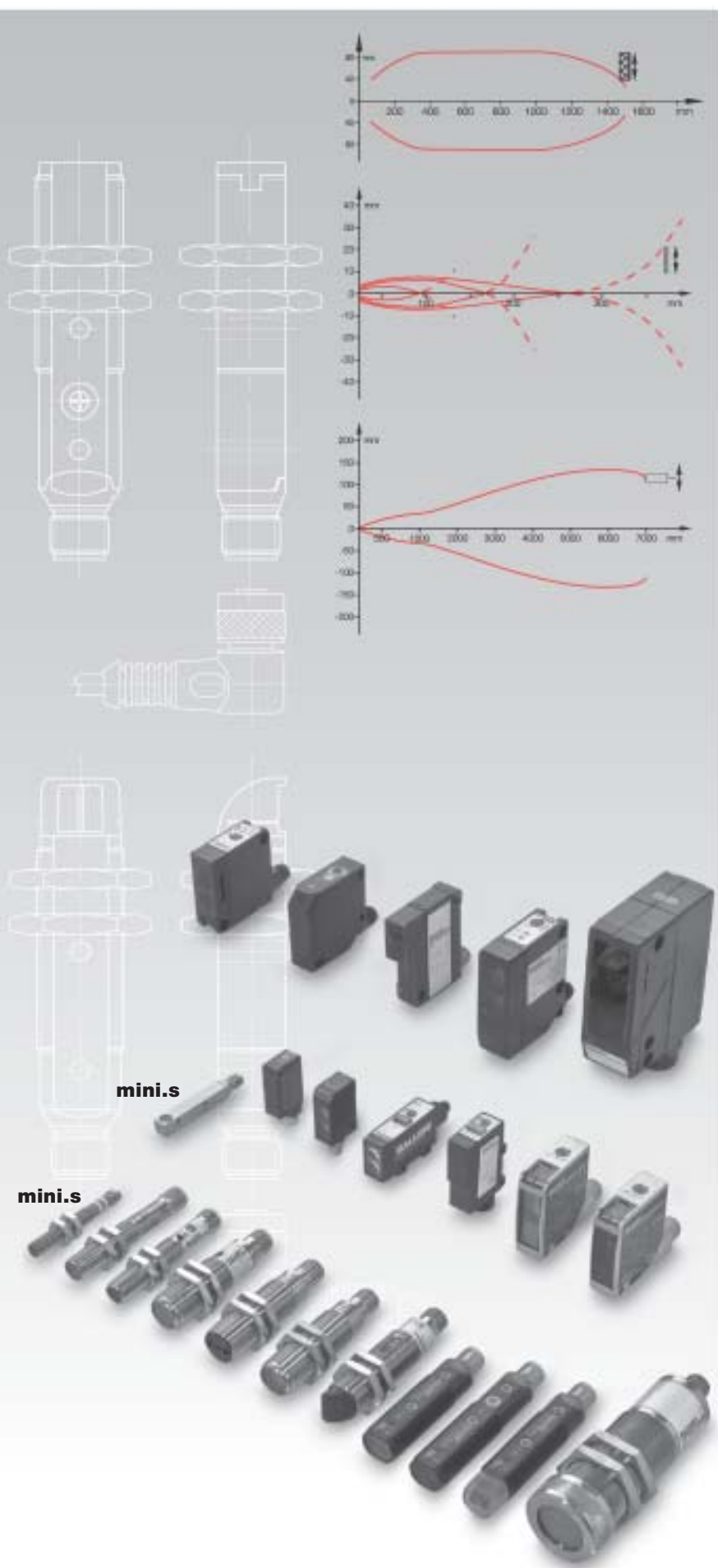


Photoelectric Sensors - Standard



- 2.1.2 **Tubular BOS 08M**
M8 metal
- 2.1.6 **BOS 12M**
M12 metal
- 2.1.14 **BOS 18M**
M18 metal
with potentiometer
Rugged
with teach-in
Laser
with AC
voltage
with angle head
- 2.1.36 **BOS 18E**
M18 stainless steel
- 2.1.42 **BOS 18KF**
M18 plastic
Laser
- 2.1.54 **BOS 18KW**
M18 plastic
with angle head
Laser
- 2.1.66 **BOS 30M**
M30 metal

- 2.1.70 **Block style BOS Q08M**
mini.s
- 2.1.74 **BOS 5K**
mini.s
with potentiometer
- 2.1.82 **BOS 6K**
mini.s
with teach-in
Laser
- 2.1.90 **BOS 15K**
- 2.1.96 **BOS 21M**
Laser
- 2.1.108 **BOS 25K**
- 2.1.114 **BOS 26K**
Laser
- 2.1.122 **BOS 35K**
- 2.1.128 **BOS 36K**
- 2.1.134 **BOS 65K**

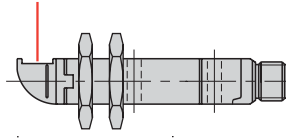
**BOS 18KW –
standards redefined**





The redesigned 18K series doesn't just look different, it features new sensors and improved technical data.

The sensors are available with red or infrared light or as Class 1 laser type. Sensor settings are made using a potentiometer or teach-in process.

The plastic housing with flattened sides allows installation using the included M18 nuts or screws through the sensor housing.

