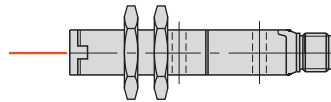


BOS 18KF – with expanded product line

BOS 18KF series sensors are available with red or infrared light or with a Class 1 laser.

They are configured using a potentiometer or via teach-in. The plastic housing with flattened sides allows installation using the included M18-nuts or screws through the sensor housing.

The sensors are available as cable- or M12- connector styles with PNP- or NPN- output.



Photoelectric Sensors

BOS 18KF Global

Product overview



Photoelectric Sensors

Photoelectric Sensors

Cylinder Designs

Block Designs

Fork Sensors

BGL

Angle Sensors

BWL

Photoelectric Sensors with Special Properties

Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors

Type		Sensing distance/ Range	Light type			Out- put	Switching type		Switch- ing fre- quency	U _s	Conne- ction	Special features			Page	
			Red light	Infrared	Laser 	PNP transistor	Light switching	Dark switching		10...30 V DC	M12 plug, 4-pin	Cable	Polarizing filter	Teach-in	Glass detection	
 Diffuse sensor with background suppression																
BOS00JM	BOS 18KF-PA-1HA-S4-C	50...100 mm	■			■	■	■	500 Hz	■	■			■		104
BOS00JL	BOS 18KF-PA-1HA-C-02	50...100 mm	■			■	■	■	500 Hz	■		■		■		104
BOS00JW	BOS 18KF-PA-1N1R-S4-C	100 mm	■			■	■	■	1 kHz	■	■					105
BOS00JU	BOS 18KF-PA-1N1R-C-02	100 mm	■			■	■	■	1 kHz	■		■				105
 Diffuse sensor with background suppression																
BOS00JK	BOS 18KF-PA-1GA-S4-C	40...100 mm	■			■	■	■	250 Hz	■	■			■		105
 Diffuse sensor																
BOS00K9	BOS 18KF-PA-1XA-S4-C	0...100 mm		■		■	■	■	1 kHz	■	■					105
BOS00K8	BOS 18KF-PA-1XA-C-02	0...100 mm		■		■	■	■	1 kHz	■		■				106
BOS00JP	BOS 18KF-PA-1LOC-S4-C	0...350 mm			■	■	■	■	1.5 kHz	■	■					112
BOS00JN	BOS 18KF-PA-1LOC-C-02	0...350 mm			■	■	■	■	1.5 kHz	■		■				112
BOS00JZ	BOS 18KF-PA-1PD-S4-C	0...400 mm		■		■	■	■	1 kHz	■	■					106
BOS00JY	BOS 18KF-PA-1PD-C-02	0...400 mm		■		■	■	■	1 kHz	■		■				107
BOS00K1	BOS 18KF-PA-1PE-S4-C	0...700 mm		■		■	■	■	1 kHz	■	■					107
BOS00K0	BOS 18KF-PA-1PE-C-02	0...700 mm		■		■	■	■	1 kHz	■		■				107
 Retroreflective sensor																
BOS00K7	BOS 18KF-PA-1TB-S4-C	0.1...1.7 m	■			■	■	■	1 kHz	■	■		■		■	108
BOS00K6	BOS 18KF-PA-1TB-C-02	0.1...1.7 m	■			■	■	■	1 kHz	■		■	■		■	108
BOS00K3	BOS 18KF-PA-1QD-S4-C	0.1...4.5 m	■			■	■	■	1 kHz	■	■		■			109
BOS00K2	BOS 18KF-PA-1QD-C-02	0.1...4.5 m	■			■	■	■	1 kHz	■		■	■			109
BOS00K5	BOS 18KF-PA-1RE-S4-C	0.1...5 m	■			■	■	■	1 kHz	■	■					109
BOS00K4	BOS 18KF-PA-1RE-C-02	0.1...5 m	■			■	■	■	1 kHz	■		■				109
BOS00JT	BOS 18KF-PA-1LQP-S4-C	0.1...16 m			■	■	■	■	1.5 kHz	■	■		■			113
BOS00JR	BOS 18KF-PA-1LQP-C-02	0.1...16 m			■	■	■	■	1.5 kHz	■		■	■			113
 Through-beam sensor Receiver																
BOS00CK	BLE 18KF-PA-1PP-S4-C	0...20 m		■		■	■	■	250 Hz	■	■					110
BOS00CJ	BLE 18KF-PA-1PP-C-02	0...20 m		■		■	■	■	250 Hz	■		■				111
BOS00CH	BLE 18KF-PA-1LT-S4-C	0...60 m			■	■	■	■	1.5 kHz	■	■					114
BOS00CF	BLE 18KF-PA-1LT-C-02	0...60 m			■	■	■	■	1.5 kHz	■		■				115
 Through-beam sensor Emitter																
BOS00EP	BLS 18KF-XX-1P-S4-L	0...20 m		■						■	■					110
BOS00EN	BLS 18KF-XX-1P-L-02	0...20 m		■						■		■				111
BOS00EM	BLS 18KF-XX-1LT-S4-L	0...60 m			■					■	■					114
BOS00EL	BLS 18KF-XX-1LT-L-02	0...60 m			■					■		■				115

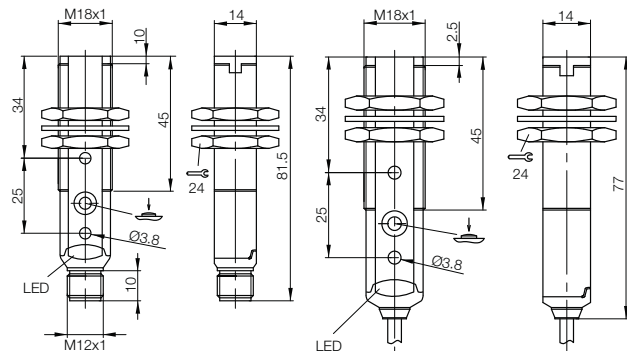
NPN on request



Type				Diffuse sensor with background suppression	Diffuse sensor with background suppression		
Detection range				50...100 mm	50...100 mm		
PNP	NC/NO	Teach-in	Ordering code				
			Part number				
PNP	NC/NO	Teach-in	Ordering code	BOS00JM	BOS00JL		
			Part number	BOS 18KF-PA-1HA-S4-C	BOS 18KF-PA-1HA-C-02		
Supply voltage U _S				10...30 V DC	10...30 V DC		
Output current				100 mA	100 mA		
No-load supply current I ₀ max.				≤ 30 mA	≤ 30 mA		
Switching type				Light and dark switching	Light and dark switching		
Polarity reversal/short-circuit protected				Yes/Yes	Yes/Yes		
Settings				Teach-in	Teach-in		
Emitter, light type				LED, red light	LED, red light		
Wavelength				630 Nm	630 Nm		
Light spot diameter				approx. 8 mm at 100 mm	approx. 8 mm at 100 mm		
Output function indicator				Yellow LED	Yellow LED		
Stability indicator				Green/red LED	Green/red LED		
Response time				1 ms	1 ms		
Switching frequency f				500 Hz	500 Hz		
Degree of protection as per IEC 60529				IP 67	IP 67		
Ambient temperature T _a				−25...+55 °C	−25...+55 °C		
Reference standard				EN 60947-5-2	EN 60947-5-2		
Material		Housing	PBT	PBT			
		Optical surface	PMMA	PMMA			
Connection				M12 connector, 4-pin	2 m PVC cable, 4×0.14 mm ³		

Reference object: white, 90% reflection, 200x200 mm

For wiring diagrams see page 119.



Photoelectric Sensors

BOS 18KF Global



Photoelectric Sensors

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Cylinder Designs

Block Designs

Fork Sensors

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Angle Sensors

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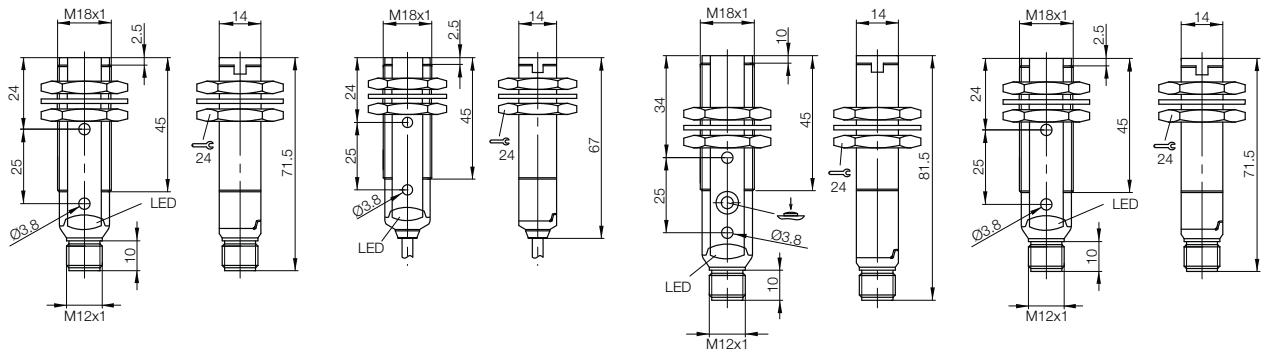
Photoelectric Sensors with Special Properties

Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors



Diffuse sensor with background suppression 100 mm	Diffuse sensor with background suppression 100 mm	Diffuse sensor with background suppression 40...100 mm	Diffuse sensor 0...100 mm
BOS00JW	BOS00JU	BOS00JK	BOS00K9
BOS 18KF-PA-1N1R-S4-C	BOS 18KF-PA-1N1R-C-02	BOS 18KF-PA-1GA-S4-C	BOS 18KF-PA-1XA-S4-C
10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
100 mA	100 mA	100 mA	100 mA
≤ 35 mA	≤ 35 mA	≤ 30 mA	≤ 35 mA
Light and dark switching	Light and dark switching	Light and dark switching	Light and dark switching
Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
Fixed	Fixed	Teach-in	Fixed
LED, red light	LED, red light	LED, red light	LED, infrared
630 Nm	630 Nm	630 Nm	880 Nm
approx. 20 mm at 100 mm	approx. 20 mm at 100 mm	approx. 8 mm at 100 mm	approx. 80 mm at 100 mm
Yellow LED	Yellow LED	Yellow LED	Yellow LED
Green/red LED	Green/red LED	Green/red LED	
0.5 ms	0.5 ms	2 ms	0.5 ms
1 kHz	1 kHz	250 Hz	1 kHz
IP 67	IP 67	IP 67	IP 67
-25...+55 °C	-25...+55 °C	-25...+55 °C	-25...+55 °C
EN 60947-5-2	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2
PBT	PBT	PBT	PBT
PMMA	PMMA	PMMA	PMMA
M12 connector, 4-pin	2 m PVC cable, 4×0.14 mm ³	M12 connector, 4-pin	M12 connector, 4-pin

