	4x M8x1-Female, 3-pin	4x M8x1-Female, 3-pin	8x M12x1-Female, 5-pin, A-coded	
Digital inputs	4x PNP, Type 2	4x PNP, Type 2	16x PNP, Type 3	
Digital outputs	—	—	16x PNP	
Analog inputs	—	—	—	
Configurable inputs/outputs	no	no	yes	
Extension port	—	—	yes	
Single-channel monitoring	—	yes	yes	
Additional function	—	—	—	
Current sum US, sensor	4 A	4 A	4 A	
Current sum UA, actuator	—	—	4 A	
Switching current	—	—	16x 200 mA	
Housing material	PBT, GF	PBT, GF	Zinc, Die casting	
Dimension	30 x 24 x 85.5 mm	30 x 24 x 85.5 mm	68 x 31.8 x 181.5 mm	
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C	
IP rating	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	2.5 ms	2.5 ms	6.2 ms	
Process data IN	1 bytes	2 bytes	8 bytes	
Process data OUT	—	—	2 bytes	
Productview	Seite 160	Seite 160	Seite 161	





	BNI00CR BNI IOL-104-S02-Z012	BNI0063 BNI IOL-106-000-Z012	BNI0062 BNI IOL-106-S01-Z012	BNI0061 BNI IOL-106-S01-Z012-C01	BNI00AJ BNI IOL-719-002-Z012
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded
	—	—	—	—	—
	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded
	16x PNP, Type 3	16x NPN, Type 2	16x NPN, Type 2	16x NPN, Type 2	—
	—	—	—	—	—
	—	—	—	—	8x Analog, voltage/analog, current/analog, temperature (0…10 V/-10…10 V/0…5 V/-5…5 V/5...10 V/4…20 mA/0…20 mA/ Pt100/Pt1000/Thermocouple Type J/Thermocouple Type K)
	no	no	no	no	no
	yes	—	—	—	—
	yes	—	yes	yes	—
	—	—	—	Identification 2 bytes	—
	4 A	4 A	4 A	4 A	4 A
	4 A	—	—	—	4 A
	—	—	—	—	—
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm
	-5...55 °C	-5...70 °C	-5...70 °C	-5...70 °C	-5...70 °C
	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	4.4 ms	3.0 ms	3.5 ms	4.0 ms	55 ms
	4 bytes	2 bytes	4 bytes	6 bytes	22 bytes
	—	—	—	—	1 bytes
	Seite 161	Seite 161	Seite 161	Seite 161	Seite 162



	BNI003U BNI IOL-302-000-Z012	BNI0032 BNI IOL-104-000-Z012	BNI003T BNI IOL-104-S01-Z012-C01	
Interface	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	
Connection (supply voltage IN)	—	—	—	
Connection slots	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	
Digital inputs	16x PNP, Type 2	16x PNP, Type 2	16x PNP, Type 2	
Digital outputs	16x PNP	—	—	
Analog inputs	—	—	—	
Configurable inputs/outputs	yes	no	no	
Extension port	—	—	—	
Single-channel monitoring	—	—	yes	
Additional function	—	—	Identification 2 bytes	
Current sum US, sensor	4 A	4 A	4 A	
Current sum UA, actuator	4 A	—	—	
Switching current	16x 500 mA	—	—	
Housing material	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting	
Dimension	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
IP rating	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	12 ms	3.0 ms	18 ms	
Process data IN	2 bytes	2 bytes	6 bytes	
Process data OUT	2 bytes	—	—	
Productview	Seite 162	Seite 161	Seite 161	





	BNI005P BNI IOL-104-S01-Z012-C02	BNI0031 BNI IOL-102-000-Z012	BNI00CM BNI IOL-302-002-Z042	BNI0046 BNI IOL-302-S02-Z013	BNI0035 BNI IOL-302-000-Z013
	IO-Link 1.0	IO-Link 1.0	IO-Link 1.1	IO-Link 1.1	IO-Link 1.0
	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded
	–	–	–	7/8“-Male, 5-pin	7/8“-Male, 5-pin
	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded
	16x PNP, Type 2	8x PNP, Type 2	16x PNP, Type 3	16x PNP, Type 3	16x PNP, Type 2
	–	–	16x PNP	16x PNP	16x PNP
	–	–	–	–	–
	no	no	yes	yes	yes
	–	–	yes	yes	–
	yes	–	–	yes	–
	Identification 4 bytes	–	–	–	–
	4 A	4 A	4 A	9.0 A	9.0 A
	–	–	4 A	9.0 A	9.0 A
	–	–	16x 2 A	16x 2 A	16x 2 A
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 32.4 x 181.5 mm	68 x 32.4 x 181.5 mm
	-5...70 °C	-5...70 °C	-5...55 °C	-5...55 °C	-5...70 °C
	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	24 ms	3.0 ms	4.4 ms	6.2 ms	12 ms
	8 bytes	1 bytes	2 bytes	8 bytes	2 bytes
	–	–	2 bytes	2 bytes	2 bytes
	Seite 161	Seite 163	Seite 161	Seite 163	Seite 164

	BNI0048 BNI IOL-302-S01-Z013-C01	BNI00CP BNI IOL-302-S02-Z026	BNI0050 BNI IOL-302-000-Z026	
Interface	IO-Link 1.0	IO-Link 1.1	IO-Link 1.0	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	
Connection (supply voltage IN)	7/8“-Male, 5-pin	7/8“-Male, 4-pin	7/8“-Male, 4-pin	
Connection slots	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	
Digital inputs	16x PNP, Type 2	16x PNP, Type 3	16x PNP, Type 2	
Digital outputs	16x PNP	16x PNP	16x PNP	
Analog inputs	—	—	—	
Configurable inputs/outputs	yes	yes	yes	
Extension port	—	yes	—	
Single-channel monitoring	yes	yes	—	
Additional function	Identification 2 bytes	—	—	
Current sum US, sensor	9.0 A	9.0 A	9.0 A	
Current sum UA, actuator	9.0 A	9.0 A	9.0 A	
Switching current	—	16x 2 A	16x 2 A	
Housing material	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting	
Dimension	68 x 32.4 x 181.5 mm	68 x 32.4 x 181.5 mm	68 x 32.4 x 181.5 mm	
Ambient temperature	-5...70 °C	-5...55 °C	-5...70 °C	
IP rating	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	30 ms	5.6 ms	12 ms	
Process data IN	10 bytes	6 bytes	2 bytes	
Process data OUT	2 bytes	2 bytes	2 bytes	
Productview	Seite 164	Seite 164	Seite 165	





	BNI0090 BNI IOL-104-S02-R012	BNI0091 BNI IOL-302-S02-R026	BNI005L BNI IOL-302-000-K006	BNI005U BNI IOL-302-000-K006-C01	BNI007Z BNI IOL-302-002-K006
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded
	—	7/8“-Male, 4-pin	—	—	—
	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded
	16x PNP, Type 3	16x PNP, Type 3	16x PNP, Type 3	16x PNP, Type 3	16x PNP, Type 3
	—	16x PNP	16x PNP	16x PNP	16x PNP
	—	—	—	—	—
	no	yes	yes	yes	yes
	yes	yes	—	—	yes
	yes	yes	—	—	—
	—	—	—	Identification 2 bytes	—
	3.5 A	9 A	4 A	4 A	4 A
	—	9 A	4 A	4 A	4 A
	—	16x 2 A	16x 350 mA	16x 350 mA	16x 350 mA
	PPS	PPS	PA, Transparent	PA, Transparent	PA, Transparent
	68 x 36.8 x 183.5 mm	68 x 37.6 x 183.5 mm	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm
	-5...70 °C	-5...55 °C	-5...55 °C	-5...55 °C	-20...55 °C
	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	4.5 ms	6.0 ms	3.5 ms	4.0 ms	3.5 ms
	4 bytes	6 bytes	2 bytes	4 bytes	2 bytes
	—	2 bytes	2 bytes	2 bytes	2 bytes
	Seite 165	Seite 166	Seite 166	Seite 167	Seite 167

	BNI005T BNI IOL-302-S01-K006	**BNI005W** BNI IOL-302-S01-K006-C01	**BNI00AF** BNI IOL-311-002-K006	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	
Connection (supply voltage IN)	—	—	—	
Connection slots	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	
Digital inputs	16x PNP, Type 3	16x PNP, Type 3	16x NPN, Type 3	
Digital outputs	16x PNP	16x PNP	16x NPN	
Analog inputs	—	—	—	
Configurable inputs/outputs	yes	yes	yes	
Extension port	—	—	yes	
Single-channel monitoring	yes	yes	—	
Additional function	—	Identification 2 bytes	—	
Current sum US, sensor	4 A	4 A	4 A	
Current sum UA, actuator	4 A	4 A	4 A	
Switching current	16x 350 mA	16x 350 mA	16x 200 mA	
Housing material	PA, Transparent	PA, Transparent	PA, Transparent	
Dimension	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm	
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C	
IP rating	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	5.0 ms	5.5 ms	3.5 ms	
Process data IN	8 bytes	10 bytes	2 bytes	
Process data OUT	2 bytes	2 bytes	2 bytes	
Productview	Seite 168	Seite 168	Seite 169	





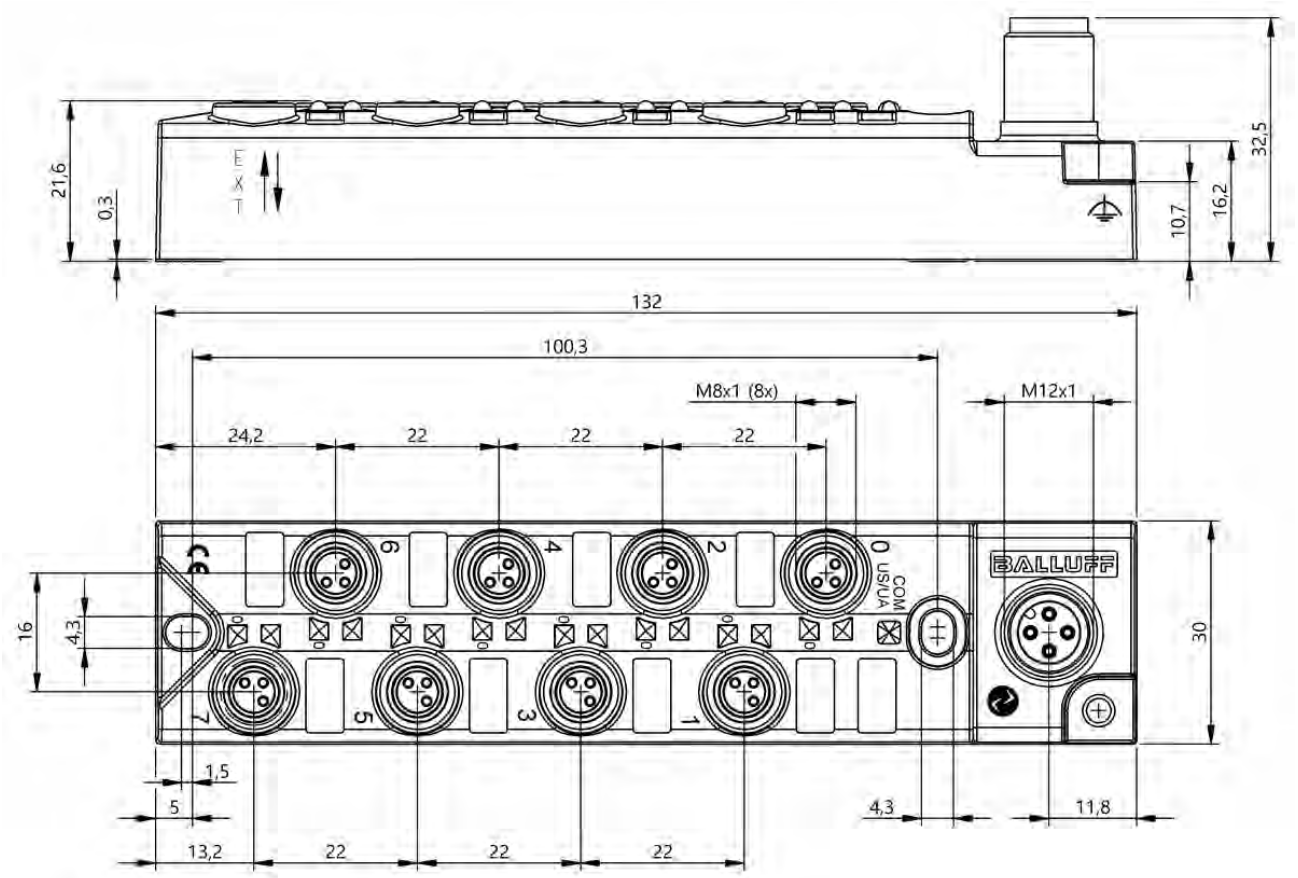
BNI00AW BNI IOL-311-S02-K006-C01	BNI0074 BNI IOL-106-000-K006	BNI0075 BNI IOL-106-S01-K006	BNI0076 BNI IOL-106-S01-K006-C01	BNI0006 BNI IOL-104-000-K006
IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.0
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded
–	–	–	–	–
8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded
16x NPN, Type 3	16x NPN, Type 2	16x NPN, Type 2	16x NPN, Type 2	16x PNP, Type 2
16x NPN	–	–	–	–
–	–	–	–	–
yes	no	no	no	no
yes	–	–	–	–
yes	–	yes	yes	–
Identification 2 bytes	–	–	Identification 2 bytes	–
4 A	4 A	4 A	4 A	4 A
4 A	–	–	–	–
16x 200 mA	–	–	–	–
PA, Transparent	PA, Transparent	PA, Transparent	PA, Transparent	PA, Transparent
50 x 30.8 x 115 mm	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm
-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C
IP67, when threaded in	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in
COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
6.0 ms	3.0 ms	3.5 ms	4.0 ms	3.0 ms
10 bytes	2 bytes	4 bytes	6 bytes	2 bytes
2 bytes	–	–	–	–
Seite 169	Seite 170	Seite 170	Seite 171	Seite 171



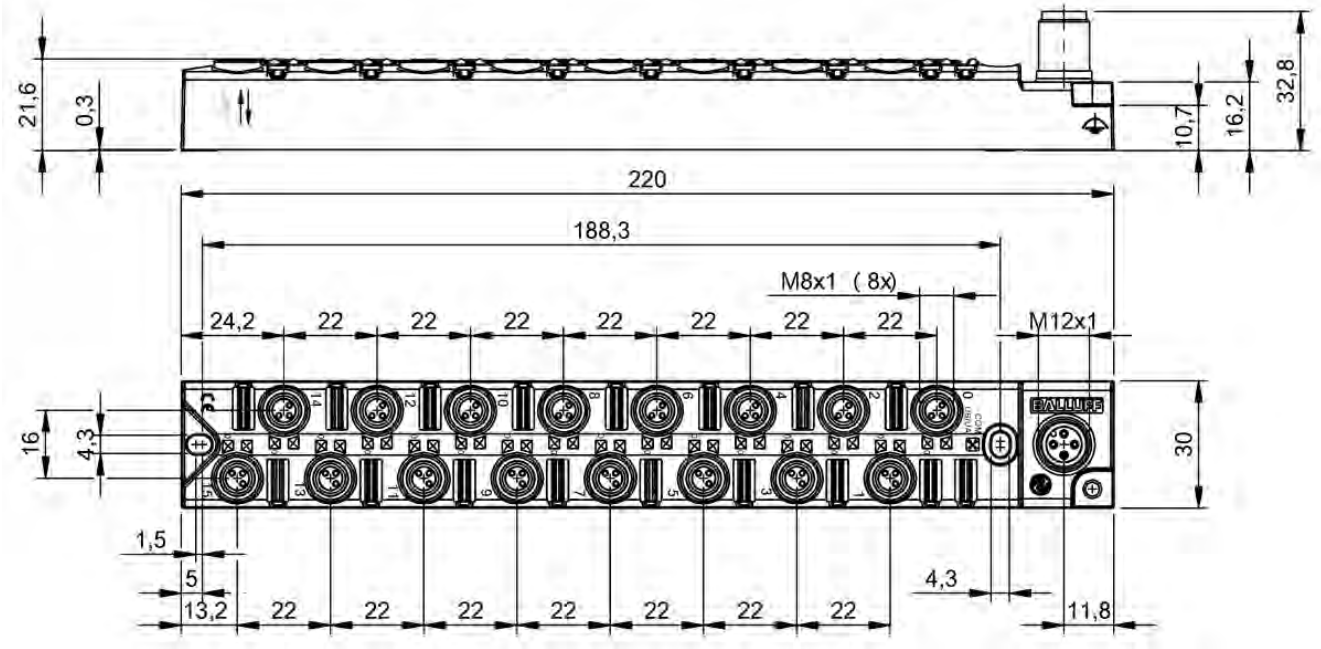
	BNI0005 BNI IOL-102-000-K006	BNI0007 BNI IOL-709-000-K006	BNI0008 BNI IOL-710-000-K006	
Interface	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	M12x1-Male, 4-pin, A-coded	
Connection (supply voltage IN)	—	—	—	
Connection slots	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	8x M12x1-Female, 5-pin, A-coded	
Digital inputs	8x PNP, Type 2	8x PNP, Type 2	8x PNP, Type 2	
Digital outputs	—	—	—	
Analog inputs	—	4x Analog, current (4…20 mA)	4x Analog, voltage (0…10 V)	
Configurable inputs/outputs	no	no	no	
Extension port	—	—	—	
Single-channel monitoring	—	—	—	
Additional function	—	—	—	
Current sum US, sensor	4 A	4 A	4 A	
Current sum UA, actuator	—	—	—	
Switching current	—	—	—	
Housing material	PA, Transparent	PA, Transparent	PA, Transparent	
Dimension	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm	
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C	
IP rating	IP67, when threaded in	IP67, when threaded in	IP67, when threaded in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	3.0 ms	30 ms	30 ms	
Process data IN	1 bytes	10 bytes	10 bytes	
Process data OUT	—	—	—	
Productview	Seite 172	Seite 172	Seite 173	



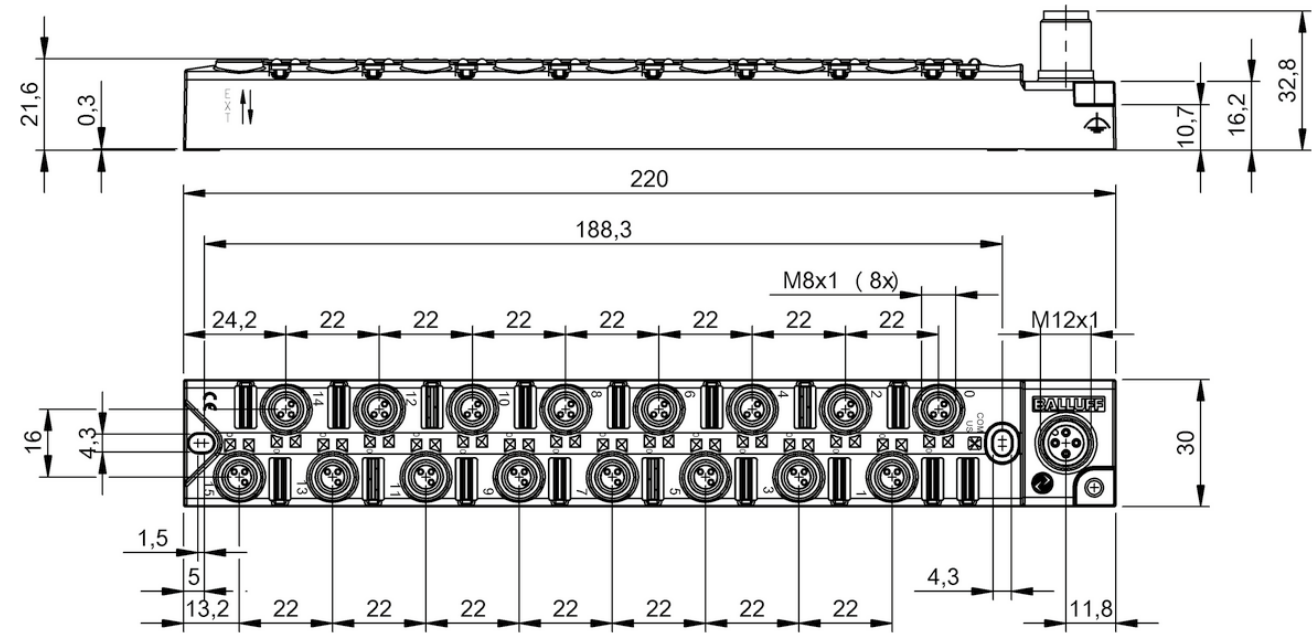

	BNI007P BNI IOL-309-000-K024-001	BNI004K BNI IOL-309-000-K024	BNI004L BNI IOL-310-000-K025	BNI007R BNI IOL-310-000-K025-001	
	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	
	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
	Pluggable without terminals, 4-pin	Screw/plug-in terminals, 4-pin	Screw/plug-in terminals, 4-pin	Pluggable without terminals, 4-pin	
	Pluggable without terminals	Screw/plug-in terminals	Screw/plug-in terminals	Pluggable without terminals	
	Pluggable without terminals	Screw/plug-in terminals	Screw/plug-in terminals	Pluggable without terminals	
	8x PNP, Type 2	8x PNP, Type 2	16x PNP, Type 2	16x PNP, Type 2	
	8x PNP	8x PNP	16x PNP	16x PNP	
	—	—	—	—	
	yes	yes	yes	yes	
	—	—	—	—	
	—	—	—	—	
	—	—	—	—	
	1.0 A	1.0 A	1.0 A	1.0 A	
	1.6 A	1.0 A	1.6 A	1.6 A	
	8x 350 mA	—	16x 350 mA	16x 350 mA	
	PA 6.6, UL94V-0	PA 6.6, UL94V-0	PA 6.6, UL94V-0	PA 6.6, UL94V-0	
	48.6 x 33.6 x 84 mm	48.6 x 42.6 x 84 mm	79 x 33.6 x 84 mm	79 x 33.6 x 84 mm	
	-20...50 °C	-20...50 °C	-20...50 °C	-20...50 °C	
	IP20	IP20	IP20	IP20	
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
	3.0 ms	3.0 ms	12 ms	12 ms	
	1 bytes	1 bytes	2 bytes	2 bytes	
	1 bytes	1 bytes	2 bytes	2 bytes	
	Seite 173	Seite 174	Seite 174	Seite 175	



