

**BOS 18M GlobalProx –
 sound and cost-effective**



We often come across systems in which a sensor adjustment is not required, not possible or is undesirable. Our BOS-18M diffuse sensors and light barriers from the Global family are the correct choice for these applications. All of these sensors have a fixed setting. This shortens the time required for system commissioning and protects against tampering. Equipped with a sound basic range of functions, these sensors also have the best possible price/performance ratio.

- Sound performance and reliable object detection
- Ideal for standard applications, e.g. in automation
- Cost-effective alternative for all types of light
- Plug and play: All sensors with fixed setting
- Universal fastening thanks to wide range of assembly accessories

**Red light sensors M18 –
 for the highest precision**

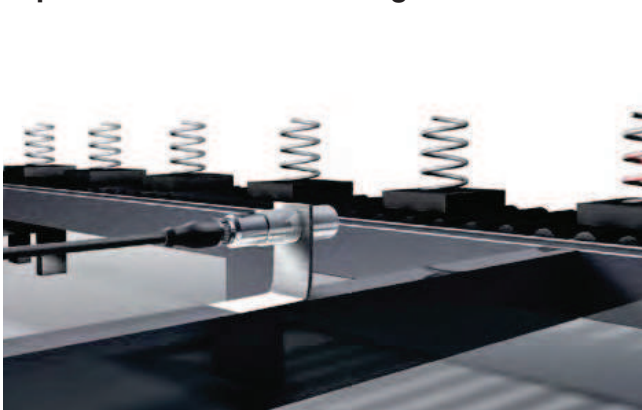


Precise switching behavior – excellent repeat accuracy

Cutting-edge LED technology and the latest Fresnel lenses are combined in this unit to form an innovative and powerful photoelectric sensor. What this means in practice: Improved repeat accuracy and precise switching behavior even at large distances.

- Long range
- Rugged M18 metal housing
- State-of-the-art LED technology with sharply contoured light spot

**BOS 18M background suppression –
 expertise with all kinds of light**

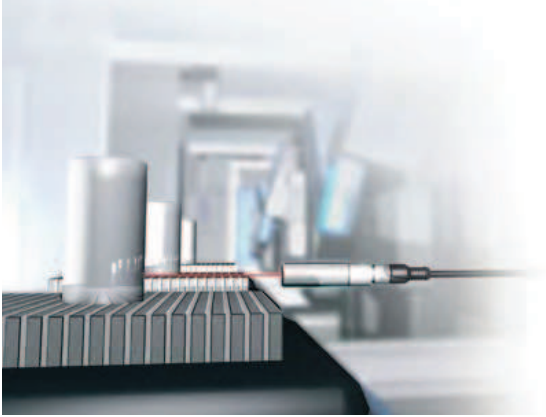


Balluff M18 laser diffuse sensors with background suppression are a genuine highlight. They are available with different light types, allowing you to simply select according to your requirements. The perfectly focused light beam is able to detect the smallest of parts, grooves or holes with maximum precision and reliability. The large light spot of the red light variant with 300 mm is ideal for detecting objects with notches, holes or openings, because breakthroughs and free areas are simply bridged.

The 150 mm red light version is ideal for distinguishing between foreground and background with high precision at extremely short distances.

- Exact, almost color-independent object detection
- The correct light type for every application – laser or red light
- Precise setting with 10-turn potentiometer
- Robust M18 metal housing with same design for all types
- Universal fastening and alignment thanks to wide range of assembly accessories

BOS 18M Teach-in



For users who prefer the teach-in procedure for sensor setting, Balluff now offers its successful red light series BOS 18M, with long ranges, precise switching behavior and very high levels of repeat accuracy. The top sensor in its class is quickly set at the push of a button. Further advantage: The BOS 18M Teach-in reports "difficulties" immediately by means of our patented "Dynamic Sensor Control" diagnostic system, which is available as an option. The DSC allows you to react immediately to contamination or malfunctions. Even users without DSC can make use of the contamination detection as the sensors are also optionally available with a separate alarm output.

- Continuous sensor monitoring of contamination and malfunctions
- Switchable output
- Simple teach-in procedure
- Standardized BOS-18M design for fast sensor change

BOS 18M infrared – invisible power



The successful BOS-18M series now also includes invisible infrared light. This type of light demonstrates its advantages particularly in heavily contaminated production environments: Objects are reliably detected unimpeded by dust or dirt. With its range of over 100 meters, the high-power version of the through-beam sensor impresses particularly in this area. The standardized design of all BOS 18Ms permits a simple change between the different types of light – without assembly change.

