

Photoelectric Sensors with Special Properties

Optical fiber base units BFB/BOS

Optical Fibers Base Units

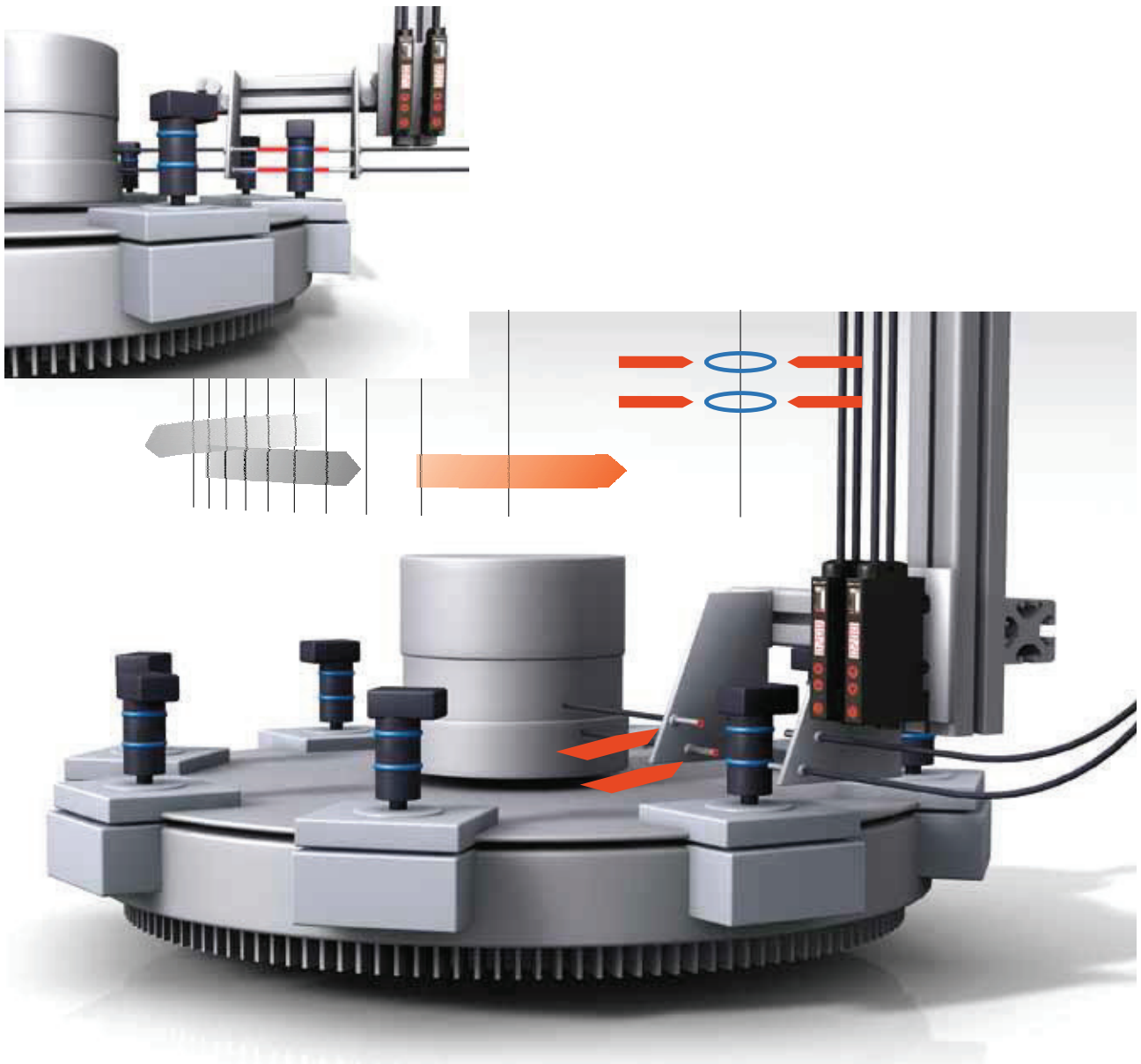
Fiber optics are needed whenever there is not enough space for a photoelectric sensor.

Plastic fiber optics are the right choice if the requirements for toughness, ambient temperature or chemical resistance are not very high. A wide range of special base units with different outputs and various functions is available when using these fiber optics: from the simple version with a potentiometer to the high-end unit with a display. The base units generally operate using red light.

The base units for glass fiber optics find use in harsh environments thanks to their powerful infrared light. Temperatures of up to 250 °C and oil mist are not a problem thanks to the various models of glass fiber optics.

Applications

- Small parts detection
- Suitable for tight mounting conditions
- Inspecting parts features
- Counting (e.g. counting drops)
- Precise parts positioning
- Assembly and handling technology
- Robotics



