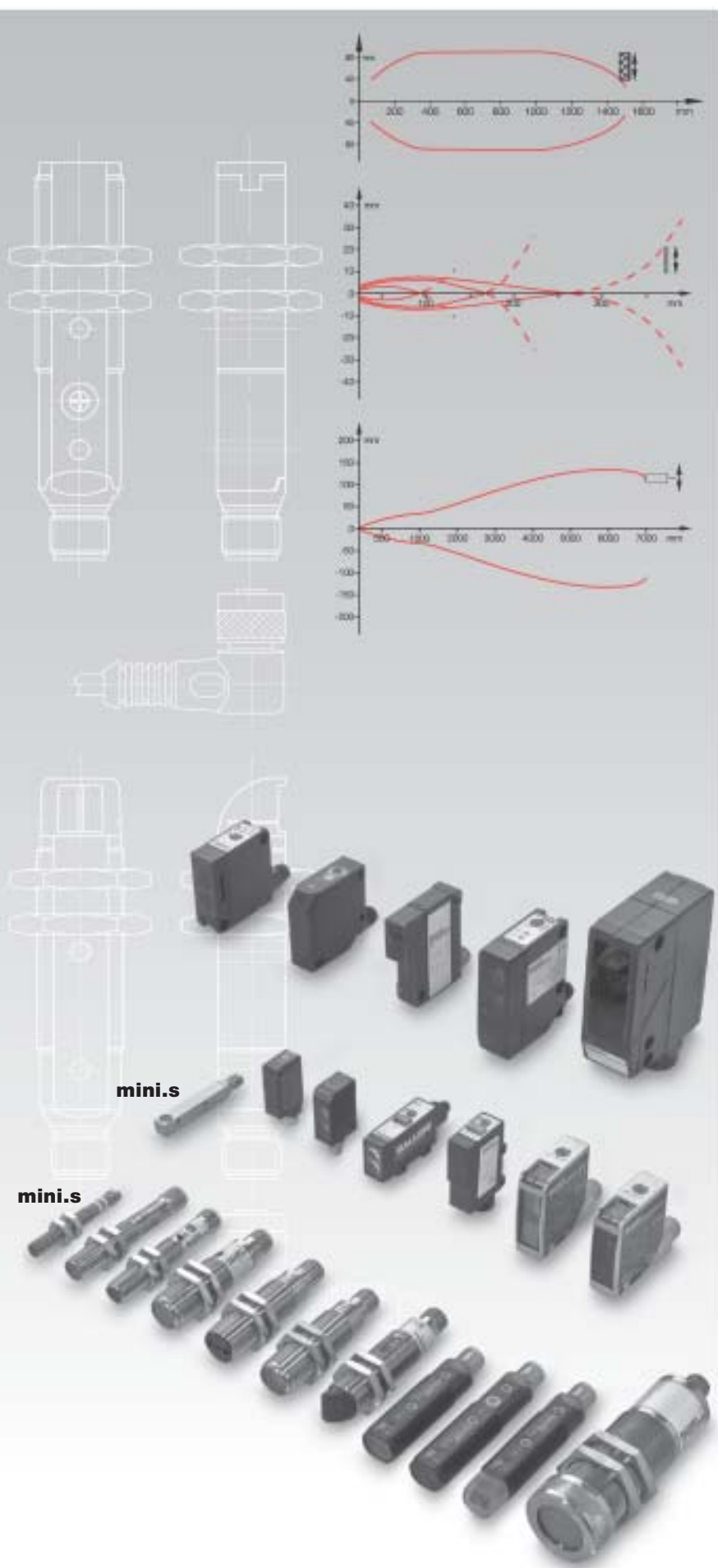


Photoelectric Sensors - Standard



- 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**

Photoelectric sensors from the **Opto-PROXINOX** series have a skin of corrosion-proof stainless steel 1.4571 and therefore do not create contamination. Nor are there any compromises with the optical surface, with its 2 mm thick glass element (also plastic for the food industry).

The nightmare of lost nameplates is also over: the stainless steel sensors are laser engraved.

The housing design is identical for all the sensors in the **BOS 18E** series.