- Reliable object detection even in a contaminated environment
- Invisible light – does not irritate personnel
- Simple and fast setting with potentiometer
- Through-beam sensor with test input for function check
- Wide range of assembly accessories

BOS 18M Laser



The **BOS 18M(R) Laser** series is characterized by long ranges and absolute precision in small parts detection. These sensors are Laser Class 1 and are available with axial or radial light exit. Newly added is a diffuse version with background suppression (Laser Class 2) and a sensing distance of 150 mm.

- Long ranges (50 m)
- High switching frequency (1.5 kHz)
- Straight- and right-angle versions
- Drill break monitoring
- Precise parts positioning
- Fast counting of objects
- High precision

The **BOS 18MR** product family has a built-in angled mirror made of scratch-resistant glass which is attached to the housing. Since the optical head does not protrude over the side, installation from the front is no problem.

- Standard M18x1 housing made of metal (nickel plated brass)
- All sensors use visible red light
- IP 67 degree of protection
- Supply voltage 10...30 V DC, polarity reversal protected
- Output short circuit protected
- Roller conveyors
- Conveying lines
- Packaging industry



Photoelectric sensors

Photoelectric standard sensors

Cylinder designs

Block designs

Photoelectric special sensors

Photoelectric distance sensors for analog distance measurement

Special accessories for photoelectric sensors

Photoelectric Standard Sensors

BOS 18M

Product overview

Type	Sensing distance/ range	Light exit		Light type			Output		Switching type		Switching frequency	U _s	Connection		Special features					Page
		Straight	Right-angle	Red light	Infrared	Laser	PNP	NPN	Light switching	Dark switching			10...30 V DC	M12 plug, 4-pin	Cable	Polarizing filter	Teach-in	Error output	Fixed	
Retroreflective sensor																				
BOS010L	BOS 18MR-PS-1QB-E5-C-S4	2 m	■	■			■			■	1 kHz	■	■						75	
BOS01F8	BOS 18M-PS-PR23-S4	4 m	■		■		■			■	400 Hz	■	■						59	
BOS01F9	BOS 18M-PO-PR23-S4	4 m	■		■		■		■	■	400 Hz	■	■						59	
BOS01J9	BOS 18M-PUV-PR30-S4	5 m	■		■		■		■	■	1 kHz	■	■				■	■	73	
BOS01CT	BOS 18M-PUD-PR30-S4	5 m	■		■		■		■	■	200 Hz	■	■				■	■	73	
BOS01HK	BOS 18M-PS-IR23-S4	6 m	■			■	■			■	400 Hz	■	■					■	59	
BOS01CE	BOS 18M-PA-PR20-S4	7 m	■		■		■		■	■	400 Hz	■	■						68	
BOS01E2	BOS 18M-NA-PR20-S4	7 m	■		■			■	■	■	400 Hz	■	■						68	
BOS01FJ	BOS 18M-PA-PR20-S4S	7 m	■		■		■		■	■	400 Hz	■	■						68	
BOS01C3	BOS 18M-PS-PR20-S4	7 m	■		■		■			■	400 Hz	■	■						69	