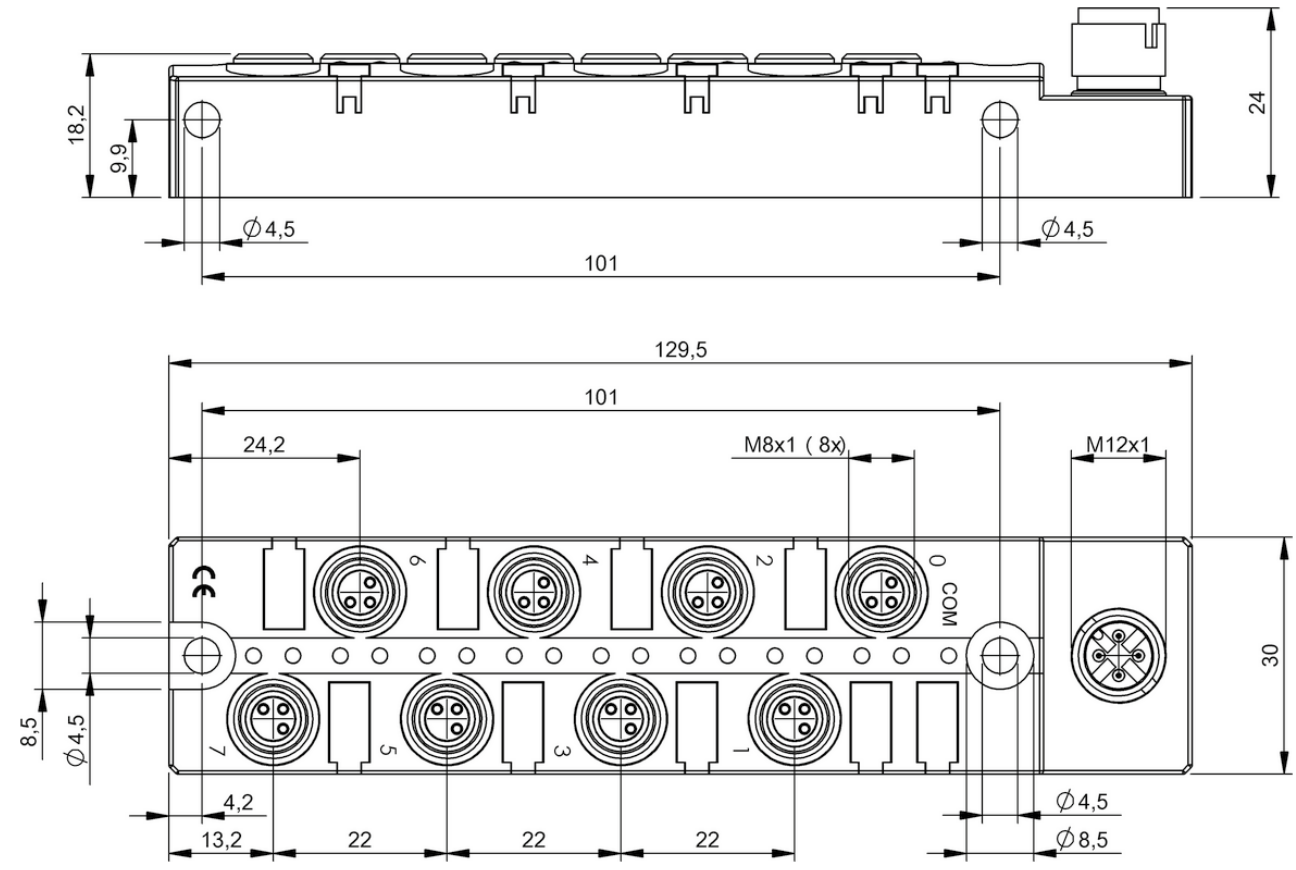
BNI0093, BNI0099



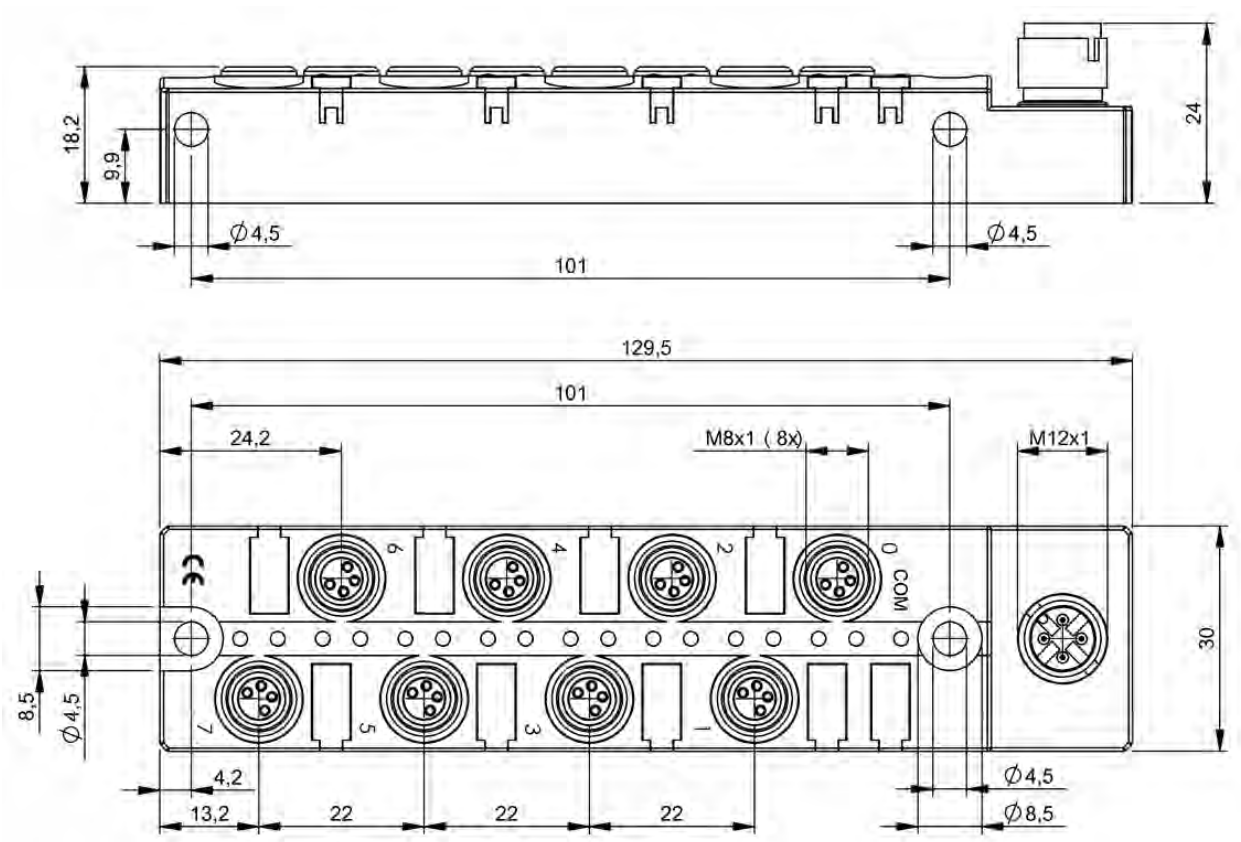
BNI00AU



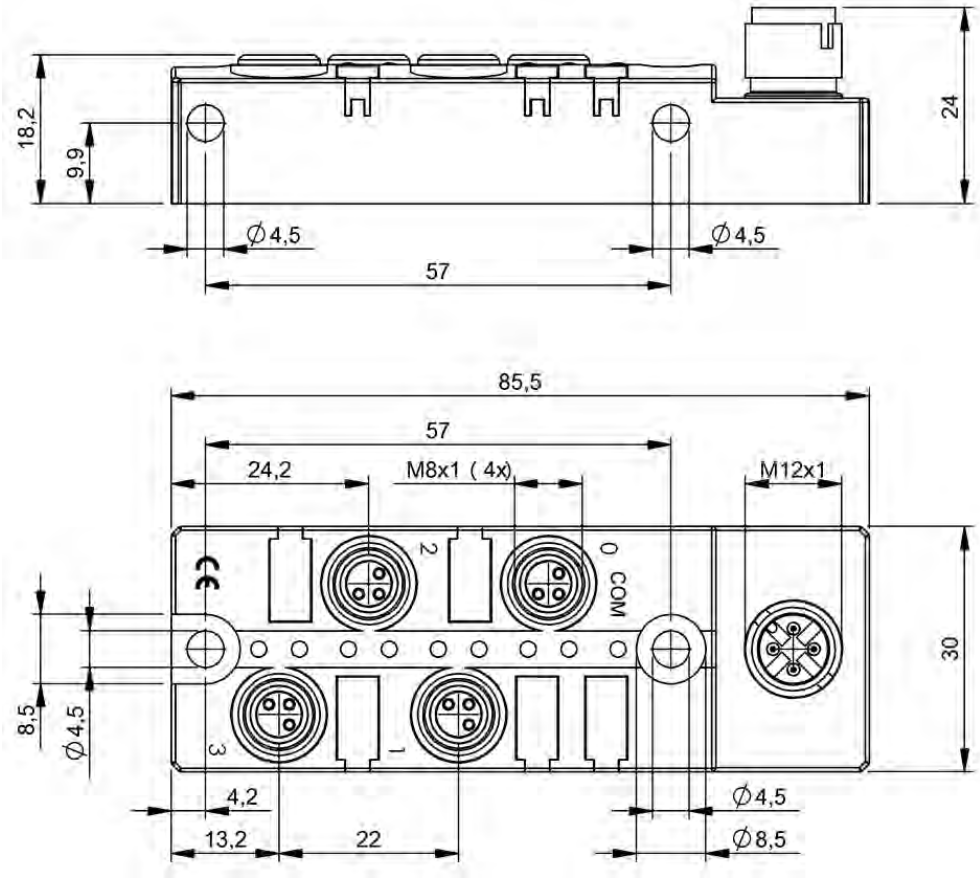
BNI00AY



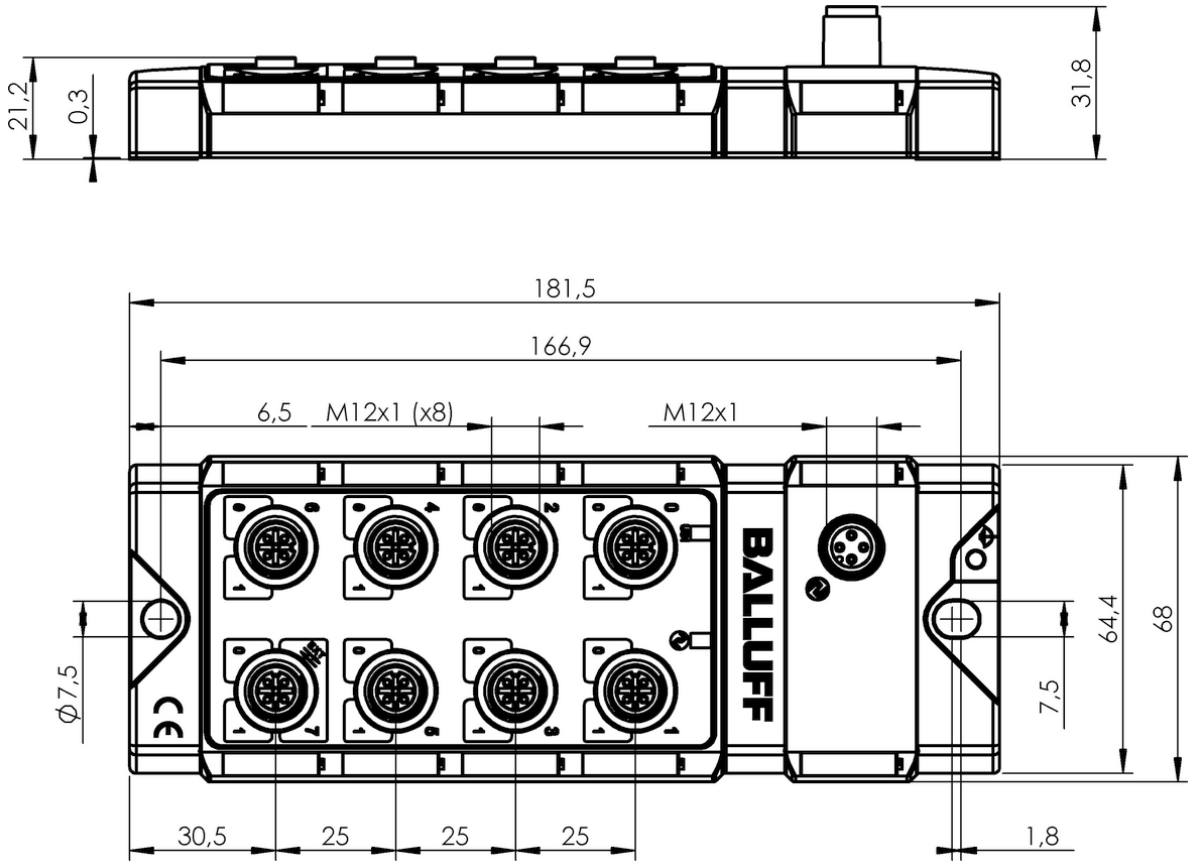
BNI000R, BNI001Y



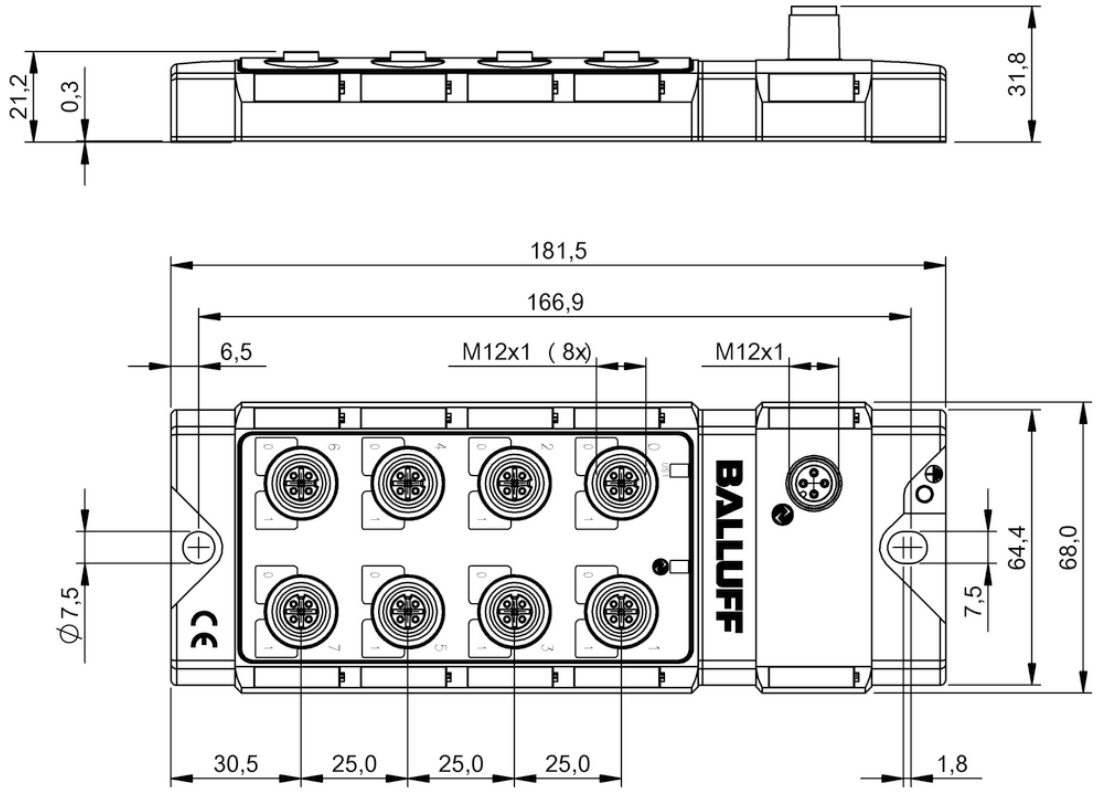
BNI0021, BNI0022



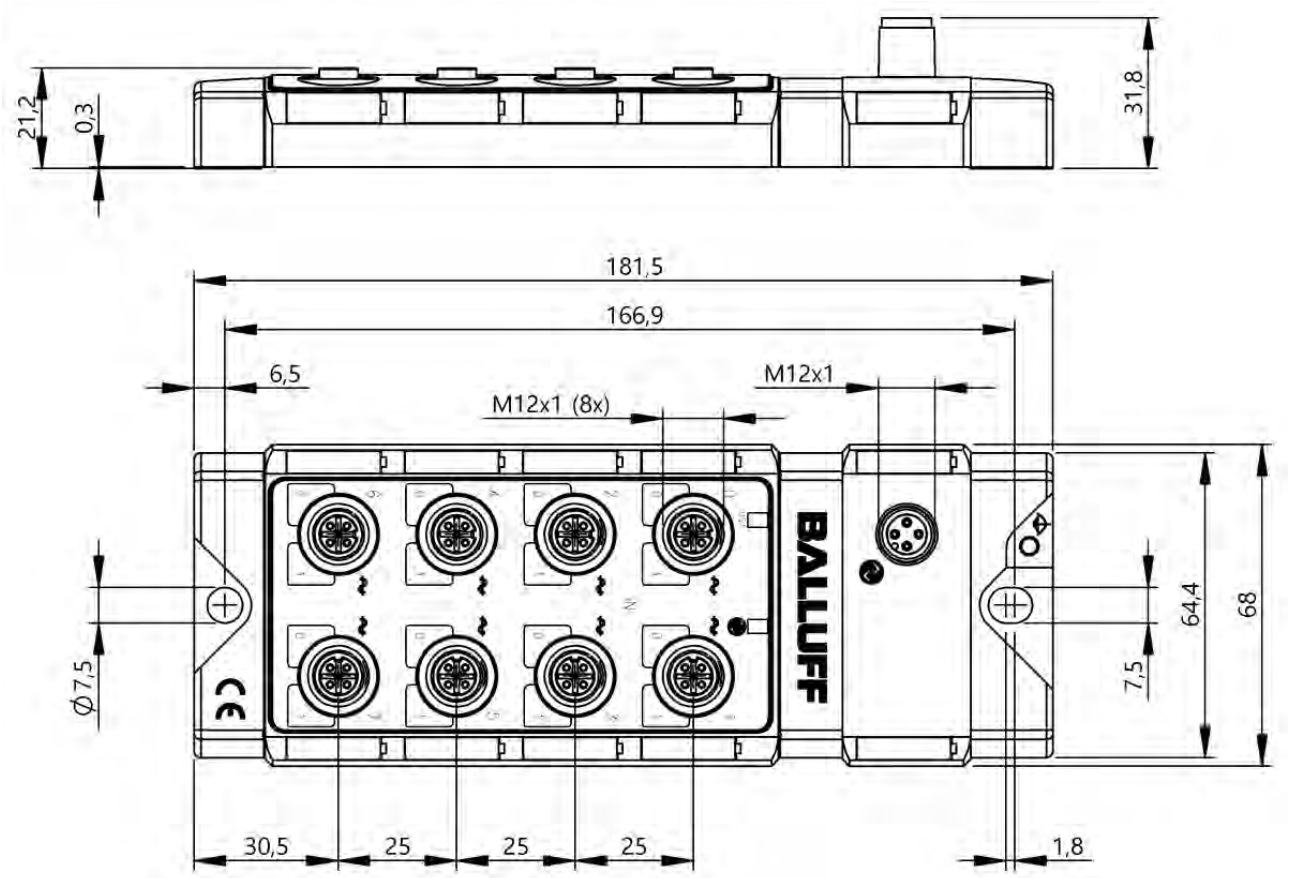
BNI000P, BNI001W



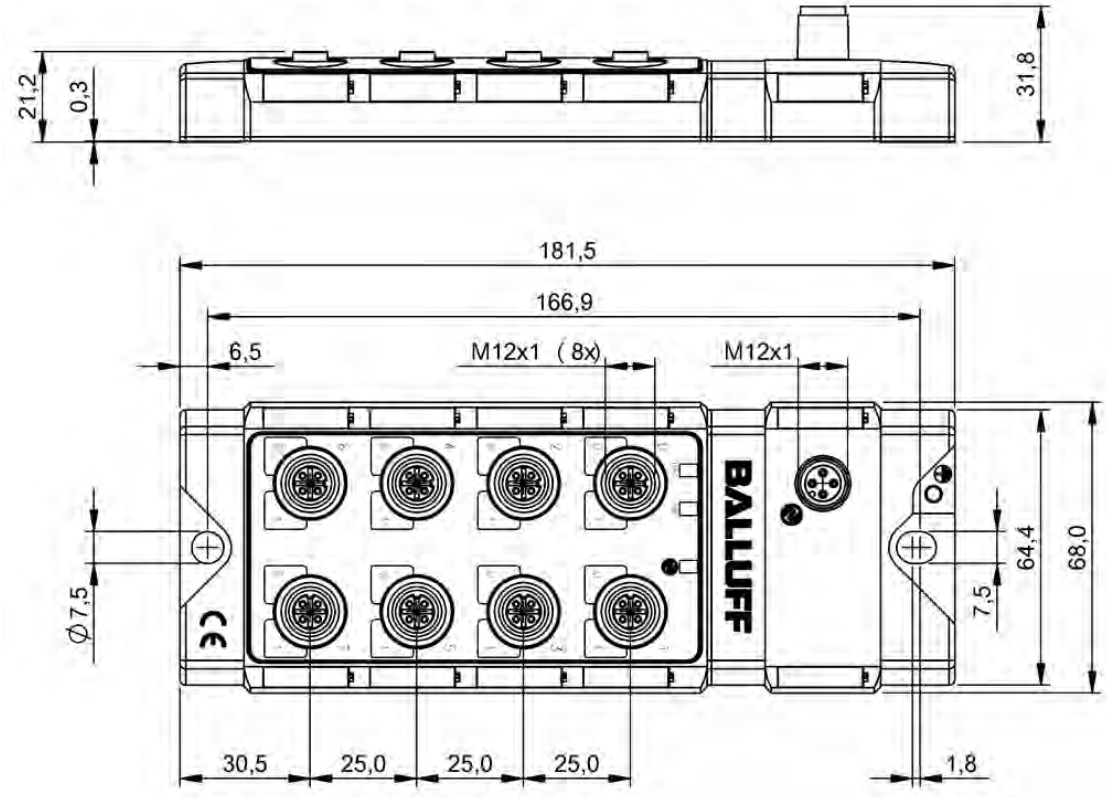
BNI00CN, BNI00CR, BNI00CM



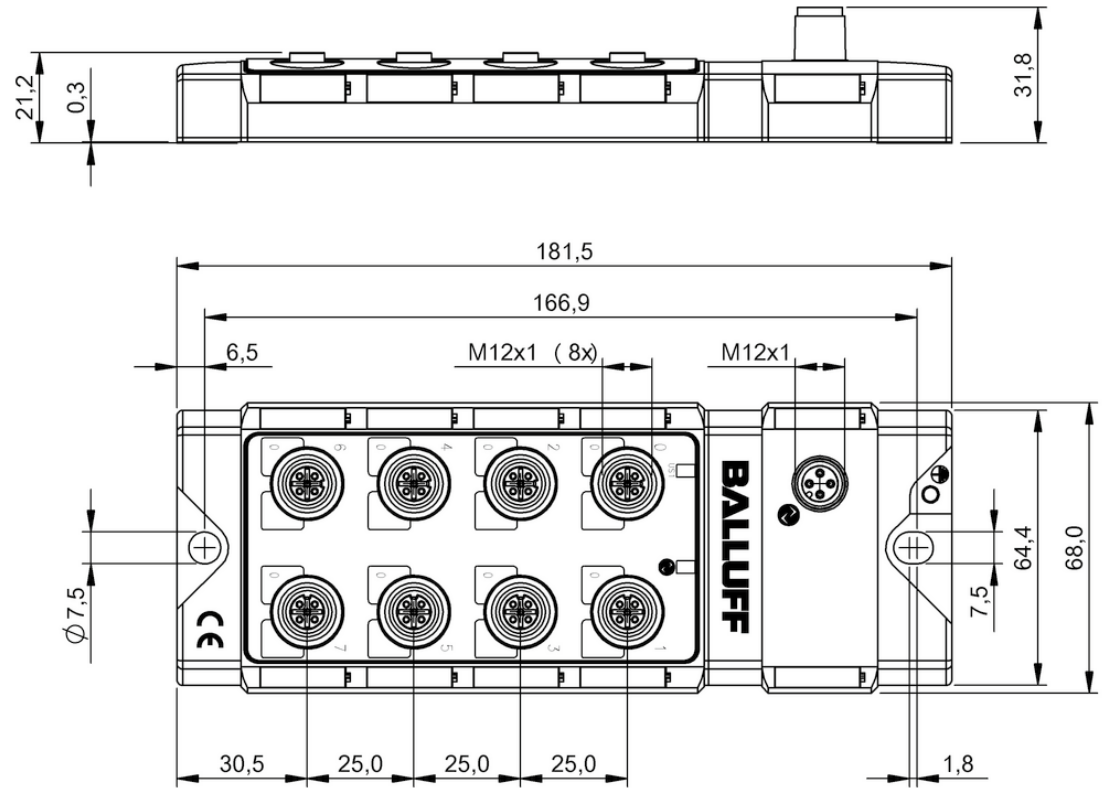
BNI0063, BNI0062, BNI0061, BNI0032, BNI003T, BNI005P



