

**BALLUFF**

*sensors worldwide*

# Global Sensors

The complete series for standard applications



**Global**





As the leading sensor specialist and system provider with more than 90 years of company tradition, Balluff GmbH has been a recognized partner in factory automation for decades. The global player has a strong presence with 56 sales branches and representative offices as well as nine production sites on all continents. The corporate headquarters in Neuhausen a.d.F. is located near Stuttgart.

Balluff masters the entire technological variety with various operating principles, including high-quality sensors and systems for position measurement and identification, as well as sensors for detecting objects and measuring fluids. The full-range assortment includes optimal network and connection technology and a comprehensive line of accessory products.

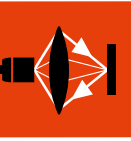
We offer innovative, first-class products tested in our own accredited laboratory, and maintain certified quality management in accordance with DIN EN 9001:2008. Our technology speaks for itself in international applications since it also meets regional standards.

Balluff stands for application-specific customer solutions, comprehensive services, individual consultation and prompt service. Our staff of more than 2.600 employees is committed to providing outstanding service worldwide.

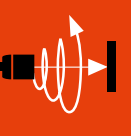
**Benefit from comprehensive sensor expertise from a single source. Achieve solutions suited to your requirements.**



**Photoelectric Global Sensors** 6



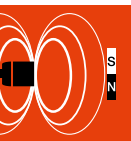
**Inductive Global Sensors** 42



**Capacitive Global Sensors** 60



**Magnetic Global Cylinder Sensors** 74



**Industrial Networking and Connectivity** 84



**Accessories** 90



**Wiring Diagrams** 106



Worldwide Sales 110

## Global Sensors

Sophisticated sensor technology and accessories for all areas of industrial automation

### Global sensors – The complete series of standard sensors

For object detection, we offer a wide range of top-quality, performance proven products for standard applications. These Global products are economically priced and suitable for all-purpose.

The Global series includes inductive, photoelectric, capacitive and magnetic field sensors – and the matching accessories.

The standard product line can be used globally and complies with the most important international approvals to meet the demands of a global customer base. Most Global products can be supplied in-stock and in high quantities.

#### All the benefits at a glance

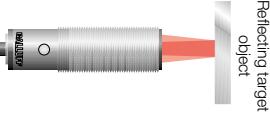
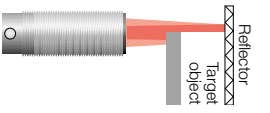
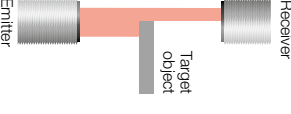




- Quality products for standard applications
- Optimal price/performance ratio
- Short delivery time
- International certifications such as CE, cULus, etc.
- Worldwide applicable and worldwide service.
- Tested above and beyond standard requirements

Additional products can be found at [www.balluff.com](http://www.balluff.com) in the selector of each product area

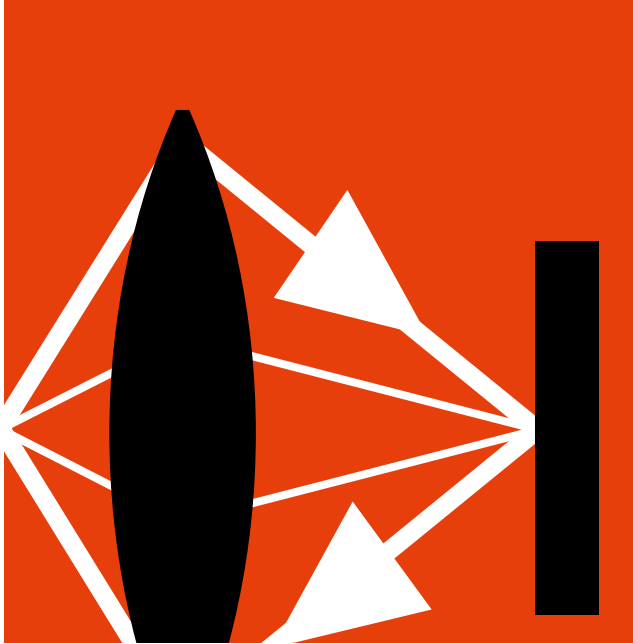


# Global

## All available sensor technologies

	Description	Switching distance (typ.)	Benefit	Disadvantage	Applications
<b>Diffuse sensor</b> 	Detect all parts that can reflect light	0...1 m	Wide variety of applications, especially useful for detecting small parts	Small detection range, sensitive to dirt, color-dependent	All-purpose models, color marking, detecting labels
<b>Retroreflective sensor</b> 	Detect all parts that interrupt or reduce the light beam	0...20 m	Ideally suited for conveyor belts or transparent parts, medium detection range	Requires a reflector, sensitive to dirt	Conveyor belts, large openings, bottle detection
<b>Through-beam sensor</b> 	Detect all parts that interrupt or reduce the light beam	0...> 50 m	For great distances or for looking through transparent objects, insensitive to dirt	Requires emitter and receiver	Height detection, control loops, level
<b>Inductive sensors</b> 	Detect different metals based on the magnetic field	0...30 mm	Versatile application highly rugged, especially in difficult environmental conditions, economical, ease of handling	Small detection range, only metal detection	All-purpose models, welding, metal cutting, speed measurement
<b>Capacitive sensors for object detection</b> (flush) 	Detect parts based on a change of density	0 up to 20 mm	For detecting dense materials; adjustable, ease of handling. Even through plastic or glass walls	Small detection range, can be impaired by changes in humidity	Detect objects regardless of color, structure or material
<b>Capacitive sensors for level detection</b> (non-flush) 	Detect parts based on a change of density	0...25 mm	For detecting bulk material or liquids – in contact with media	Can be impaired by material deposits	Detect objects regardless of color, structure or material
<b>Magnetic cylinder sensors</b> 	Detect a magnet	Magnet-dependent	For pneumatic cylinders, detects most objects (other than steel). Fits in nearly all standard cylinders	For close range, requires a magnet	Detect the cylinder position





# Photoelectric Global Sensors

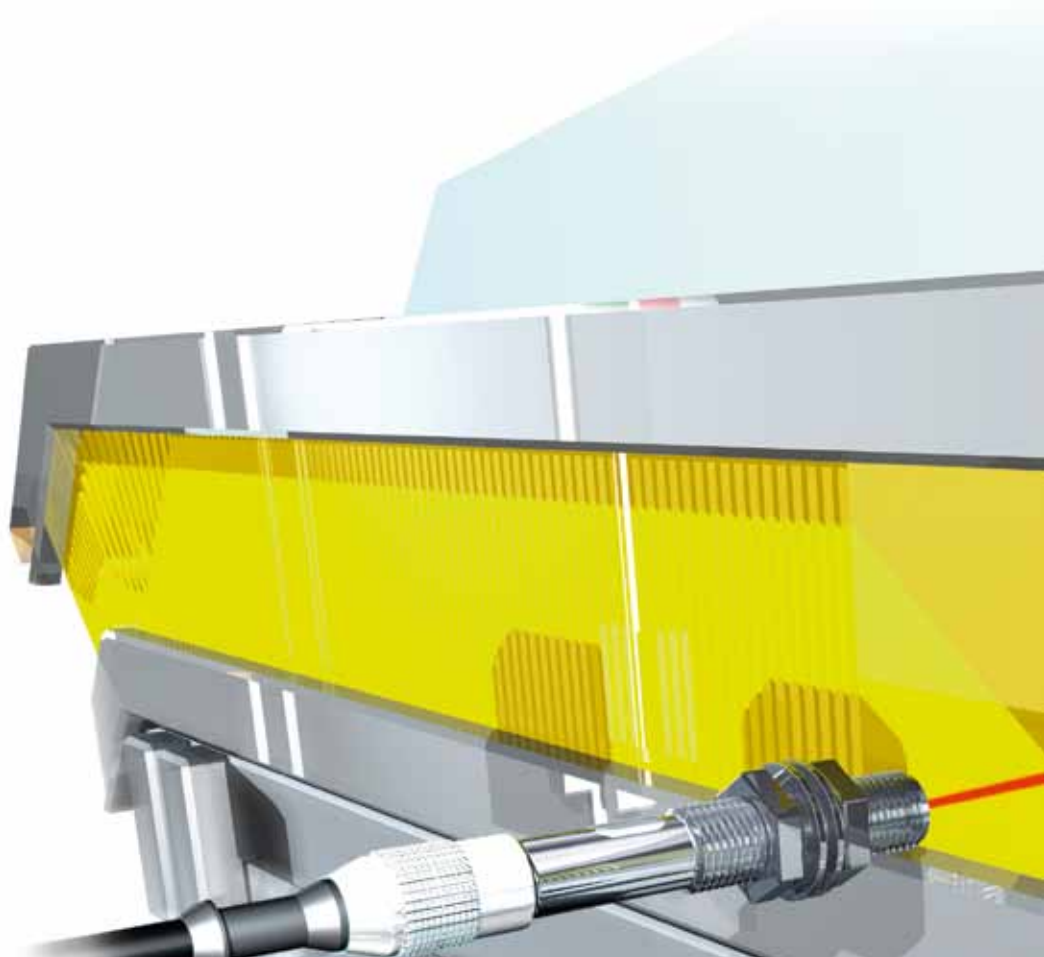
## Photoelectric Global sensors – the first choice for standard applications

Easy operation, fast installation, affordable price – the highlights of our photoelectric Global sensors.

The broad spectrum of diffuse sensors, retroreflective light sensors and through-beam sensors in various housing designs has a wide variety of applications.

### Features

- Sound performance and reliable object detection
- ideal for standard applications
- cost-effective in every light type





# Photoelectric Global Sensors

## Contents

### Block designs

BOS 5K

8

### Cylinder designs

BOS 12M

14

BOS 18M

18

BOS 18KF

22

BOS 18KW

30

### Fork sensors

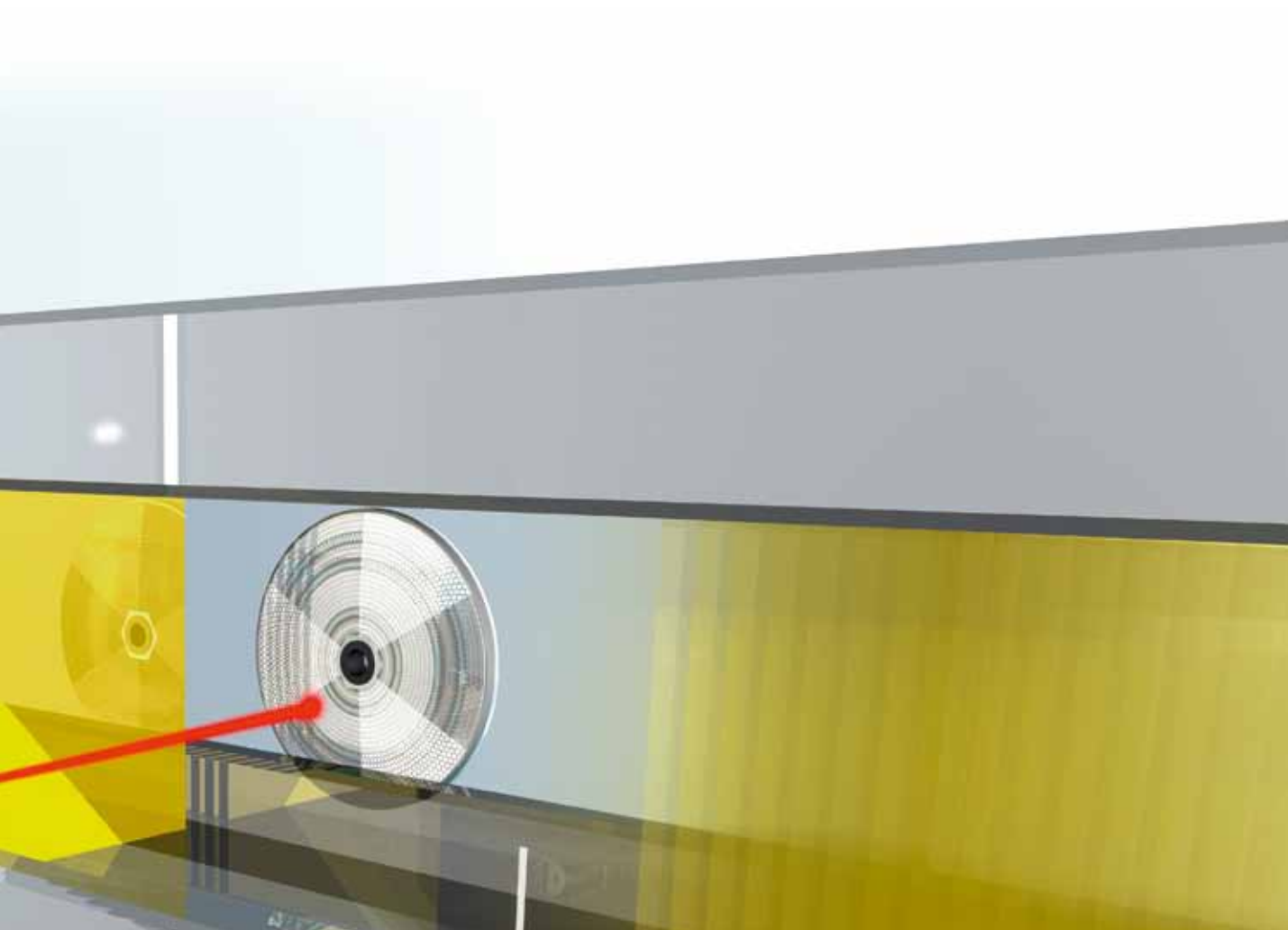
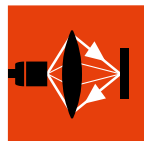
BGL

36

### Angle sensors

BWL

40



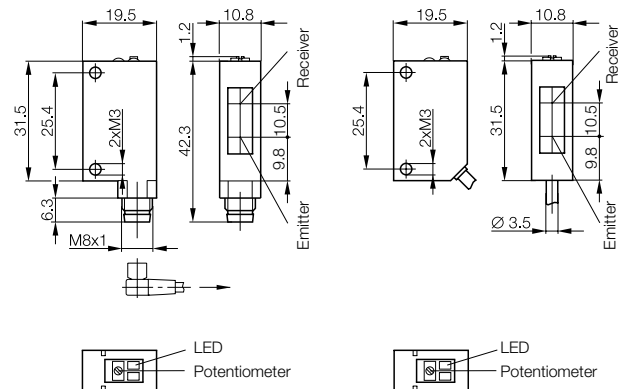
Preferred variants  
 available immediately



Type		Diffuse sensor with background suppression	Diffuse sensor with background suppression
Detection range		<b>40...200 mm</b>	<b>40...200 mm</b>
PNP Normally open	<b>Ordering code</b>	<b>BOS012A</b>	<b>BOS0129</b>
	Part number	BOS 5K-PS-RH12-S75	BOS 5K-PS-RH12-02
PNP Normally closed	<b>Ordering code</b>	<b>BOS011Z</b>	<b>BOS011Y</b>
	Part number	BOS 5K-PO-RH12-S75	BOS 5K-PO-RH12-02
NPN Normally open	<b>Ordering code</b>	<b>BOS011F</b>	<b>BOS011E</b>
	Part number	BOS 5K-NS-RH12-S75	BOS 5K-NS-RH12-02
NPN Normally closed	<b>Ordering code</b>	<b>BOS0112</b>	<b>BOS0111</b>
	Part number	BOS 5K-NO-RH12-S75	BOS 5K-NO-RH12-02
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
Polarity reversal/short-circuit protected		Yes/Yes	Yes/Yes
Settings		Potentiometer, 6-turn	Potentiometer, 6-turn
Emitter, light type		LED, red light	LED, red light
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
Material	Housing	PC/PBT	PC/PBT
	Optical surface	PC	PC
Connection		M8 connector, 4-pin	2 m PVC cable, 3×0.2 mm <sup>2</sup>

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

Other variants on request.



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M8, 4-pin/straight	2 m/PVC	<b>BCC02PC</b>
M8, 4-pin/angled	2 m/PVC	<b>BCC02PZ</b>
M8, 4-pin/straight	5 m/PVC	<b>BCC02PM</b>
M8, 4-pin/angled	5 m/PVC	<b>BCC02R0</b>

**Recommended accessories**

Description	Ordering code
Mounting bracket	<b>BAM00U5</b>
Mounting bracket	<b>BAM00U6</b>

You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

You can find additional mechanical accessories in our catalog  
**Accessories Line.**

# Photoelectric Global Sensors

## Block designs, BOS 5K, Sensing distance 200 mm, 900 mm

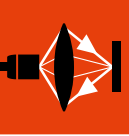


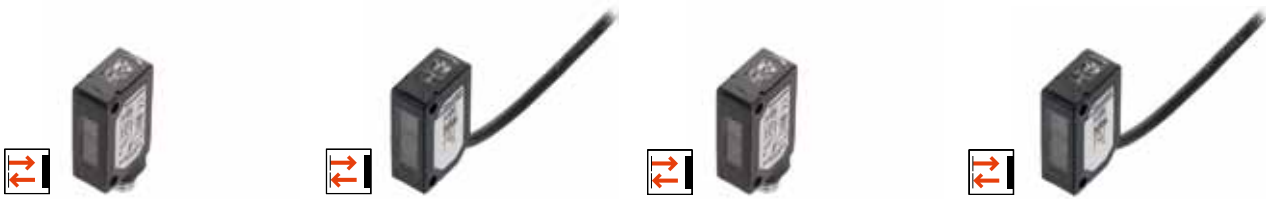
Photo-  
electric  
Global  
Sensors

**Block  
Designs**

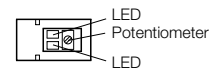
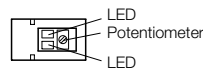
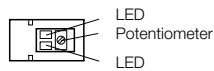
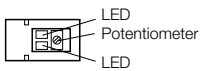
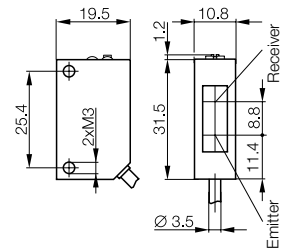
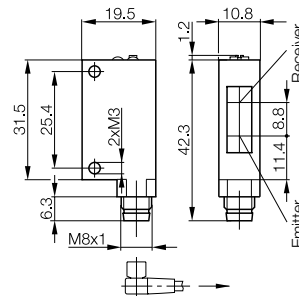
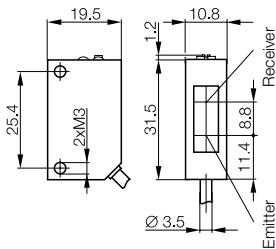
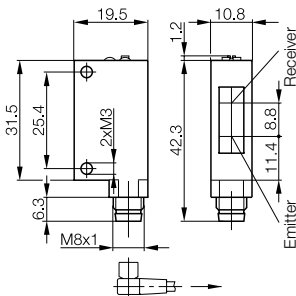
Cylinder  
Designs

Fork Sensors

Angle Sensors



Diffuse sensor, small beam 50...200 mm	Diffuse sensor, small beam 50...200 mm	Diffuse sensor 0...900 mm	Diffuse sensor 0...900 mm
<b>BOS0128</b>	<b>BOS0127</b>	<b>BOS0124</b>	<b>BOS0123</b>
BOS 5K-PS-RD11-S75	BOS 5K-PS-RD11-02	BOS 5K-PS-ID10-S75	BOS 5K-PS-ID10-02
<b>BOS011W</b>	<b>BOS011U</b>	<b>BOS011L</b>	<b>BOS011K</b>
BOS 5K-PO-RD11-S75	BOS 5K-PO-RD11-02	BOS 5K-PO-ID10-S75	BOS 5K-PO-ID10-02
<b>BOS011C</b>	<b>BOS011A</b>	<b>BOS0117</b>	<b>BOS0116</b>
BOS 5K-NS-RD11-S75	BOS 5K-NS-RD11-02	BOS 5K-NS-ID10-S75	BOS 5K-NS-ID10-02
<b>BOS0110</b>	<b>BOS010Z</b>	<b>BOS010R</b>	<b>BOS010P</b>
BOS 5K-NO-RD11-S75	BOS 5K-NO-RD11-02	BOS 5K-NO-ID10-S75	BOS 5K-NO-ID10-02
10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
100 mA	100 mA	100 mA	100 mA
≤ 30 mA	≤ 30 mA	≤ 30 mA	≤ 30 mA
Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
Potentiometer, 270°	Potentiometer, 270°	Potentiometer, 270°	Potentiometer, 270°
LED, red light	LED, red light	LED, infrared	LED, infrared
500 Hz	500 Hz	500 Hz	500 Hz
IP 67	IP 67	IP 67	IP 67
-25...+55 °C	-25...+55 °C	-25...+55 °C	-25...+55 °C
PC/PBT	PC/PBT	PC/PBT	PC/PBT
PC	PC	PC	PC
M8 connector, 4-pin	2 m PVC cable, 3×0.2 mm <sup>2</sup>	M8 connector, 4-pin	2 m PVC cable, 3×0.2 mm <sup>2</sup>



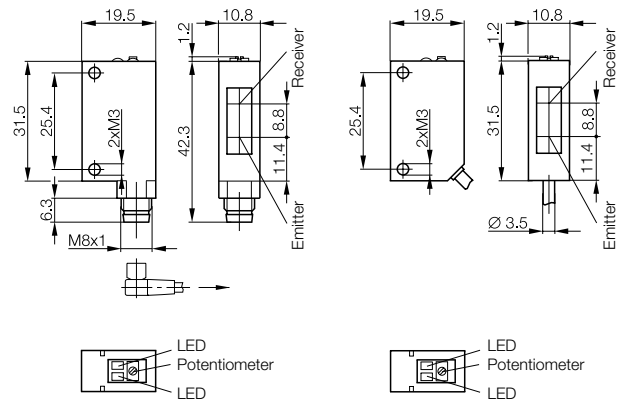
Preferred variants  
 available immediately



Type			Retroreflective sensor	Retroreflective sensor
Detection range			<b>0.1...4 m</b>	<b>0.1...4 m</b>
PNP Normally open	<b>Ordering code</b>		<b>BOS012E</b>	<b>BOS012C</b>
		Part number	BOS 5K-PS-RR10-S75	BOS 5K-PS-RR10-02
PNP Normally closed	<b>Ordering code</b>		<b>BOS012I</b>	<b>BOS012O</b>
		Part number	BOS 5K-PO-RR10-S75	BOS 5K-PO-RR10-02
NPN Normally open	<b>Ordering code</b>		<b>BOS011J</b>	<b>BOS011B</b>
		Part number	BOS 5K-NS-RR10-S75	BOS 5K-NS-RR10-02
NPN Normally closed	<b>Ordering code</b>		<b>BOS0114</b>	<b>BOS011H</b>
		Part number	BOS 5K-NO-RR10-S75	BOS 5K-NO-RR10-02
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
Polarity reversal/short-circuit protected			Yes/Yes	Yes/Yes
Settings			Potentiometer, 270°	Potentiometer, 270°
Emitter, light type			LED, red light	LED, red light
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
Material	Housing		PC/PBT	PC/PBT
	Optical surface		PC	PC
Connection			M8 connector, 4-pin	2 m PVC cable, 3×0.2 mm <sup>2</sup>

Reference object: white, 90% reflection, 200×200 mm  
 Reference reflector: BOS R-9

Other variants on request.



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M8, 4-pin/straight	2 m/PVC	<b>BCC02PC</b>
M8, 4-pin/angled	2 m/PVC	<b>BCC02PZ</b>
M8, 4-pin/straight	5 m/PVC	<b>BCC02PM</b>
M8, 4-pin/angled	5 m/PVC	<b>BCC02R0</b>

**Recommended accessories**

Description	Ordering code
Mounting bracket	<b>BAM00U5</b>
Mounting bracket	<b>BAM00U6</b>
Reflector 51×61 mm	<b>BAM00WL</b>

You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

You can find additional mechanical accessories in our catalog  
**Accessories Line.**

# Photoelectric Global Sensors

## Block designs, BOS 5K, Range 10 m

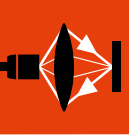


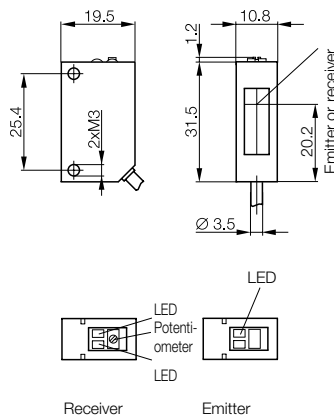
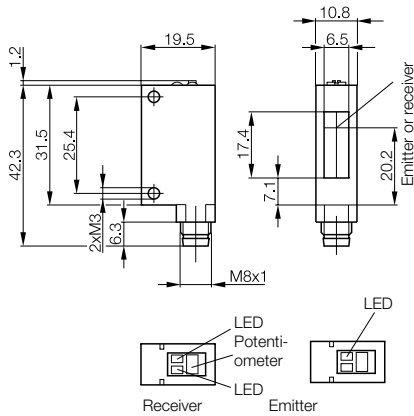
Photo-  
electric  
Global  
Sensors

**Block  
Designs**

Cylinder  
Designs  
Fork Sensors  
Angle Sensors



Through-beam sensor 0...10 m	Through-beam sensor 0...10 m
<b>BOS0126</b>	<b>BOS0125</b>
BOS 5K-PS-IX10-S75	BOS 5K-PS-IX10-02
<b>BOS011R</b>	<b>BOS011N</b>
BOS 5K-PO-IX10-S75	BOS 5K-PO-IX10-02
<b>BOS0119</b>	<b>BOS0118</b>
BOS 5K-NS-IX10-S75	BOS 5K-NS-IX10-02
<b>BOS010W</b>	<b>BOS010U</b>
BOS 5K-NO-IX10-S75	BOS 5K-NO-IX10-02
10...30 V DC	10...30 V DC
100 mA	100 mA
≤ 20 mA (receiver), ≤15mA (emitter)	≤ 20 mA (receiver), ≤15mA (emitter)
Yes/Yes	Yes/Yes
Potentiometer, 270°	Potentiometer, 270°
LED, infrared	LED, infrared
500 Hz	500 Hz
IP 67	IP 67
-25...+55 °C	-25...+55 °C
PC/PBT	PC/PBT
PC	PC
M8 connector, 4-pin	2 m PVC cable, 3(2)×0.2 mm <sup>2</sup> (emitter)



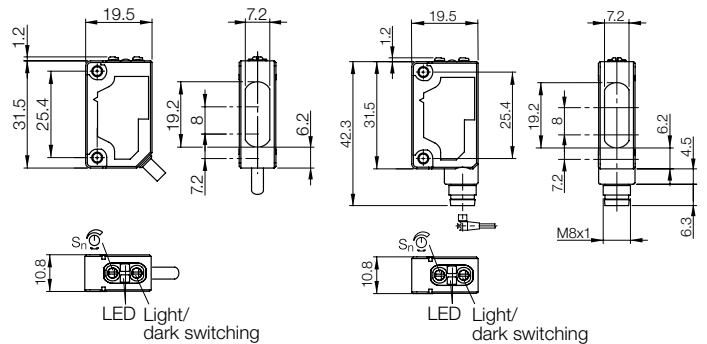


**Preferred variants available immediately**

Type	Diffuse sensor with background suppression	Diffuse sensor with background suppression
Detection range	<b>20...300 mm</b>	<b>20...300 mm</b>
PNP NO/NC	<b>Ordering code BOS01JZ</b>	<b>BOS01JK</b>
	Part number BOS 5K-PU-LH12-02	BOS 5K-PU-LH12-S75
NPN NO/NC	<b>Ordering code BOS01JY</b>	<b>BOS01K0</b>
	Part number BOS 5K-NU-LH12-02	BOS 5K-NU-LH12-S75
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
Polarity reversal/short-circuit protected	Yes/Yes	Yes/Yes
Settings	Potentiometer, 270°	Potentiometer, 270°
Emitter, light type	Laser class 1, red light	Laser class 1, red light
Switching frequency $f$	2000 Hz	2000 Hz
Degree of protection as per IEC 60529	IP 67	IP 67
Ambient temperature $T_a$	-10...+55 °C	-10...+55 °C
Material	Housing: PC/PBT Optical surface: PMMA	Housing: PC/PBT Optical surface: PMMA
Connection	2 m PVC cable, 3×0.2 mm <sup>2</sup>	M8 connector, 4-pin

Reference object: white, 90% reflection, 200×200 mm  
 Reference reflector: BOS R-22

Other variants on request.



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M8, 4-pin/straight	2 m/PVC	<b>BCC02PC</b>
M8, 4-pin/angled	2 m/PVC	<b>BCC02PZ</b>
M8, 4-pin/straight	5 m/PVC	<b>BCC02PM</b>
M8, 4-pin/angled	5 m/PVC	<b>BCC02R0</b>

**Recommended accessories**

Description	Ordering code
Mounting bracket	<b>BAM00U5</b>
Mounting bracket	<b>BAM00U6</b>
Reflector 14×23 mm	<b>BAM00UM</b>
Reflector 51×62 mm	<b>BAM00UY</b>

You can find additional electrical accessories in our catalog **Industrial Networking and Connectivity**.

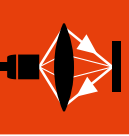
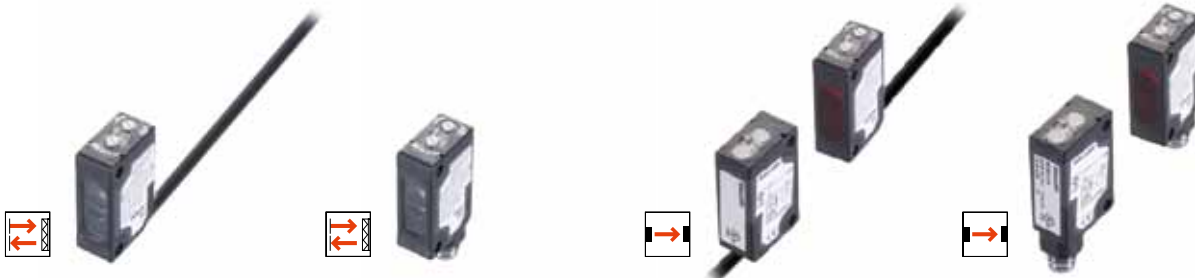
You can find additional mechanical accessories in our catalog **Accessories Line**.



# Photoelectric Global Sensors

## Block designs, BOS 5K, laser

### Range 10 m, 30 m



Photoelectric Global Sensors

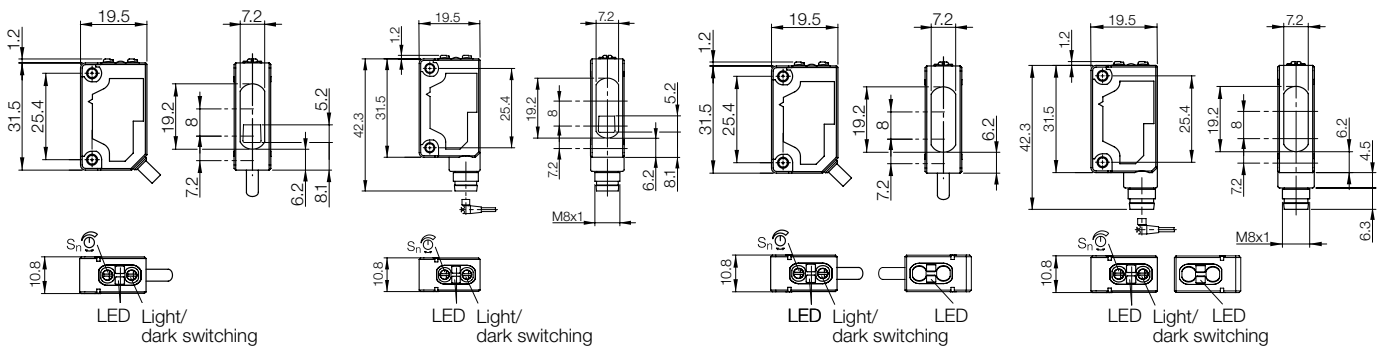
Block Designs

Cylinder Designs

Fork Sensors

Angle Sensors

Retroreflective sensor 0...10 m	Retroreflective sensor 0...10 m	Through-beam sensor 0...30 m	Through-beam sensor 0...30 m
<b>BOS01JT</b>	<b>BOS01JW</b>	<b>BOS01JM</b>	<b>BOS01JP</b>
BOS 5K-PU-LR10-02	BOS 5K-PU-LR10-S75	BOS 5K-PU-LX10-02	BOS 5K-PU-LX10-S75
<b>BOS01JR</b>	<b>BOS01JU</b>	<b>BOS01JL</b>	<b>BOS01JN</b>
BOS 5K-NU-LR10-02	BOS 5K-NU-LR10-S75	BOS 5K-NU-LX10-02	BOS 5K-NU-LX10-S75
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
Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
Potentiometer, 270°	Potentiometer, 270°	Potentiometer, 270°	Potentiometer, 270°
Laser class 1, red light	Laser class 1, red light	Laser class 1, red light	Laser class 1, red light
2000 Hz	2000 Hz	2000 Hz	2000 Hz
IP 67	IP 67	IP 67	IP 67
-10...+55 °C	-10...+55 °C	-10...+55 °C	-10...+55 °C
PC/PBT	PC/PBT	PC/PBT	PC/PBT
PMMA	PMMA	PMMA	PMMA
2 m PVC cable, 3x0.2 mm <sup>2</sup>	M8 connector, 4-pin	2 m PVC cable, 3x0.2 mm <sup>2</sup>	M8 connector, 4-pin

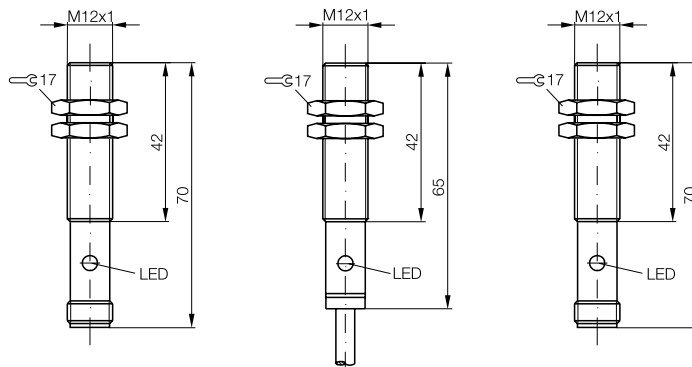


Preferred variants  
 available immediately



Type		Diffuse sensor 1...100 mm	Diffuse sensor 1...100 mm	Diffuse sensor 1...200 mm
PNP NO	<b>Ordering code</b>	<b>BOS0012</b>	<b>BOS0010</b>	<b>BOS0043</b>
	Part number	BOS 12M-PS-1YA-S4-C	BOS 12M-PS-1YA-B0-C-03	BOS 12M-PS-1YB-S4-C
PNP NC	<b>Ordering code</b>	<b>BOS000P</b>	<b>BOS000N</b>	<b>BOS000T</b>
	Part number	BOS 12M-PO-1YA-S4-C	BOS 12M-PO-1YA-B0-C-03	BOS 12M-PO-1YB-S4-C
NPN NO	<b>Ordering code</b>	<b>BOS000H</b>	<b>BOS000F</b>	<b>BOS000K</b>
	Part number	BOS 12M-NS-1YA-S4-C	BOS 12M-NS-1YA-B0-C-03	BOS 12M-NS-1YB-S4-C
NPN NC	<b>Ordering code</b>	<b>BOS0042</b>	<b>BOS0008</b>	<b>BOS000A</b>
	Part number	BOS 12M-NO-1YA-S4-C	BOS 12M-NO-1YA-B0-C-03	BOS 12M-NO-1YB-S4-C
Supply voltage $U_S$		10...30 V DC	10...30 V DC	10...30 V DC
Output current		≤ 200 mA	≤ 200 mA	≤ 200 mA
Polarity reversal/short-circuit protected		Yes/Yes	Yes/Yes	Yes/Yes
Settings		fixed	fixed	fixed
Emitter, light type		LED, red light	LED, red light	LED, red light
Switching frequency f		200 Hz	200 Hz	200 Hz
Degree of protection as per IEC 60529		IP 67	IP 67	IP 67
Ambient temperature $T_a$		-15...+55 °C	-15...+55 °C	-15...+55 °C
Material	Housing	Nickel-plated CuZn	Nickel-plated CuZn	Nickel-plated CuZn
	Optical surface	PMMA	PMMA	PMMA
Connection		M12 connector, 4-pin	3 m PVC cable, 3×0.34 mm <sup>2</sup>	M12 connector, 4-pin

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



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036P</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC036N</b>

**Recommended accessories**

Description	Ordering code
Mounting bracket	<b>BAM00C0</b>
Mounting cuff	<b>BAM00C4</b>
Mounting cuff	<b>BAM0218</b>

You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

You can find additional mechanical accessories in  
 our catalog **Accessories Line.**

# Photoelectric Global Sensors

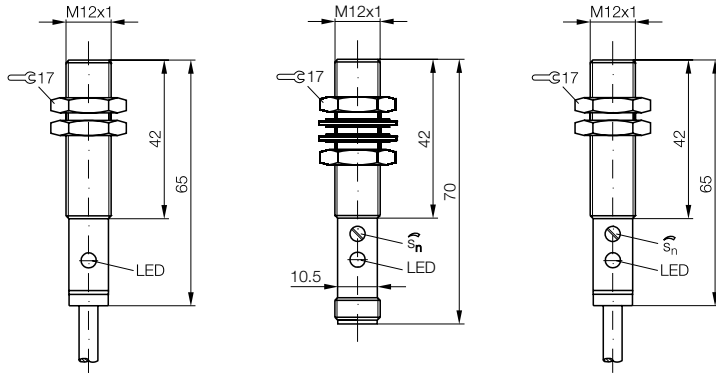
## Cylinder designs, BOS 12M, Sensing distance 200 mm, 400 mm



Photo-  
electric  
Global  
Sensors  
Block  
Designs  
Cylinder  
Designs  
Fork Sensors  
Angle Sensors



Diffuse sensor 1...200 mm	Diffuse sensor 1...400 mm	Diffuse sensor 1...400 mm		
<b>BOS0013</b>	<b>BOS0045</b>	<b>BOS000Y</b>		
BOS 12M-PS-1YB-B0-C-03	BOS 12M-PS-1PD-S4-C	BOS 12M-PS-1PD-B0-C-03		
<b>BOS000R</b>	<b>BOS0044</b>	<b>BOS000L</b>		
BOS 12M-PO-1YB-B0-C-03	BOS 12M-PO-1PD-S4-C	BOS 12M-PO-1PD-B0-C-03		
<b>BOS000J</b>	<b>BOS000E</b>	<b>BOS000C</b>		
BOS 12M-NS-1YB-B0-C-03	BOS 12M-NS-1PD-S4-C	BOS 12M-NS-1PD-B0-C-03		
<b>BOS0009</b>	<b>BOS0007</b>			
BOS 12M-NO-1YB-B0-C-03	BOS 12M-NO-1PD-S4-C			
10...30 V DC	10...30 V DC	10...30 V DC		
≤ 200 mA	≤ 200 mA	≤ 200 mA		
Yes/Yes	Yes/Yes	Yes/Yes		
fixed	Potentiometer, 270°	Potentiometer, 270°		
LED, red light	LED, infrared light	LED, infrared light		
200 Hz	200 Hz	200 Hz		
IP 67	IP 67	IP 67		
-15...+55 °C	-15...+55 °C	-15...+55 °C		
Nickel-plated CuZn	Nickel-plated CuZn	Nickel-plated CuZn		
PMMA	PMMA	PMMA		
3 m PVC cable, 3x0.34 mm <sup>2</sup>	M12 connector, 4-pin	3 m PVC cable, 3x0.34 mm <sup>2</sup>		

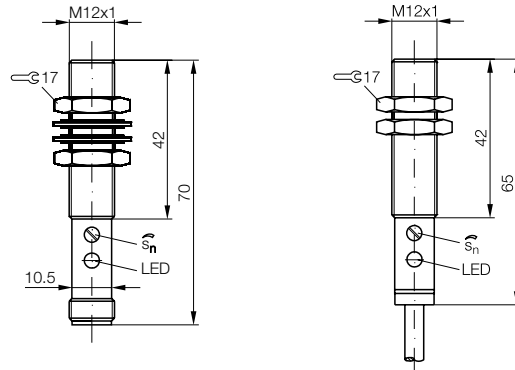


Preferred variants  
 available immediately



Type			Retroreflective sensor	Retroreflective sensor
Detection range			0...1.5 m	0...1.5 m
PNP NC	Emitter	<b>Ordering code</b>		
		Part number		
PNP complementary	Receiver	<b>Ordering code</b>		
		Part number		
PNP NO	Polarizing filter	<b>Ordering code</b>	<b>BOS00RE</b>	<b>BOS00RK</b>
		Part number	BOS 12M-PS-1QA-S4-C	BOS 12M-PS-1QA-B0-C-03
PNP NC	Polarizing filter	<b>Ordering code</b>	<b>BOS00RJ</b>	<b>BOS00RH</b>
		Part number	BOS 12M-PO-1QA-S4-C	BOS 12M-PO-1QA-B0-C-03
Supply voltage $U_s$			10...30 V DC	10...30 V DC
Output current			≤ 200 mA	≤ 200 mA
Polarity reversal/short-circuit protected			Yes/Yes	Yes/Yes
Settings			Potentiometer, 270°	Potentiometer, 270°
Emitter, light type			LED, red light	LED, red light
Switching frequency $f$			200 Hz	200 Hz
Degree of protection as per IEC 60529			IP 67	IP 67
Ambient temperature $T_a$			-15...+55 °C	-15...+55 °C
Permissible ambient light			5 klx	5 klx
Material	Housing		Nickel-plated CuZn	Nickel-plated CuZn
	Optical surface		PMMA	PMMA
Connection			M12 connector, 4-pin	3 m PVC cable, 3x0.34 mm <sup>2</sup>