BOS01E0	BOS 18M-NS-PR20-S4	7 m	■		■			■		■	400 Hz	■	■						69	
BOS01CZ	BOS 18M-PO-PR20-S4	7 m	■		■		■		■	■	400 Hz	■	■						69	
BOS01E1	BOS 18M-NO-PR20-S4	7 m	■		■		■		■	■	400 Hz	■	■						69	
BOS01EM	BOS 18M-PO-PR20-S4S	7 m	■		■		■		■	■	400 Hz	■	■						69	
BOS01EN	BOS 18M-NO-PR20-S4S	7 m	■		■		■		■	■	400 Hz	■	■						69	
BOS01HR	BOS 18M-PA-IR21-S4	7 m	■			■	■		■	■	400 Hz	■	■				■		78	
BOS01HW	BOS 18M-NA-IR21-S4	7 m	■		■		■		■	■	400 Hz	■	■						78	
BOS0145	BOS 18MR-PA-LR10-02	9 m		■			■	■	■	■	1.5 kHz	■	■			■	■		87	
BOS0132	BOS 18MR-NA-LR10-02	9 m		■			■	■	■	■	1.5 kHz	■	■			■	■		87	
BOS0146	BOS 18MR-PA-LR10-S4	9 m		■			■	■	■	■	1.5 kHz	■	■			■	■		87	
BOS0140	BOS 18MR-NA-LR10-S4	9 m		■			■	■	■	■	1.5 kHz	■	■			■	■		87	
BOS01F0	BOS 18M-PA-IR20-S4	10 m	■			■	■		■	■	400 Hz	■	■						79	
BOS01F2	BOS 18M-NA-IR20-S4	10 m	■		■		■		■	■	400 Hz	■	■						79	
BOS01F1	BOS 18M-PS-IR20-S4	10 m	■		■		■		■	■	400 Hz	■	■						79	
BOS013M	BOS 18M-PA-LR10-S4	16 m	■				■	■	■	■	1.5 kHz	■	■				■		84	
BOS013E	BOS 18M-NA-LR10-S4	16 m	■				■	■	■	■	1.5 kHz	■	■				■		84	
BOS013L	BOS 18M-PA-LR10-02	16 m	■				■	■	■	■	1.5 kHz	■	■			■	■		84	
BOS013C	BOS 18M-NA-LR10-02	16 m	■				■	■	■	■	1.5 kHz	■	■			■	■		84	
Through-beam sensor Receiver																				
BOS010E	BLE 18MR-PA-1PP-E5-C-S4	0...16 m		■	■		■		■	■	1 kHz	■	■						75	
BOS01CC	BOS 18M-PA-RE20-S4	0...20 m		■	■		■		■	■	400 Hz	■	■						70	
BOS01EK	BOS 18M-NA-RE20-S4	0...20 m		■	■			■	■	■	400 Hz	■	■						70	
BOS01FK	BOS 18M-PA-RE20-S4S	0...20 m		■	■		■		■	■	400 Hz	■	■						70	
BOS01C2	BOS 18M-PS-RE20-S4	0...20 m		■	■		■			■	400 Hz	■	■						71	
BOS01EH	BOS 18M-NS-RE20-S4	0...20 m		■	■			■		■	400 Hz	■	■						71	
BOS01EE	BOS 18M-PO-RE20-S4	0...20 m		■	■		■		■	■	400 Hz	■	■						71	
BOS01EJ	BOS 18M-NO-RE20-S4	0...20 m		■	■			■	■	■	400 Hz	■	■						71	
BOS01EF	BOS 18M-PO-RE20-S4S	0...20 m		■	■		■		■	■	400 Hz	■	■						71	
BOS01EL	BOS 18M-NO-RE20-S4S	0...20 m		■	■			■	■	■	400 Hz	■	■						71	
BOS01FF	BOS 18M-PO-RE23-S4	0...20 m		■	■		■		■	■	400 Hz	■	■					■	60	
BOS01FE	BOS 18M-PS-RE23-S4	0...20 m		■	■		■		■	■	400 Hz	■	■					■	60	
BOS01J7	BOS 18M-PUV-RE30-S4	0...20 m		■	■		■		■	■	1 kHz	■	■				■	■	73	
BOS01CW	BOS 18M-PUD-RE30-S4	0...20 m		■	■		■		■	■	200 Hz	■	■				■		73	
BOS01HP	BOS 18M-PS-IE23-S4	0...50 m		■		■	■			■	400 Hz	■	■					■	61	
BOS01F3	BOS 18M-PA-IE20-S4	0...50 m		■		■	■		■	■	400 Hz	■	■						79	
BOS01F4	BOS 18M-NA-IE20-S4	0...50 m		■		■		■	■	■	400 Hz	■	■						79	
BOS0074	BLE 18M-BA-1LT-S4-C	0...50 m		■			■	■	■	■	6 kHz	■	■						93	
BOS0076	BLE 18MR-BA-1LT-S4-C	0...50 m		■			■	■	■	■	6 kHz	■	■						93	