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



Type	Range	Light function			Output		Output function		Switching frequency	U _B	Connec-tion		Fea-tures		Page
		Red light	Infrared	Laser	PNP-Transistor	NPN-Transistor	Light-on	Dark-on			10...30 V DC	M12 connector, 4-pin	Cable	Polarizing filter	
 Diffuse with HGA															
BOS 18KW-PA-1HA-S4-C	50...100 mm	■			■		■	■	500 Hz	■	■			■	2.1.56
BOS 18KW-NA-1HA-S4-C	50...100 mm	■				■	■	■	500 Hz	■	■			■	2.1.56
BOS 18KW-PA-1HA-C-02	50...100 mm	■			■		■	■	500 Hz	■		■		■	2.1.56
BOS 18KW-NA-1HA-C-02	50...100 mm	■				■	■	■	500 Hz	■		■		■	2.1.56
 Diffuse															
BOS 18KW-PA-1XA-S4-C	0...80 mm		■		■		■	■	1 kHz	■	■				2.1.57
BOS 18KW-NA-1XA-S4-C	0...80 mm		■			■	■	■	1 kHz	■	■				2.1.57
BOS 18KW-PA-1XA-C-02	0...80 mm		■		■		■	■	1 kHz	■		■			2.1.57
BOS 18KW-NA-1XA-C-02	0...80 mm		■			■	■	■	1 kHz	■		■			2.1.57
BOS 18KW-PA-1PD-S4-C	0...400 mm		■		■		■	■	1 kHz	■	■				2.1.57
BOS 18KW-NA-1PD-S4-C	0...400 mm		■			■	■	■	1 kHz	■	■				2.1.57
BOS 18KW-PA-1PD-C-02	0...400 mm		■		■		■	■	1 kHz	■		■			2.1.57
BOS 18KW-NA-1PD-C-02	0...400 mm		■			■	■	■	1 kHz	■		■			2.1.57
BOS 18KW-PA-1LOB-S4-C	0...250 mm			■	■		■	■	1.5 kHz	■	■				2.1.60
BOS 18KW-NA-1LOB-S4-C	0...250 mm			■		■	■	■	1.5 kHz	■	■				2.1.60
BOS 18KW-PA-1LOB-C-02	0...250 mm			■	■		■	■	1.5 kHz	■		■			2.1.60
BOS 18KW-NA-1LOB-C-02	0...250 mm			■		■	■	■	1.5 kHz	■		■			2.1.60
 Retroreflective															
BOS 18KW-PA-1QC-S4-C	0.1...3 m	■			■		■	■	1 kHz	■	■			■	2.1.58
BOS 18KW-NA-1QC-S4-C	0.1...3 m	■				■	■	■	1 kHz	■	■			■	2.1.58
BOS 18KW-PA-1QC-C-02	0.1...3 m	■			■		■	■	1 kHz	■		■		■	2.1.58
BOS 18KW-NA-1QC-C-02	0.1...3 m	■				■	■	■	1 kHz	■		■		■	2.1.58
BOS 18KW-PA-1LQH-S4-C	0.1...9 m			■	■		■	■	1.5 kHz	■	■			■	2.1.61
BOS 18KW-NA-1LQH-S4-C	0.1...9 m			■		■	■	■	1.5 kHz	■	■			■	2.1.61
BOS 18KW-PA-1LQH-C-02	0.1...9 m			■	■		■	■	1.5 kHz	■		■		■	2.1.61
BOS 18KW-NA-1LQH-C-02	0.1...9 m			■		■	■	■	1.5 kHz	■		■		■	2.1.61
 Through-beam															
BLE 18KW-PA-1PP-S4-C	0...15 m	■			■		■	■	250 Hz	■	■				2.1.59
BLE 18KW-NA-1PP-S4-C	0...15 m	■				■	■	■	250 Hz	■	■				2.1.59
BLE 18KW-PA-1PP-C-02	0...15 m	■			■		■	■	250 Hz	■		■			2.1.59
BLE 18KW-NA-1PP-C-02	0...15 m	■				■	■	■	250 Hz	■		■			2.1.59
BLE 18KW-PA-1LT-S4-C	0...50 m			■	■		■	■	1.5 kHz	■	■				2.1.62
BLE 18KW-NA-1LT-S4-C	0...50 m			■		■	■	■	1.5 kHz	■	■				2.1.62
BLE 18KW-PA-1LT-C-02	0...50 m			■	■		■	■	1.5 kHz	■		■			2.1.62
BLE 18KW-NA-1LT-C-02	0...50 m			■		■	■	■	1.5 kHz	■		■			2.1.62
BLS 18KW-XX-1P-S4-L	0...15 m	■								■	■				2.1.59
BLS 18KW-XX-1P-L-02	0...15 m	■								■		■			2.1.59
BLS 18KW-XX-1LT-S4-L	0...50 m			■						■	■				2.1.63
BLS 18KW-XX-1LT-L-02	0...50 m			■						■		■			2.1.63

2.1

2.3

Photoelectric sensors accessories page 2.3.2 ...

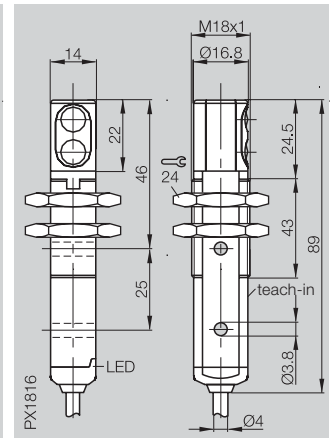
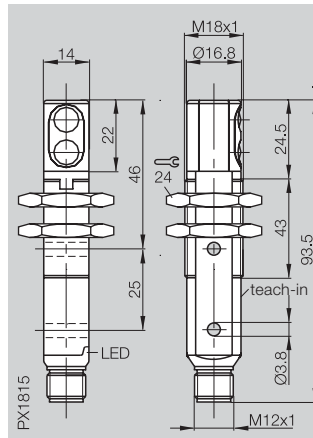
6

Connectors page 6.2 ...

Diffuse with background suppression maximum range
Diffuse maximum range

50...100 mm

50...100 mm



Diffuse



PNP	50...100 mm	HGA
NPN	50...100 mm	HGA
PNP	80 mm	
NPN	80 mm	
PNP	400 mm	
NPN	400 mm	

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

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

Electrical data

Supply voltage U_B	10...30 V DC
Ripple	≤ 2 V
No-load supply current I_0 max.	≤ 30 mA
Switching output	PNP- or NPN-Transistor
Output current	100 mA
Switching type	Light- and dark-on
Voltage drop U_d at I_0	≤ 2 V
Settings	teach-in

10...30 V DC
≤ 2 V
≤ 30 mA
PNP- or NPN-Transistor
100 mA
Light- and dark-on
≤ 2 V
teach-in

10...30 V DC
≤ 2 V
≤ 30 mA
PNP- or NPN-Transistor
100 mA
Light- and dark-on
≤ 2 V
teach-in

Optical data

Recommended range	50...100 mm
Emitter, light type	LED, red light
Wavelength	630 nm
Light spot diameter	approx. 10 mm at 100 mm

50...100 mm
LED, red light
630 nm
approx. 10 mm at 100 mm

50...100 mm
LED, red light
630 nm
approx. 10 mm at 100 mm

Indicator

Output function indicator	LED yellow
Stability indicator	LED green/red

LED yellow
LED green/red

LED yellow
LED green/red

Time data

Response time	1 ms
Frequency of operating cycles f	500 Hz

1 ms
500 Hz

1 ms
500 Hz

Mechanical data

Dimensions	M18x93.5 mm
Connection	M12 connector, 4-pin
No. of wires x cross-section	
Housing material	PBT
Optical surface	PMMA
Weight	25 g