Reference reflector: BOS R-1



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036P</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC036N</b>

**Recommended accessories**

Description	Ordering code
Mounting bracket	<b>BAM00C0</b>
Mounting cuff	<b>BAM00C4</b>
Mounting cuff	<b>BAM0218</b>
Reflector Ø 84 mm	<b>BAM00UK</b>

You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

You can find additional mechanical accessories in  
 our catalog **Accessories Line.**

# Photoelectric Global Sensors

## Cylinder designs, BOS 12M, Range 5 m

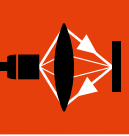
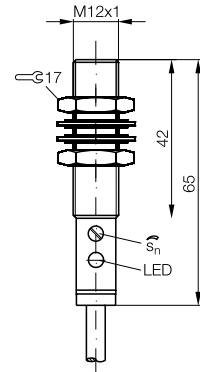
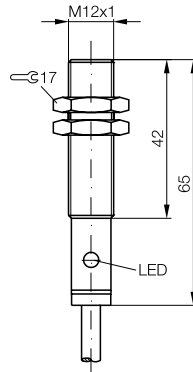
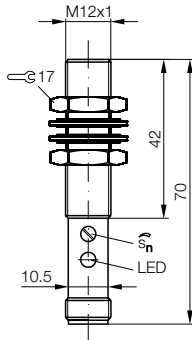
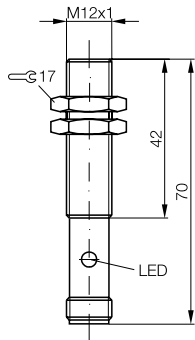


Photo-  
electric  
Global  
Sensors  
Block  
Designs  
Cylinder  
Designs  
Fork Sensors  
Angle Sensors



Through-beam sensor 0...5 m	Through-beam sensor 0...5 m	Through-beam sensor 0...5 m	Through-beam sensor 0...5 m
<b>BOS00W2</b>		<b>BOS00UW</b>	
BLS 12M-XX-1RD-S4-L		BLS 12M-XX-1RD-B0-L-03	
	<b>BOS00UE</b>		<b>BOS00UC</b>
	BLE 12M-PA-1PD-S4-C		BLE 12M-PA-1PD-B0-C-03
10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
	≤ 200 mA		≤ 200 mA
Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
	Potentiometer, 270°		Potentiometer, 270°
LED, red light	LED, red light	LED, red light	LED, red light
	500 Hz		500 Hz
IP 67	IP 67	IP 67	IP 67
-15...+55 °C	-15...+55 °C	-15...+55 °C	-15...+55 °C
5 klx	5 klx	5 klx	5 klx
Nickel-plated CuZn	Nickel-plated CuZn	Nickel-plated CuZn	Nickel-plated CuZn
PMMA	PMMA	PMMA	PMMA
M12 connector, 4-pin	M12 connector, 4-pin	3 m PVC cable, 3x0.34 mm <sup>2</sup>	3 m PVC cable, 3x0.34 mm <sup>2</sup>

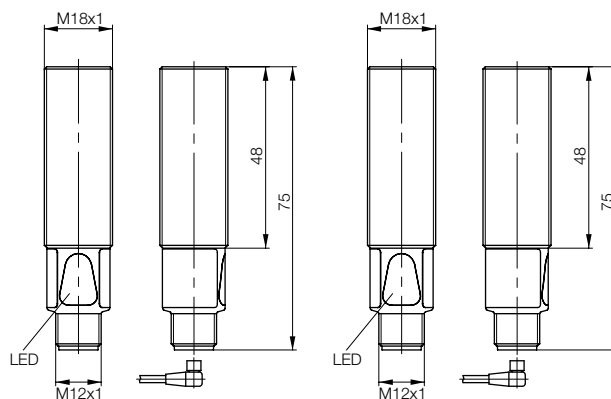


Preferred variants  
 available immediately



Type		Diffuse sensor	Diffuse sensor
Detection range		<b>1...400 mm</b>	<b>1...600 mm</b>
PNP NO	<b>Ordering code</b>	<b>BOS01FA</b>	<b>BOS01HL</b>
	Part number	BOS 18M-PS-RD23-S4	BOS 18M-PS-ID23-S4
PNP NC	<b>Ordering code</b>	<b>BOS01FC</b>	
	Part number	BOS 18M-PO-RD23-S4	
PNP NO	Polarizing filter	<b>Ordering code</b>	
		Part number	
PNP NC	Polarizing filter	<b>Ordering code</b>	
		Part number	
Supply voltage $U_S$		10...30 V DC	10...30 V DC
Output current		100 mA	100 mA
Polarity reversal/short-circuit protected		Yes/Yes	Yes/Yes
Settings		fixed	fixed
Emitter, light type		LED, red light	LED, infrared
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

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



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036P</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC036N</b>

**Recommended accessories**

Description	Ordering code
Mounting bracket	<b>BAM00EY</b>
Mounting bracket	<b>BAM00RY</b>
Mounting cuff	<b>BAM00F2</b>
Mounting cuff	<b>BAM0219</b>
Reflector Ø 84 mm	<b>BAM00UK</b>

You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

You can find additional mechanical accessories in  
 our catalog **Accessories Line.**

# Photoelectric Global Sensors

## Cylinder designs, BOS 18M, Range 4 m, 6 m

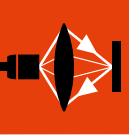
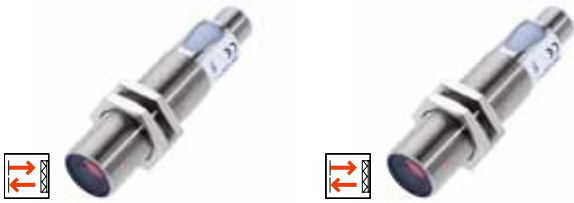
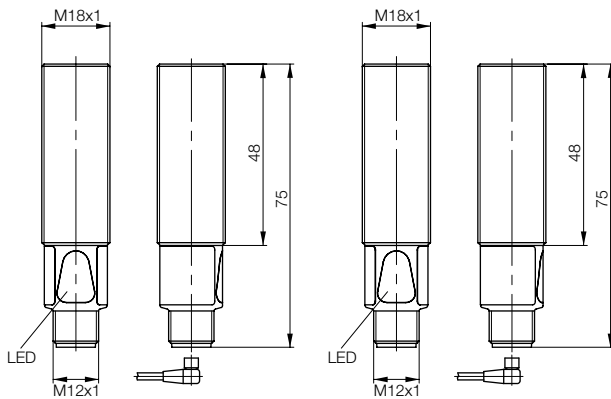


Photo-  
electric  
Global  
Sensors  
Block  
Designs  
Cylinder  
Designs  
Fork Sensors  
Angle Sensors



	<b>Retroreflective sensor</b> <b>4 m</b>	<b>Retroreflective sensor</b> <b>6 m</b>		
		<b>BOS01HK</b> BOS 18M-PS-IR23-S4		
	<b>BOS01F8</b> BOS 18M-PS-PR23-S4			
	<b>BOS01F9</b> BOS 18M-PO-PR23-S4			
	10...30 V DC	10...30 V DC		
	100 mA	100 mA		
	Yes/Yes	Yes/Yes		
	fixed	fixed		
	LED, red light	LED, infrared		
	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		



Preferred variants  
 available immediately



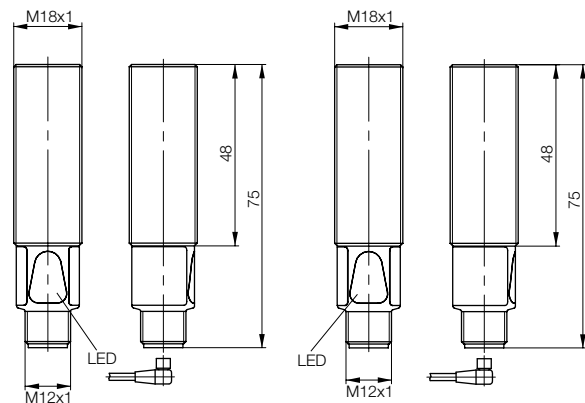
Emitter



Receiver

Type	Through-beam sensor		Through-beam sensor
Detection range	0...20 m		0...20 m
PNP NC	Emitter	<b>Ordering code</b> <b>BOS01FH</b>	
		Part number BOS 18M-X-RS23-S4	
PNP NO	Receiver	<b>Ordering code</b> <b>BOS01FE</b>	
		Part number BOS 18M-PS-RE23-S4	
Supply voltage $U_s$	10...30 V DC		10...30 V DC
Output current			100 mA
Polarity reversal/short-circuit protected	Yes/Yes		Yes/Yes
Settings	fixed		fixed
Emitter, light type	LED, red light		LED, red light
Received light indicator			Yellow 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

Other variants on request.



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036P</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC036N</b>

**Recommended accessories**

Description	Ordering code
Mounting bracket	<b>BAM00EY</b>
Mounting bracket	<b>BAM00RY</b>
Mounting cuff	<b>BAM00F2</b>
Mounting cuff	<b>BAM0219</b>

You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

You can find additional mechanical accessories in  
 our catalog **Accessories Line.**

# Photoelectric Global Sensors

## Cylinder designs, BOS 18M, Range 50 m

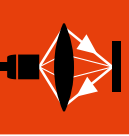
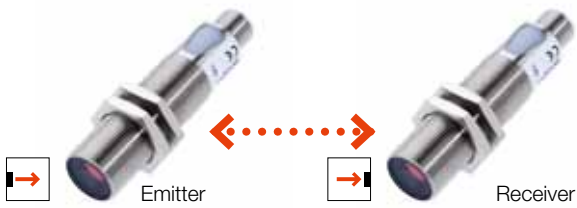
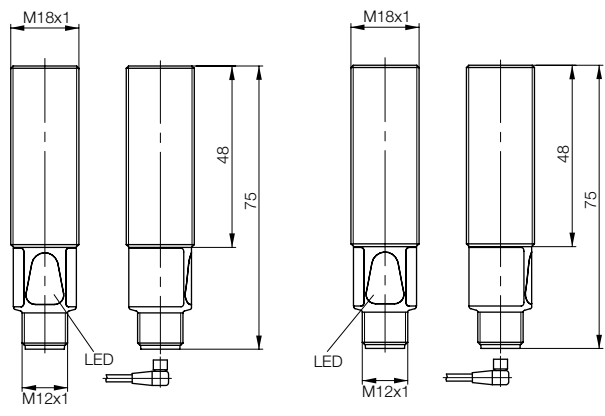


Photo-  
electric  
Global  
Sensors  
Block  
Designs  
Cylinder  
Designs  
Fork Sensors  
Angle Sensors



	<b>Through-beam sensor</b> <b>0...50 m</b> <b>BOS01HM</b> BOS 18M-X-IS23-S4	<b>Through-beam sensor</b> <b>0...50 m</b> <b>BOS01HP</b> BOS 18M-PS-IE23-S4		
	10...30 V DC	10...30 V DC		
	Yes/Yes	100 mA		
	fixed	Yes/Yes		
	LED, infrared	fixed		
		LED, infrared		
		Yellow 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 Global Sensors

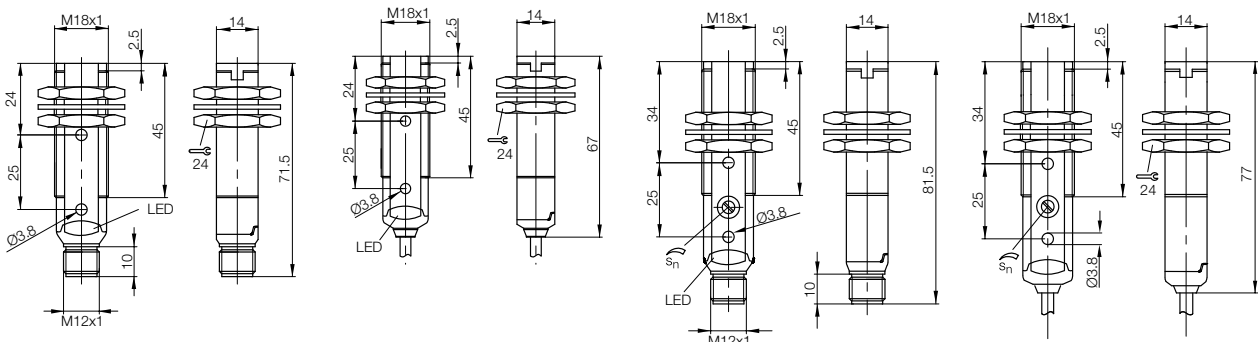
## Cylinder designs, BOS 18KF, Sensing distance 100 mm, 400 mm



Photo-  
electric  
Global  
Sensors  
Block  
Designs  
Cylinder  
Designs  
Fork Sensors  
Angle Sensors



<b>Diffuse sensor</b> <b>0...100 mm</b> <b>BOS00K9</b> BOS 18KF-PA-1XA-S4-C	<b>Diffuse sensor</b> <b>0...100 mm</b> <b>BOS00K8</b> BOS 18KF-PA-1XA-C-02	<b>Diffuse sensor</b> <b>0...400 mm</b> <b>BOS00JZ</b> BOS 18KF-PA-1PD-S4-C	<b>Diffuse sensor</b> <b>0...400 mm</b> <b>BOS00JY</b> BOS 18KF-PA-1PD-C-02
	<b>BOS00JE</b> BOS 18KF-NA-1XA-C-02	<b>BOS00J3</b> BOS 18KF-NA-1PD-S4-C	<b>BOS00J1</b> BOS 18KF-NA-1PD-C-02
10...30 V DC 100 mA ≤ 35 mA Light and dark switching Yes/Yes fixed LED, infrared 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/dark (complementary) Yes/Yes fixed LED, infrared 1 kHz IP 67 -25...+55 °C EN 60947-5-2 PBT PMMA 2 m PVC cable, 4x0.14 mm <sup>3</sup>	10...30 V DC 100 mA ≤ 35 mA Light/dark (complementary) Yes/Yes Potentiometer, 270° LED, infrared 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/dark (complementary) Yes/Yes Potentiometer, 270° LED, infrared 1 kHz IP 67 -25...+55 °C EN 60947-5-2 PBT PMMA 2 m PVC cable, 4x0.14 mm <sup>3</sup>





# Photoelectric Global Sensors

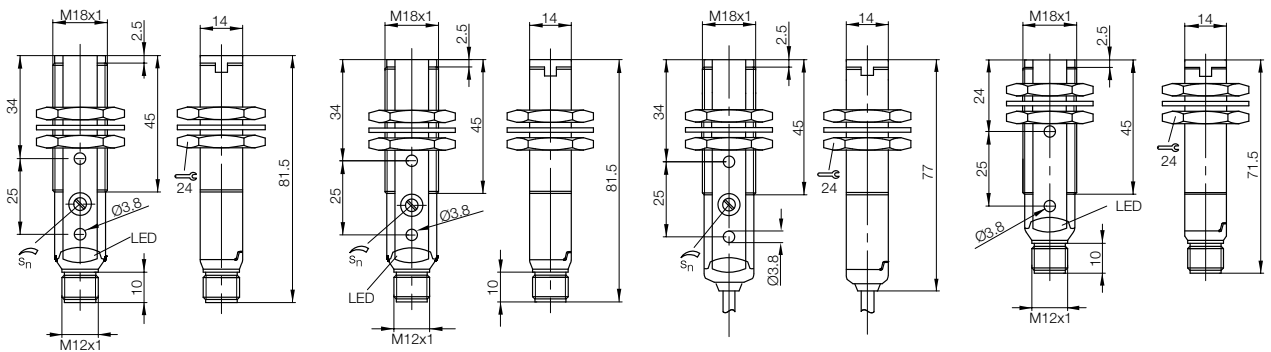
## Cylinder designs, BOS 18KF, 1.7 m, 4.5 m, 5 m range



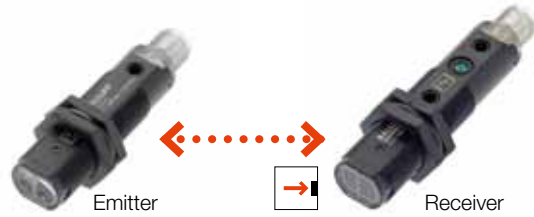
Photo-  
electric  
Global  
Sensors  
Block  
Designs  
Cylinder  
Designs  
Fork Sensors  
Angle Sensors



Retroreflective sensor 0.1...1.7 m <b>BOS00K7</b> BOS 18KF-PA-1TB-S4-C	Retroreflective sensor 0.1...4.5 m <b>BOS00K3</b> BOS 18KF-PA-1QD-S4-C	Retroreflective sensor 0.1...4.5 m <b>BOS00K2</b> BOS 18KF-PA-1QD-C-02	Retroreflective sensor 0.1...5 m <b>BOS00K5</b> BOS 18KF-PA-1RE-S4-C
	<b>BOS00J7</b> BOS 18KF-NA-1QD-S4-C	<b>BOS00J6</b> BOS 18KF-NA-1QD-C-02	<b>BOS00J9</b> BOS 18KF-NA-1RE-S4-C
10...30 V DC 100 mA Yes/Yes Potentiometer, 270° LED, red light 1 kHz IP 67 -25...+55 °C EN 60947-5-2 PBT PMMA M12 connector, 4-pin	10...30 V DC 100 mA Yes/Yes Potentiometer, 270° LED, red light 1 kHz IP 67 -25...+55 °C EN 60947-5-2 PBT PMMA M12 connector, 4-pin	10...30 V DC 100 mA Yes/Yes Potentiometer, 270° LED, red light 1 kHz IP 67 -25...+55 °C EN 60947-5-2 PBT PMMA 2 m PVC cable, 4x0.14 mm <sup>3</sup>	10...30 V DC 100 mA Yes/Yes fixed LED, infrared 1 kHz IP 67 -25...+55 °C EN 60947-5-2 PBT PMMA M12 connector, 4-pin

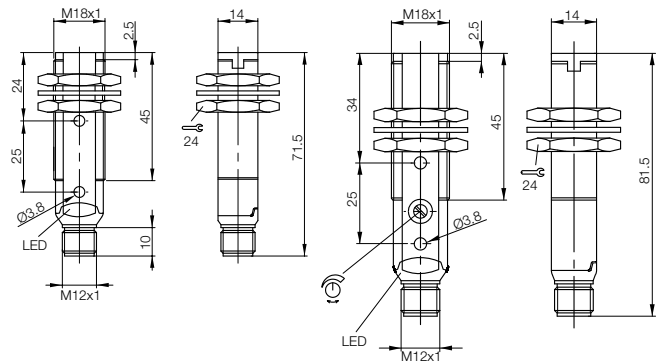


Preferred variants  
available immediately



Type	Through-beam sensor			Through-beam sensor
Detection range	0...20 m			0...20 m
PNP NC/NO	Emitter	<b>Ordering code</b>	<b>BOS00EP</b>	
		Part number	BLS 18KF-XX-1P-S4-L	
PNP NC/NO	Receiver	<b>Ordering code</b>		<b>BOS00CK</b>
		Part number		BLE 18KF-PA-1PP-S4-C
NPN NC/NO	Receiver	<b>Ordering code</b>		<b>BOS00CE</b>
		Part number		BLE 18KF-NA-1PP-S4-C
Supply voltage $U_s$	10...30 V DC			10...30 V DC
Output current	≤ 35 mA			100 mA
No-load supply current $I_0$ max.	≤ 35 mA			≤ 30 mA
Polarity reversal/short-circuit protected	Yes/Yes			Yes/Yes
Settings				Potentiometer, 270°
Help functions	Test input			
Emitter, light type	LED, infrared			
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

Other variants on request.



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036P</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC036N</b>

**Recommended accessories**

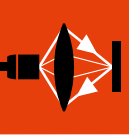
Description	Ordering code
Mounting bracket	<b>BAM00EY</b>
Mounting bracket	<b>BAM00RY</b>
Clamping holder	<b>BAM00RW</b>

You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

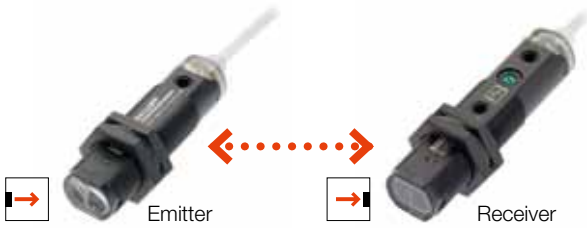
You can find additional mechanical accessories in  
our catalog **Accessories Line.**

# Photoelectric Global Sensors

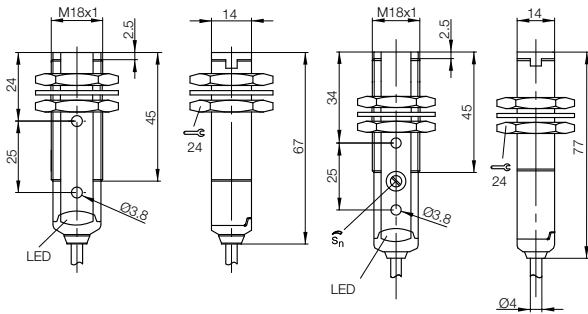
## Cylinder designs, BOS 18KF, Range 20 m



Photoelectric Global Sensors  
 Block Designs  
 Cylinder Designs  
 Fork Sensors  
 Angle Sensors



Through-beam sensor 0...20 m <b>BOS00EN</b> BLS 18KF-XX-1P-L-02	Through-beam sensor 0...20 m <b>BOS00CJ</b> BLE 18KF-PA-1PP-C-02 <b>BOS00CC</b> BLE 18KF-NA-1PP-C-02		
10...30 V DC	10...30 V DC		
≤ 35 mA	100 mA		
Yes/Yes	≤ 30 mA		
Test input	Yes/Yes		
LED, infrared	Potentiometer, 270°		
	250 Hz		
IP 67	IP 67		
-25...+55 °C	-25...+55 °C		
EN 60947-5-2	EN 60947-5-2		
PBT	PBT		
PMMA	PMMA		
2 m PVC cable, 4x0.14 mm <sup>2</sup>	2 m PVC cable, 4x0.14 mm <sup>2</sup>		



Photoelectric Global Sensors  
**Cylinder designs, BOS 18KF Laser,**  
**Sensing distance 350 mm, range 16 m**

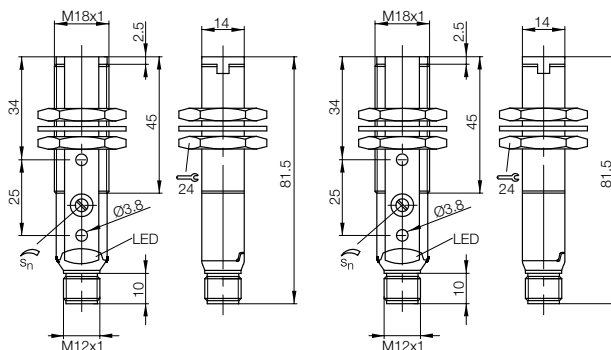
**M18**  
**Plastic Laser**  
**Global**

Preferred variants available immediately



Type			Diffuse sensor	Retroreflective sensor
Detection range			0...350 mm	0.1...16 m
PNP	NC/NO	Emitter	<b>Ordering code</b>	
			Part number	
PNP	NC/NO	Receiver	<b>Ordering code</b>	
			Part number	
PNP	NC/NO		<b>BOS00JP</b>	
			BOS 18KF-PA-1LOC-S4-C	
PNP	NC/NO	Polarizing filter	<b>Ordering code</b>	<b>BOS00JT</b>
			Part number	BOS 18KF-PA-1LQP-S4-C
NPN	NC/NO	Receiver	<b>Ordering code</b>	
			Part number	
NPN	NC/NO		<b>BOS00HU</b>	
			BOS 18KF-NA-1LOC-S4-C	
NPN	NC/NO	Polarizing filter	<b>Ordering code</b>	<b>BOS00HY</b>
			Part number	BOS 18KF-NA-1LQP-S4-C
Supply voltage $U_s$			10...30 V DC	10...30 V DC
Output current			100 mA	100 mA
Polarity reversal/short-circuit protected			Yes/Yes	Yes/Yes
Settings			Potentiometer, 270°	Potentiometer, 270°
Emitter, light type			Laser, red light	Laser, red light
Laser class			1	1
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	M12 connector, 4-pin

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



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036P</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC036N</b>

**Recommended accessories**

Description	Ordering code
Mounting bracket	<b>BAM00EY</b>
Mounting bracket	<b>BAM00RY</b>
Clamping holders	<b>BAM00RW</b>

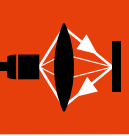
You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

You can find additional mechanical accessories in our catalog  
**Accessories Line.**



# Photoelectric Global Sensors

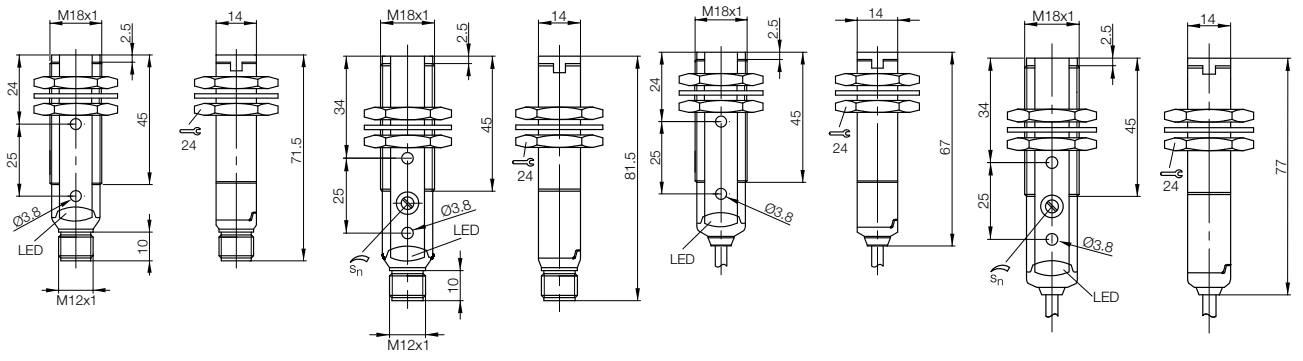
## Cylinder designs, BOS 18KF Laser, Range 60 m



Photoelectric Global Sensors  
 Block Designs  
 Cylinder Designs  
 Fork Sensors  
 Angle Sensors



Through-beam sensor 0...60 m <b>BOS00EM</b> BLS 18KF-XX-1LT-S4-L	Through-beam sensor 0...60 m <b>BOS00CH</b> BLE 18KF-PA-1LT-S4-C	Through-beam sensor 0...60 m <b>BOS00EL</b> BLS 18KF-XX-1LT-L-02	Through-beam sensor 0...60 m <b>BOS00CF</b> BLE 18KF-PA-1LT-C-02
	<b>BOS00CA</b> BLE 18KF-NA-1LT-S4-C		<b>BOS00C9</b> BLE 18KF-NA-1LT-C-02
10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
Yes/Yes	100 mA	100 mA	100 mA
Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
Laser, red light	Potentiometer, 270°	Potentiometer, 270°	Potentiometer, 270°
1		1	
1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz
IP 67	IP 67	IP 67	IP 67
-10...+50 °C	-10...+50 °C	-10...+50 °C	-10...+50 °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	M12 connector, 4-pin	2 m PVC cable, 4x0.14 mm <sup>2</sup>	2 m PVC cable, 4x0.14 mm <sup>2</sup>



Photoelectric Global Sensors  
**Cylinder designs, BOS 18KW,**  
**Sensing distance 80 mm, 100 mm**

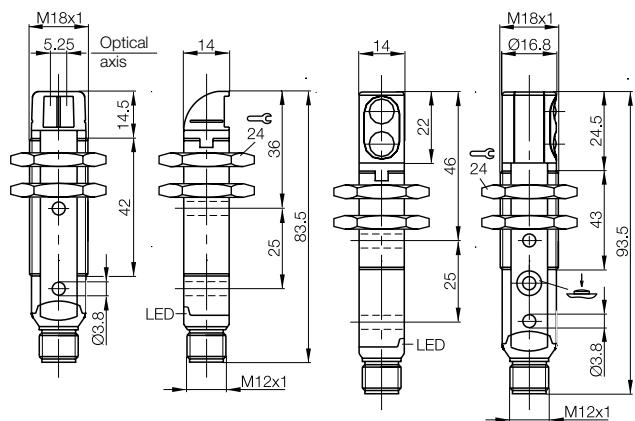
**M18 Plastic**  
**with angle head**  
**Global**

Preferred variants  
 available immediately



Type	Diffuse sensor		Diffuse sensor with background suppression	
Detection range	0...80 mm		50...100 mm	
PNP NC/NO	<b>Ordering code</b>	<b>BOS00M1</b>		
	Part number	BOS 18KW-PA-1XA-S4-C		
PNP NC/NO Teach-in	<b>Ordering code</b>		<b>BOS00LH</b>	
	Part number		BOS 18KW-PA-1HA-S4-C	
PNP NC/NO Polarizing filter, transparency detection	<b>Ordering code</b>			
	Part number			
PNP NC/NO Polarizing filter	<b>Ordering code</b>			
	Part number			
NPN NC/NO	<b>Ordering code</b>	<b>BOS00LE</b>		
	Part number	BOS 18KW-NA-1XA-S4-C		
NPN NC/NO Polarizing filter	<b>Ordering code</b>			
	Part number			
Supply voltage $U_s$	10...30 V DC		10...30 V DC	
Output current	100 mA		100 mA	
Polarity reversal/short-circuit protected	Yes/Yes		Yes/Yes	
Settings	fixed		Teach-in	
Emitter, light type	LED, infrared		LED, red light	
Switching frequency $f$	1 kHz		500 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	PBT	PBT	
	Optical surface	PMMA	PMMA	
Connection	M12 connector, 4-pin		M12 connector, 4-pin	

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



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036P</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC036N</b>

**Recommended accessories**

Description	Ordering code
Mounting bracket	<b>BAM00RY</b>
Clamping holders	<b>BAM00RW</b>
Reflector Ø 84 mm	<b>BAM00UK</b>

You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

You can find additional mechanical accessories in our catalog  
**Accessories Line.**

# Photoelectric Global Sensors

## Cylinder designs, BOS 18KW,

### Sensing distance 400 mm, range 1.7 m, 3 m

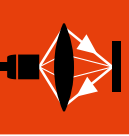
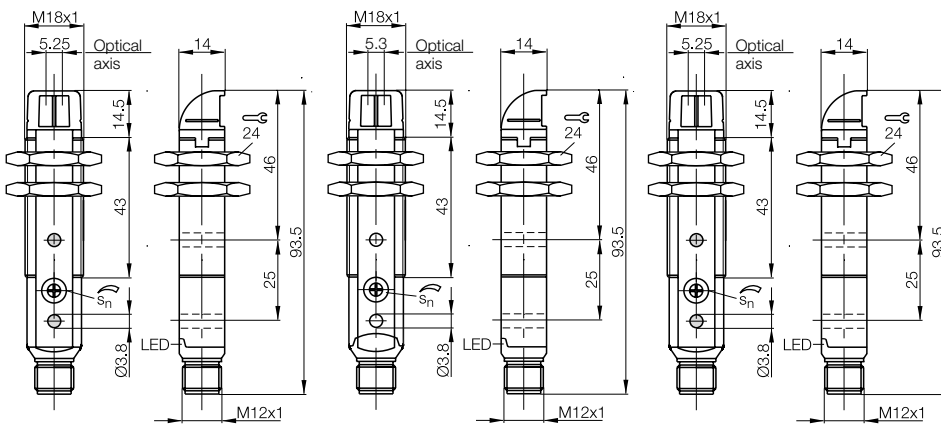


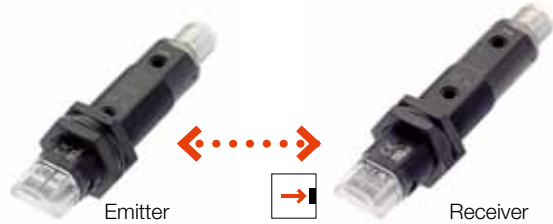
Photo-  
electric  
Global  
Sensors  
Block  
Designs  
Cylinder  
Designs  
Fork Sensors  
Angle Sensors



	<b>Diffuse sensor</b> <b>0...400 mm</b> <b>BOS00LT</b> BOS 18KW-PA-1PD-S4-C	<b>Retroreflective sensor</b> <b>0.1...1.7 m</b> <b>BOS00LZ</b> BOS 18KW-PA-1TB-S4-C	<b>Retroreflective sensor</b> <b>0.1...3 m</b> <b>BOS00LW</b> BOS 18KW-PA-1QC-S4-C	
	<b>BOS00L6</b> BOS 18KW-NA-1PD-S4-C		<b>BOS00L8</b> BOS 18KW-NA-1QC-S4-C	
	10...30 V DC 100 mA Yes/Yes Potentiometer, 270° LED, infrared 1 kHz IP 67 -25...+55 °C EN 60947-5-2 PBT PMMA M12 connector, 4-pin	10...30 V DC 100 mA Yes/Yes Potentiometer, 270° LED, red light 1 kHz IP 67 -25...+55 °C EN 60947-5-2 PBT PMMA M12 connector, 4-pin	10...30 V DC 100 mA Yes/Yes Potentiometer, 270° LED, red light 1 kHz IP 67 -25...+55 °C EN 60947-5-2 PBT PMMA M12 connector, 4-pin	

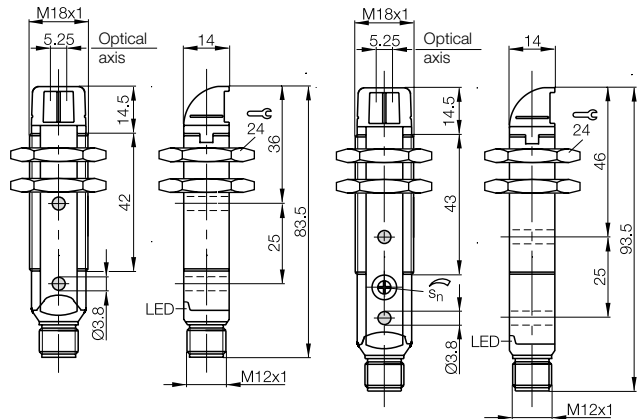


Preferred variants  
 available immediately



Type	Through-beam sensor		Through-beam sensor
Detection range	0...15 m		0...15 m
PNP NC/NO	Emitter	<b>Ordering code</b> <b>BOS00EW</b>	
		Part number BLS 18KW-XX-1P-S4-L	
PNP NC/NO	Receiver	<b>Ordering code</b> <b>BOS00CW</b>	
		Part number BLE 18KW-PA-1PP-S4-C	
NPN NC/NO	Receiver	<b>Ordering code</b> <b>BOS00CP</b>	
		Part number BLE 18KW-NA-1PP-S4-C	
Supply voltage $U_s$	10...30 V DC		10...30 V DC
Output current			100 mA
Polarity reversal/short-circuit protected	Yes/Yes		Yes/Yes
Settings			Potentiometer, 270°
Emitter, light type	LED, infrared		
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
Material	Housing	PBT	PBT
	Optical surface	PMMA	PMMA
Connection	M12 connector, 4-pin		M12 connector, 4-pin

Other variants on request.



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036P</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC036N</b>

**Recommended accessories**

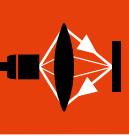
Description	Ordering code
Mounting bracket	<b>BAM00RY</b>
Clamping holder	<b>BAM00RW</b>

You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

You can find additional mechanical accessories in  
 our catalog **Accessories Line.**

# Photoelectric Global Sensors

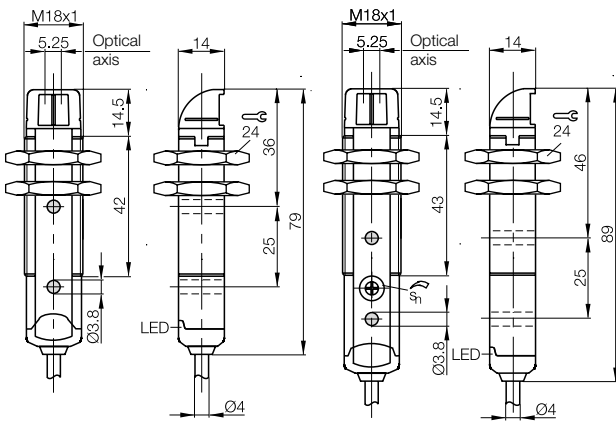
## Cylinder designs, BOS 18KW, Range 15 m



Photoelectric Global Sensors  
 Block Designs  
 Cylinder Designs  
 Fork Sensors  
 Angle Sensors



	<b>Through-beam sensor</b> <b>0...15 m</b> <b>BOS00EU</b> BLS 18KW-XX-1P-L-02	<b>Through-beam sensor</b> <b>0...15 m</b> <b>BOS00CU</b> BLE 18KW-PA-1PP-C-02		
		<b>BOS00CN</b> BLE 18KW-NA-1PP-C-02		
	10...30 V DC	10...30 V DC		
	Yes/Yes	100 mA Yes/Yes		
	LED, infrared	Potentiometer, 270°		
	IP 67	250 Hz		
	-25...+55 °C	IP 67		
	PBT	-25...+55 °C		
	PMMA	PBT		
	2 m PVC cable, 4x0.14 mm <sup>2</sup>	PMMA		
		2 m PVC cable, 4x0.14 mm <sup>2</sup>		

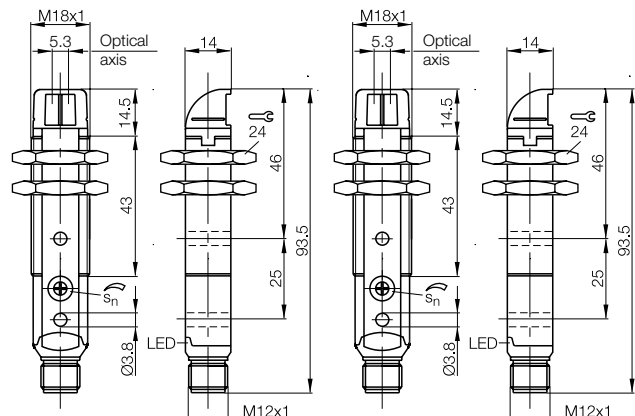


Preferred variants  
 available immediately



Type	Diffuse sensor		Retroreflective sensor	
Detection range	0...250 mm		0.1...9 m	
PNP NC/NO	Emitter	<b>Ordering code</b>		
		Part number		
PNP NC/NO	Receiver	<b>Ordering code</b>		
		Part number		
PNP NC/NO		<b>Ordering code</b>	<b>BOS00LK</b>	
		Part number	BOS 18KW-PA-1LOB-S4-C	
PNP NC/NO	Polarizing filter	<b>Ordering code</b>		<b>BOS00LM</b>
		Part number		BOS 18KW-PA-1LQH-S4-C
NPN NC/NO	Receiver	<b>Ordering code</b>		
		Part number		
NPN NC/NO		<b>Ordering code</b>	<b>BOS00LO</b>	
		Part number	BOS 18KW-NA-1LOB-S4-C	
NPN NC/NO	Polarizing filter	<b>Ordering code</b>		<b>BOS00L2</b>
		Part number		BOS 18KW-NA-1LQH-S4-C
Supply voltage $U_s$	10...30 V DC		10...30 V DC	
Output current	100 mA		100 mA	
Polarity reversal/short-circuit protected	Yes/Yes		Yes/Yes	
Settings	Potentiometer, 270°		Potentiometer, 270°	
Emitter, light type	Laser, red light		Laser, red light	
Laser class	1		1	
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		M12 connector, 4-pin	

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



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036P</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC036N</b>

**Recommended accessories**

Description	Ordering code
Mounting bracket	<b>BAM00RY</b>
Clamping holder	<b>BAM00RW</b>
Reflector Ø 84 mm	<b>BAM00UK</b>

You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

You can find additional mechanical accessories in our catalog  
**Accessories Line.**



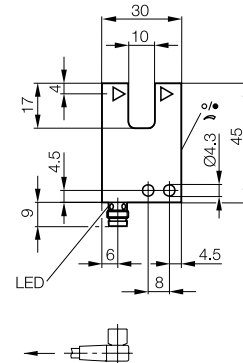
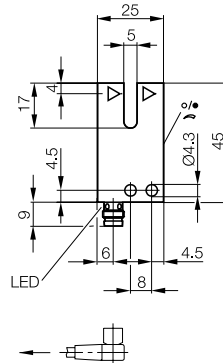
Preferred variants  
available immediately



Series	<b>BGL</b>	<b>BGL</b>	
Fork opening	<b>5 mm</b>	<b>10 mm</b>	
Fork depth	<b>17 mm</b>	<b>17 mm</b>	
PNP NO/NC	<b>Ordering code</b> <b>BGL001W</b>	<b>BGL0001</b>	
	Part number BGL 5A-001-S49	BGL 10A-001-S49	
NPN NO/NC	<b>Ordering code</b> <b>BGL001Y</b>	<b>BGL0002</b>	
	Part number BGL 5A-002-S49	BGL 10A-002-S49	
Supply voltage $U_s$	10...30 V DC	10...30 V DC	
Output current	200 mA	200 mA	
Polarity reversal/short-circuit protected	Yes/Yes	Yes/Yes	
Settings	Potentiometer, 270°	Potentiometer, 270°	
Emitter, light type	LED, red light	LED, red light	
Resolution (smallest discernible part)	0.3 mm	0.3 mm	
Repeat accuracy	20 $\mu$ m	20 $\mu$ m	
Switching hysteresis	$\leq$ 0.1 mm	$\leq$ 0.1 mm	
Switching frequency	3 kHz	3 kHz	
Degree of protection as per IEC 60529	IP 67	IP 67	
Ambient temperature $T_a$	-10...+60 °C	-10...+60 °C	
Ambient light limit according to	EN 60947-5-2	EN 60947-5-2	
Material	Housing GD-Zn	GD-Zn	
	Optical surface Glass	Glass	
Connection	M8 connector, 3-pin	M8 connector, 3-pin	



Wiring diagrams see page 106.