BOS 18M

Product overview

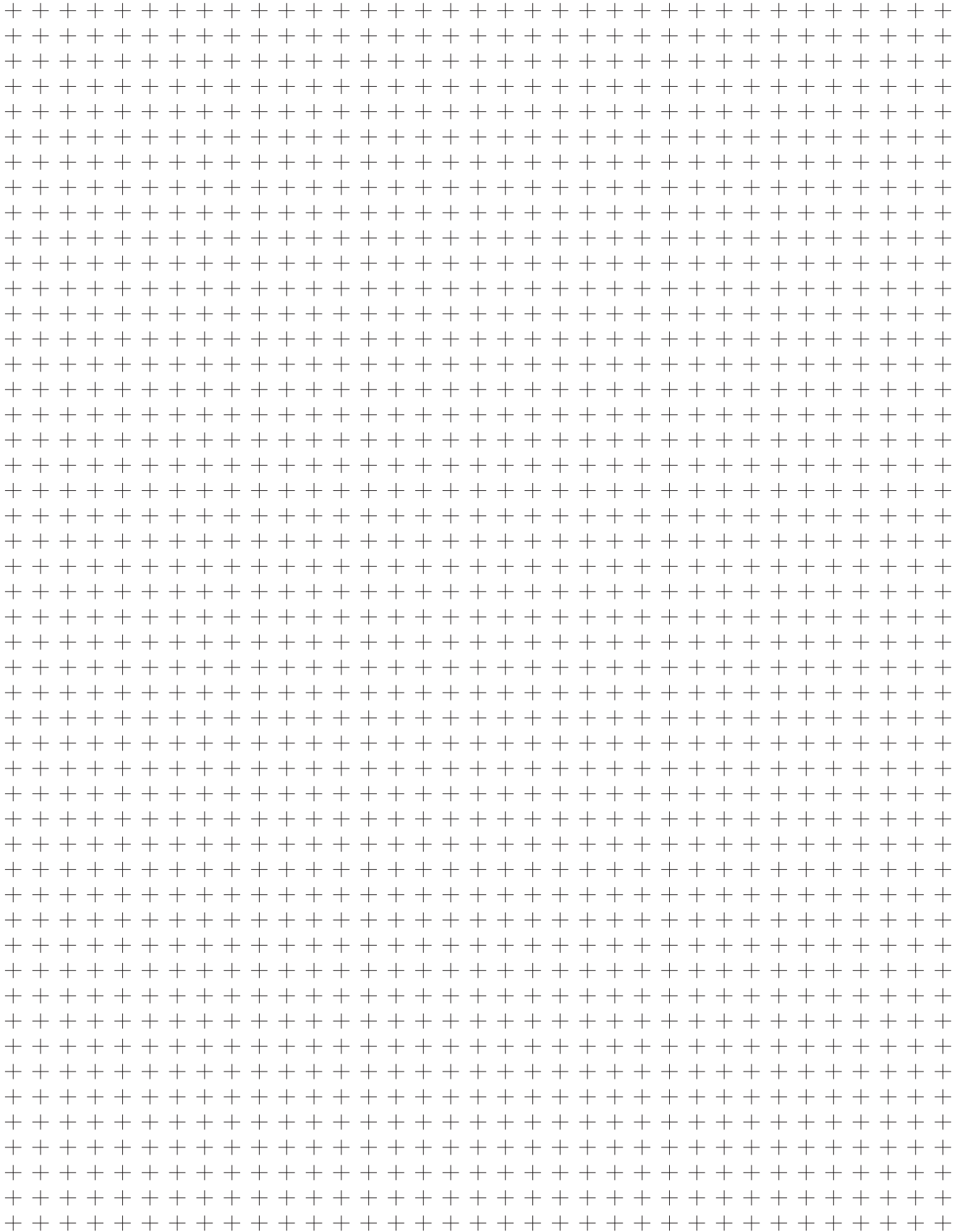
Type	Sensing distance/ range	Light exit		Light type			Output		Switching type		Switching frequency	U _S	Connection		Special features					Page
		Straight	Right-angle	Red light	Infrared	Laser	PNP	NPN	Light switching	Dark switching			10...30 V DC	M12 plug, 4-pin	Cable	Polarizing filter	Teach-in	Error output	Fixed	
Through-beam sensor Receiver																				
BOS0143	BOS 18MR-PA-LE10-02	0...50 m	■			■	■		■	■	1.5 kHz	■							88	
BOS013W	BOS 18MR-NA-LE10-02	0...50 m	■					■	■	■	1.5 kHz	■		■					88	
BOS0144	BOS 18MR-PA-LE10-S4	0...50 m	■			■	■		■	■	1.5 kHz	■	■						88	
BOS013Y	BOS 18MR-NA-LE10-S4	0...50 m	■			■		■	■	■	1.5 kHz	■	■						88	
BOS013K	BOS 18M-PA-LE10-S4	0...60 m	■			■	■		■	■	1.5 kHz	■	■						85	
BOS013A	BOS 18M-NA-LE10-S4	0...60 m	■			■		■	■		1.5 kHz	■	■						85	
BOS013J	BOS 18M-PA-LE10-02	0...60 m	■			■	■		■	■	1.5 kHz	■		■					85	
BOS0139	BOS 18M-NA-LE10-02	0...60 m	■			■		■	■		1.5 kHz	■		■					85	
Through-beam sensor Emitter																				
BOS010F	BLS 18MR-XX-1P-E5-L-S4	0...16 m		■	■							■	■						75	
BOS01C0	BOS 18M-X-RS20-S4	0...20 m	■		■							■	■						71	
BOS01EP	BOS 18M-XT-RS20-S4	0...20 m	■		■							■	■					■	71	
BOS01FH	BOS 18M-X-RS23-S4	0...20 m	■		■							■	■						60	
BOS01CY	BOS 18M-X-RS30-S4	0...20 m	■		■							■	■						73	
BOS01HM	BOS 18M-X-IS23-S4	0...50 m	■			■						■	■						61	
BOS01F5	BOS 18M-X-IS20-S4	0...50 m	■			■						■	■						79	
BOS01HN	BOS 18M-XT-IS20-S4	0...50 m	■			■						■	■					■	79	
BOS01HT	BOS 18M-X-IS24-S4	0...100 m	■			■						■	■						79	
BOS01HU	BOS 18M-XT-IS24-S4	0...100 m	■			■						■	■					■	79	
BOS00AW	BLS 18M-XX-1LT-S4-C	0...50 m	■				■					■	■						93	
BOS00AU	BLS 18MR-XX-1LT-S4-C	0...50 m		■			■					■	■						93	
BOS0147	BOS 18MR-XT-LS10-02	0...50 m		■			■					■		■				■	89	
BOS0148	BOS 18MR-XT-LS10-S4	0...50 m		■			■					■	■					■	89	
BOS013R	BOS 18M-XT-LS10-S4	0...60 m	■				■					■	■					■	85	
BOS013P	BOS 18M-XT-LS10-02	0...60 m	■				■					■		■				■	85	