M18x93.5 mm
M12 connector, 4-pin
PBT
PMMA
25 g

M18x89 mm
2 m cable, PVC
4x0.14 mm ²
PBT
PMMA
75 g

Ambient data

Degree of protection per IEC 60529	IP 67
Polarity reversal protected	yes
Short circuit protected	yes
Ambient temperature range T_a	-25...+55 °C
Reference standard	EN 60947-5-2

IP 67
yes
yes
-25...+55 °C
EN 60947-5-2

IP 67
yes
yes
-25...+55 °C
EN 60947-5-2

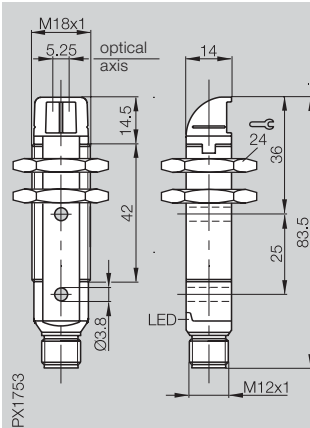
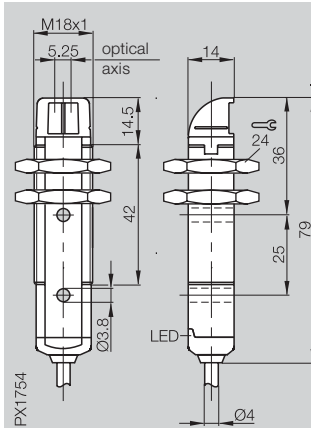
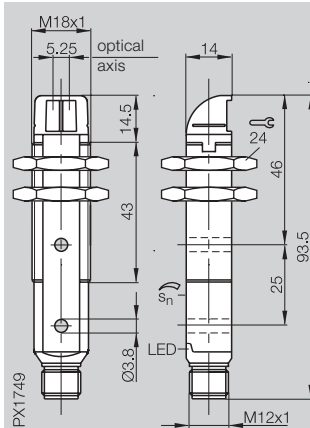
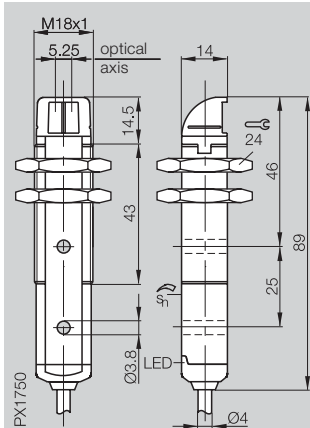
Diffuse values referenced to Kodak gray card 90% reflective.

Wiring diagrams, characteristics and accessories see page **2.1.64** and **2.1.65**.

M18 plastic with angle head

Photoelectric Sensors

BOS 18KW
Range 80 mm, 400 mm

0...80 mm	0...80 mm	0...400 mm	0...400 mm
			
BOS 18KW-PA-1XA-S4-C BOS 18KW-NA-1XA-S4-C	BOS 18KW-PA-1XA-C-02 BOS 18KW-NA-1XA-C-02	BOS 18KW-PA-1PD-S4-C BOS 18KW-NA-1PD-S4-C	BOS 18KW-PA-1PD-C-02 BOS 18KW-NA-1PD-C-02
10...30 V DC ≤ 2 V ≤ 35 mA PNP- or NPN-Transistor 100 mA Light- and dark-on ≤ 2 V	10...30 V DC ≤ 2 V ≤ 35 mA PNP- or NPN-Transistor 100 mA Light- and dark-on ≤ 2 V	10...30 V DC ≤ 2 V ≤ 35 mA PNP- or NPN-Transistor 100 mA Light- and dark-on ≤ 2 V Potentiometer 270°	10...30 V DC ≤ 2 V ≤ 35 mA PNP- or NPN-Transistor 100 mA Light- and dark-on ≤ 2 V Potentiometer 270°
0...80 mm LED, infrared 880 nm approx. 55 mm at 100 mm	0...80 mm LED, infrared 880 nm approx. 55 mm at 100 mm	0...350 mm LED, infrared 880 nm approx. 35 mm at 400 mm	0...350 mm LED, infrared 880 nm approx. 35 mm at 400 mm
LED yellow	LED yellow	LED yellow LED green	LED yellow LED green
0.5 ms 1 kHz	0.5 ms 1 kHz	0.5 ms 1 kHz	0.5 ms 1 kHz
M18×83.5 mm M12 connector, 4-pin	M18×79 mm 2 m cable, PVC 4×0.14 mm ²	M18×93.5 mm M12 connector, 4-pin	M18×89 mm 2 m cable, PVC 4×0.14 mm ²
PBT PMMA 25 g	PBT PMMA 75 g	PBT PMMA 25 g	PBT PMMA 75 g
IP 67 yes yes	IP 67 yes yes	IP 67 yes yes	IP 67 yes yes
-25...+55 °C EN 60947-5-2	-25...+55 °C EN 60947-5-2	-25...+55 °C EN 60947-5-2	-25...+55 °C EN 60947-5-2

2.1

2.3

Photoelectric sensors accessories page 2.3.2 ...

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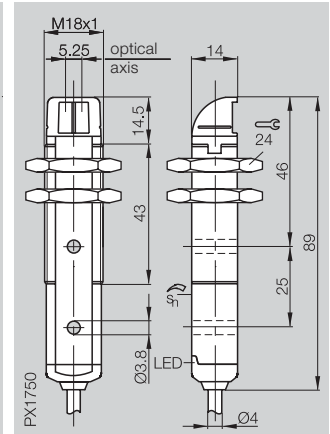
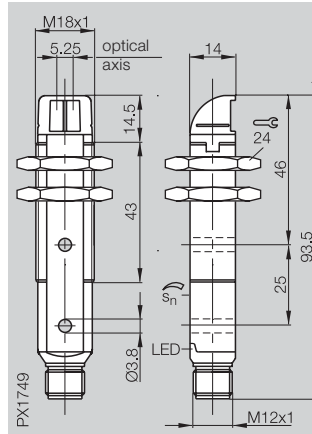
Connectors page 6.2 ...