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M8, 3-pin/straight	2 m/PVC	<b>BCC02NU</b>
M8, 3-pin/angled	2 m/PVC	<b>BCC02P5</b>
M8, 3-pin/straight	5 m/PVC	<b>BCC02NW</b>
M8, 3-pin/angled	5 m/PVC	<b>BCC02P6</b>

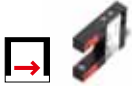
You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

# Photoelectric Global Sensors

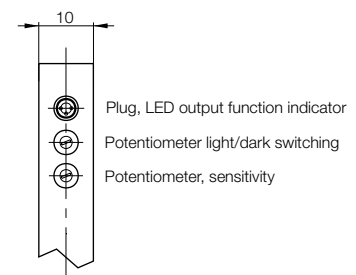
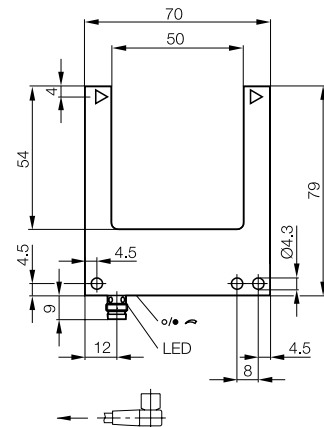
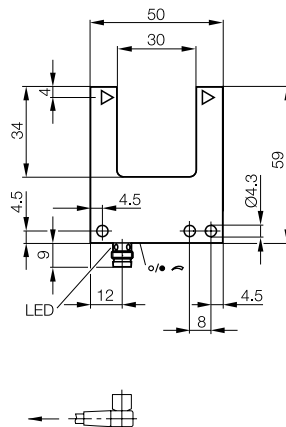
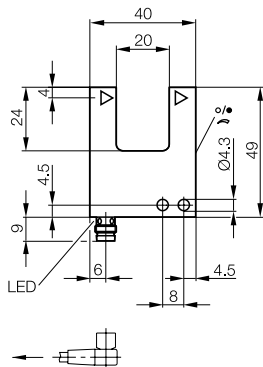
## Fork sensors BGL



Photo-  
electric  
Global  
Sensors  
Block  
Designs  
Cylinder  
Designs  
**Fork Sensors**  
Angle Sensors



BGL 20 mm 24 mm BGL000R BGL000T	BGL 30 mm 34 mm BGL0016 BGL0018	BGL 50 mm 54 mm BGL001J BGL001L
BGL 20A-001-S49 BGL 20A-002-S49	BGL 30A-001-S49 BGL 30A-002-S49	BGL 50A-001-S49 BGL 50A-002-S49
10...30 V DC 200 mA Yes/Yes Potentiometer, 270° LED, red light 0.3 mm 20 µm ≤ 0.1 mm 1.5 kHz IP 67 -10...+60 °C EN 60947-5-2 GD-Zn Glass M8 connector, 3-pin	10...30 V DC 200 mA Yes/Yes Potentiometer, 270° LED, red light 0.3 mm 20 µm ≤ 0.1 mm 1.5 kHz IP 67 -10...+60 °C EN 60947-5-2 GD-Zn Glass M8 connector, 3-pin	10...30 V DC 200 mA Yes/Yes Potentiometer, 270° LED, red light 0.4 mm 40 µm ≤ 0.15 mm 1.5 kHz IP 67 -10...+60 °C EN 60947-5-2 GD-Zn Glass M8 connector, 3-pin



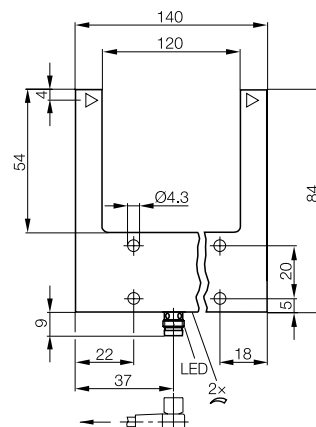
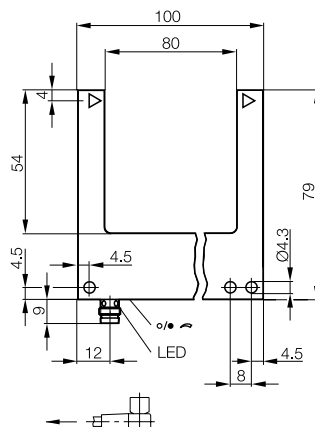
Preferred variants  
available immediately



Series	<b>BGL</b>	<b>BGL</b>	
Fork opening	<b>80 mm</b>	<b>120 mm</b>	
Fork depth	<b>54 mm</b>	<b>54 mm</b>	
PNP NO/NC	<b>Ordering code</b>	<b>BGL0023</b>	<b>BGL0007</b>
	Part number	BGL 80A-001-S49	BGL 120A-001-S49
NPN NO/NC	<b>Ordering code</b>	<b>BGL0024</b>	<b>BGL0008</b>
	Part number	BGL 80A-002-S49	BGL 120A-002-S49
Supply voltage $U_s$	10...30 V DC	10...30 V DC	
Output current	200 mA	200 mA	
Polarity reversal/short-circuit protected	Yes/Yes	Yes/Yes	
Settings	Potentiometer, 270°	Potentiometer, 270°	
Emitter, light type	LED, red light	LED, red light	
Resolution (smallest discernible part)	0.4 mm	0.5 mm	
Repeat accuracy	60 $\mu$ m	80 $\mu$ m	
Switching hysteresis	$\leq$ 0.2 mm	$\leq$ 0.2 mm	
Switching frequency	1.5 kHz	1.5 kHz	
Degree of protection as per IEC 60529	IP 67	IP 67	
Ambient temperature $T_a$	-10...+60 °C	-10...+60 °C	
Ambient light limit according to	EN 60947-5-2	EN 60947-5-2	
Material	Housing: GD-Zn Optical surface: Glass	GD-Zn Glass	
Connection	M8 connector, 3-pin	M8 connector, 3-pin	



Wiring diagrams see page 106.



#### Suitable connectors

Size/design	Length/cable material	Ordering code
M8, 3-pin/straight	2 m/PVC	<b>BCC02NU</b>
M8, 3-pin/angled	2 m/PVC	<b>BCC02P5</b>
M8, 3-pin/straight	5 m/PVC	<b>BCC02NW</b>
M8, 3-pin/angled	5 m/PVC	<b>BCC02P6</b>

You can find additional electrical accessories in our catalog

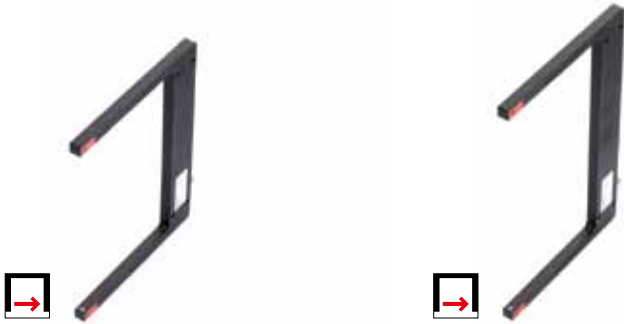
**Industrial Networking and Connectivity.**

# Photoelectric Global Sensors

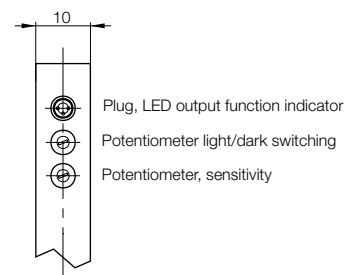
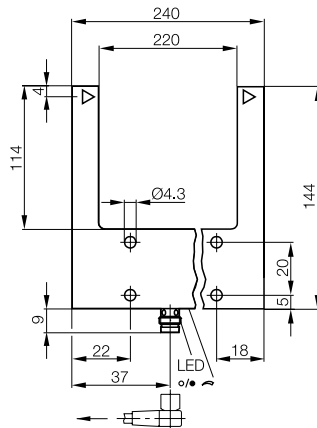
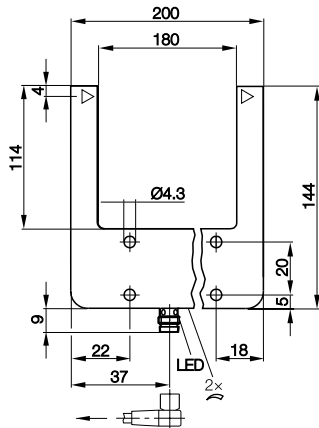
## Fork sensors BGL



Photo-  
electric  
Global  
Sensors  
Block  
Designs  
Cylinder  
Designs  
**Fork Sensors**  
Angle Sensors



BGL 180 mm 114 mm BGL000J	BGL 220 mm 114 mm BGL0010	
BGL 180A-001-S49	BGL 220A-001-S49	
<b>BGL000K</b>	<b>BGL0011</b>	
BGL 180A-002-S49	BGL 220A-002-S49	
10...30 V DC	10...30 V DC	
200 mA	200 mA	
Yes/Yes	Yes/Yes	
Potentiometer, 270°	Potentiometer, 270°	
LED, red light	LED, red light	
0.6 mm	0.6 mm	
80 µm	80 µm	
≤ 0.2 mm	≤ 0.2 mm	
1.5 kHz	1.5 kHz	
IP 67	IP 67	
-10...+60 °C	-10...+60 °C	
EN 60947-5-2	EN 60947-5-2	
GD-Zn	GD-Zn	
Glass	Glass	
M8 connector, 3-pin	M8 connector, 3-pin	



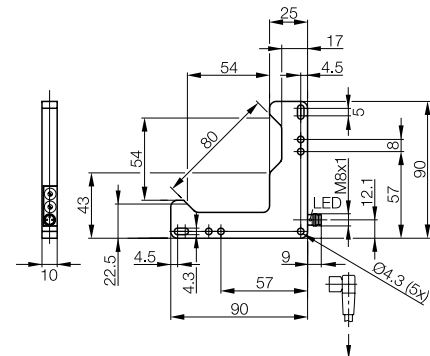
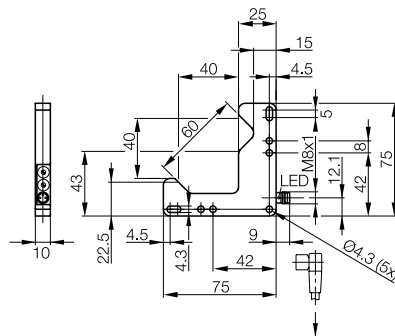
Preferred variants  
available immediately



Series	<b>BWL</b>	<b>BWL</b>
Optical axis	<b>40/40 mm</b>	<b>54/54</b>
PNP NO/NC	<b>Ordering code</b>	<b>BWL000F</b>
	Part number	BWL 4040D-R011-S49
NPN NO/NC	<b>Ordering code</b>	<b>BWL000H</b>
	Part number	BWL 4040D-R012-S49
Supply voltage $U_S$	10...30 V DC	10...30 V DC
Output current	200 mA	200 mA
Switching type	Light/dark switching (selectable)	Light/dark switching (selectable)
Polarity reversal/short-circuit protected	Yes/Yes	Yes/Yes
Settings	Potentiometer, 270°	Potentiometer, 270°
Emitter, light type	LED, red light	LED, red light
Resolution (smallest discernible part)	0.4 mm	0.4 mm
Repeat accuracy	40 $\mu$ m	60 $\mu$ m
Switching hysteresis	$\leq$ 0.15 mm	$\leq$ 0.2 mm
Switching frequency	1.5 kHz	1.5 kHz
Degree of protection as per IEC 60529	IP 67	IP 67
Ambient temperature $T_a$	-10...+60 °C	-10...+60 °C
Ambient light limit according to	EN 60947-5-2	EN 60947-5-2
Material	Housing	GD-Zn
	Optical surface	Glass
Connection	M8 connector, 3-pin	M8 connector, 3-pin

Connector orientation: different  
fork openings available on request.

Wiring diagrams see page 106.



#### Suitable connectors

Size/design	Length/cable material	Ordering code
M8, 3-pin/straight	2 m/PVC	<b>BCC02NU</b>
M8, 3-pin/angled	2 m/PVC	<b>BCC02P5</b>
M8, 3-pin/straight	5 m/PVC	<b>BCC02NW</b>
M8, 3-pin/angled	5 m/PVC	<b>BCC02P6</b>

You can find additional electrical accessories in our catalog

**Industrial Networking and Connectivity.**

# Photoelectric Global Sensors

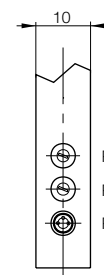
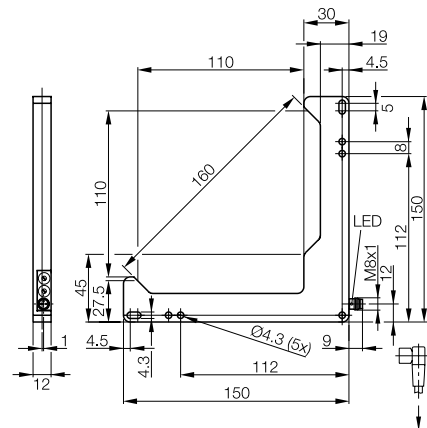
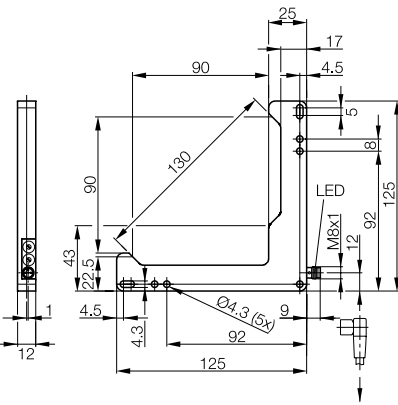
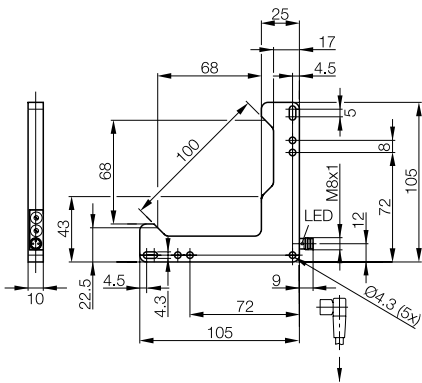
## Angle sensors BWL



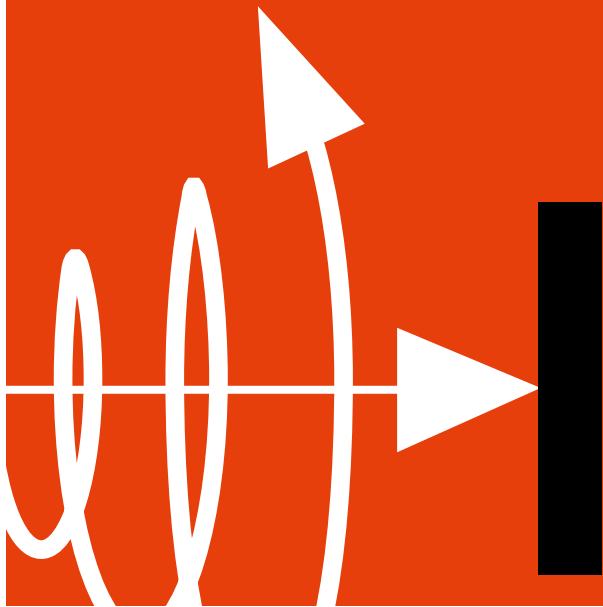
Photoelectric Global Sensors  
Block Designs  
Cylinder Designs  
Fork Sensors  
Angle Sensors



BWL 68/68 mm	BWL 90/90 mm	BWL 110/110 mm
<b>BWL0012</b>	<b>BWL0019</b>	<b>BWL0005</b>
BWL 6868D-R011-S49	BWL 9090D-R011-S49	BWL 110110D-R011-S49
<b>BWL0013</b>	<b>BWL001A</b>	<b>BWL0006</b>
BWL 6868D-R012-S49	BWL 9090D-R012-S49	BWL 110110D-R012-S49
10...30 V DC	10...30 V DC	10...30 V DC
200 mA	200 mA	200 mA
Light/dark switching (selectable)	Light/dark switching (selectable)	Light/dark switching (selectable)
Yes/Yes	Yes/Yes	Yes/Yes
Potentiometer, 270°	Potentiometer, 270°	Potentiometer, 270°
LED, red light	LED, red light	LED, red light
0.5 mm	0.6 mm	0.6 mm
80 µm	80 µm	80 µm
≤ 0.2 mm	≤ 0.2 mm	≤ 0.2 mm
1.5 kHz	1.5 kHz	1.5 kHz
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
GD-Zn	GD-Zn	GD-Zn
Glass	Glass	Glass
M8 connector, 3-pin	M8 connector, 3-pin	M8 connector, 3-pin



⊕ Potentiometer, sensitivity  
⊕ Potentiometer light/dark switching  
⊕ Plug, LED output function indicator



# Inductive Global Sensors

## Inductive Global sensors – wide variety of models provide flexibility

Inductive Global sensors provide sophisticated technology at the best price. The wide range of over 400 models includes cylindrical sensors in M8, M12, M18 and M30, and DC 3-wire and DC 2-wire versions.

### Features

- Wide variety of versions: DC 2-wire and DC 3-wire as normally open or normally closed version
- Shielded and unshielded versions
- Plug or cable connection
- Highly reliable due to protection against short-circuit, overvoltage, polarity reversal and overcurrent
- Robust designs with metal plug for rough environments
- As standard version and with increased switching distance

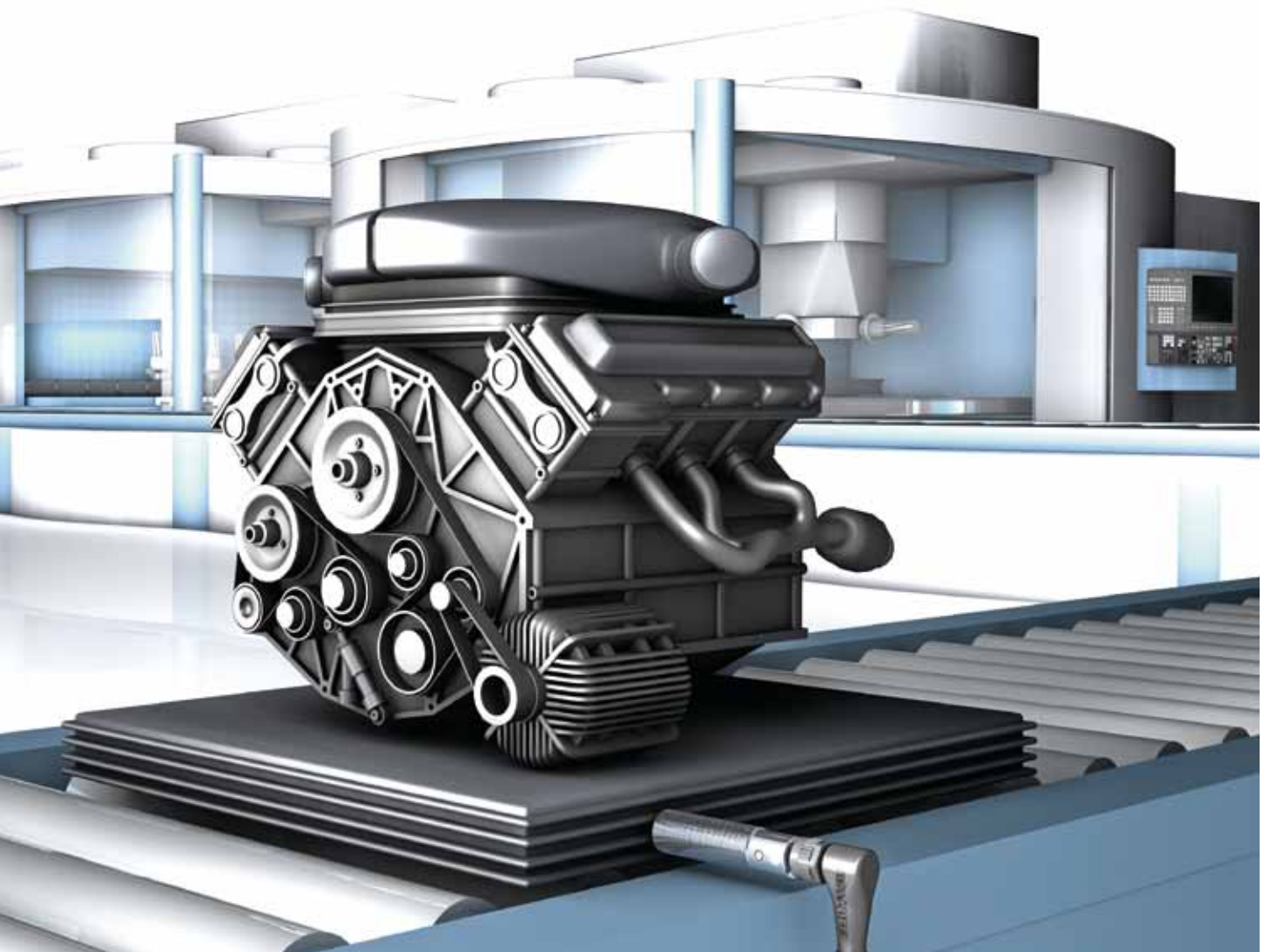
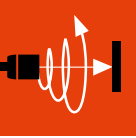


**Cylinder designs**

M8x1	44
M12x1	48
M18x1	51
M30x1	54

**Cylinder designs, DC 2-wire**

M8x1	58
M12x1	58
M18x1	59
M30x1.5	59



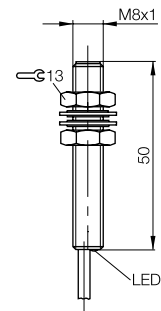
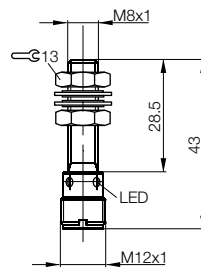
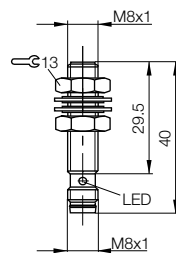
Preferred variants  
 available immediately



Series	M8x1	M8x1	M8x1
Installation type (pay attention to the note in the Basic Information chapter)	flush	flush	flush
Rated switching distance $s_n$	<b>1.5 mm</b>	<b>1.5 mm</b>	<b>1.5 mm</b>
Assured switching distance $s_a$	0...1.2 mm	0...1.2 mm	0...1.2 mm
PNP, NO	<b>Ordering code</b> BES00CJ	<b>BES00CH</b>	<b>BES0037</b>
	Part number BES M08EE-PSC15B-S49G-003	BES M08EE-PSC15B-S04G-003	BES M08MI-PSC15B-BV02
PNP, normally closed	<b>Ordering code</b> BES00CC	<b>BES00CA</b>	<b>BES0030</b>
	Part number BES M08EE-POC15B-S49G-003	BES M08EE-POC15B-S04G-003	BES M08MI-POC15B-BV02
NPN, NO	<b>Ordering code</b> BES00C7	<b>BES00C6</b>	<b>BES002F</b>
	Part number BES M08EE-NSC15B-S49G-003	BES M08EE-NSC15B-S04G-003	BES M08MI-NSC15B-BV02
NPN, NC	<b>Ordering code</b> BES00C3	<b>BES00C2</b>	<b>BES03PJ</b>
	Part number BES M08EE-NOC15B-S49G-003	BES M08EE-NOC15B-S04G-003	BES M08MI-NOC15B-BV02
Supply voltage $U_s$	10...30 V DC	10...30 V DC	12...30 V DC
Voltage drop $U_d$ at $I_e$ max.	2.5 V	2.5 V	2 V
Rated insulation voltage $U_i$ (protection class)	250 V AC (II)	250 V AC (II)	75 V DC
Rated operating current $I_e$	200 mA	200 mA	200 mA
Polarity reversal protected/transposition protected/short-circuit protected	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
Ambient temperature $T_a$	-25...70 °C	-25...70 °C	-25...70 °C
Switching frequency $f$ max.	1 kHz	1 kHz	1 kHz
Output function indicator	Yellow LED	Yellow LED	Yellow LED
Degree of protection as per IEC 60529	IP 67	IP 67	IP 67
Approvals	CE, cULus	CE, cULus	CE, cULus
Material	Housing: Stainless steel	Stainless steel	Brass-coated
	Sensing surface: PBT	PBT	PA 12
Connection	M8 connector, 3-pin	M12 connector, 4-pin	2 m PVC cable, 3x0.14 mm <sup>2</sup>

Wiring diagrams see page 106.

Other variants on request.



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M8, 3-pin/straight	2 m/PVC	<b>BCC02NU</b>
M8, 3-pin/angled	2 m/PVC	<b>BCC02P5</b>
M8, 3-pin/straight	5 m/PVC	<b>BCC02NW</b>
M8, 3-pin/angled	5 m/PVC	<b>BCC02P6</b>
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036N</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/angled	5 m/PVC	<b>BCC036P</b>

**Recommended accessories**

Description	Ordering code
Mounting bracket	<b>BAM009U</b>
Mounting cuff	<b>BAM00A2</b>
Clamp with positive stop	<b>BAM00AH</b>
Tube switch	<b>BAM019W</b>

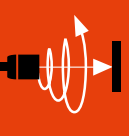
You can find additional mechanical accessories in our catalog **Accessories Line**.

You can find additional electrical accessories in our catalog **Industrial Networking and Connectivity**.

# Inductive Global Sensors

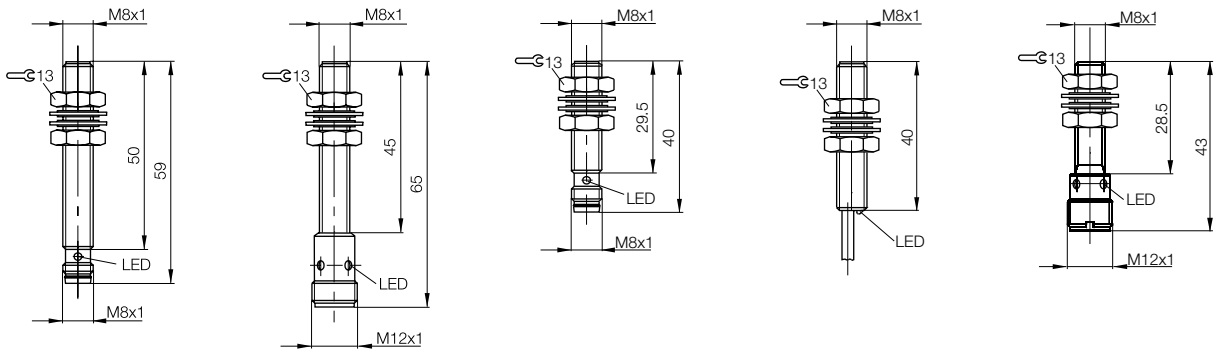
## Cylinder designs, DC 3-wire

### M8x1, rated switching distance 1.5 mm, 2 mm



Inductive  
Global Sensors  
**Cylinder  
Designs,  
DC 3-wire**  
Cylinder  
Designs,  
DC 2-wire

M8x1	M8x1	M8x1	M8x1	M8x1
flush	flush	flush	flush	flush
<b>1.5 mm</b>	<b>1.5 mm</b>	<b>2 mm</b>	<b>2 mm</b>	<b>2 mm</b>
0...1.2 mm	0...1.2 mm	0...1.6 mm	0...1.6 mm	0...1.6 mm
<b>BES003C</b>	<b>BES0027</b>	<b>BES00CK</b>	<b>BES00CW</b>	<b>BES00FC</b>
BES M08MI-PSC15B-S49G	BES M08MH1-PSC15B-S04G	BES M08EE-PSC20B-S49G-003	BES M08EF-PSC20B-BP02-003	BES M08EE-PSC20B-S04G-003
<b>BES03P6</b>	<b>BES0026</b>	<b>BES00CF</b>	<b>BES00CT</b>	<b>BES00CE</b>
BES M08MI-POC15B-S49G	BES M08MH1-POC15B-S04G	BES M08EE-POC20B-S49G-003	BES M08EF-POC20B-BP02-003	BES M08EE-POC20B-S04G-003
<b>BES002K</b>	<b>BES0024</b>	<b>BES00C9</b>	<b>BES00CP</b>	<b>BES00C8</b>
BES M08MI-NSC15B-S49G	BES M08MH1-NSC15B-S04G	BES M08EE-NSC20B-S49G-003	BES M08EF-NSC20B-BP02-003	BES M08EE-NSC20B-S04G-003
<b>BES03PK</b>	<b>BES0023</b>	<b>BES00C5</b>	<b>BES00CM</b>	<b>BES00C4</b>
BES M08MI-NOC15B-S49G	BES M08MH1-NOC15B-S04G	BES M08EE-NOC20B-S49G-003	BES M08EF-NOC20B-BP02-003	BES M08EE-NOC20B-S04G-003
12...30 V DC	12...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
2 V	2 V	2.5 V	2.5 V	2.5 V
75 V DC	75 V DC	250 V AC (□)	250 V AC (□)	250 V AC (□)
200 mA	200 mA	200 mA	200 mA	200 mA
Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
1 kHz	1 kHz	700 Hz	700 Hz	700 Hz
Yellow LED	Yellow LED	Yellow LED	Yellow LED	Yellow LED
IP 67	IP 67	IP 67	IP 67	IP 67
CE, cULus	CE, cULus	CE, cULus	CE, cULus	CE, cULus
Brass-coated	Brass-coated	Stainless steel	Stainless steel	Stainless steel
PA 12	PA 12	PBT	PBT	PBT
M8 connector, 3-pin	M12 connector, 4-pin	M8 connector, 3-pin	2 m PUR cable, 3x0.14 mm <sup>2</sup>	M12 connector, 4-pin



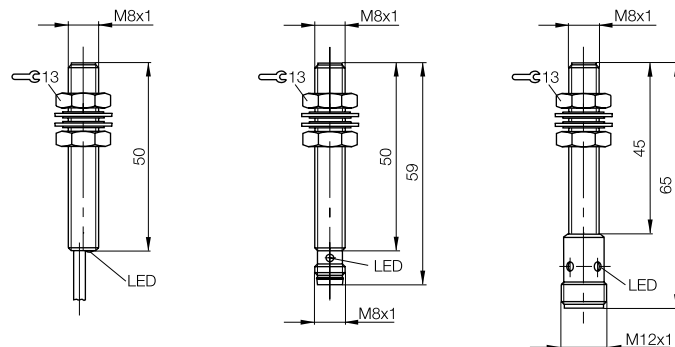
Preferred variants  
 available immediately



Series		M8x1	M8x1	M8x1
Installation type (pay attention to the note in the Basic Information chapter)		flush	flush	flush
Rated switching distance $s_n$		<b>2 mm</b>	<b>2 mm</b>	<b>2 mm</b>
Assured switching distance $s_a$		0...1.6 mm	0...1.6 mm	0...1.6 mm
PNP, NO	<b>Ordering code</b>	<b>BES003K</b>	<b>BES003P</b>	<b>BES0028</b>
	Part number	BES M08MI-PSC20B-BV02	BES M08MI-PSC20B-S49G	BES M08MH1-PSC20B-S04G
PNP, normally closed	<b>Ordering code</b>	<b>BES03TH</b>	<b>BES0033</b>	<b>BES03T5</b>
	Part number	BES M08MI-POC20B-BV02	BES M08MI-POC20B-S49G	BES M08MH1-POC20B-S04G
NPN, NO	<b>Ordering code</b>	<b>BES002P</b>	<b>BES002U</b>	<b>BES0025</b>
	Part number	BES M08MI-NSC20B-BV02	BES M08MI-NSC20B-S49G	BES M08MH1-NSC20B-S04G
NPN, NC	<b>Ordering code</b>	<b>BES03TF</b>	<b>BES03TJ</b>	<b>BES03T6</b>
	Part number	BES M08MI-NOC20B-BV02	BES M08MI-NOC20B-S49G	BES M08MH1-NOC20B-S04G
Supply voltage $U_s$		12...30 V DC	12...30 V DC	12...30 V DC
Voltage drop $U_d$ at $I_e$ max.		2.5 V	2.5 V	2.5 V
Rated insulation voltage $U_i$ (protection class)		75 V DC	75 V DC	75 V DC
Rated operating current $I_e$		200 mA	200 mA	200 mA
Polarity reversal protected/transposition protected/short-circuit protected		Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
Ambient temperature $T_a$		-25...70 °C	-25...70 °C	-25...70 °C
Switching frequency $f$ max.		700 Hz	700 Hz	700 Hz
Output function indicator		Yellow LED	Yellow LED	Yellow LED
Degree of protection as per IEC 60529		IP 67	IP 67	IP 67
Approvals		CE, cULus	CE, cULus	CE, cULus
Material	Housing	Brass-coated	Brass-coated	Brass-coated
	Sensing surface	PA 12	PA 12	PA 12
Connection		2 m PVC cable, 3x0.14 mm <sup>2</sup>	M8 connector, 3-pin	M12 connector, 4-pin

Wiring diagrams see page 106.

Other variants on request.



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M8, 3-pin/straight	2 m/PVC	<b>BCC02NU</b>
M8, 3-pin/angled	2 m/PVC	<b>BCC02P5</b>
M8, 3-pin/straight	5 m/PVC	<b>BCC02NW</b>
M8, 3-pin/angled	5 m/PVC	<b>BCC02P6</b>
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036N</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/angled	5 m/PVC	<b>BCC036P</b>

**Recommended accessories**

Description	Ordering code
Mounting bracket	<b>BAM009U</b>
Mounting cuff	<b>BAM00A2</b>

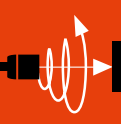
You can find additional mechanical accessories in our catalog **Accessories Line**.

You can find additional electrical accessories in our catalog **Industrial Networking and Connectivity**.

# Inductive Global Sensors

## Cylinder designs, DC 3-wire

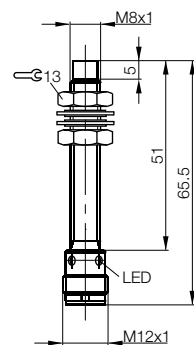
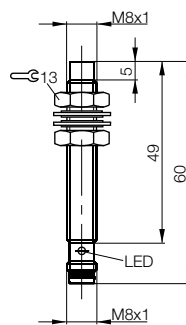
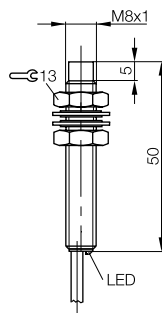
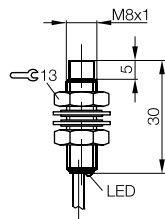
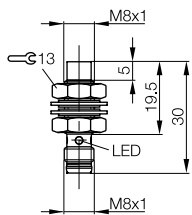
### M8×1, rated switching distance 4 mm



Inductive  
Global Sensors  
**Cylinder  
Designs,  
DC 3-wire**  
Cylinder  
Designs,  
DC 2-wire



M8×1	M8×1	M8×1	M8×1	M8×1
Non-flush	Non-flush	Non-flush	Non-flush	Non-flush
<b>4 mm</b>	<b>4 mm</b>	<b>4 mm</b>	<b>4 mm</b>	<b>4 mm</b>
0...3.2 mm	0...3.2 mm	0...3.2 mm	0...3.2 mm	0...3.2 mm
<b>BES000M</b>	<b>BES000Z</b>	<b>BES0017</b>	<b>BES001J</b>	<b>BES001H</b>
BES M08EB-PSC40F-S49G	BES M08ED-PSC40F-BV02	BES M08EG-PSC40F-BV02	BES M08EH-PSC40F-S49G	BES M08EH-PSC40F-S04G
<b>BES000L</b>	<b>BES000W</b>	<b>BES0015</b>	<b>BES001F</b>	<b>BES001E</b>
BES M08EB-POC40F-S49G	BES M08ED-POC40F-BV02	BES M08EG-POC40F-BV02	BES M08EH-POC40F-S49G	BES M08EH-POC40F-S04G
<b>BES000K</b>	<b>BES000T</b>	<b>BES0013</b>	<b>BES001C</b>	<b>BES001A</b>
BES M08EB-NSC40F-S49G	BES M08ED-NSC40F-BV02	BES M08EG-NSC40F-BV02	BES M08EH-NSC40F-S49G	BES M08EH-NSC40F-S04G
<b>BES000J</b>	<b>BES000P</b>	<b>BES0011</b>	<b>BES0019</b>	<b>BES0018</b>
BES M08EB-NOC40F-S49G	BES M08ED-NOC40F-BV02	BES M08EG-NOC40F-BV02	BES M08EH-NOC40F-S49G	BES M08EH-NOC40F-S04G
10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
2.5 V	2.5 V	2.5 V	2.5 V	2.5 V
250 V AC (□)	250 V AC (□)	250 V AC (□)	250 V AC (□)	250 V AC (□)
200 mA	200 mA	200 mA	200 mA	200 mA
Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz
Yellow LED	Yellow LED	Yellow LED	Yellow LED	Yellow LED
IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20	IP 67
CE, cULus	CE, cULus	CE, cULus	CE, cULus	CE, cULus
Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel
PBT	PA 12	PBT	PBT	PBT
M8 connector, 3-pin	2 m PVC cable, 3x0.14 mm <sup>2</sup>	2 m PVC cable, 3x0.14 mm <sup>2</sup>	M8 connector, 3-pin	M12 connector, 4-pin



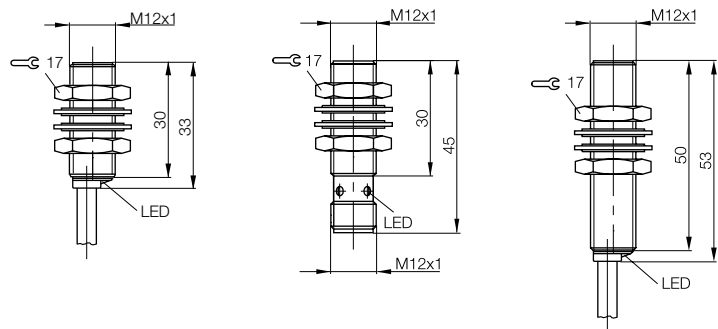
Preferred variants  
 available immediately



Series		<b>M12x1</b>	<b>M12x1</b>	<b>M12x1</b>
Installation type (pay attention to the note in the Basic Information chapter)		flush	flush	flush
Rated switching distance $s_n$		<b>2 mm</b>	<b>2 mm</b>	<b>2 mm</b>
Assured switching distance $s_a$		0...1.6 mm	0...1.6 mm	0...1.6 mm
PNP, NO	<b>Ordering code</b>	<b>BES00E4</b>	<b>BES00EE</b>	<b>BES005U</b>
	Part number	BES M12MD-PSC20B-BP02-003	BES M12ME-PSC20B-S04G-003	BES M12MI-PSC20B-BV02
PNP, normally closed	<b>Ordering code</b>	<b>BES00E2</b>	<b>BES00EA</b>	<b>BES00FP</b>
	Part number	BES M12MD-POC20B-BP02-003	BES M12ME-POC20B-S04G-003	BES M12MI-POC20B-BV02
NPN, NO	<b>Ordering code</b>	<b>BES00E0</b>	<b>BES00E8</b>	<b>BES00FL</b>
	Part number	BES M12MD-NSC20B-BP02-003	BES M12ME-NSC20B-S04G-003	BES M12MI-NSC20B-BV02
NPN, NC	<b>Ordering code</b>	<b>BES00CY</b>	<b>BES00E6</b>	<b>BES03PR</b>
	Part number	BES M12MD-NOC20B-BP02-003	BES M12ME-NOC20B-S04G-003	BES M12MI-NOC20B-BV02
Supply voltage $U_s$		10...30 V DC	10...30 V DC	12...30 V DC
Voltage drop $U_d$ at $I_e$ max.		2 V	2 V	2.5 V
Rated insulation voltage $U_i$ (protection class)		250 V AC (□)	250 V AC (□)	250 V AC (□)
Rated operating current $I_e$		200 mA	200 mA	200 mA
Polarity reversal protected/transposition protected/short-circuit protected		Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
Ambient temperature $T_a$		-25...70 °C	-25...70 °C	-25...70 °C
Switching frequency $f$ max.		1.2 kHz	1.2 kHz	1.2 kHz
Output function indicator		Yellow LED	Yellow LED	Yellow LED
Degree of protection as per IEC 60529		IP 67	IP 67	IP 68 per BWN Pr. 20
Approvals		CE, cULus	CE, cULus	CE, cULus
Material	Housing	Brass-coated	Brass-coated	Brass-coated
	Sensing surface	PBT	PBT	PA 12
Connection		2 m PUR cable, 3x0.34 mm <sup>2</sup>	M12 connector, 4-pin	2 m PVC cable, 3x0.34 mm <sup>2</sup>

Wiring diagrams see page 106.