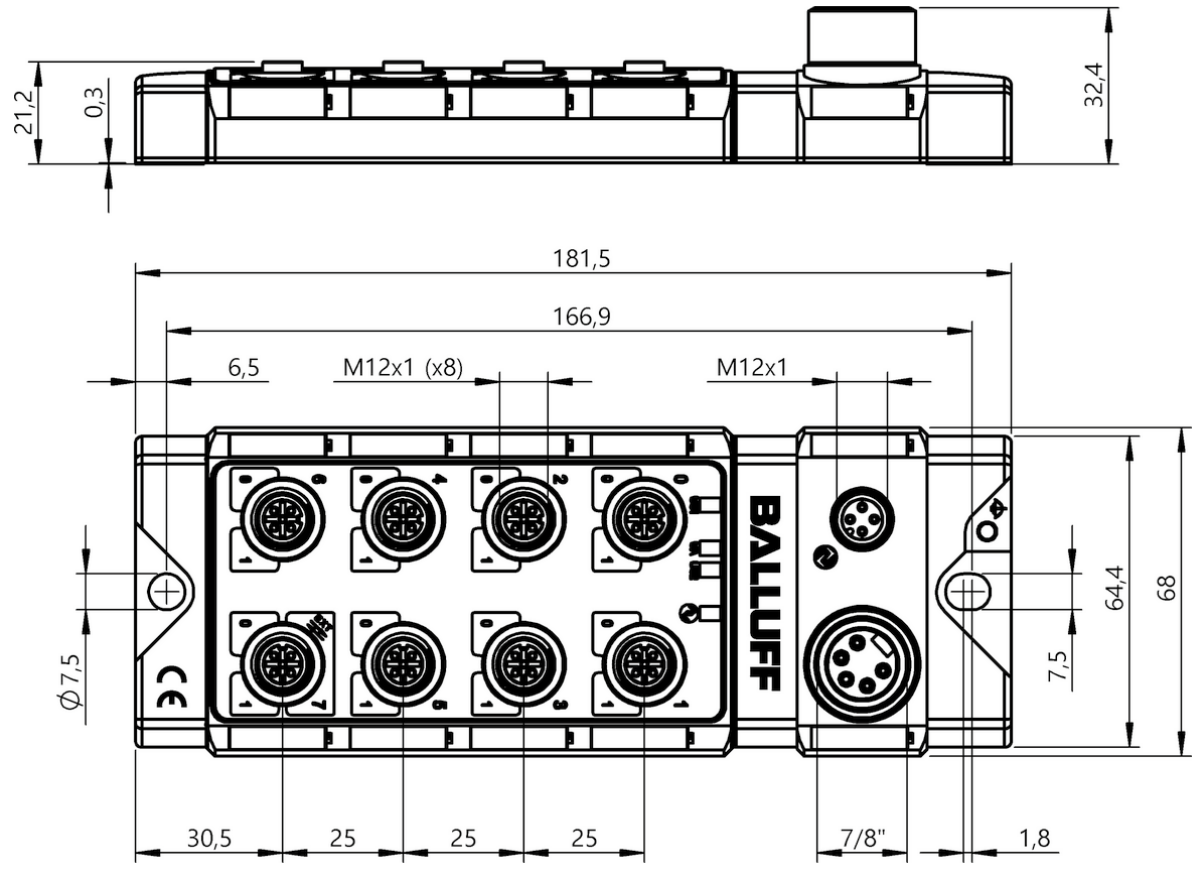
BNI00AJ



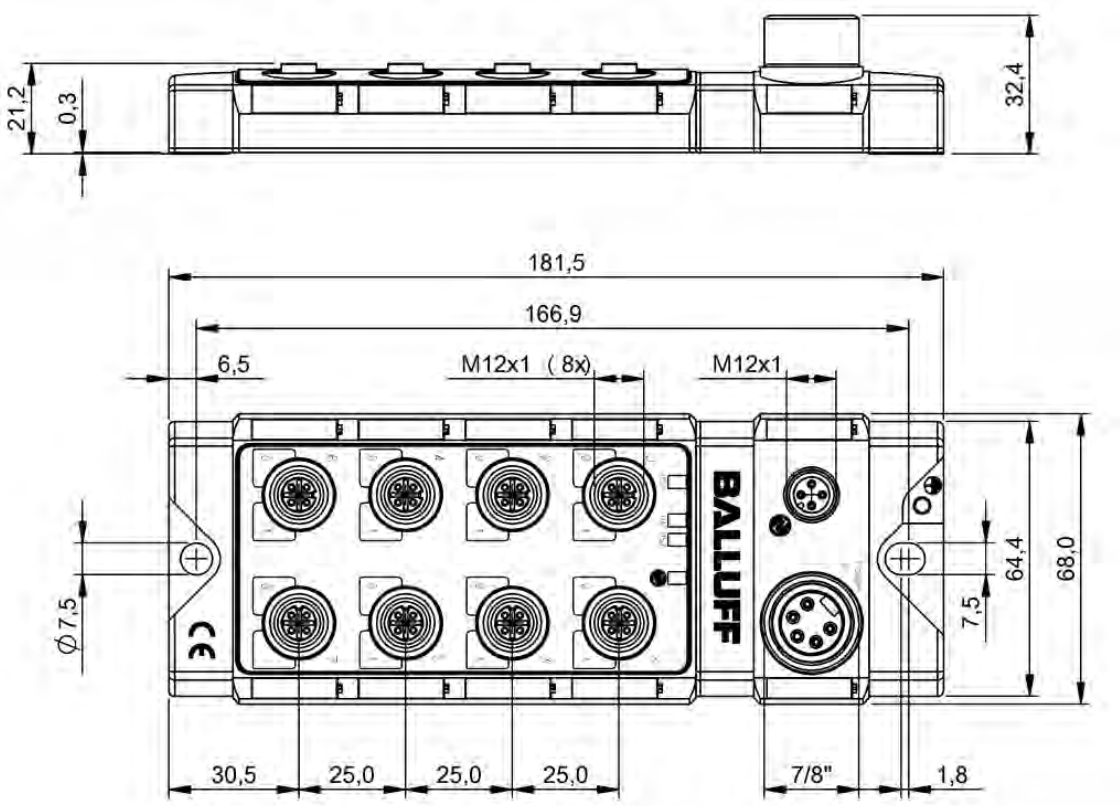
BNI003U



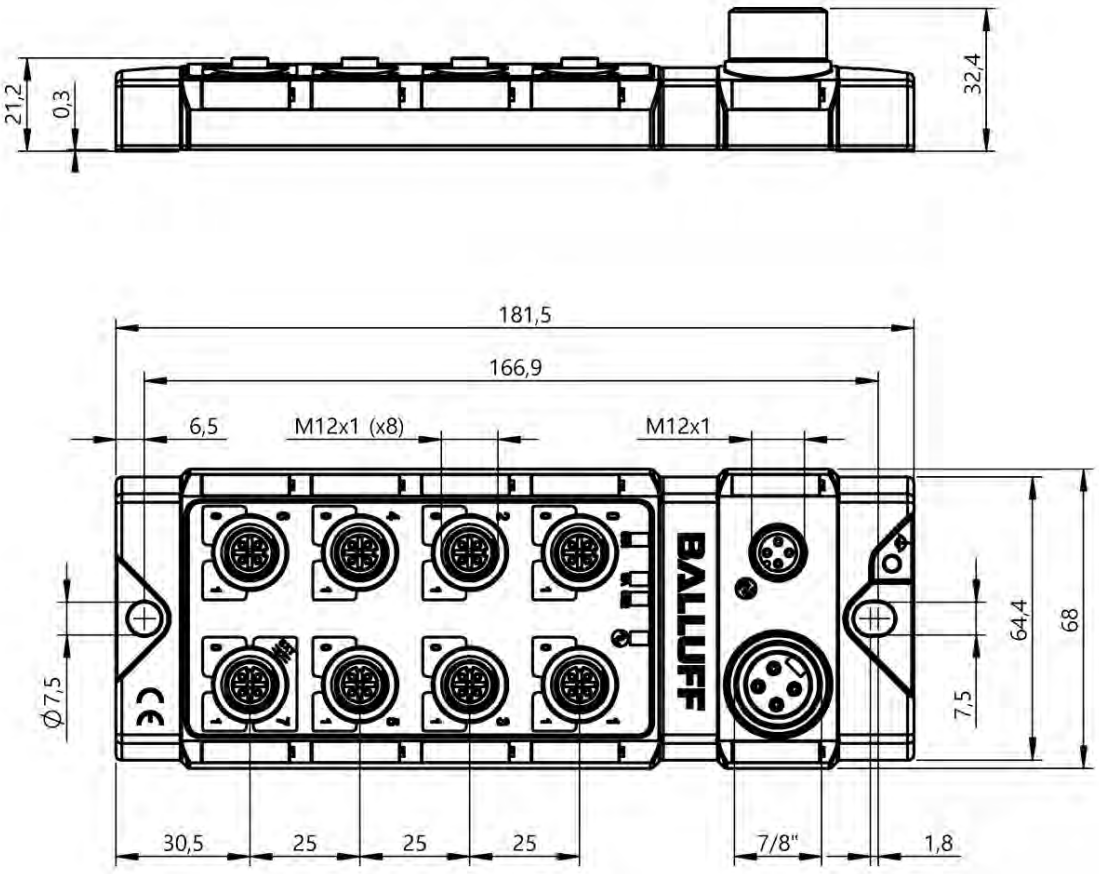
BNI0031



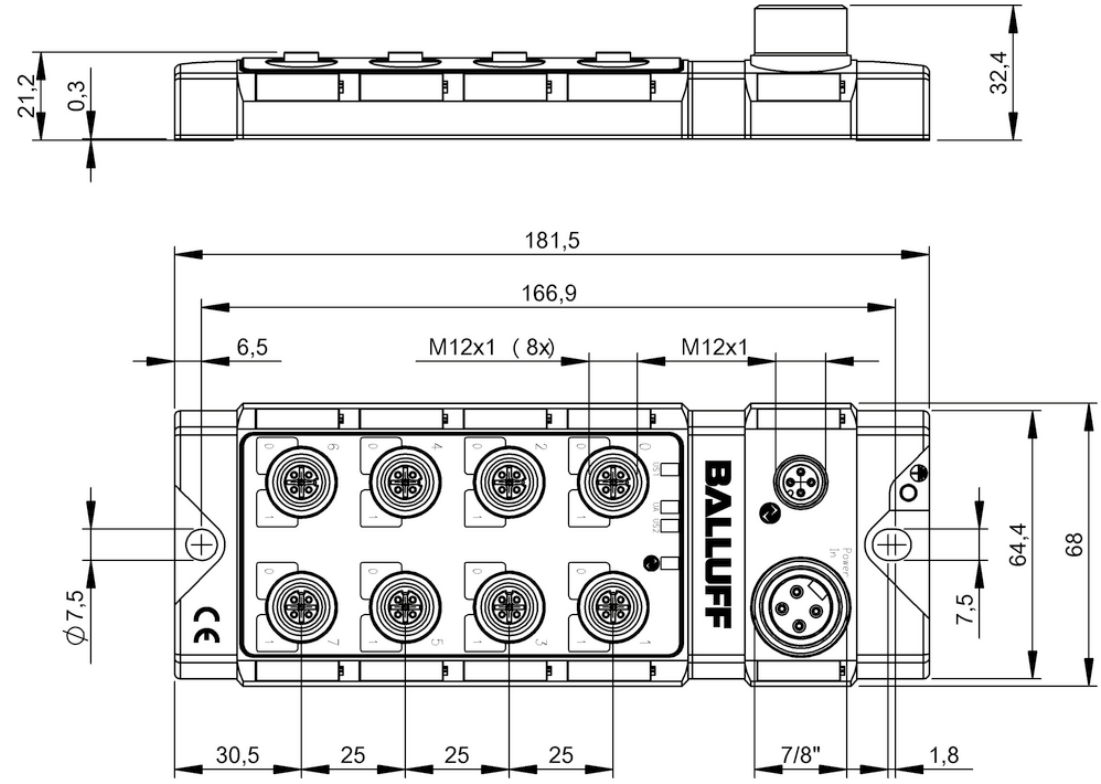
BNI0046



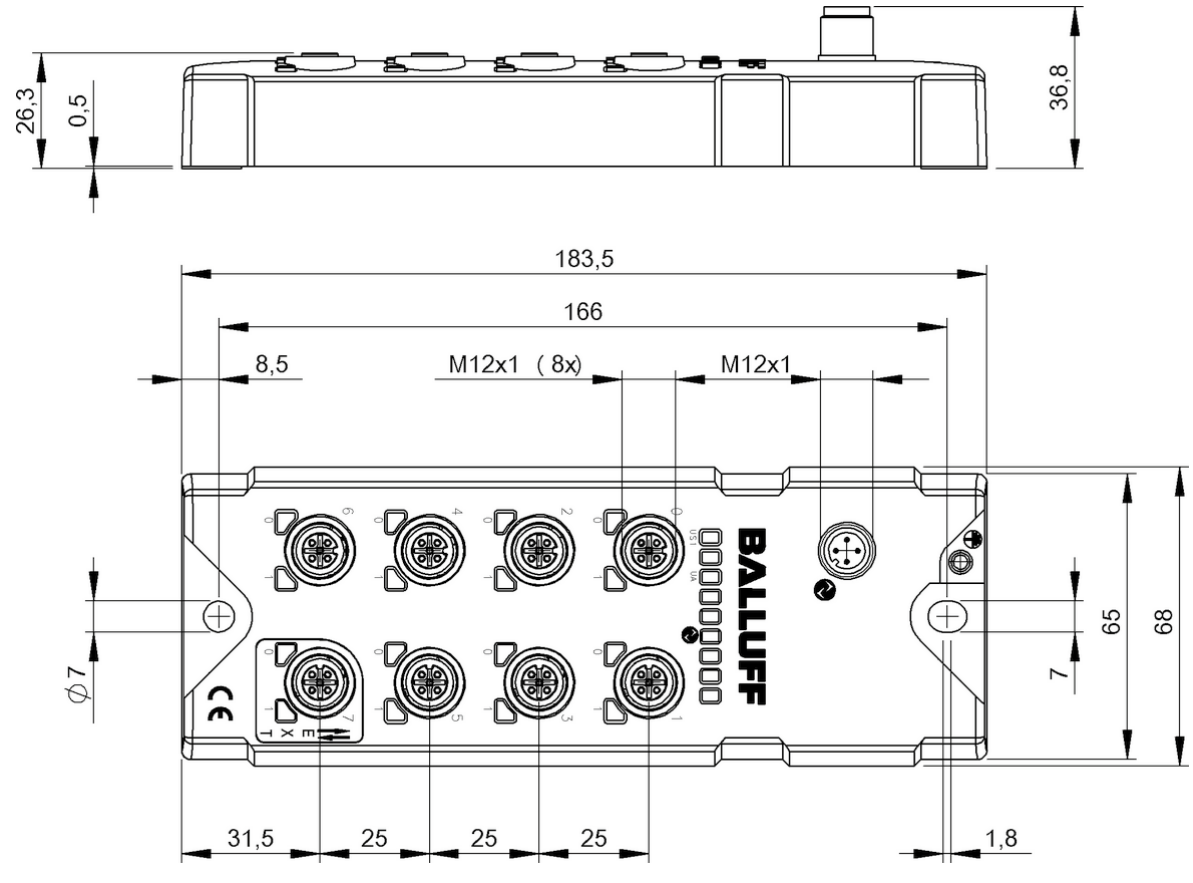
BNI0035, BNI0048



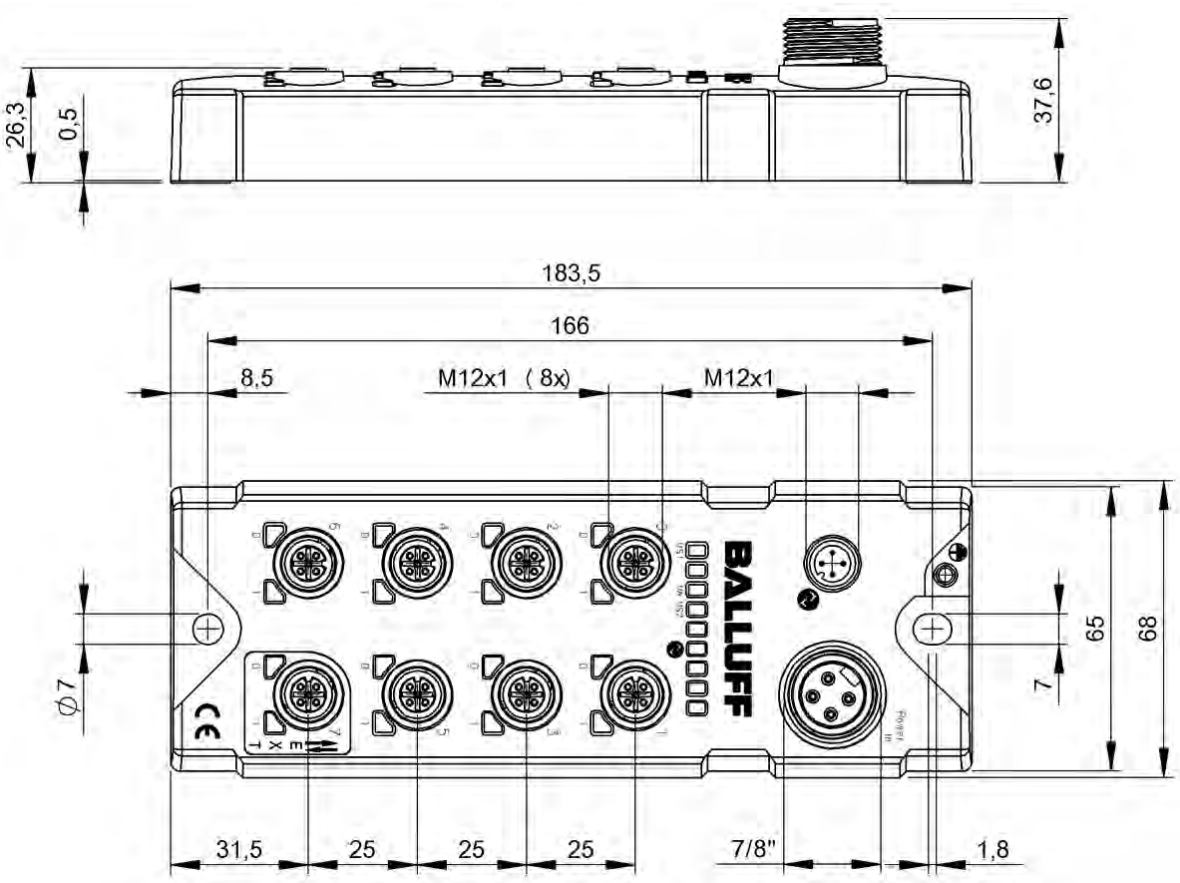
BNI00CP



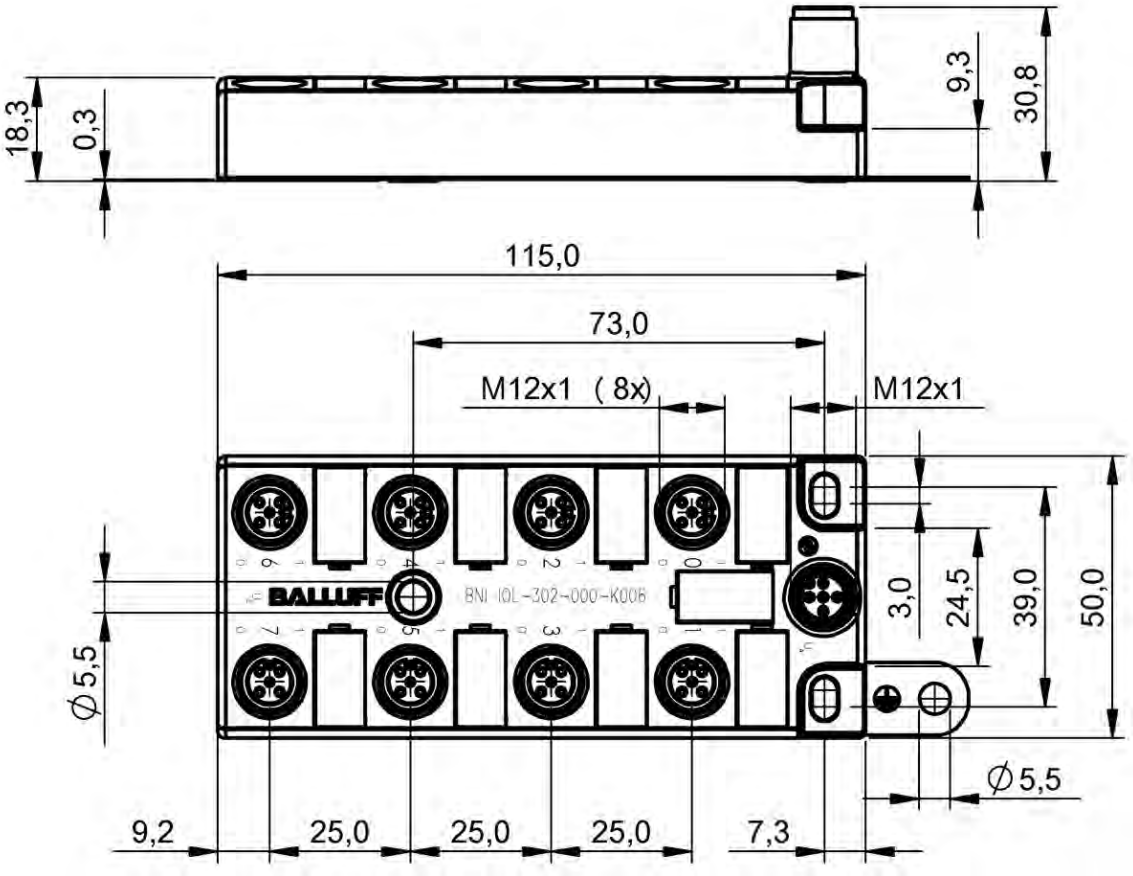
BNI0050



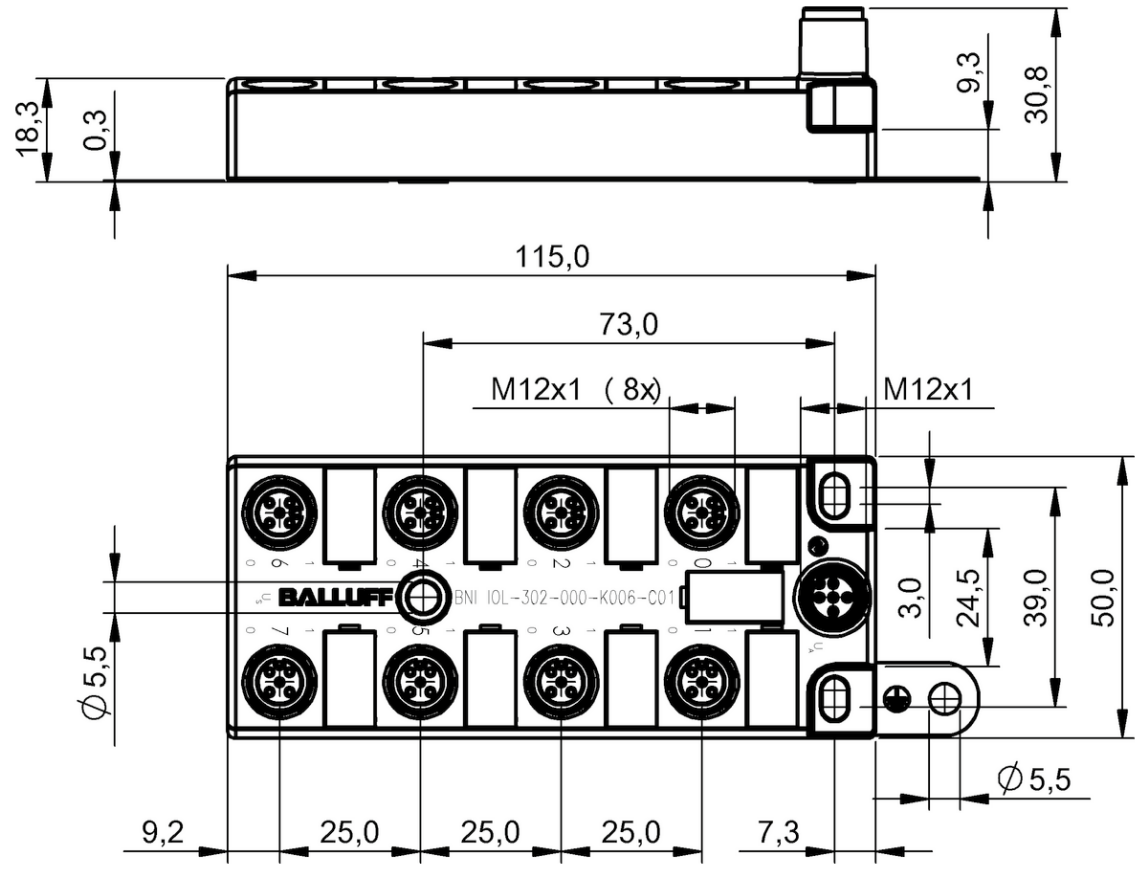
BNI0090



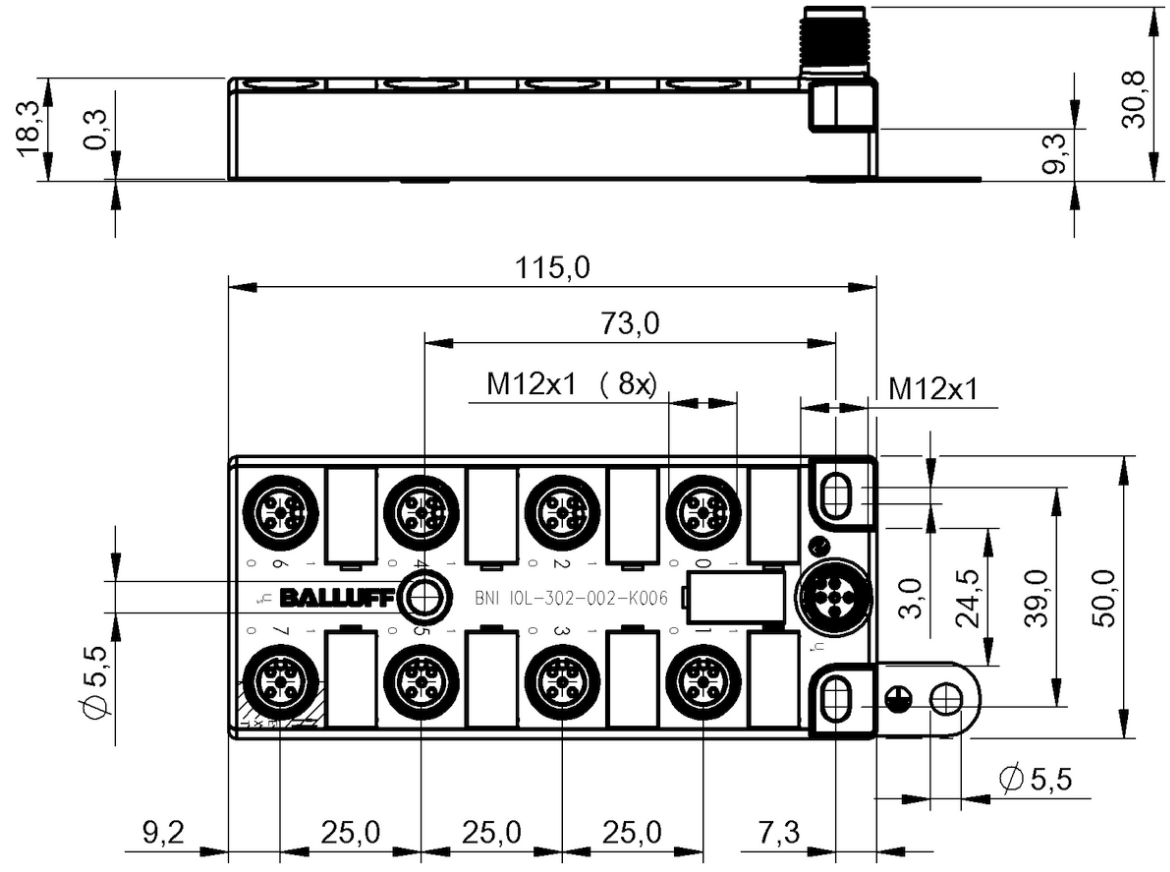
BNI0091



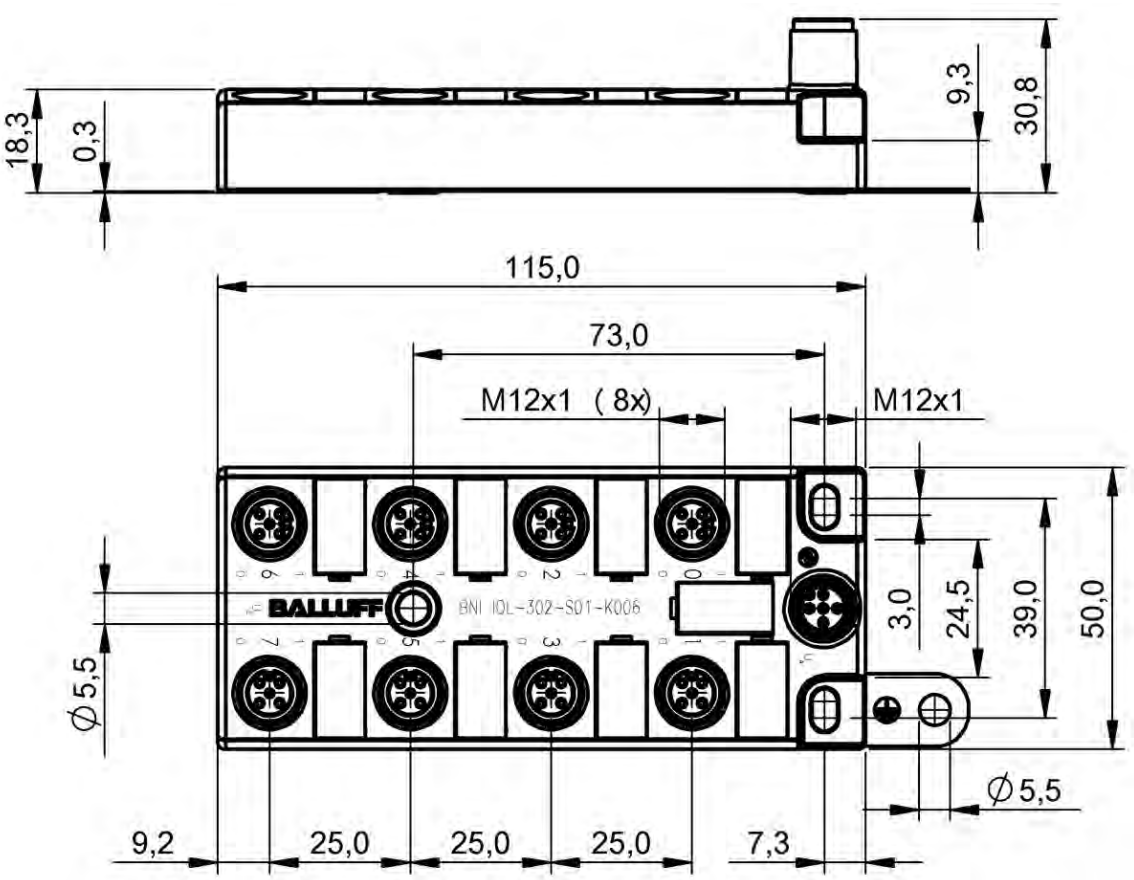
BNI005L



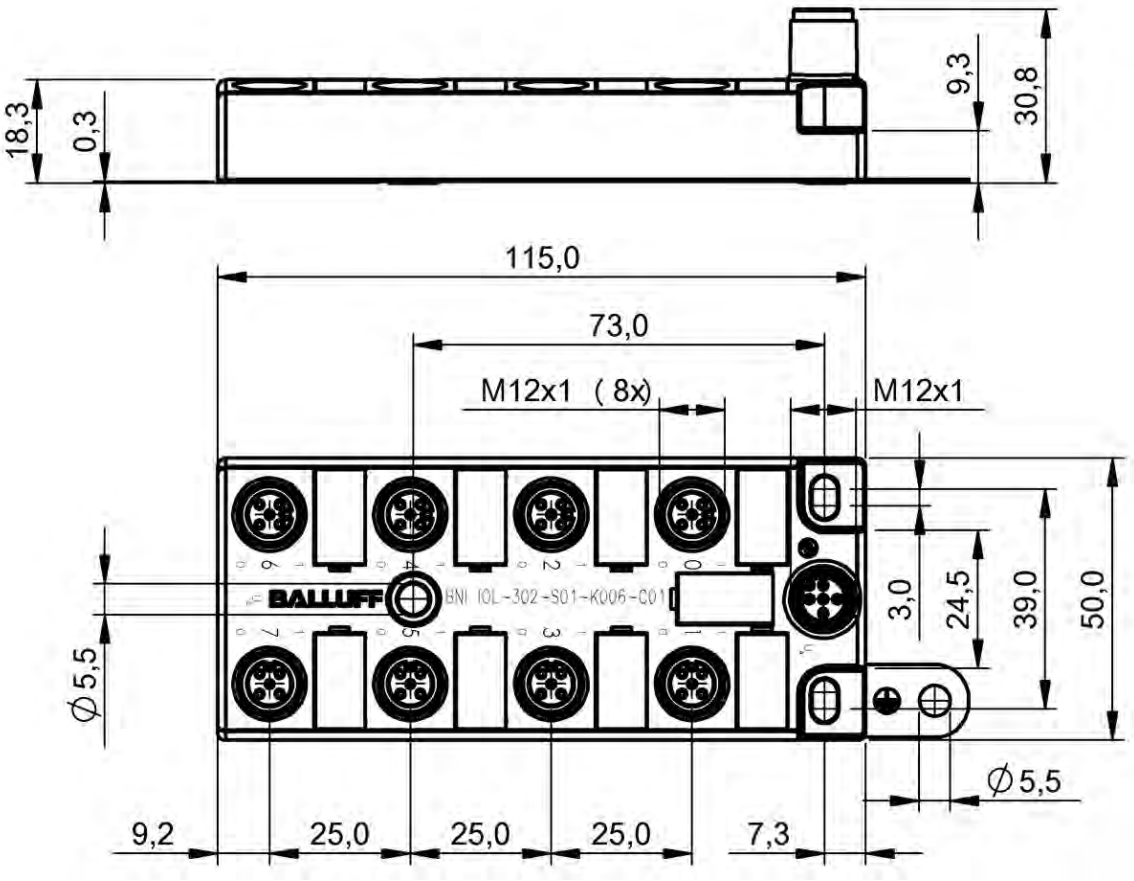
BNI005U



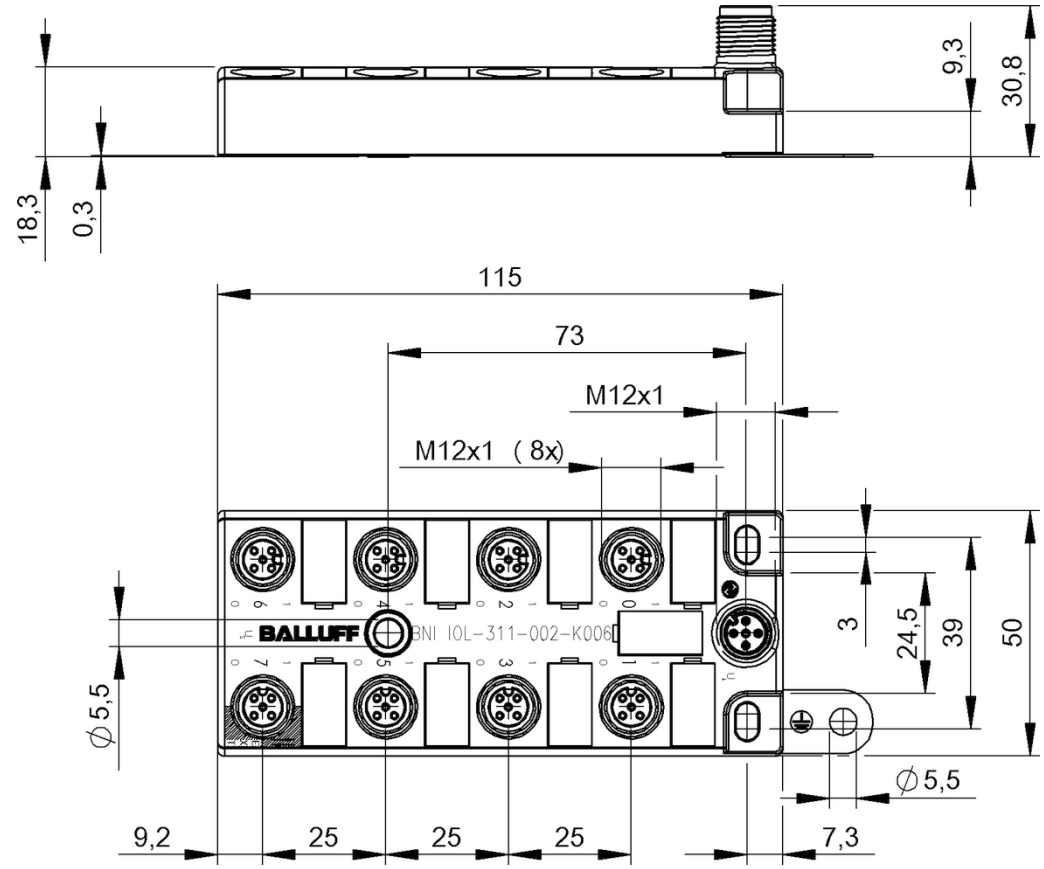
BNI007Z



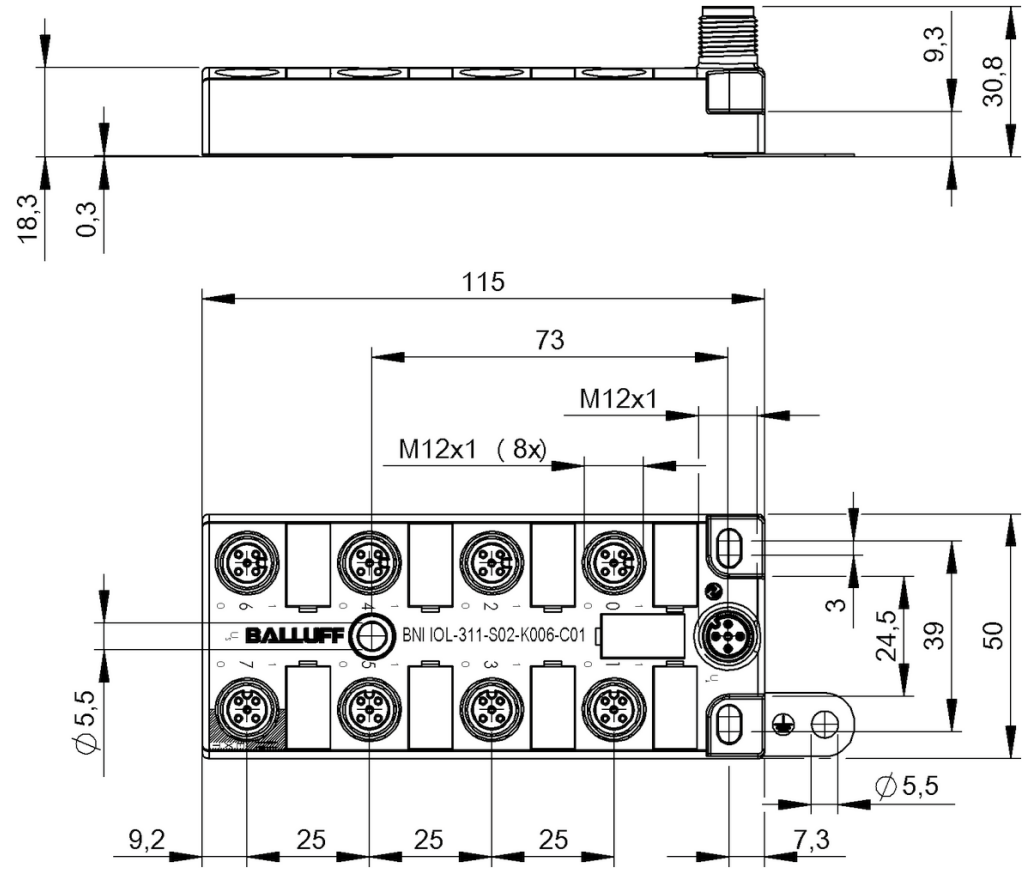
BNI005T



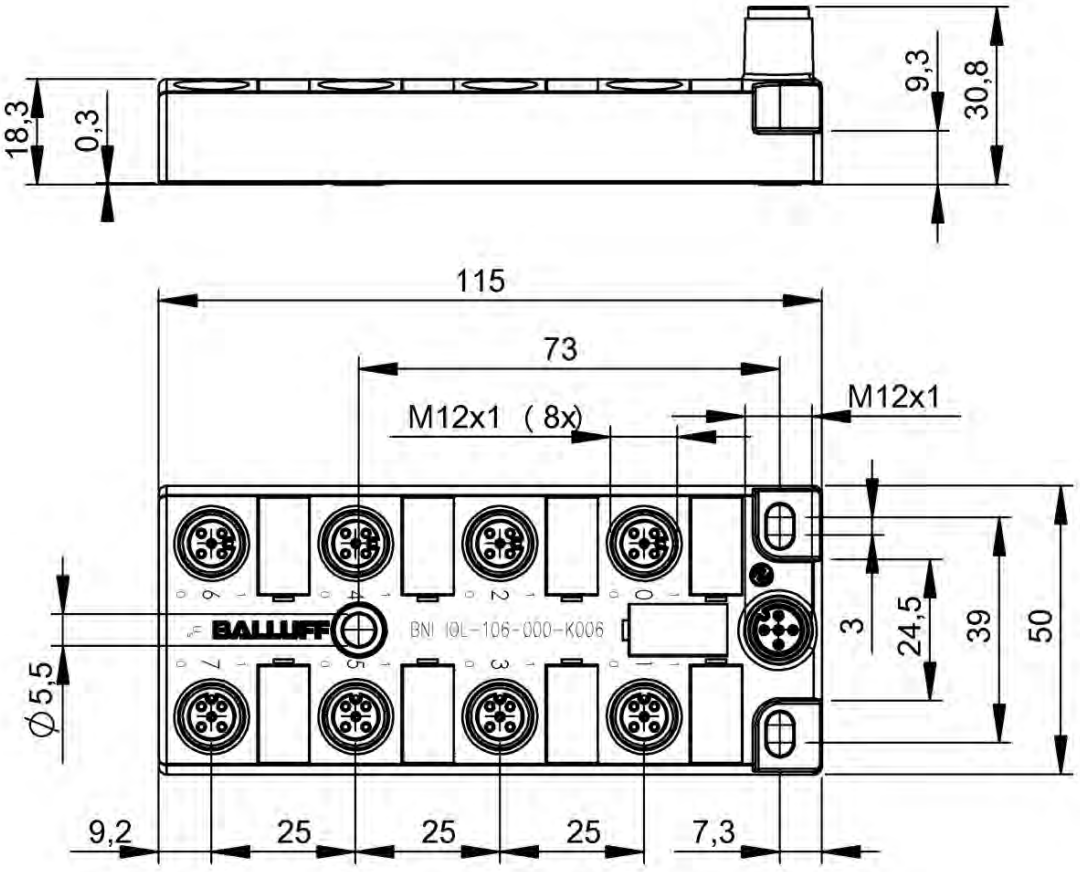
BNI005W



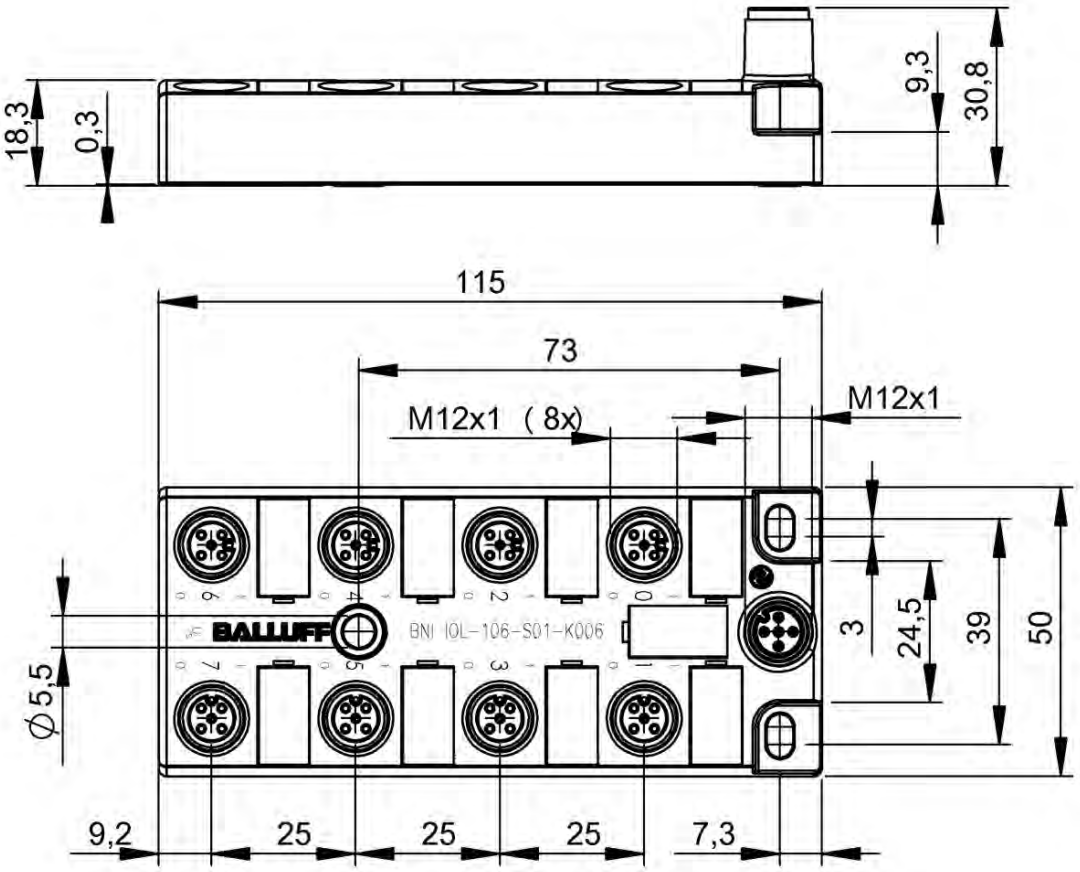
BNI00AF



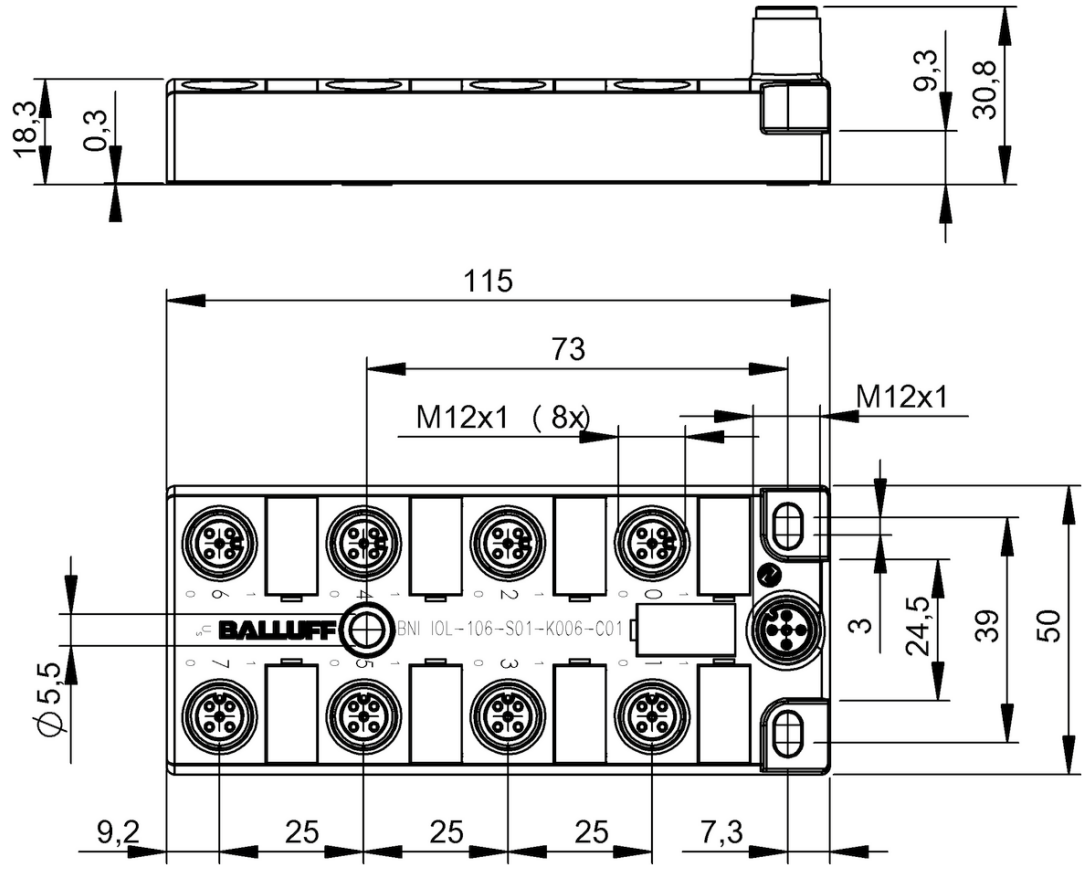
BNI00AW



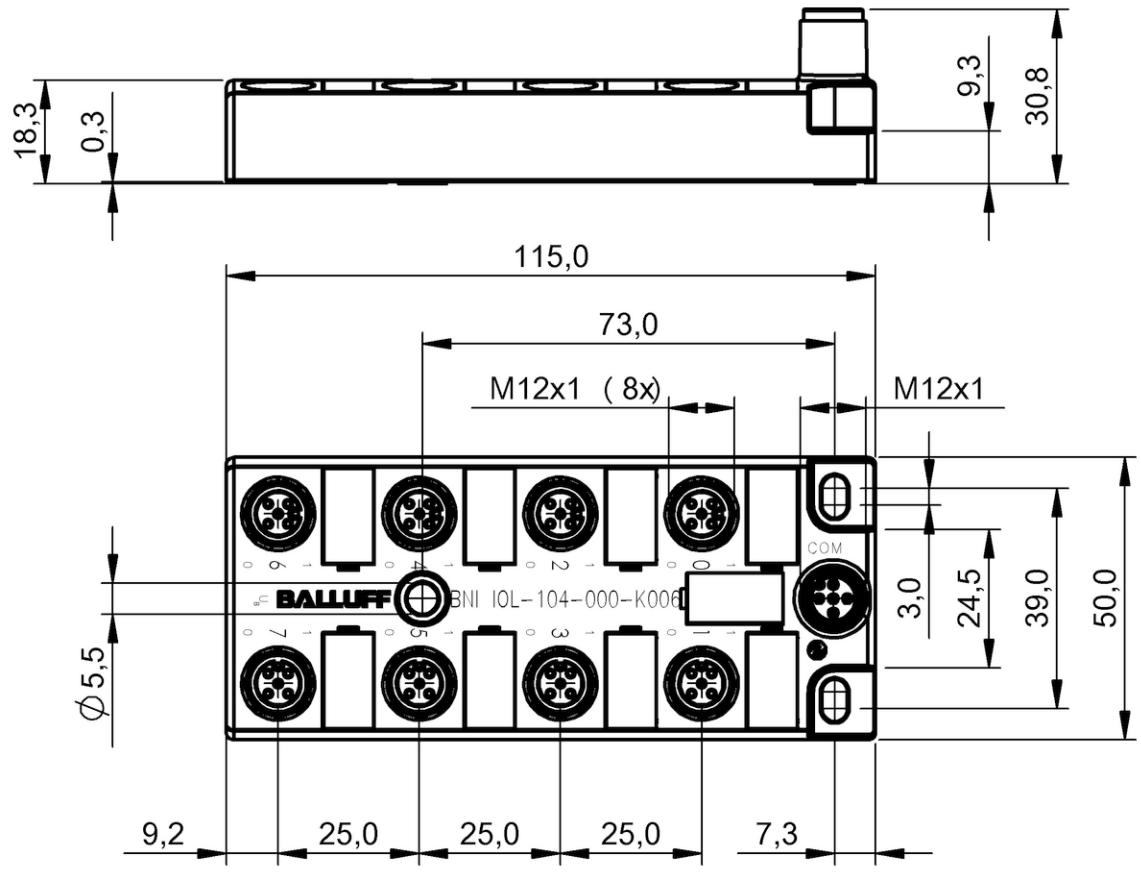
BNI0074



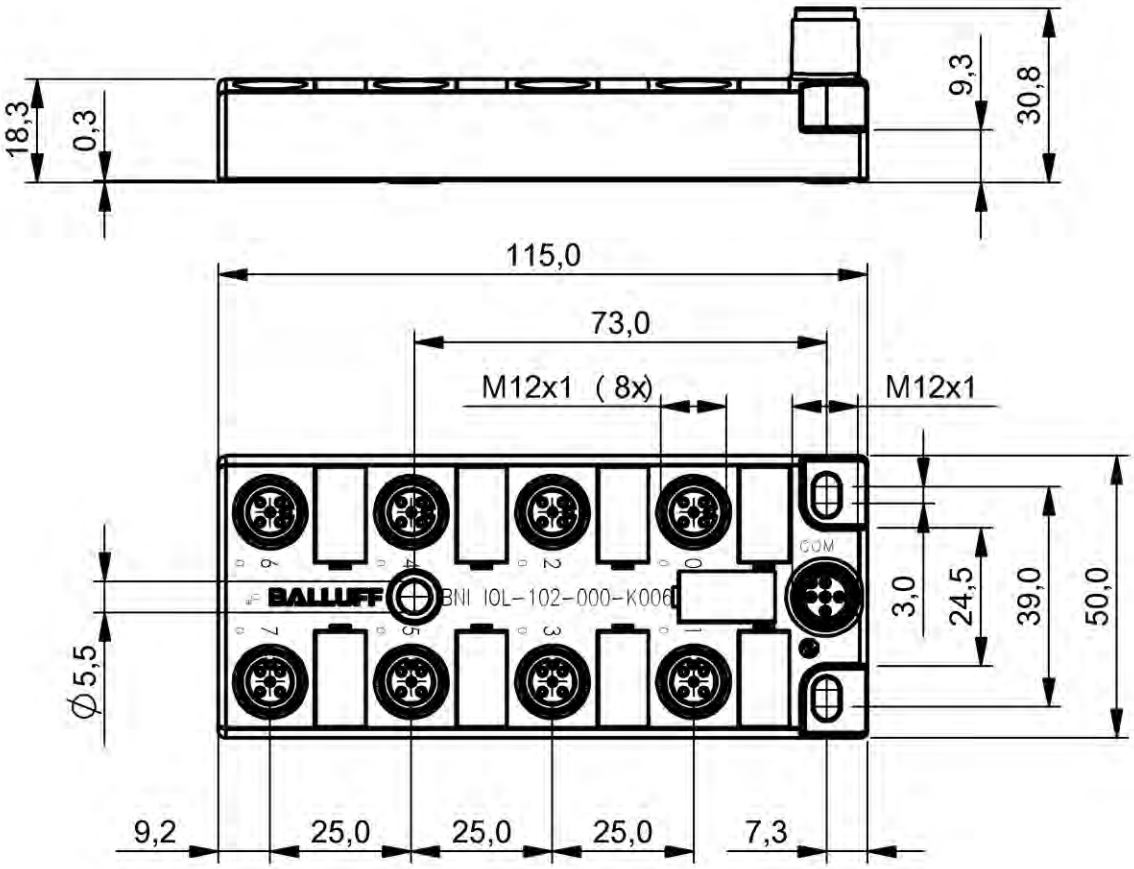
BNI0075



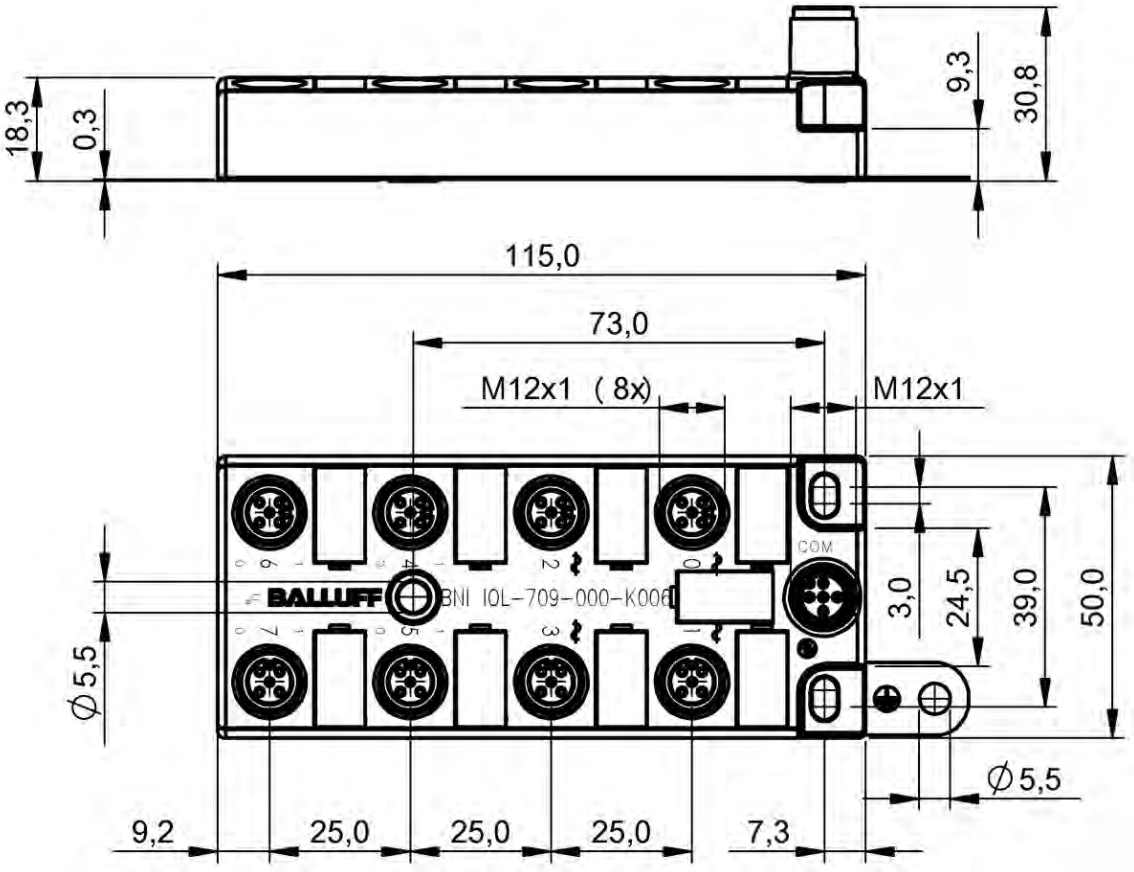
BNI0076



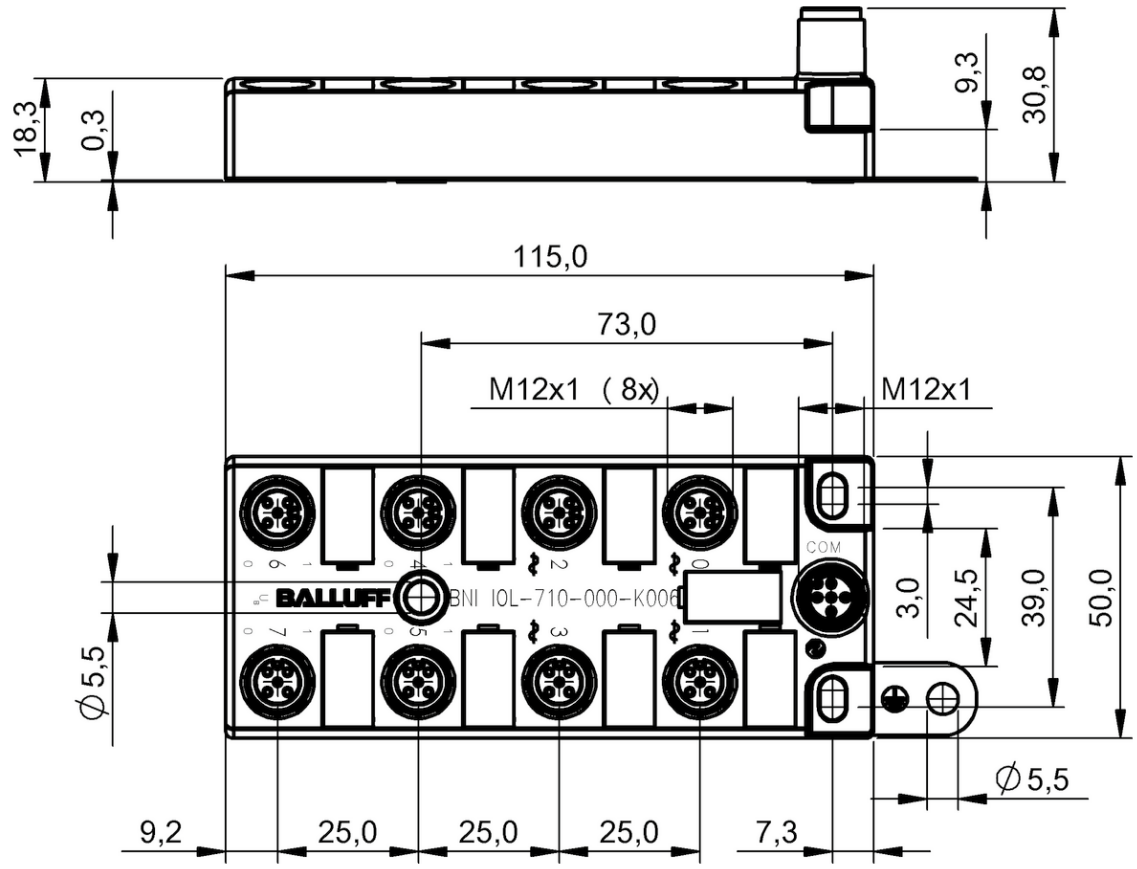
BNI0006



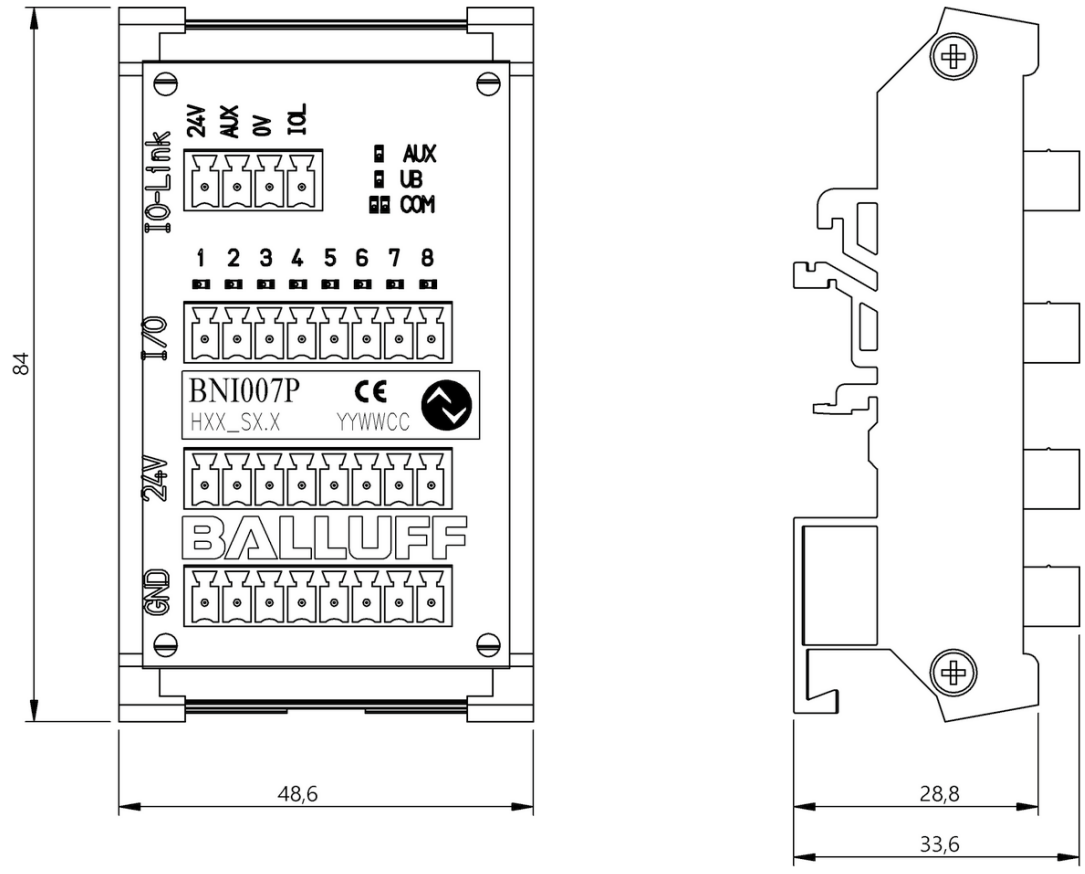
BNI0005



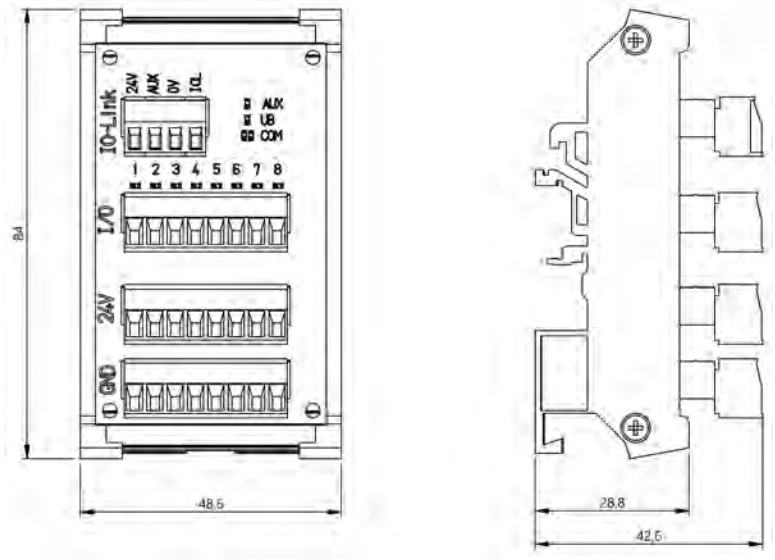
BNI0007



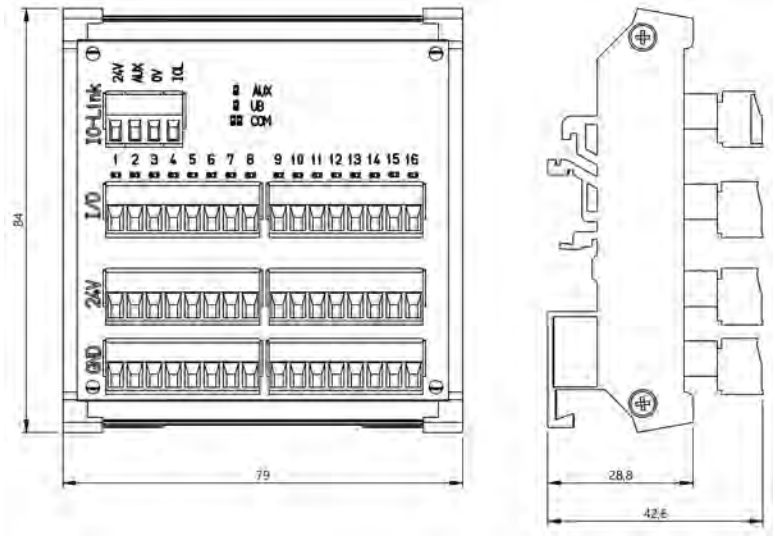
BNI0008



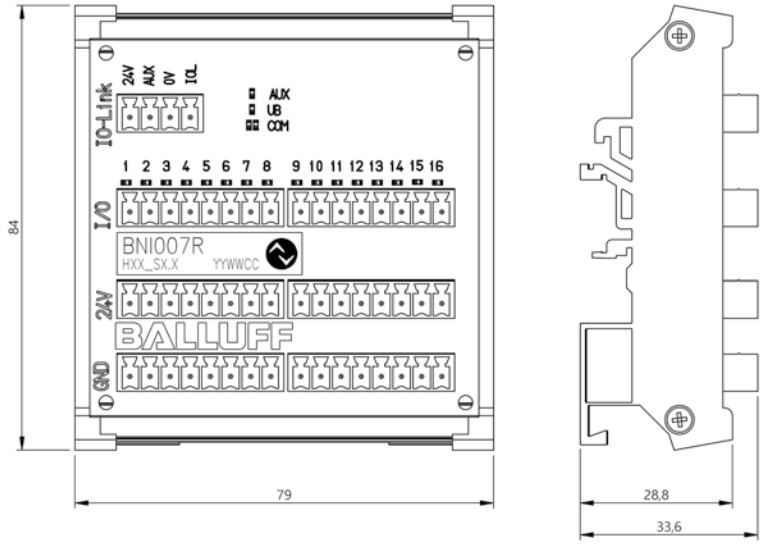
BNI007P



BNI004K



BNI004L


IO-Link
24V
AUX
0V
IOL
AUX
UB
COM