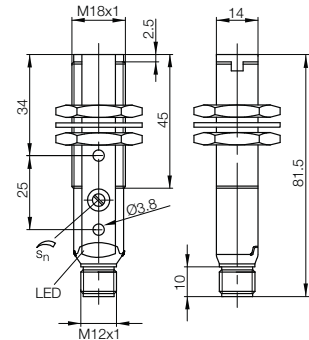
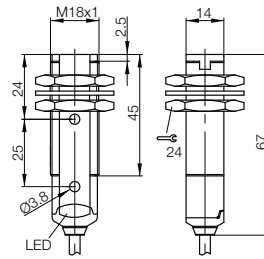




Type		Diffuse sensor	Diffuse sensor	
Detection range		0...100 mm	0...400 mm	
PNP NC/NO	Ordering code	BOS00K8	BOS00JZ	
	Part number	BOS 18KF-PA-1XA-C-02	BOS 18KF-PA-1PD-S4-C	
Supply voltage U_s		10...30 V DC	10...30 V DC	
Output current		100 mA	100 mA	
No-load supply current I_0 max.		≤ 35 mA	≤ 35 mA	
Switching type		Light/dark (complementary)	Light/dark (complementary)	
Polarity reversal/short-circuit protected		Yes/Yes	Yes/Yes	
Settings		Fixed	Potentiometer, 270°	
Emitter, light type		LED, infrared	LED, infrared	
Wavelength		880 Nm	880 Nm	
Light spot diameter		approx. 80 mm at 100 mm	approx. 100 mm at 300 mm	
Output function indicator		Yellow LED	Yellow LED	
Stability indicator			Green LED	
Response time		0.5 ms	0.5 ms	
Switching frequency f		1 kHz	1 kHz	
Degree of protection as per IEC 60529		IP 67	IP 67	
Ambient temperature T_a		-25...+55 °C	-25...+55 °C	
Reference standard		EN 60947-5-2	EN 60947-5-2	
Material	Housing	PBT	PBT	
	Optical surface	PMMA	PMMA	
Connection		2 m PVC cable, 4x0.14 mm ³	M12 connector, 4-pin	

Reference object: white, 90% reflection, 200×200 mm

For wiring diagrams see page 119.



Photoelectric Sensors

BOS 18KF Global



Photoelectric Sensors

Photoelectric Sensors

Cylinder Designs

Block Designs

Fork Sensors

BGL

Angle Sensors

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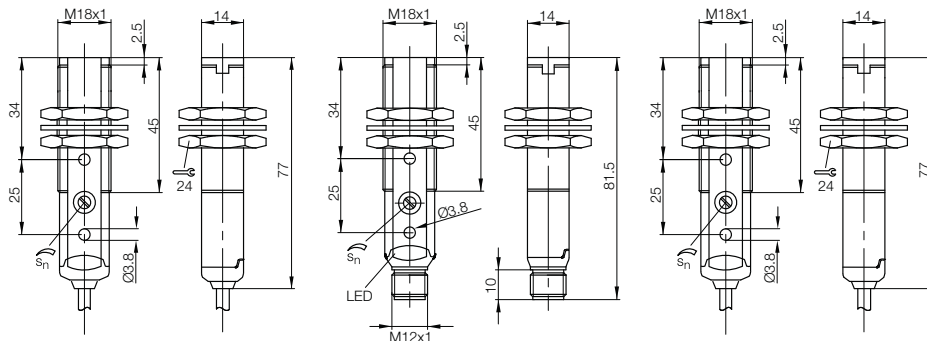
Photoelectric Sensors with Special Properties

Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors



Diffuse sensor 0...400 mm	Diffuse sensor 0...700 mm	Diffuse sensor 0...700 mm	
BOS00JY	BOS00K1	BOS00K0	
BOS 18KF-PA-1PD-C-02	BOS 18KF-PA-1PE-S4-C	BOS 18KF-PA-1PE-C-02	
10...30 V DC	10...30 V DC	10...30 V DC	
100 mA	100 mA	100 mA	
≤ 35 mA	≤ 35 mA	≤ 35 mA	
Light/dark (complementary)	Light/dark (complementary)	Light/dark (complementary)	
Yes/Yes	Yes/Yes	Yes/Yes	
Potentiometer, 270°	Potentiometer, 270°	Potentiometer, 270°	
LED, infrared	LED, infrared	LED, infrared	
880 Nm	880 Nm	880 Nm	
approx. 100 mm at 300 mm	approx. 200 mm at 600 mm	approx. 200 mm at 600 mm	
Yellow LED	Yellow LED	Yellow LED	
Green LED	Green LED	Green LED	
0.5 ms	0.5 ms	0.5 ms	
1 kHz	1 kHz	1 kHz	
IP 67	IP 67	IP 67	
-25...+55 °C	-25...+55 °C	-25...+55 °C	
EN 60947-5-2	EN 60947-5-2	EN 60947-5-2	
PBT	PBT	PBT	
PMMA	PMMA	PMMA	
2 m PVC cable, 4x0.14 mm ³	M12 connector, 4-pin	2 m PVC cable, 4x0.14 mm ³	

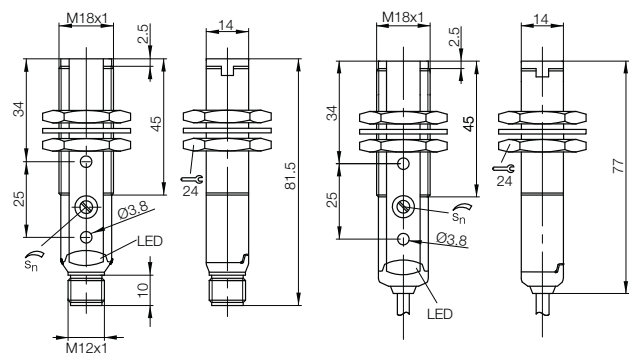




Type				Retroreflective sensor	Retroreflective sensor	
Detection range				0.1...1.7 m	0.1...1.7 m	
PNP	NC/NO	Polarizing filter, trans- parency detection	Ordering code	BOS00K7	BOS00K6	
			Part number	BOS 18KF-PA-1TB-S4-C	BOS 18KF-PA-1TB-C-02	
PNP	NC/NO	Polarizing filter	Ordering code			
			Part number			
PNP	NC/NO		Ordering code			
			Part number			
Supply voltage U _S				10...30 V DC	10...30 V DC	
Output current				100 mA	100 mA	
No-load supply current I ₀ max.				≤ 35 mA	≤ 35 mA	
Switching type				Light/dark (complementary)	Light/dark (complementary)	
Polarity reversal/short-circuit protected				Yes/Yes	Yes/Yes	
Settings				Potentiometer, 270°	Potentiometer, 270°	
Emitter, light type				LED, red light	LED, red light	
Wavelength				660 Nm	660 Nm	
Light spot diameter				approx. 45 mm at 1 m	approx. 45 mm at 1 m	
Output function indicator				Yellow LED	Yellow LED	
Stability indicator				Green LED	Green LED	
Response time				0.5 ms	0.5 ms	
Switching frequency f				1 kHz	1 kHz	
Degree of protection as per IEC 60529				IP 67	IP 67	
Ambient temperature T _a				–25...+55 °C	–25...+55 °C	
Reference standard				EN 60947-5-2	EN 60947-5-2	
Material			Housing	PBT	PBT	
			Optical surface	PMMA	PMMA	
Connection				M12 connector, 4-pin	2 m PVC cable, 4x0.14 mm ³	

Reference reflector: BOS R-1

For wiring diagrams see page 119.



Photoelectric Sensors

BOS 18KF Global



Photoelectric Sensors

Photoelectric Sensors

Cylinder Designs

Block Designs

Fork Sensors

BGL

Angle Sensors

BWL

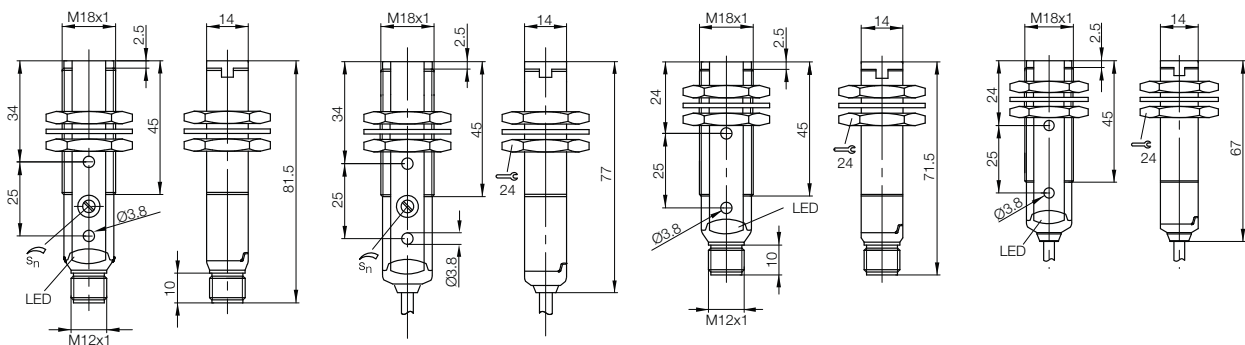
Photoelectric Sensors with Special Properties

Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors



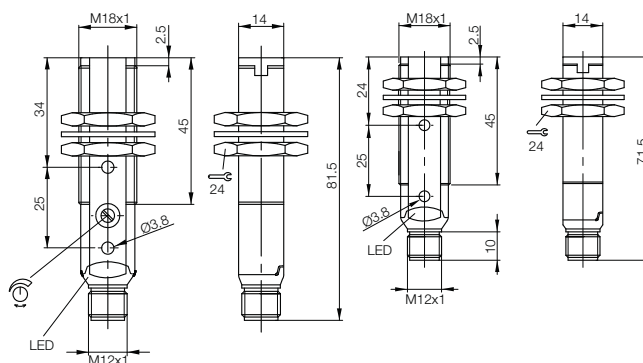
Retroreflective sensor 0.1...4.5 m	Retroreflective sensor 0.1...4.5 m	Retroreflective sensor 0.1...5 m	Retroreflective sensor 0.1...5 m
BOS00K3 BOS 18KF-PA-1QD-S4-C	BOS00K2 BOS 18KF-PA-1QD-C-02	BOS00K5 BOS 18KF-PA-1RE-S4-C	BOS00K4 BOS 18KF-PA-1RE-C-02
10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
100 mA	100 mA	100 mA	100 mA
≤ 35 mA	≤ 35 mA	≤ 35 mA	≤ 35 mA
Light/dark (complementary)	Light/dark (complementary)	Light/dark (complementary)	Light/dark (complementary)
Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
Potentiometer, 270°	Potentiometer, 270°	Fixed	Fixed
LED, red light	LED, red light	LED, infrared	LED, infrared
660 Nm	660 Nm	880 Nm	880 Nm
approx. 65 mm at 3 m	approx. 65 mm at 3 m	approx. 100 mm at 2 m	approx. 100 mm at 2 m
Yellow LED	Yellow LED	Yellow LED	Yellow LED
Green LED	Green LED	Green LED	Green LED
0.5 ms	0.5 ms	0.5 ms	0.5 ms
1 kHz	1 kHz	1 kHz	1 kHz
IP 67	IP 67	IP 67	IP 67
-25...+55 °C	-25...+55 °C	-25...+55 °C	-25...+55 °C
EN 60947-5-2	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2
PBT	PBT	PBT	PBT
PMMA	PMMA	PMMA	PMMA
M12 connector, 4-pin	2 m PVC cable, 4x0.14 mm ³	M12 connector, 4-pin	2 m PVC cable, 4x0.14 mm ³





Type				Through-beam sensor	Through-beam sensor	
Detection range				0...20 m	0...20 m	
PNP	NC/NO	Receiver	Ordering code	BOS00CK		
			Part number	BLE 18KF-PA-1PP-S4-C		
		Emitter	Ordering code		BOS00EP	
			Part number		BLS 18KF-XX-1P-S4-L	
Supply voltage U _S				10...30 V DC	10...30 V DC	
Output current				100 mA		
No-load supply current I ₀ max.				≤ 30 mA	≤ 35 mA	
Switching type				Light/dark (complementary)		
Polarity reversal/short-circuit protected				Yes/Yes	Yes/Yes	
Settings				Potentiometer, 270°		
Help functions					Test input	
Emitter, light type					LED, infrared	
Wavelength					880 ms	
Light spot diameter					approx. 500 mm at 15 m	
Power-on indicator				Green LED	Green LED	
Output function indicator				Yellow LED		
Response time				2 ms		
Switching frequency f				250 Hz		
Degree of protection as per IEC 60529				IP 67	IP 67	
Ambient temperature T _a				−25...+55 °C	−25...+55 °C	
Reference standard				EN 60947-5-2	EN 60947-5-2	
Material		Housing	PBT	PBT		
		Optical surface	PMMA	PMMA		
Connection			M12 connector, 4-pin	M12 connector, 4-pin		

For wiring diagrams see page 119.



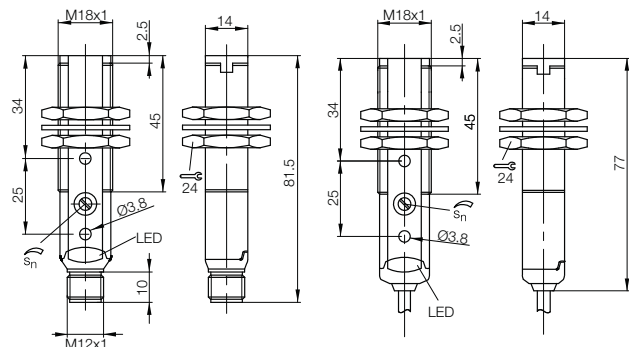




Type			Diffuse sensor	
Detection range			0...350 mm	
PNP NC/NO	Ordering code		BOS00JP	
	Part number		BOS 18KF-PA-1LOC-S4-C	
PNP NC/NO	Polarizing filter	Ordering code		
		Part number		
Supply voltage U_s			10...30 V DC	
Output current			100 mA	
No-load supply current I_0 max.			≤ 35 mA	
Switching type			Light and dark switching	
Polarity reversal/short-circuit protected			Yes/Yes	
Settings			Potentiometer, 270°	
Emitter, light type			Laser, red light	
Wavelength			650 Nm	
Laser class			1	
Resolution			approx. 0.3 mm at 50 mm approx. 0.3 mm at 100 mm approx. 0.5 mm at 150 mm	
Power-on indicator			Green LED	
Output function indicator			Yellow LED	
Response time			333 μ s	
Switching frequency f			1.5 kHz	
Degree of protection as per IEC 60529			IP 67	
Ambient temperature T_a			-10...+50 °C	
Reference standard			EN 60947-5-2	
Material	Housing		PBT	
	Optical surface		PMMA	
Connection			M12 connector, 4-pin	
				2 m PVC cable, 4x0.14 mm ²

Reference object: white, 90% reflection, 200x200 mm
Reference reflector: BOS R-1

For wiring diagrams see page 119.





Photoelectric Sensors

BOS 18KF Laser Global



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Block Designs

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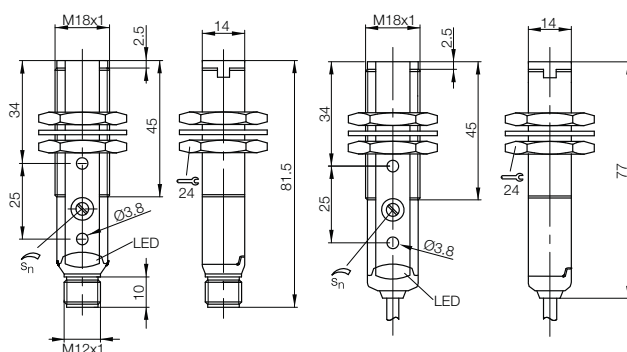
BWL

Photoelectric
Sensors with
Special Proper-
ties

Photoelectric
Distance
Sensors
for Analog
Distance
Measurement

Accessories for
Photoelectric
Sensors

Retroreflective sensor 0.1...16 m	Retroreflective sensor 0.1...16 m		
BOS00JT	BOS00JR		
BOS 18KF-PA-1LQP-S4-C	BOS 18KF-PA-1LQP-C-02		
10...30 V DC	10...30 V DC		
100 mA	100 mA		
≤ 35 mA	≤ 35 mA		
Light and dark switching	Light and dark switching		
Yes/Yes	Yes/Yes		
Potentiometer, 270°	Potentiometer, 270°		
Laser, red light	Laser, red light		
650 Nm	650 Nm		
1	1		
approx. 0.9 mm at 1 m	approx. 0.9 mm at 1 m		
approx. 2 mm at 3 m	approx. 2 mm at 3 m		
Green LED	Green LED		
Yellow LED	Yellow LED		
333 µs	333 µs		
1.5 kHz	1.5 kHz		
IP 67	IP 67		
-10...+50 °C	-10...+50 °C		
EN 60947-5-2	EN 60947-5-2		
PBT	PBT		
PMMA	PMMA		
M12 connector, 4-pin	2 m PVC cable, 4x0.14 mm ²		





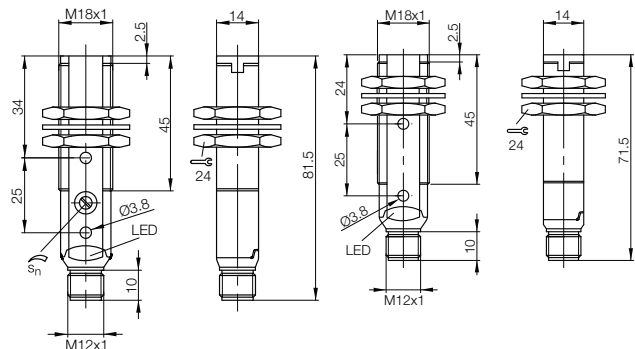
Receiver



Emitter

Type				Through-beam sensor	Through-beam sensor	
Detection range				0...60 m	0...60 m	
PNP	NC/NO	Receiver	Ordering code	BOS00CH		
			Part number	BLE 18KF-PA-1LT-S4-C		
		Emitter	Ordering code		BOS00EM	
			Part number		BLS 18KF-XX-1LT-S4-L	
Supply voltage U _S				10...30 V DC	10...30 V DC	
Output current				100 mA		
No-load supply current I ₀ max.				≤ 30 mA	≤ 35 mA	
Switching type				Light and dark switching		
Polarity reversal/short-circuit protected				Yes/Yes	Yes/Yes	
Settings				Potentiometer, 270°		
Emitter, light type					Laser, red light	
Wavelength					650 Nm	
Laser class					1	
Resolution					approx. 2.5 mm at 5 m approx. 5 mm at 10 m approx. 10 mm at 20 m	
Power-on indicator				Green LED	Green LED	
Output function indicator				Yellow LED		
Response time				333 μs		
Switching frequency f				1.5 kHz		
Degree of protection as per IEC 60529				IP 67	IP 67	
Ambient temperature T _a				−10...+50 °C	−10...+50 °C	
Reference standard				EN 60947-5-2	EN 60947-5-2	
Material		Housing	PBT	PBT		
		Optical surface	PMMA	PMMA		
Connection				M12 connector, 4-pin	M12 connector, 4-pin	

For wiring diagrams see page 119.