Other variants on request.



#### Suitable connectors

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036N</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/angled	5 m/PVC	<b>BCC036P</b>

#### Recommended accessories

Description	Ordering code
Mounting bracket	<b>BAM00C0</b>
Mounting cuff	<b>BAM00C4</b>
Mounting cuff	<b>BAM0218</b>
Clamping Holders with positive stop	<b>BAM00E0</b>

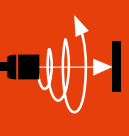
You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

You can find additional mechanical accessories in our catalog  
**Accessories Line.**

# Inductive Global Sensors

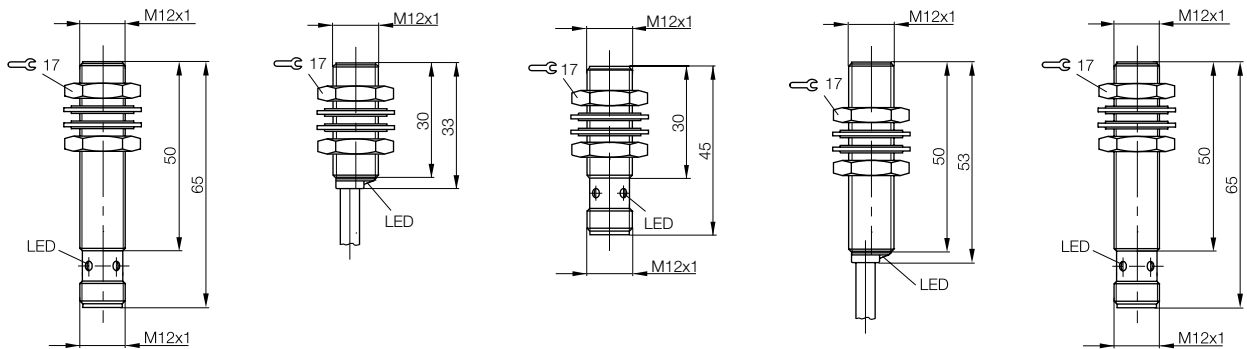
## Cylinder design, DC 3-wire

### M12x1, rated switching distance 2 mm, 4 mm



Inductive  
Global Sensors  
**Cylinder  
Designs,  
DC 3-wire**  
Cylinder  
Designs,  
DC 2-wire

M12x1	M12x1	M12x1	M12x1	M12x1
flush	flush	flush	flush	flush
<b>2 mm</b>	<b>4 mm</b>	<b>4 mm</b>	<b>4 mm</b>	<b>4 mm</b>
0...1.6 mm	0...3.2 mm	0...3.2 mm	0...3.2 mm	0...3.2 mm
<b>BES0060</b>	<b>BES00E5</b>	<b>BES00EF</b>	<b>BES0064</b>	<b>BES0068</b>
BES M12MI-PSC20B-S04G	BES M12MD-PSC40B-BP02-003	BES M12ME-PSC40B-S04G-003	BES M12MI-PSC40B-BV02	BES M12MI-PSC40B-S04G
<b>BES005F</b>	<b>BES00E3</b>	<b>BES00EC</b>	<b>BES005L</b>	<b>BES005N</b>
BES M12MI-POC20B-S04G	BES M12MD-POC40B-BP02-003	BES M12ME-POC40B-S04G-003	BES M12MI-POC40B-BV02	BES M12MI-POC40B-S04G
<b>BES0054</b>	<b>BES00E1</b>	<b>BES00E9</b>	<b>BES00FM</b>	<b>BES0059</b>
BES M12MI-NSC20B-S04G	BES M12MD-NSC40B-BP02-003	BES M12ME-NSC40B-S04G-003	BES M12MI-NSC40B-BV02	BES M12MI-NSC40B-S04G
<b>BES004Y</b>	<b>BES00CZ</b>	<b>BES00E7</b>	<b>BES03PT</b>	<b>BES004Z</b>
BES M12MI-NOC20B-S04G	BES M12MD-NOC40B-BP02-003	BES M12ME-NOC40B-S04G-003	BES M12MI-NOC40B-BV02	BES M12MI-NOC40B-S04G
12...30 V DC	10...30 V DC	10...30 V DC	12...30 V DC	12...30 V DC
2.5 V	2.5 V	2.5 V	2.5 V	2.5 V
250 V AC (□)	250 V AC (□)	250 V AC (□)	250 V AC (□)	250 V AC (□)
200 mA	200 mA	200 mA	200 mA	200 mA
Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
1.2 kHz	300 Hz	300 Hz	500 Hz	500 Hz
Yellow LED	Yellow LED	Yellow LED	Yellow LED	Yellow LED
IP 68 per BWN Pr. 20	IP 67	IP 67	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20
CE, cULus	CE, cULus	CE, cULus	CE, cULus	CE, cULus
Brass-coated	Brass-coated	Brass-coated	Brass-coated	Brass-coated
PA 12	LCP	LCP	PA 12	PA 12
M12 connector, 4-pin	2 m PUR cable, 3x0.34 mm <sup>2</sup>	M12 connector, 4-pin	2 m PVC cable, 3x0.34 mm <sup>2</sup>	M12 connector, 4-pin



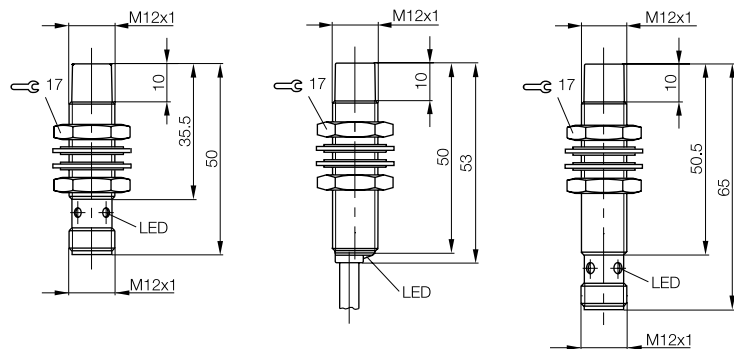
preferred variants  
 available immediately



Series		<b>M12x1</b>	<b>M12x1</b>	<b>M12x1</b>
Installation type (pay attention to the note in the Basic Information chapter)		Non-flush	Non-flush	Non-flush
Rated switching distance $s_n$		<b>8 mm</b>	<b>8 mm</b>	<b>8 mm</b>
Assured switching distance $s_a$		0...6.4 mm	0...6.4 mm	0...6.4 mm
PNP, NO	<b>Ordering code</b>	<b>BES01PY</b>	<b>BES004M</b>	<b>BES004N</b>
	Part number	BES M12MD-PSC80F-S04G	BES M12MG-PSC80F-BV02	BES M12MG-PSC80F-S04G
PNP, normally closed	<b>Ordering code</b>	<b>BES01PU</b>	<b>BES004J</b>	<b>BES004K</b>
	Part number	BES M12MD-POC80F-S04G	BES M12MG-POC80F-BV02	BES M12MG-POC80F-S04G
NPN, NO	<b>Ordering code</b>	<b>BES01PT</b>	<b>BES004E</b>	<b>BES004F</b>
	Part number	BES M12MD-NSC80F-S04G	BES M12MG-NSC80F-BV02	BES M12MG-NSC80F-S04G
NPN, NC	<b>Ordering code</b>	<b>BES01PR</b>	<b>BES0049</b>	<b>BES004A</b>
	Part number	BES M12MD-NOC80F-S04G	BES M12MG-NOC80F-BV02	BES M12MG-NOC80F-S04G
Supply voltage $U_s$		10...30 V DC	10...30 V DC	10...30 V DC
Voltage drop $U_d$ at $I_e$ max.		2.5 V	2.5 V	2.5 V
Rated insulation voltage $U_i$ (protection class)		250 V AC (II)	250 V AC (II)	250 V AC (II)
Rated operating current $I_e$		200 mA	200 mA	200 mA
Polarity reversal protected/transposition protected/short-circuit protected		Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
Ambient temperature $T_a$		-25...70 °C	-25...70 °C	-25...70 °C
Switching frequency $f$ max.		800 Hz	800 Hz	800 Hz
Output function indicator		Yellow LED	Yellow LED	Yellow LED
Degree of protection as per IEC 60529		IP 68 per BWN Pr. 20	IP 67	IP 67
Approvals		CE, cULus	CE, cULus	CE, cULus
Material	Housing	Brass-coated	Brass-coated	Brass-coated
	Sensing surface	PBT	PBT	PBT
Connection		M12 connector, 4-pin	2 m PVC cable, 3x0.34 mm <sup>2</sup>	M12 connector, 4-pin

Wiring diagrams see page 106.

Other variants on request.



#### Suitable connectors

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036N</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/angled	5 m/PVC	<b>BCC036P</b>

You can find additional cable lengths in our accessories catalog.

**Industrial Networking and Connectivity.**

#### Recommended accessories

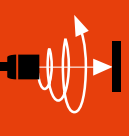
Description	Ordering code
Mounting cuff	<b>BAM00C4</b>
Mounting cuff	<b>BAM0218</b>
Mounting cuff	<b>BAM00F2</b>
Mounting cuff	<b>BAM0219</b>
Mounting bracket	<b>BAM00C0</b>
Mounting bracket	<b>BAM00EY</b>
Clamping holders with positive stop	<b>BAM00FT</b>

You can find additional mechanical accessories in our catalog **Accessories Line.**

# Inductive Global Sensors

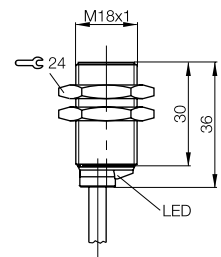
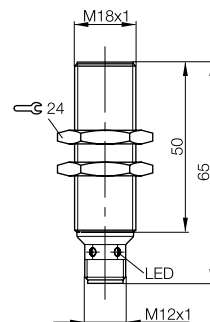
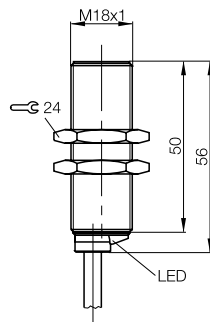
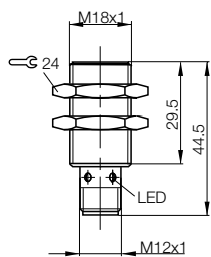
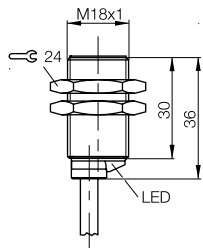
## Cylinder design, DC 3-wire

### M18x1, rated switching distance 5 mm, 8 mm



Inductive  
Global Sensors  
**Cylinder  
Designs,  
DC 3-wire**  
Cylinder  
Designs,  
DC 2-wire

M18x1	M18x1	M18x1	M18x1	M18x1
flush	flush	flush	flush	flush
<b>5 mm</b>	<b>5 mm</b>	<b>5 mm</b>	<b>5 mm</b>	<b>8 mm</b>
0...4 mm	0...4 mm	0...4 mm	0...4 mm	0...6.4 mm
<b>BES00EN</b>	<b>BES00EY</b>	<b>BES0082</b>	<b>BES0086</b>	<b>BES00EP</b>
BES M18MD-PSC50B-BP02-003	BES M18ME-PSC50B-S04G-003	BES M18MI-PSC50B-BV02	BES M18MI-PSC50B-S04G	BES M18MD-PSC80B-BP02-003
<b>BES00EL</b>	<b>BES00EU</b>	<b>BES007R</b>	<b>BES043J</b>	<b>BES00EM</b>
BES M18MD-POC50B-BP02-003	BES M18ME-POC50B-S04G-003	BES M18MI-POC50B-BV02	BES M18MI-POC50B-S04G	BES M18MD-POC80B-BP02-003
<b>BES00EJ</b>	<b>BES00ER</b>	<b>BES007A</b>	<b>BES044F</b>	<b>BES00EK</b>
BES M18MD-NSC50B-BP02-003	BES M18ME-NSC50B-S04G-003	BES M18MI-NSC50B-BV02	BES M18MI-NSC50B-S04G	BES M18MD-NSC80B-BP02-003
<b>BES03T8</b>	<b>BES03T7</b>	<b>BES03RR</b>		<b>BES00EH</b>
BES M18MD-NOC50B-BP02-003	BES M18ME-NOC50B-S04G-003	BES M18MI-NOC50B-BV02		BES M18MD-NOC80B-BP02-003
10...30 V DC	10...30 V DC	12...30 V DC	12...30 V DC	10...30 V DC
2 V	2 V	2.5 V	2.5 V	3.5 V
75 V DC	75 V DC	250 V AC (□)	250 V AC (□)	75 V DC
200 mA	200 mA	200 mA	200 mA	130 mA
Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
700 Hz	700 Hz	700 Hz	700 Hz	150 Hz
Yellow LED	Yellow LED	Yellow LED	Yellow LED	Yellow LED
IP 67	IP 67	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20	IP 67
CE, cULus	CE, cULus	CE, cULus	CE, cULus	CE, cULus
Brass-coated	Brass-coated	Brass-coated	Brass-coated	Brass-coated
PA 12	PA 12	PA 12	PA 12	PBT
2 m PUR cable, 3 x 0.34 mm <sup>2</sup>	M12 connector, 4-pin	2 m PVC cable, 3x0.34 mm <sup>2</sup>	M12 connector, 4-pin	2 m PUR cable, 3x0.34 mm <sup>2</sup>



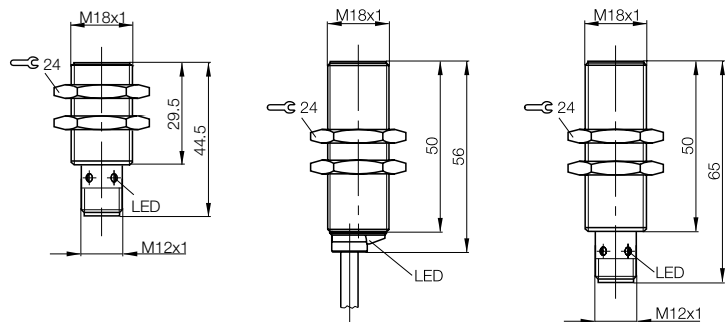
preferred variants  
 available immediately



Series	M18x1	M18x1	M18x1
Installation type (pay attention to the note in the Basic Information chapter)	flush	flush	flush
Rated switching distance $s_n$	<b>8 mm</b>	<b>8 mm</b>	<b>8 mm</b>
Assured switching distance $s_a$	0...6.4 mm	0...6.4 mm	0...6.4 mm
PNP, NO	<b>Ordering code</b> Part number	<b>BES00EZ</b> BES M18ME-PSC80B-S04G-003	<b>BES008E</b> BES M18MI-PSC80B-BV02
PNP, normally closed	<b>Ordering code</b> Part number	<b>BES00EW</b> BES M18ME-POC80B-S04G-003	<b>BES008L</b> BES M18MI-PSC80B-S04G
NPN, NO	<b>Ordering code</b> Part number	<b>BES00ET</b> BES M18ME-NSC80B-S04G-003	<b>BES03PY</b> BES M18MI-POC80B-BV02
NPN, NC	<b>Ordering code</b> Part number	<b>BES03RN</b> BES M18ME-NOC80B-S04G-003	<b>BES03RP</b> BES M18MI-POC80B-S04G
Supply voltage $U_s$	10...30 V DC	12...30 V DC	10...30 V DC
Voltage drop $U_d$ at $I_e$ max.	3.5 V	2.5 V	2.5 V
Rated insulation voltage $U_i$ (protection class)	75 V DC	250 V AC (□)	250 V AC (□)
Rated operating current $I_e$	130 mA	200 mA	200 mA
Polarity reversal protected/transposition protected/short-circuit protected	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
Ambient temperature $T_a$	-25...70 °C	-25...70 °C	-25...70 °C
Switching frequency $f$ max.	150 Hz	150 Hz	1 kHz
Output function indicator	Yellow LED	Yellow LED	Yellow LED
Degree of protection as per IEC 60529	IP 67	IP 68 per BWN Pr. 20	IP 67
Approvals	CE, cULus	CE, cULus	CE, cULus
Material	Housing: Brass-coated Sensing surface: PBT	Brass-coated PA 12	Brass-coated PBT
Connection	M12 connector, 4-pin	2 m PVC cable, 3x0.34 mm <sup>2</sup>	M12 connector, 4-pin

Wiring diagrams see page 106.

Other variants on request.



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036N</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/angled	5 m/PVC	<b>BCC036P</b>

**Recommended accessories**

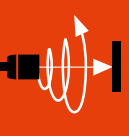
Description	Ordering code
Mounting cuff	<b>BAM00F2</b>
Mounting cuff	<b>BAM0219</b>
Mounting bracket	<b>BAM00EY</b>

You can find additional cable lengths in our accessories catalog.

**Industrial Networking and Connectivity.**

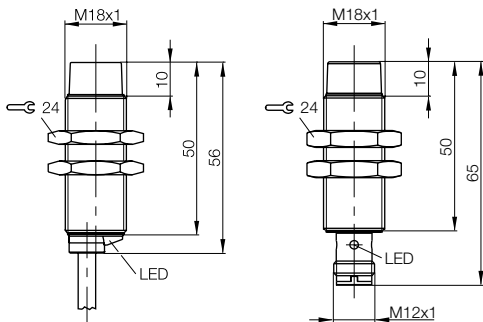
You can find additional mechanical accessories in our catalog **Accessories Line.**

Inductive Global Sensors  
Cylinder design, DC 3-wire  
M18x1, rated switching distance 16 mm



Inductive  
Global Sensors  
Cylinder  
Designs,  
DC 3-wire  
Cylinder  
Designs,  
DC 2-wire

<b>M18x1</b>	<b>M18x1</b>			
Non-flush	Non-flush			
<b>16 mm</b>	<b>16 mm</b>			
0...13 mm	0...13 mm			
<b>BES006Z</b>	<b>BES03RM</b>			
BES M18MG-PSC16F-BV02	BES M18MG-PSC16F-S04G			
<b>BES006U</b>	<b>BES03RL</b>			
BES M18MG-POC16F-BV02	BES M18MG-POC16F-S04G			
<b>BES006P</b>				
BES M18MG-NSC16F-BV02				
<b>BES006L</b>				
BES M18MG-NOC16F-BV02				
10...30 V DC	10...30 V DC			
2.5 V	2.5 V			
250 V AC (□)	75 V DC (□)			
200 mA	200 mA			
Yes/Yes/Yes	Yes/Yes/Yes			
-25...70 °C	-25...70 °C			
800 Hz	800 Hz			
Yellow LED	Yellow LED			
IP 67	IP 67			
CE, cULus	CE, cULus			
Brass-coated	Brass-coated			
PBT	PBT			
2 m PVC cable, 3x0.34 mm <sup>2</sup>	M12 connector, 4-pin			



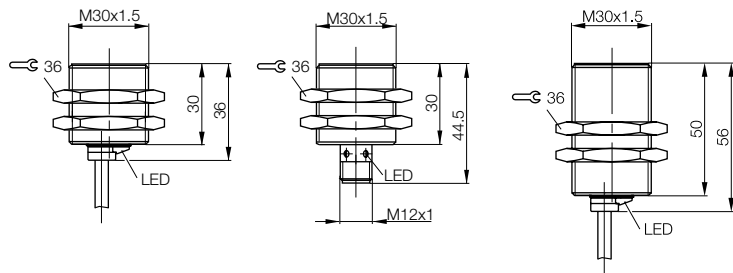
preferred variants  
 available immediately



Series		M30×1.5	M30×1.5	M30×1.5
Installation type (pay attention to the note in the Basic Information chapter)		flush	flush	flush
Rated switching distance $s_n$		<b>10 mm</b>	<b>10 mm</b>	<b>10 mm</b>
Assured switching distance $s_a$		0...8.1 mm	0...8 mm	0...8.1 mm
PNP, NO	<b>Ordering code</b>	<b>BES00F3</b>	<b>BES00F8</b>	<b>BES00A0</b>
	Part number	BES M30MD-PSC10B-BP02-003	BES M30ME-PSC10B-S04G-003	BES M30MI-PSC10B-BV02
PNP, normally closed	<b>Ordering code</b>	<b>BES03TC</b>	<b>BES00F6</b>	<b>BES009M</b>
	Part number	BES M30MD-POC10B-BP02-003	BES M30ME-POC10B-S04G-003	BES M30MI-POC10B-BV02
NPN, NO	<b>Ordering code</b>	<b>BES00F0</b>	<b>BES00F5</b>	<b>BES009C</b>
	Part number	BES M30MD-NSC10B-BP02-003	BES M30ME-NSC10B-S04G-003	BES M30MI-NSC10B-BV02
NPN, NC	<b>Ordering code</b>	<b>BES03TE</b>	<b>BES03TA</b>	<b>BES0096</b>
	Part number	BES M30MD-NOC10B-BP02-003	BES M30ME-NOC10B-S04G-003	BES M30MI-NOC10B-BV02
Supply voltage $U_s$		10...30 V DC	10...30 V DC	12...30 V DC
Voltage drop $U_d$ at $I_e$ max.		3.5 V	3.5 V	2.5 V
Rated insulation voltage $U_i$ (protection class)		75 V DC	75 V DC	250 V AC (II)
Rated operating current $I_e$		130 mA	130 mA	200 mA
Polarity reversal protected/transposition protected/short-circuit protected		Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
Ambient temperature $T_a$		-25...70 °C	-25...70 °C	-25...70 °C
Switching frequency $f$ max.		150 Hz	150 Hz	400 Hz
Output function indicator		Yellow LED	Yellow LED	Yellow LED
Degree of protection as per IEC 60529		IP67	IP 67	IP 68 per BWN Pr. 20
Approvals		CE, cULus	CE, cULus	CE, cULus
Material	Housing	Brass-coated	Brass-coated	Brass-coated
	Sensing surface	PA 12	PA 12	PA 12
Connection		2 m PUR cable, 3×0.34 mm <sup>2</sup>	M12 connector, 4-pin	2 m PVC cable, 3×0.34 mm <sup>2</sup>

Wiring diagrams see page 106.

Other variants on request.



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036N</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/angled	5 m/PVC	<b>BCC036P</b>

You can find additional cable lengths in our accessories catalog.  
**Industrial Networking and Connectivity.**

**Recommended accessories**

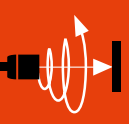
Description	Ordering code
Mounting bracket	<b>BAM00HH</b>
Mounting cuff	<b>BAM00HN</b>
Mounting cuff	<b>BAM01U0</b>
Clamping holders with positive stop	<b>BAM00J6</b>

You can find additional mechanical accessories in our catalog **Accessories Line.**

# Inductive Global Sensors

## Cylinder design, DC 3-wire

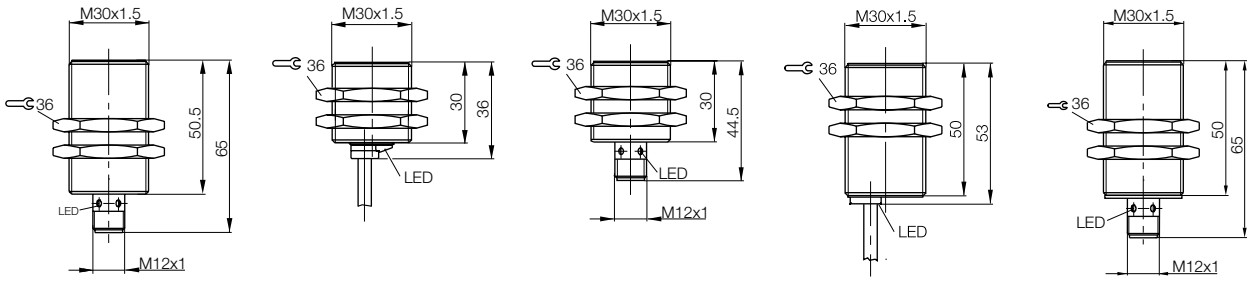
### M30×1.5, rated switching distance 10 mm, 15 mm



Inductive  
Global Sensors  
**Cylinder  
Designs,  
DC 3-wire**  
Cylinder  
Designs,  
DC 2-wire



M30×1.5	M30×1.5	M30×1.5	M30×1.5	M30×1.5
flush	flush	flush	flush	flush
<b>10 mm</b>	<b>15 mm</b>	<b>15 mm</b>	<b>15 mm</b>	<b>15 mm</b>
0...8.1 mm	0...12 mm	0...12 mm	0...12.2 mm	0...12.2 mm
<b>BES00A3</b>	<b>BES00F4</b>	<b>BES00F9</b>	<b>BES00AA</b>	<b>BES00AF</b>
BES M30MI-PSC10B-S04G	BES M30MD-PSC15B-BP02-003	BES M30ME-PSC15B-S04G-003	BES M30MI-PSC15B-BV02	BES M30MI-PSC15B-S04G
<b>BES043H</b>	<b>BES00F2</b>	<b>BES00F7</b>	<b>BES009T</b>	<b>BES03RK</b>
BES M30MI-POC10B-S04G	BES M30MD-POC15B-BP02-003	BES M30ME-POC15B-S04G-003	BES M30MI-POC15B-BV02	BES M30MI-POC15B-S04G
	<b>BES00F1</b>		<b>BES03RH</b>	
	BES M30MD-NSC15B-BP02-003		BES M30MI-NSC15B-BV02	
			<b>BES03RJ</b>	
			BES M30MI-NOC15B-BV02	
12...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
2.5 V	3.5 V	3.5 V	2.5 V	2.5 V
75 V DC	75 V DC	75 DC	250 V AC (□)	250 V AC (□)
200 mA	130 mA	130 mA	200 mA	200 mA
Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
400 Hz	75 Hz	75 Hz	100 Hz	100 Hz
Yellow LED	Yellow LED	Yellow LED	Yellow LED	Yellow LED
IP 67	IP 67	IP 67	IP 67	IP 67
CE, cULus	CE, cULus	CE, cULus	CE, cULus	CE, cULus
Brass-coated	Brass-coated	Brass-coated	Brass-coated	Brass-coated
PA 12	PA 12	PA 12	PA 12	PA 12
M12 connector, 4-pin	2 m PUR cable, 3×0.34 mm <sup>2</sup>	M12 connector, 4-pin	2 m PVC cable, 3×0.34 mm <sup>2</sup>	M12 connector, 4-pin



Inductive Global Sensors  
**Cylinder designs, DC 3-wire**  
**M30×1.5, rated switching distance 30 mm**

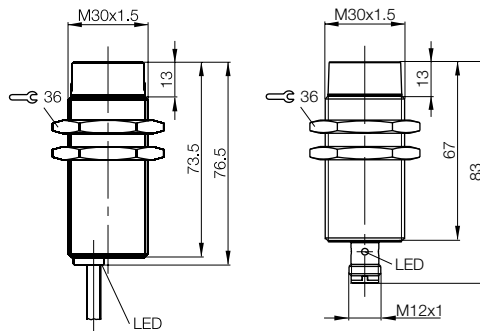
preferred variants  
 available immediately



Series		<b>M30×1.5</b>	<b>M30×1.5</b>	
Installation type (pay attention to the note in the Basic Information chapter)		Non-flush	Non-flush	
Rated switching distance $s_n$		<b>30 mm</b>	<b>30 mm</b>	
Assured switching distance $s_a$		0...24 mm	0...24 mm	
PNP, NO	<b>Ordering code</b>	<b>BES00AY</b>	<b>BES03RE</b>	
	Part number	BES M30MM-PSC30F-BV02	BES M30MM-PSC30F-S04G	
PNP, normally closed	<b>Ordering code</b>	<b>BES00AT</b>	<b>BES03RC</b>	
	Part number	BES M30MM-POC30F-BV02	BES M30MM-POC30F-S04G	
NPN, NO	<b>Ordering code</b>	<b>BES00AN</b>		
	Part number	BES M30MM-NSC30F-BV02		
NPN, NC	<b>Ordering code</b>	<b>BES00AK</b>		
	Part number	BES M30MM-NOC30F-BV02		
Supply voltage $U_s$		10...30 V DC	10...30 V DC	
Voltage drop $U_d$ at $I_e$ max.		2.5 V	2.5 V	
Rated insulation voltage $U_i$ (protection class)		250 V AC (□)	250 V AC (□)	
Rated operating current $I_e$		200 mA	200 mA	
Polarity reversal protected/transposition protected/short-circuit protected		Yes/Yes/Yes	Yes/Yes/Yes	
Ambient temperature $T_a$		-25...70 °C	-25...70 °C	
Switching frequency $f$ max.		300 Hz	300 Hz	
Output function indicator		Yellow LED	Yellow LED	
Degree of protection as per IEC 60529		IP 67	IP 67	
Approvals		CE, cULus	CE, cULus	
Material	Housing	Brass-coated	Brass-coated	
	Sensing surface	PBT	PBT	
Connection		2 m PVC cable, 3×0.34 mm <sup>2</sup>	M12 connector, 4-pin	

Wiring diagrams see page 106.

Other variants on request.



**Suitable connectors**

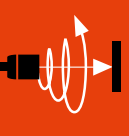
Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036N</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/angled	5 m/PVC	<b>BCC036P</b>

**Recommended accessories**

Description	Ordering code
Mounting bracket	<b>BAM00HH</b>
Mounting cuff	<b>BAM00HN</b>
Mounting cuff	<b>BAM01U0</b>

You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

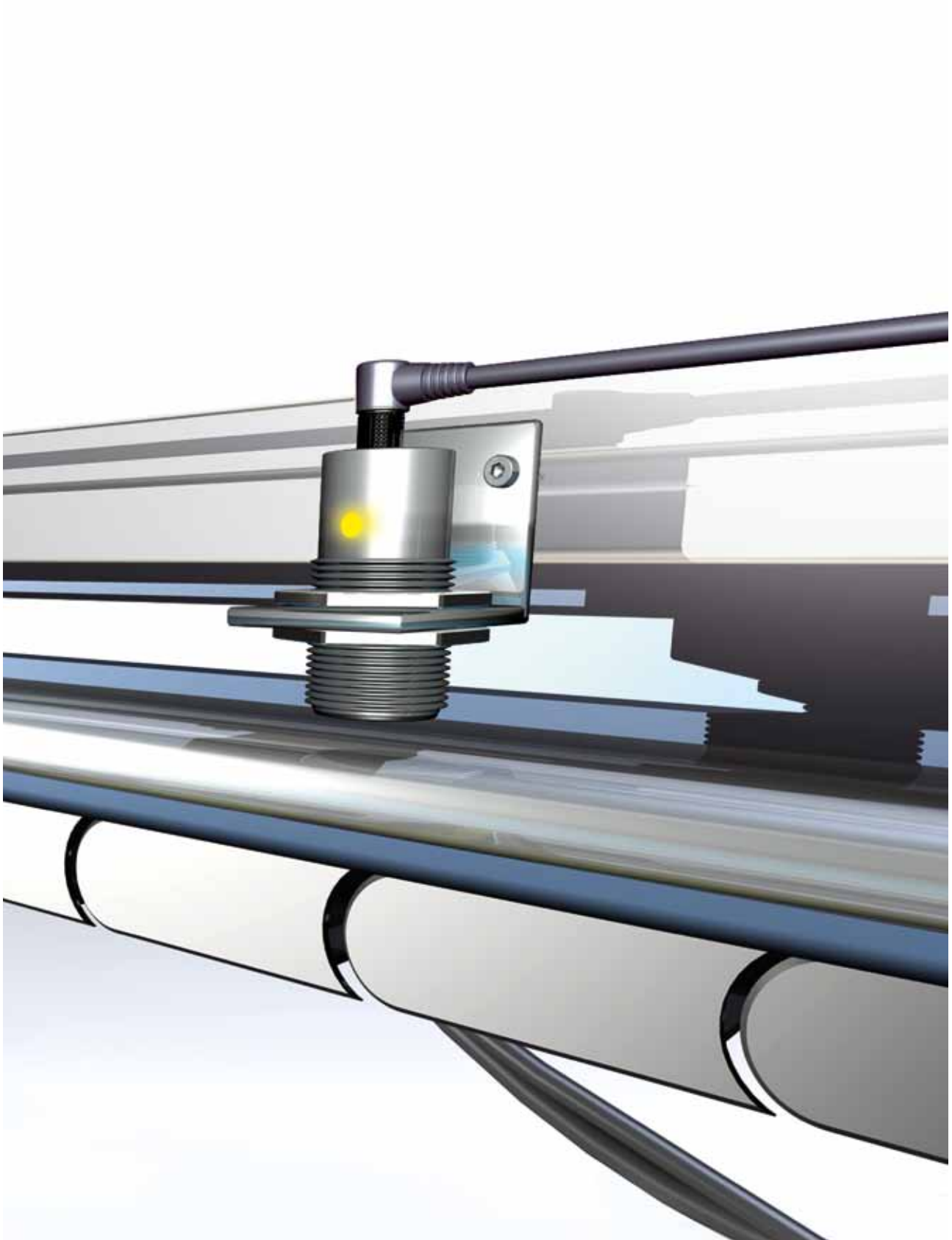
You can find additional mechanical accessories in  
 our catalog **Accessories Line.**



Inductive  
Global Sensors

**Cylinder  
Designs,  
DC 3-wire**

Cylinder  
Designs,  
DC 2-wire



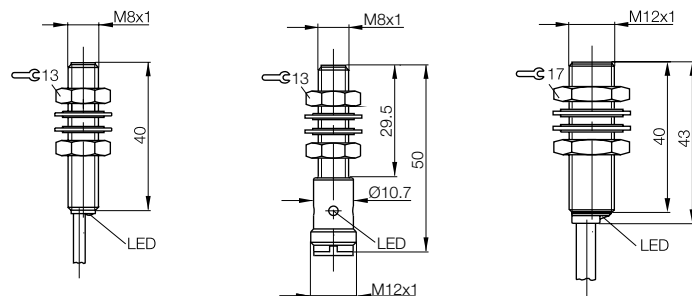
Preferred variants available immediately



Series		M8x1	M8x1	M12x1
Installation type (pay attention to the note in the Basic Information chapter)		flush	flush	flush
Rated switching distance $s_n$		<b>2 mm</b>	<b>2 mm</b>	<b>3 mm</b>
Assured switching distance $s_a$		0...1.6 mm	0...1.6 mm	0...2.4 mm
Polarized, NO	<b>Ordering code</b>	<b>BES001L</b>	<b>BES0022</b>	<b>BES0045</b>
	Part number	BES M08MG-GSC20B-BV02	BES M08ME1-GSC20B-S04G	BES M12MG-GSC30B-BV02
Polarized, NC	<b>Ordering code</b>	<b>BES024R</b>	<b>BES024N</b>	<b>BES024L</b>
	Part number	BES M08MG-GOC20B-BV02	BES M08ME1-GOC20B-S04G	BES M12MG-GOC30B-BV02
Non-polarized, NO	<b>Ordering code</b>	<b>BES001T</b>	<b>BES001Y</b>	<b>BES004T</b>
	Part number	BES M08MG-USC20B-BV02	BES M08ME1-USC20B-S04G	BES M12MG-USC30B-BV02
Non-polarized, NC	<b>Ordering code</b>	<b>BES024T</b>	<b>BES024P</b>	<b>BES024M</b>
	Part number	BES M08MG-UOC20B-BV02	BES M08ME1-UOC20B-S04G	BES M12MG-UOC30B-BV02
Supply voltage $U_s$		10...36 V DC	10...36 V DC	10...36 V DC
Voltage drop $U_d$ at $I_e$ max.		5 V	5 V	≤ 5 V
Rated insulation voltage $U_i$		75 V DC	75 V DC	75 V DC
Rated operating current $I_e$		100 mA	100 mA	100 mA
Minimum operational current $I_m$		5 mA	5 mA	5 mA
Residual current $I_r$ max.		600 $\mu$ A	600 $\mu$ A	600 $\mu$ A
Permissible load capacitance max.		1 $\mu$ F	1 $\mu$ F	1 $\mu$ F
Polarity reversal protected/transposition protected/short-circuit protected		Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
Ambient temperature $T_a$		-25...+70 °C	-25...+70 °C	-25...+70 °C
Switching frequency $f$ max.		1.5 kHz	1.5 kHz	1.3 kHz
Output function indicator		Yellow LED	Yellow LED	Yellow LED
Degree of protection as per IEC 60529		IP 67	IP 67	IP 67
Approvals		CE, cULus	CE, cULus	CE, cULus
Material	Housing	Brass-coated	Brass-coated	Brass-coated
	Sensing surface	PBT	PBT	PA 12
Connection		2 m PVC cable, 2x0.14 mm <sup>2</sup>	M12 connector, 4-pin	2 m PVC cable, 2x0.34 mm <sup>2</sup>

Wiring diagrams see page 106.

Other variants on request.



#### Suitable connectors

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036N</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/angled	5 m/PVC	<b>BCC036P</b>

You can find additional electrical accessories in our catalog

**Industrial Networking and Connectivity.**

#### Recommended accessories

Description	Ordering code
Mounting bracket	<b>BAM009U</b>
Mounting bracket	<b>BAM00C0</b>
Mounting bracket	<b>BAM00EY</b>
Mounting bracket	<b>BAM00HH</b>

You can find additional mechanical accessories in our catalog **Accessories Line.**

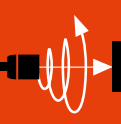


# Inductive Global Sensors

## Cylinder designs, DC 2-wire

M12x1, M18x1, M30x1.5,

Rated switching distance 3 mm, 7 mm, 15 mm

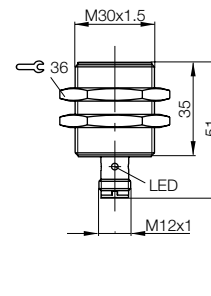
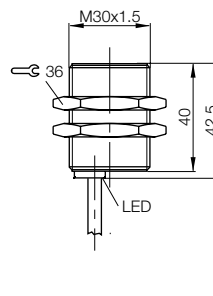
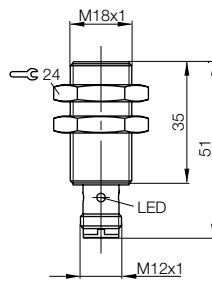
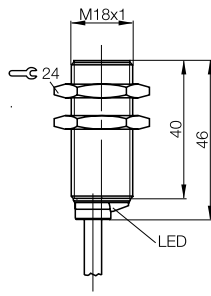
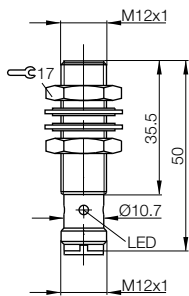


Inductive  
Global Sensors

Cylinder  
Designs,  
DC 3-wire

Cylinder  
Designs,  
DC 2-wire

M12x1	M18x1	M18x1	M30x1.5	M30x1.5
flush	flush	flush	flush	flush
<b>3 mm</b>	<b>7 mm</b>	<b>7 mm</b>	<b>15 mm</b>	<b>15 mm</b>
0...2.4 mm	0...5.6 mm	0...5.6 mm	0...12 mm	0...12 mm
<b>BES003Z</b>	<b>BES00FA</b>	<b>BES0328</b>	<b>BES008R</b>	<b>BES027L</b>
BES M12MF-GSC30B-S04G	BES M18MG-GSC70B-BV02	BES M18MF-GSC70B-S04G	BES M30MF-GSC15B-BV02	BES M30MF-GSC15B-S04G
<b>BES024J</b>	<b>BES02NT</b>	<b>BES02NL</b>	<b>BES0279</b>	<b>BES027C</b>
BES M12MF-GOC30B-S04G	BES M18MG-GOC70B-BV02	BES M18MF-GOC70B-S04G	BES M30MF-GOC15B-BV02	BES M30MF-GOC15B-S04G
<b>BES0041</b>	<b>BES0073</b>	<b>BES02NR</b>	<b>BES0091</b>	<b>BES027E</b>
BES M12MF-USC30B-S04G	BES M18MG-USC70B-BV02	BES M18MF-USC70B-S04G	BES M30MF-USC15B-BV02	BES M30MF-USC15B-S04G
<b>BES024K</b>	<b>BES02NU</b>	<b>BES02NN</b>	<b>BES027A</b>	<b>BES027F</b>
BES M12MF-UOC30B-S04G	BES M18MG-UOC70B-BV02	BES M18MF-UOC70B-S04G	BES M30MF-UOC15B-BV02	BES M30MF-UOC15B-S04G
10...36 V DC	10...36 V DC	10...36 V DC	10...36 V DC	10...36 V DC
≤ 5 V	4 V	≤ 5 V	≤ 5 V	≤ 5 V
75 V DC	75 V DC	75 V DC	75 V DC	75 V DC
100 mA	100 mA	100 mA	100 mA	100 mA
5 mA	5 mA	5 mA	5 mA	5 mA
600 µA	600 µA	600 µA	600 µA	600 µA
1 µF	1 µF	1 µF	1 µF	1 µF
Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C
1.3 kHz	600 Hz	600 Hz	400 Hz	400 Hz
Yellow LED	Yellow LED	Yellow LED	Yellow LED	Yellow LED
IP 67	IP 67	IP 67	IP 67	IP 67
CE, cULus	CE, cULus	CE, cULus	CE, cULus	CE, cULus
Brass-coated	Brass-coated	Brass-coated	Brass-coated	Brass-coated
PA 12	PA 12	PA 12	PA 12	PA 12
M12 connector, 4-pin	2 m PVC cable, 3x0.34 mm <sup>2</sup>	M12 connector, 4-pin	2 m PVC cable, 2x0.34 mm <sup>2</sup>	M12 connector, 4-pin





# Capacitive Global Sensors

## Capacitive Global sensors – above-average technology at the best price

For object and level detection, capacitive Global sensors are particularly cost-effective. They offer a wide range of performance-proven products in above-average technology with the best possible EMC protection at a low price.

