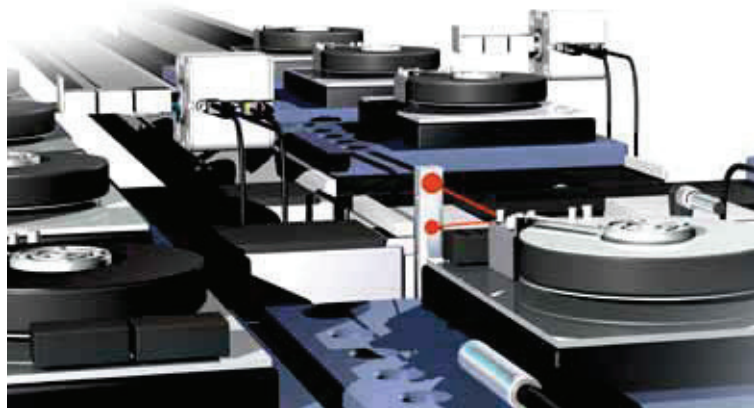


Diffuse sensor and reflection and through-beam sensor are now also available in the block-shaped housing with 8 mm edge length. These new Opto-mini.s **BOS Q08M** persuade with simple handling with fixed set detection and range. In this way, they provide the small diffuse sensors solutions in highly dynamic applications such as robot arms. This is precisely where components that have very low weight and small dimensions while retaining high switching precision are in demand.

Reliably detect the smallest parts

Balluff through-beam sensors BOS Q08M are innovative, compact products that reach a high performance level. Nothing else produces comparable results under similar conditions. These sensors are therefore particularly recommended if there is little space available. A focused light beam is able to detect even the smallest of parts, grooves or holes reliably. In this way, they check things like heights very reliably. And in cramped systems, the high-performance, compact units are also characterized by the fact that their fine laser beam (PinPoint laser/red light) can be aligned very precisely in the middle of closely set parts to ensure reliable detection.

- Small design for small spaces
- Rugged metal housing
- Reliable detection of small parts up to 0.4 mm (PinPoint red light) or 0.28 mm (laser)
- Uses a patented mounting concept for Bosch profiles that allows quick, precise positioning