Photoelectric Sensors with Special Properties

Optical fiber base units BFB/BOS

Product overview



Photoelectric Sensors

Photoelectric Sensors

Photoelectric Sensors with Special Properties

Analog Fork Sensors BGL_C

Optical Window Sensors BOW

Light Grids BLG

Color Sensors BFS

Contrast Sensors BKT

Luminescence Sensors BLT

Optical Fiber Base Units BFB/BOS



Plastic Fiber Optics BFO

Glass Fiber Optics BFO

Photoelectric Distance Sensors

for Analog Distance Measurement

Accessories for Photoelectric Sensors

Type		Light type		Output		Switching type		Switching frequency	U _s		Connection			Special features		Page	
		Red light	Infrared light	PNP	NPN	Analog output	Alarm output		Light switching	Dark switching	10...30 V DC	11...26 V DC	M8 plug, 3-pin	M8 plug, 4-pin	M12 plug, 4-pin		Cable
	Base units for plastic optical fibers																
BFB0004	BFB 75K-001-P-S75	■		■				■	■	1.5 kHz	■		■			■	315
BFB0002	BFB 75K-001-N-S75	■			■			■	■	1.5 kHz	■		■			■	315
BFB0003	BFB 75K-001-P-02	■		■				■	■	1.5 kHz	■			■	■		315
BFB0001	BFB 75K-001-N-02	■			■			■	■	1.5 kHz	■			■	■		315
BFB0006	BFB 75K-002-P-S75	■		■				■	■	8 kHz	■		■			■	317
BFB0005	BFB 75K-002-N-S75	■			■			■	■	8 kHz	■		■			■	317
BFB0008	BFB 75K-003-P-02	■		■		■		■	■	8 kHz	■			■	■	■	317
BFB0007	BFB 75K-003-N-02	■			■	■		■	■	8 kHz	■			■	■	■	317
BOS003K	BOS 73K-PU-1FR-C-02	■		■			■	■	■	1 kHz		■	■			■	319
BOS003L	BOS 73K-PU-1FR-C-S75-00,1	■		■			■	■	■	1 kHz				■	■	■	319
BOS014L	BOS 73K-PU-1FR-C-S49-00,3	■		■			■	■	■	1 kHz		■	■			■	319
BOS009R	BOS 6K-PU-1FR-S75-C	■		■			■	■	■	1 kHz	■		■			■	321
BOS009P	BOS 6K-PU-1FR-C-02	■		■			■	■	■	1 kHz	■			■	■		321
BOS008W	BOS 6K-NU-1FR-S75-C	■			■		■	■	■	1 kHz	■		■			■	321
BOS008U	BOS 6K-NU-1FR-C-02	■			■		■	■	■	1 kHz	■			■	■		321
BOS00JJ	BOS 18KF-PA-1FR-S4-C	■		■			■	■	■	1 kHz	■		■				323
BOS00JH	BOS 18KF-PA-1FR-C-02	■		■			■	■	■	1 kHz	■			■			323
BOS00HL	BOS 18KF-NA-1FR-S4-C	■			■		■	■	■	1 kHz	■		■				323
BOS00HK	BOS 18KF-NA-1FR-C-02	■			■		■	■	■	1 kHz	■			■			323
	Base units for glass optical fibers																
BOS0049	BOS 18M-PA-1PD-E5-C-S4		■	■				■	■	100 Hz	■			■			324
BOS0080	BOS 18M-PU-1PD-SA5-C		■	■				■	■	1 kHz	■			■			324
BOS001P	BOS 18M-PA-1PF-E5-C-S4		■	■				■	■	200 Hz	■			■			325
BOS007U	BOS 18M-GU-1PF-S4-Y		■	■	■			■	■	1 kHz	■			■			325
BOS0134	BOS 30M-GA-1PH-S4-C		■	■	■			■	■	100 Hz	■			■			325

Photoelectric Sensors with Special Properties

Optical fiber base units BFB 75K

Base Units for Plastic Optical Fibers

The **BFB 75K-001...**

is ideal for any kind of standard application. This affordable sensor is installed on DIN rails and makes a great entry-level model. Ease of setting using a teach-in procedure on the sensor or via an external teach line make the sensor especially user-friendly.

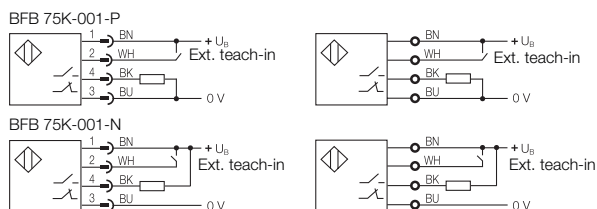
Features

- Red light
- Teach-in
- Connector and cable versions

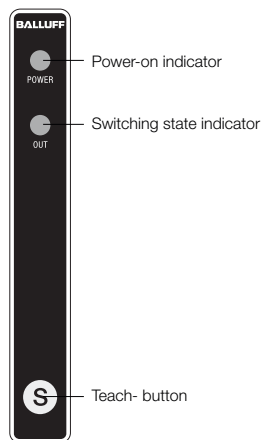
Mounting notes for fiber optics


The resistance of the sealing ring must be overcome when connecting the fiber optics to the base unit.

Wiring diagrams




Operating panel



 **Suitable connectors**
(please order separately)



 **Recommended accessories**
(please order separately)

Size	Design	Cable material	Color	Length	Ordering code
M8, 4-pin	Straight	PUR	Black	2 m	BCC02N2
M8, 4-pin	Straight	PVC	Gray	2 m	BCC02PL
M8, 4-pin	Angled	PUR	Black	2 m	BCC02NC
M8, 4-pin	Angled	PVC	Gray	2 m	BCC02PZ

Connectors without LED are suitable for PNP and NPN sensors.

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

Suitable fiber optics can be found on page 343 and in our **Accessories** catalog.