Retroreflective with polarizing filter
Through-beam

maximum range
maximum range

0.1...3 m

0.1...3 m



Retroreflective

PNP	0.1...3 m	Polarizing filter
NPN	0.1...3 m	Polarizing filter

BOS 18KW-PA-1QC-S4-C
BOS 18KW-NA-1QC-S4-C

BOS 18KW-PA-1QC-C-02
BOS 18KW-NA-1QC-C-02

Through-beam

PNP	15 m	Receiver
NPN	15 m	Receiver
	15 m	Emitter

Electrical data

Supply voltage U_B	10...30 V DC
Ripple	≤ 2 V
No-load supply current I_0 max.	≤ 35 mA
Switching output	PNP- or NPN-Transistor
Output current	100 mA
Switching type	Light- and dark-on
Voltage drop U_d at I_0	≤ 2 V
Settings	Potentiometer 270°
Help functions	

10...30 V DC
≤ 2 V
≤ 35 mA
PNP- or NPN-Transistor
100 mA
Light- and dark-on
≤ 2 V
Potentiometer 270°

Optical data

Recommended range	0.1...2.5 m
Emitter, light type	LED, red light
Wavelength	630 nm
Light spot diameter	approx. 60 mm at 2 m

0.1...2.5 m
LED, red light
630 nm
approx. 60 mm at 2 m

Indicator

Power-on indicator	
Output function indicator	LED yellow
Stability indicator	LED green

LED yellow
LED green

Time data

Response time	0.5 ms
Frequency of operating cycles f	1 kHz

0.5 ms
1 kHz

Mechanical data

Dimensions	M18x93.5 mm
Connection	M12 connector, 4-pin
No. of wires x cross-section	
Housing material	PBT
Optical surface	PMMA
Weight	25 g

M18x89 mm
2 m cable, PVC
4x0.14 mm ²
PBT
PMMA
75 g

Ambient data

Degree of protection per IEC 60529	IP 67
Polarity reversal protected	yes
Short circuit protected	yes
Ambient temperature range T_a	-25...+55 °C
Reference standard	EN 60947-5-2

IP 67
yes
yes
-25...+55 °C
EN 60947-5-2

Retroreflective values referenced to R1 reflector.

Wiring diagrams, characteristics and accessories see page 2.1.64 and 2.1.65.

M18 plastic with angle head

Photoelectric Sensors

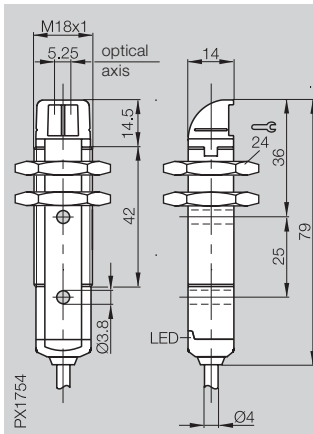
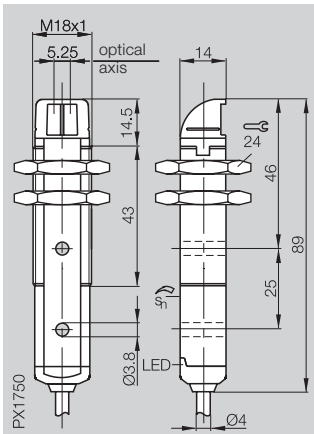
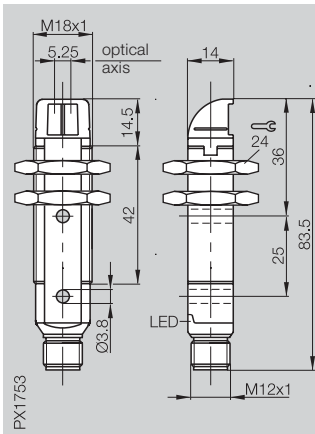
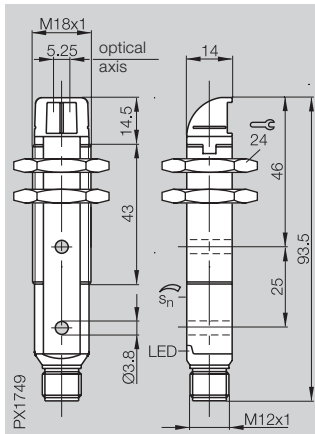
BOS 18KW
Range 15 m

0...15 m

0...15 m

0...15 m

0...15 m



BLE 18KW-PA-1PP-S4-C
BLE 18KW-NA-1PP-S4-C

BLS 18KW-XX-1P-S4-L

BLE 18KW-PA-1PP-C-02
BLE 18KW-NA-1PP-C-02

BLS 18KW-XX-1P-L-02

10...30 V DC
≤ 2 V
≤ 30 mA
PNP- or NPN-Transistor
100 mA
Light- and dark-on
≤ 2 V
Potentiometer 270°

10...30 V DC
≤ 2 V
≤ 35 mA

10...30 V DC
≤ 2 V
≤ 30 mA
PNP- or NPN-Transistor
100 mA
Light- and dark-on
≤ 2 V
Potentiometer 270°

10...30 V DC
≤ 2 V
≤ 35 mA

Test input

Test input

0...10 m

0...10 m
LED, infrared
880 nm
approx. 470 mm at 10 m

0...10 m

0...10 m
LED, infrared
880 nm
approx. 470 mm at 10 m

LED green
LED yellow

LED green

LED green
LED yellow

LED green

2 ms
250 Hz

2 ms
250 Hz

M18×93.5 mm
M12 connector, 4-pin

M18×83.5 mm
M12 connector, 4-pin

M18×89 mm
2 m cable, PVC
4×0.14 mm²

M18×79 mm
2 m cable, PVC
4×0.14 mm²

PBT
PMMA
25 g

PBT
PMMA
25 g

PBT
PMMA
75 g

PBT
PMMA
75 g

IP 67
yes
yes
-25...+55 °C
EN 60947-5-2

IP 67
yes
yes
-25...+55 °C
EN 60947-5-2

IP 67
yes
yes
-25...+55 °C
EN 60947-5-2

IP 67
yes
yes
-25...+55 °C
EN 60947-5-2

2.1

2.3

Photoelectric sensors accessories page 2.3.2 ...