Photoelectric Sensors

BOS Q08M

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			Output	Switching type		Switching frequency	U _s	Connection			Page
		Red light	Red light pin point	Laser		PNP transistor	Light switching			Dark switching	M8 connector, 3-pin	Pigtail M8 plug, 3-pin	
Diffuse sensor with background suppression									10...30 V DC				
BOS0163	BOS Q08M-PS-KF20-00,2-S49	5...50 mm	■		■	■		400 Hz	■		■		140
BOS0168	BOS Q08M-PO-KF20-00,2-S49	5...50 mm	■		■		■	400 Hz	■		■		140
BOS0160	BOS Q08M-PS-KF20-S49	5...50 mm	■		■	■		400 Hz	■	■			140
BOS0164	BOS Q08M-PO-KF20-S49	5...50 mm	■		■		■	400 Hz	■	■			140
BOS0161	BOS Q08M-PS-KF20-02	5...50 mm	■		■	■		400 Hz	■			■	141
BOS0165	BOS Q08M-PO-KF20-02	5...50 mm	■		■		■	400 Hz	■			■	141
Diffuse sensor													
BOS0041	BOS Q08M-PS-RD11-S49	0...55 mm	■		■	■		500 Hz	■	■			141
BOS003Z	BOS Q08M-PO-RD11-S49	0...55 mm	■		■		■	500 Hz	■	■			141
BOS0040	BOS Q08M-PS-RD11-02	0...55 mm	■		■	■		500 Hz	■			■	141
BOS003Y	BOS Q08M-PO-RD11-02	0...55 mm	■		■		■	500 Hz	■			■	141
Retroreflective sensor with polarizing filter													
BOS00U6	BOS Q08M-PS-PR11-S49	25...550 mm	■		■		■	500 Hz	■	■			142
BOS00U4	BOS Q08M-PO-PR11-S49	25...550 mm	■		■	■		500 Hz	■	■			142
BOS00U5	BOS Q08M-PS-PR11-02	25...550 mm	■		■	■		500 Hz	■			■	142
BOS00U3	BOS Q08M-PO-PR11-02	25...550 mm	■		■		■	500 Hz	■			■	142
BOS01MU	BOS Q08M-PS-LR20-00,2-S49	0...100 mm	■	■			■	400 Hz	■		■		144
BOS01MW	BOS Q08M-PO-LR20-00,2-S49	0...100 mm	■	■		■		400 Hz	■		■		144
BOS01MP	BOS Q08M-PS-LR20-S49	0...100 mm	■	■			■	400 Hz	■	■			144
BOS01MR	BOS Q08M-PO-LR20-S49	0...100 mm	■	■		■		400 Hz	■	■			144
BOS01MZ	BOS Q08M-PS-LR20-02	0...100 mm	■	■			■	400 Hz	■			■	145
Through-beam sensor Receiver													
BOS00YC	BOS Q08M-PS-KE20-00,2-S49	0...2.2 m	■		■		■	400 Hz	■		■		143
BOS00Y8	BOS Q08M-PO-KE20-00,2-S49	0...2.2 m	■		■	■		400 Hz	■		■		143
BOS00YF	BOS Q08M-PS-KE20-S49	0...2.2 m	■		■		■	400 Hz	■	■			143
BOS00YA	BOS Q08M-PO-KE20-S49	0...2.2 m	■		■	■		400 Hz	■	■			143
BOS00YE	BOS Q08M-PS-KE20-02	0...2.2 m	■		■		■	400 Hz	■			■	143
BOS00Y9	BOS Q08M-PO-KE20-02	0...2.2 m	■		■	■		400 Hz	■			■	143
BOS0197	BOS Q08M-PS-LE20-00,2-S49	0...3 m		■	■		■	400 Hz	■		■		146
BOS0194	BOS Q08M-PO-LE20-00,2-S49	0...3 m		■	■	■		400 Hz	■		■		146
BOS0199	BOS Q08M-PS-LE20-S49	0...3 m		■	■	■		400 Hz	■	■			146
BOS0196	BOS Q08M-PO-LE20-S49	0...3 m		■	■	■		400 Hz	■	■			146
BOS0198	BOS Q08M-PS-LE20-02	0...3 m		■	■		■	400 Hz	■			■	147
BOS0195	BOS Q08M-PO-LE20-02	0...3 m		■	■	■		400 Hz	■			■	147
Through-beam sensor Emitter													
BOS00YH	BOS Q08M-X-KS20-00,2-S49	0...2.2 m	■						■		■		143
BOS00YK	BOS Q08M-X-KS20-S49	0...2.2 m	■						■	■			143
BOS00YJ	BOS Q08M-X-KS20-02	0...2.2 m	■						■			■	143
BOS019M	BOS Q08M-X-LS20-00,2-S49	0...3 m		■					■		■		146
BOS018K	BOS Q08M-X-LS20-S49	0...3 m		■					■	■			146
BOS018M	BOS Q08M-X-LS20-02	0...3 m		■					■			■	147

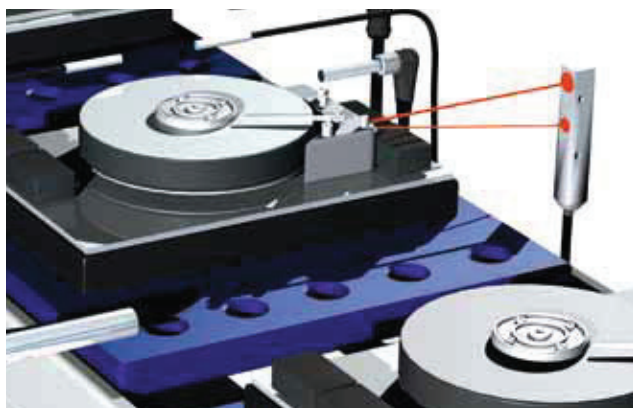
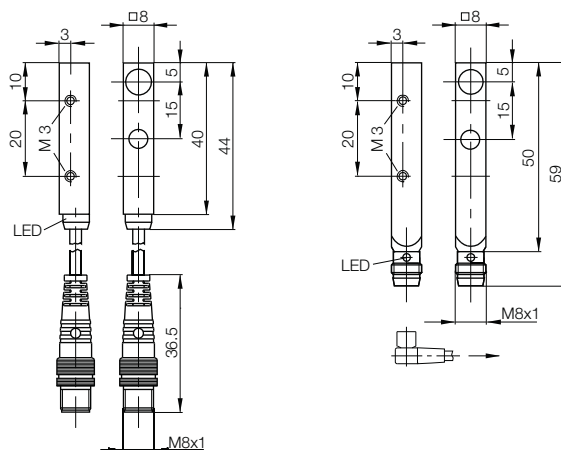
NPN on request