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
I/O
BNI007R
HXX_SX.X
YYWWCC
24V
BALLUFF
GND
84
79
28,8
33,6

BNI007R



	BNI006J BNI IOL-750-V08-K007	BNI006E BNI IOL-750-V09-K007	BNI006K BNI IOL-750-V10-K007	
Version	Valve interface	Valve interface	Valve interface	
Application	Festo with D-Sub female, 25-pin, GND on Pin 25, Bosch Rexroth LS04, Bürkert Typ 8640	Festo with D-Sub female, 25-pin, GND on Pin 25, Bosch Rexroth LS04	SMC VQC 1000/2000/4000	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 5-pin, A-coded	M12x1-Male, 5-pin, A-coded	M12x1-Male, 5-pin, A-coded	
Valve terminal connection	—	—	—	
Cable length L	0.6 m	0.6 m	0.6 m	
Outputs, number	24	16	24	
Output current max. UA, actuator	—	—	—	
Current sum UA, actuator	4 A	4 A	4 A	
Function	3-pin connection, Actuator supply on Pin 1	3-pin connection, Actuator supply on Pin 1	3-pin connection, Actuator supply on Pin 1	
Housing material	PA	PA	PA	
Dimension	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm	
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C	
IP rating	IP40, plugged in	IP40, plugged in	IP40, plugged in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	3.5 ms	3.0 ms	3.5 ms	
Process data IN	—	—	—	
Process data OUT	4 bytes	2 bytes	4 bytes	
Productview	Seite 180	Seite 180	Seite 180	