Photoelectric Sensors

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Photoelectric Sensors

Photoelectric Sensors

Cylinder Designs

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Angle Sensors

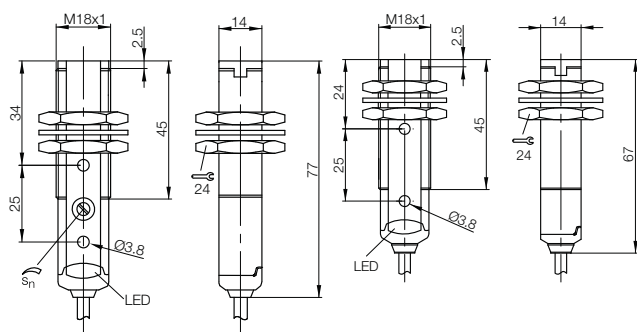
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Photoelectric Sensors with Special Properties

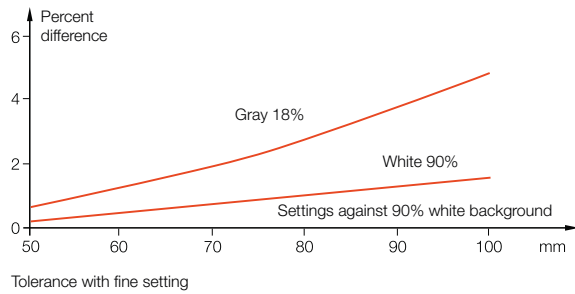
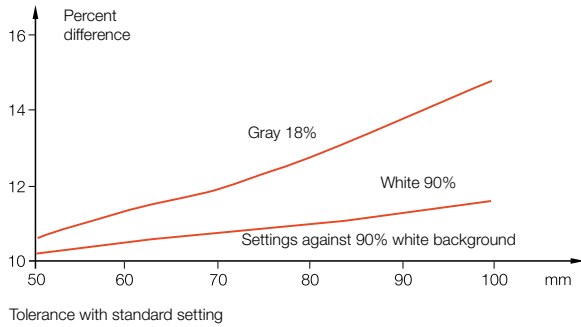
Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors

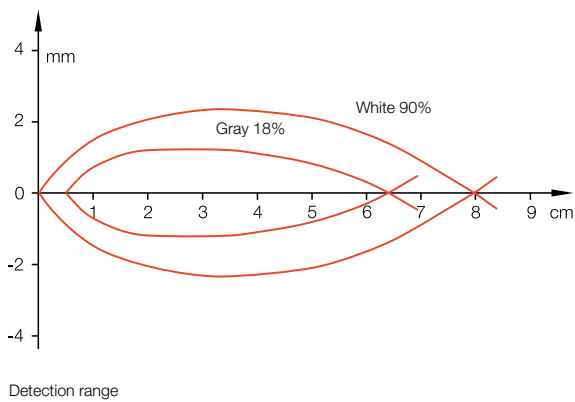
Through-beam sensor 0...60 m	Through-beam sensor 0...60 m		
BOS00CF			
BLE 18KF-PA-1LT-C-02			
	BOS00EL		
	BLS 18KF-XX-1LT-L-02		
10...30 V DC	10...30 V DC		
100 mA			
≤ 30 mA	≤ 35 mA		
Light and dark switching			
Yes/Yes	Yes/Yes		
Potentiometer, 270°			
	Laser, red light		
	650 Nm		
	1		
	approx. 2.5 mm at 5 m		
	approx. 5 mm at 10 m		
	approx. 10 mm at 20 m		
	Green LED		
Green LED			
Yellow LED			
333 μs			
1.5 kHz			
IP 67	IP 67		
-10...+50 °C	-10...+50 °C		
EN 60947-5-2	EN 60947-5-2		
PBT	PBT		
PMMA	PMMA		
2 m PVC cable, 4x0.14 mm ²	2 m PVC cable, 4x0.14 mm ²		



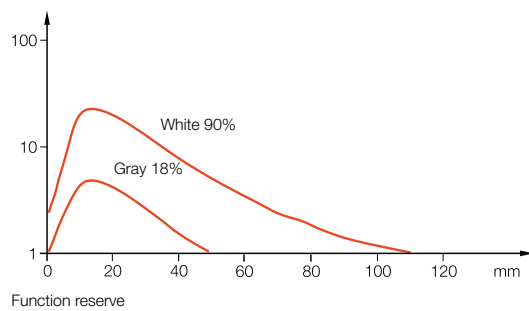
Diffuse sensor BOS 18KF-...-1HA-...



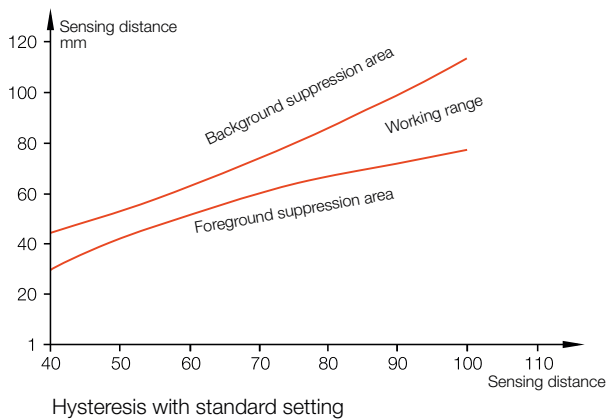
Diffuse sensor BOS 18KF-...-1N1R-...



Diffuse sensor BOS 18KF-...-1XA-...



Diffuse sensor BOS 18KF-...-1GA-...





Photoelectric Sensors

BOS 18KF Global

Function diagrams



Photoelectric Sensors

Photoelectric Sensors

Cylinder Designs

Block Designs

Fork Sensors

BGL

Angle Sensors

BWL

Photoelectric Sensors with Special Properties

Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors

Accessories for Photoelectric Sensors

Accessories for Photoelectric Sensors

Accessories for Photoelectric Sensors

Accessories for Photoelectric Sensors

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Accessories for Photoelectric Sensors

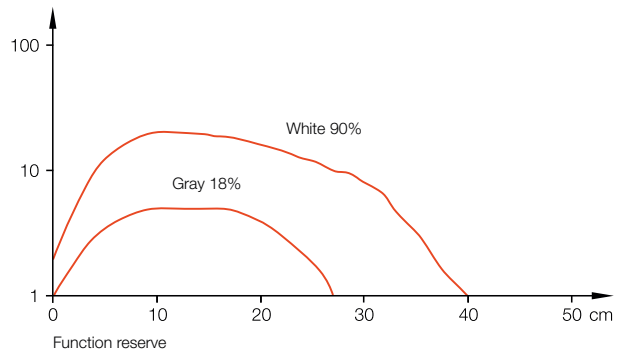
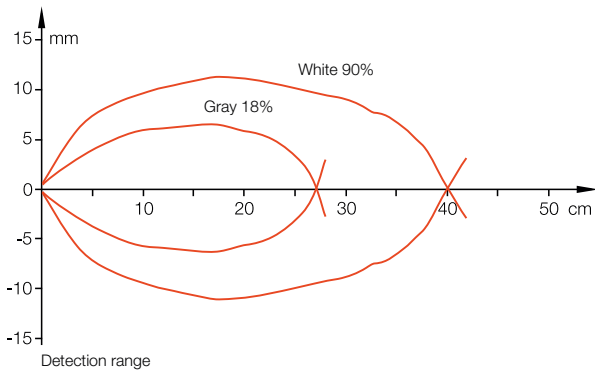
Accessories for Photoelectric Sensors

Accessories for Photoelectric Sensors

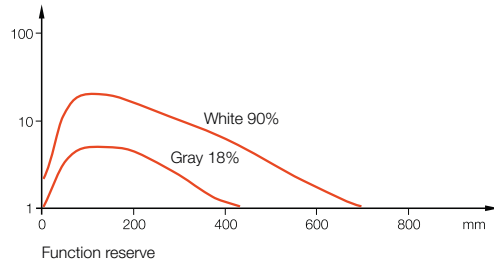
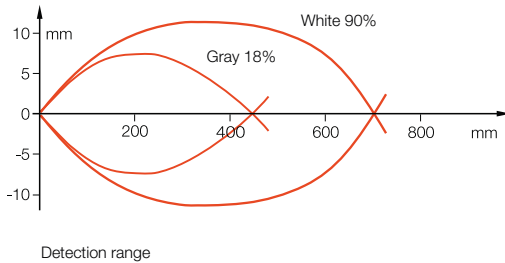
Accessories for Photoelectric Sensors

Accessories for Photoelectric Sensors

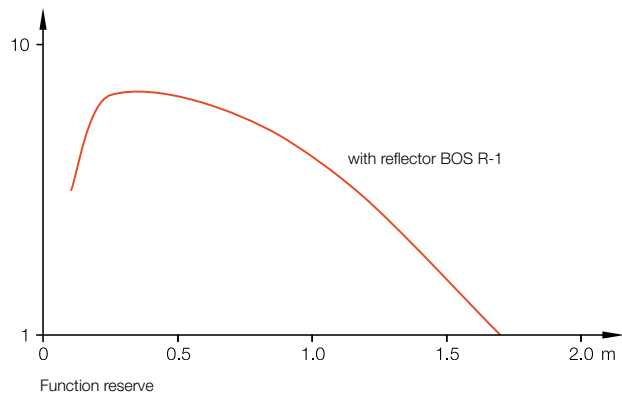
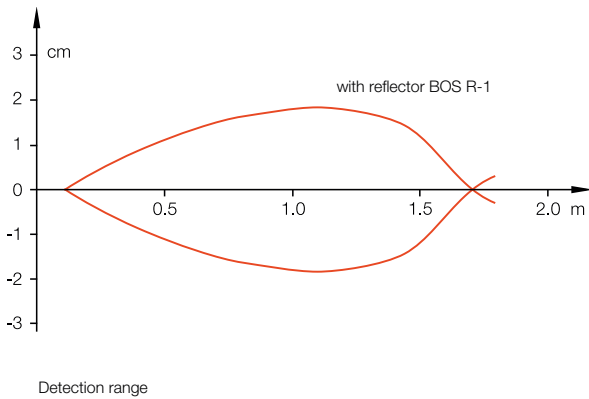
Diffuse sensor BOS 18KF-...-1PD-...



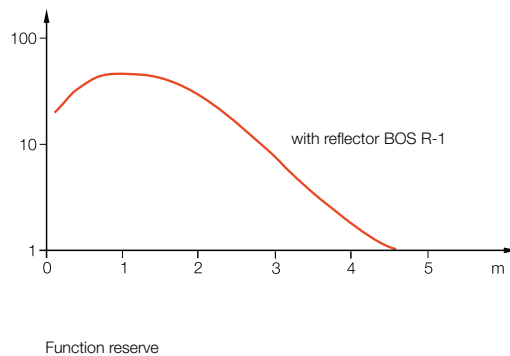
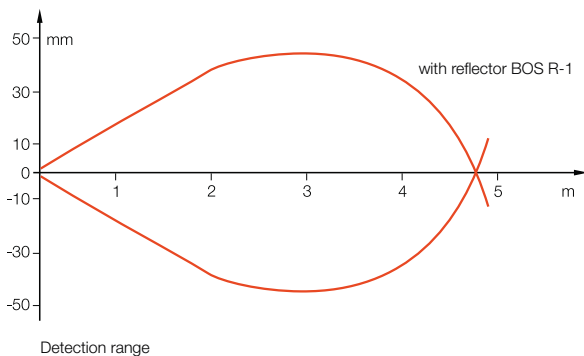
Diffuse sensor BOS 18KF-...-1PE-...