Type		Diffuse sensor with background suppression	Diffuse sensor with background suppression
Detection range		5...50 mm	5...50 mm
PNP NO	Ordering code	BOS0163	BOS0160
	Part number	BOS Q08M-PS-KF20-00,2-S49	BOS Q08M-PS-KF20-S49
PNP NC	Ordering code	BOS0168	BOS0164
	Part number	BOS Q08M-PO-KF20-00,2-S49	BOS Q08M-PO-KF20-S49
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.		≤ 15 mA	≤ 15 mA
Switching type		Light or dark switching	Light or dark switching
Polarity reversal/short-circuit protected		Yes/Yes	Yes/Yes
Settings		Fixed	Fixed
Emitter, light type		Pin point-LED, red light	Pin point-LED, red light
Wavelength		655 Nm	655 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		-10...+60 °C	-10...+60 °C
Permissible ambient light per		EN 60947-5-2	EN 60947-5-2
Material	Housing	Nickel-plated GD-Zn	Nickel-plated GD-Zn
	Optical surface	PMMA, PC	PMMA, PC
Connection		Pigtail 20 cm, M8 plug, 3-pin	M8 connector, 3-pin

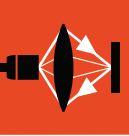
Reference object: white, 90% reflection, 200×200 mm

For wiring diagrams see page 146.



Photoelectric Sensors

BOS Q08M



Photoelectric Sensors

Photoelectric Sensors

Cylinder Designs

Block Designs

Fork Sensors

BGL

Angle Sensors

BWL

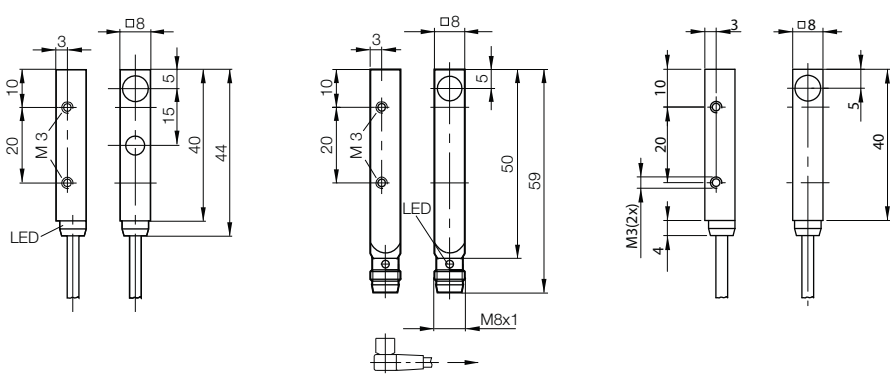
Photoelectric Sensors with Special Properties

Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors



Diffuse sensor with background suppression	Diffuse sensor	Diffuse sensor	
5...50 mm	0...55 mm	0...55 mm	
BOS0161	BOS0041	BOS0040	
BOS Q08M-PS-KF20-02	BOS Q08M-PS-RD11-S49	BOS Q08M-PS-RD11-02	
BOS0165	BOS003Z	BOS003Y	
BOS Q08M-PO-KF20-02	BOS Q08M-PO-RD11-S49	BOS Q08M-PO-RD11-02	
10...30 V DC	10...30 V DC	10...30 V DC	
100 mA	100 mA	100 mA	
≤ 15 mA	≤ 15 mA	≤ 15 mA	
Light or dark switching	Light or dark switching	Light or dark switching	
Yes/Yes	Yes/Yes	Yes/Yes	
Fixed	Fixed	Fixed	
Pin point-LED, red light	LED, red light	LED, red light	
655 Nm	640 Nm	640 Nm	
Yellow LED	Yellow LED	Yellow LED	
1.25 ms	1.25 ms	1.25 ms	
400 Hz	400 Hz	400 Hz	
IP 67	IP 67	IP 67	
-10...+60 °C	-10...+60 °C	-10...+60 °C	
EN 60947-5-2	EN 60947-5-2	EN 60947-5-2	
Nickel-plated GD-Zn	Nickel-plated GD-Zn	Nickel-plated GD-Zn	
PMMA, PC	PMMA	PMMA	
2 m PUR cable, 3x0.14 mm ²	M8 connector, 3-pin	2 m PUR cable, 3x0.14 mm ²	

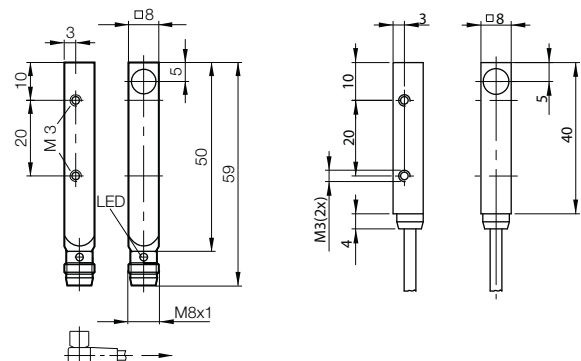
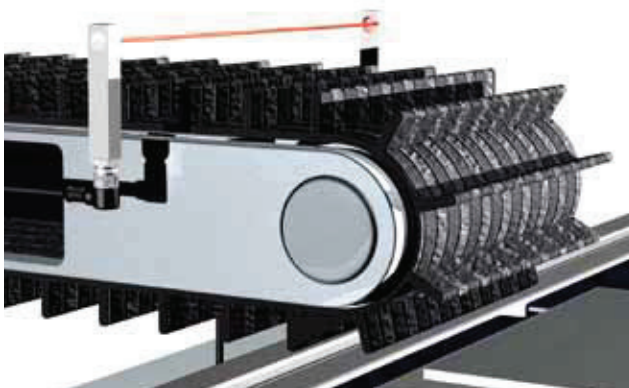




Type			Retroreflective sensor	Retroreflective sensor
Detection range			25...550 mm	25...550 mm
PNP NO	Polarizing filter	Ordering code	BOS00U6	BOS00U5
		Part number	BOS Q08M-PS-PR11-S49	BOS Q08M-PS-PR11-02
PNP NC	Polarizing filter	Ordering code	BOS00U4	BOS00U3
		Part number	BOS Q08M-PO-PR11-S49	BOS Q08M-PO-PR11-02
PNP NO	Receiver	Ordering code		
		Part number		
PNP NC	Receiver	Ordering code		
		Part number		
	Emitter	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.			≤ 20 mA	≤ 20 mA
Switching type			Light or dark switching	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			640 Nm	640 Nm
Smallest detectable part				
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			-10...+60 °C	-10...+60 °C
Permissible ambient light per			EN 60947-5-2	EN 60947-5-2
Material	Housing		Nickel-plated GD-Zn	Nickel-plated GD-Zn
	Optical surface		PMMA	PMMA
Connection			M8 connector, 3-pin	2 m PUR cable, 3x0.14 mm ²

Reference reflector: BOS R-9

For wiring diagrams see page 146.