A special housing nose and optics construction provides optimum sealing and rigidity. In addition to the usual IP 68 protection, steam cleaning is also permitted.

The **BOS 18E** series includes diffuse models with fixed sensing distances of 100 mm, 200 mm and 400 mm. They are manufactured to precise tolerances. This makes them ideal for rapid and uncomplicated assembly. The use of highly visible red light (100 and 200 mm versions) also makes them easy to set up.

The through-beam model operates using infrared light, with an outstanding range of 16 m. The high-energy beam can penetrate ordinary paper. An ideal sensor for harsh environments, for example in the food processing and machine tools industry, where a sensor with large function reserves is demanded!

Features





- Supply voltage 10...30 V DC, polarity reversal protected
- Output short circuit protected
- Rugged stainless steel housing without holes and with stainless nuts
- Enclosure rating IP 68 (BWN Pr. 27), can also withstand steam cleaning
- Optical surface of rugged 2 mm Borofloat glass or scratch-resistant Tempax, bead secured.

Applications

- Bottling equipment
- Food processing
- Packaging
- Laundry and dry-cleaning
- Machine tools
- Heavy industry
- Wherever other sensors don't measure up

Tested to BWN Pr. 27
(IP 68 for the foods industry)



Type	Range	Light function		Output		Output function		Switching frequency	U _B	Connec-tion		Fea-tures	Page
		Red light	Infrared	PNP-Transistor	NPN-Transistor	Light-on	Dark-on			10...30 V DC	M12 connector, 4-pin		
 Diffuse with HGA	0...40 mm												
BOS 18E-PS-1N2M-S 4-D		■		■		■		100 Hz	■	■			2.1.38
 Diffuse	0...100 mm												
BOS 18E-PS-1YA-E5-D-S 4	0...100 mm	■		■		■		100 Hz	■	■			2.1.38
BOS 18E-PO-1YA-E5-D-S 4	0...100 mm	■		■		■	■	100 Hz	■	■			2.1.38
BOS 18E-PS-1XA-SA 1-S 4			■	■		■		100 Hz	■	■			2.1.39
	0...200 mm												
BOS 18E-PS-1YB-E5-D-S 4	0...200 mm	■		■		■		100 Hz	■	■			2.1.38
BOS 18E-PS-1XB-SA 1-S 4			■	■		■		100 Hz	■	■			2.1.39
	0...400 mm												
BOS 18E-PS-1YD-E5-D-S 4	0...400 mm	■		■		■		100 Hz	■	■			2.1.38
BOS 18E-PS-1XD-SA 1-S 4			■	■		■		100 Hz	■	■			2.1.39
 Retroreflective	2 m												
BOS 18E-PS-1UB-E5-D-S 4	2 m	■		■		■		100 Hz	■	■		■	2.1.39
BOS 18E-PO-1UB-E5-D-S 4	2 m	■		■		■		100 Hz	■	■		■	2.1.39
BOS 18E-PS-1UB-SA 1-D-S 4		■		■		■		100 Hz	■	■		■	2.1.39
	4 m												
BOS 18E-PS-1WD-E5-D-S 4		■		■		■		100 Hz	■	■			2.1.39
 Through-beam	16 m												
BLE 18E-PS-1P-E5-D-S 4	16 m		■	■		■		100 Hz	■	■			2.1.39
BLE 18E-PO-1P-E5-D-S 4	16 m		■	■		■		100 Hz	■	■			2.1.39
BLE 18E-PS-1P-SA 1-S 4			■	■		■		100 Hz	■	■			2.1.39
	16 m												
BLS 18E-XX-1P-E5-X-S 4	16 m		■						■	■			2.1.39
BLS 18E-XX-1P-SA 1-S 4			■						■	■			2.1.39

2.1

2.3

Photoelectric sensors accessories page 2.3.2 ...