The complete series includes M12, M18 and M30 variants in cable version and with M12 male. In a plastic or stainless steel housing. This guarantees maximum versatility in application.

All sensors can be easily adjusted to applications via potentiometers.

### Features

- Stainless steel or plastic housing (PBT)
- PNP and NPN versions with normally open or normally closed
- Power-on indicator (large green LED)
- Output function indicator (large yellow LED)
- High electromagnetic compatibility (EMC)

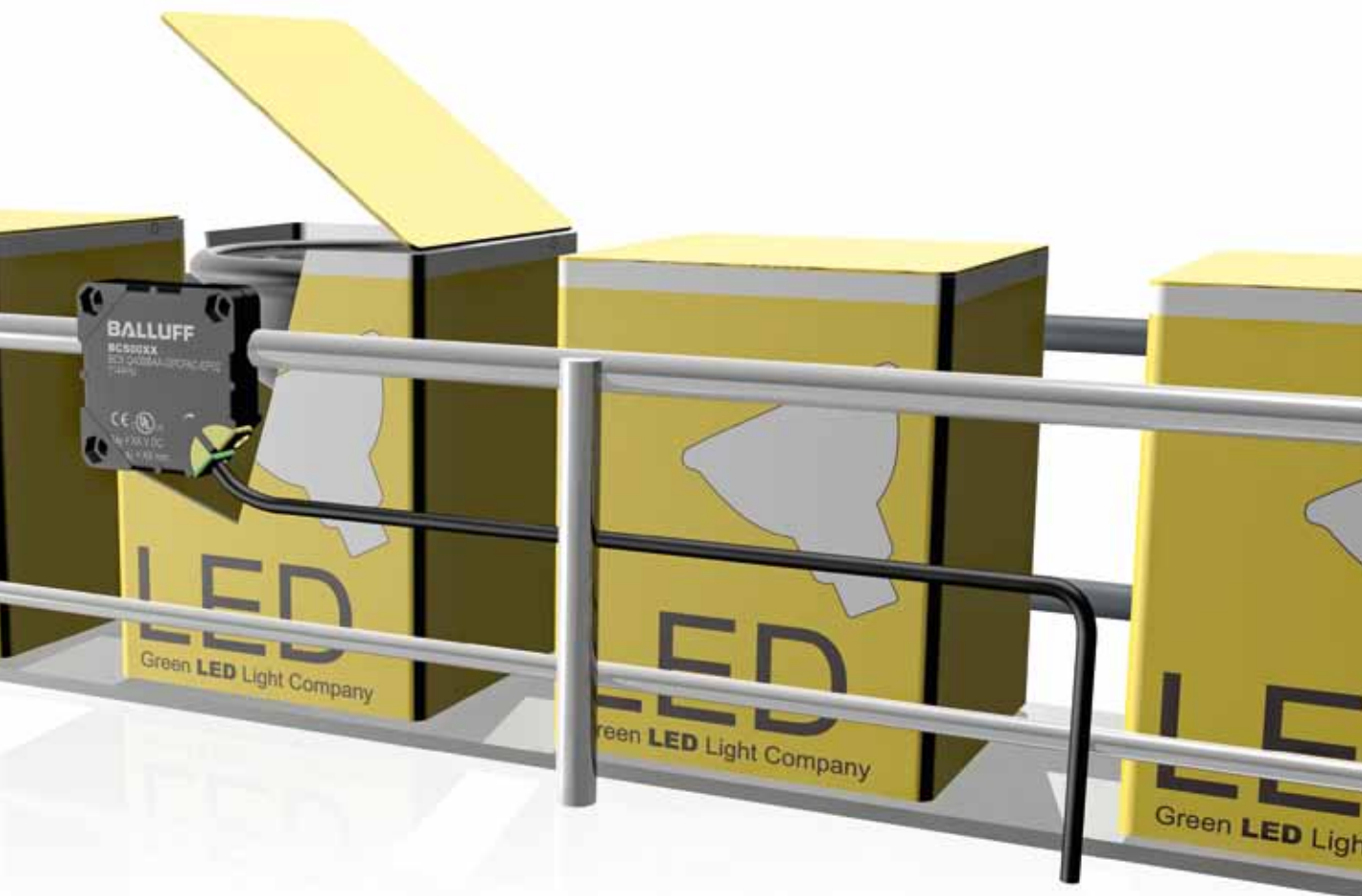




# Capacitive Global Sensors

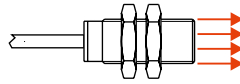
## Contents

<b>Performance Spectrum</b>	62
<b>Capacitive Sensors for Object Detection</b>	
<b>Cylinder Designs</b>	
M12	64
M18	65
M30	66
<b>Block Designs</b>	
40x40x10 mm	68
<b>Capacitive Sensors for Level Detection</b>	
<b>Cylinder Designs</b>	
M12	70
M18	71
M30	72



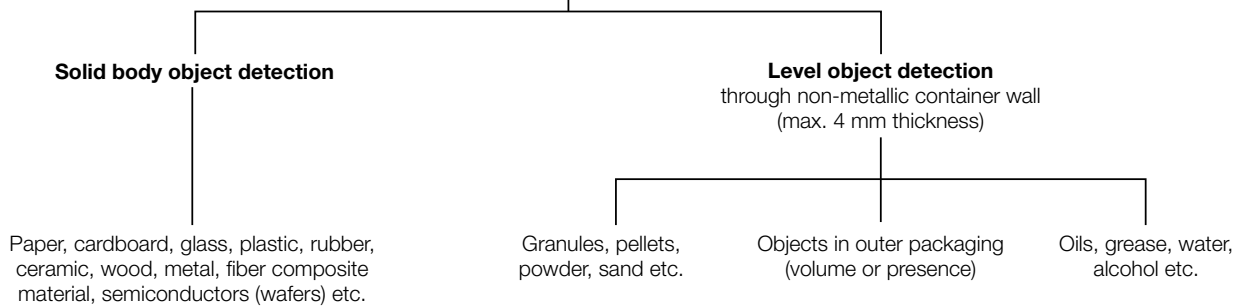
**Object Detection**

- Flush-mount
- Extended switching distance
- For example, detecting plastic parts



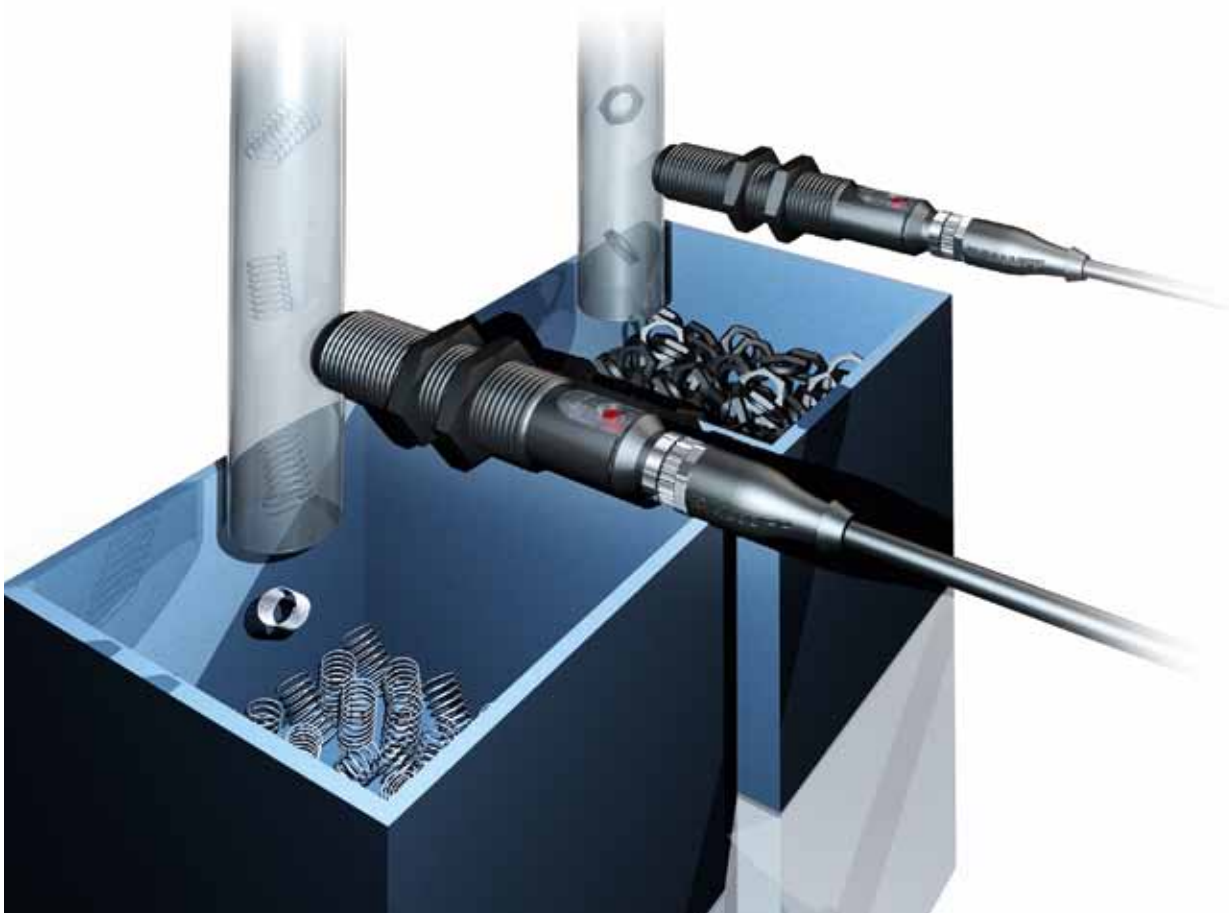
Flush-mount capacitive sensors detect objects reliably, even from a great distance. Regardless of color, structure and material.

**Shielded sensors**  
Fields of application



**Benefit**

The concentrated electrical field enables also to detect media with a low dielectric constant reliably. (electrically weak or non-conductive, non-metallic materials).

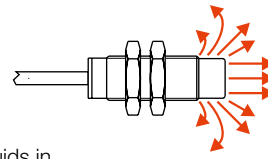


# Capacitive Global Sensors

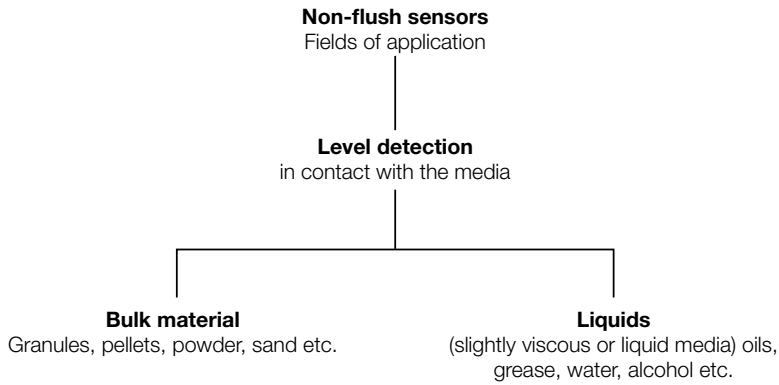
## Performance spectrum

### Level detection

- Non-flush mount: improved adhesion compensation
- User adjustable sensitivity

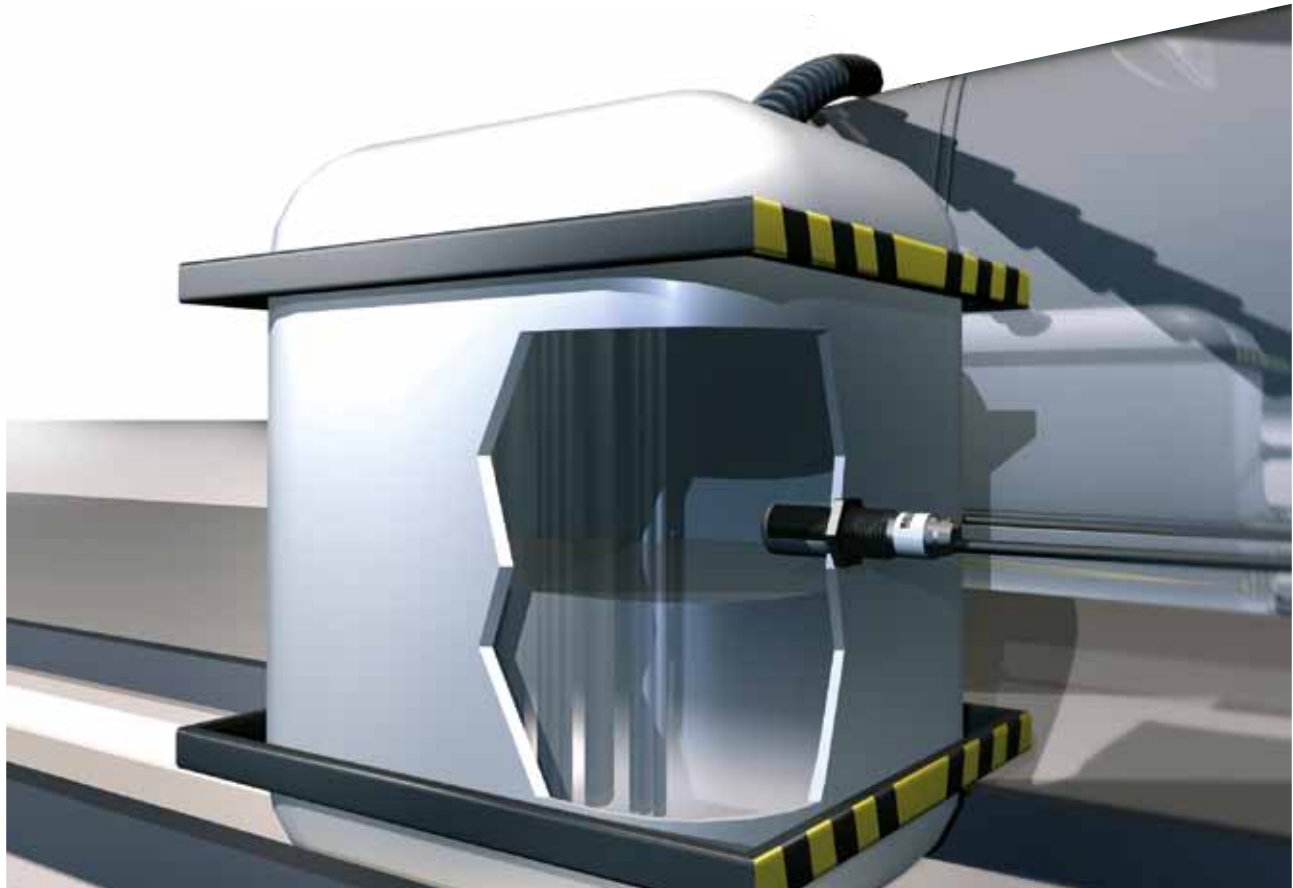


Non-flush mount Global sensors are ideal for level detection of bulk materials or liquids in direct contact. Material deposits are suppressed reliably in the process.



### Benefit

Their spherical electrical field effectively compensates for material adhesion on the sensing face.



Capacitive Global Sensors  
**Performance Spectrum**  
 Capacitive Sensors for Object Detection, Cylinder Designs, Block Designs  
 Capacitive Sensors for Level Detection, Cylinder Designs

Capacitive Global Sensors  
for object detection, cylinder designs,  
DC 3-wire, M12×1, rated switching distance 4 mm

M12, M18  
Metal  
Global

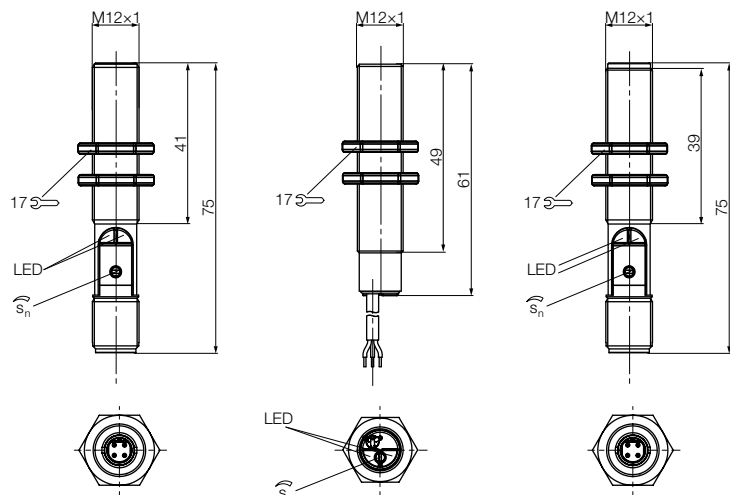
Preferred variants  
available immediately



Size		<b>M12×1</b>	<b>M12×1</b>	<b>M12×1</b>
Installation type		flush	flush	flush
Rated switching distance $s_n$		<b>1...4 mm</b>	<b>1...4 mm</b>	<b>1...4 mm</b>
PNP, NO	<b>Ordering code</b>	<b>BCS00P0</b>	<b>BCS00R4</b>	<b>BCS00PJ</b>
	Part number	BCS M12B4G2-PSC40D-S04K	BCS M12B4I1-PSC40D-EP02	BCS M12BBG2-PSC40D-S04K
PNP, normally closed	<b>Ordering code</b>	<b>BCS00P1</b>	<b>BCS00P8</b>	<b>BCS00PK</b>
	Part number	BCS M12B4G2-POC40D-S04K	BCS M12B4I1-POC40D-EP02	BCS M12BBG2-POC40D-S04K
NPN, NO	<b>Ordering code</b>	<b>BCS00P2</b>	<b>BCS00P9</b>	<b>BCS00PL</b>
	Part number	BCS M12B4G2-NSC40D-S04K	BCS M12B4I1-NSaC40D-EP02	BCS M12BBG2-NSC40D-S04K
NPN, NC	<b>Ordering code</b>	<b>BCS00P3</b>	<b>BCS00PA</b>	<b>BCS00PM</b>
	Part number	BCS M12B4G2-NOC40D-S04K	BCS M12B4I1-NOC40D-EP02	BCS M12BBG2-NOC40D-S04K
Supply voltage $U_s$		10...30 V DC	10...30 V DC	10...30 V DC
Voltage drop $U_d$ at $I_o$		≤ 1.5 V	≤ 1.5 V	≤ 1.5 V
Rated insulation voltage $U_i$		75 V DC	75 V DC	75 V DC
Output current max.		100 mA	100 mA	100 mA
No-load supply current $I_o$ max.		≤ 15 mA	≤ 15 mA	≤ 15 mA
Polarity reversal protected/transposition protected/short-circuit protected		Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
Ambient temperature $T_a$		-25...+85 °C	-25...+85 °C	-25...+85 °C
Switching frequency $f$		100 Hz	100 Hz	100 Hz
Supply voltage/output function indicator		Green LED/Yellow LED	Green LED/Yellow LED	Green LED/Yellow LED
Degree of protection as per IEC 60529		IP 67	IP 67	IP 67
Material	Housing	Stainless steel	Stainless steel	PBT
	Sensing surface	PBT	PBT	PBT
	Cover	PA 12, PBT	PA 12	PA 12, PBT
Connection		M12 connector, 4-pin, A-coded	2 m PUR cable, 3×0.14 mm <sup>2</sup>	M12 connector, 4-pin, A-coded

Wiring diagrams see page 107.

Other variants on request.



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036P</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC036N</b>

You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

**Recommended accessories**

Description	Ordering code
Mounting bracket	<b>BAM00C0</b>
Mounting bracket	<b>BAM00EY</b>
Clamping holders	<b>BAM015E</b>
Clamping holders	<b>BAM015F</b>

You can find additional mechanical accessories in  
our catalog **Accessories Line.**

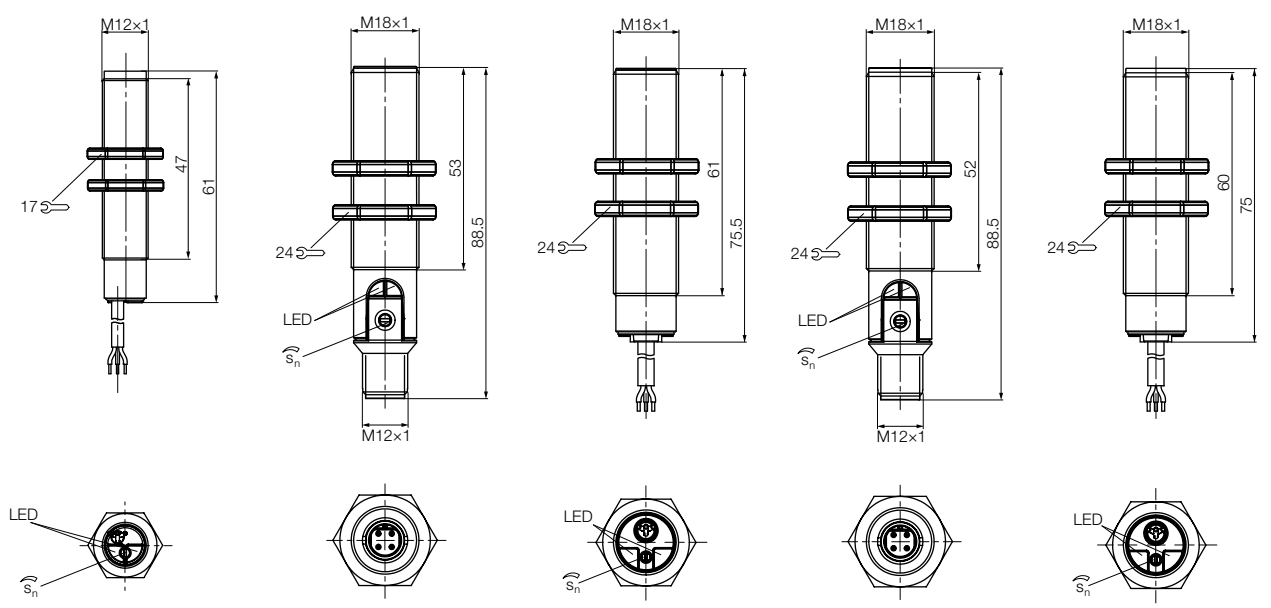
# Capacitive Global Sensors for object detection, cylinder designs, DC 3-wire, M12×1, M18×1, rated switching distance 4 mm, 8 mm



M12×1	M18×1	M18×1	M18×1	M18×1
flush	flush	flush	flush	flush
1...4 mm	2...8 mm	2...8 mm	2...8 mm	2...8 mm
<b>BCS00PU</b>	<b>BCS00MF</b>	<b>BCS00LK</b>	<b>BCS00M8</b>	<b>BCS00NZ</b>
BCS M12BBI1-PSC40D-EP02	BCS M18B4I3-PSC80D-S04K	BCS M18B4N1-PSC80D-EP02	BCS M18BBI3-PSC80D-S04K	BCS M18BBN1-PSC80D-EP02
<b>BCS00PW</b>	<b>BCS00M4</b>	<b>BCS00LR</b>	<b>BCS00MH</b>	<b>BCS00M1</b>
BCS M12BBI1-POC40D-EP02	BCS M18B4I3-POC80D-S04K	BCS M18B4N1-POC80D-EP02	BCS M18BBI3-POC80D-S04K	BCS M18BBN1-POC80D-EP02
<b>BCS00PY</b>	<b>BCS00M5</b>	<b>BCS00LN</b>	<b>BCS00MJ</b>	<b>BCS00M2</b>
BCS M12BBI1-NSC40D-EP02	BCS M18B4I3-NSC80D-S04K	BCS M18B4N1-NSC80D-EP02	BCS M18BBI3-NSC80D-S04K	BCS M18BBN1-NSC80D-EP02
<b>BCS00PZ</b>	<b>BCS00M6</b>	<b>BCS00LP</b>	<b>BCS00MK</b>	<b>BCS00M3</b>
BCS M12BBI1-NOC40D-EP02	BCS M18B4I3-NOC80D-S04K	BCS M18B4N1-NOC80D-EP02	BCS M18BBI3-NOC80D-S04K	BCS M18BBN1-NOC80D-EP02
10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
≤ 1.5 V	≤ 1.5 V	≤ 1.5 V	≤ 1.5 V	≤ 1.5 V
75 V DC	75 V DC	75 V DC	75 V DC	75 V DC
100 mA	100 mA	100 mA	100 mA	100 mA
≤ 15 mA	≤ 15 mA	≤ 15 mA	≤ 15 mA	≤ 15 mA
Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
-25...+85 °C	-25...+85 °C	-25...+85 °C	-25...+85 °C	-25...+85 °C
100 Hz	100 Hz	100 Hz	100 Hz	100 Hz
Green LED/Yellow LED	Green LED/Yellow LED	Green LED/Yellow LED	Green LED/Yellow LED	Green LED/Yellow LED
IP 67	IP 67	IP 67	IP 67	IP 67
PBT	Stainless steel	Stainless steel	PBT	PBT
PBT	PBT	PBT	PBT	PBT
PA 12	PA 12, PBT	PA 12	PA 12, PBT	PA 12
2 m PUR cable, 3×0.14 mm <sup>2</sup>	M12 connector, 4-pin, A-coded	2 m PUR cable, 3×0.34 mm <sup>2</sup>	M12 connector, 4-pin, A-coded	2 m PUR cable, 3×0.34 mm <sup>2</sup>



Capacitive Global Sensors  
Performance Spectrum  
Capacitive Sensors for Object Detection, Cylinder Designs, Block Designs  
Capacitive Sensors for Level Detection, Cylinder Designs



Capacitive Global Sensors  
for object detection, cylinder designs,  
DC 3-wire, M30×1.5, rated switching distance 15 mm

M30 Metal  
Global

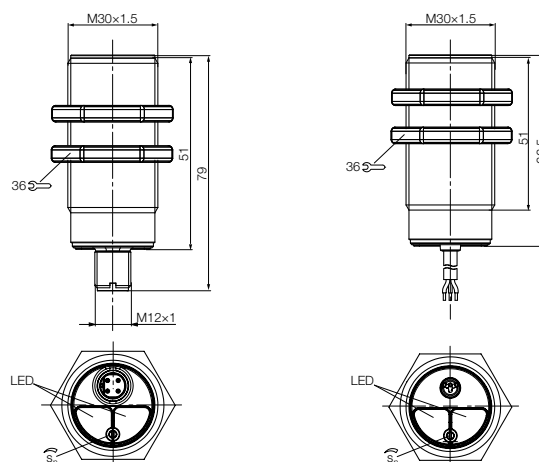
Preferred variants  
available immediately



Size		<b>M30×1.5</b>	<b>M30×1.5</b>
Installation type		flush	flush
Rated switching distance $s_n$		<b>2...15 mm</b>	<b>2...15 mm</b>
PNP, NO	<b>Ordering code</b>	<b>BCS00MR</b>	<b>BCS00N2</b>
	Part number	BCS M30B4I2-PSC15D-S04K	BCS M30B4I1-PSC15D-EP02
PNP, normally closed	<b>Ordering code</b>	<b>BCS00MT</b>	<b>BCS00N3</b>
	Part number	BCS M30B4I2-POC15D-S04K	BCS M30B4I1-POC15D-EP02
NPN, NO	<b>Ordering code</b>	<b>BCS00MU</b>	<b>BCS00N4</b>
	Part number	BCS M30B4I2-NSC15D-S04K	BCS M30B4I1-NSC15D-EP02
NPN, NC	<b>Ordering code</b>	<b>BCS00MW</b>	<b>BCS00N5</b>
	Part number	BCS M30B4I2-NOC15D-S04K	BCS M30B4I1-NOC15D-EP02
Supply voltage $U_S$		10...30 V DC	10...30 V DC
Voltage drop $U_d$ at $I_o$		≤ 1.5 V	≤ 1.5 V
Rated insulation voltage $U_i$		75 V DC	75 V DC
Output current max.		100 mA	100 mA
No-load supply current $I_o$ max.		≤ 15 mA	≤ 15 mA
Polarity reversal protected/transposition protected/short-circuit protected		Yes/Yes/Yes	Yes/Yes/Yes
Ambient temperature $T_a$		-25...+85 °C	-25...+85 °C
Switching frequency $f$		100 Hz	100 Hz
Supply voltage/output function indicator		Green LED/Yellow LED	Green LED/Yellow LED
Degree of protection as per IEC 60529		IP 67	IP 67
Material	Housing	Stainless steel	Stainless steel
	Sensing surface	PBT	PBT
	Cover	PA 12, PBT	PA 12, PBT
Connection		M12 connector, 4-pin, A-coded	2 m PUR cable, 3×0.34 mm <sup>2</sup>

Wiring diagrams see page 107.

Other variants on request.



Suitable connectors

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036P</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC036N</b>

Recommended accessories

Description	Ordering code
Mounting bracket	<b>BAM00HH</b>
Clamping holders	<b>BAM015H</b>
Clamping holders	<b>BAM01U0</b>
Mounting cuff	<b>BAM00HN</b>

You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity**.

You can find additional mechanical accessories in  
our catalog **Accessories Line**.

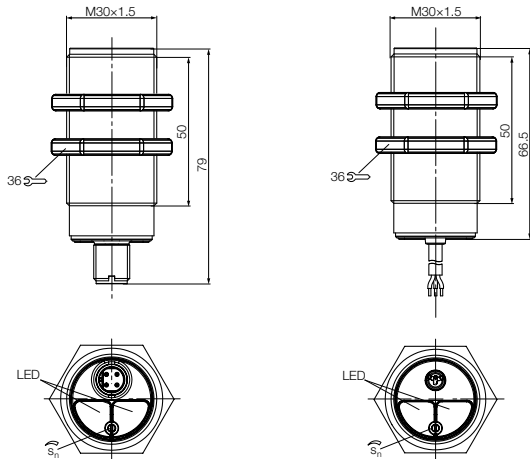
# Capacitive Global Sensors for object detection, cylinder designs, DC 3-wire, M30×1.5, rated switching distance 15 mm



M30×1.5	M30×1.5		
flush	flush		
<b>2...15 mm</b>	<b>2...15 mm</b>		
<b>BCS00NA</b>	<b>BCS00NM</b>		
BCS M30BBI2-PSC15D-S04K	BCS M30BBI1-PSC15D-EP02		
<b>BCS00NC</b>	<b>BCS00NN</b>		
BCS M30BBI2-POC15D-S04K	BCS M30BBI1-POC15D-EP02		
<b>BCS00NE</b>	<b>BCS00NP</b>		
BCS M30BBI2-NSC15D-S04K	BCS M30BBI1-NSC15D-EP02		
<b>BCS00NF</b>	<b>BCS00NR</b>		
BCS M30BBI2-NOC15D-S04K	BCS M30BBI1-NOC15D-EP02		
10...30 V DC	10...30 V DC		
≤ 1.5 V	≤ 1.5 V		
75 V DC	75 V DC		
100 mA	100 mA		
≤ 15 mA	≤ 15 mA		
Yes/Yes/Yes	Yes/Yes/Yes		
-25...+85 °C	-25...+85 °C		
100 Hz	100 Hz		
Green LED/Yellow LED	Green LED/Yellow LED		
IP 67	IP 67		
PBT	PBT		
PBT	PBT		
PA 12, PBT	PA 12, PBT		
M12 connector, 4-pin, A-coded	2 m PUR cable, 3×0.34 mm <sup>2</sup>		



Capacitive  
Global  
Sensors  
Performance  
Spectrum  
Capacitive  
Sensors  
for Object  
Detection,  
Cylinder  
Designs,  
Block  
Designs  
Capacitive  
Sensors for  
Level  
Detection,  
Cylinder  
Designs



Capacitive Global Sensors  
for object detection, block designs, DC 3-wire,  
40×40×10 mm Uniflat, rated switching distance 20 mm

40×40×10 mm  
**Global**

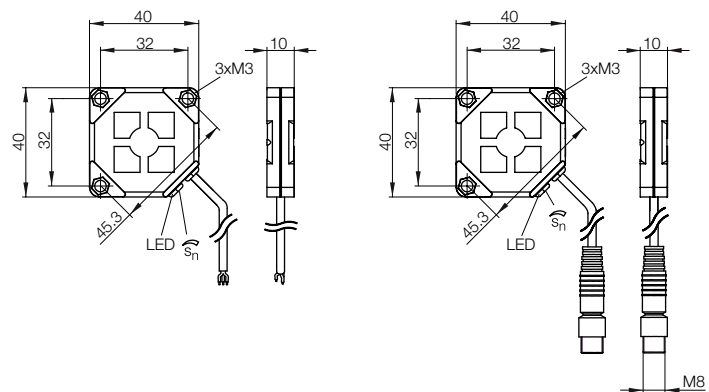
Preferred variants  
available immediately



Size		40×40×10 mm Uniflat	40×40×10 mm Uniflat
Installation type		flush	flush
Rated switching distance $s_n$		1...20 mm	1...20 mm
PNP/NPN and NO/NC, can be coded	<b>Ordering code</b>	<b>BCS00TR</b>	
	Part number	BCS Q40BBAA-GPC20C-EP02	
PNP, NO	<b>Ordering code</b>		<b>BCS00U6</b>
	Part number		BCS Q40BBAA-PSC20C-EP00,3-GS49
PNP, normally closed	<b>Ordering code</b>		<b>BCS00U5</b>
	Part number		BCS Q40BBAA-POC20C-EP00,3-GS49
Supply voltage $U_s$		10...30 V DC	10...30 V DC
Voltage drop $U_d$ at $I_e$		≤ 2.5 V	≤ 2.5 V
Rated insulation voltage $U_i$		75 V DC	75 V DC
Output current max.		100 mA	100 mA
No-load supply current $I_0$ max.		≤ 15 mA	≤ 15 mA
Polarity reversal protected/transposition protected/short-circuit protected		No/No/Yes	Yes/Yes/Yes
Ambient temperature $T_a$		-5...+85 °C	-5...+85 °C
Switching frequency $f$		100 Hz	100 Hz
Supply voltage/output function indicator		Green LED/Yellow LED	Green LED/Yellow LED
Degree of protection as per IEC 60529		IP 67	IP 67
Material	Housing	PBT	PBT
	Sensing surface	PBT	PBT
	Cover	PBT	PBT
Connection		2 m PUR cable, 3×0.14 mm <sup>2</sup>	0.3 m PUR cable with M8 plug, 3-pin

Wiring diagrams see page 107.

Other variants on request.



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M8, 3-pin/straight	2 m/PVC	<b>BCC02NU</b>
M8, 3-pin/angled	5 m/PVC	<b>BCC02NW</b>

**Recommended accessories**

Description	Ordering code
Ø 20 mm sensor holder	<b>BAM01UL</b>

You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

You can find additional mechanical accessories in  
our catalog **Accessories Line.**

Capacitive Global Sensors  
for object detection



Capacitive  
Global  
Sensors  
Performance  
Spectrum  
Capacitive  
Sensors  
for Object  
Detection,  
Cylinder  
Designs,  
Block  
Designs  
Capacitive  
Sensors for  
Level  
Detection,  
Cylinder  
Designs



Capacitive Global Sensors  
for level detection, cylinder designs,  
DC 3-wire, M12x1

M12, M18  
Metal  
Global

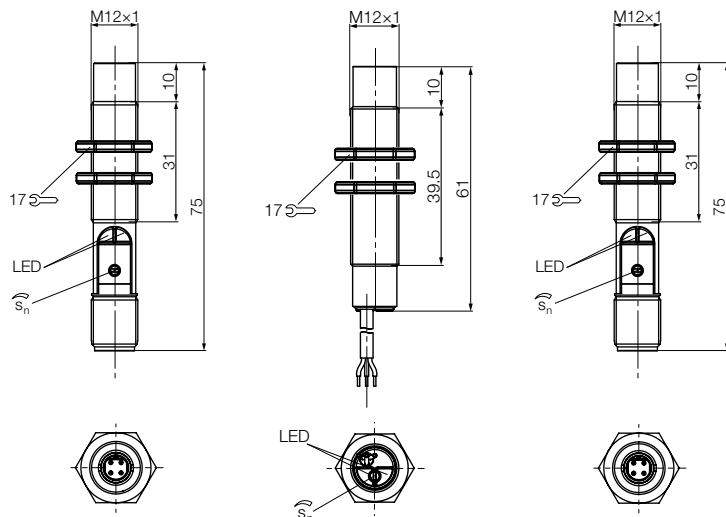
Preferred variants  
available immediately



Size	M12x1	M12x1	M12x1
Installation type	Non-flush	Non-flush	Non-flush
Rated switching distance $s_n$	1...8 mm	1...8 mm	1...8 mm
PNP, NO	<b>Ordering code</b>	<b>BCS00P4</b>	<b>BCS00PC</b>
	Part number	BCS M12B4E2-PSC80H-S04K	BCS M12B4G1-PSC80H-EP02
PNP, normally closed	<b>Ordering code</b>	<b>BCS00P5</b>	<b>BCS00PE</b>
	Part number	BCS M12B4E2-POC80H-S04K	BCS M12B4G1-POC80H-EP02
NPN, NO	<b>Ordering code</b>	<b>BCS00P6</b>	<b>BCS00PF</b>
	Part number	BCS M12B4E2-NSC80H-S04K	BCS M12B4G1-NSC80H-EP02
NPN, NC	<b>Ordering code</b>	<b>BCS00P7</b>	<b>BCS00PH</b>
	Part number	BCS M12B4E2-NOC80H-S04K	BCS M12B4G1-NOC80H-EP02
Supply voltage $U_s$	10...30 V DC	10...30 V DC	10...30 V DC
Voltage drop $U_d$ at $I_o$	$\leq 1.5$ V	$\leq 1.5$ V	$\leq 1.5$ V
Rated insulation voltage $U_i$	75 V DC	75 V DC	75 V DC
Output current max.	100 mA	100 mA	100 mA
No-load supply current $I_o$ max.	$\leq 15$ mA	$\leq 15$ mA	$\leq 15$ mA
Polarity reversal protected/transposition protected/short-circuit protected	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
Ambient temperature $T_a$	-25...+85 °C	-25...+85 °C	-25...+85 °C
Switching frequency $f$	100 Hz	100 Hz	100 Hz
Output function indicator	Yellow LED	Yellow LED	Green LED/Yellow LED
Degree of protection as per IEC 60529	IP 67	IP 67	IP 67
Material	Housing	Stainless steel	Stainless steel
	Sensing surface	PBT	PBT
	Cover	PA 12, PBT	PA 12
Connection	M12 connector, 4-pin, A-coded	2 m PUR cable, 3x0.14 mm <sup>2</sup>	M12 connector, 4-pin, A-coded

Wiring diagrams see page 107.

Other variants on request.