Photoelectric Sensors

BOS Q08M



Photoelectric Sensors

Photoelectric Sensors

Cylinder Designs

Block Designs

Fork Sensors

BGL

Angle Sensors

BWL

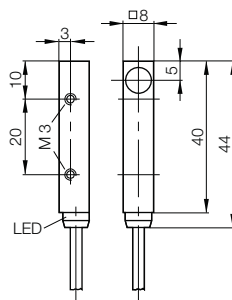
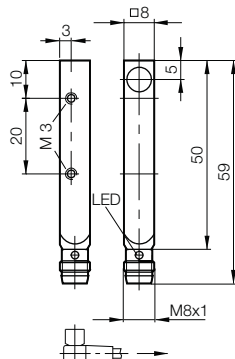
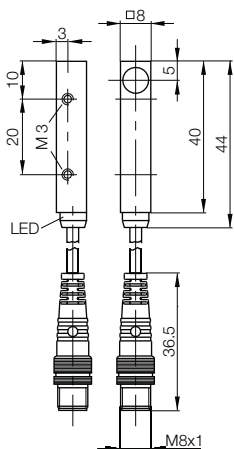
Photoelectric Sensors with Special Properties

Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors



Through-beam sensor 0...2.2 m	Through-beam sensor 0...2.2 m	Through-beam sensor 0...2.2 m	
BOS00YC BOS Q08M-PS-KE20-00,2-S49	BOS00YF BOS Q08M-PS-KE20-S49	BOS00YE BOS Q08M-PS-KE20-02	
BOS00Y8 BOS Q08M-PO-KE20-00,2-S49	BOS00YA BOS Q08M-PO-KE20-S49	BOS00Y9 BOS Q08M-PO-KE20-02	
BOS00YH BOS Q08M-X-KS20-00,2-S49	BOS00YK BOS Q08M-X-KS20-S49	BOS00YJ BOS Q08M-X-KS20-02	
10...30 V DC	10...30 V DC	10...30 V DC	
100 mA	100 mA	100 mA	
≤ 15 mA	≤ 15 mA	≤ 15 mA	
Light or dark switching	Light or dark switching	Light or dark switching	
Yes/Yes	Yes/Yes	Yes/Yes	
Fixed	Fixed	Fixed	
Pin point-LED, red light	Pin point-LED, red light	Pin point-LED, red light	
655 Nm	655 Nm	655 Nm	
0.4 mm	0.4 mm	0.4 mm	
Yellow LED	Yellow LED	Yellow LED	
1.25 ms	1.25 ms	1.25 ms	
400 Hz	400 Hz	400 Hz	
IP 67	IP 67	IP 67	
-10...+60 °C	-10...+60 °C	-10...+60 °C	
EN 60947-5-2	EN 60947-5-2	EN 60947-5-2	
Nickel-plated GD-Zn	Nickel-plated GD-Zn	Nickel-plated GD-Zn	
PMMA	PMMA	PMMA	
Pigtail 20 cm, M8 plug, 3-pin	M8 connector, 3-pin	2 m PUR cable, 3x0.14 mm ²	