■ Ordering code
 ■ Part number

Photoelectric Standard Sensors

BOS 18M

Product overview



Photoelectric sensors

Photoelectric standard sensors

Cylinder designs

Block designs

Photoelectric special sensors

Photoelectric distance sensors for analog distance measurement

Special accessories for photoelectric sensors

Photoelectric Standard Sensors
BOS 18M Global
 Sensing distance 400 mm, 600 mm

M18 Metal
Global

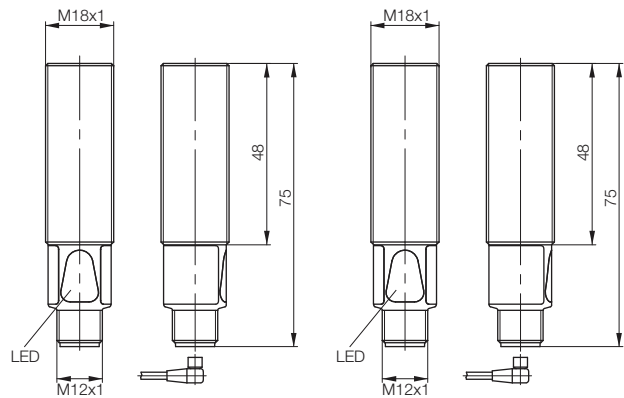


Type		Diffuse sensor 1...400 mm	Diffuse sensor 1...600 mm
Detection range			
PNP NO	Part number	BOS 18M-PS-RD23-S4 ①	BOS 18M-PS-ID23-S4 ①
NPN NO	Part number		
PNP NC	Part number	BOS 18M-PO-RD23-S4 ②	
NPN NC	Part number		
PNP NO	Polarizing filter	Part number	
NPN NO		Part number	
PNP NC	Polarizing filter	Part number	
NPN NC		Part number	
Supply voltage U_B		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 or dark switching	Light switching
Polarity reversal/short-circuit protected		Yes/Yes	Yes/Yes
Settings		Fixed	Fixed
Emitter, light type		LED, red light	LED, infrared
Wavelength		620...670 nm	850 nm
Received light indicator		Yellow LED	Yellow LED
Response time		1.25 ms	1.25 ms
Switching frequency f		400 Hz	400 Hz
Degree of protection as per IEC 60529		IP 67	IP 67
Ambient temperature T_a		-5...+55 °C	-5...+55 °C
Permissible ambient light		10 klx	5 klx
Material	Housing	Nickel-plated brass	Nickel-plated brass
	Optical surface	Glass	Glass
Connection		M12 connector, 4-pin	M12 connector, 4-pin

Diffuse sensor values referenced to 90% reflective Kodak gray card.
 Retroreflective sensor values referenced to R1 reflector.

wiring diagrams on page 95.