Photoelectric Sensors with Special Properties

Optical fiber base units BFB 75K



Photoelectric
Sensors

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Sensors

Photoelectric
Sensors with
Special Proper-
ties

Analog Fork
Sensors BGL_C

Optical Window
Sensors BOW

Light Grids BLG

Color Sensors
BFS

Contrast Sensors
BKT

Luminescence
Sensors BLT

**Optical Fiber
Base Units
BFB/BOS**

Plastic
Fiber Optics BFO

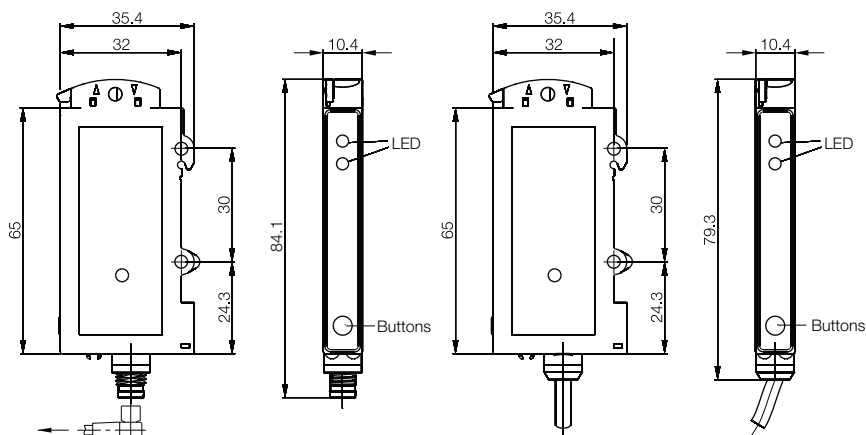
Glass Fiber
Optics BFO

Photoelectric
Distance
Sensors
for Analog
Distance
Measurement

Accessories for
Photoelectric
Sensors

Series	BFB 75K		BFB 75K	
Plastic fiber optic base unit	for plastic fiber optics with an outside diameter of 2.2 mm		for plastic fiber optics with an outside diameter of 2.2 mm	
PNP NC/NO	Ordering code	BFB0004	BFB0003	
	Part number	BFB 75K-001-P-S75	BFB 75K-001-P-02	
NPN NC/NO	Ordering code	BFB0002	BFB0001	
	Part number	BFB 75K-001-N-S75	BFB 75K-001-N-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.		≤ 20 mA	≤ 20 mA	
Switching type		Light/dark switching (selectable)	Light/dark switching (selectable)	
Polarity reversal/short-circuit protected		Yes/Yes	Yes/Yes	
Settings		Teach-in	Teach-in	
Emitter, light type		LED, red light	LED, red light	
Wavelength		660 Nm	660 Nm	
Light spot diameter		Depends on the fiber optics	Depends on the fiber optics	
Power-on indicator		Green LED	Green LED	
Switching state indicator		Yellow LED	Yellow LED	
Switching frequency f		1.5 kHz	1.5 kHz	
Degree of protection as per IEC 60529		IP 64	IP 64	
Ambient temperature T_a		-20...+60 °C	-20...+60 °C	
Permissible ambient light per		EN 60947-5-2	EN 60947-5-2	
Material	Housing	ABS	ABS	
	Optical surface	Depends on fiber optics	Depends on fiber optics	
Connection		M8 connector, 4-pin	2 m PVC cable, 4x0.14 mm ²	

→ Connector orientation



Photoelectric Sensors with Special Properties

Optical fiber base units BFB 75K

Base Units for Plastic Optical Fibers

The BFB 75K-002...

The high-end amplifier offers perfect performance with 12-bit resolution, a 4-digit display and a switching frequency up to 8 kHz.

Various operating modes such as Fine or High Distance allow the sensor to be better adapted to the respective application.

Several sensors can be installed next to each other. Up to four sensors installed adjacent to each other are synchronized to avoid mutual interference in an application. They are synchronized automatically after the supply voltage is turned on.

Adjustable time functions, window programming and fine-tuning for the switching point expand its range of application options.

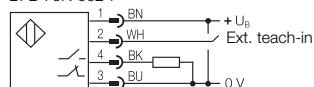
An additional analog output makes the BFB 75K-003... version a great all-rounder. The output signal is in proportion to the remission or to the distance of the target object. All of the functions of the BFB 75K-02 variant are included.

Features

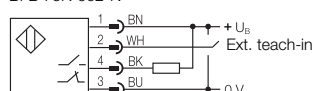
- Display
- 4 operating modes
- No mutual interference
- Variant with analog output

Wiring diagrams

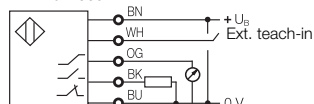
BFB 75K-002-P



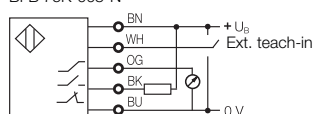
BFB 75K-002-N



BFB 75K-003-P



BFB 75K-003-N




Mounting notes for fiber optics

The resistance of the sealing ring must be overcome when connecting the fiber optics to the base unit.