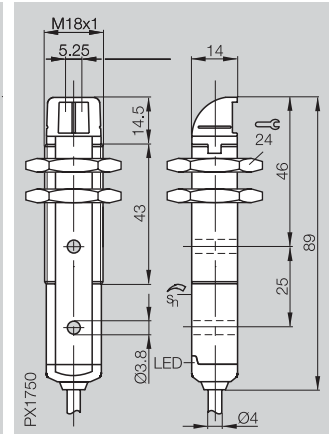
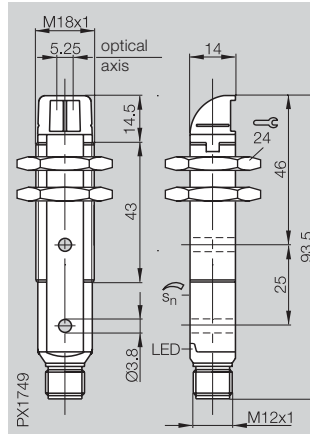
6

Connectors page 6.2 ...

Diffuse	maximum range
Retroreflective with polarizing filter	maximum range

0...250 mm

0...250 mm



Diffuse



PNP	250 mm
NPN	250 mm

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

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

Retroreflective



PNP	0.1...9 m	Polarizing filter
NPN	0.1...9 m	Polarizing filter

Electrical data

Supply voltage U_B

10...30 V DC

10...30 V DC

Ripple

≤ 2 V

≤ 2 V

No-load supply current I_0 max.

≤ 35 mA

≤ 35 mA

Switching output

PNP- or NPN-Transistor

PNP- or NPN-Transistor

Output current

100 mA

100 mA

Switching type

Light- and dark-on

Light- and dark-on

Voltage drop U_d at I_0

≤ 2 V

≤ 2 V

Settings

Potentiometer 270°

Potentiometer 270°

Optical data

Recommended range

0...250 mm

0...250 mm

Emitter, light type

Laser, red light

Laser, red light

Wavelength

650 nm

650 nm

Laser class

Class 1

Class 1

Resolution

approx. 0.3 mm at 50 mm
approx. 0.3 mm at 100 mm
approx. 0.5 mm at 150 mm

approx. 0.3 mm at 50 mm
approx. 0.3 mm at 100 mm
approx. 0.5 mm at 150 mm

Indicator

Output function indicator

LED yellow

LED yellow

Stability indicator

LED green

LED green

Time data

Response time

333 μs

333 μs

Frequency of operating cycles f

1.5 kHz

1.5 kHz

Mechanical data

Dimensions

M18x93.5 mm

M18x89 mm

Connection

M12 connector, 4-pin

2 m cable, PVC

No. of wires × cross-section

4×0.14 mm²

Housing material

PBT

PBT

Optical surface

PMMA

PMMA

Weight

25 g

75 g

Ambient data

Degree of protection per IEC 60529

IP 67

IP 67

Polarity reversal protected

yes

yes

Short circuit protected

yes

yes

Ambient temperature range T_a

-10...+50 °C

-10...+50 °C

Reference standard

EN 60947-5-2

EN 60947-5-2

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

Wiring diagrams, characteristics and accessories see page 2.1.64 and 2.1.65.

M18 plastic Laser with angle head

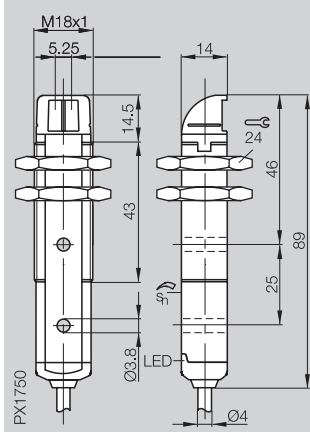
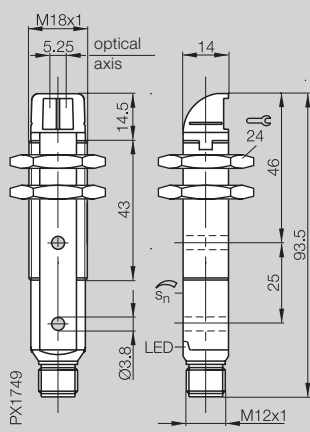


Photoelectric Sensors

BOS 18KW Laser
Range 9 m

0.1...9 m

0.1...9 m



BOS 18KW-PA-1LQH-S4-C
BOS 18KW-NA-1LQH-S4-C

BOS 18KW-PA-1LQH-C-02
BOS 18KW-NA-1LQH-C-02

10...30 V DC

≤ 2 V

≤ 35 mA

PNP- or NPN-Transistor

100 mA

Light- and dark-on

≤ 2 V

Potentiometer 270°

10...30 V DC

≤ 2 V

≤ 35 mA

PNP- or NPN-Transistor

100 mA

Light- and dark-on

≤ 2 V

Potentiometer 270°

0.1...9 m

Laser, red light

650 nm

Class 1

approx. 9 mm over 1 m

0.1...9 m

Laser, red light

650 nm

Class 1

approx. 9 mm over 1 m

LED yellow

LED green

LED yellow

LED green

333 μs

1.5 kHz

333 μs

1.5 kHz

M18×93.5 mm

M12 connector, 4-pin

M18×89 mm

2 m cable, PVC

4×0.14 mm²

PBT

PMMA

25 g

PBT

PMMA

75 g

IP 67

yes

yes

-10...+50 °C

EN 60947-5-2

IP 67

yes

yes

-10...+50 °C

EN 60947-5-2

2.1

2.3

Photoelectric sensors
accessories
page 2.3.2 ...

6

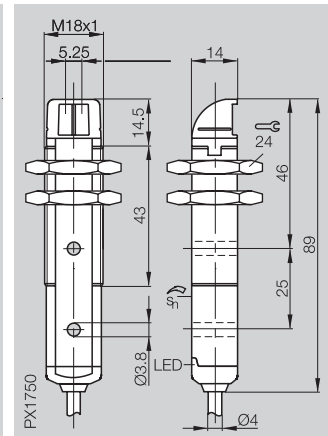
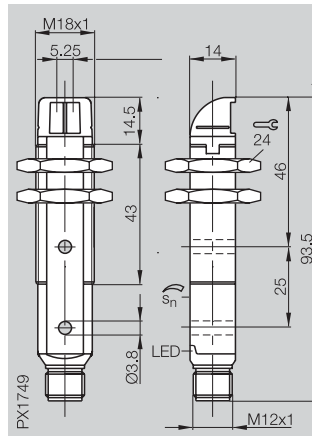
Connectors
page 6.2 ...