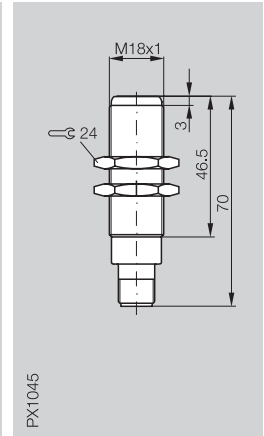
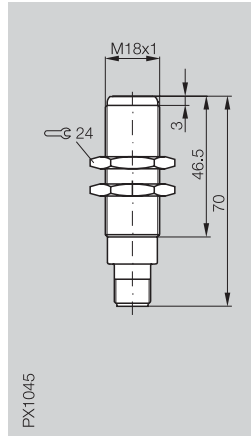
6

Connectors page 6.2 ...

Photoelectric Sensors

BOS 18E
Range 40 mm, 100 mm,
200 mm, 400 mm

Diffuse with background suppression	Range	0...40 mm	
Diffuse	Range		0...100/0...200/0...400 mm
Retroreflective	Range		
Through-beam	Range		



stainless steel

Diffuse



PNP, light-on 40 mm

PNP, light-on 100 mm



PNP, dark-on 100 mm

PNP, light-on 200 mm

PNP, light-on 400 mm

Retroreflective



PNP, dark-on 2 m Polarizing filter

PNP, light-on 2 m Polarizing filter

PNP, dark-on 4 m

Through-beam



PNP, dark-on 16 m Receiver

PNP, light-on 16 m Receiver

Emitter

Electrical data

Supply voltage U_B

10...30 V DC

10...30 V DC

Ripple

15 %

10 %

No-load supply current I_0 max.

≤ 20 mA

≤ 20 mA

Switching output

PNP-Transistor

PNP-Transistor

Output current

200 mA

200 mA

Switching type

Light-on

Light- or dark-on

Voltage drop U_d at I_o

≤ 2.5 V

≤ 2.5 V

Settings

fixed

fixed

Optical data

Emitter, light type

LED, red light

LED, red light

Wavelength

660 nm

660 nm

Time data

Response time

5 ms

5 ms

Frequency of operating cycles f

100 Hz

100 Hz

Mechanical data

Dimensions

M18x70 mm

M18x70 mm

Connection

M12 connector, 4-pin

M12 connector, 4-pin

Housing material

Stainless steel 1.4571

Stainless steel 1.4571

Optical surface

Glass

Glass

Weight

55 g

55 g

Ambient data

Degree of protection per IEC 60529

IP 69K and
IP 68 per BWN Pr. 27

IP 69K and
IP 68 per BWN Pr. 27

Polarity reversal protected

yes

yes

Short circuit protected

yes

yes

Ambient temperature range T_a

-5...+75 °C

-20...+75 °C

Ambient light rejection

2 kLux

2 kLux

Diffuse values referenced to Kodak gray card 90% reflective.

Retroreflective values referenced to R1 reflector.

Wiring diagrams, characteristics and accessories see page 2.1.40 and 2.1.41.

M18 stainless steel

Photoelectric Sensors

BOS 18E
Range 100 mm, 200 mm,
400 mm, 2 m, 4 m, 16 m

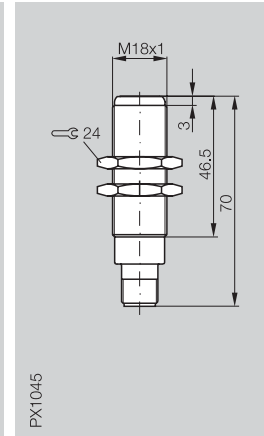
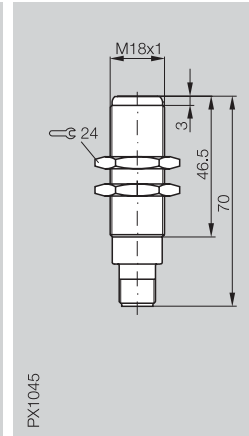
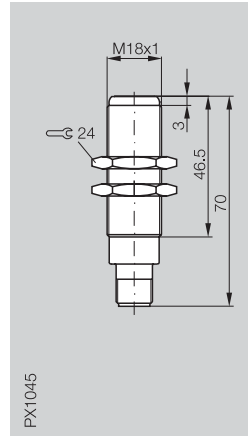
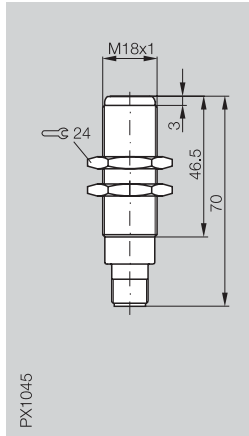
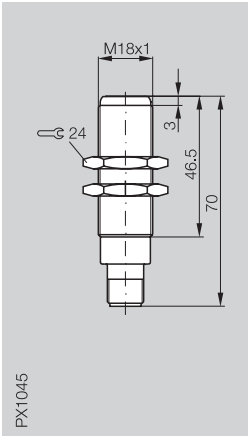
0...100/0...200/0...400 mm