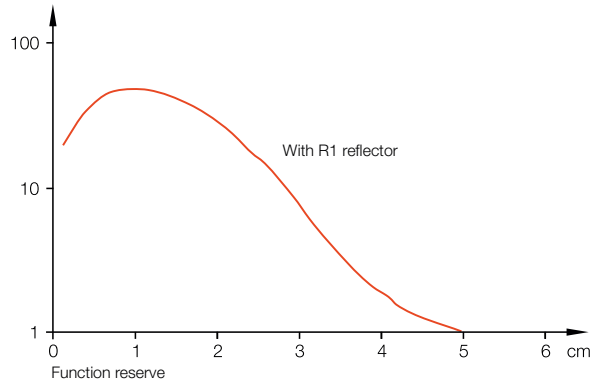
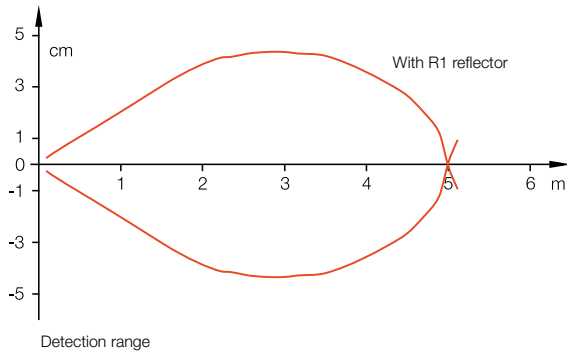
Retroreflective sensor BOS 18KF-...-1TB-...



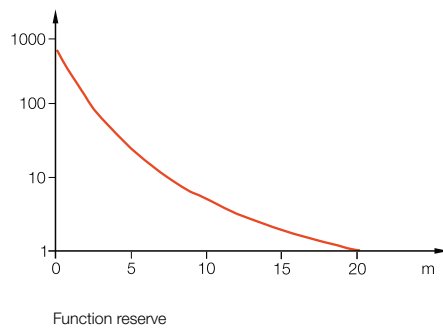
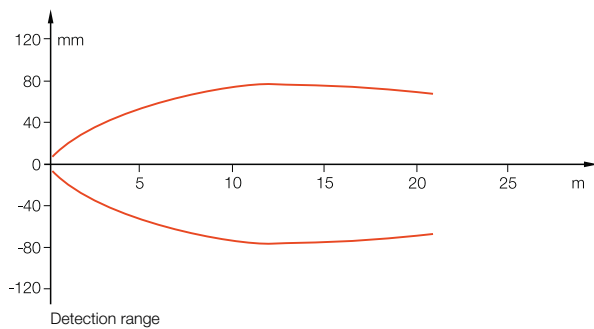
Retroreflective sensor BOS 18KF-...-1QD-...



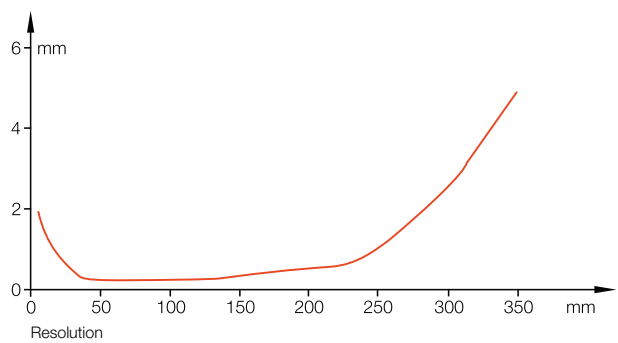
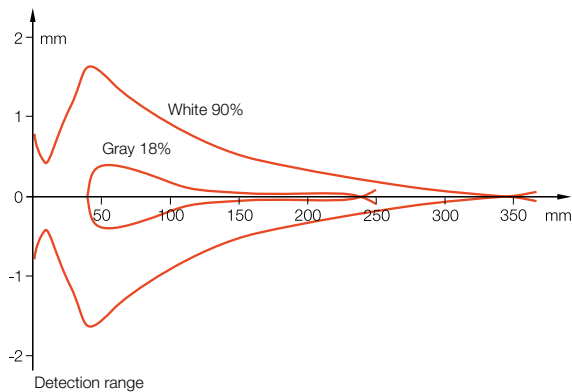
Retroreflective sensor BOS 18KF-...-1RE-...



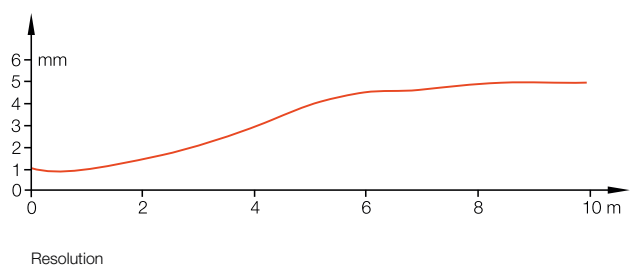
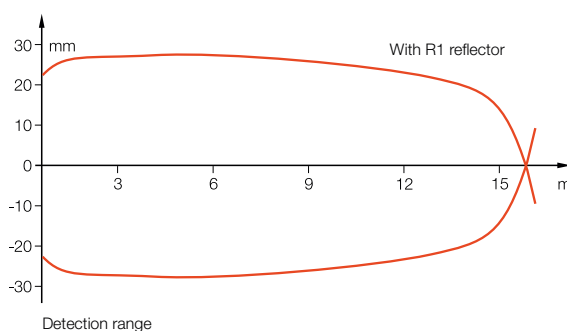
Through-beam sensor BLE/BLS 18KF-...-1PP/1P-...



Diffuse sensor BOS 18KF-...-1LOC-...



Retroreflective sensor BOS 18KF-...-1LQP-...





Photoelectric Sensors

BOS 18KF Global

Function diagrams, connection, accessories



Photoelectric Sensors

Photoelectric Sensors

Cylinder Designs

Block Designs

Fork Sensors

BGL

Angle Sensors

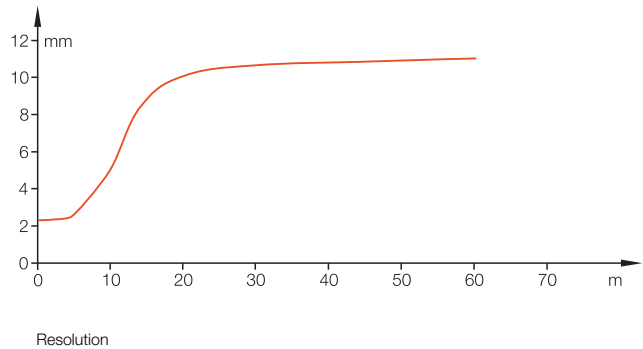
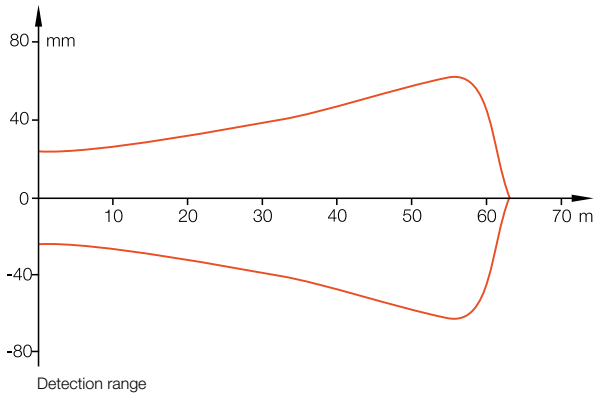
BWL

Photoelectric Sensors with Special Properties

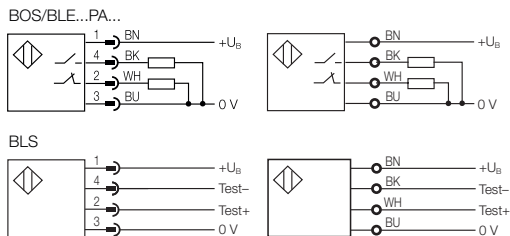
Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors

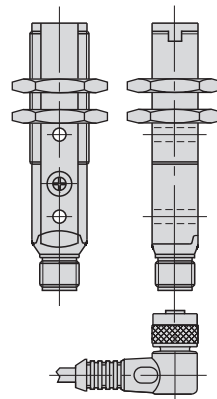
Through-beam sensor BLE/BLS 18KF...-1LT...



Wiring diagrams



Connector orientation



BOS 18KF

Recommended accessories (please order separately)

Description	Ordering code
① Mounting clamp	BAM00T3
② Mounting bracket	BAM00RY
③ Reflector	BAM00UK
④ Round aperture	BAM00R6
⑤ Cover nut	BAM00RL
⑥ Air shield	BAM00R9



You can find special accessories for diffuse sensors, such as **reflectors, apertures, lenses, filters and deflection heads**, in this catalog starting on page 376.

More mechanical accessories: You can find a large selection of mounting components of all types, such as clamping holders, mounting brackets and the Balluff mounting system BMS, in our **Accessories Line** catalog.

Suitable connectors (please order separately)

Size	Design	Cable material	Color	Length	Ordering code
M12, 4-pin	Straight	PUR	Black	2 m	BCC032F
M12, 4-pin	Straight	PVC	Gray	2 m	BCC0367
M12, 4-pin	Angled	PUR	Black	2 m	BCC032Y
M12, 4-pin	Angled	PVC	Gray	2 m	BCC036N

Connectors without LED are suitable for PNP and NPN sensors.

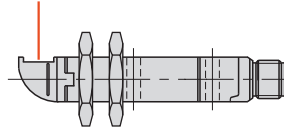
More electrical accessories: You can find a large selection of plug connectors and connector cables in a wide variety of cable materials, colors and lengths in our **Industrial Networking and Connectivity** catalog.

BOS 18KW – with expanded product line

BOS 18KW series sensors are available with red- or infrared light or with a Class 1 laser.

They are configured using a potentiometer or via teach-in. The plastic housing with flattened sides allows installation using the included M18-nuts or screws through the sensor housing.

The sensors are available as cable- or M12- connector styles with PNP- or NPN- output.