Ordering codes on pages 54-56.



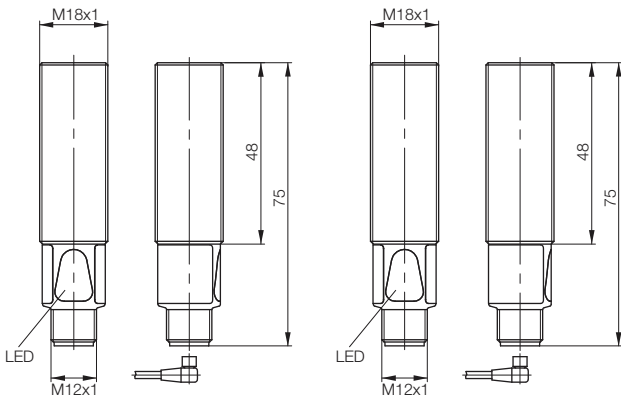
Photoelectric Standard Sensors

BOS 18M Global

Range 4 m, 6 m



	Retroreflective sensor 4 m	Retroreflective sensor 6 m		
		BOS 18M-PS-IR23-S4 ①		Photoelectric standard sensors
				Cylinder designs
				Block designs
	BOS 18M-PS-PR23-S4 ①			Photoelectric special sensors
	BOS 18M-PO-PR23-S4 ②			Photoelectric distance sensors for analog distance measurement
	10...30 V DC	10...30 V DC		Special accessories for photoelectric sensors
	100 mA	100 mA		
	≤ 30 mA	≤ 30 mA		
	Light or dark switching	Dark switching		
	Yes/Yes	Yes/Yes		
	Fixed	Fixed		
	LED, red light	LED, infrared		
	620...670 nm	850 nm		
	Yellow LED	Yellow LED		
	1.25 ms	1.25 ms		
	400 Hz	400 Hz		
	IP 67	IP 67		
	-5...+55 °C	-5...+55 °C		
	10 klx	5 klx		
	Nickel-plated brass	Nickel-plated brass		
	Glass	Glass		
	M12 connector, 4-pin	M12 connector, 4-pin		



Photoelectric sensors

Photoelectric standard sensors

Cylinder designs

Block designs

Photoelectric special sensors

Photoelectric distance sensors for analog distance measurement

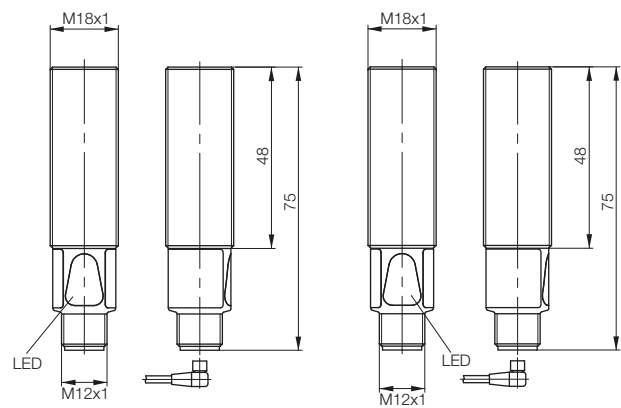
Special accessories for photoelectric sensors



Type	Through-beam sensor		Through-beam sensor
Detection range	0...20 m		0...20 m
PNP NO Receiver	Part number	BOS 18M-PS-RE23-S4 ②	
NPN NO Receiver	Part number		
PNP NC Receiver	Part number	BOS 18M-PO-RE23-S4 ①	
NPN NC Receiver	Part number		
Emitter	Part number		BOS 18M-X-RS23-S4 ⑥
	Part number		
Supply voltage U_B	10...30 V DC		10...30 V DC
Output current	100 mA		
No-load supply current I_0 max.	≤ 20 mA		≤ 30 mA
Switching type	Light or dark switching		
Polarity reversal/short-circuit protected	Yes/Yes		Yes/Yes
Settings	Fixed		Fixed
Emitter, light type	LED, red light		LED, red light
Wavelength	620...670 nm		620...670 nm
Received light indicator	Yellow LED		
Power-on indicator			Green LED
Response time	1.25 ms		
Switching frequency f	400 Hz		
Degree of protection as per IEC 60529	IP 67		IP 67
Ambient temperature T_a	$-5...+55$ °C		$-5...+55$ °C
Permissible ambient light	10 klx		10 klx
Material	Housing	Nickel-plated brass	Nickel-plated brass
	Optical surface	Glass	Glass
Connection	M12 connector, 4-pin		M12 connector, 4-pin