Operating mode	Standard	High Resolution	High switching frequency	High Range size
Sensing distance*	150 mm	70 mm	70 mm	300 mm
Switching frequency	1 kHz	125 Hz	8 kHz	125 Hz

*Depending on fiber optics used

 **Suitable connectors**
(please order separately)

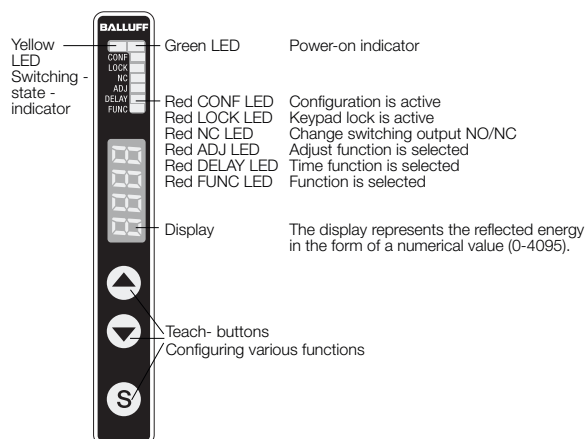



Size	Design	Cable material	Color	Length	Ordering code
M8, 4-pin	Straight	PUR	Black	2 m	BCC02N2
M8, 4-pin	Straight	PVC	Gray	2 m	BCC02PL
M8, 4-pin	Angled	PUR	Black	2 m	BCC02NC
M8, 4-pin	Angled	PVC	Gray	2 m	BCC02PZ

Connectors without LED are suitable for PNP and NPN sensors.

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

Operating panel

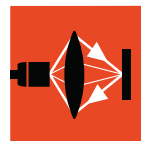
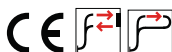


 **Recommended accessories**
(please order separately)

Suitable fiber optics can be found **on page 343** and in our **Accessories catalog**.

Photoelectric Sensors with Special Properties

Optical fiber base units BFB 75K



Photoelectric Sensors

Photoelectric Sensors

Photoelectric Sensors with Special Properties

Analog Fork Sensors BGL_C

Optical Window Sensors BOW

Light Grids BLG

Color Sensors BFS

Contrast Sensors BKT

Luminescence Sensors BLT

Optical Fiber Base Units BFB/BOS

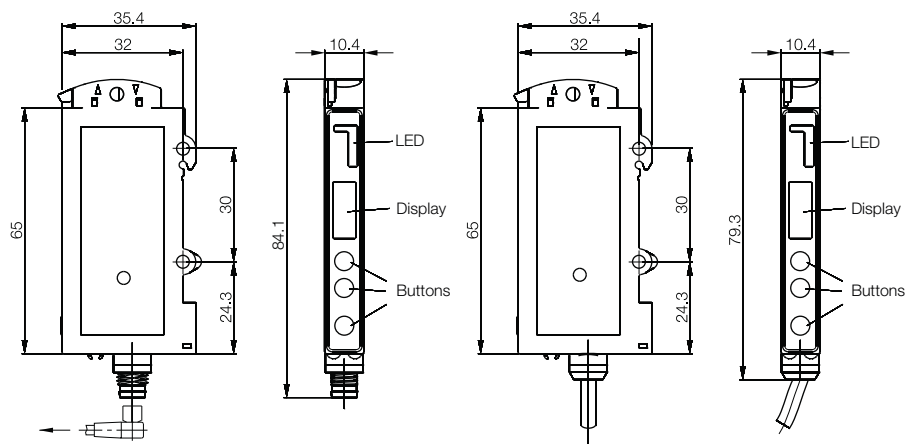
Plastic Fiber Optics BFO

Glass Fiber Optics BFO

Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors

Series	BFB 75K		BFB 75K	
Plastic fiber optic base unit	for plastic fiber optics with an outside diameter of 2.2 mm		for plastic fiber optics with an outside diameter of 2.2 mm	
PNP NC/NO	Ordering code	BFB0006	BFB0008	
	Part number	BFB 75K-002-P-S75	BFB 75K-003-P-02	
NPN NC/NO	Ordering code	BFB0005	BFB0007	
	Part number	BFB 75K-002-N-S75	BFB 75K-003-N-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.	≤ 25 mA		≤ 20 mA	
Analog output			0...10 V (max. 2 mA)	
Switching type	Light/dark switching (selectable)		Light/dark switching (selectable)	
Polarity reversal/short-circuit protected	Yes/Yes		Yes/Yes	
Settings	Teach-in		Teach-in	
Emitter, light type	LED, red light		LED, red light	
Wavelength	630 Nm		630 Nm	
Light spot diameter	Depends on the fiber optics		Depends on the fiber optics	
Power-on indicator	Green LED		Green LED	
Switching state indicator	Yellow LED		Yellow LED	
Status indicator	6x red LEDs		6x red LEDs	
Display	4-digit		4-digit	
Switching frequency f	Standard	1.5 kHz	1.5 kHz	
	Fast Mode	8 kHz	8 kHz	
Time function	Adjustable 1...2000 ms delay for switching on and/or off		Adjustable 1...2000 ms delay for switching on and/or off	
Degree of protection as per IEC 60529	IP 64		IP 64	
Ambient temperature T_a	-20...+60 °C		-20...+60 °C	
Permissible ambient light per	EN 60947-5-2		EN 60947-5-2	
Material	Housing	ABS	ABS	
	Optical surface	Depends on fiber optics	Depends on fiber optics	
Connection	M8 connector, 4-pin		2 m PVC cable, 5x0.14 mm ²	



Photoelectric Sensors with Special Properties

Optical fiber base units BOS 73K

Base Units for Plastic Optical Fibers

The **BOS 73K** with display simplifies sensor handling and provides a precise overview of its settings.

The display shows sensitivity, signal strength as well as additional functions.