Photoelectric Sensors

BOS 18KW Global

Product overview



Photoelectric Sensors

Photoelectric Sensors

Cylinder Designs

Block Designs

Fork Sensors

BGL

Angle Sensors

BWL

Photoelectric Sensors with Special Properties

Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors

Type

Sensing distance/
Range

Light type

Out-
put

Switching
type

Switch-
ing fre-
quency

U_s

Connec-
tion

Special
features

Page

Ordering code

Part number

Diffuse sensor with background suppression

BOS00LH BOS 18KW-PA-1HA-S4-C

50...100 mm

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BOS00LF BOS 18KW-PA-1HA-C-02

50...100 mm

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Diffuse sensor

BOS00M1 BOS 18KW-PA-1XA-S4-C

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BOS00M0 BOS 18KW-PA-1XA-C-02

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BOS00LK BOS 18KW-PA-1LOB-S4-C

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BOS00LJ BOS 18KW-PA-1LOB-C-02

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BOS00LT BOS 18KW-PA-1PD-S4-C

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BOS00LR BOS 18KW-PA-1PD-C-02

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Retroreflective sensor

BOS00LZ BOS 18KW-PA-1TB-S4-C

0.1...1.7 m

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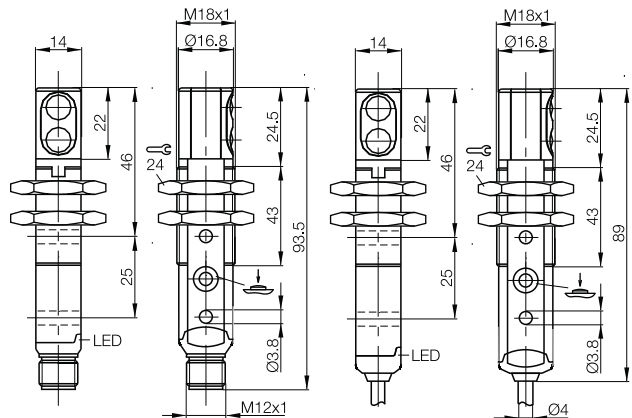
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Type	Diffuse sensor with background suppression		Diffuse sensor with background suppression	
Detection range	50...100 mm		50...100 mm	
PNP NC/NO	Ordering code			
	Part number			
PNP NC/NO Teach-in	Ordering code		BOS00LH	
	Part number		BOS 18KW-PA-1HA-S4-C	
			BOS00LF	
			BOS 18KW-PA-1HA-C-02	
Supply voltage U_s	10...30 V DC		10...30 V DC	
Output current	100 mA		100 mA	
No-load supply current I_0 max.	≤ 30 mA		≤ 35 mA	
Switching type	Light and dark switching		Light and dark switching	
Polarity reversal/short-circuit protected	Yes/Yes		Yes/Yes	
Settings	Teach-in		Teach-in	
Emitter, light type	LED, red light		LED, red light	
Wavelength	630 Nm		660 Nm	
Light spot diameter	approx. 10 mm at 100 mm		approx. 10 mm at 100 mm	
Output function indicator	Yellow LED		Yellow LED	
Stability indicator	Green/red LED		Green/red LED	
Response time	1 ms		0.5 ms	
Switching frequency f	500 Hz		1 kHz	
Degree of protection as per IEC 60529	IP 67		IP 67	
Ambient temperature T_a	$-25...+55$ °C		$-25...+55$ °C	
Permissible ambient light	EN 60947-5-2		EN 60947-5-2	
Material	Housing	PBT	Housing	PBT
	Optical surface	PMMA	Optical surface	PMMA
Connection	M12 connector, 4-pin		2 m PVC cable, 4x0.14 mm ²	

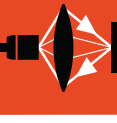
Reference object: white, 90% reflection, 200x200 mm

For wiring diagrams see page 133.



Photoelectric Sensors

BOS 18KW Global



Photoelectric Sensors

Photoelectric Sensors

Cylinder Designs

Block Designs

Fork Sensors

BGL

Angle Sensors

BWL

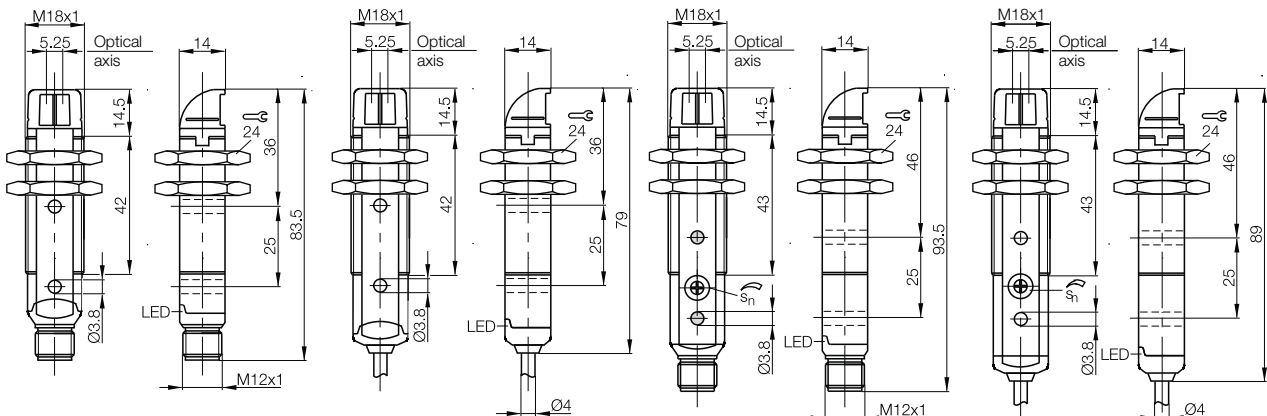
Photoelectric Sensors with Special Properties

Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors



Diffuse sensor 0...80 mm BOS00M1 BOS 18KW-PA-1XA-S4-C	Diffuse sensor 0...80 mm BOS00M0 BOS 18KW-PA-1XA-C-02	Diffuse sensor 0...400 mm BOS00LT BOS 18KW-PA-1PD-S4-C	Diffuse sensor 0...400 mm BOS00LR BOS 18KW-PA-1PD-C-02
10...30 V DC 100 mA ≤ 35 mA Light and dark switching Yes/Yes Fixed LED, infrared 880 Nm approx. 55 mm at 100 mm Yellow LED 0.5 ms 1 kHz IP 67 -25...+55 °C EN 60947-5-2 PBT PMMA M12 connector, 4-pin	10...30 V DC 100 mA ≤ 35 mA Light and dark switching Yes/Yes Fixed LED, infrared 880 Nm approx. 55 mm at 100 mm Yellow LED 0.5 ms 1 kHz IP 67 -25...+55 °C EN 60947-5-2 PBT PMMA 2 m PVC cable, 4x0.14 mm ²	10...30 V DC 100 mA ≤ 35 mA Light and dark switching Yes/Yes Potentiometer, 270° LED, infrared 880 Nm approx. 35 mm at 400 mm Yellow LED Green LED 0.5 ms 1 kHz IP 67 -25...+55 °C EN 60947-5-2 PBT PMMA M12 connector, 4-pin	10...30 V DC 100 mA ≤ 35 mA Light and dark switching Yes/Yes Potentiometer, 270° LED, infrared 880 Nm approx. 35 mm at 400 mm Yellow LED Green LED 0.5 ms 1 kHz IP 67 -25...+55 °C EN 60947-5-2 PBT PMMA 2 m PVC cable, 4x0.14 mm ²





For wiring diagrams see page 133.



Photoelectric Sensors

BOS 18KW Global



Photoelectric Sensors

Photoelectric Sensors

Cylinder Designs

Block Designs

Fork Sensors

BGL

Angle Sensors

BWL

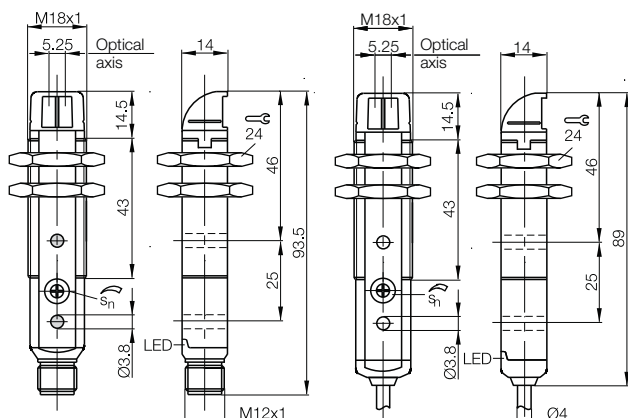
Photoelectric Sensors with Special Properties

Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors



Retroreflective sensor 0.1...3 m	Retroreflective sensor 0.1...3 m		
BOS00LW	BOS00LU		
BOS 18KW-PA-1QC-S4-C	BOS 18KW-PA-1QC-C-02		
10...30 V DC	10...30 V DC		
100 mA	100 mA		
≤ 35 mA	≤ 35 mA		
Light and dark switching	Light and dark switching		
Yes/Yes	Yes/Yes		
Potentiometer, 270°	Potentiometer, 270°		
LED, red light	LED, red light		
660 Nm	660 Nm		
approx. 60 mm at 2 m	approx. 60 mm at 2 m		
Yellow LED	Yellow LED		
Green LED	Green LED		
0.5 ms	0.5 ms		
1 kHz	1 kHz		
IP 67	IP 67		
-25...+55 °C	-25...+55 °C		
EN 60947-5-2	EN 60947-5-2		
PBT	PBT		
PMMA	PMMA		
M12 connector, 4-pin	2 m PVC cable, 4x0.14 mm ²		





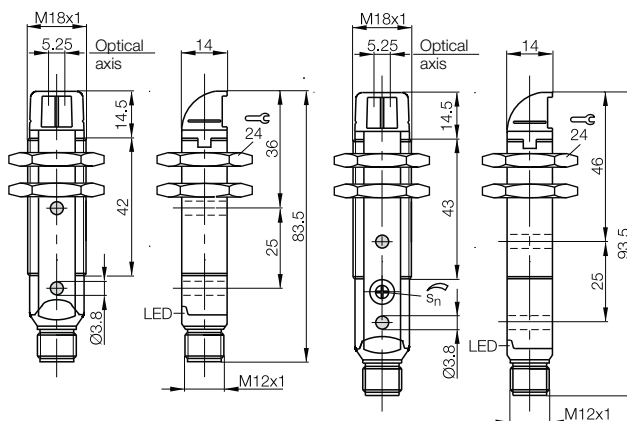
Emitter



Receiver

Type	Through-beam sensor			0...15 m	Through-beam sensor	0...15 m
Detection range					BOS00CW	
PNP NC/NO	Receiver	Ordering code			BLE 18KW-PA-1PP-S4-C	
		Part number				
PNP NC/NO	Emitter	Ordering code		BOS00EW		
		Part number		BLS 18KW-XX-1P-S4-L		
Supply voltage U_s				10...30 V DC	10...30 V DC	
Output current					100 mA	
No-load supply current I_0 max.				≤ 35 mA	≤ 30 mA	
Switching type					Light and dark switching	
Polarity reversal/short-circuit protected				Yes/Yes	Yes/Yes	
Settings					Potentiometer, 270°	
Help functions				Test input		
Emitter, light type				LED, infrared		
Wavelength				880 Nm		
Light spot diameter				approx. 470 mm at 10 m		
Power-on indicator				Green LED	Green LED	
Output function indicator					Yellow LED	
Response time					2 ms	
Switching frequency f					250 Hz	
Degree of protection as per IEC 60529				IP 67	IP 67	
Ambient temperature T_a				-25...+55 °C	-25...+55 °C	
Permissible ambient light				EN 60947-5-2	EN 60947-5-2	
Material	Housing	Optical surface		PBT	PBT	
				PMMA	PMMA	
Connection				M12 connector, 4-pin	M12 connector, 4-pin	

For wiring diagrams see page 133.