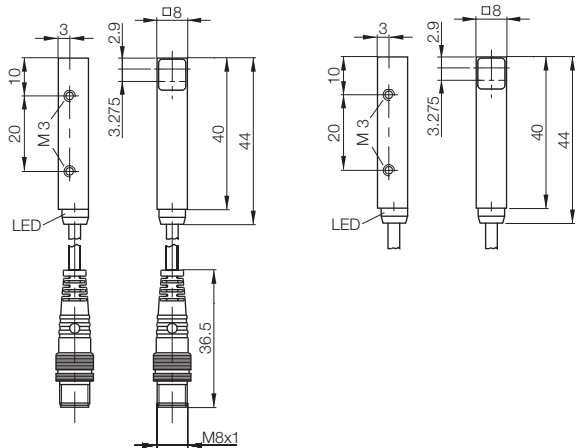




Type			Retroreflective sensor	Retroreflective sensor
Detection range			0...1 m	0...1 m
PNP NO	Polarizing filter	Ordering code	BOS01MU	BOS01MP
		Part number	BOS Q08M-PS-LR20-00-2-S49	BOS Q08M-PS-LR20-S49
PNP NC	Polarizing filter	Ordering code	BOS01MW	BOS01MR
		Part number	BOS Q08M-PO-LR20-00-2-S49	BOS Q08M-PO-LR20-S49
Supply voltage U_s			10...30 V DC	10...30 V DC
Output current			100 mA (receiver)	100 mA (receiver)
No-load supply current I_0 max.			≤ 10 mA	≤ 10 mA
Switching type			Light switching	Light switching
Polarity reversal/short-circuit protected			Yes/Yes	Yes/Yes
Settings			Fixed	Fixed
Emitter, light type			Laser, red light	Laser, red light
Wavelength			655 Nm	655 Nm
Laser class			1	1
Smallest detectable part			0.3 mm	0.3 mm
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 per			EN 60947-5-2	EN 60947-5-2
Material	Housing		Nickel-plated GD-Zn	Nickel-plated GD-Zn
	Optical surface		PMMA	PMMA
Connection			Pigtail 20 cm, M8 connector, 3-pin	M8 connector, 3-pin

Reference reflector: BOS R-22

If the distance between the sensor and reflector is less than 70 mm, we recommend using the reflector BOS R-56 or the reflective tape BOS R-40.





Photoelectric Sensors

BOS Q08M Laser



Photoelectric Sensors

Photoelectric Sensors

Cylinder Designs

Block Designs

Fork Sensors

BGL

Angle Sensors

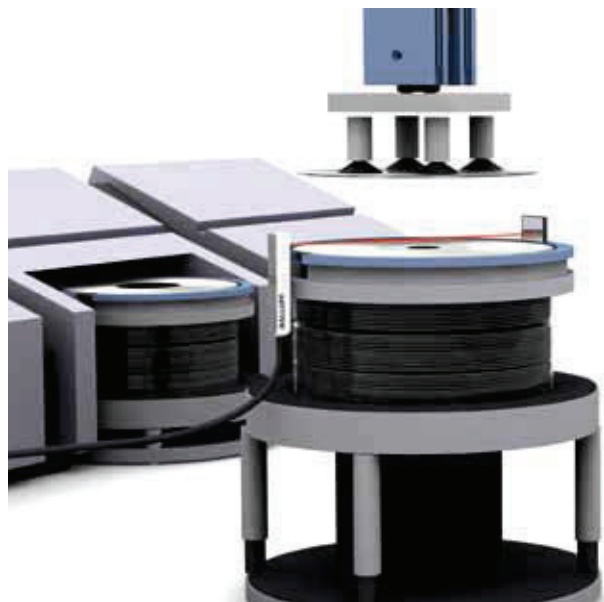
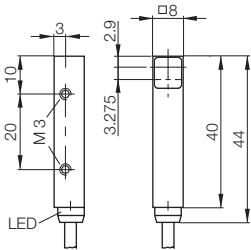
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Photoelectric Sensors with Special Properties

Photoelectric Distance Sensors for Analog Distance Measurement

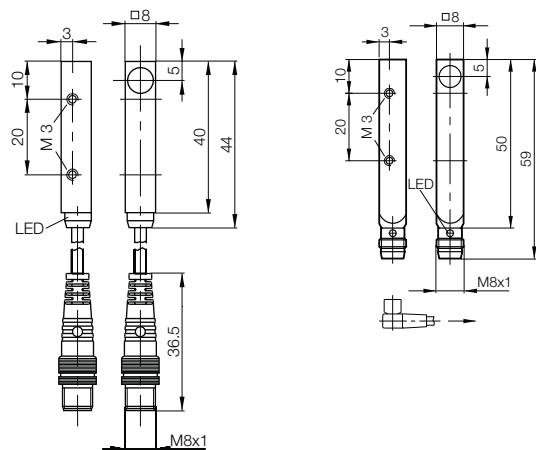
Accessories for Photoelectric Sensors

	Retroreflective sensor			
	0...1 m			
	BOS01MZ			
	BOS Q08M-PS-LR20-02			
	10...30 V DC			
	100 mA (receiver)			
	≤ 10 mA			
	Dark switching			
	Yes/Yes			
	Fixed			
	Laser, red light			
	655 Nm			
	1			
	0.3 mm			
	Yellow LED			
	1.25 ms			
	400 Hz			
	IP 67			
	-5...+55 °C			
	EN 60947-5-2			
	Nickel-plated GD-Zn			
	PMMA			
	2 m PUR cable,			
	3x0.14 mm ²			