The switching point and hysteresis can be acquired automatically or set manually. The powerful red light emitter permits very long sensing distances and ranges.

A switching- and alarm output is also provided as an output and time functions can also be set.

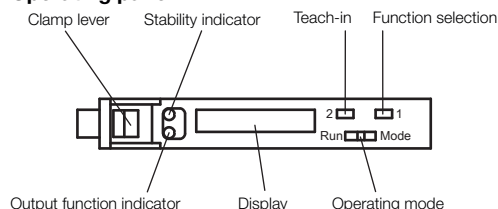
Multiple sensors can be used without them interfering with each other thanks to two transmission channels.



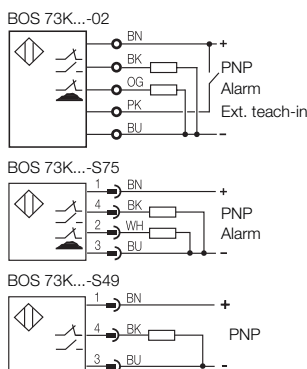
Features

- LCD display with backlighting
- Settings via teach-in
- Powerful red light emitter for long ranges
- Contamination output
- All time functions can be set from 10...120 ms
- Two transmission channels

Operating panel

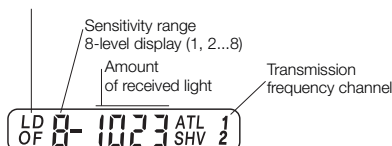


Wiring diagrams



Display

Operating mode
 L: Light switching
 D: Dark switching
 O: Switch-on delay
 F: switch-off delay



Functions
 Sensor functions
 A: Automatic Detection
 T: Teach-in
 L: Lock
 Additional functions
 S: Manual sensitivity setting/switch-on point
 H: Manual hysteresis setting (switch-off point)
 V: Signal strength fluctuation and absolute value display

Series		Plastic fiber optic base unit
PNP	NC/NO	Ordering code
		Part number
Supply voltage U_S		
Switching frequency f		Switching output
		Alarm output
No-load supply current I_0 max.		
Switching type		
Polarity reversal/short-circuit protected		
Settings		
Emitter, light type		
Wavelength		
Light spot diameter		
Output function indicator		
Stability indicator		
Display		
Response time		
Switching frequency f		Standard
Time function		
Degree of protection as per IEC 60529		
Ambient temperature T_a		
Permissible ambient light		
Material		Housing
		Optical surface
Connection		

Mounting materials included!



Suitable connectors
 (please order separately)



Size	Design	Cable material	Color	Length	Ordering code
M8, 4-pin	Straight	PUR	Black	2 m	BCC02N2
M8, 4-pin	Straight	PVC	Gray	2 m	BCC02PL
M8, 4-pin	Angled	PUR	Black	2 m	BCC02NC
M8, 4-pin	Angled	PVC	Gray	2 m	BCC02PZ

Connectors without LED are suitable for PNP and NPN sensors.

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



Suitable connectors
 (please order separately)



Size	Design	Cable material	Color	Length	Ordering code
M8, 3-pin	Straight	PUR	Black	2 m	BCC02M8
M8, 3-pin	Straight	PVC	Gray	2 m	BCC02NU
M8, 3-pin	Angled	PUR	Black	2 m	BCC02ML
M8, 3-pin	Angled	PVC	Gray	2 m	BCC02P5

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Photoelectric Sensors with Special Properties

Optical fiber base units BOS 73K



BOS 73K for plastic fiber optics with an outside diameter of 2.2 mm	BOS 73K for plastic fiber optics with an outside diameter of 2.2 mm	BOS 73K for plastic fiber optics with an outside diameter of 2.2 mm
BOS003K	BOS003L	BOS014L
BOS 73K-PU-1FR-C-02	BOS 73K-PU-1FR-C-S75-00,1	BOS 73K-PU-1FR-C-S49-00,3
11...26 V DC	11...26 V DC	11...26 V DC
100 mA	100 mA	100 mA
50 mA	50 mA	50 mA
≤ 50 mA	≤ 50 mA	≤ 50 mA
Light/dark switching (selectable)	Light/dark switching (selectable)	Light/dark switching (selectable)
Yes/Yes	Yes/Yes	Yes/Yes
Teach-in/Manually using buttons	Teach-in/Manually using buttons	Teach-in/Manually using buttons
LED, red light	LED, red light	LED, red light
660 Nm	660 Nm	660 Nm
Depends on the fiber optics	Depends on the fiber optics	Depends on the fiber optics
Orange LED	Orange LED	Orange LED
Green LED	Green LED	Green LED
Backlit LCD	Backlit LCD	Backlit LCD
Channel 1: 0.5 ms	Channel 1: 0.5 ms	Channel 1: 0.5 ms
Channel 2: 0.6 ms	Channel 2: 0.6 ms	Channel 2: 0.6 ms
Channel 1: 1 kHz	Channel 1: 1 kHz	Channel 1: 1 kHz
Channel 2: 833 Hz	Channel 2: 833 Hz	Channel 2: 833 Hz
On/off delay	On/off delay	On/off delay
10...120 ms selectable	10...120 ms selectable	10...120 ms selectable
IP 54	IP 54	IP 54
-25...+55 °C	-25...+55 °C	-25...+55 °C
Artificial light ≤ 10 klx, Sunlight ≤ 20 klx	Artificial light ≤ 10 klx, Sunlight ≤ 20 klx	Artificial light ≤ 10 klx, Sunlight ≤ 20 klx
ABS	ABS	ABS
Depends on fiber optics	Depends on fiber optics	Depends on fiber optics
2 m PVC cable, 5×0.2 mm ²	Pigtail 10 cm, M8 connector, 4-pin	Pigtail 30 cm, M8 connector, 3-pin