	BNI006H BNI IOL-750-V11-K007	BNI006L BNI IOL-750-V13-K007	BNI006N BNI IOL-751-V08-K007	BNI006M BNI IOL-751-V09-K007	BNI006P BNI IOL-751-V10-K007
	Valve interface	Valve interface	Power Aux valve terminal connector	Power Aux valve terminal connector	Power Aux valve terminal connector
	SMC VQC 1000/2000/4000	Numatics	Festo with D-Sub female, 25-pin, GND on Pin 25, Bosch Rexroth LS04, Bürkert Typ 8640	Festo with D-Sub female, 25-pin, GND on Pin 25, Bosch Rexroth LS04	SMC VQC 1000/2000/4000
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
	M12x1-Male, 5-pin, A-coded	M12x1-Male, 5-pin, A-coded	M12x1-Male, 5-pin, A-coded	M12x1-Male, 5-pin, A-coded	M12x1-Male, 5-pin, A-coded
	–	–	–	–	–
	0.6 m	0.6 m	0.6 m	0.6 m	0.6 m
	16	22	24	16	24
	–	–	–	–	–
	4 A	4 A	4 A	4 A	4 A
	3-pin connection, Actuator supply on Pin 1	3-pin connection, Actuator supply on Pin 1	4-pin connection, Power Aux on Pin 2	4-pin connection, Power Aux on Pin 2	4-pin connection, Power Aux on Pin 2
	PA	PA	PA	PA	PA
	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm
	-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C
	IP40, plugged in	IP40, plugged in	IP40, plugged in	IP40, plugged in	IP40, plugged in
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	3.0 ms	3.5 ms	3.5 ms	3.0 ms	3.5 ms
	–	–	–	–	–
	2 bytes	4 bytes	4 bytes	2 bytes	4 bytes
	Seite 180	Seite 180	Seite 180	Seite 180	Seite 180