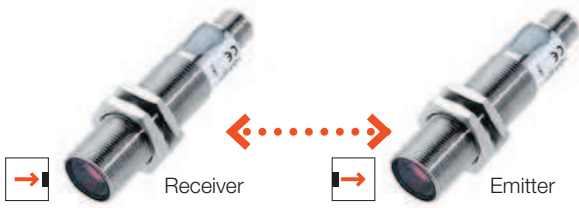
Wiring diagrams on page 95.

Ordering codes on pages 54-56.



Photoelectric Standard Sensors

BOS 18M Global Range 50 m



Through-beam sensor 0...50 m	Through-beam sensor 0...50 m		
BOS 18M-PS-IE23-S4 ②			
	BOS 18M-X-IS23-S4 ⑥		
10...30 V DC	10...30 V DC		
100 mA	≤ 30 mA		
≤ 20 mA			
Dark switching			
Yes/Yes	Yes/Yes		
Fixed	Fixed		
LED, infrared	LED, infrared		
850 nm	850 nm		
Yellow LED	Green LED		
1.25 ms			
400 Hz			
IP 67	IP 67		
-5...+55 °C	-5...+55 °C		
5 klx	5 klx		
Nickel-plated brass	Nickel-plated brass		
Glass	Glass		
M12 connector, 4-pin	M12 connector, 4-pin		



Photoelectric sensors

Photoelectric standard sensors

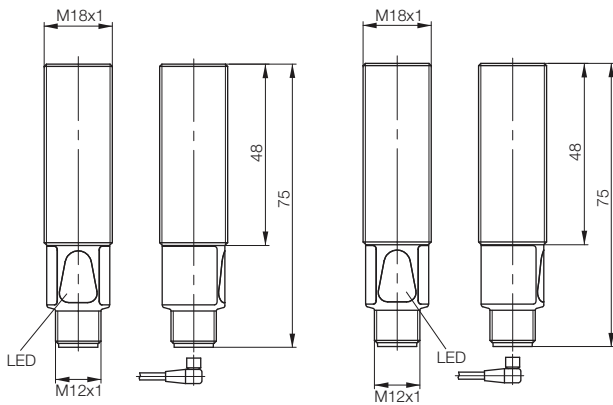
Cylinder designs

Block designs

Photoelectric special sensors

Photoelectric distance sensors for analog distance measurement

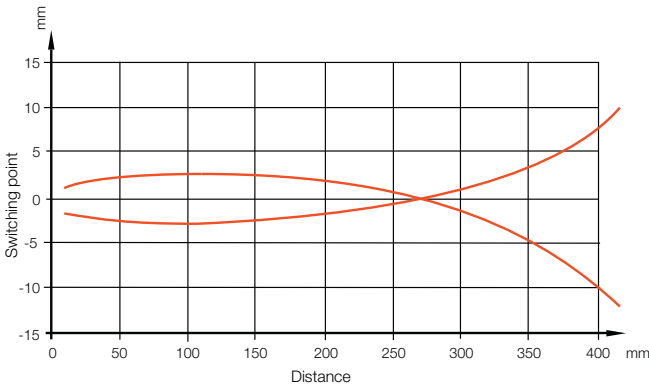
Special accessories for photoelectric sensors



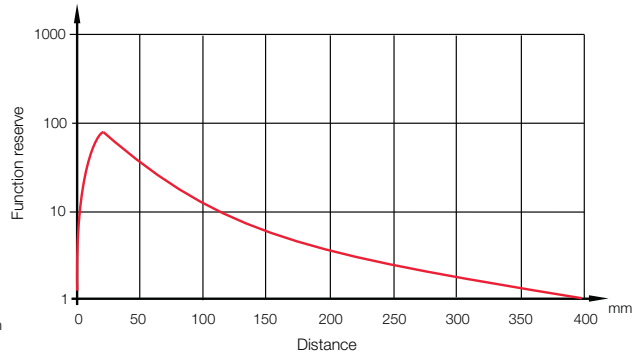
Photoelectric Standard Sensors
BOS 18M Global
 Response curves, function diagram