Photoelectric
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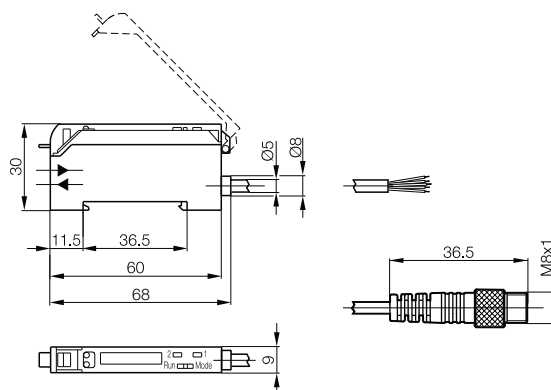
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Photoelectric
Distance
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Accessories for
Photoelectric
Sensors



+ Recommended accessories
(please order separately)

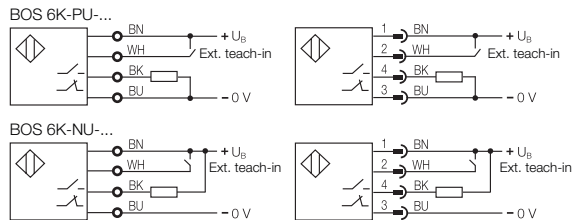
Suitable fiber optics can be found **on page 343**
and in our **Accessories** catalog.

The **BOS 6K** series also offers a optical fiber base unit that is easy to teach in externally using a button or control line. Together with the BFO series of fiber optics, an enclosure rating of IP 67 is provided.

Features

- Teach-in
- Contamination indicator
- Control line for external teach-in
- Disable buttons

Wiring diagrams



Recommended accessories (please order separately)

Description	Ordering code
Mounting bracket	BAM00UH



Suitable fiber optics can be found **on page 343** and in our **Accessories** catalog.

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

Suitable connectors (please order separately)



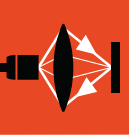
Size	Design	Cable material	Color	Length	Ordering code
M8, 4-pin	Straight	PUR	Black	2 m	BCC02N2
M8, 4-pin	Straight	PVC	Gray	2 m	BCC02PL
M8, 4-pin	Angled	PUR	Black	2 m	BCC02NC
M8, 4-pin	Angled	PVC	Gray	2 m	BCC02PZ

Connectors without LED are suitable for PNP and NPN sensors.

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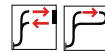
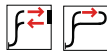
Photoelectric Sensors with Special Properties

Optical fiber base units BOS 6K



Photoelectric Sensors

Photoelectric Sensors



Photoelectric Sensors with Special Properties

Analog Fork Sensors BGL_C

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Plastic Fiber Optics BFO

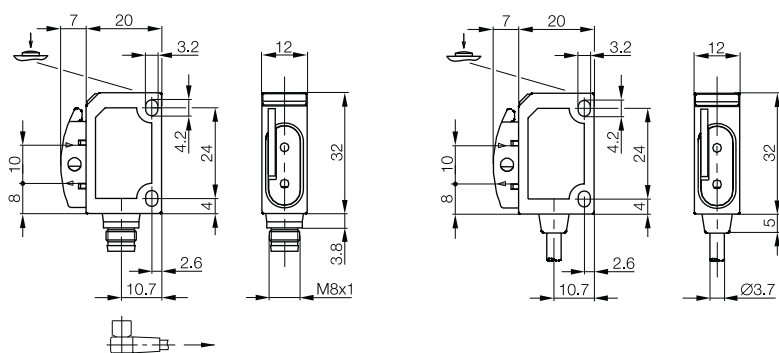
Glass Fiber Optics BFO

Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors

Series	BOS 6K		BOS 6K	
Plastic fiber optic base unit	for plastic fiber optics with an outside diameter of 2.2 mm		for plastic fiber optics with an outside diameter of 2.2 mm	
PNP NC/NO	Ordering code	BOS009R	BOS009P	
	Part number	BOS 6K-PU-1FR-S75-C	BOS 6K-PU-1FR-C-02	
NPN NC/NO	Ordering code	BOS008W	BOS008U	
	Part number	BOS 6K-NU-1FR-S75-C	BOS 6K-NU-1FR-C-02	
Supply voltage U_s		10...30 V DC	10...30 V DC	
Output current		100 mA	100 mA	
No-load supply current I_0 max.		≤ 25 mA	≤ 25 mA	
Switching type		Light/dark switching (selectable)	Light/dark switching (selectable)	
Polarity reversal/short-circuit protected		Yes/Yes	Yes/Yes	
Settings		Teach-in	Teach-in	
Emitter, light type		LED, red light	LED, red light	
Wavelength		660 Nm	660 Nm	
Light spot diameter		Depends on range/sensing distance	Depends on range/sensing distance	
Output function indicator		Yellow LED	Yellow LED	
Stability indicator		Green LED	Green LED	
Response time		0.5 ms	0.5 ms	
Switching frequency f		1 kHz	1 kHz	
Number of conductors × conductor cross-section			4×0.14 mm ²	
Degree of protection as per IEC 60529		IP 67	IP 67	
Ambient temperature T_a		-20...+60 °C	-20...+60 °C	
Permissible ambient light		EN 60947-5-2	EN 60947-5-2	
Material	Housing	ABS	ABS	
	Optical surface	Depends on fiber optics	Depends on fiber optics	
Connection		M8 connector, 4-pin	2 m PVC cable	