Suitable connectors

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036P</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC036N</b>

Recommended accessories

Description	Ordering code
Mounting bracket	<b>BAM00C0</b>
Mounting bracket	<b>BAM00EY</b>
Clamping holder with positive stop	<b>BAM00CY</b>
Clamping holder with positive stop	<b>BAM00FR</b>

You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

You can find additional mechanical accessories in  
our catalog **Accessories Line.**

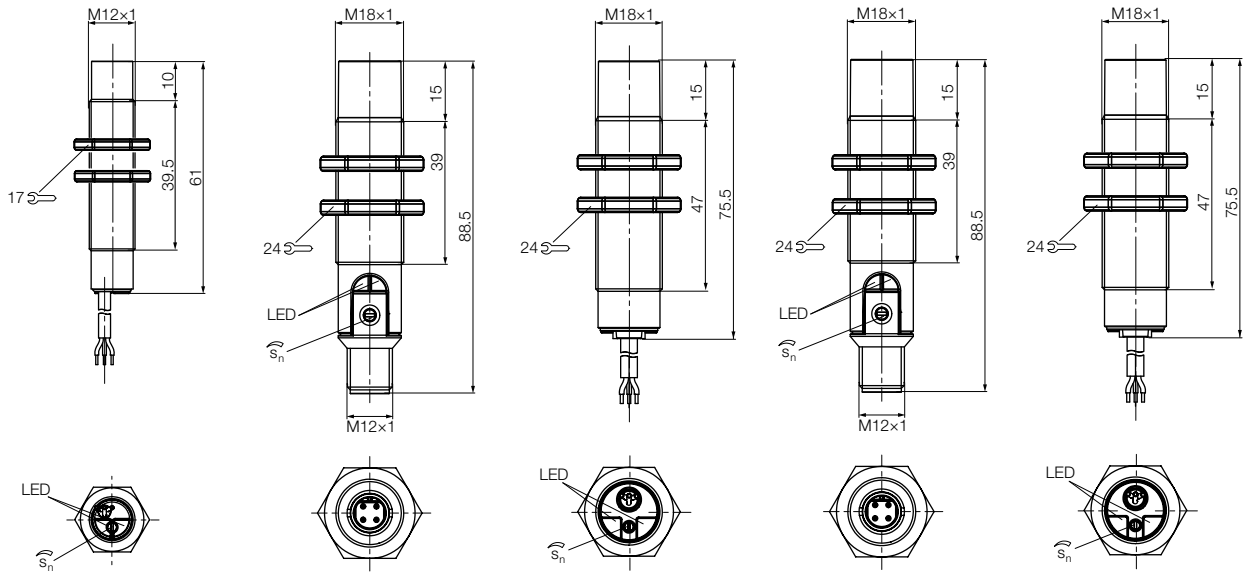
# Capacitive Global Sensors for level detection, cylinder designs, DC 3-wire, M12x1, M18x1



M12x1	M18x1	M18x1	M18x1	M18x1
Non-flush	Non-flush	Non-flush	Non-flush	Non-flush
1...8 mm	2..15 mm	2..15 mm	2..15 mm	2..15 mm
<b>BCS00R0</b>	<b>BCS00ME</b>	<b>BCS00M7</b>	<b>BCS00LM</b>	<b>BCS00LL</b>
BCS M12BBG1-PSC80H-EP02	BCS M18B4G2-PSC15H-S04K	BCS M18B4H1-PSC15H-EP02	BCS M18BBG2-PSC15H-S04K	BCS M18BBH1-PSC15H-EP02
<b>BCS00R1</b>	<b>BCS00ML</b>	<b>BCS00M9</b>	<b>BCS00LT</b>	<b>BCS00LY</b>
BCS M12BBG1-POC80H-EP02	BCS M18B4G2-POC15H-S04K	BCS M18B4H1-POC15H-EP02	BCS M18BBG2-POC15H-S04K	BCS M18BBH1-POC15H-EP02
<b>BCS00R2</b>	<b>BCS00MM</b>	<b>BCS00MA</b>	<b>BCS00LU</b>	<b>BCS00LZ</b>
BCS M12BBG1-NSC80H-EP02	BCS M18B4G2-NSC15H-S04K	BCS M18B4H1-NSC15H-EP02	BCS M18BBG2-NSC15H-S04K	BCS M18BBH1-NSC15H-EP02
<b>BCS00R3</b>	<b>BCS00MN</b>	<b>BCS00MC</b>	<b>BCS00LW</b>	<b>BCS00MO</b>
BCS M12BBG1-NOC80H-EP02	BCS M18B4G2-NOC15H-S04K	BCS M18B4H1-NOC15H-EP02	BCS M18BBG2-NOC15H-S04K	BCS M18BBH1-NOC15H-EP02
10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
≤ 1.5 V	≤ 1.5 V	≤ 1.5 V	≤ 1.5 V	≤ 1.5 V
75 V DC	75 V DC	75 V DC	75 V DC	75 V DC
100 mA	100 mA	100 mA	100 mA	100 mA
≤ 15 mA	≤ 15 mA	≤ 15 mA	≤ 15 mA	≤ 15 mA
Yes/Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
-25...+85 °C	-25...+85 °C	-25...+85 °C	-25...+85 °C	-25...+85 °C
100 Hz	100 Hz	100 Hz	100 Hz	100 Hz
Green LED/Yellow LED	Green LED/Yellow LED	Green LED/Yellow LED	Green LED/Yellow LED	Green LED/Yellow LED
IP 67	IP 67	IP 67	IP 67	IP 67
PBT	Stainless steel	Stainless steel	PBT	PBT
PBT	PBT	PBT	PBT	PBT
PA 12	PA 12, PBT	PA 12	PA 12, PBT	PA 12
2 m PUR cable, 3x0.14 mm <sup>2</sup>	M12 connector, 4-pin, A-coded	2 m PUR cable, 3x0.34 mm <sup>2</sup>	M12 connector, 4-pin, A-coded	2 m PUR cable 3x0.34 mm <sup>2</sup>



Capacitive Global Sensors  
Performance Spectrum  
Capacitive Sensors for Object Detection, Cylinder Designs, Block Designs  
Capacitive Sensors for Level Detection, Cylinder Designs



Capacitive Global Sensors  
for level detection, cylinder designs,  
DC 3-wire, M30×1.5

M30 Metal  
Global

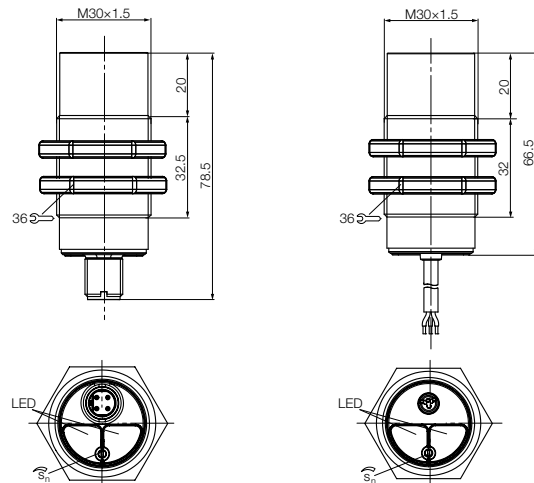
Preferred variants  
available immediately



Size		<b>M30×1.5</b>	<b>M30×1.5</b>
Installation type		Non-flush	Non-flush
Rated switching distance $s_n$		<b>1...25 mm</b>	<b>1...25 mm</b>
PNP, NO	<b>Ordering code</b>	<b>BCS00MY</b>	<b>BCS00N6</b>
	Part number	BCS M30B4E2-PSC25H-S04K	BCS M30B4E1-PSC25H-EP02
PNP, normally closed	<b>Ordering code</b>	<b>BCS00MZ</b>	<b>BCS00N7</b>
	Part number	BCS M30B4E2-POC25H-S04K	BCS M30B4E1-POC25H-EP02
NPN, NO	<b>Ordering code</b>	<b>BCS00N0</b>	<b>BCS00N8</b>
	Part number	BCS M30B4E2-NSC25H-S04K	BCS M30B4E1-NSC25H-EP02
NPN, NC	<b>Ordering code</b>	<b>BCS00N1</b>	<b>BCS00N9</b>
	Part number	BCS M30B4E2-NOC25H-S04K	BCS M30B4E1-NOC25H-EP02
Supply voltage $U_S$		10...30 V DC	10...30 V DC
Voltage drop $U_d$ at $I_o$		≤ 1.5 V	≤ 1.5 V
Rated insulation voltage $U_i$		75 V DC	75 V DC
Output current max.		100 mA	100 mA
No-load supply current $I_o$ max.		≤ 15 mA	≤ 15 mA
Polarity reversal protected/transposition protected/short-circuit protected		Yes/Yes/Yes	Yes/Yes/Yes
Ambient temperature $T_a$		-25...+85 °C	-25...+85 °C
Switching frequency $f$		100 Hz	100 Hz
Supply voltage/output function indicator		Green LED/Yellow LED	Green LED/Yellow LED
Degree of protection as per IEC 60529		IP 67	IP 67
Material	Housing	Stainless steel	Stainless steel
	Sensing surface	PBT	PBT
	Cover	PA 12, PBT	PA 12, PBT
Connection		M12 connector, 4-pin, A-coded	2 m PUR cable, 3×0.34 mm <sup>2</sup>

Wiring diagrams see page 107.

Other variants on request.



**Suitable connectors**

Size/design	Length/cable material	Ordering code
M12, 4-pin/straight	2 m/PVC	<b>BCC0367</b>
M12, 4-pin/angled	2 m/PVC	<b>BCC036P</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC0368</b>
M12, 4-pin/straight	5 m/PVC	<b>BCC036N</b>

You can find additional electrical accessories in our catalog  
**Industrial Networking and Connectivity.**

**Recommended accessories**

Description	Ordering code
Mounting bracket	<b>BAM00HH</b>
Clamping holders	<b>BAM01UO</b>
Mounting cuff	<b>BAM00HN</b>

You can find additional mechanical accessories in  
our catalog **Accessories Line.**

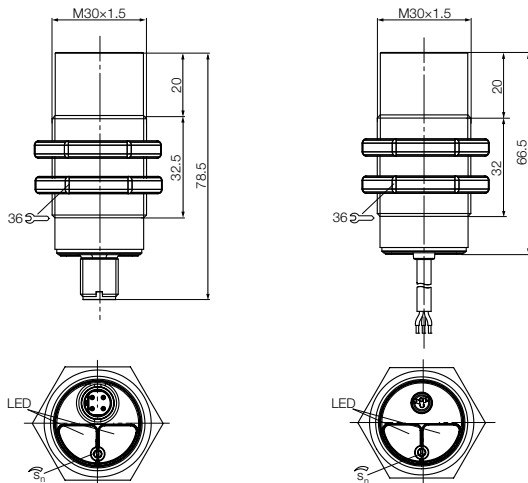
# Capacitive Global Sensors for level detection, cylinder designs, DC 3-wire, M30×1.5



<b>M30×1.5</b> Non-flush <b>1...25 mm</b> <b>BCS00NH</b> BCS M30BBE2-PSC25H-S04K	<b>M30×1.5</b> Non-flush <b>1...25 mm</b> <b>BCS00NT</b> BCS M30BBE1-PSC25H-EP02		
<b>BCS00NJ</b> BCS M30BBE2-POC25H-S04K	<b>BCS00NU</b> BCS M30BBE1-POC25H-EP02		
<b>BCS00NK</b> BCS M30BBE2-NSC25H-S04K	<b>BCS00NW</b> BCS M30BBE1-NSC25H-EP02		
<b>BCS00NL</b> BCS M30BBE2-NOC25H-S04K	<b>BCS00NY</b> BCS M30BBE1-NOC25H-EP02		
10...30 V DC ≤ 1.5 V 75 V DC 100 mA ≤ 15 mA Yes/Yes/Yes -25...+85 °C 100 Hz Green LED/Yellow LED IP 67 PBT PBT PA 12, PBT M12 connector, 4-pin, A-coded	10...30 V DC ≤ 1.5 V 75 V DC 100 mA ≤ 15 mA Yes/Yes/Yes -25...+85 °C 100 Hz Green LED/Yellow LED IP 67 PBT PBT PA 12, PBT 2 m PUR cable, 3×0.34 mm <sup>2</sup>		



Capacitive  
Global  
Sensors  
Performance  
Spectrum  
Capacitive  
Sensors  
for Object  
Detection,  
Cylinder  
Designs,  
Block  
Designs  
Capacitive  
Sensors for  
Level  
Detection,  
Cylinder  
Designs





# Magnetic Global Cylinder Sensors

## Magnetic Global cylinder sensors – for perfect grip in the pneumatic cylinder

Our compact magnetic Global cylinder sensors offer the perfect grip. They are precisely matched to the different cylinder groove shapes. Therefore, they can not only be installed flush in the respective slot, but also fit in completely.

- Insertion from above or the side
- Cable or connector versions
- Compact design

### For the C-slot: BMF 204 and BMF 214

BMF 204 – for 3.8 mm slot

BMF 214 – for 4 mm slot

- Can be inserted via the groove end
- Exceptional grip
- Miniature design for grippers and short-stroke cylinders
- Exactly positionable

### For the T-slot: BMF 235

BMF 235 – the standard

- Large and extremely bright LED for simple diagnostics
- Can be installed in the T-slot from above (drop-in installation)
- with standard screwdriver or 1.5 mm Allen key
- Short, compact design with outstanding grip

### V-Twin® – one plug for two sensors

In M8 or M12

- With one 4-core or 3-core cables
- Reduces use of materials
- Fast installation
- Lowers costs
- Simply double sensors on a multi-interface block/sensor splitter

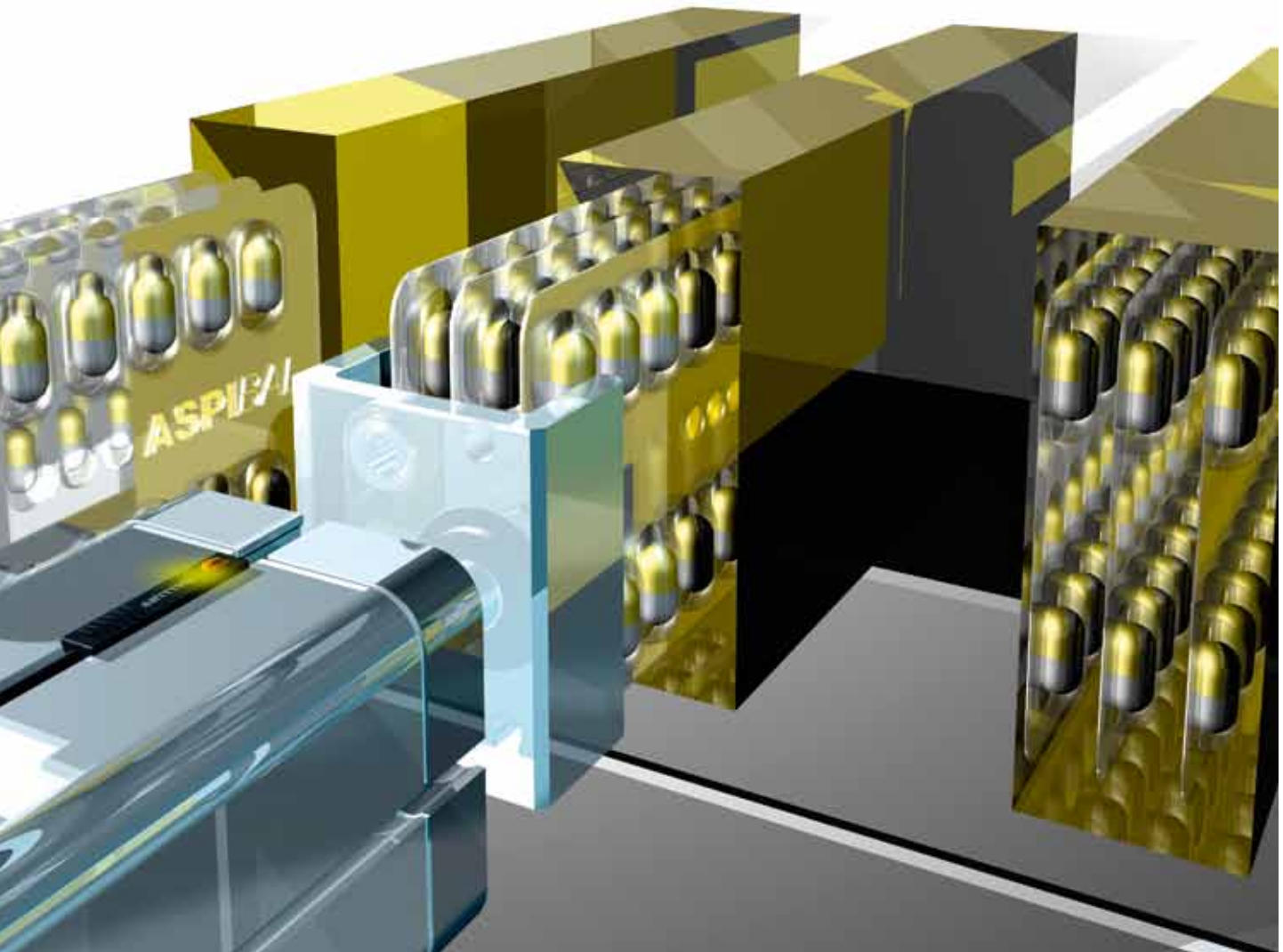
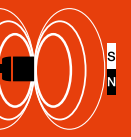


# Magnetic Global Cylinder Sensors

## Contents

### Compact Design

BMF 204 Global	76
BMF 214 Global	78
BMF 243 Global	80
BMF 235 Global	82



# Magnetic Global Cylinder Sensors

## Compact design, BMF 204

# C-slot (size 10 slot)

## Global

### Secure hold in the slot

The design is adapted to the slot, i.e. the sensor can be inserted into the slot.

### Installed and adjusted quickly and easily

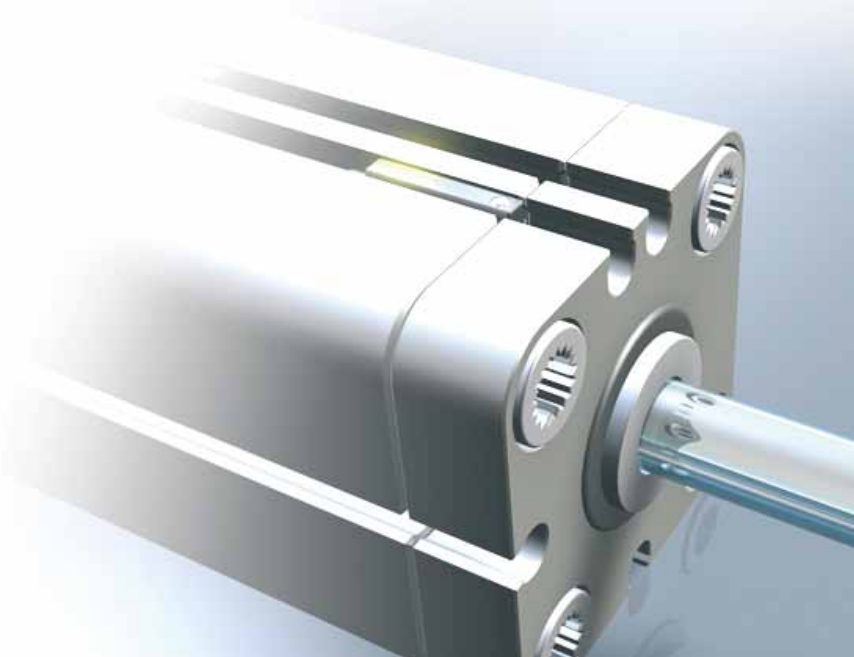
The retaining element is integrated into the sensor.

### Can also be used in space-critical applications

Flush-mounted, the sensor "disappears" in the slot.

### Optimum solution for every gripper and short-stroke cylinder

Miniature design, extremely short



Preferred variants available immediately



Series	
Properties	
PNP, NO	<b>Ordering code</b>
	Part number
Supply voltage $U_S$	
Voltage drop $U_d$	
Rated insulation voltage $U_i$	
Rated operating current $I_o$	
No-load supply current $I_o$ max.	
Polarity reversal protected/transposition protected/short-circuit protected	
Rated switching field strength $I_{H_n}$	
Assured switching field strength $I_{H_a}$	
Temperature drift of switch-on point of $I_{H_n}$	
On/off delay	
Ambient temperature $T_a$	
Degree of protection as per IEC 60529	
Approval	
Material	Housing
Connection	
Assembly	
Slot	

Wiring diagrams see page 107.

Other variants on request.



The BMF 204 and BMF 214 have an impressive, extremely compact design.



**Recommended accessories**  
(please order separately)

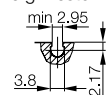


Special accessories for magnetic cylinder sensors, such as **installation tools, cable clips, or hose clamps**, can be found in the Object Detection catalog on page 842.

### Slot dimension

C-slot (size 10 slot)

e.g. Festo





# Magnetic Global Cylinder Sensors

## Compact design, BMF 204

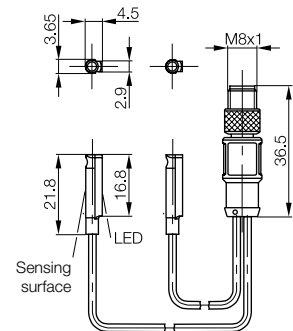
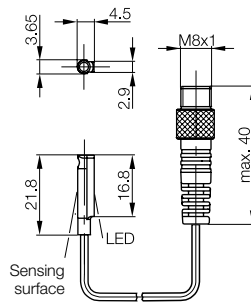
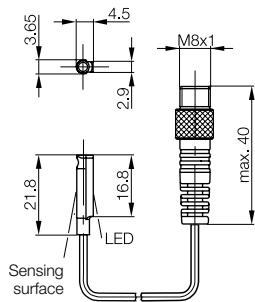
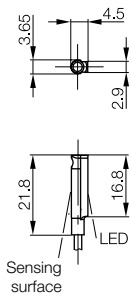


BMF 204	BMF 204	BMF 204	BMF 204
Small housing for the Festo C-slot with direct PUR cable	Small housing for the Festo C-slot with M8 connector	Small housing for the Festo C-slot with M8 connector	Small housing for the Festo C-slot with M12 connector
<b>BMF0001</b>	<b>BMF0002</b>	<b>BMF0003</b>	<b>BMF00A6</b>
BMF 204K-PS-C-2A-PU-02	BMF 204K-PS-C-2A-SA2-S49-00,3	BMF 204K-PS-C-2A-SA2-S49-00,5	BMF 204K-PS-C-2A-SA2-S4-00,3
10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
≤ 2.5 V	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V
75 V DC	75 V DC	75 V DC	75 V DC
100 mA	100 mA	100 mA	100 mA
≤ 8 mA	≤ 8 mA	≤ 8 mA	≤ 8 mA
Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
1.2 kA/m	1.2 kA/m	1.2 kA/m	1.2 kA/m
≥ 2 kA/m	≥ 2 kA/m	≥ 2 kA/m	≥ 2 kA/m
≤ 0.3%/°C	≤ 0.3%/°C	≤ 0.3%/°C	≤ 0.3%/°C
≤ 0.07 ms/≤ 0.07 ms	≤ 0.07 ms/≤ 0.07 ms	≤ 0.07 ms/≤ 0.07 ms	≤ 0.07 ms/≤ 0.07 ms
-25...+85 °C	-25...+85 °C	-25...+85 °C	-25...+85 °C
IP 67	IP 67	IP 67	IP 67
CE, cULus	CE, cULus	CE, cULus	CE, cULus
PA12	PA12	PA12	PA12
2 m PUR cable, 3×0.1 mm <sup>2</sup>	0.3 m PUR cable with M8 connector, 3-pin	0.5 m PUR cable with M8 connector, 3-pin	0.3 m PUR cable with M12 connector, 4-pin
Can be inserted from the side	Can be inserted from the side	Can be inserted from the side	Can be inserted from the side
∩ C-slot (size 10 slot)	∩ C-slot (size 10 slot)	∩ C-slot (size 10 slot)	∩ C-slot (size 10 slot)



Magnetic Global Cylinder Sensors in Compact Design

**BMF 204**  
BMF 214  
BMF 243  
BMF 235



**Secure hold in the slot**

The design is adapted to the slot, i.e. the sensor can be inserted into the slot.

**Installed and adjusted quickly and easily**

The retaining element is integrated into the sensor.

**Can also be used in space-critical applications**

Flush-mounted, the sensor "disappears" in the slot.

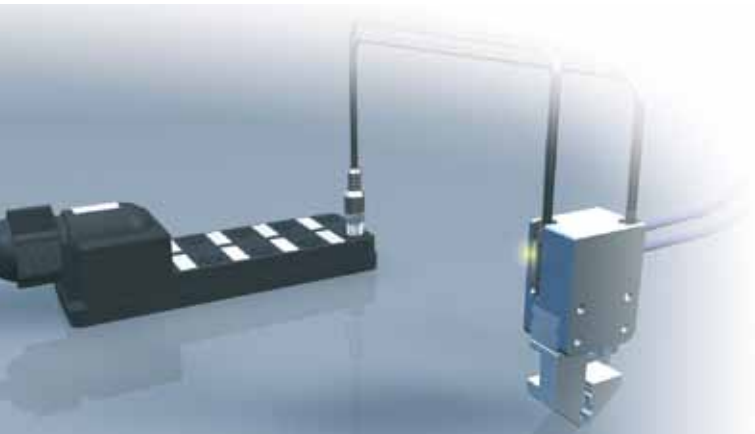
**Optimum solution for every gripper and short-stroke cylinder**

Miniature design, extremely short.

Preferred variants available immediately



Series	
Properties	
PNP, NO	<b>Ordering code</b>
	Part number
Supply voltage $U_S$	
Voltage drop $U_d$	
Rated insulation voltage $U_i$	
Rated operating current $I_o$	
No-load supply current $I_o$ max.	
Polarity reversal protected/transposition protected/short-circuit protected	
Rated switching field strength $I H_n I$	
Assured switching field strength $I H_a I$	
Temperature drift of switch-on point of $I H_n I$	
On/off delay	
Ambient temperature $T_a$	
Degree of protection as per IEC 60529	
Approval	
Material	Housing
Connection	
Assembly	
Slot	



**V-Twin – two sensors, one connector**

- Save on connectors and increase value creation.
- Just one plug-in position for two sensors
- Flexibly detect multiple positions on pneumatic grippers and cylinders.

Wiring diagrams see page 107.

Other variants on request.

**Recommended accessories**  
(please order separately)

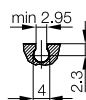


Special accessories for magnetic cylinder sensors, such as **installation tools, cable clips, or hose clamps**, can be found in the Object Detection catalog on page 842.

**Slot dimension**

C-slot (rounded groove)

e.g. SMC



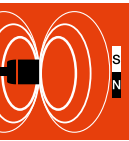


# Magnetic Global Cylinder Sensors

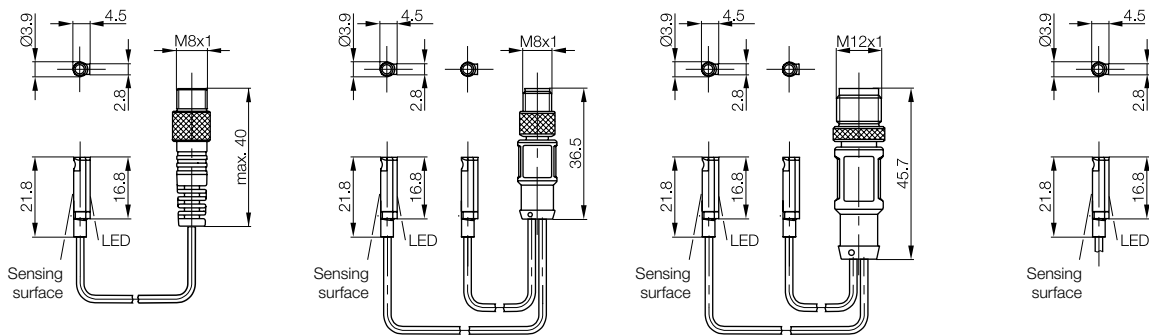
## Compact design, BMF 214



BMF 214	BMF 214	BMF 214	BMF 214
Small housing for the SMC C-slot with M8 connector	Small housing for the SMC C-slot with M8 connector	Small housing for the SMC C-slot with M12 connector	Small housing for the SMC C-slot with direct PUR cable
<b>BMF00A2</b>	<b>BMF00A5</b>	<b>BMF00A4</b>	<b>BMF00A1</b>
BMF 214K-PS-C-2A-SA2-S49-00,3	BMF 214K-PS-C-2A-SA95-S75-00,3	BMF 214K-PS-C-2A-SA95-S4-00,3	BMF 214K-PS-C-2A-PU-02
10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
≤ 2.5 V	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V
75 V DC	75 V DC	75 V DC	75 V DC
100 mA	100 mA	100 mA	100 mA
≤ 8 mA	≤ 8 mA	≤ 8 mA	≤ 8 mA
Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
1.2 kA/m	1.2 kA/m	1.2 kA/m	1.2 kA/m
≥ 2 kA/m	≥ 2 kA/m	≥ 2 kA/m	≥ 2 kA/m
≤ 0.3%/°C	≤ 0.3%/°C	≤ 0.3%/°C	≤ 0.3%/°C
≤ 0.07 ms/≤ 0.07 ms	≤ 0.07 ms/≤ 0.07 ms	≤ 0.07 ms/≤ 0.07 ms	≤ 0.07 ms/≤ 0.07 ms
-25...+85 °C	-25...+85 °C	-25...+85 °C	-25...+85 °C
IP 67	IP 67	IP 67	IP 67
CE, cULus	CE, cULus	CE, cULus	CE, cULus
PA12	PA12	PA12	PA12
0.3 m PUR cable with M8 connector, 3-pin	0.3 m PUR cable with M8 connector, 4-pin	0.3 m PUR cable with M12 connector, 4-pin	2 m PUR cable, 3×0.1 mm <sup>2</sup>
Can be inserted from the side	Can be installed from above	Can be installed from above	Can be installed from above
∩ C-slot (rounded groove)	∩ C-slot (rounded groove)	∩ C-slot (rounded groove)	∩ C-slot (rounded groove)



Magnetic Global Cylinder Sensors in Compact Design  
 BMF 204  
 BMF 214  
 BMF 243  
 BMF 235

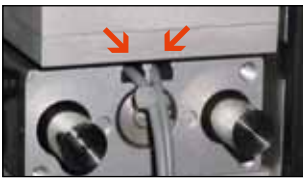




**New mounting concept**  
Solid hold in the slot, sensor cannot be wrenched from the slot.



**Can be installed in the slot from above**  
Can be installed even on cylinders with a covered slot



**Compact design, i.e. can be mounted flush**  
Can also be used in space-critical applications



**As short as possible (24 mm)**  
Can also be used in space-critical applications



Preferred variants available immediately



Series		
Properties		
PNP, NO	<b>Ordering code</b>	
	Part number	
PNP, normally closed	<b>Ordering code</b>	
	Part number	
NPN, NO	<b>Ordering code</b>	
	Part number	
NPN, NC	<b>Ordering code</b>	
	Part number	
Supply voltage $U_S$		
Voltage drop $U_d$		
Rated insulation voltage $U_i$		
Rated operating current $I_o$		
No-load supply current $I_o$ max.		
Polarity reversal protected/transposition protected/short-circuit protected		
Rated switching field strength $I_{H_n}$		
Assured switching field strength $I_{H_a}$		
On/off delay		
Ambient temperature $T_a$		
Degree of protection as per IEC 60529		
Approval		
Material	Housing	
Connection		
Assembly		
Slot		

Wiring diagrams see page 107.

Other variants on request.

**Recommended accessories**  
(please order separately)



Special accessories for magnetic cylinder sensors, such as **installation tools, cable clips, or hose clamps**, can be found in the Object Detection catalog on page 842.

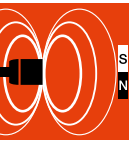


# Magnetic Global Cylinder Sensors

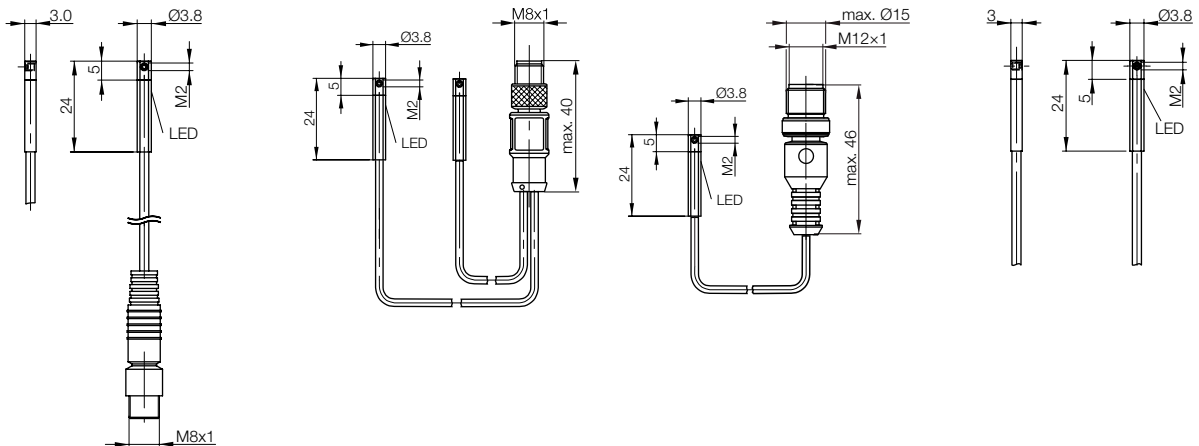
## Compact design, BMF 243



BMF 243	BMF 243	BMF 243	BMF 243
The new benchmark for every C-slot (rounded groove) with M8 connector	The new benchmark for every C-slot (rounded groove) with M8 connector	The new benchmark for every C-slot (rounded groove) with M12 connector	The new benchmark for every C-slot (rounded groove) with direct PUR cable
<b>BMF00EL</b>	<b>BMF00ET</b>	<b>BMF00ER</b>	<b>BMF00EF</b>
BMF 243K-PS-C-2A-SA2-S49-00,3	BMF 243K-PS-C-2A-SA95-S75-00,3	BMF 243K-PS-C-2A-SA2-S4-00,3	BMF 243K-PS-C-2A-PU-02
<b>BMF00EM</b>			<b>BMF00EH</b>
BMF 243K-PO-C-2A-SA2-S49-00,3			BMF 243K-PO-C-2A-PU-02
<b>BMF00EN</b>			<b>BMF00EJ</b>
BMF 243K-NS-C-2A-SA2-S49-00,3			BMF 243K-NS-C-2A-PU-02
<b>BMF00EP</b>			<b>BMF00EK</b>
BMF 243K-NO-C-2A-SA2-S49-00,3			BMF 243K-NO-C-2A-PU-02
10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
≤ 2.4 V	≤ 2.4 V	≤ 2.4 V	≤ 2.4 V
75 V DC	75 V DC	75 V DC	75 V DC
100 mA	100 mA	100 mA	100 mA
7.5 mA	7.5 mA	7.5 mA	7.5 mA
Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
2 kA/m	2 kA/m	2 kA/m	2 kA/m
≥ 2.4 kA/m	≥ 2.4 kA/m	≥ 2.4 kA/m	≥ 2.4 kA/m
≤ 0.07 ms/≤ 0.07 ms	≤ 0.07 ms/≤ 0.07 ms	≤ 0.07 ms/≤ 0.07 ms	≤ 0.07 ms/≤ 0.07 ms
-25...+85 °C	-25...+85 °C	-25...+85 °C	-25...+85 °C
IP 67	IP 67	IP 67	IP 67
CE, cULus	CE, cULus	CE, cULus	CE, cULus
PA 12 and A2 steel	PA 12 and A2 steel	PA 12 and A2 steel	PA 12 and A2 steel
0.3 m PUR cable with M8 connector, 3-pin	0.3 m PUR cable with M8 connector, 4-pin	0.3 m PUR cable with M12 connector, 4-pin	2 m PUR cable, 3×0.10 mm <sup>2</sup>
Can be installed from above	Can be installed from above	Can be installed from above	Can be installed from above
∩ C-slot (rounded groove)	∩ C-slot (rounded groove)	∩ C-slot (rounded groove)	∩ C-slot (rounded groove)



Magnetic Global Cylinder Sensors in Compact Design  
 BMF 204  
 BMF 214  
**BMF 243**  
 BMF 235





**Very bright LED**

Reliable detection of switching function from far away (25 m in bright factory building).



**New mounting concept**

Solid hold in the slot, sensor cannot be wrenched from the slot.



**Knurled screw**

Sensor screws in firmly, extremely secure hold in any slot (e.g. Parker, Festo, SMC, Bosch).



Can be installed from above.  
Easy installation with Allen or slotted screwdriver

Preferred variants available immediately



Series		
Properties		
PNP, NO	<b>Ordering code</b>	
	Part number	
PNP, normally closed	<b>Ordering code</b>	
	Part number	
NPN, NO	<b>Ordering code</b>	
	Part number	
NPN, NC	<b>Ordering code</b>	
	Part number	
Supply voltage $U_S$		
Voltage drop $U_d$		
Rated insulation voltage $U_i$		
Rated operating current $I_o$		
No-load supply current $I_o$ max.		
Polarity reversal protected/transposition protected/short-circuit protected		
Rated switching field strength $I_{H_n}$		
Assured switching field strength $I_{H_a}$		
Temperature drift of switch-on point of $I_{H_n}$		
On/off delay		
Ambient temperature $T_a$		
Degree of protection as per IEC 60529		
Approval		
Material	Housing	
Connection		
Assembly		
Slot		

Wiring diagrams see page 107.

Other variants on request.

**Recommended accessories**  
(please order separately)



Special accessories for magnetic cylinder sensors, such as **installation tools, cable clips, or hose clamps**, can be found in the Object Detection catalog on page 842.



# Magnetic Global Cylinder Sensors

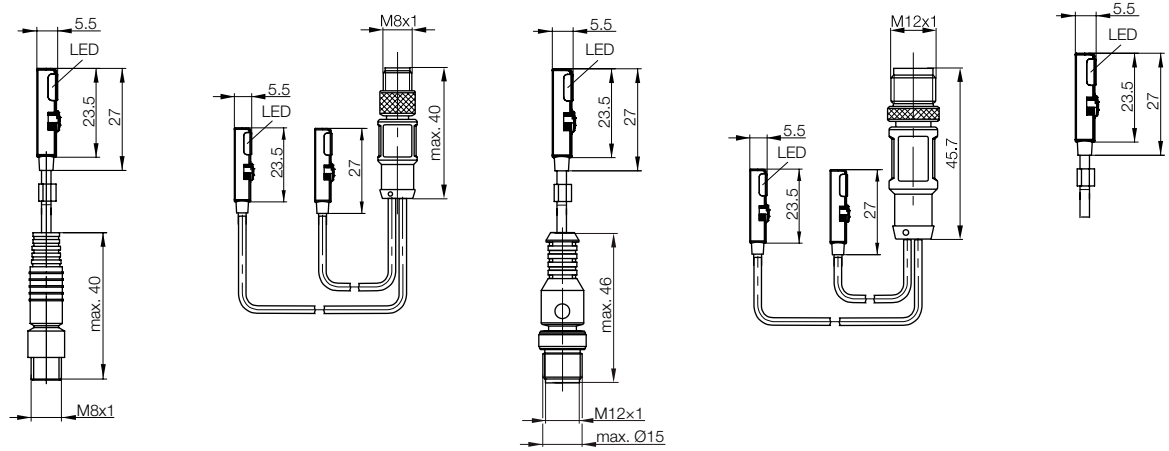
## Compact design, BMF 235

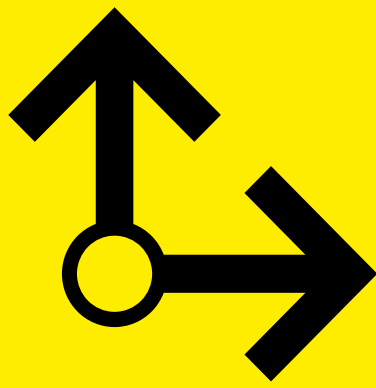


BMF 235	BMF 235	BMF 235	BMF 235	BMF 235
The new benchmark for every T-slot with M8 connector	The new benchmark for every T-slot with M8 connector	The new benchmark for every T-slot with M12 connector	The new benchmark for every T-slot with M12 connector	The new benchmark for every T-slot with direct PUR cable
<b>BMF00C4</b>	<b>BMF00CA</b>	<b>BMF00C5</b>	<b>BMF00C9</b>	<b>BMF00AR</b>
BMF 235K-PS-C-2A-SA2-S49-00,3	BMF 235K-PS-C-2A-SA95-S75-00,3	BMF 235K-PS-C-2A-SA2-S4-00,3	BMF 235K-PS-C-2A-SA95-S4-00,3	BMF 235K-PS-C-2A-PU-02
<b>BMF00C6</b>				<b>BMF00AT</b>
BMF 235K-PO-C-2A-SA2-S49-00,3				BMF 235K-PO-C-2A-PU-02
<b>BMF00C2</b>				<b>BMF00AU</b>
BMF 235K-NS-C-2A-SA2-S49-00,3				BMF 235K-NS-C-2A-PU-02
<b>BMF00C3</b>				<b>BMF00AW</b>
BMF 235K-NO-C-2A-SA2-S49-00,3				BMF 235K-NO-C-2A-PU-02
10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
≤ 2.5 V	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V
75 V DC	75 V DC	75 V DC	75 V DC	75 V DC
100 mA	100 mA	100 mA	100 mA	100 mA
6 mA	6 mA	6 mA	6 mA	6 mA
Yes/No/Yes	Yes/No/Yes	Yes/No/Yes	Yes/No/Yes	Yes/No/Yes
1.2 kA/m	1.2 kA/m	1.2 kA/m	1.2 kA/m	1.2 kA/m
≥ 2 kA/m	≥ 2 kA/m	≥ 2 kA/m	≥ 2 kA/m	≥ 2 kA/m
≤ 0.3 %/°C	≤ 0.3 %/°C	≤ 0.3 %/°C	≤ 0.3 %/°C	≤ 0.3 %/°C
≤ 0.1 ms/≤ 0.1 ms	≤ 0.1 ms/≤ 0.1 ms	≤ 0.1 ms/≤ 0.1 ms	≤ 0.1 ms/≤ 0.1 ms	≤ 0.1 ms/≤ 0.1 ms
-25...+85 °C	-25...+85 °C	-25...+85 °C	-25...+85 °C	-25...+85 °C
IP 67	IP 67	IP 67	IP 67	IP 67
CE, cULus	CE, cULus	CE, cULus	CE, cULus	CE, cULus
PA12	PA12	PA12	PA12	PA12
0.3 m PUR cable with M8 connector, 4-pin	0.3 m PUR cable with M8 connector, 4-pin	0.3 m PUR cable with M12 connector, 4-pin	0.3 m PUR cable with M12 connector, 4-pin	2 m PUR cable, 3×0.1 mm <sup>2</sup>
Can be installed from above	Can be installed from above	Can be installed from above	Can be installed from above	Can be installed from above
┌┐ T-slot	┌┐ T-slot	┌┐ T-slot	┌┐ T-slot	┌┐ T-slot



Magnetic Global Cylinder Sensors in Compact Design  
 BMF 204  
 BMF 214  
 BMF 243  
**BMF 235**





# Industrial Networking and Connectivity

## Industrial networking and connectivity – a selection

From our extensive product line we have put together a selection for you that covers the most important applications in object detection.