2 m/4 m

2 m

16 m

16 m



BOS 18E-PS-1XA-SA 1-S 4
BOS 18E-PS-1XB-SA 1-S 4
BOS 18E-PS-1XD-SA 1-S 4

BOS 18E-PS-1UB-E5-D-S 4
BOS 18E-PO-1UB-E5-D-S 4
BOS 18E-PS-1WD-E5-D-S 4

BOS 18E-PS-1UB-SA 1-S 4

BLE 18E-PS-1P-E5-D-S 4
BLE 18E-PO-1P-E5-D-S 4
BLS 18E-XX-1P-E5-X-S 4

BLE 18E-PS-1P-SA 1-S 4
BLS 18E-XX-1P-SA 1-S 4

10...30 V DC

10...30 V DC

10...30 V DC

10...30 V DC

10...30 V DC

15 %

10 %

15 %

15 %

15 %

≤ 20 mA

≤ 20 mA

≤ 20 mA

≤ 15 mA (BLS ≤ 40 mA)

≤ 15 mA (BLS ≤ 35 mA)

PNP-Transistor

PNP-Transistor

PNP-Transistor

PNP-Transistor

PNP-Transistor

200 mA

200 mA

200 mA

200 mA

200 mA

Light-on

Light- or dark-on

Dark-on

Light- or dark-on

Dark-on

≤ 2.5 V

≤ 2.5 V

≤ 2.5 V

≤ 2.5 V

≤ 2.5 V

fixed

fixed

fixed

fixed

fixed

LED, infrared

LED, red light

LED, red light

LED, infrared

LED, infrared

880 nm

660 nm

660 nm

880 nm

880 nm

5 ms

5 ms

5 ms

5 ms

5 ms

100 Hz

100 Hz

100 Hz

100 Hz

100 Hz

M18x70 mm

M18x70 mm

M18x70 mm

M18x70 mm

M18x70 mm

M12 connector, 4-pin

M12 connector, 4-pin

M12 connector, 4-pin

M12 connector, 4-pin

M12 connector, 4-pin

Stainless steel 1.4571

Stainless steel 1.4571

Stainless steel 1.4571

Stainless steel 1.4571

Stainless steel 1.4571

PMMA scratch-resistant

Glass

PMMA scratch-resistant

Glass

PMMA scratch-resistant

55 g

40 g

40 g

55 g (40 g)

55 g (40 g)

IP 69K and

IP 69K and

IP 69K and

IP 69K and

IP 69K and

IP 68 per BWN Pr. 27

IP 68 per BWN Pr. 27

IP 68 per BWN Pr. 27

IP 68 per BWN Pr. 27

IP 68 per BWN Pr. 27

yes

yes

yes

yes

yes

yes

yes

yes

yes

yes

-5...+75 °C

-20...+75 °C

-20...+75 °C

-5...+75 °C

-5...+75 °C

2 kLux

2 kLux

2 kLux

2 kLux

2 kLux

2.1

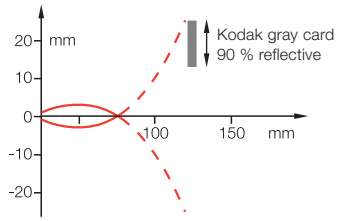
2.3

Photoelectric sensors accessories page 2.3.2 ...