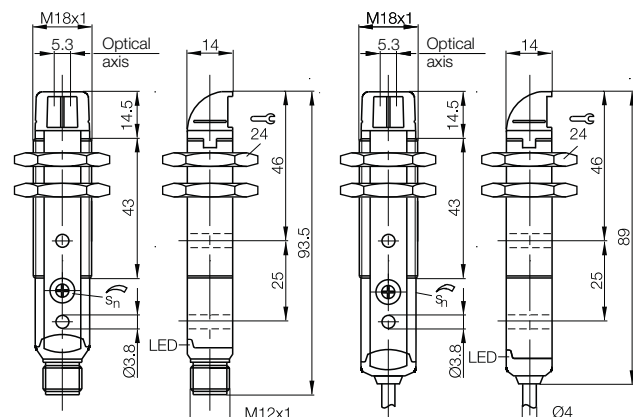
BALLUFF | 127



Type			Diffuse sensor	Diffuse sensor	
Detection range			0...250 mm	0...250 mm	
PNP NC/NO			BOS00LK	BOS00LJ	
	Ordering code		Part number	Part number	
			BOS 18KW-PA-1LOB-S4-C	BOS 18KW-PA-1LOB-C-02	
PNP NC/NO	Polarizing filter				
	Ordering code				
			Part number		
Supply voltage U_s			10...30 V DC	10...30 V DC	
Output current			100 mA	100 mA	
No-load supply current I_0 max.			≤ 35 mA	≤ 35 mA	
Switching type			Light and dark switching	Light and dark switching	
Polarity reversal/short-circuit protected			Yes/Yes	Yes/Yes	
Settings			Potentiometer, 270°	Potentiometer, 270°	
Emitter, light type			Laser, red light	Laser, red light	
Wavelength			650 Nm	650 Nm	
Laser class			1	1	
Resolution			approx. 0.3 mm at 50 mm approx. 0.3 mm at 100 mm approx. 0.5 mm at 150 mm	approx. 0.3 mm at 50 mm approx. 0.3 mm at 100 mm approx. 0.5 mm at 150 mm	
Power-on indicator			Green LED	Green LED	
Output function indicator			Yellow LED	Yellow LED	
Response time			333 μs	333 μs	
Switching frequency f			1.5 kHz	1.5 kHz	
Degree of protection as per IEC 60529			IP 67	IP 67	
Ambient temperature T_a			-10...+50 °C	-10...+50 °C	
Reference standard			EN 60947-5-2	EN 60947-5-2	
Material	Housing		PBT	PBT	
	Optical surface		PMMA	PMMA	
Connection			M12 connector, 4-pin	2 m PVC cable, 4x0.14 mm²	

Reference object: white, 90% reflection, 200×200 mm
Reference reflector: BOS R-1

For wiring diagrams see page 133.





Photoelectric Sensors

BOS 18KW Laser Global



Photoelectric Sensors

Photoelectric Sensors

Cylinder Designs

Block Designs

Fork Sensors

BGL

Angle Sensors

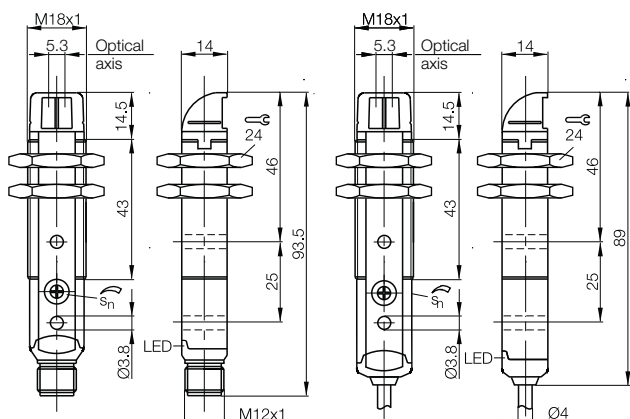
BWL

Photoelectric Sensors with Special Properties

Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors

Retroreflective sensor 0.1...9 m	Retroreflective sensor 0.1...9 m		
BOS00LM	BOS00LL		
BOS 18KW-PA-1LQH-S4-C	BOS 18KW-PA-1LQH-C-02		
10...30 V DC	10...30 V DC		
100 mA	100 mA		
≤ 35 mA	≤ 35 mA		
Light and dark switching	Light and dark switching		
Yes/Yes	Yes/Yes		
Potentiometer, 270°	Potentiometer, 270°		
Laser, red light	Laser, red light		
650 Nm	650 Nm		
1	1		
approx. 0.9 mm at 1 m	approx. 0.9 mm at 1 m		
approx. 2 mm at 3 m	approx. 2 mm at 3 m		
Green LED	Green LED		
Yellow LED	Yellow LED		
333 µs	333 µs		
1.5 kHz	1.5 kHz		
IP 67	IP 67		
-10...+50 °C	-10...+50 °C		
EN 60947-5-2	EN 60947-5-2		
PBT	PBT		
PMMA	PMMA		
M12 connector, 4-pin	2 m PVC cable, 4x0.14 mm²		



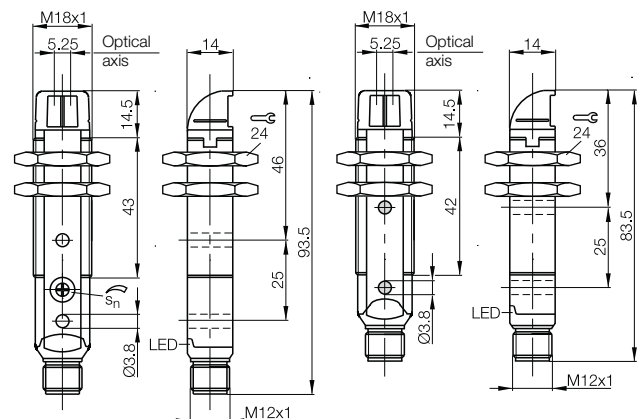
M18 Plastic Laser with Angle Head

Global



Type			Through-beam sensor	Through-beam sensor
Detection range			0...50 m	0...50 m
PNP NC/NO	Emitter	Ordering code		BOS00ET
		Part number		BLS 18KW-XX-1LT-S4-L
PNP NC/NO	Receiver	Ordering code	BOS00CT	
		Part number	BLE 18KW-PA-1LT-S4-C	
Supply voltage U_s			10...30 V DC	10...30 V DC
Output current			100 mA	
No-load supply current I_0 max.			≤ 30 mA	≤ 35 mA
Switching type			Light and dark switching	
Polarity reversal/short-circuit protected			Yes/Yes	Yes/Yes
Settings			Potentiometer, 270°	
Help function				Test input
Emitter, light type				Laser, red light
Wavelength				650 Nm
Laser class				1
Resolution				approx. 2.5 mm at 5 m approx. 5 mm at 10 mm approx. 10 mm at 20 mm
Power-on indicator			Green LED	Green LED
Output function indicator			Yellow LED	
Response time			333 μ s	
Switching frequency f			1.5 kHz	
Degree of protection as per IEC 60529			IP 67	IP 67
Ambient temperature T_a			-10...+50 °C	-10...+50 °C
Reference standard			EN 60947-5-2	EN 60947-5-2
Material	Housing	PBT	PBT	PBT
	Optical surface	PMMA	PMMA	PMMA
Connection			M12 connector, 4-pin	M12 connector, 4-pin

For wiring diagrams see page 133.



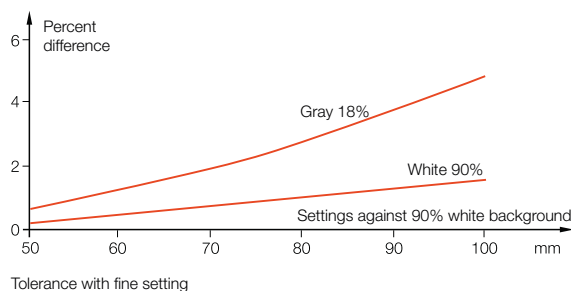
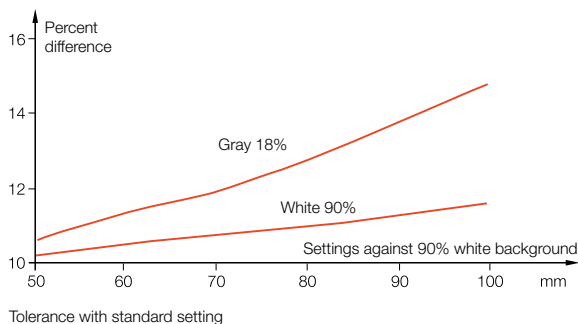


Photoelectric Sensors

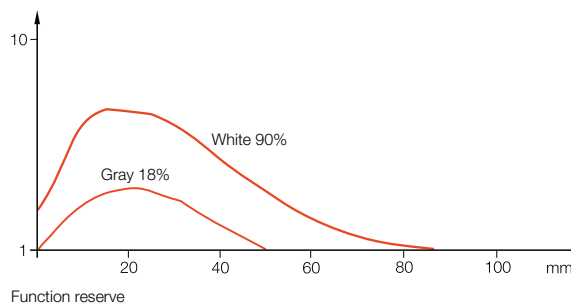
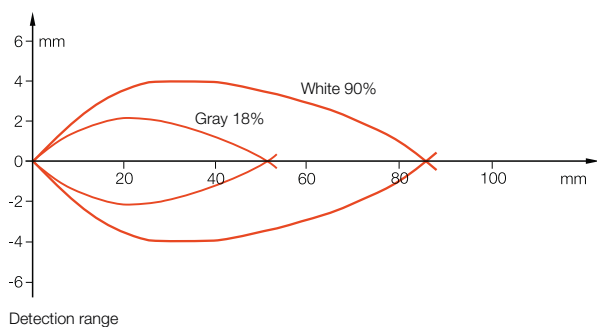
BOS 18KW Laser Global

Function diagrams

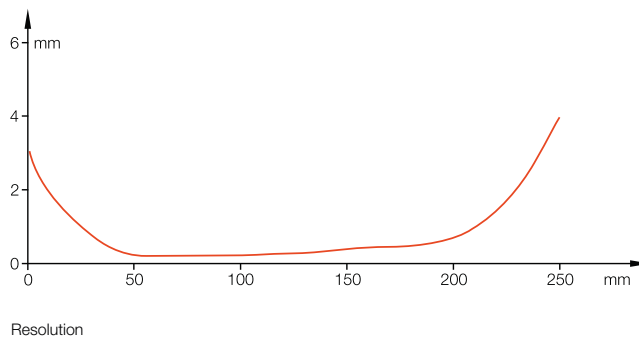
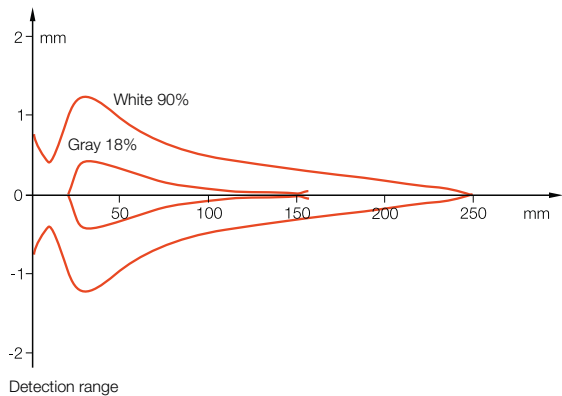
Diffuse sensor BOS 18KW-..-1HA-...