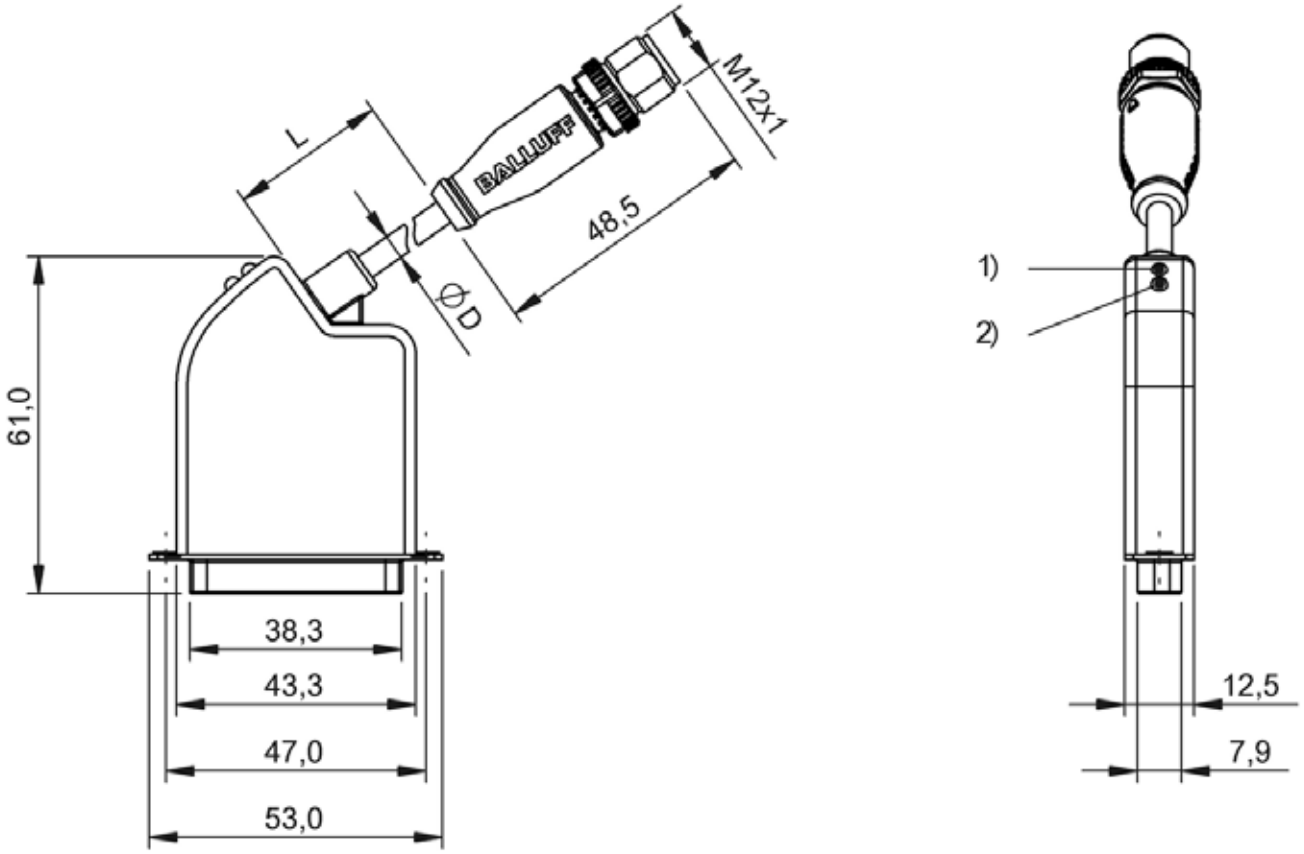


	BNI006T BNI IOL-751-V11-K007	BNI006R BNI IOL-751-V13-K007	BNI006Y BNI IOL-752-V08-K007	
Version	Power Aux valve terminal connector	Power Aux valve terminal connector	Power Aux valve terminal connector	
Application	SMC VQC 1000/2000/4000	Numatics	Festo with D-Sub female, 25-pin, GND on Pin 25, Bosch Rexroth LS04, Bürkert Typ 8640	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 5-pin, A-coded	M12x1-Male, 5-pin, A-coded	M12x1-Male, 5-pin, A-coded	
Valve terminal connection	—	—	—	
Cable length L	0.6 m	0.6 m	0.6 m	
Outputs, number	16	22	24	
Output current max. UA, actuator	—	—	—	
Current sum UA, actuator	4 A	4 A	4 A	
Function	4-pin connection, Power Aux on Pin 2	4-pin connection, Power Aux on Pin 2	5-pin connection, Power Aux on Pin 2, also 0V on Pin 5	
Housing material	PA	PA	PA	
Dimension	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm	
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C	
IP rating	IP40, plugged in	IP40, plugged in	IP40, plugged in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	3.0 ms	3.5 ms	3.5 ms	
Process data IN	—	—	—	
Process data OUT	2 bytes	4 bytes	4 bytes	
Productview	Seite 180	Seite 180	Seite 180	

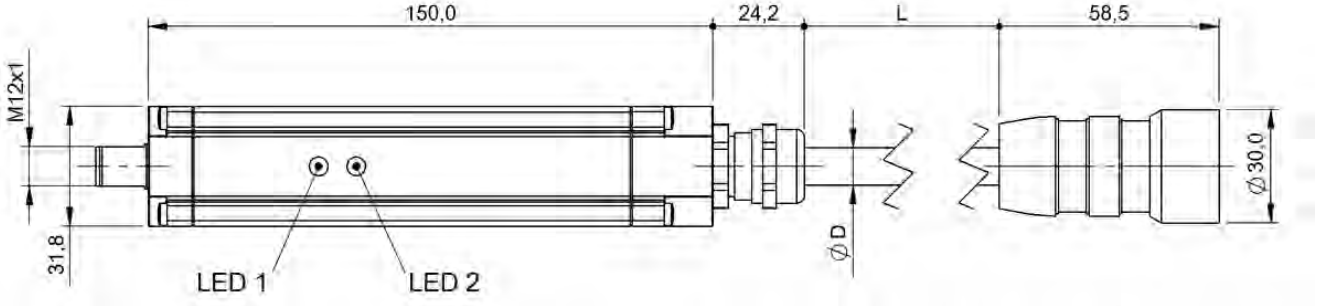




	BNI006U BNI IOL-752-V09-K007	BNI006Z BNI IOL-752-V10-K007	BNI006W BNI IOL-752-V11-K007	BNI006F BNI IOL-752-V13-K007	BNI004W BNI IOL-770-V06-A027
	Power Aux valve terminal connector	Power Aux valve terminal connector	Power Aux valve terminal connector	Power Aux valve terminal connector	Power Aux valve terminal connector
	Festo with D-Sub female, 25-pin, GND on Pin 25, Bosch Rexroth LS04	SMC VQC 1000/2000/4000	SMC VQC 1000/2000/4000	Numatics	SMC VQC 1000/2000/4000
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
	M12x1-Male, 5-pin, A-coded	M12x1-Male, 5-pin, A-coded	M12x1-Male, 5-pin, A-coded	M12x1-Male, 5-pin, A-coded	M12x1-Male, 5-pin, A-coded
	—	—	—	—	—
	0.6 m	0.6 m	0.6 m	0.6 m	0.5 m
	16	24	16	22	24
	—	—	—	—	—
	4 A	4 A	4 A	4 A	4.0 A
	5-pin connection, Power Aux on Pin 2, also 0V on Pin 5	5-pin connection, Power Aux on Pin 2, also 0V on Pin 5	5-pin connection, Power Aux on Pin 2, also 0V on Pin 5	5-pin connection, Power Aux on Pin 2, also 0V on Pin 5	4-pin connection, Power Aux on Pin 2, Diagnostics
	PA	PA	PA	PA	Aluminum
	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm	31.8 x 31.8 x 185 mm
	-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C	-5...70 °C
	IP40, plugged in	IP40, plugged in	IP40, plugged in	IP40, plugged in	IP67, plugged in
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	3.0 ms	3.5 ms	3.0 ms	3.5 ms	5.5 ms
	—	—	—	—	9 bytes
	2 bytes	4 bytes	2 bytes	4 bytes	4 bytes
	Seite 180	Seite 180	Seite 180	Seite 180	Seite 180



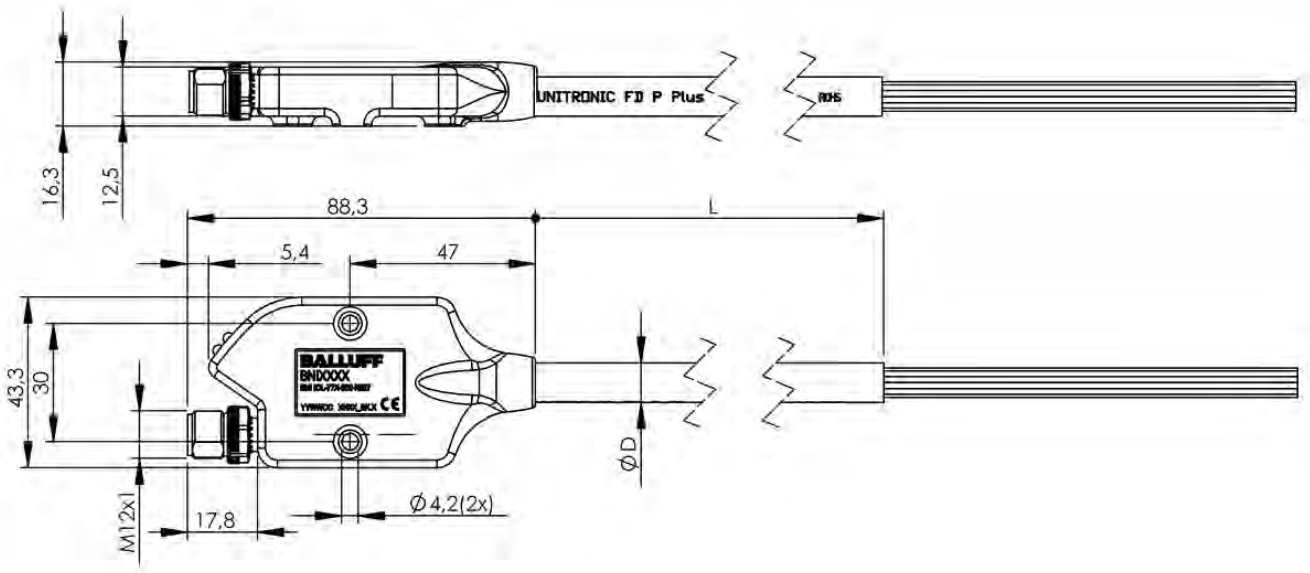
BNI006J, BNI006E, BNI006K, BNI006H, BNI006L, BNI006N, BNI006M, BNI006P, BNI006T, BNI006R, BNI006Y, BNI006U, BNI006Z, BNI006W, BNI006F



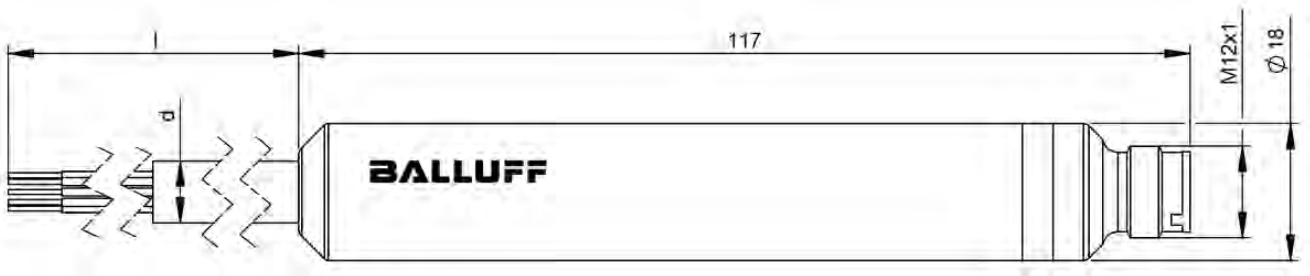
BNI004W

	BNI005M BNI IOL-771-000-K027	BNI00CA BNI IOL-771-002-K027-003	
Version	Universal cable I/O interface	Universal cable I/O interface	
Interface	IO-Link 1.1	IO-Link 1.1	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 5-pin, A-coded	M12x1-Male, 5-pin, A-coded	
Connection for sensor	open cable end-Leads	open cable end-Leads	
Cable length L	0.5 m	3 m	
Digital inputs	16x PNP, Type 3	16x PNP, Type 3	
Digital outputs	16x PNP	16x PNP	
Configurable inputs/outputs	yes	yes	
Output current max.	—	—	
Additional function	—	—	
Housing material	PA	PA	
Dimension	43.3 x 16.3 x 88.3 mm	43.3 x 16.3 x 88.3 mm	
Ambient temperature	-5...55 °C	-5...55 °C	
IP rating	IP54, to open cable end	IP54, to open cable end	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	4 ms	4 ms	
Process data IN	2 bytes	2 bytes	
Process data OUT	2 bytes	2 bytes	
Productview	Seite 184	Seite 184	

	BNI005N BNI IOL-772-000-K027	BNI00CC BNI IOL-772-002-K027-003	BNI00AE BNI IOL-772-002-E032	
	Universal cable I/O interface	Universal cable I/O interface	Universal cable I/O interface	
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
	M12x1-Male, 5-pin, A-coded	M12x1-Male, 5-pin, A-coded	M12x1-Male, 4-pin, A-coded	
	open cable end-Leads	open cable end-Leads	open cable end-Leads	
	0.5 m	3 m	1.3 m	
	8x PNP, Type 3	8x PNP, Type 3	8x PNP, Type 3	
	8x PNP	8x PNP	8x PNP	
	yes	yes	yes	
	—	—	—	
	—	—	—	
	PA	PA	Stainless steel (1.4404) PTFE	
	43.3 x 16.3 x 88.3 mm	43.3 x 16.3 x 88.3 mm	Ø 18 x 117 mm	
	-5...55 °C	-5...55 °C	-5...60 °C	
	IP54, to open cable end	IP54, to open cable end	IP69K, IP68, when threaded in	
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
	3.2 ms	3.2 ms	8.4 ms	
	1 bytes	1 bytes	1 bytes	
	1 bytes	1 bytes	1 bytes	
	Seite 184	Seite 184	Seite 184	



BNI005M, BNI00CA, BNI005N, BNI00CC



BNI00AE

Efficient communication without wear

INDUCTIVE COUPLERS

Fixed wiring of sensors and actuators comes with drawbacks: cable and contacts are often severely loaded in automation, and cables can fatigue and break. In the worst case scenario this can result in a machine failure. Our BIC inductive couplers transmit data and power contactlessly across an air gap. Thus, no mechanical wear is produced. The system availability is higher, the cycle times are shorter and the sequences are more flexible. The units can quickly be disconnected, are easy to handle and are maintenance-free. This enables you to meet new demands quickly.

Features

- No mechanical wear
- Higher system availability, shorter cycle times, more flexible sequences
- Quickly disconnectable, easy to handle, maintenance free

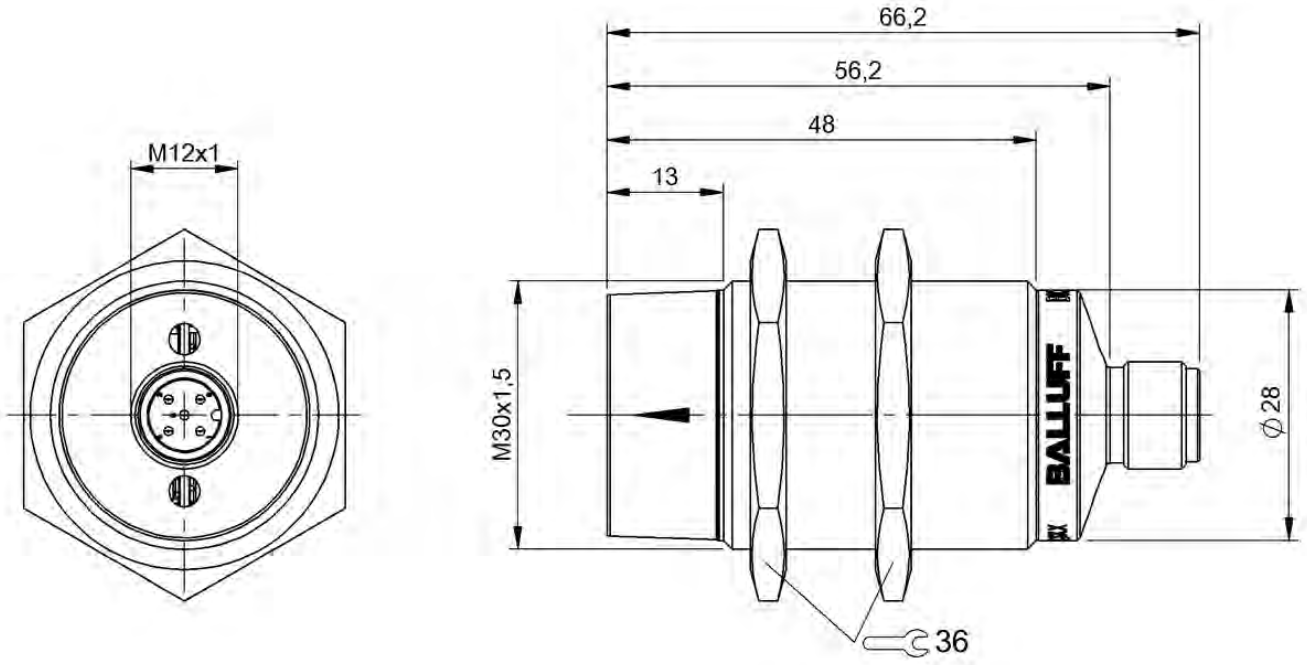


	BIC0086 BIC 1B1-IT1A0-M30EI21-SM4A5A	**BIC0087** BIC 2B1-IT1A0-M30EI21-SM4A5A	**BIC007L** BIC 1B0-ITA50-M30MF1-SM4A5A	
Function	IO-Link	IO-Link	IO-Link signal transmission	
Signal type	bi-directional	bi-directional	bi-directional	
Transmission distance	0...5 mm	0...5 mm	0...10 mm	
Component	Base	Remote	Base	
Interface	—	—	IO-Link 1.1	
Connection	Connector, M12x1-Male	Connector, M12x1-Female	Connector, M12x1-Male, 5-pin	
Rated operating voltage Ue	24 VDC	—	24 VDC	
Output voltage	—	24 VDC	—	
Rated output current	—	1.5 A	—	
Output current max.	—	2.2 A	—	
Housing material	Stainless steel	Stainless steel	Brass, coated	
Dimension	—	—	Ø 30 x 66.2 mm	
Ambient temperature	-5...70 °C	-5...70 °C	-5...55 °C	
IP rating	IP67	IP67	IP67	
Transfer rate	COM2 (38.4 kBaud), COM3 (230.4 kBaud), Diagnostic channel: COM2 (38.4 kBaud)	COM2 (38.4 kBaud), COM3 (230.4 kBaud)	COM2 (38.4 kBaud)	
Additive cycle time	0 ms	0 ms	Device + 2.0 ms	
Process data IN	0…32 bytes, Diagnostic channel: 2 bytes	0…32 bytes	0…32 bytes	
Process data OUT	0…32 bytes, Diagnostic channel: 1 byte	0…32 bytes	0…32 bytes	
SIO mode	no	no	yes	
Productview	Seite 190	Seite 190	Seite 190	

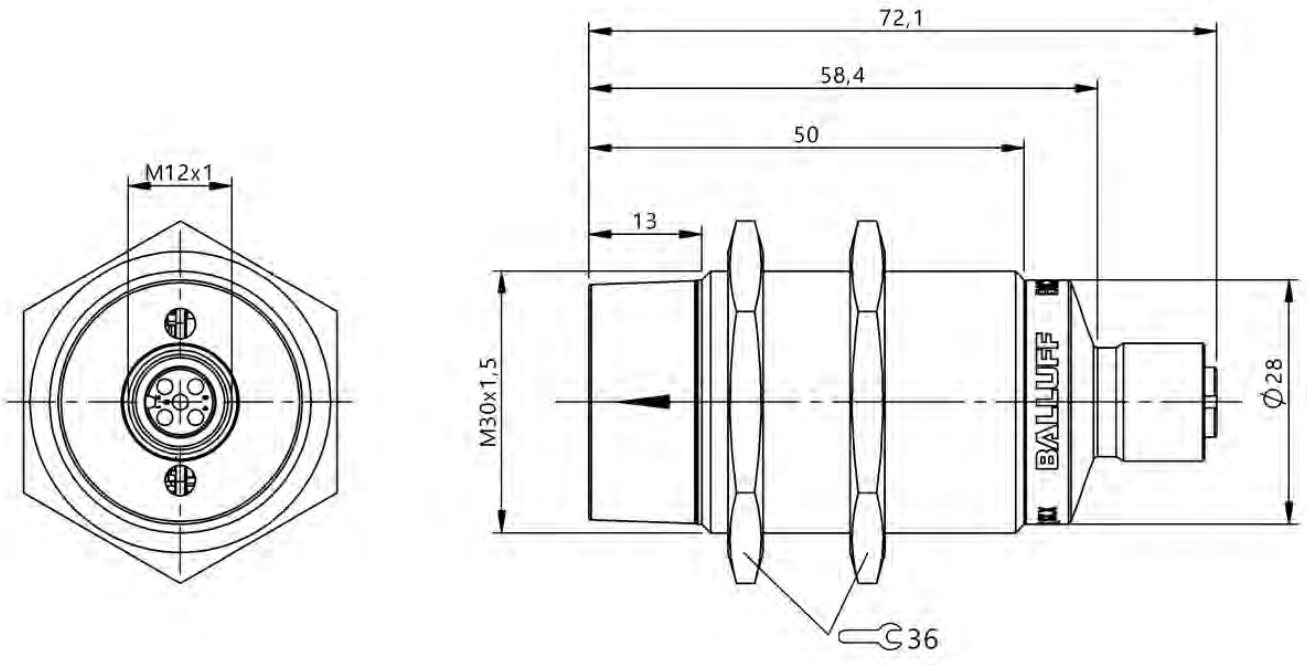




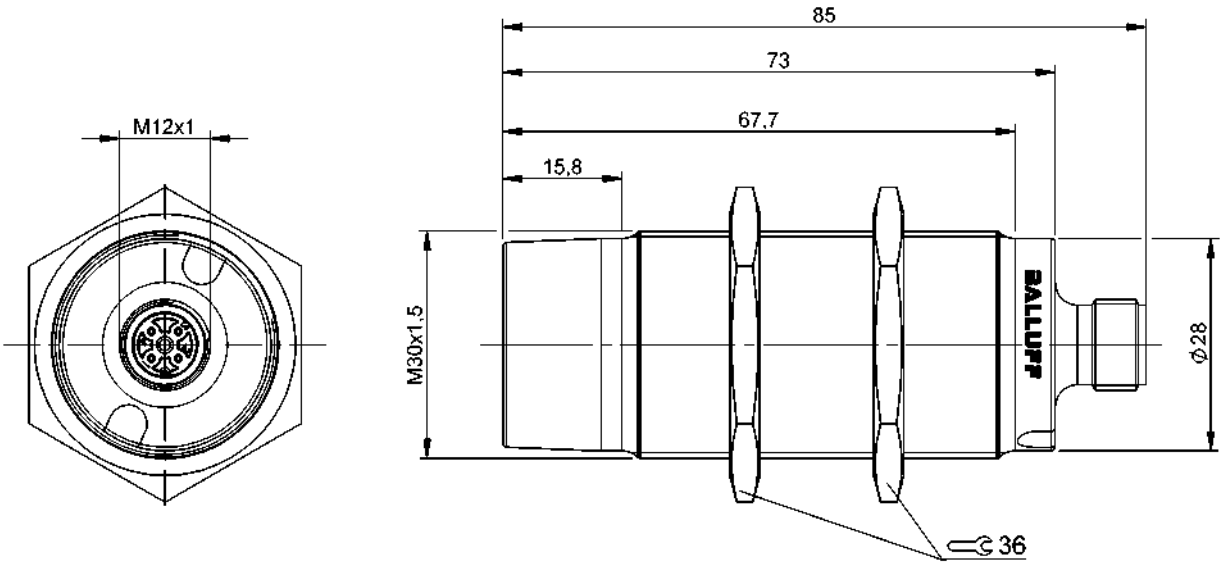
	BIC007E BIC 2B0-ITA50-M30MF1-SM4A5A	BIC007F BIC 1B0-IT1A7-Q40KFU-SM4A4A	BIC007H BIC 2B0-IT1A7-Q40KFU-SM4A5A	BIC0070 BIC 1B0-ITA50-Q40KFU-SM4A4A	BIC0071 BIC 2B0-ITA50-Q40KFU-SM4A5A
	IO-Link signal transmission	IO-Link signal transmission	IO-Link signal transmission	IO-Link signal transmission	IO-Link signal transmission
	bi-directional	bi-directional	bi-directional	bi-directional	bi-directional
	0...10 mm	0...5 mm	0...5 mm	0...5 mm	0...5 mm
	Remote	Base	Remote	Base	Remote
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	Connector, M12x1-Male, 5-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Female, 5-pin	Connector, M12x1-Male, 4-pin	Connector, M12x1-Female, 5-pin
	—	24 VDC	—	24 VDC	—
	24 VDC	—	24 VDC	—	24 VDC
	650 mA	—	1.7 A	—	500 mA
	5 A / 0.12 ms	—	5 A / 1 ms	—	5 A / 0.05 ms
	Brass, coated	PBTP	PBTP	PBTP	PBTP
	Ø 30 x 72.1 mm	40 x 40 x 62 mm	40 x 40 x 62 mm	40 x 40 x 62 mm	40 x 40 x 62 mm
	-5...55 °C	-5...55 °C	-5...55 °C	-5...65 °C	-5...65 °C
	IP67	IP67	IP67	IP67	IP67
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud), COM3 (230.4 kBaud)	COM2 (38.4 kBaud), COM3 (230.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	Device + 2.0 ms	Device + 2.8 ms	Device + 2.8 ms	Device + 2.0 ms	Device + 2.0 ms
	0…32 bytes	0…32 bytes	0…32 bytes	0…32 bytes	0…32 bytes
	0…32 bytes	0…32 bytes	0…32 bytes	0…32 bytes	0…32 bytes
	yes	no	no	yes	yes
	Seite 190	Seite 191	Seite 192	Seite 192	Seite 193