# Industrial Networking and Connectivity – A Selection

## Contents

<b>M8 Connectors</b>	
3-pin	86
4-pin	87
<b>M12 Connectors</b>	
4-pin	88
<b>Passive splitters</b>	
BPI	89



Preferred variants available immediately

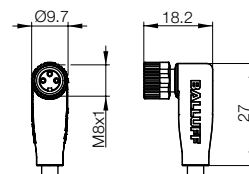
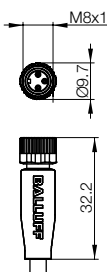


Connector diagram and wiring		PIN 1: brown PIN 3: blue PIN 4: black	PIN 1: brown PIN 3: blue PIN 4: black
Max. supply voltage AC $U_s$		60 V AC	60 V AC
Max. supply voltage DC $U_s$		60 V DC	60 V DC
Cable		Molded	Molded
Number of conductors x conductor cross-section		3x0.34 mm <sup>2</sup>	3x0.34 mm <sup>2</sup>
Degree of protection as per IEC 60529		IP 67	IP 67
Ambient temperature $T_a$	PUR	-25...+90 °C/-25...+90 °C (UL 80 °C)	-25...+90 °C/-25...+90 °C (UL 80 °C)
Static/moving	PVC	-25...+105 °C/-5...+90 °C (UL 80 °C)	-25...+105 °C/-5...+90 °C (UL 80 °C)

Cable material	Color	Length	Ordering code	
			Part number	
PVC	gray	2 m	<b>BCC02NU</b>	<b>BCC02P5</b>
			BCC M313-0000-10-001-VX8334-020	BCC M323-0000-10-001-VX8334-020
PVC	gray	5 m	<b>BCC02NW</b>	<b>BCC02P6</b>
			BCC M313-0000-10-001-VX8334-050	BCC M323-0000-10-001-VX8334-050
PVC	gray	10 m	<b>BCC02NY</b>	<b>BCC02P7</b>
			BCC M313-0000-10-001-VX8334-100	BCC M323-0000-10-001-VX8334-100

Other cable materials, colors, and lengths on request.

Connectors without LED are suitable for PNP and NPN switching functions.



# Connectors

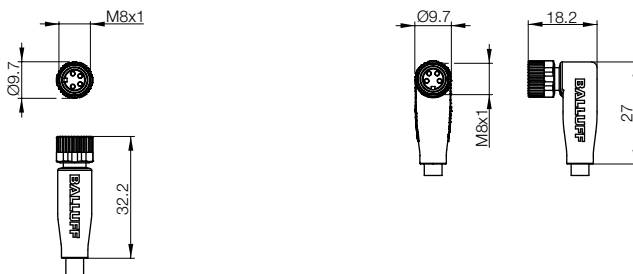
## M8 female straight and right-angle, 4-pin, no LED



	PIN 1: brown PIN 2: white PIN 3: blue PIN 4: black	PIN 1: brown PIN 2: white PIN 3: blue PIN 4: black	
	30 V AC 30 V DC Molded 4x0.34 mm <sup>2</sup> IP 67 -25...+90 °C/-25...+90 °C (UL 80 °C) -25...+105 °C/-5...+90 °C (UL 80 °C)	30 V AC 30 V DC Molded 4x0.34 mm <sup>2</sup> IP 67 -25...+90 °C/-25...+90 °C (UL 80 °C) -25...+105 °C/-5...+90 °C (UL 80 °C)	
	<b>Ordering code</b> Part number		
	<b>BCC02PL</b> BCC M314-0000-10-003-VX8434-020	<b>BCC02PZ</b> BCC M324-0000-10-003-VX8434-020	
	<b>BCC02PM</b> BCC M314-0000-10-003-VX8434-050	<b>BCC02R0</b> BCC M324-0000-10-003-VX8434-050	
	<b>BCC02PN</b> BCC M314-0000-10-003-VX8434-100	<b>BCC02R1</b> BCC M324-0000-10-003-VX8434-100	



Industrial Networking and Connectivity  
M8 Connectors  
M12 Connectors  
Passive Splitters



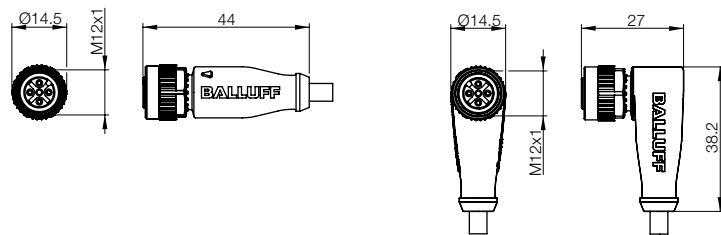
Preferred variants available immediately



Connector diagram and wiring	<p>PIN 1: brown PIN 2: white PIN 3: blue PIN 4: black</p>		<p>PIN 1: brown PIN 2: white PIN 3: blue PIN 4: black</p>	
Max. supply voltage AC $U_s$	250 V AC		250 V AC	
Max. supply voltage DC $U_s$	250 V DC		250 V DC	
Cable	Molded		Molded	
Number of conductors x conductor cross-section	4x0.34 mm <sup>2</sup>		4x0.34 mm <sup>2</sup>	
Degree of protection as per IEC 60529	IP 68		IP 68	
Ambient temperature $T_a$	PUR	-40...+90 °C/-25...+90 °C (UL 80 °C)	PVC	-40...+90 °C/-25...+90 °C (UL 80 °C)
Static/moving	PVC	-40...+105 °C/-5...+105 °C (UL 80 °C)	PVC	-40...+105 °C/-5...+105 °C (UL 80 °C)

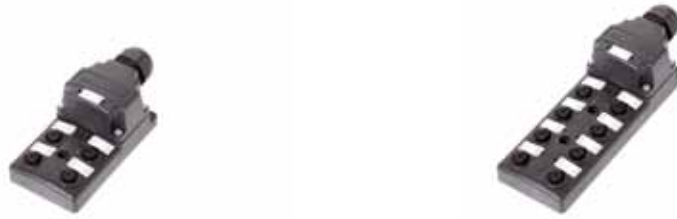
Cable material	Color	Length	Ordering code	Part number
PVC	gray	2 m	<b>BCC0367</b> BCC M415-0000-1A-003-VX8434-020	<b>BCC036N</b> BCC M425-0000-1A-003-VX8434-020
PVC	gray	5 m	<b>BCC0368</b> BCC M415-0000-1A-003-VX8434-050	<b>BCC036P</b> BCC M425-0000-1A-003-VX8434-050
PVC	gray	10 m	<b>BCC0369</b> BCC M415-0000-1A-003-VX8434-100	<b>BCC036R</b> BCC M425-0000-1A-003-VX8434-100

Other cable materials, colors, and lengths on request.  
Connectors without LED are suitable for PNP and NPN switching functions.



# Passive Splitters

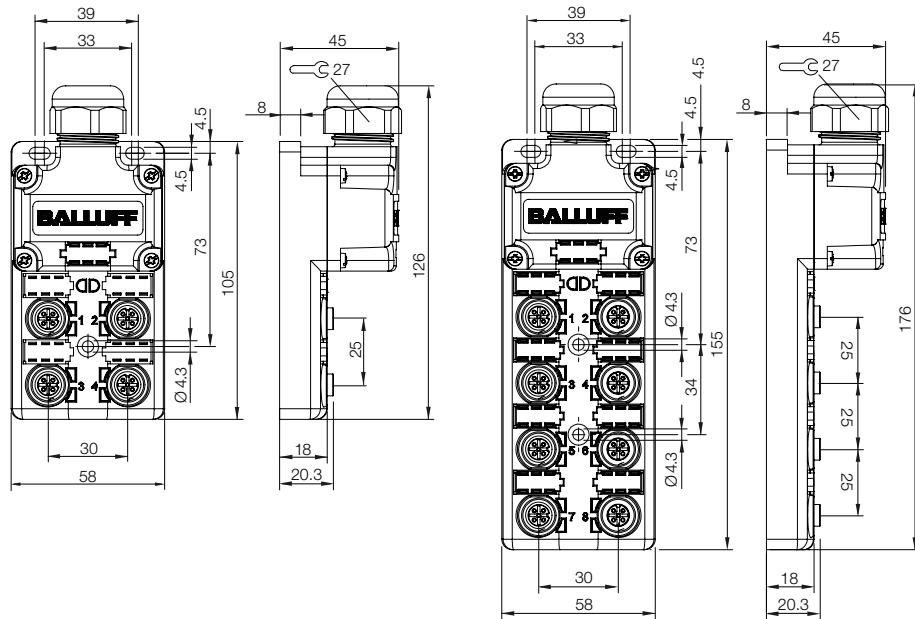
## BPI, 5-pin

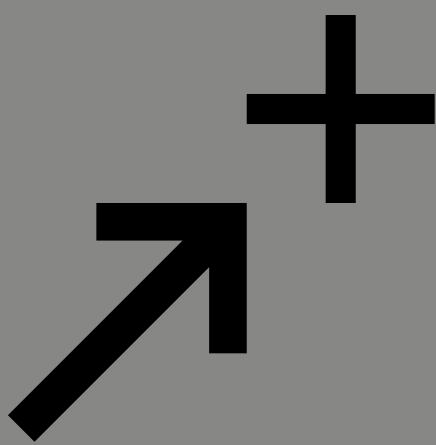


■ Preferred variants available immediately

Description	4-way, M12 with LEDs	8-way, M12 with LEDs
<b>Ordering code</b>	<b>BPI007K</b>	<b>BPI007H</b>
Part number	BPI 4M4A5P-2K-00-TPSG	BPI 8M4A5P-2K-00-TPSN
Rated operating voltage $U_e$	24 V DC	24 V DC
Supply voltage $U_s$	10...30 V DC	10...30 V DC
Function indicator	Yes	Yes
Power-on indicator	Green LED	Green LED
Sensor connection	5-pin female, M12×1	5-pin female, M12×1
Controller connection	Cap connection without cable	Cap connection without cable
Number of sockets	4	4
Current load capacity	2 A	2 A
Total current	6 A	6 A
Housing material	PBT, GF, fully potted	PBT, GF, fully potted
Degree of protection as per IEC 60529	IP 67 (when screwed into place)	IP 67 (when screwed into place)
Ambient temperature $T_a$	-25...+80 °C	-25...+80 °C
Use	PNP normally open/normally closed (NO/NC) $\swarrow$ - / $\searrow$	PNP normally open/normally closed (NO/NC) $\swarrow$ - / $\searrow$
Recommended connector - port	BCC M415...	BCC M415...

Industrial Networking and Connectivity  
M8 Connectors  
M12 Connectors  
Passive Splitters





# Accessories

## Accessories – a partial listing from our extensive product line

Fitting accessories are the optimal peripherals for sensors:

We provide reliable products for time and cost-saving integration into your automation system and for reliable operation.

We have put together a selection for you from our comprehensive product line.



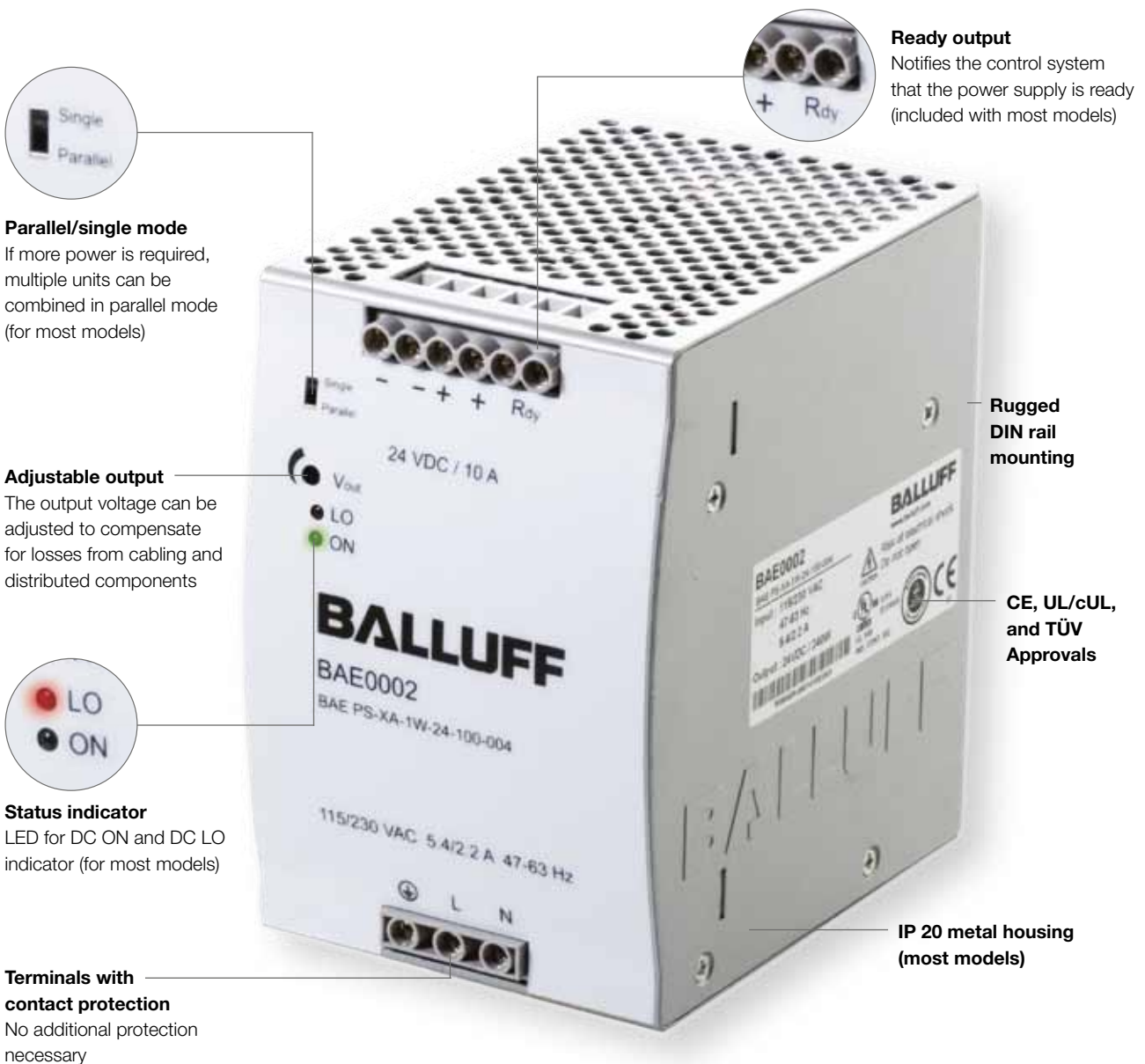
# Accessories

## Contents

<b>Accessories</b>	
Power Supplies	92
Mounting Brackets, Reflectors	100
Mounting Brackets, Mounting Adapters	101
Mounting Cuffs, Clamping Holders	102
Protective End Caps, Clamping Holders	103
Mounting Brackets, Hose Clamp	104
Mounting Bracket, Positive Stop	105



- **Ultra-reliable power supplies**  
 for protecting sensitive control electronics
- **Protection against unforeseen events**  
 Integrated overload and overvoltage protection
- **Wide selection of models**  
 Individual devices or individually combinations of different models available
- **Clean, precise power supply for particularly demanding systems**  
 Load regulation  $\pm 1\%$  for all models, ripple and noise under 50 mV for most models
- **Long service life for less system downtime**  
 MTBF (Mean Time Between Failure) up to 800,000 hours/  
 91 years



**Parallel/single mode**  
 If more power is required, multiple units can be combined in parallel mode (for most models)

**Adjustable output**  
 The output voltage can be adjusted to compensate for losses from cabling and distributed components



**Status indicator**  
 LED for DC ON and DC LO indicator (for most models)

**Terminals with contact protection**  
 No additional protection necessary



**Ready output**  
 Notifies the control system that the power supply is ready (included with most models)

**Rugged DIN rail mounting**

**CE, UL/cUL, and TÜV Approvals**

**IP 20 metal housing (most models)**

# Power Supplies

## Standard units

### Power for controllers and networks

Specially designed for control devices, Balluff power supplies are easily integrated into your control package and offer extra security.

The PS series of ultra-reliable power supply units is available in a wide range of 12, 24, and 48 V DC models with single or 3-phase input. With a bandwidth of 18 W to 960 W, they truly leave nothing to be desired. If you need even more power, simply connect multiple power supplies together in parallel (parallel mode).

If you need different voltages, simply contact us.



Output voltage (24 V DC)								Input voltage	Features			Product information	
0.75 A/18 W	1.25 A/30 W	2.5 A/60 W	3.8 A/91.20 W	5 A/120 W	10 A/240 W	20 A/480 W	40 A/960 W		Housing material	Parallel mode	Ready output	Ordering code	Part number
■								Single-phase <sup>1</sup>	Plastic			<b>BAE0001</b>	BAE-PS-XA-1W-24-007-001
	■							Single-phase <sup>1</sup>	Plastic		■	<b>BAE0004</b>	BAE-PS-XA-1W-24-012-002
		■						Single-phase <sup>1</sup>	Plastic		■	<b>BAE0005</b>	BAE-PS-XA-1W-24-025-002
			■					Single-phase <sup>2</sup>	Metal	■	■	<b>BAE003J</b>	BAE-PS-XA-1W-24-038-003
				■				Single-phase <sup>2</sup>	Metal	■	■	<b>BAE0006</b>	BAE-PS-XA-1W-24-050-003
					■			Single-phase <sup>2</sup>	Metal	■	■	<b>BAE0002</b>	BAE-PS-XA-1W-24-100-004
						■		Single-phase <sup>2</sup>	Metal	■	■	<b>BAE0003</b>	BAE-PS-XA-1W-24-200-005
				■				3-phase <sup>3</sup>	Metal		■	<b>BAE0007</b>	BAE-PS-XA-3Y-24-050-009
					■			3-phase <sup>3</sup>	Metal	■	■	<b>BAE0008</b>	BAE-PS-XA-3Y-24-100-006
						■		3-phase <sup>3</sup>	Metal	■	■	<b>BAE0009</b>	BAE-PS-XA-3Y-24-200-007
							■	3-phase <sup>3</sup>	Metal	■	■	<b>BAE003R</b>	BAE-PS-XA-3Y-24-400-010

<sup>1</sup> = 100...240 V AC  
<sup>2</sup> = 115/230 V AC (Auto-Select)  
<sup>3</sup> = 340...575 V AC



Accessories  
**Power Supplies**  
 Mounting Brackets,  
 Reflectors,  
 Mounting Adapters  
 Mounting Cuffs,  
 Clamping Holders,  
 Protective End Caps  
 Mounting Brackets,  
 Hose Clamp,  
 Positive Stop

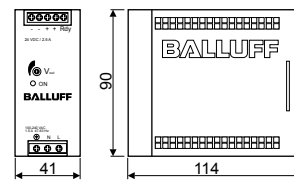
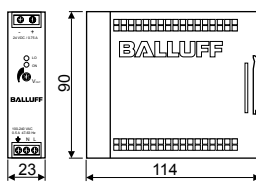
Power Supplies  
**Single-phase input voltage**  
**0.75 A, 1.25 A**



■ Preferred variants  
 available immediately

Output current	0.75 A	1.25 A
Output power	18 W	30 W
Output voltage	24 V DC (SELV)	24 V DC (SELV)
Input voltage	100...240 V AC	100...240 V AC
<b>Ordering code</b>	<b>BAE0001</b>	<b>BAE0004</b>
Part number	BAE PS-XA-1W-24-007-001	BAE PS-XA-1W-24-012-002
Input voltage range	90...264 V AC/120...375 V DC	85...264 V AC/90...375 V DC
Frequency range	47...63 Hz	47...63 Hz
Input fuse	T2 A/250 V AC internal	T2 A/250 V AC internal
Voltage adjustment range	22.5...28.5 V DC	22.5...28.5 V DC
Status indicator DC ON	Green LED	Green LED
Status indicator DC LOW	Red LED	
Efficiency	77 %	86 %
Response	Hiccup mode	Forward characteristic
Ambient temperature	-20...+70 °C	-40...+70 °C
Derating	-2.5%/°C of +61 °C	-2.5%/°C of +61 °C
Degree of protection as per IEC 60529	IP 20	IP 20
Ready output	No	DC OK output
Cooling	Free convection	Free convection
Approvals	CE, UL/cUL, TÜV	CE, UL/cUL, TÜV
Wiring diagram		

\*SELV = Safety Extra Low Voltage



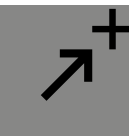
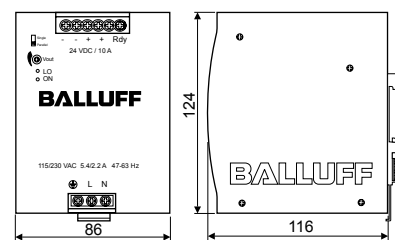
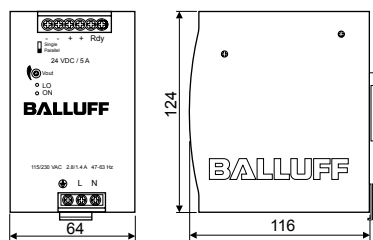
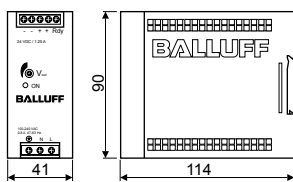
# Power Supplies

## Single-phase input voltage

### 2.5 A, 3.8 A, 5 A



2.5 A	3.8 A	5 A
60 W	91.20 W	120 W
24 V DC (SELV)	24 V DC (SELV)	24 V DC (SELV)
100...240 V AC	115/230 V AC (Auto-Select)	115/230 V AC (Auto-Select)
<b>BAE0005</b>	<b>BAE003J</b>	<b>BAE0006</b>
BAE PS-XA-1W-24-025-002	BAE PS-XA-1W-24-038-003	BAE PS-XA-1W-24-050-003
85...264 V AC/90...375 V DC	90...132 V AC; 180...264 V AC/210...375 V DC	90...132 V AC; 180...264 V AC/210...375 V DC
47...63 Hz	47...63 Hz	47...63 Hz
T2 A/250 V AC internal	T3.15 A/250 V AC internal	T3.15 A/250 V AC internal
22.5...28.5 V DC	22.5...24.5 V DC	22.5...28.5 V DC
Green LED	Green LED	Green LED
	Red LED	Red LED
89 %	86 %	86 %
Forward characteristic	Forward characteristic	Forward characteristic
-40...+70 °C	-35...+70 °C	-35...+70 °C
-2.5%/°C of +61 °C	-2.5%/°C of +61 °C	-2.5%/°C of +61 °C
IP 20	IP 20	IP 20
DC OK output	DC OK output relay	DC OK output relay
Free convection	Free convection	Free convection
CE, UL/cUL, TÜV	CE, UL/cUL, TÜV, ODVA	CE, UL/cUL, TÜV



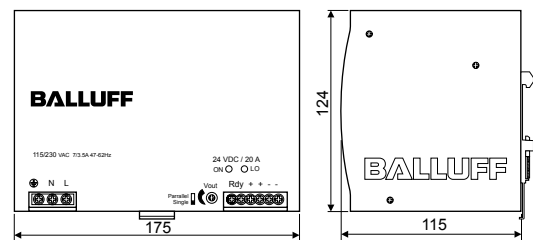
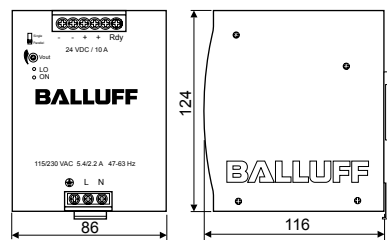
Accessories  
**Power Supplies**  
 Mounting Brackets,  
 Reflectors,  
 Mounting Adapters  
 Mounting Cuffs,  
 Clamping Holders,  
 Protective End Caps  
 Mounting Brackets,  
 Hose Clamp,  
 Positive Stop



■ Preferred variants available immediately

Output current	10 A	20 A
Output power	240 W	480 W
Output voltage	24 V DC (SELV)	24 V DC (SELV)
Input voltage	115/230 V AC (Auto-Select)	115/230 V AC (Auto-Select)
<b>Ordering code</b>	<b>BAE0002</b>	<b>BAE0003</b>
Part number	BAE PS-XA-1W-24-100-004	BAE PS-XA-1W-24-200-005
Input voltage range	90...132 V AC; 180...264 V AC/210...375 V DC	90...264 V AC/120...370 V DC
Frequency range	47...63 Hz	47...63 Hz
Input fuse	T6.3 A/250 V AC internal	T10 A/250 V AC internal
Voltage adjustment range	22.5...28.5 V DC	22.5...28.5 V DC
Status indicator DC ON	Green LED	Green LED
Status indicator DC LOW	Red LED	Red LED
Efficiency	89 %	89 %
Response	Forward characteristic	Forward characteristic
Ambient temperature	-40...+70 °C	-40...+70 °C
Derating	-2.5%/°C of +61 °C	-2.5%/°C of +56 °C
Degree of protection as per IEC 60529	IP 20	IP 20
Ready output	DC OK output relay	DC OK output relay
Cooling	Free convection	Free convection
Approvals	CE, UL/cUL, TÜV	CE, UL/cUL, TÜV
Wiring diagram		

\*SELV = Safety Extra Low Voltage



# Power Supplies

## 3-phase input voltage

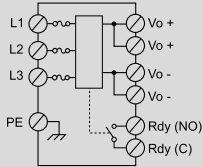
### 5 A, 10 A



5 A  
120 W  
24 V DC (SELV)  
3x 400...500 V AC

#### BAE0007

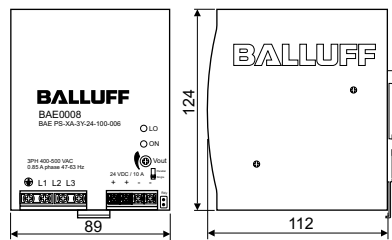
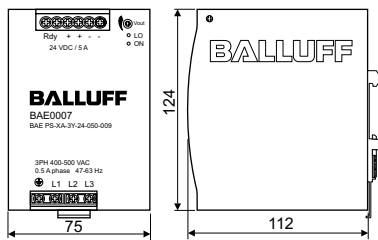
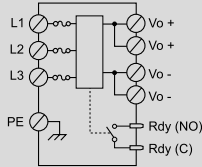
BAE PS-XA-3Y-24-050-009  
340...575 V AC/480...820 V DC  
47...63 Hz  
2 A/600 V AC internal/phase  
22.5...28.5 V DC  
Green LED  
Red LED  
89 %  
Hiccup mode  
-40...+70 °C  
-2.5%/°C of +61 °C  
IP 20  
DC OK output relay  
Free convection  
CE, UL/cUL, TÜV



10 A  
240 W  
24 V DC (SELV)  
3x 400...500 V AC

#### BAE0008

BAE PS-XA-3Y-24-100-006  
340...575 V AC/480...820 V DC  
47...63 Hz  
T2 A/600 V AC internal/phase  
22.5...28.5 V DC  
Green LED  
Red LED  
90 %  
Hiccup mode  
-40...+70 °C  
-2.5%/°C of +61 °C  
IP 20  
DC OK output relay  
Free convection  
CE, UL/cUL, TÜV



Accessories  
**Power Supplies**  
Mounting Brackets,  
Reflectors,  
Mounting Adapters  
Mounting Cuffs,  
Clamping Holders,  
Protective End Caps  
Mounting Brackets,  
Hose Clamp,  
Positive Stop

Power Supplies  
**3-phase input voltage**  
**20 A, 40 A**

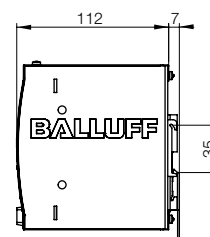
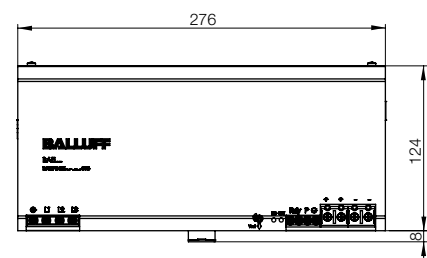
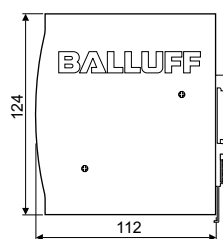
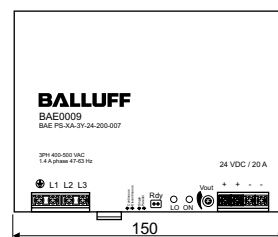


■ Preferred variants  
 available immediately



Output current	20 A	40 A
Output power	480 W	960 W
Output voltage	24 V DC (SELV)	24 V DC (SELV)
Input voltage	3x 400...500 V AC	3x 400...500 V AC
<b>Ordering code</b>	<b>BAE0009</b>	<b>BAE003R</b>
Part number	BAE PS-XA-3Y-24-200-007	BAE PS-XA-3Y-24-400-010
Input voltage range	340...575 V AC/480...820 V DC	340...575 V AC/480...820 V DC
Frequency range	47...63 Hz	47...63 Hz
Input fuse	3.15 A/500 V AC internal/phase	T5 A/500 V AC internal/phase
Voltage adjustment range	22.5...28.5 V DC	22.5...28.5 V DC
Status indicator DC ON	Green LED	Green LED
Status indicator DC LOW	Red LED	Red LED
Efficiency	90 %	92 %
Response	Forward characteristic (C), restart after 30 s (D), Shutoff within 3 s, (C)/(D) toggable	Hiccup mode
Ambient temperature	-30...+70 °C	-40...+70 °C
Derating	-2.5%/°C of +61 °C	-3.5%/°C above +61 °C
Degree of protection as per IEC 60529	IP 20	IP 20
Ready output	DC OK output relay	No
Cooling	Free convection	Free convection
Approvals	CE, UL/cUL, TÜV	CE, UL/cUL, TÜV
Wiring diagram		

\*SELV =  
 Safety Extra  
 Low Voltage



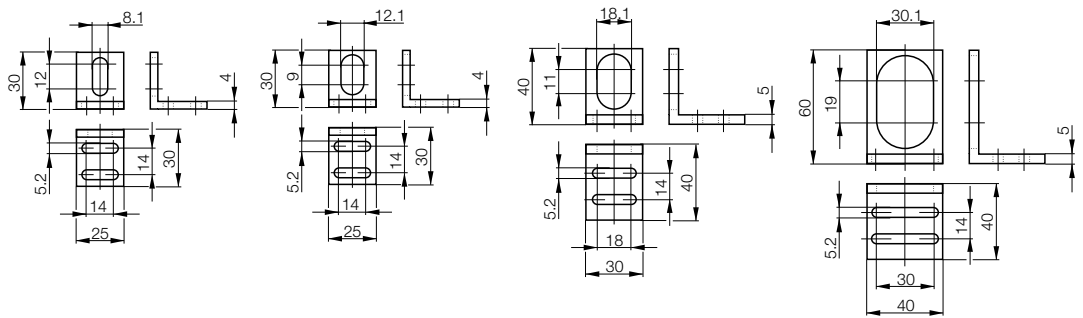


## Accessories

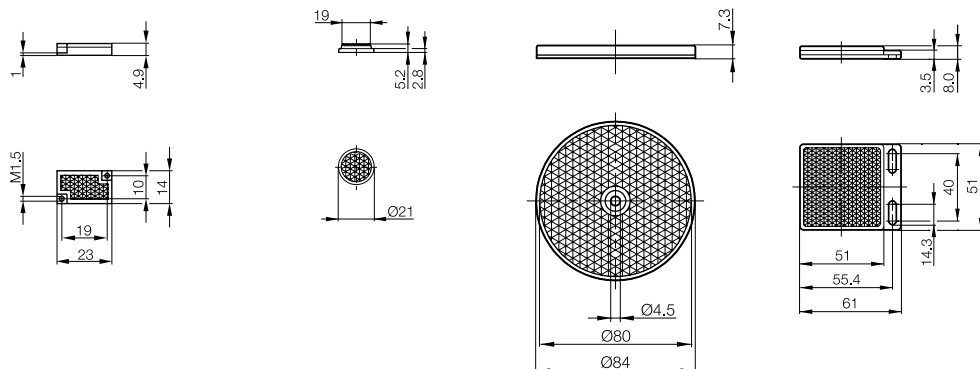
- Power Supplies
- Mounting Brackets,
- Reflectors,
- Mounting Adapters
- Mounting Cuffs,
- Clamping Holders,
- Protective End Caps
- Mounting Brackets,
- Hose Clamp,
- Positive Stop



Description	<b>Mounting bracket</b>	<b>Mounting bracket</b>	<b>Mounting bracket</b>	<b>Mounting bracket</b>
Use	For sensors and clamps <b>M8</b>	For sensors and clamps <b>M12</b>	for <b>M18</b> sensors	for <b>M30</b> sensors
<b>Ordering code</b>	<b>BAM009U</b>	<b>BAM00C0</b>	<b>BAM00EY</b>	<b>BAM00HH</b>
Part number	BES 08,0-HW-1	BES 12,0-HW-1	BES 18,0-HW-1	BES 30,0-HW-1
Material	Anodized aluminum	Anodized aluminum	Anodized aluminum	Anodized aluminum



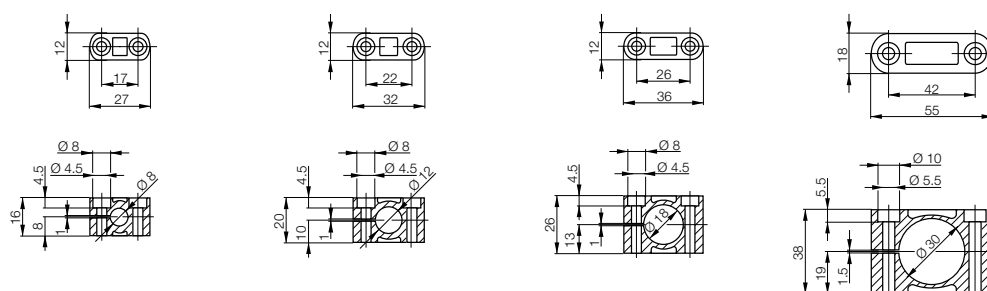
Description	<b>Reflector 14×23 mm</b>	<b>Reflector Ø 21 mm</b>	<b>Reflector Ø 84 mm</b>	<b>Reflector 51×61 mm</b>
Fastener	Two M1.5 screws	Glue	M4 screw	two M4 screws
<b>Ordering code</b>	<b>BAM00UM</b>	<b>BAM00UT</b>	<b>BAM00UK</b>	<b>BAM00WL</b>
Part number	BOS R-12	BOS R-16	BOS R-1	BOS R-9
Material	PMMA/ABS	PMMA/ABS	PMMA/ABS	PMMA/ABS
Triple size	0.9 mm	1.2 mm	4 mm	4 mm
Special features	for laser retroreflective sensors	for laser retroreflective sensors	for Retroreflective sensors	for Retroreflective sensors
Temperature range	-20...+60 °C	-20...+60 °C	-20...+60 °C	-20...+60 °C



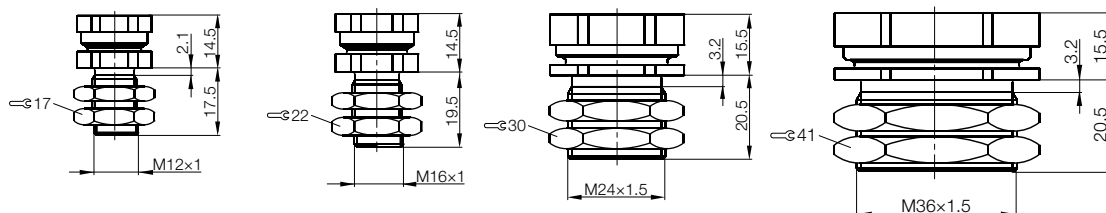




Description	<b>Mounting cuff</b>	<b>Mounting cuff</b>	<b>Mounting cuff</b>	<b>Mounting cuff</b>
Use	Ø 8 mm	Ø 12 mm	Ø 18 mm	Ø 30 mm
<b>Ordering code</b>	<b>BAM00A2</b>	<b>BAM00C4</b>	<b>BAM00F2</b>	<b>BAM00HN</b>
Part number	BES 08,0-BS-1	BES 12,0-BS-1	BES 18,0-BS-1	BES 30,0-BS-1
Material	PA 6	PA 6	PA 6	PA 6



Description	<b>Clamping holder with positive stop</b>	<b>Clamping holder with positive stop</b>	<b>Clamping holder with positive stop</b>	<b>Clamping holder with positive stop</b>
Use	For sensors Ø 8 mm and <b>M8</b> with thread length ≥ 30 mm	For sensors Ø 12 mm and <b>M12</b> with thread length ≥ 30 mm	For sensors Ø 18 mm and <b>M18</b> with thread length ≥ 30 mm	For sensors Ø 30 mm and <b>M30</b> with thread length ≥ 50 mm
<b>Ordering code</b>	<b>BAM00AH</b>	<b>BAM00E0</b>	<b>BAM00FT</b>	<b>BAM00J6</b>
Part number	BES 08,0-KH-2S	BES 12,0-KH-2S	BES 18,0-KH-2S	BES 30,0-KH-2S
Reduction of the rated switching distance				
Material	Nickel-plated CuZn	Nickel-plated CuZn	Nickel-plated CuZn	