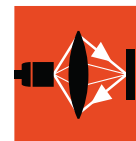
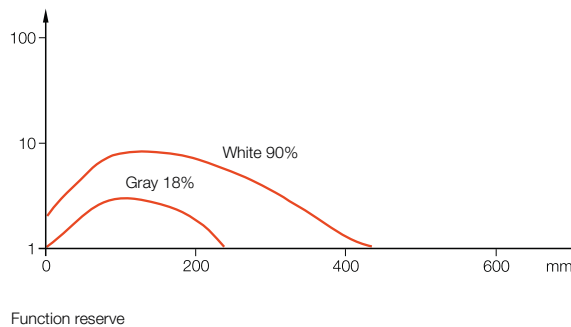
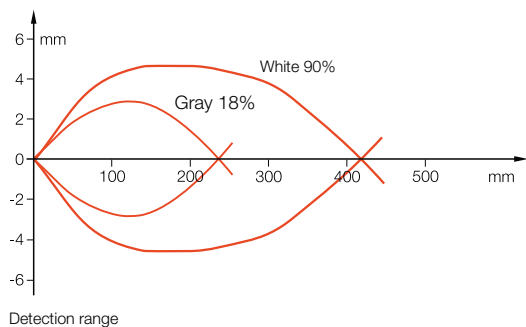
Diffuse sensor BOS 18KW-..-1XA-...



Diffuse sensor BOS 18KW-..-1LOB-...



Diffuse sensor BOS 18KW-..-1PD-...



Photoelectric Sensors

Photoelectric Sensors

Cylinder Designs

Block Designs

Fork Sensors

BGL

Angle Sensors

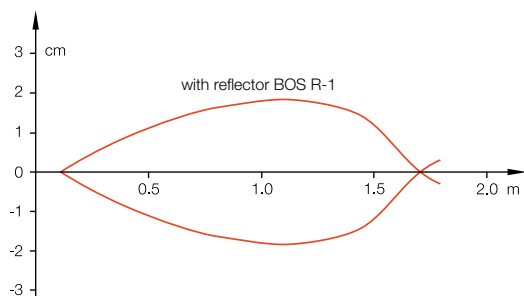
BWL

Photoelectric Sensors with Special Properties

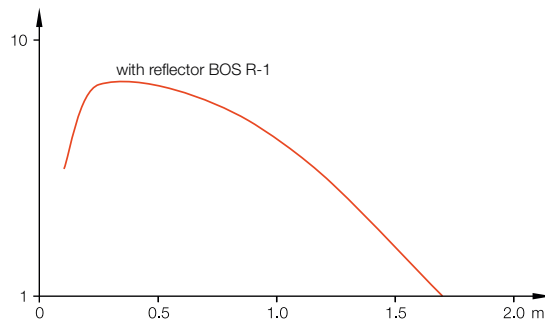
Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors

Retroreflective sensor BOS 18KW-...-1TB-...

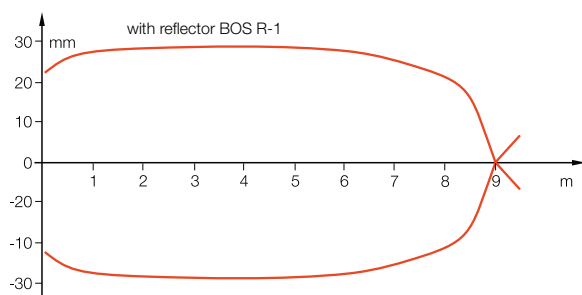


Detection range

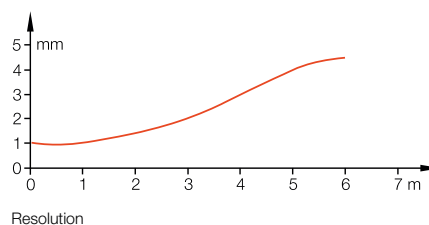


Function reserve

Retroreflective BOS 18KW-...-1LQH-...

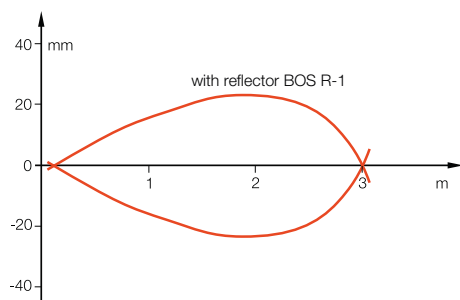


Detection range

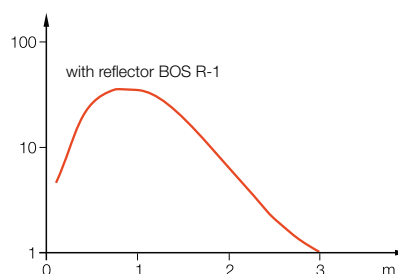


Resolution

Retroreflective sensor BOS 18KW-...-1QC-...



Detection range



Function reserve

Photoelectric Sensors

BOS 18KW Global

Connection, accessories



Photoelectric Sensors

Photoelectric Sensors

Cylinder Designs

Block Designs

Fork Sensors

BGL

Angle Sensors

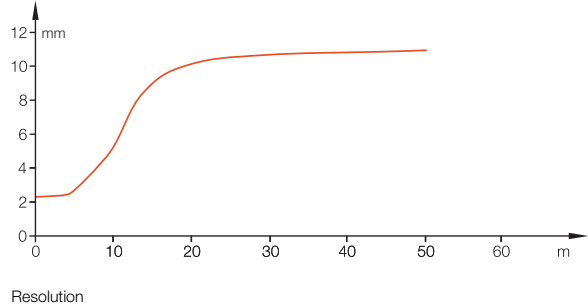
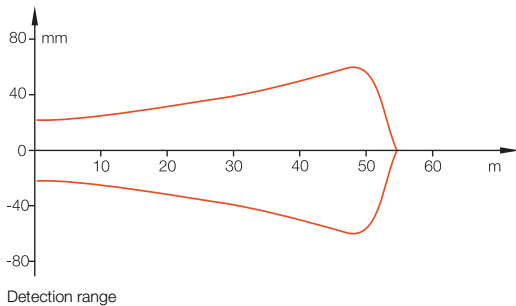
BWL

Photoelectric Sensors with Special Properties

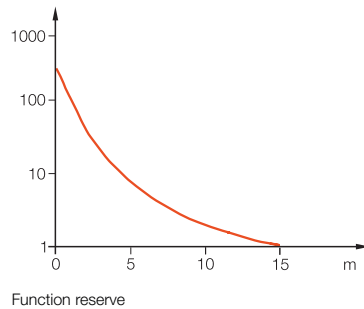
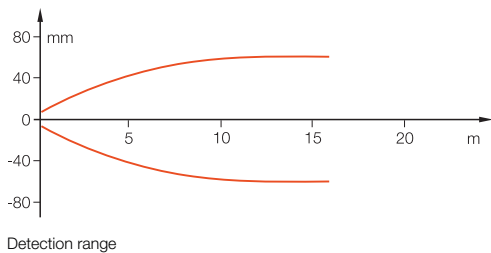
Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors

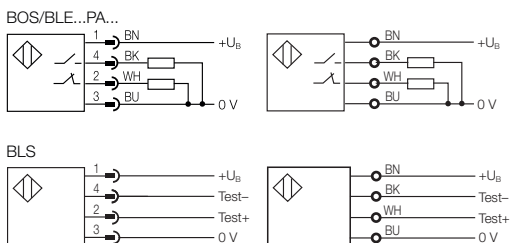
Through-beam sensor BLE/BLS 18KW-...-1LT-...



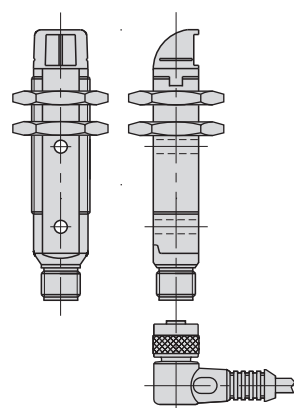
Through-beam BLE/BLS 18KW-...-1PP/1P-...



Wiring diagrams



Connector orientation



Recommended accessories (please order separately)

Description	Ordering code
① Mounting clamp	BAM00T3
② Mounting bracket	BAM00RY
③ Reflector	BAM00UK



Suitable connectors (please order separately)

Size	Design	Cable material	Color	Length	Ordering code
M12, 4-pin	Straight	PUR	Black	2 m	BCC032F
M12, 4-pin	Straight	PVC	Gray	2 m	BCC0367
M12, 4-pin	Angled	PUR	Black	2 m	BCC032Y
M12, 4-pin	Angled	PVC	Gray	2 m	BCC036N



You can find special accessories for diffuse sensors, such as **reflectors, apertures, lenses, filters and deflection heads**, in this catalog starting on page 376.

More mechanical accessories: You can find a large selection of mounting components of all types, such as clamping holders, mounting brackets and the Balluff mounting system BMS, in our **Accessories Line** catalog.

Connectors without LED are suitable for PNP and NPN sensors.

More electrical accessories: You can find a large selection of plug connectors and connector cables in a wide variety of cable materials, colors and lengths in our **Industrial Networking and Connectivity** catalog.