6

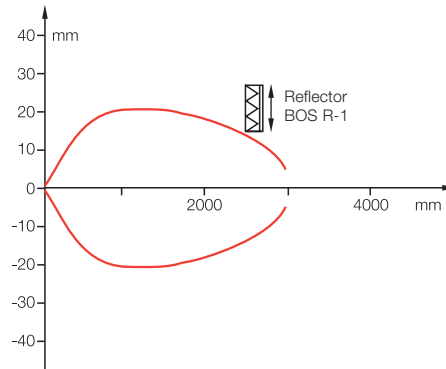
Connectors page 6.2 ...

Diffuse BOS 18E-...-1YA-...



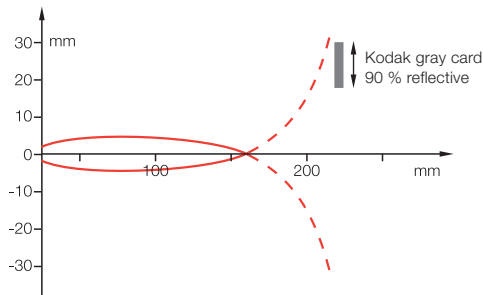
Range measured with side approach of Kodak gray card.

Retroreflective BOS 18E-...-1UB-...



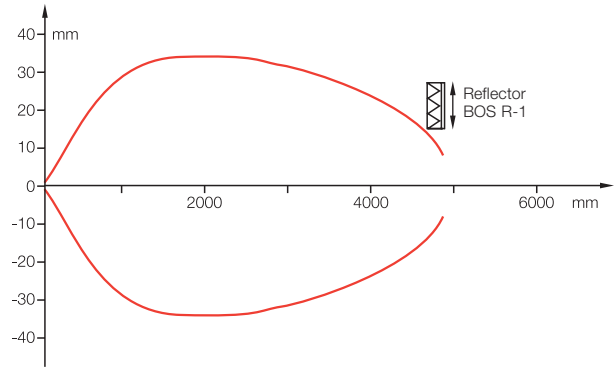
Range measured using side approach with reflector.

Diffuse BOS 18E-...-1YB-...



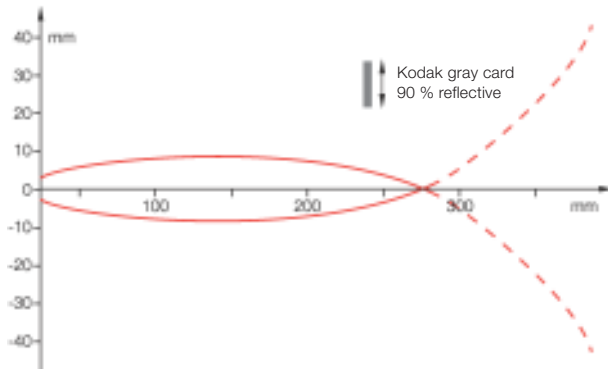
Range measured with side approach of Kodak gray card.

Retroreflective BOS 18E-...-1WD-...



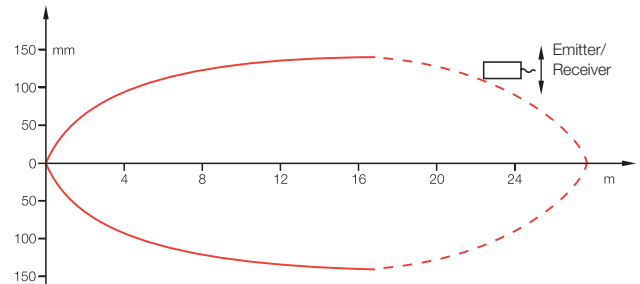
Range measured using side approach with reflector.

Diffuse BOS 18E-...-1YD-...



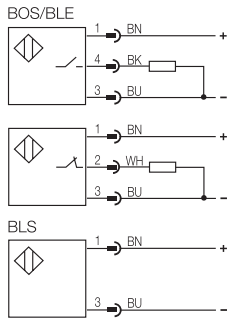
Range measured with side approach of Kodak gray card.

Through-beam BLE/BLS 18E-...



For through-beam the maximum possible offset between emitter and receiver is measured.