Through-beam

maximum range

0...50 m

0...50 m



Through-beam

PNP	50 m	Receiver
NPN	50 m	Receiver
	50 m	Emitter

BLE 18KW-PA-1LT-S4-C
BLE 18KW-NA-1LT-S4-C

BLE 18KW-PA-1LT-C-02
BLE 18KW-NA-1LT-C-02

Electrical data

Supply voltage U_B

10...30 V DC

10...30 V DC

Ripple

≤ 2 V

≤ 2 V

No-load supply current I_0 max.

≤ 30 mA

≤ 30 mA

Switching output

PNP- or NPN-Transistor

PNP- or NPN-Transistor

Output current

100 mA

100 mA

Switching type

Light- and dark-on

Light- and dark-on

Voltage drop U_d at I_0

≤ 2 V

≤ 2 V

Settings

Potentiometer 270°

Potentiometer 270°

Help functions

Optical data

Recommended range

0...50 m

0...50 m

Emitter, light type

Wavelength

Laser class

Resolution

Indicator

Power-on indicator

LED green

LED green

Output function indicator

LED yellow

LED yellow

Time data

Response time

333 μs

333 μs

Frequency of operating cycles f

1.5 kHz

1.5 kHz

Mechanical data

Dimensions

M18×93.5 mm

M18×89 mm

Connection

M12 connector, 4-pin

2 m cable, PVC

No. of wires × cross-section

4×0.14 mm²

Housing material

PBT

PBT

Optical surface

PMMA

PMMA

Weight

25 g

75 g

Ambient data

Degree of protection per IEC 60529

IP 67

IP 67

Polarity reversal protected

yes

yes

Short circuit protected

yes

yes

Ambient temperature range T_a

-10...+50 °C

-10...+50 °C

Reference standard

EN 60947-5-2

EN 60947-5-2

Diffuse values referenced to Kodak gray card 90% reflective.

Wiring diagrams, characteristics and accessories see page 2.1.64 and 2.1.65.

M18 plastic Laser with angle head

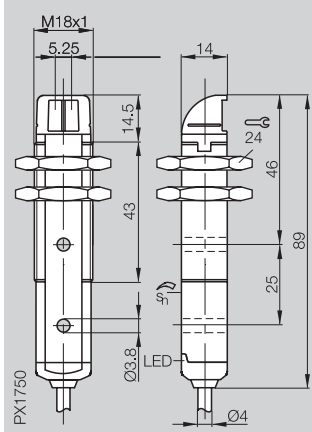
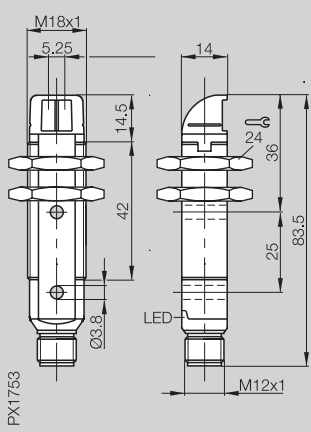


Photoelectric Sensors

BOS 18KW Laser
Range 50 m

0...50 m

0...50 m



BLS 18KW-XX-1LT-S4-L

BLS 18KW-XX-1LT-L-02

10...30 V DC
≤ 2 V
≤ 35 mA

10...30 V DC
≤ 2 V
≤ 35 mA

Test input

Test input

0...50 m
Laser, red light
650 nm
Class 1
approx. 2.5 mm at 5 m
approx. 5 mm at 10 m
approx. 10 mm at 20 m

0...50 m
Laser, red light
650 nm
Class 1
approx. 2.5 mm at 5 m
approx. 5 mm at 10 m
approx. 10 mm at 20 m

LED green

LED green

M18×93.5 mm
M12 connector, 4-pin

M18×89 mm
2 m cable, PVC
4×0.14 mm²

PBT
PMMA
25 g

PBT
PMMA
75 g

IP 67
yes
yes

IP 67
yes
yes

-10...+50 °C
EN 60947-5-2

-10...+50 °C
EN 60947-5-2

2.1

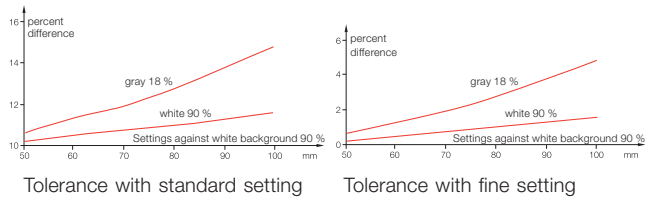
2.3

Photoelectric sensors
accessories
page 2.3.2 ...

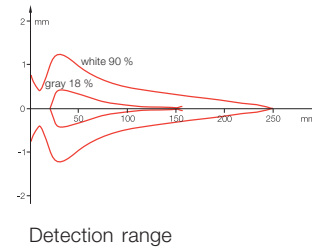
6

Connectors
page 6.2 ...

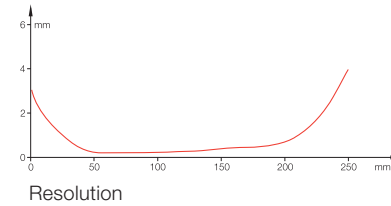
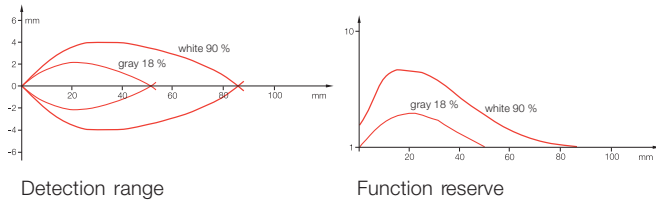
BOS 18KW-...-1HA-...



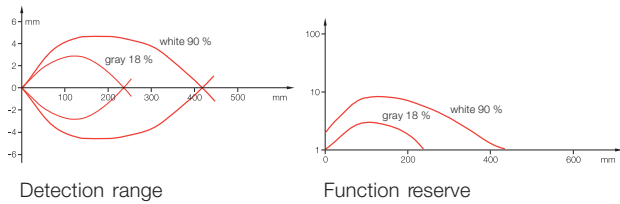
BOS 18KW-...-1LOB-...