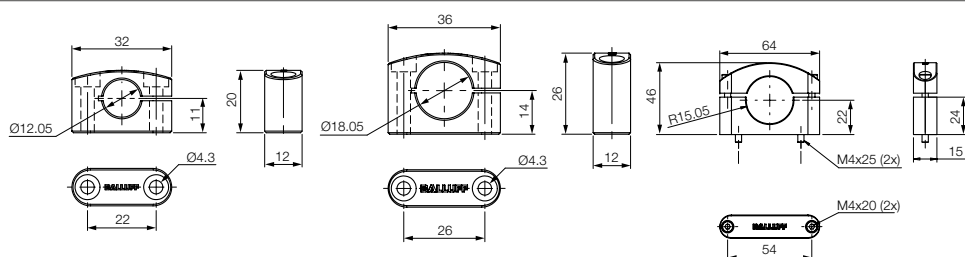


# Accessories

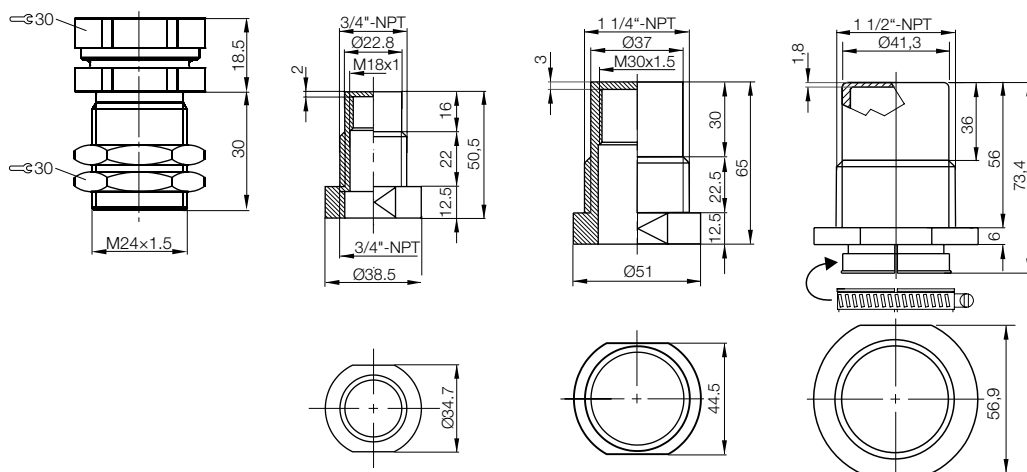
## Protective end caps, clamping holders



<b>Mounting cuff</b> For sensors <b>Ø 12 mm and M12</b> <b>BAM0218</b> BAM MC-XA-027-D12,0-1 Anodized aluminum	<b>Mounting cuff</b> For sensors <b>Ø 18 mm and M18</b> <b>BAM0219</b> BAM MC-XA-027-D18,0-1 Anodized aluminum	<b>Mounting cuff</b> For sensors <b>Ø 30 mm,</b> <b>M30</b> and pressure sensors <b>BAM01U0</b> BAM MC-XA-017-D30,0-1 Anodized aluminum		
---	---	--	--	--



<b>Clamping holder with positive stop</b> For sensors <b>Ø 18 mm and M18</b> with thread length ≥ 48 mm <b>BAM00FR</b> BES 18,0-KH-2M	<b>Protective end cap</b> For M18 sensors <b>BAM00F1</b> BES 18-SM-3 2 mm PTFE	<b>Protective end cap</b> For M30 sensors <b>BAM00HL</b> BES 30-SM-3 2 mm PTFE	<b>Protective end cap</b> For M30 sensors <b>BAM00HM</b> BES 30-SM-5 2 mm PTFE	
---	---	---	---	--



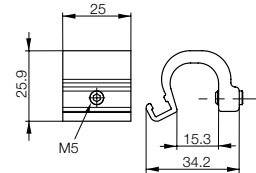
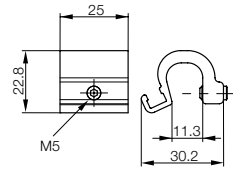
Protective end caps for installing in containers for level measurement



Accessories  
Power Supplies  
Mounting Brackets,  
Reflectors,  
Mounting Adapters  
**Mounting Cuffs,  
Clamping Holders,  
Protective End  
Caps**  
Mounting Brackets,  
Hose Clamp,  
Positive Stop



Mounting bracket for Slot	<b>BMF 303</b> Profile/tie rod	<b>BMF 303</b> Profile/tie rod
<b>Ordering code</b>	<b>BAM01M9</b>	<b>BAM01MA</b>
Part number	BMF 235-HW-109	BMF 235-HW-110
Cylinder type, for example	For profile/tie rod cylinders <b>5...11 mm</b> in conjunction with T-slot holder, for example BAM00L2	For profile/tie rod cylinders <b>9...15 mm</b> in conjunction with T-slot holder, for example BAM00L2



Piston diameter	Hose clamp BMF size_ for BMF 307 and BMF 235	
≤ 8 mm	0	<b>BAM00N2</b>
8...10 mm	1	<b>BAM00N3</b>
12 mm	1	
16 mm	1	
20 mm	2	<b>BAM00N4</b>
25 mm	2	
32 mm	3	<b>BAM00N5</b>
40 mm	4	<b>BAM00N6</b>
50 mm	5	<b>BAM00N7</b>
63 mm	6	<b>BAM00N8</b>
70 mm	8	<b>BAM00N9</b>
80 mm	7	<b>BAM00NA</b>
90 mm	10	<b>BAM01TC</b>
100 mm	9	<b>BAM01F4</b>

# Accessories

## Mounting bracket, positive stop



**BMF 303**

Profile/tie rod

**BAM01MC**

BMF 235-HW-111

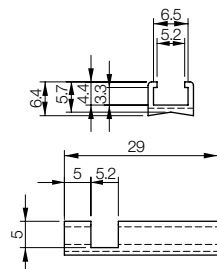
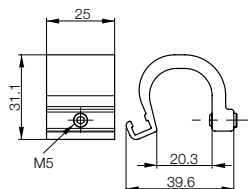
For profile/tie rod cylinders **14...20 mm** in conjunction with T-slot holder, for example BAM00L2

**BMF 307 and BMF 235**

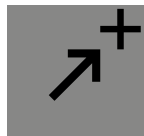
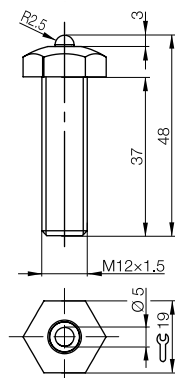
**BAM01Y9**

BMF 307-HW-112

Piston diameter **< 8...110 mm** pneumatic cylinder, round without slot or tie rod



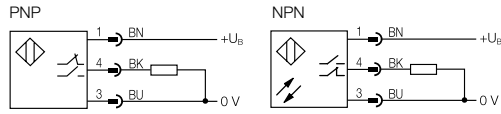
Description	<b>Positive stop</b>
Use	For <b>M8</b> sensors for mechanical protection
<b>Ordering code</b>	<b>BAM019W</b>
Part number	BAM FS-XE-004-M8-4
Spring force F (N)	4
Impact force F <sub>max</sub> (N)	400
Switching operations min. (with F <sub>max</sub> )	500000
Housing material	Stainless steel



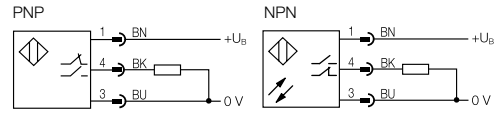
Accessories  
 Power Supplies  
 Mounting Brackets,  
 Reflectors,  
 Mounting Adapters  
 Mounting Cuffs,  
 Clamping Holders,  
 Protective End Caps  
**Mounting  
 Brackets,  
 Hose Clamp,  
 Positive Stop**

**Photoelectric  
Wiring diagram**

**Fork sensors BGL**



**Angle sensors BWL**



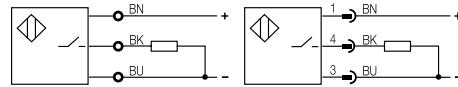
**Inductive (BIS)  
Wiring diagrams**

DC 3/4 wire  
Normally open

**Cable/terminals**

**Male**

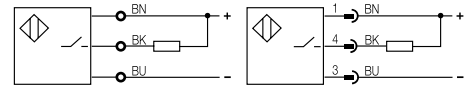
**PNP (+) sourcing**



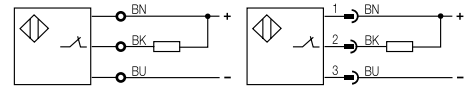
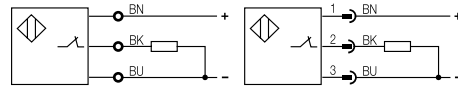
**Cable/terminals**

**Male**

**NPN (-) sinking**

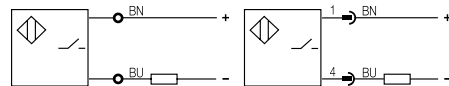


Normally closed

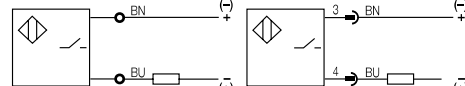


DC 2-wire  
Normally open

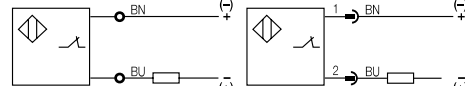
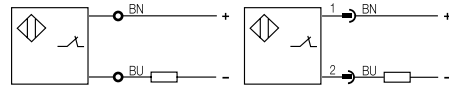
**polarized**



**non-polarized**



Normally closed

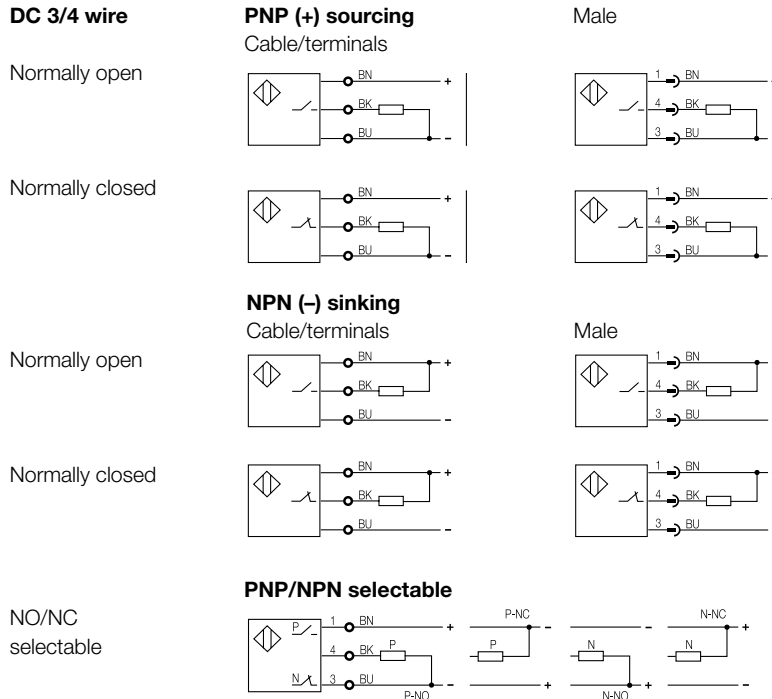


**Correction factors**

The correction factor indicates the reduction of the switching distance in damping materials which deviate from 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

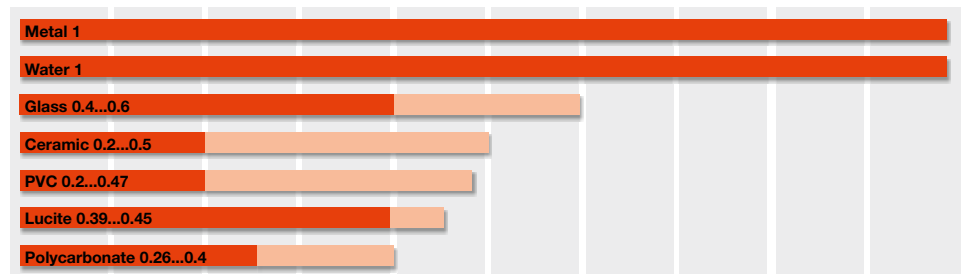
### Capacitive (BCS) Wiring diagrams



### Operating conditions and correction factors

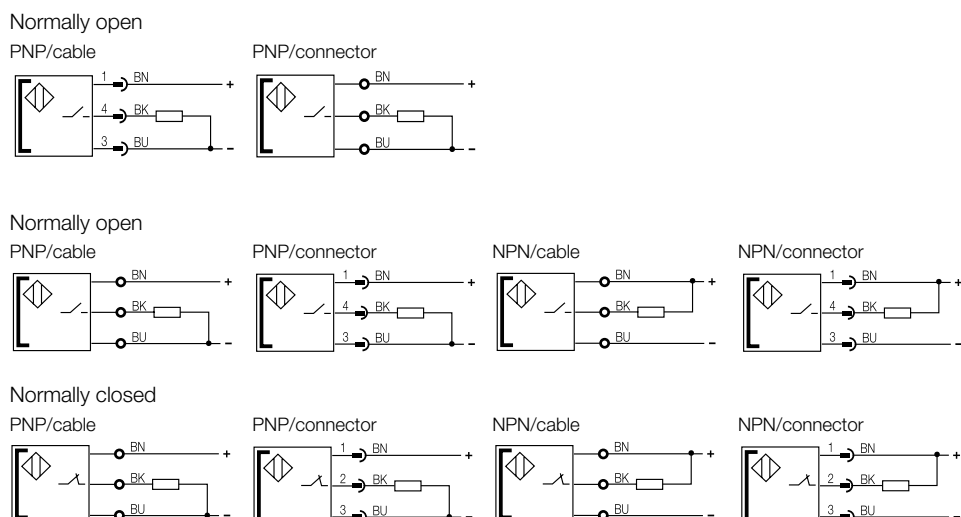
If an electrically non-conducting actuation element (target) enters the sensor field, the capacitance changes proportionally to  $\epsilon_r$  and to the immersion depth or to the distance to the sensing surface. As the rated switching distance  $s_n$  based on a grounded standard target made of Fe 360, the switching distances must be corrected when using other materials.

#### Correction factors for typical materials



Correction factors should be determined using the target material directly.

### Magnetic (BMF) Wiring diagrams

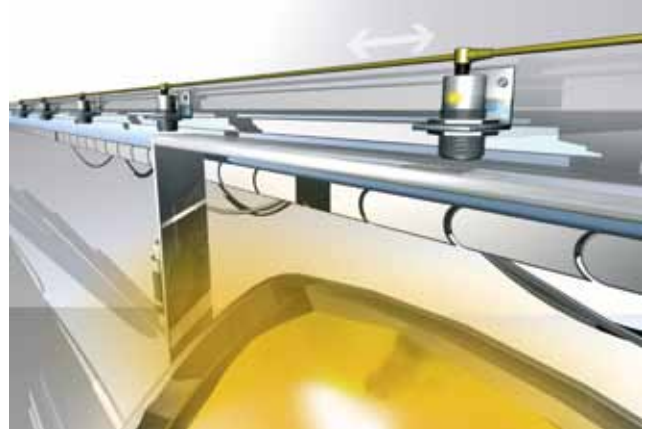


# Global sensors

Quality at a fair price – for your standard application



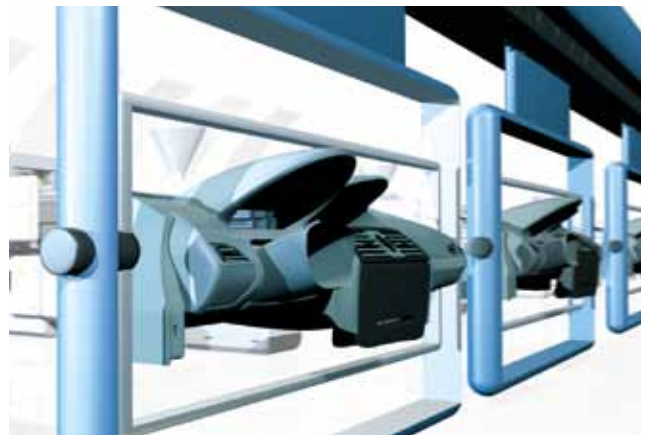
Angle sensors enable reliable position detection.



Inductive sensors detect positions reliably.



Whether at the injection molding machine or for assembly and automation, different sensor technologies control the material feed precisely.



The harmonious interaction between various sensors ensures optimal process in component production.



Capacitive sensors guarantee correct level detection.



Photoelectric sensors optimize positioning tasks.



Multiple sensors support the correct process in tire production.



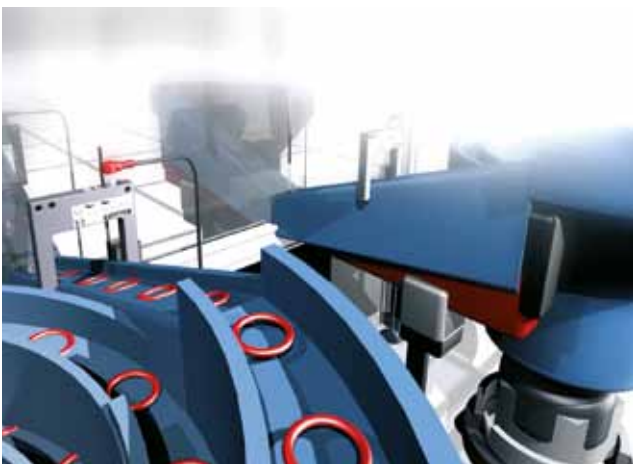
Sensors check packaging with reliability.



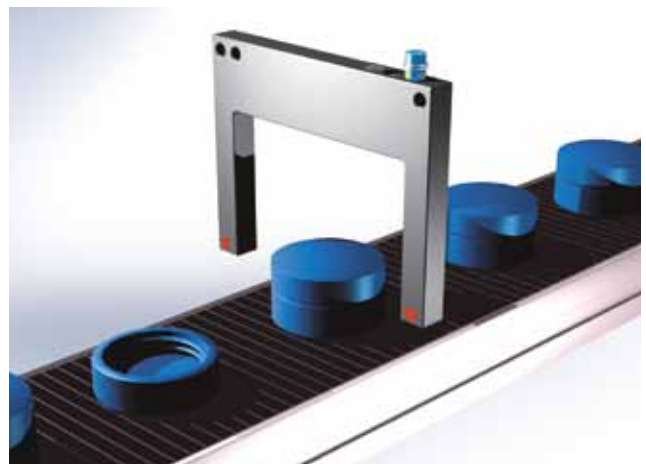
Reliable sensors carry out frequent format changes, for example, when cartoning, in a flexible manner.



Different sensors are perfectly tuned to take over the handling and assembly tasks of robotics.



Fork sensors provide the visual information you need at vibrating conveyors and part separators.



Fork sensors are easy to operate. Receivers and emitters in a single housing guarantee an easy installation.

# Worldwide Sales

## Headquarters

### Germany

Balluff GmbH  
Schurwaldstrasse 9  
73765 Neuhausen a.d.F.  
Phone +49 7158 173-0  
Fax +49 7158 5010  
balluff@balluff.de

## Subsidiaries and Representatives

### Argentina

Balluff Argentina S.R.L.  
Echeverría 1050, 1st UF 2  
1604 Florida Oeste,  
Buenos Aires  
Phone +54 11 4730-4544  
Fax +54 11 4730-3908

### Australia

Balluff Pty. Ltd.  
Unit 25, 18 Malvern Street  
Bayswater VIC 3153  
Phone 1300 225 833  
Fax 1300 653 894  
sales@balluff.com.au

### Austria

Balluff GmbH  
Industriestraße B16  
2345 Brunn am Gebirge  
Phone +43 2236 32521-0  
Fax +43 2236 32521-46  
sensor@balluff.at

### Bahrain

Multiline Technical Co.,  
United Arab Emirates

### Belarus

Automaticcentre OOO  
Nezavisimosti Av. 185,  
Block 19, Office 3  
220125 Minsk  
Phone +375 17 2838940  
Fax +375 17 2181798  
info@automatica.by

### Belgium

Balluff bvba  
Researchpark Haasrode 1820  
Interleuvenlaan 62,  
3001 Leuven  
Phone +32 16 397800  
Fax +32 16 397809  
info.be@balluff.be

### Brazil

Balluff Controles  
Elétricos Ltda.  
Rua Francisco Foga, 25  
Distrito Industrial  
CEP 13280.000  
Vinhedo – Sao Paulo  
Phone +55 19 38769999  
Fax +55 19 38769990  
balluff@balluff.com.br

### Bulgaria

Belopitov AG  
41, Nedelcho Bonchev St.  
1528 Sofia  
Phone +359 2 9609875  
Fax +359 2 9609896  
bps@bps.bg

### Canada

Balluff Canada Inc.  
2840 Argentia Road, Unit 2  
Mississauga, Ontario L5N 8G4  
Phone +1 905 816-1494  
Toll-free 1-8 00-927-9654  
Fax +1 905 816-1411  
balluff.canada@balluff.ca

### Chile

Microtec S/A  
Salar Ascotan, Parque Enea Pud 1281  
Santiago  
Phone + 56 2 25954661  
soledadrozaz@micro.cl

### China

Balluff (Shanghai) Trading Co., Ltd.  
8F, Building A, Yunding International  
Commercial Plaza,  
No. 800 Chengshan Rd,  
Pudong, Shanghai, 200125  
Phone +86 21 5089 9970  
Fax +86 21 5089 9975  
info@balluff.com.cn

### Colombia

Micro Pneumatic S.A.  
Calle 19, No. 70-63  
Zona Industrial, Bogotá  
Phone +57 1 4050016  
hescobar@micro.com.co

### Croatia

HSTEC d.d.  
Zagrebbacka 100  
23000 Zadar  
Phone +385 23 205-405  
Fax +385 23 205-406  
info@hstec.hr

### Czech Republic

Balluff CZ, s.r.o  
Pelušková 1400  
198 00 Praha 9 – Kyje  
Phone +420 281 000 666  
Fax +420 281 940066  
obchod@balluff.cz

### Denmark

Balluff ApS  
Åbogade 15  
8200 Århus N  
Phone +45 70 234929  
Fax +45 70 234930  
info.dk@balluff.dk

### Ecuador

CAMEI S.A.  
Vasco de Contreras  
N35-254 y Mañosca  
Quito  
Phone +593 2 224 2288  
Fax +593 2 245 6510  
camei@uio.satnet.net

### Egypt

EGEC  
24 St., 302 Taksym El Kodah-smouha,  
First Floor, Department 1  
Alexandria  
Phone +20 3 4299771  
Fax +20 3 4261773  
info@egecgroup.com

### Finland

Murri Oy  
Koukkukatu 1  
15700 Lahti  
Phone +358 3 8824000  
Fax +358 3 8824040  
myynti@murri.fi

### France

Balluff SAS  
5 rue des Vieilles Vignes  
Bâtiment A  
CS 90406 Croissy Beaubourg  
77435 Marne la Vallée Cedex 02  
Phone +33 1 64111990  
Fax +33 1 64111991  
info.fr@balluff.fr

### Greece

S. NAZOS S.A.  
10 KLM Thessalonikis-Kilkis  
P.O. Box 57008  
Thessaloniki  
Phone +30 2310 462120  
Fax +30 2310 474079  
parasos@nazos.gr

### Hong Kong

Sensortech Company  
No. 43, 18th Street  
Hong Lok Yuen,  
Tai Po, NT  
Phone +852 26510188  
Fax +852 26510388  
sensortech@netvigator.com

### Hungary

Balluff Elektronika Kft.  
Pápai út. 55.  
8200 Veszprém  
Phone +36 88 421808  
Fax +36 88 423439  
saleshu@balluff.hu

### Iceland

Smith & Norland  
Nótúni 4  
105 Reykjavik  
Phone +354 520 3000  
Fax +354 520 3011  
olaf@sminor.is

### India

Balluff India  
405 Raikar Chambers  
Deonar Village Road,  
Govandi, Mumbai 400088  
Phone +91 22 25568097  
Fax +91 22 25560871  
balluff@balluff.co.in

### Indonesia

PT. GUNADAYA SOLUTECH  
Industrial Electrical Products  
Ruko Golden Boulevard, Block G, No. 18  
BSD City, Serpong  
15322 Banten  
Phone +62 21 53160995  
Fax +62 21 53160994  
info@gunadaya.com

### Ireland

Balluff Ireland Ltd.  
Block B, The Crescent Building  
Northwood, Santry  
Dublin 9  
Phone +353 1 8934188  
Fax +44 161 2824701  
sales.ie@balluff.com

### Israel

Ancitech Ltd.  
19, Hamashbir St.  
Industrial Zone Holon  
58853 Holon  
Phone +972 3 5568351  
Fax +972 3 5569278  
tuvia@ancitech.com

### Italy

Balluff Automation S.R.L.  
Via Morandi 4  
10095 Grugliasco, Torino  
Phone +39 11 3150711  
Fax +39 11 3170140  
info.italy@balluff.it

### Japan

Balluff Co., Ltd.  
Aqua Hakusan Bldg. 9F  
1-13-7 Hakusan, Bunkyo-ku,  
Tokyo 113-0001  
Phone +81 3 3830-0520  
Fax +81 3 3830-0519  
info.jp@balluff.jp

### Kazakhstan

elcos electric control systems  
2A, Molodezhnyi Str. 3D  
Block O., Offices 318-319  
050061 Almaty  
Phone +7 727 3340536  
Fax +7 727 3340539  
info@elcos.kz

### Kuwait

Multiline Technical Co.,  
United Arab Emirates

### Latvia and Estonia

SIA Interautomatika  
Brīvības g. 410  
1024 Rīga  
Phone +371 67522010  
Fax +371 67522007  
info@interautomatika.lv

### Lithuania

UAB Interautomatika  
Kęstučio 47  
08127 Vilnius  
Phone +370 5 2607810  
Fax +370 5 2411464  
andrius@interautomatika.lt

### Malaysia

Profacto Solution & Service Sdn. Bhd.  
No.30A, Jalan Anggerik Mokara G31/G,  
Kota Kemuning, 40460 Shah Alam, Selangor  
Phone +60 3 51 21 85 28  
Fax +60 3 51 21 85 27  
ckkkyyong@streamyx.com

Team Automation Systems (M) Sdn. Bhd.  
2A, Jalan MP17, Taman Merdeka Permai,  
Batu Berendam, 75250 Melaka  
Phone +60 6 3366223  
Fax +60 6 3366223  
sales@teamtas.com.my

Team Automation Systems (M) Sdn. Bhd.  
No. 94-B, Jalan Raja Uda  
12300 Butterworth, Penang  
Phone +60 4 3102888  
Fax +60 4 3102889  
sales-pg@teamtas.com.my

**Mexico**

Balluff de México S.A. de C.V.  
Anillo Vial II Fray Junipero Serra No. 4416  
Colonia La Vista Residencial, CP 76232  
Delegación Epigmenio González  
Queretaro, Qro.  
Phone +52 442 2124882  
Fax +52 442 2140536  
balluff.mexico@balluff.com

**Marocco**

TAK  
Ilot 24B, Lot 24A-2  
Tanger Free Zone  
9000 Tanger  
Phone +212 06 61464946  
Fax +212 05 39393269  
o.zerhouani@tak.ma

**Netherlands**

Balluff B.V.  
Europalaan 6a  
5232 BC 's-Hertogenbosch  
Phone +31 73 6579702  
Fax +31 73 6579786  
info.nl@balluff.nl

**New Zealand**

Balluff Ltd.  
105 Morrin Road  
Panmure, Auckland  
New Zealand  
Phone +63 9 250 1460  
Fax +63 9 250 1462  
sales@balluff.co.nz

**Norway**

Primatec as  
Lillesandsveien 44  
4877 Grimstad  
Phone +47 37 258700  
Fax +47 37 258710  
post@primatec.no

**Oman**

Multiline Technical Co.,  
United Arab Emirates

**Philippines**

Technorand Sales Corporation  
122 McArthur Highway  
Malabon, Metro Manila  
Phone +632 7245006  
Fax +632 7245010  
technorand@gmail.com

**Poland**

Balluff Sp. z o.o.  
Ul. Muchoborska 16  
54-424 Wrocław  
Phone +48 71 3384929  
Fax +48 71 3384930  
balluff@balluff.pl

**Portugal**

LA2P Lda.  
Rua Teofilo Braga, 156 A  
Escrit. F – Edificio S. Domingos  
Cabeco Do Mouro  
2785-122 S. Domingos De Rana  
Phone +351 21 4447070  
Fax +351 21 4447075  
la2p@la2p.pt

**Qatar**

Multiline Technical Co.,  
United Arab Emirates

**Romania**

Balluff Automation SRL  
Strada Industrilor Nr. 56.,  
Bloc 1, Etaj 1  
032901 Bucuresti Sector 3  
Phone +40 374 926252  
Fax +40 374 097 423  
office@balluff.com.ro

**Russia**

Balluff OOO  
M. Kaluzhskaja Street 15  
Building 17, Office 500  
119071 Moscow  
Phone +7 495 78071-94  
Fax +7 495 78071-97  
balluff@balluff.ru

**Saudi Arabia**

Multiline Technical Co.,  
United Arab Emirates

**Serbia**

ENEL d.o.o.  
Ul. Vasilja Pavlovica 10  
14000 Valjevo  
Phone +381 14 291161  
Fax +381 14 244641  
enelvaljevo@gmail.com

**Singapore**

Balluff Asia Pte. Ltd.  
18 Sin Ming Lane  
#06-41 Midview City,  
Singapore 573960  
Phone +65 62524384  
Fax +65 62529060  
balluff@balluff.com.sg

**Slovakia**

Balluff Slovakia s.r.o.  
Blagoevova 9  
85104 Bratislava  
Phone +421 2 67200062  
Fax +421 2 67200060  
info@balluff.sk

**Slovenia**

Senzorji SB d.o.o.,  
Proizvodnja,  
trgovina in storitve d.o.o.  
Livadna ulica 1  
2204 Miklavž na Dravskem polju  
Phone +386 2 6290300  
Fax +386 2 6290302  
senzorji.sb@siol.net

**South Africa**

PAL Distributers CC  
291A Pine Avenue, Ferndale  
Randburg, Gauteng  
Phone +27 11 7814381  
Fax +27 11 7818166  
pal@polka.co.za

**South Korea**

Mahani Electric Co. Ltd.  
792-7 Yeoksam-Dong  
Gangnam-Gu, Seoul  
Post code: 135-080  
Phone +82 2 21943300  
Fax +82 2 21943397  
yskim@hanmec.co.kr

**Spain**

Balluff S.L. (Sociedad Unipersonal)  
Edificio Forum SCV  
Planta 5º, Oficina 4º  
Carretera Sant Cugat a Rubi  
Km01, 40-50  
08190 Sant Cugat del Vallés  
Barcelona  
Phone +34 93 5441313  
Fax +34 93 5441312  
info.es@balluff.es

**Sweden**

Balluff AB  
Gamlestadsvägen 2, B19  
41502 Göteborg  
Phone +46 31 3408630  
Fax +46 31 3409431  
info.se@balluff.se

**Switzerland**

Balluff Sensortechnik AG  
Riedstrasse 6  
8953 Dietikon  
Phone +41 43 3223240  
Fax +41 43 3223241  
sensortechnik@balluff.ch

**Taiwan**

Canaan Electric Corp.  
6F-5, No. 63 Sec. 2  
Chang An East Road  
10455 Taipei  
Phone +886 22 5082331  
Fax +886 22 5084744  
sales@canaan-elec.com.tw

**Thailand**

Compomax Co. Ltd.  
16 Soi Ekamai 4,  
Sukhumvit 63 Rd.  
Prakanongnua, Vadhana,  
Bangkok 10110  
Phone +66 2 7269595  
Fax +66 2 7269800  
info@compomax.co.th

**Turkey**

Balluff Sensor Otomasyon  
Sanayi Ve Ticaret Ltd. Sti.  
Perpa Ticaret Is Merkezi  
A Blok, Kat 1-2-3  
No: 0013-0014  
34381 Okmeydani/Istanbul  
Phone +90 212 3200411  
Fax +90 212 3200416  
balluff@balluff.com.tr

**Ukraine**

Micronlogistik Ltd.  
Ul. Promyischlennaya Street 37  
65031 Odessa  
Phone +380 48 7781278  
Fax +380 48 2358760  
info@balluff-ua.com

**United Arab Emirates**

Multiline Technical Co.  
TCA, behind ADCB Bank  
46530 Abu Dhabi  
Phone +971 2 6430733  
Fax +971 2 6430778  
asif@multilinetech.com

**United Kingdom**

Balluff Ltd.  
20 Cheshire Business Park  
Cheshire Avenue  
Lostock Gralam  
Northwich, CW9 7UA  
Phone +44 161 282-4700  
Fax +44 161 282-4701  
sales@balluff.co.uk

**USA**

Balluff Inc.  
8125 Holton Drive  
Florence, KY 41042-0937  
Phone +1 859 727-2200,  
Toll-free 1-800-543-8390  
Fax +1 859 727-4823  
balluff@balluff.com

**Venezuela**

Micro Tecnologia Neumatica, C.A  
Av. Henry Ford C.C.  
Boulevard Industrial Local AC-2  
Valencia Carabobo  
Phone +58 241 8641534  
Fax +58 241 8641732  
iraida.marrero@micro.com.ve

**Vietnam**

Anh Nghi Son Service Trading Co., Ltd.  
D3 KDC Mieu Noi Dinh Tien Hoang St.,  
W3, Binh Thanh Dist.,  
Ho Chi Minh City  
Phone +84 8 35170401  
Fax +84 8 35170403  
ans.vina@gmail.com





# Services

**Customized. According to your specifications. In the best quality.**

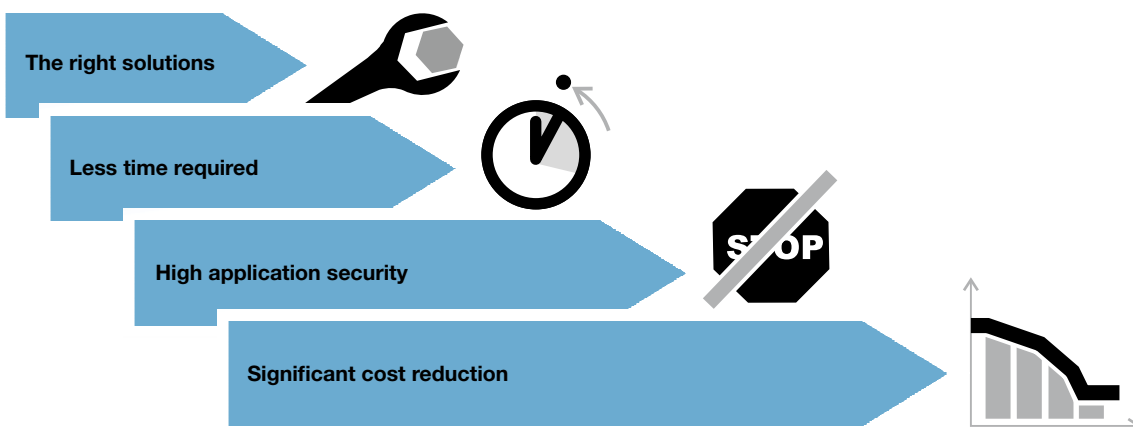
Balluff stands for highly efficient sensor technology, compact connection technology and an extensive range of accessories. We offer comprehensive services to support you, with customized solutions and individualized advice. We do this completely according to your specifications.

You receive our support over the entire life cycle of our products: Including the design and planning of your projects, testing and setup on site, and training and support. For an optimal implementation and significant planning security. This enables quick startup and an early start to production. This leads to maximum productivity and more cost-effectiveness. Learn about your options.

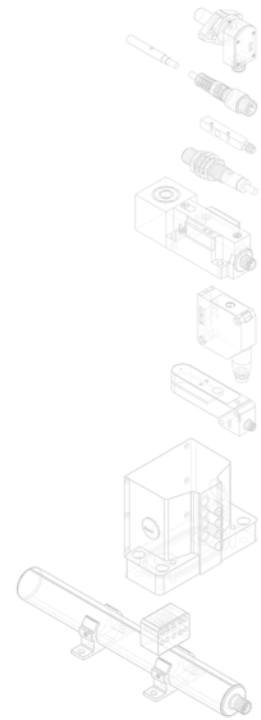
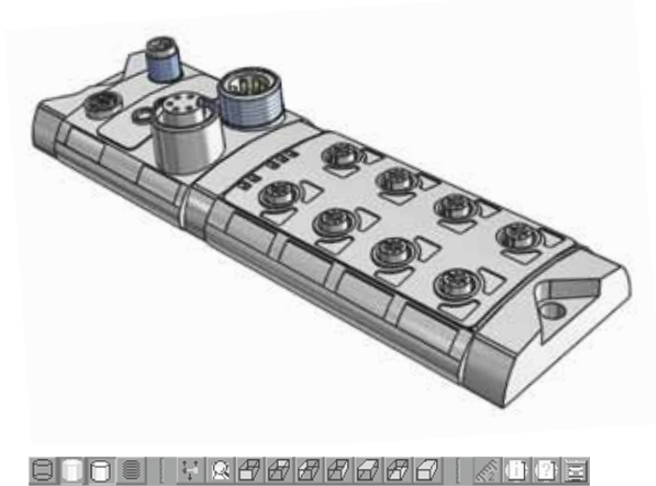


You can find more information in our Services brochure or send us an e-mail: [tsm.de@balluff.com](mailto:tsm.de@balluff.com)

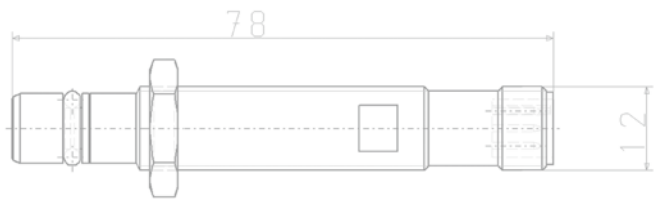
<p><b>Application advice through our TecSupport</b> Individualized expertise for your technical requirements</p>	<p>Real-world examples:</p> <ul style="list-style-type: none"> <li>■ Selection of the correct identification procedure for an assembly line</li> <li>■ IO-Link concept as a cost-effective alternative to conventional wiring</li> <li>■ System consulting for radio frequency identification (RFID): identification of large steel pipes in adverse environments</li> <li>■ Recognizing multiple containers on a pallet in goods receiving</li> </ul>
<p><b>Commissioning</b> Order expert knowledge. And benefit from a quick start of production.</p>	<p>Real-world examples:</p> <ul style="list-style-type: none"> <li>■ Setting up an optical checkpoint with the vision sensor BVS</li> <li>■ Consulting and support during the programming of RFID systems BIS</li> <li>■ Installation and commissioning of a color detection application with the BFS color sensor</li> </ul>
<p><b>Fully customized products</b> Specific versions according to your requirements: from pre-assembly to engineering services</p>	<p>Real-world examples:</p> <ul style="list-style-type: none"> <li>■ Extending the housing of a BHS high-pressure resistant inductive sensor</li> <li>■ Extra threads for the housing cover of a BTL micropulse transducer</li> <li>■ Customer-specific holder for an RFID data carrier</li> <li>■ Adaptation of the characteristics for BAW analog sensors</li> </ul>
<p><b>Training</b> Make use of well-founded manufacturer knowledge. And benefit from application security.</p>	<ul style="list-style-type: none"> <li>■ <b>Professional sensor use:</b> Select operating principles, install sensors professionally and ensure the reliable operation of your application.</li> <li>■ <b>Position and distance measurement:</b> This is how you make precise and wear-free measurements.</li> <li>■ <b>RFID:</b> The right data at the right time at the right place.</li> <li>■ <b>Vision sensor:</b> Using an image processing sensor, ensure manufacturing quality in three steps.</li> <li>■ <b>Vision sensor identification:</b> Reliably identify data matrix codes with an image-processing sensor.</li> <li>■ <b>Industrial networking with IO-Link:</b> Manage signals intelligently and cost-effectively.</li> </ul>



## Retrieving CAD and E-Plan formats online



- All catalog products are available: inductive sensors, photoelectric sensors, sensors for pneumatic cylinders, micropulse transducers, industrial RFID systems, vision sensors BVS, mechanical single and multiple position switches, industrial networking and connectivity, and so on.
- Graphics reduced to the essentials for optimized performance



### CAD formats on the Cadenas PARTserver



#### The benefits to you

- Fast, efficient design
- Free availability of all Balluff catalog products
- All common CAD formats
- Convenient preview in 3D
- Configurable products

#### And here is how it works

- Go to the 3D data at [www.balluff.com](http://www.balluff.com)
- You are redirected to the Cadenas PARTserver
- Select a sensor and perform an optional check via 3D preview
- Add it to the shopping cart
- Once you have entered your details, the CAD files of your choice are sent to you by e-mail

#### EPLAN macros – Electrical project planning made easy

And now users of EPLAN electrical project planning software can also profit from this free service. On our Web site planners and designers can download macros for selected Balluff products at no charge and implement them in their design. These macros include all the necessary graphics, technical and commercial information for the electrical design and documentation. Benefit from significant time and cost savings.

# SENSOR SOLUTIONS AND SYSTEMS

## For all areas of the automation industry

As a global player, we stand for comprehensive system expertise, continuous innovation and the greatest reliability. Balluff is technological variety in the highest quality and first-class individual service. Our 2600 employees are working to ensure this worldwide.



Systems and Service | Industrial Networking and Connectivity | Industrial Identification |  
Object Detection | Linear Position Sensing and Measurement | Condition Monitoring and Fluid Sensors | Accessories

Phone +49 7158 173-0

[www.balluff.com](http://www.balluff.com)

# BALLUFF

sensors worldwide



Systems and Service



Industrial Networking and Connectivity



Industrial Identification



Object Detection



Linear Position Sensing and Measurement



Condition Monitoring and Fluid Sensors



Accessories

## Headquarters

Balluff GmbH  
Schurwaldstrasse 9  
73765 Neuhausen a.d.F.  
Germany  
Phone +49 7158 173-0  
Fax +49 7158 5010  
balluff@balluff.de



[www.balluff.com](http://www.balluff.com)