Wiring diagrams



Recommended accessories

please order separately



Round aperture
BOS 18-BL-1



Reflector
BOS R-1



Air shield
BOS 18-LT-1



Mounting clamp
BOS 18,0-KB-1



Connector
BKS-S 20E

2.1

2.3

Photoelectric sensors
accessories
page 2.3.2 ...

6

Connectors
page 6.2 ...

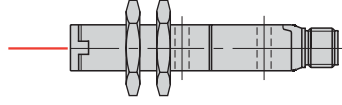
**BOS 18KF –
standards redefined**





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 18KF-PA-1HA-S4-C	50...100 mm	■			■		■	■	500 Hz	■	■			■	2.1.44
BOS 18KF-NA-1HA-S4-C	50...100 mm	■				■	■	■	500 Hz	■	■			■	2.1.44
BOS 18KF-PA-1HA-C-02	50...100 mm	■			■		■	■	500 Hz	■		■		■	2.1.44
BOS 18KF-NA-1HA-C-02	50...100 mm	■				■	■	■	500 Hz	■		■		■	2.1.44
 Diffuse															
BOS 18KF-PA-1XA-S4-C	0...100 mm		■		■		■	■	1 kHz	■	■				2.1.45
BOS 18KF-NA-1XA-S4-C	0...100 mm		■			■	■	■	1 kHz	■	■				2.1.45
BOS 18KF-PA-1XA-C-02	0...100 mm		■		■		■	■	1 kHz	■		■			2.1.45
BOS 18KF-NA-1XA-C-02	0...100 mm		■			■	■	■	1 kHz	■		■			2.1.45
BOS 18KF-PA-1PE-S4-C	0...700 mm		■		■		■	■	1 kHz	■	■				2.1.45
BOS 18KF-NA-1PE-S4-C	0...700 mm		■			■	■	■	1 kHz	■	■				2.1.45
BOS 18KF-PA-1PE-C-02	0...700 mm		■		■		■	■	1 kHz	■		■			2.1.45
BOS 18KF-NA-1PE-C-02	0...700 mm		■			■	■	■	1 kHz	■		■			2.1.45
BOS 18KF-PA-1LOC-S4-C	0...350 mm			■	■		■	■	1.5 kHz	■	■				2.1.48
BOS 18KF-NA-1LOC-S4-C	0...350 mm			■		■	■	■	1.5 kHz	■	■				2.1.48
BOS 18KF-PA-1LOC-C-02	0...350 mm			■	■		■	■	1.5 kHz	■		■			2.1.48
BOS 18KF-NA-1LOC-C-02	0...350 mm			■		■	■	■	1.5 kHz	■		■			2.1.48
 Retroreflective															
BOS 18KF-PA-1QD-S4-C	0.1...4.5 m	■			■		■	■	1 kHz	■	■			■	2.1.46
BOS 18KF-NA-1QD-S4-C	0.1...4.5 m	■				■	■	■	1 kHz	■	■			■	2.1.46
BOS 18KF-PA-1QD-C-02	0.1...4.5 m	■			■		■	■	1 kHz	■		■		■	2.1.46
BOS 18KF-NA-1QD-C-02	0.1...4.5 m	■				■	■	■	1 kHz	■		■		■	2.1.46
BOS 18KF-PA-1LQP-S4-C	0.1...16 m			■	■		■	■	1.5 kHz	■	■			■	2.1.49
BOS 18KF-NA-1LQP-S4-C	0.1...16 m			■		■	■	■	1.5 kHz	■	■			■	2.1.49
BOS 18KF-PA-1LQP-C-02	0.1...16 m			■	■		■	■	1.5 kHz	■		■		■	2.1.49
BOS 18KF-NA-1LQP-C-02	0.1...16 m			■		■	■	■	1.5 kHz	■		■		■	2.1.49
 Through-beam															
BLE 18KF-PA-1PP-S4-C	0...20 m	■			■		■	■	250 Hz	■	■				2.1.47
BLE 18KF-NA-1PP-S4-C	0...20 m	■				■	■	■	250 Hz	■	■				2.1.47
BLE 18KF-PA-1PP-C-02	0...20 m	■			■		■	■	250 Hz	■		■			2.1.47
BLE 18KF-NA-1PP-C-02	0...20 m	■				■	■	■	250 Hz	■		■			2.1.47
BLE 18KF-PA-1LT-S4-C	0...60 m			■	■		■	■	1.5 kHz	■	■				2.1.50
BLE 18KF-NA-1LT-S4-C	0...60 m			■		■	■	■	1.5 kHz	■	■				2.1.50
BLE 18KF-PA-1LT-C-02	0...60 m			■	■		■	■	1.5 kHz	■		■			2.1.50
BLE 18KF-NA-1LT-C-02	0...60 m			■		■	■	■	1.5 kHz	■		■			2.1.50
BLS 18KF-XX-1P-S4-L	0...20 m	■								■	■				2.1.47
BLS 18KF-XX-1P-L-02	0...20 m	■								■		■			2.1.47
BLS 18KF-XX-1LT-S4-L	0...60 m			■						■	■				2.1.51
BLS 18KF-XX-1LT-L-02	0...60 m			■						■		■			2.1.51