 → Connector orientation



Photoelectric Sensors with Special Properties

Optical fiber base units BOS 18KF

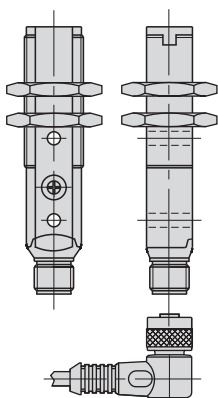
Base Units for Plastic Optical Fibers

The optical fiber base unit **BOS 18KF** is a highlight far away from DIN rail installation, distinguishing itself with simple operation and installation.

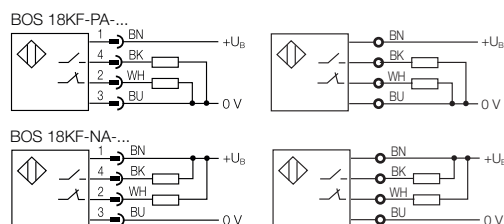
Features

- Sensitivity setting using 270°- potentiometer
- Cap nut for adapting optical fibers

Connector orientation



Wiring diagrams



Recommended accessories (please order separately)

Description	Ordering code
Mounting bracket	BAM00RY



Suitable fiber optics can be found **on page 343** and in our **Accessories** catalog.

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

Suitable connectors (please order separately)



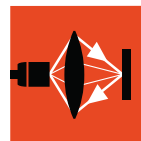
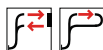
Size	Design	Cable material	Color	Length	Ordering code
M12, 4-pin	Straight	PUR	Black	2 m	BCC032F
M12, 4-pin	Straight	PVC	Gray	2 m	BCC0367
M12, 4-pin	Angled	PUR	Black	2 m	BCC032Y
M12, 4-pin	Angled	PVC	Gray	2 m	BCC036N

Connectors without LED are suitable for PNP and NPN sensors.

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

Photoelectric Sensors with Special Properties

Optical fiber base units BOS 18KF



Photoelectric Sensors

Photoelectric Sensors

Photoelectric Sensors with Special Properties

Analog Fork Sensors BGL_C

Optical Window Sensors BOW

Light Grids BLG

Color Sensors BFS

Contrast Sensors BKT

Luminescence Sensors BLT

Optical Fiber Base Units BFB/BOS

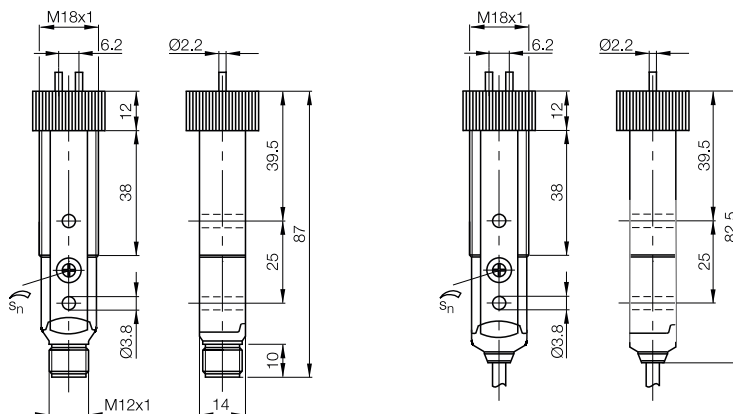
Plastic Fiber Optics BFO

Glass Fiber Optics BFO

Photoelectric Distance Sensors for Analog Distance Measurement

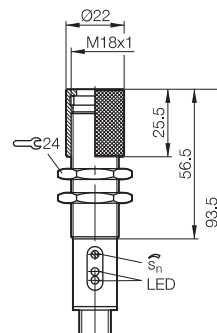
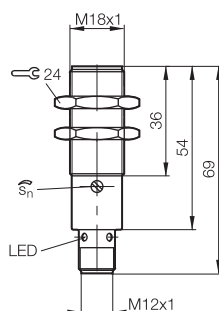
Accessories for Photoelectric Sensors

Series	BOS 18KF		BOS 18KF	
Plastic fiber optic base unit	for plastic fiber optics with an outside diameter of 2.2 mm		for plastic fiber optics with an outside diameter of 2.2 mm	
PNP NC/NO	Ordering code	BOS00JJ	BOS00JH	
	Part number	BOS 18KF-PA-1FR-S4-C	BOS 18KF-PA-1FR-C-02	
NPN NC/NO	Ordering code	BOS00HL	BOS00HK	
	Part number	BOS 18KF-NA-1FR-S4-C	BOS 18KF-NA-1FR-C-02	
Supply voltage US	10...30 V DC		10...30 V DC	
No-load supply current I0 max.	≤ 35 mA		≤ 35 mA	
Output current	100 mA		100 mA	
Switching type	Light and dark switching		Light and dark switching	
Polarity reversal/short-circuit protected	Yes/Yes		Yes/Yes	
Settings	Potentiometer, 270°		Potentiometer, 270°	
Emitter, light type	LED, red light		LED, red light	
Wavelength	660 Nm		660 Nm	
Light spot diameter	Depends on range/sensing distance		Depends on range/sensing distance	
Output function indicator	Yellow LED		Yellow LED	
Stability indicator	Green LED		Green LED	
Response time	0.5 ms		0.5 ms	
Switching frequency f	1 kHz		1 kHz	
Degree of protection as per IEC 60529	IP 67		IP 67	
Ambient temperature Ta	-25...+55 °C		-25...+55 °C	
Permissible ambient light	EN 60947-5-2		EN 60947-5-2	
Material	Housing	PBT	PBT	
	Optical surface	Depends on fiber optics	Depends on fiber optics	
Connection	M12 connector, 4-pin		2 m PVC cable, 4x0.14 mm ²	