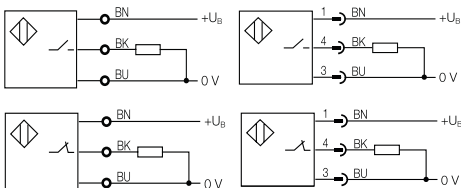


Type			Through-beam sensor	Through-beam sensor
Detection range			0...3 m	0...3 m
PNP NO	Receiver	Ordering code	BOS0197	BOS0199
		Part number	BOS Q08M-PS-LE20-00,2-S49	BOS Q08M-PS-LE20-S49
PNP NC	Receiver	Ordering code	BOS0194	BOS0196
		Part number	BOS Q08M-PO-LE20-00,2-S49	BOS Q08M-PO-LE20-S49
	Emitter	Ordering code	BOS019M	BOS018K
		Part number	BOS Q08M-X-LS20-00,2-S49	BOS Q08M-X-LS20-S49
Supply voltage U_s			10...30 V DC	10...30 V DC
Output current			100 mA (receiver)	100 mA (receiver)
No-load supply current I_0 max.			≤ 15 mA	≤ 15 mA
Switching type			Light or dark switching	Light or dark switching
Polarity reversal/short-circuit protected			Yes/Yes	Yes/Yes
Settings			Fixed	Fixed
Emitter, light type			Laser, red light	Laser, red light
Wavelength			650 Nm	650 Nm
Laser class			1	1
Smallest detectable part			0.28 mm	0.28 mm
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			0...+50 °C	0...+50 °C
Permissible ambient light per			EN 60947-5-2	EN 60947-5-2
Material	Housing		Nickel-plated GD-Zn	Nickel-plated GD-Zn
	Optical surface		PMMA	PMMA
Connection			Pigtail 20 cm, M8 plug, 3-pin	M8 connector, 3-pin

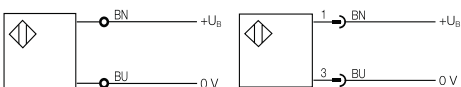


Wiring diagrams

Diffuse, retroreflective,
 through-beam sensor receivers



Through-beam sensor emitters





Photoelectric Sensors

BOS Q08M Laser



Photoelectric Sensors

Photoelectric Sensors

Cylinder Designs

Block Designs

Fork Sensors

BGL

Angle Sensors

BWL

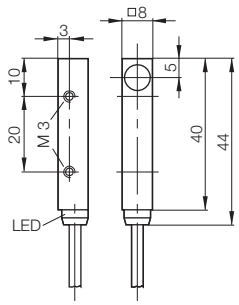
Photoelectric Sensors with Special Properties

Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors



Through-beam sensor			
0...3 m			
BOS0198			
BOS Q08M-PS-LE20-02			
BOS0195			
BOS Q08M-PO-LE20-02			
BOS018M			
BOS Q08M-X-LS20-02			
10...30 V DC			
100 mA (receiver)			
≤ 15 mA			
Light or dark switching			
Yes/Yes			
Fixed			
Laser, red light			
650 Nm			
1			
0.28 mm			
Yellow LED			
1.25 ms			
400 Hz			
IP 67			
0...+50 °C			
EN 60947-5-2			
Nickel-plated GD-Zn			
PMMA			
2 m PUR cable, 3x0.14 mm ²			



Clamping holders
For Bosch profile: **BES Q08-KH-3**

Recommended accessories
(please order separately)

Description	Ordering code
Reflector	BAM00WL



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
M8, 3-pin	Straight	PUR	Black	2 m	BCC02M8
M8, 3-pin	Straight	PVC	Gray	2 m	BCC02NU
M8, 3-pin	Angled	PUR	Black	2 m	BCC02ML
M8, 3-pin	Angled	PVC	Gray	2 m	BCC02P5



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**.