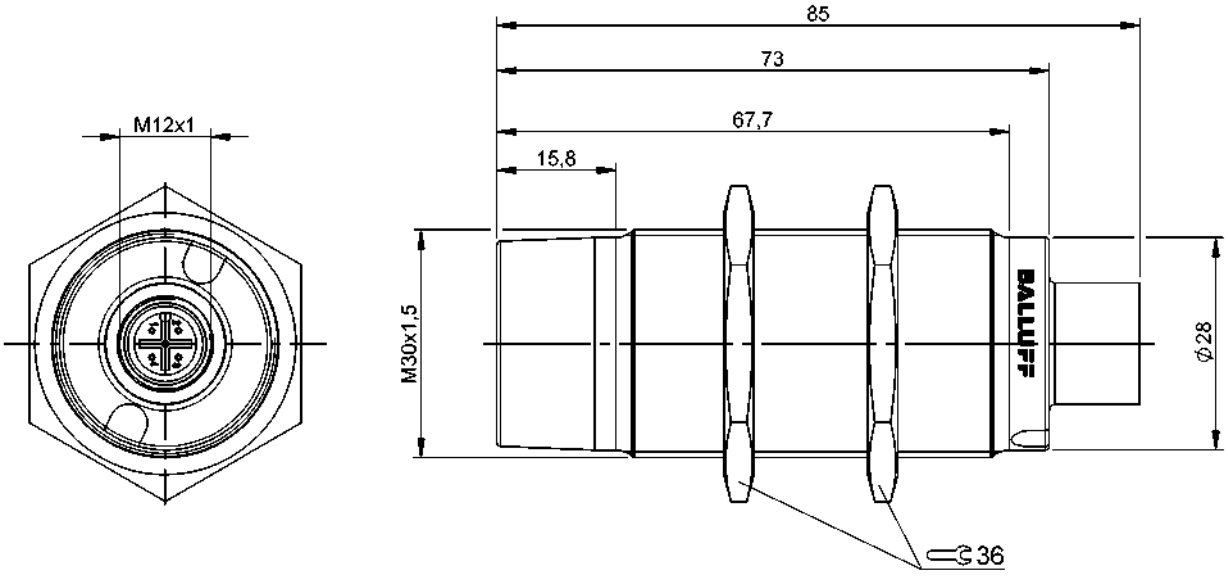
BIC007L



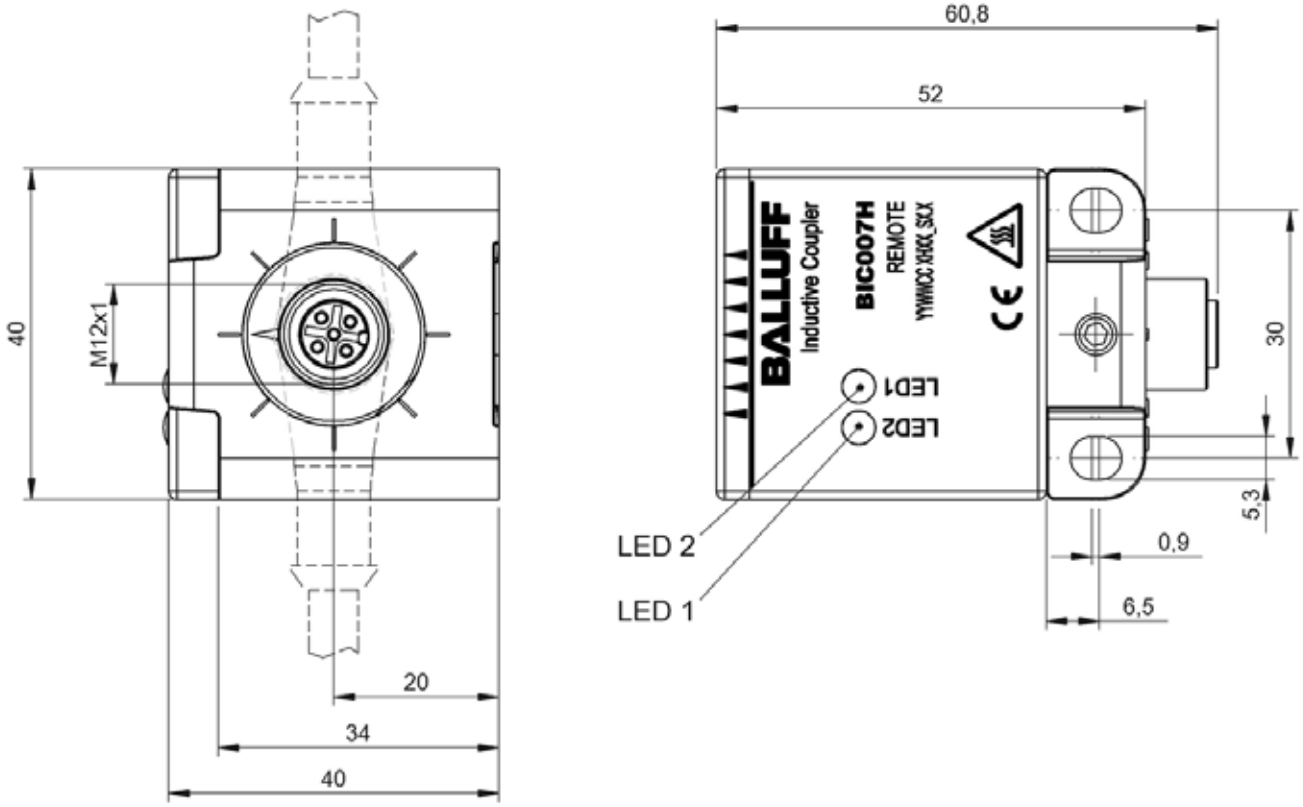
BIC007E



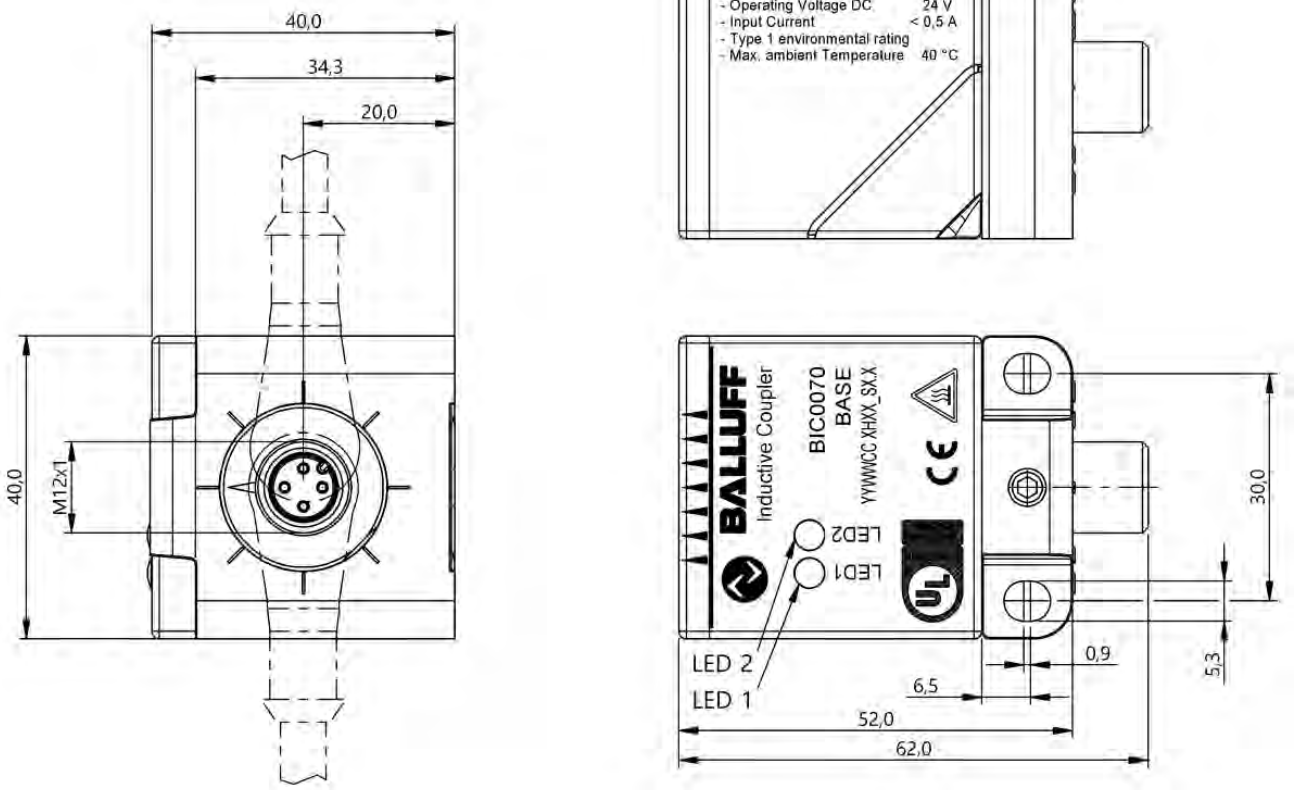
BIC0086



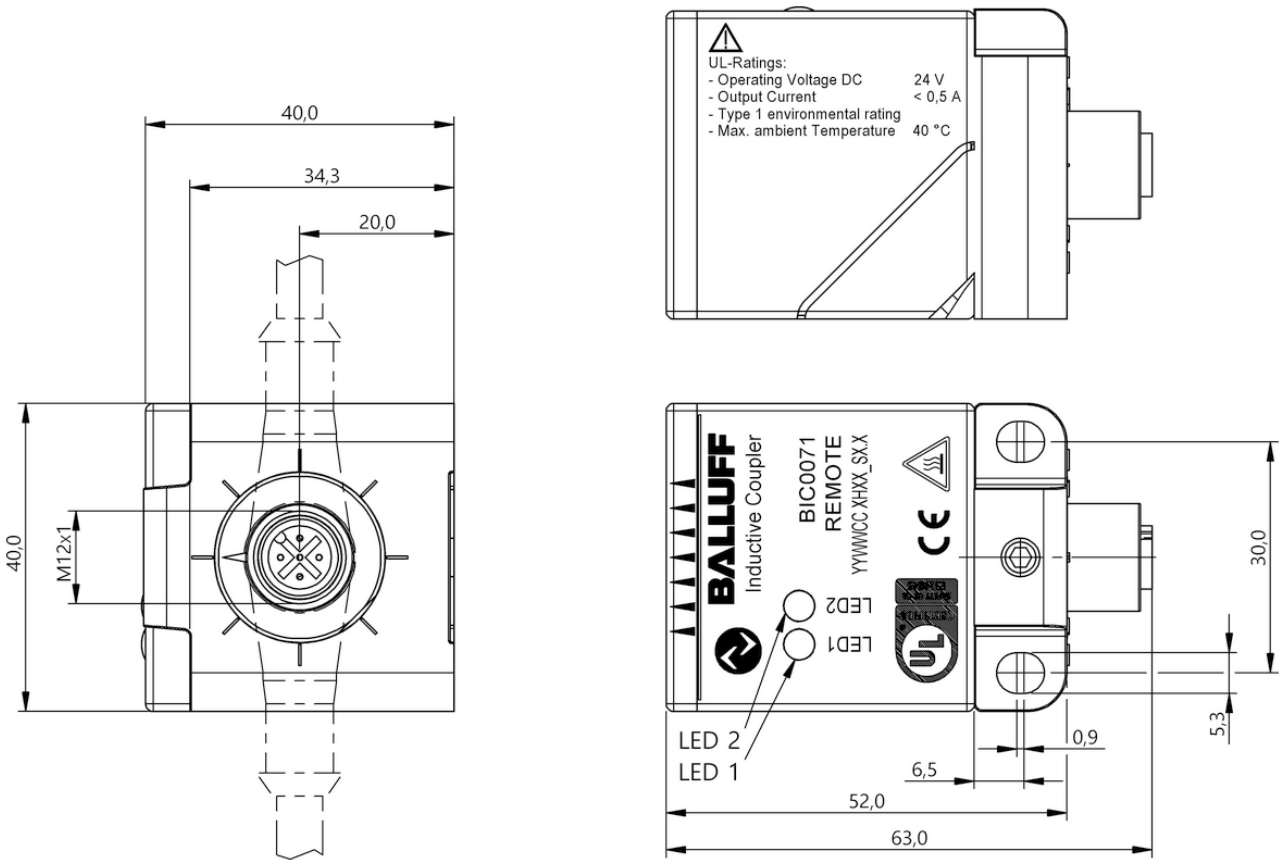
BIC0087



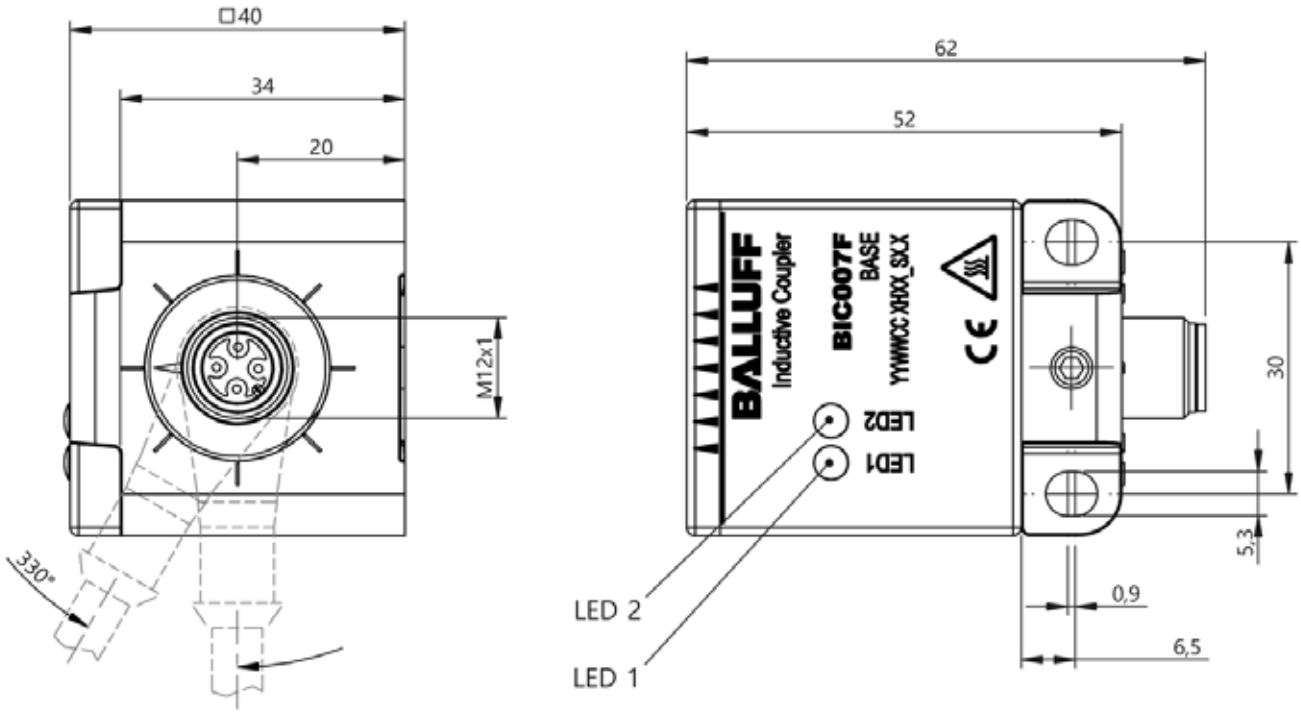
BIC007H



BIC0070



BIC0071



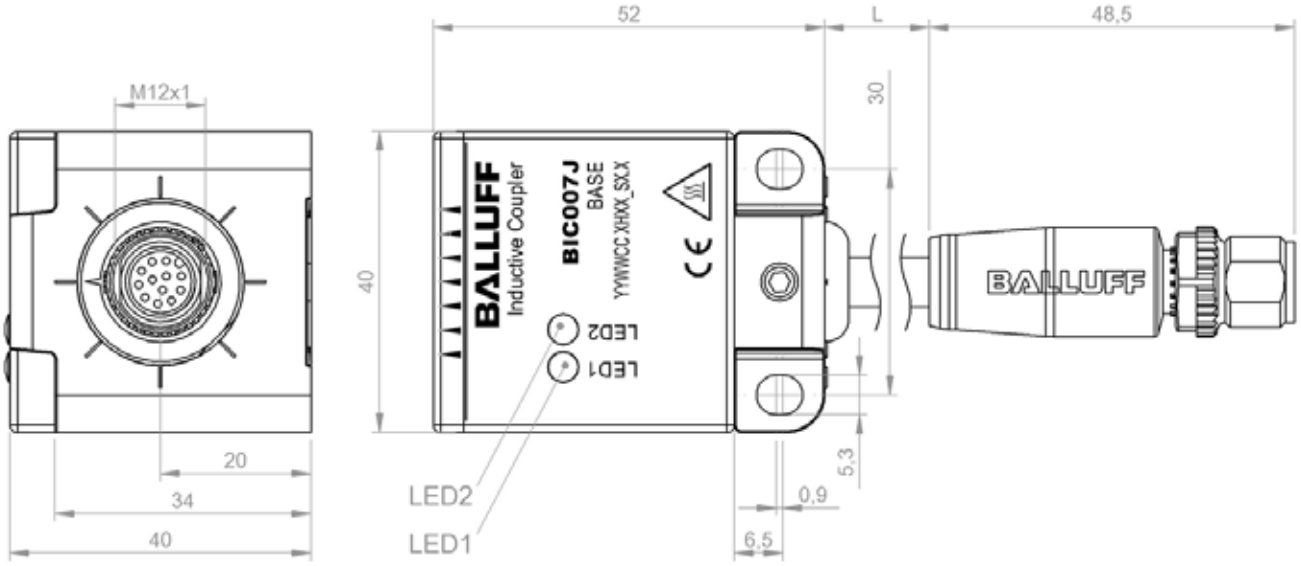
BIC007F

	BIC007J BIC 1I3-P2A50-Q40KFU-EPX0-002-M4CA	BIC007K BIC 2I3-P2A50-Q40KFU-EPX0-002-M4CA	
Function	Signal transmission	Signal transmission	
Signal type	unidirectional	unidirectional	
Digital inputs	—	8x PNP	
Digital outputs	8x PNP	—	
Transmission distance	0...5 mm	0...5 mm	
Component	Base	Remote	
Connection	Connector, M12x1, 12-pin, 0.20 m, PUR	Connector, M12x1, 12-pin, 0.20 m, PUR	
Rated operating voltage Ue	24 VDC	—	
Output voltage	—	24 VDC	
Rated output current	—	500 mA	
Housing material	PBTP	PBTP	
Dimension	40 x 40 x 52 mm	40 x 40 x 52 mm	
Ambient temperature	-5...65 °C	-5...65 °C	
Protection degree	IP67	IP67	
Productview	Seite 198	Seite 198	

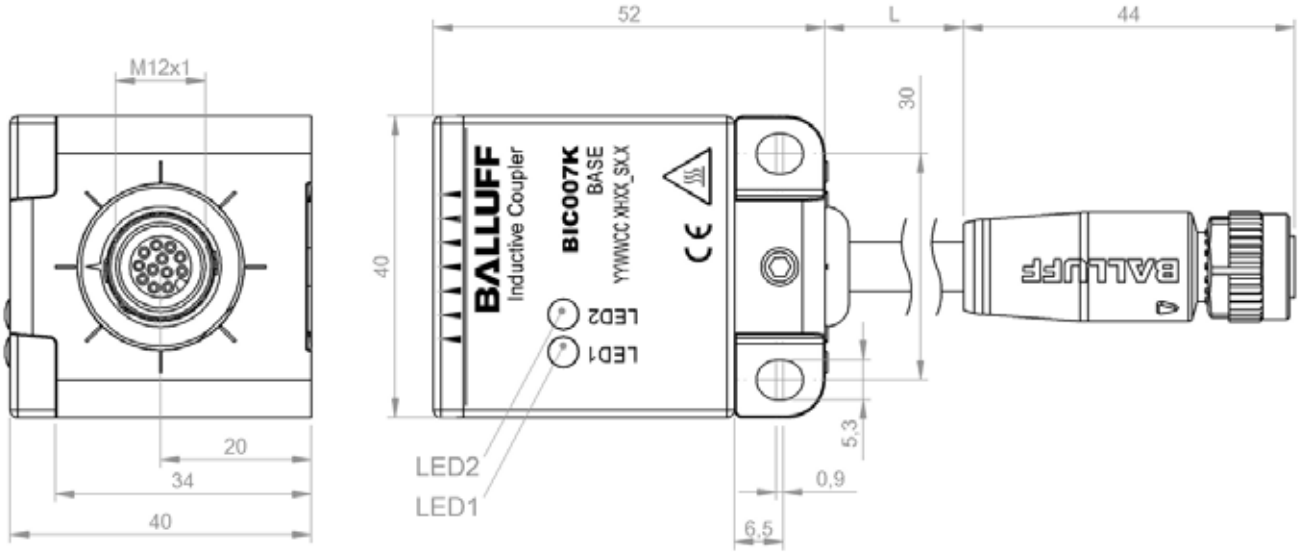
	BIC0077 BIC 1I1-P2A05-M12MM-BPX0-003-M45A	**BIC0078** BIC 2I1-P2A05-M12MF-BPX0-003-M44A	**BIC007T** BIC 1I22-P2A02-M18MN2-EPX07-050	**BIC007U** BIC 2I22-P2A02-M18MF2-EPX07-050
	Signal transmission	Signal transmission	Signal transmission	Signal transmission
	unidirectional	unidirectional	unidirectional	unidirectional
	—	2x PNP	—	4x PNP
	2x PNP	—	4x PNP	—
	0...2.5 mm	0...2.5 mm	1...3 mm	1...3 mm
	Base	Remote	Base	Remote
	Connector, M12x1, 5-pin, 0.30 m, PUR	Connector, M12x1, 5-pin, 0.30 m, PUR	Cable, 5.00 m, PUR	Cable, 5.00 m, PUR
	24 VDC	—	24 VDC	12 VDC
	—	24 VDC	—	24 VDC
	—	50 mA	—	100 mA
	Brass, coated	Brass, coated	Brass, coated	Brass, coated
	Ø 12 x 65 mm	Ø 12 x 41 mm	Ø 18 x 94 mm	Ø 18 x 61 mm
	-10...50 °C	-10...50 °C	0...50 °C	0...50 °C
	IP67	IP67	IP67	IP67
	Seite 199	Seite 199	Seite 200	Seite 200

	BIC0009 BIC 1I3-P2A50-M30MI3-SM4ACA	**BIC005J** BIC 2I3-P2A50-M30MI3-BPX0C-002-M4CA	
Function	Signal transmission	Signal transmission	
Signal type	unidirectional	unidirectional	
Digital inputs	—	8x PNP	
Digital outputs	8x PNP	—	
Transmission distance	0...5 mm	0...5 mm	
Component	Base	Remote	
Connection	Connector, M12x1, 12-pole	Connector, M12x1, 12-pin, 0.20 m, PUR	
Rated operating voltage Ue	24 VDC	—	
Output voltage	—	24 VDC	
Rated output current	—	500 mA	
Housing material	Brass, coated	Brass, coated	
Dimension	Ø 30 x 107 mm	Ø 30 x 85.5 mm	
Ambient temperature	0...55 °C	0...55 °C	
Protection degree	IP67	IP67	
Productview	Seite 201	Seite 201	

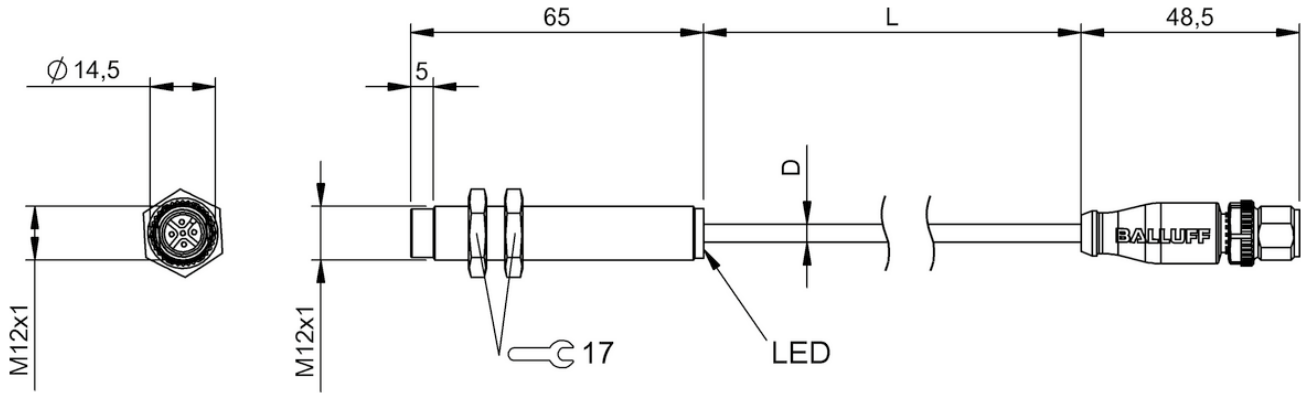
	BIC000A BIC 2I3-P2A50-M30MI3-SM4ACA			
	Signal transmission			
	unidirectional			
	8x PNP			
	—			
	0...5 mm			
	Remote			
	Connector, M12x1, 12-pole			
	—			
	24 VDC			
	500 mA			
	Brass, coated			
	Ø 30 x 106 mm			
	0...55 °C			
	IP67			
	Seite 202			