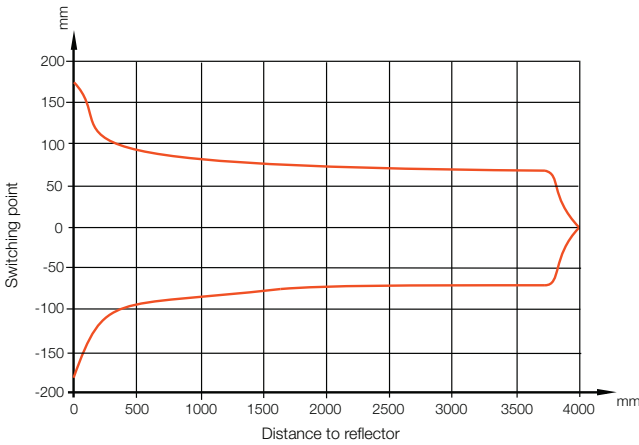
Diffuse sensor BOS 18M...RD23
 Response curve



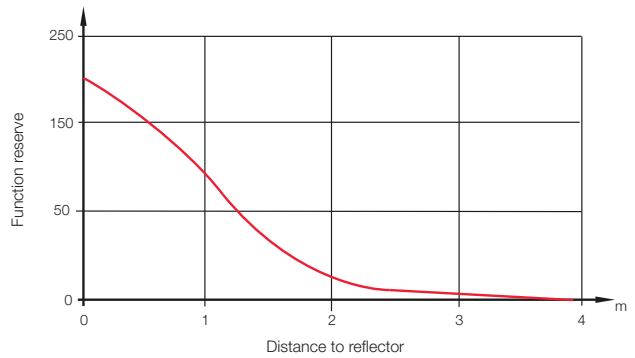
Diffuse sensor BOS 18M...RD23
 Distance function reserve



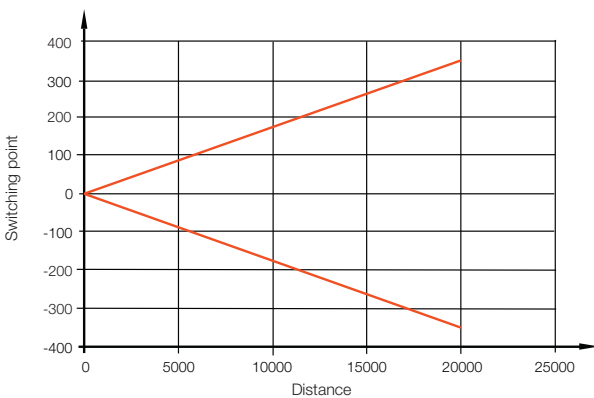
Retroreflective sensor BOS 18M...PR23
 Response curve



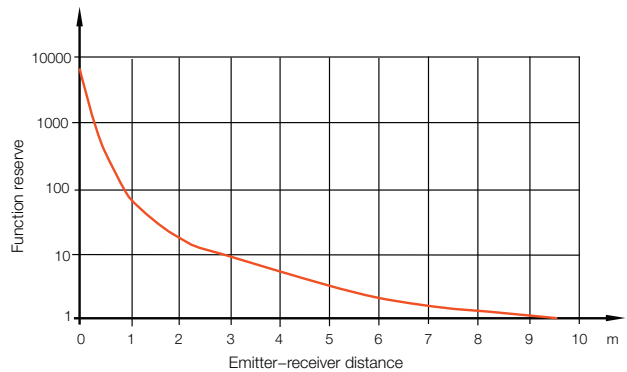
Retroreflective sensor BOS 18M...PR23
 Distance function reserve



Through-beam sensor BOS 18M...RE/RS23
 Response curve based on distance



Through-beam sensor BOS 18M...RE/RS23
 Emitter distance function reserve



Photoelectric Standard Sensors

BOS 18M Global Accessories



Photoelectric sensors

Photoelectric standard sensors

Cylinder designs
Block designs

Photoelectric special sensors

Photoelectric distance sensors for analog distance measurement

Special accessories for photoelectric sensors

Recommended accessories (please order separately)

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



You can find special accessories for photoelectric sensors, such as **reflectors, apertures, lenses, filters and deflection heads**, in this catalog on page 420.

Suitable connectors (please order separately)

Size	Design	Cable material	Color	Length	Ordering code
M12, 4-pin	Straight	PUR	Yellow	5 m	BCC05FE
M12, 4-pin	Straight	PVC	Yellow	2 m	BCC0CAU
M12, 4-pin	Angled	PUR	Yellow	2 m	BCC05TA
M12, 4-pin	Angled	PVC	Yellow	2 m	BCC0CAT



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**.