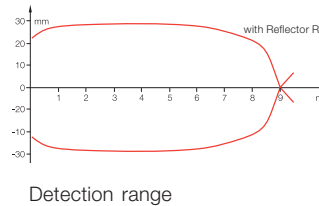
BOS 18KW-...-1XA-...



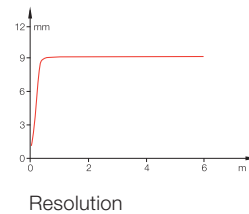
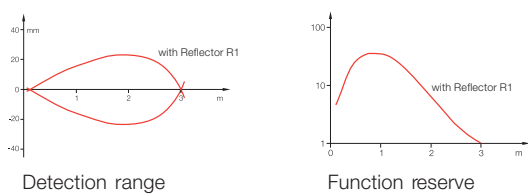
BOS 18KW-...-1PD-...



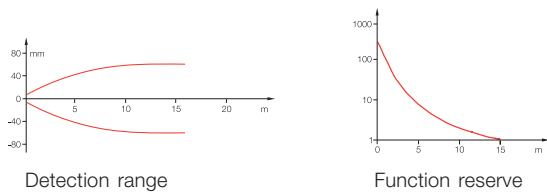
BOS 18KW-...-1LQH-...



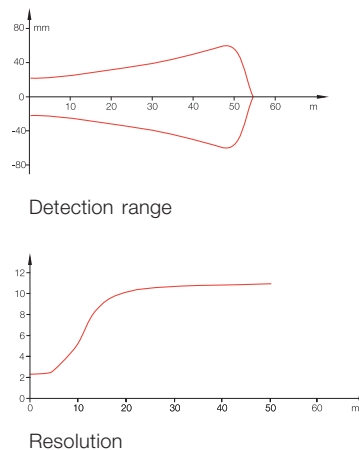
BOS 18KW-...-1QC-...



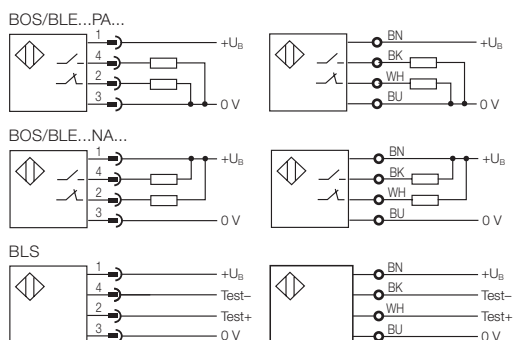
BLE/BLS 18KW-...-1PP/1P-...



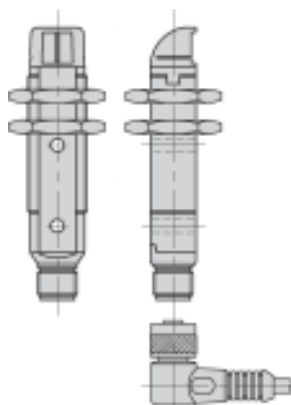
BLE/BLS 18KW-...-1LT-...



Wiring diagrams



Connector orientation



Recommended accessories please order separately



Mounting clamp
BOS 18,0-KB-2



Mounting clamp
BOS 18,0-KB-1



Mounting bracket
BES 18-HW-1



Reflector
BOS R-1



Connector
BKS-_ 19/BKS-_ 20

2.1

2.3

Photoelectric
sensors
accessories
page 2.3.2 ...

6

Connectors,
holders ...
page 6.2 ...

The **BOS 30M** series combines the high optical performance of large block style sensors with the installation-friendly characteristics of tubular sensors.

The long range of 2 m provides great function reserve under unfavorable working conditions. A rugged glass disk protects the optics from things like hot chips, and the 18-turn potentiometer enables exact sensitivity setting. In addition an integrated contamination indicator warns you in time when the optics are beginning to be affected by dirt or other effects.

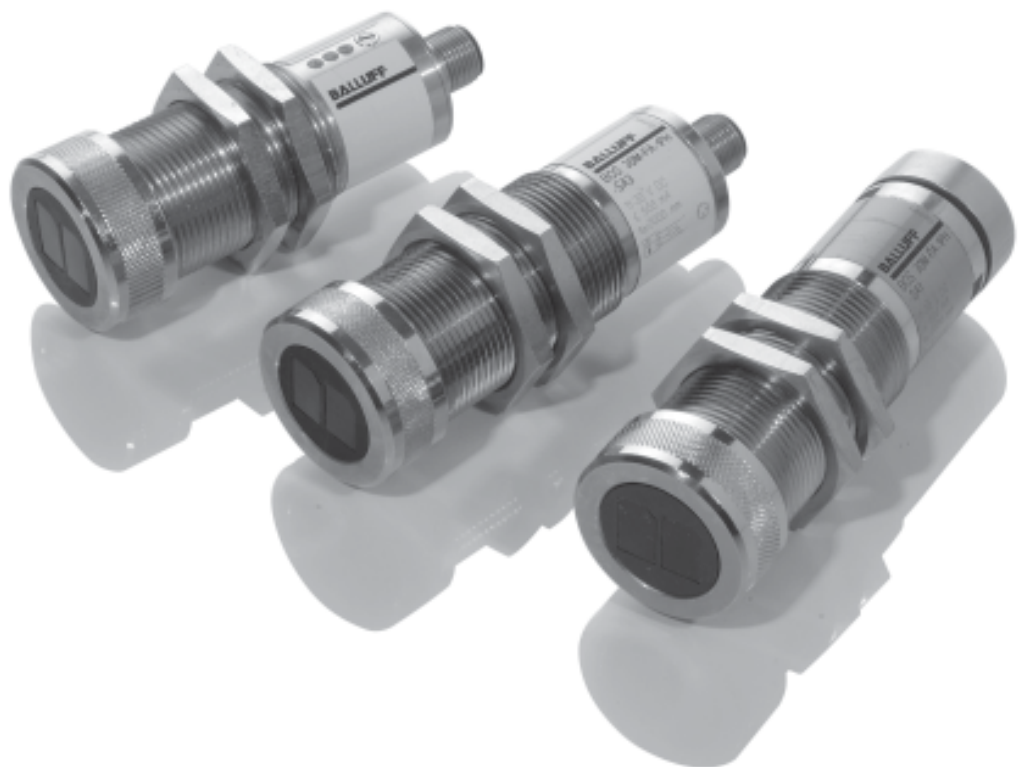
Together with special glass fiber optics BFO 18V... Balluff offers a high-performance and rugged concept – especially suitable for the automobile industry.