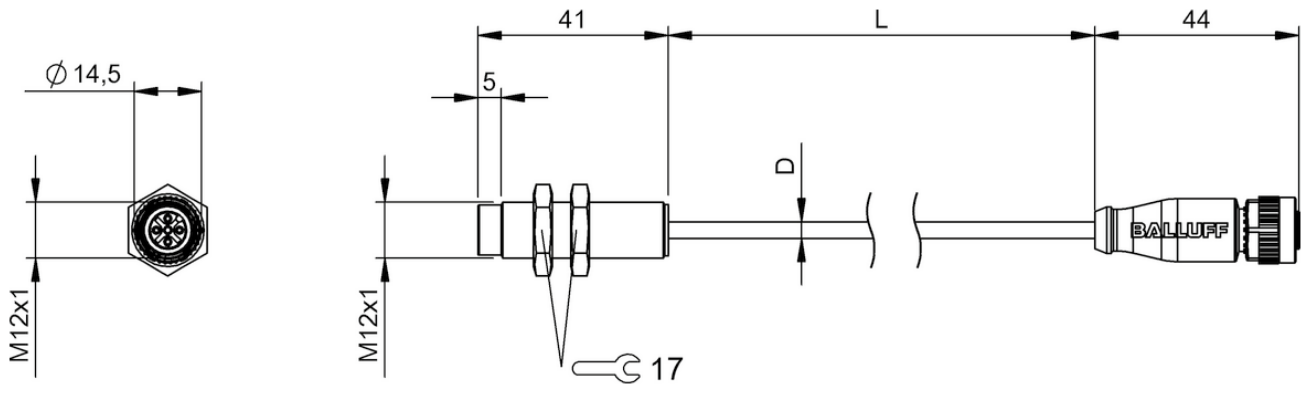
BIC007J



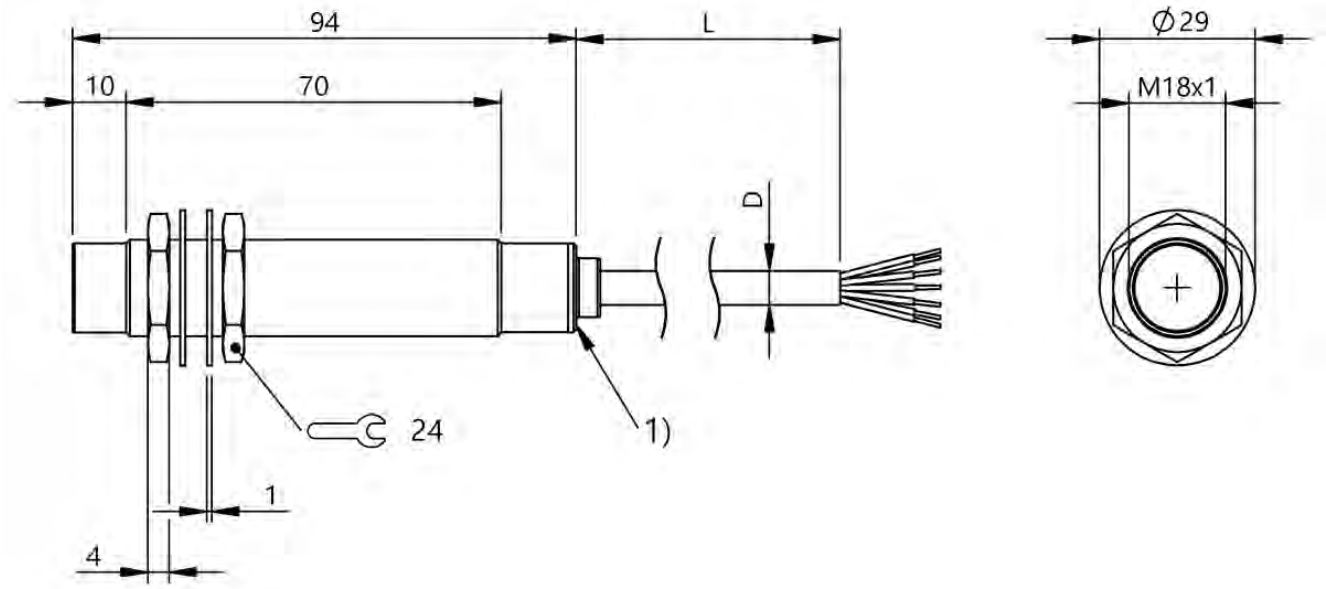
BIC007K



BIC0077

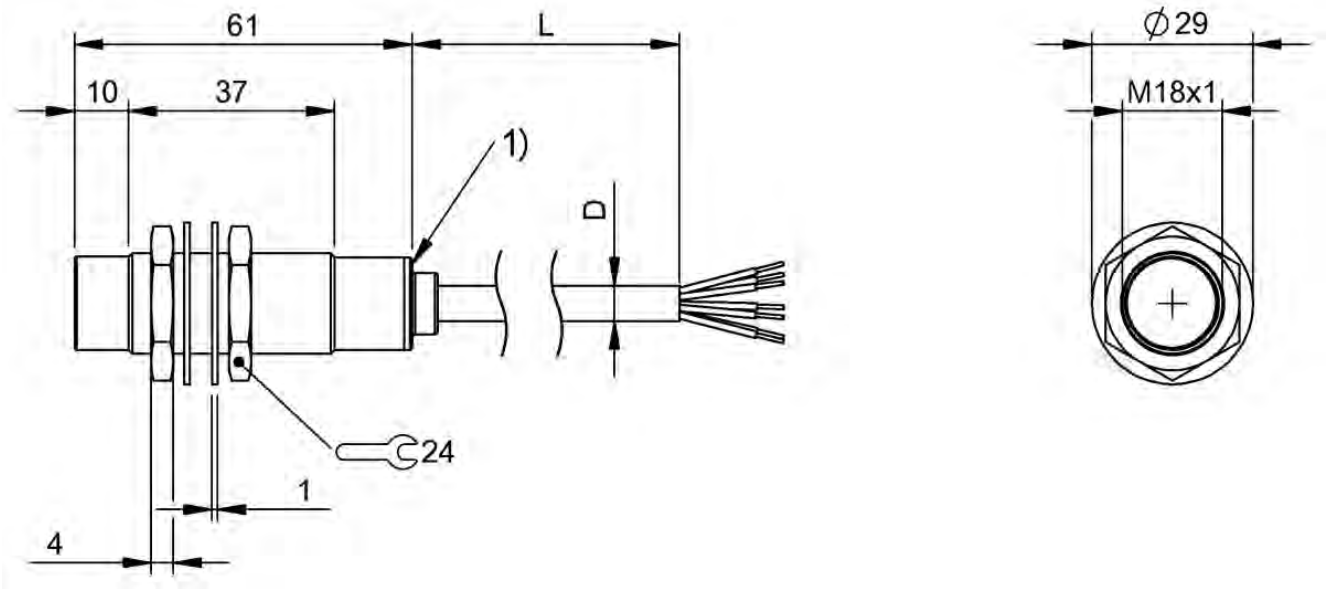


BIC0078



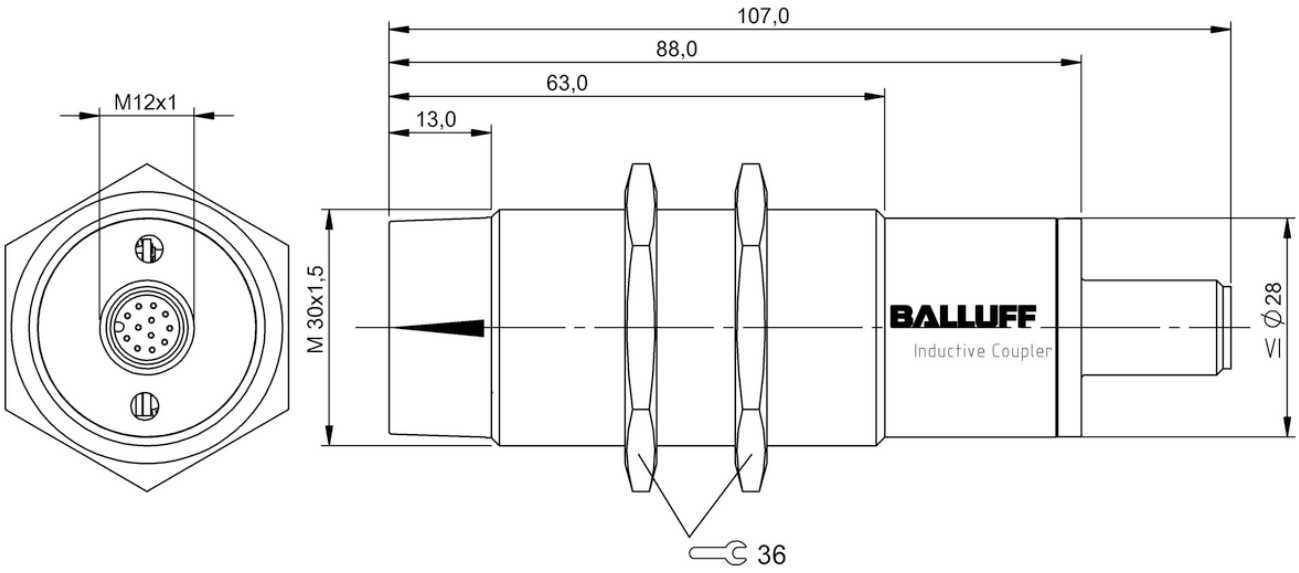
1) LED function indicator

BIC007T

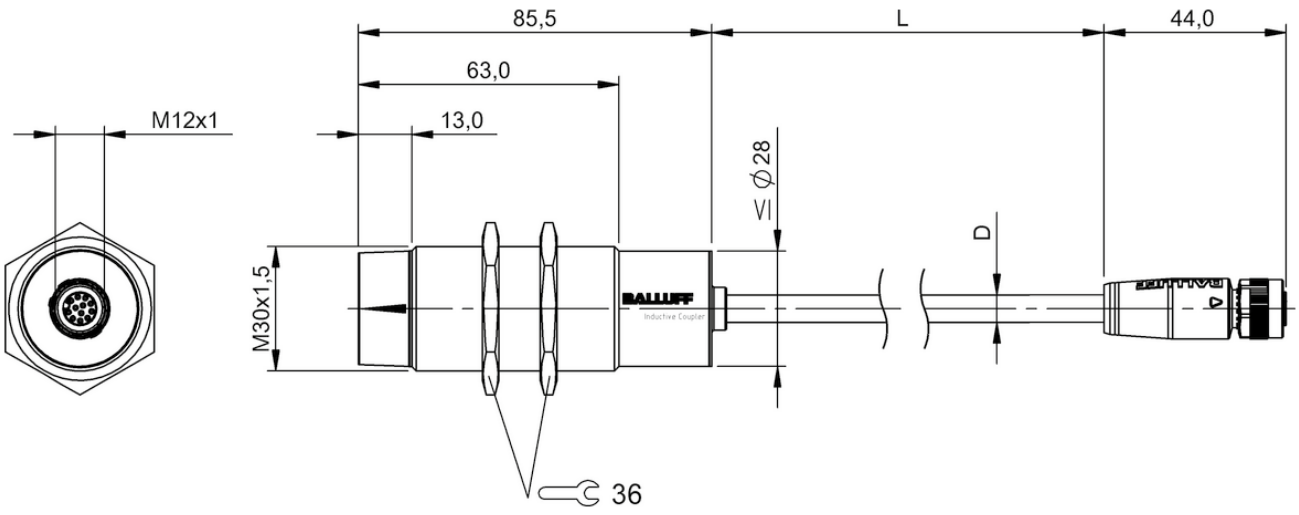


1) LED function indicator

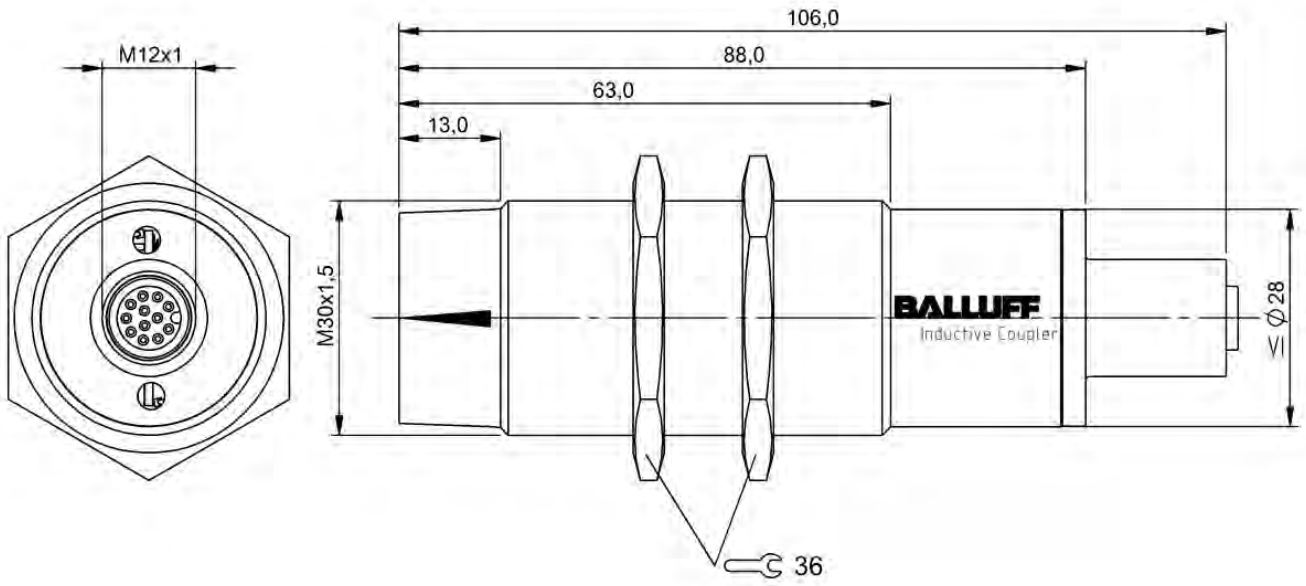
BIC007U



BIC0009



BIC005J


M12x1
106,0
88,0
63,0
13,0
M30x1,5
BALLUFF
Inductive Coupler
Ø28
36

BIC000A

	BIC0007 BIC 1P0-P2A50-M30MI3-SM4A4A	BIC0008 BIC 2P0-P2A50-M30MI3-SM4A5A	
Function	Power only	Power only	
Transmission distance	0...5 mm	0...5 mm	
Component	Base	Remote	
Connection	Connector, M12x1, 4-pin	Connector, M12x1, 5-pin	
Rated operating voltage Ue	24 VDC	—	
Output voltage	—	24 VDC	
Rated output current	—	500 mA	
Housing material	Brass, coated	Brass, coated	
Dimension	Ø 30 x 100 mm	Ø 30 x 107.5 mm	
Ambient temperature	-5...55 °C	-5...55 °C	
Protection degree	IP67	IP67	
Productview	Seite 206	Seite 206	

	BIC0075 BIC 1P0-P25A0-Q120AE-SA3A40	BIC0076 BIC 2P0-P25A0-Q120AE-SA3A40	BIC0073 BIC 1P0-P25A0-Q120AE-SA3A50	BIC0074 BIC 2P0-P25A0-Q120AE-SA3A50
	Power only	Power only	Power only	Power only
	0...4 mm	0...4 mm	0...4 mm	0...4 mm
	Base	Remote	Base	Remote
	Connector, 7/8“, 4-pole	Connector, 7/8“, 4-pole	Connector, 7/8“, 5-pole	Connector, 7/8“, 5-pole
	24 VDC	—	24 VDC	—
	—	24 VDC	—	24 VDC
	—	5 A	—	5 A
	Aluminum, black anodized	Aluminum, black anodized	Aluminum, black anodized	Aluminum, black anodized
	120 x 45 x 120 mm	120 x 45 x 120 mm	120 x 45 x 120 mm	120 x 45 x 120 mm
	-10...50 °C	-10...50 °C	-10...50 °C	-10...50 °C
	IP67	IP67	IP67	IP67
	Seite 207	Seite 207	Seite 207	Seite 207

Software

**Generate, transport, visualize data –
Create added value**

SOFTWARE AND SYSTEMS SOLUTIONS.

innovating automation

The future of automation is increasingly connected and digital. The growing diversity of technology – including in the private sector – expectations of many users while the demands on industry rise.

Meeting these increasing demands necessitates the merging of traditional automation technology (OT) and information technology (IT). And the increased use of software is the next logical step.

Balluff offers IIoT capable hardware and middleware in combination with powerful software. This means you benefit from system solutions for the widest variety of requirements in your production environment.

Your Balluff solutions

- Configuring Balluff IO-Link devices with the **Balluff Engineering Tool** 216
- Injection molding tool management with **Mold-ID** 218
- Tool parameter transfer with **Easy Tool-ID** 220

Parameterizing, configuring and starting up IO-Link devices – now even easier

BALLUFF ENGINEERING TOOL

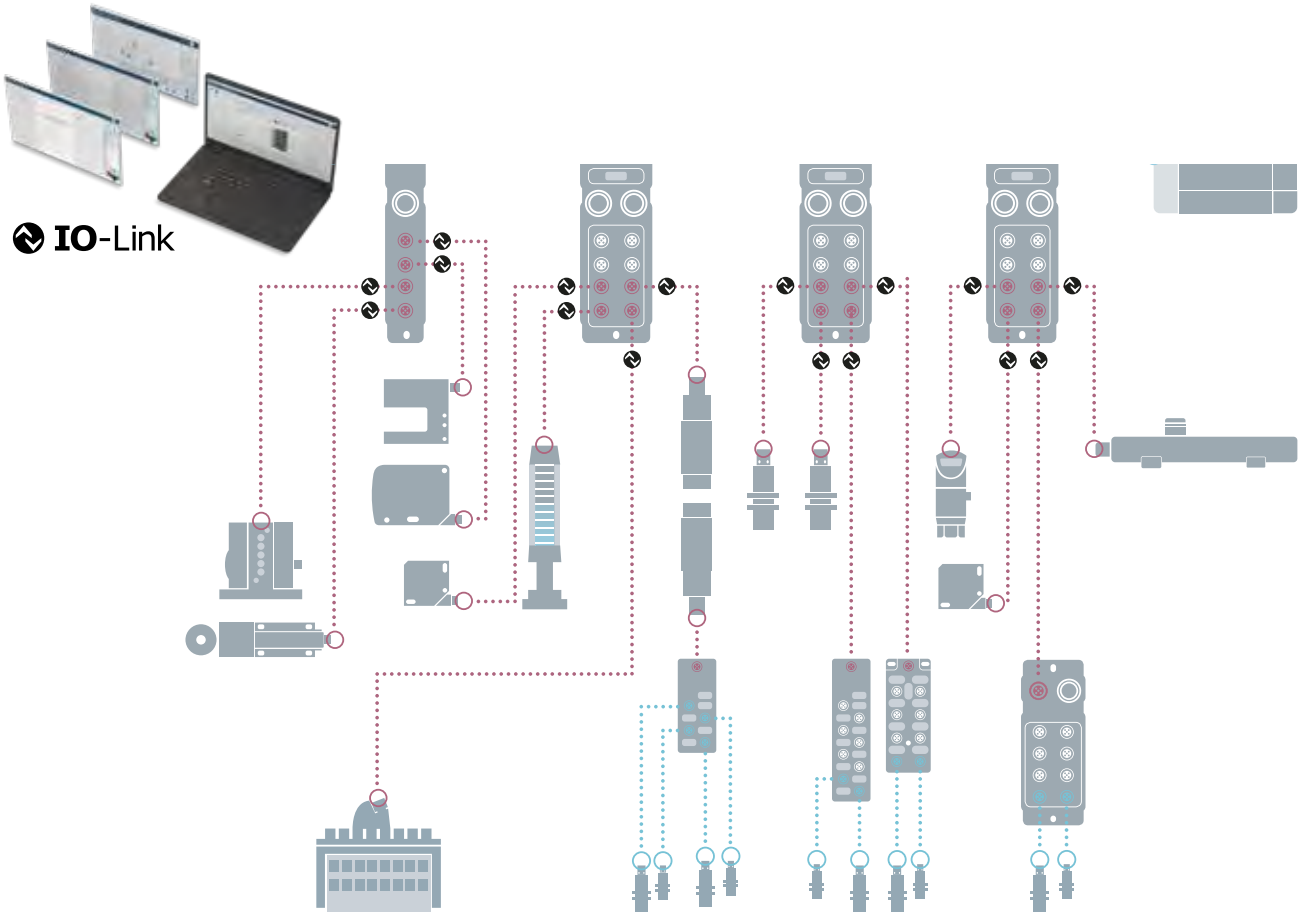
When you need a manufacturer-neutral startup and configuration of IO-Link devices, the Balluff Engineering Tool (BET) is the answer.

This software quickly and easily provides you with an overview of your topologies and allows you to track the status of all the connected IO-Link devices. You can also parameterize and place the devices in service while also managing the parameters for individual devices or entire topologies. Functions for documenting the topologies and for testing inputs and outputs are also available within the software along with simple assignment of IP addresses.

The BET is part of the Smart Automation and Monitoring System (SAMS) from Balluff, which includes a variety of devices with a standard operating, configuration and diagnostics concept.

Features

- Simple, faster setup of IO-Link devices – even without a PLC
- Reduced startup time and fewer errors since IO-Link device settings can be saved and reused
- Prevents wiring mistakes and reduces time-consuming troubleshooting by testing the IO-Link wiring before startup
- Overview of the entire IO-Link topology and its status
- Part of the Smart Automation and Monitoring System (SAMS) from Balluff



BALLUFF ENGINEERING TOOL (BET)

Standard version	BAI BET-S12N-UDN-0001-_DW-ST_ _
Description	You get the full functional capability of our Balluff Engineering Tool (BET) in the form of a 12-month license. You can configure the scope of the license yourself. One license is needed for each terminal device fully covered by the BET. The software can be used with some function limitations without purchasing a license.

Ordering example: BAI BET-S12N-UDN-0001-__DW-ST__

Payment type
- 2 Software subscription, monthly payments
- 3 Software subscription, annual payment

Number of network blocks
- OB 2 active distributors
- OB 5 active distributors
- OB 10 active distributors
- OB 20 active distributors

No license is required for using just one network module.

The BET is suitable for all Profinet and Ethernet/IP IO-Link network blocks firmware version 3.2.2 and higher.

ACCESSORIES




	BNI0067	BNI000F	BNI0089	BNI005E
Description	Unmanaged Switches Ethernet TCP/IP 10Base-T/100Base-TX, 8x RJ45 female, 8-pin	Unmanaged Switches Ethernet TCP/IP 10Base-T/100Base-TX, 8x M12x1 female, 4-pin, D-coded	Unmanaged Switches Ethernet TCP/IP 10Base-T/100Base-TX, 8x M12x1 female, 4-pin, D-coded	Unmanaged Switches Ethernet TCP/IP 10Base-T/100Base-TX, 5x RJ45 female, 8-pin

CONNECTORS




2 M CABLE	BCC0JF0	BCC06FN	BCC0E90	BCC06J3
10 M CABLE	BCC0JF3		BCC0E8P	
Connection 1	M12 male, straight, 4-pin, D-coded	7/8" female, straight, 5-pin	M12 male, straight, 4-pin, D-coded	7/8" female, straight, 4-pin
Connection 2	RJ45 male, straight, 4-pin	7/8" male, straight, 5-pin	RJ45 male, straight, 4-pin	7/8" male, straight, 4-pin
Interface	Profinet	Current	Ethernet/IP	Current
Cable	PUR shielded, green, drag-chain compatible	PUR black, drag-chain compatible	TPE shielded, turquoise, drag-chain compatible	PUR black, drag-chain compatible

Архангельск (8182)63-90-72
Астана (7172)727-132
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

Киргизия (996)312-96-26-47
Россия (495)268-04-70
Казахстан (772)734-952-31

balluff.nt-rt.ru || bfd@nt-rt.ru