Type	BOS 18M for glass fiber optics		BOS 18M for glass fiber optics	
PNP	NC/NO	Ordering code	BOS0049	BOS0080
		Part number	BOS 18M-PA-1PD-E5-C-S4	BOS 18M-PU-1PD-SA5-C
PNP/NPN	NC/NO	Ordering code		
		Part number		
Supply voltage U_S			10...30 V DC	10...30 V DC
Output current			200 mA	200 mA
No-load supply current I_0 max.			≤ 20 mA	≤ 25 mA
Switching type			Light/dark switching (complementary)	Light/dark switching (selectable)
Polarity reversal/short-circuit protected			Yes/Yes	Yes/Yes
Settings			Potentiometer, 270°	18-turn potentiometer
Emitter, light type			LED, infrared	LED, infrared
Wavelength			880 Nm	880 Nm
Response time			5 ms	5 ms
Switching frequency f			100 Hz	1 kHz
Degree of protection as per IEC 60529			IP 67	IP 67
Ambient temperature T_a			-5...+55 °C	-20...+60 °C
Permissible ambient light			5 klx	2 klx
Material	Housing		Nickel-plated CuZn	Nickel-plated CuZn
	Optical surface		PMMA	Glass
Connection			M12 connector, 4-pin	M12 connector, 4-pin



Recommended accessories
(please order separately)

Description	Ordering code
Mounting bracket	BAM00RY



Suitable fiber optics can be found **on page 343**
and in our **Accessories** catalog.

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

Suitable connectors
(please order separately)

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



Connectors without LED are suitable for PNP and NPN sensors.

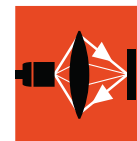
More electrical accessories: You can find a large selection of plug connectors and connector cables in a wide variety of cable materials, colors and lengths in our **Industrial Networking and Connectivity** catalog.

Photoelectric Sensors with Special Properties

Optical fiber base units BOS



BOS 18M for glass fiber optics	BOS 18M for glass fiber optics	BOS 30M for glass fiber optics	
BOS001P			
BOS 18M-PA-1PF-E5-C-S4			
	BOS007U	BOS0134	
	BOS 18M-GU-1PF-S4-Y	BOS 30M-GA-1PH-S4-C	
10...30 V DC	11...30 V DC	10...30 V DC	
200 mA	200 mA	200 mA	
≤ 20 mA	≤ 25 mA	≤ 40 mA	
Light/dark switching (complementary)	Light/dark switching (selectable)	Light/dark switching (complementary)	
Yes/Yes	Yes/Yes	Yes/Yes	
Potentiometer, 270°	18-turn potentiometer	18-turn potentiometer	
LED, infrared	LED, infrared	LED, infrared	
880 Nm	880 Nm	880 Nm	
2.5 ms	0.5 ms	5 ms	
200 Hz	1 kHz	100 Hz	
IP 67	IP 65	IP 65	
-5...+55 °C	-20...+60 °C	-20...+60 °C	
5 klx	1 klx	1 klx	
Nickel-plated CuZn	Nickel-plated CuZn	Nickel-plated CuZn	
PMMA	Glass	Glass	
M12 connector, 4-pin	M12 connector, 4-pin	M12 connector, 4-pin	



Photoelectric Sensors

Photoelectric Sensors

Photoelectric Sensors with Special Properties

Analog Fork Sensors BGL_C

Optical Window Sensors BOW

Light Grids BLG

Color Sensors BFS

Contrast Sensors BKT

Luminescence Sensors BLT

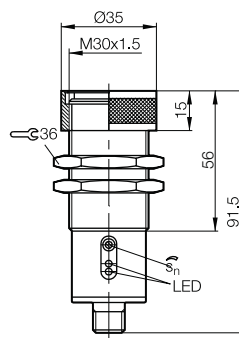
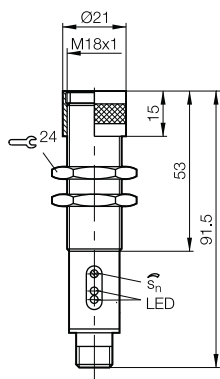
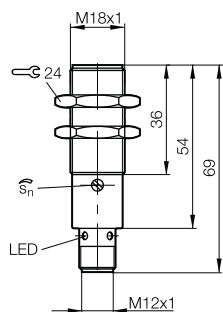
Optical Fiber Base Units BFB/BOS

Plastic Fiber Optics BFO

Glass Fiber Optics BFO

Photoelectric Distance Sensors for Analog Distance Measurement

Accessories for Photoelectric Sensors



Wiring diagrams