Features

- Long range
- Rugged design (metal housing and glass protective shield)
- 18-turn potentiometer
- Selectable normally open/ normally closed
- Compatible with special glass fiber optics
- Approvals for the automobile industry
- Contamination indicator

Applications

- Automobile industry
- Conveying and warehousing
- Construction machinery
- Woodworking industry
- Where harsh conditions prevail



Type	Range	Light function		Output		Output function		Switching frequency	U _B	Connection		Page
		Red light	Infrared	PNP-Transistor	NPN-Transistor	Light-on	Dark-on			M12 connector, 4-pin	BKS-S 1, 5-pin	
 Diffuse												
BOS 30M-PU-1PH-SA 1-C	0...2 m		■	■		■	■	100 Hz	■		■	2.1.68
BOS 30M-PU-1PH-SA 3-C	0...2 m		■	■		■	■	100 Hz	■	■		2.1.68
BOS 30M-GA-1PH-S 4-C	0...2 m		■	■		■	■	100 Hz	■	■		2.1.68

2.1

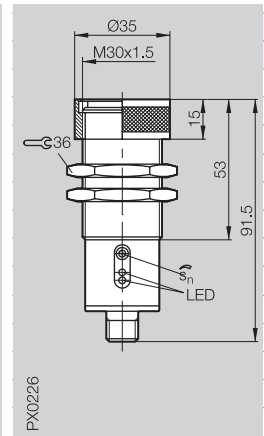
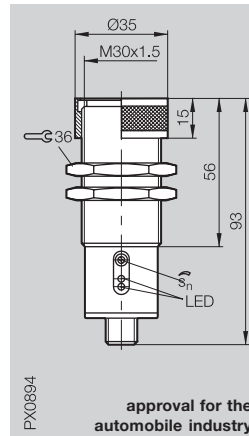
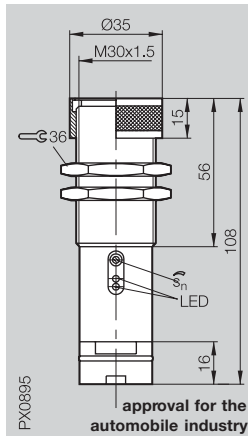
2.3

Photoelectric sensors accessories page 2.3.2 ...

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Connectors page 6.2 ...

Diffuse	Range	0...2 m	0...2 m	0...2 m
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Diffuse

PNP	2 m	Daylight filter	BOS 30M-PU-1PH-SA 1-C	BOS 30M-PU-1PH-SA 3-C	BOS 30M-GA-1PH-S 4-C
PNP/NPN	2 m	Daylight filter			

Electrical data

Supply voltage U_B	10...30 V DC	10...30 V DC	10...30 V DC
Ripple	10 %	10 %	10 %
No-load supply current I_0 max.	≤ 40 mA	≤ 40 mA	≤ 40 mA
Switching output	PNP-Transistor	PNP-Transistor	PNP- and NPN-Transistor (push-pull)
Output current	200 mA	200 mA	200 mA
Switching type	Light- and dark-on	Light- and dark-on	Light- and dark-on
Voltage drop U_d at I_0	≤ 2.4 V	≤ 2.4 V	≤ 2.4 V
Settings	18-turn potentiometer	18-turn potentiometer	18-turn potentiometer

Optical data

Emitter, light type	LED, infrared	LED, infrared	LED, infrared
Wavelength	880 nm	880 nm	880 nm

Indicator

Power-on indicator	LED green	LED green	LED green
Output function indicator	LED yellow	LED yellow	LED yellow
Stability indicator	LED red	LED red	LED red

Time data

Response time	5 ms	5 ms	5 ms
Frequency of operating cycles f	100 Hz	100 Hz	100 Hz

Mechanical data

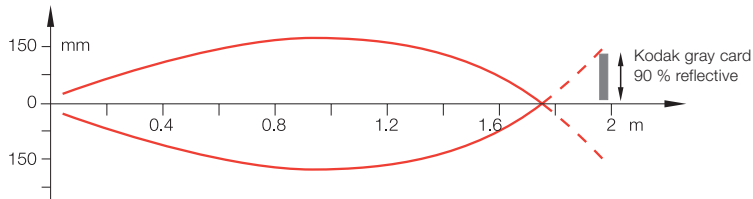
Dimensions	M30×108 mm	M30×93 mm	M30×91.5 mm
Connection	BKS-S 1 connector	M12 connector, 4-pin	M12 connector, 4-pin
Housing material	Nickel plated brass	Nickel plated brass	Nickel plated brass
Optical surface	Glass	Glass	Glass
Weight	230 g	230 g	230 g

Ambient data

Degree of protection per IEC 60529	IP 65	IP 65	IP 65
Polarity reversal protected	yes	yes	yes
Short circuit protected	yes	yes	yes
Ambient temperature range T_a	-20...+60 °C	-20...+60 °C	-20...+60 °C

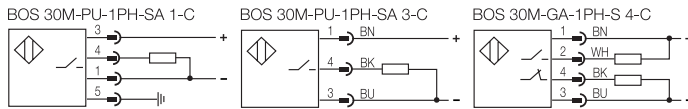
Diffuse values referenced to Kodak gray card 90% reflective, 400×400 mm.

Diffuse BOS 30M-...-1PH-...

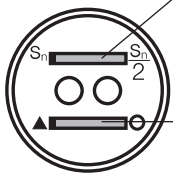


Range measured with side approach of Kodak gray card.

Wiring diagrams



Switch for halving the switching distance. The switching distance can be set more precisely. The resolution of the 18-turn potentiometer is increased.



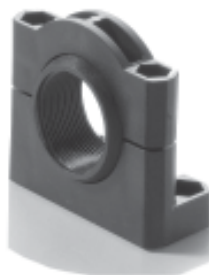
Inverting switch for toggling the final stage version. Converts normally closed to normally open for example.

Recommended accessories

please order separately



Adapter
BFO 30-A1



Mounting clamp
BOS 30,0-KB-1



Connector
BKS-S 1



Connector
BKS-_ 19/BKS-_ 20

2.1

2.3

Photoelectric sensors accessories page 2.3.2 ...

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Connectors page 6.2 ...