2.1

2.3

Photoelectric sensors accessories page 2.3.2 ...

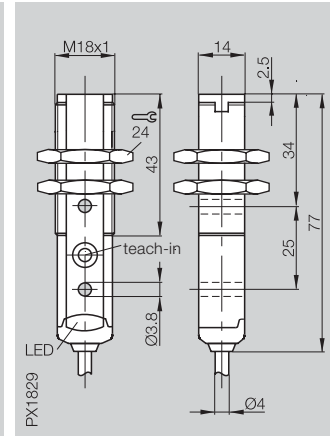
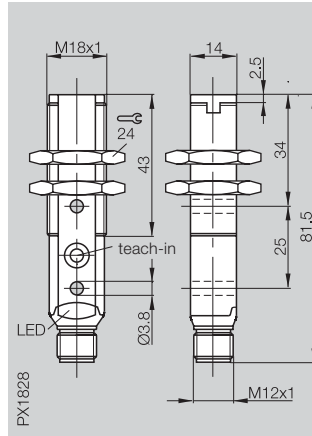
6

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 100 mm

NPN 100 mm

PNP 700 mm

NPN 700 mm

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

teach-in

teach-in

Optical data

Recommended range

50...100 mm

50...100 mm

Emitter, light type

LED, red light

LED, red light

Wavelength

630 nm

630 nm

Light spot diameter

approx. 8 mm at 100 mm

approx. 8 mm at 100 mm

Indicator

Output function indicator

LED yellow

LED yellow

Stability indicator

LED green/red

LED green/red

Time data

Response time

1 ms

1 ms

Frequency of operating cycles f

500 Hz

500 Hz

Mechanical data

Dimensions

M18x81.5 mm

M18x77 mm

Connection

M12 connector, 4-pin

2 m cable, PVC

No. of wires x cross-section

4x0.14 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

-25...+55 °C

-25...+55 °C

Reference standard

EN 60947-5-2

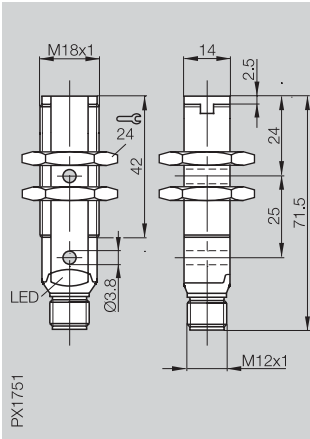
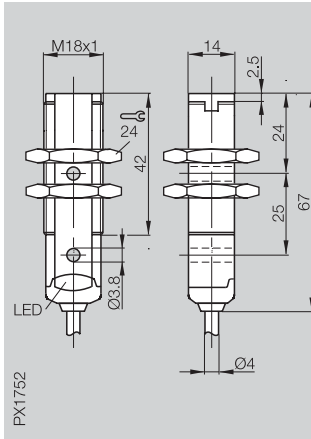
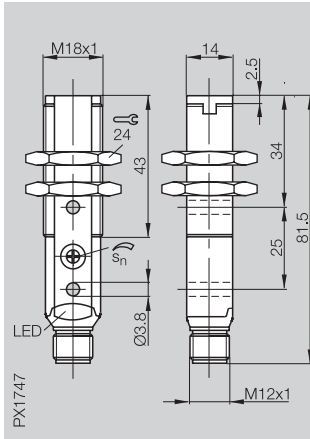
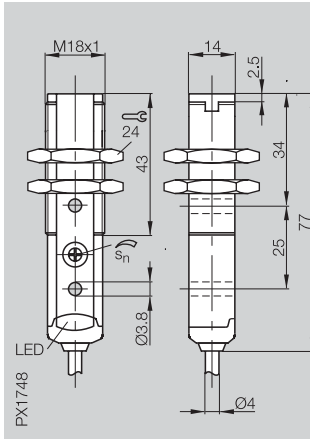
EN 60947-5-2

Diffuse values referenced to Kodak gray card 90% reflective.

Wiring diagrams, characteristics and accessories see page **2.1.52** and **2.1.53**.

M18 plastic Sensors

BOS 18KF
Range 100 mm, 700 mm

0...100 mm	0...100 mm	0...700 mm	0...700 mm
			
BOS 18KF-PA-1XA-S4-C BOS 18KF-NA-1XA-S4-C	BOS 18KF-PA-1XA-C-02 BOS 18KF-NA-1XA-C-02	BOS 18KF-PA-1PE-S4-C BOS 18KF-NA-1PE-S4-C	BOS 18KF-PA-1PE-C-02 BOS 18KF-NA-1PE-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...100 mm LED, infrared 880 nm approx. 80 mm at 100 mm	0...100 mm LED, infrared 880 nm approx. 80 mm at 100 mm	0...600 mm LED, infrared 880 nm approx. 40 mm at 600 mm	0...600 mm LED, infrared 880 nm approx. 40 mm at 600 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
M18x71.5 mm M12 connector, 4-pin	M18x67 mm 2 m cable, PVC 4x0.14 mm ²	M18x81.5 mm M12 connector, 4-pin	M18x77 mm 2 m cable, PVC 4x0.14 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 ...

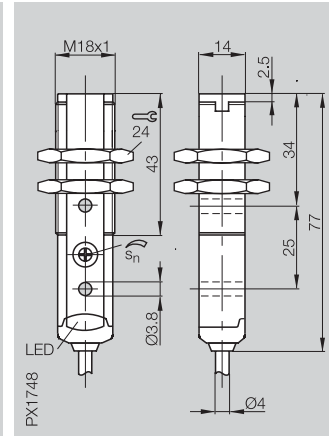
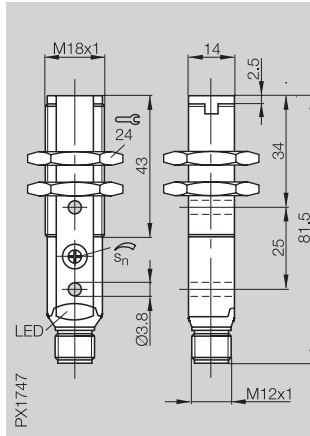
6

Connectors page 6.2 ...

Retroreflective with polarizing filter maximum range
Through-beam maximum range

0.1...4.5 m

0.1...4.5 m



Retroreflective

PNP 0.1...4.5 m Polarizing filter
NPN 0.1...4.5 m Polarizing filter

BOS 18KF-PA-1QD-S4-C
BOS 18KF-NA-1QD-S4-C

BOS 18KF-PA-1QD-C-02
BOS 18KF-NA-1QD-C-02

Through-beam

PNP 20 m Receiver
NPN 20 m Receiver
20 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...4 m
Emitter, light type LED, red light
Wavelength 630 nm
Light spot diameter approx. 65 mm at 3 m

0.1...4 m
LED, red light
630 nm
approx. 65 mm at 3 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 M18x81.5 mm
Connection M12 connector, 4-pin
No. of wires \times cross-section
Housing material PBT
Optical surface PMMA
Weight 25 g

M18x77 mm
2 m cable, PVC
4x0.14 mm²
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.

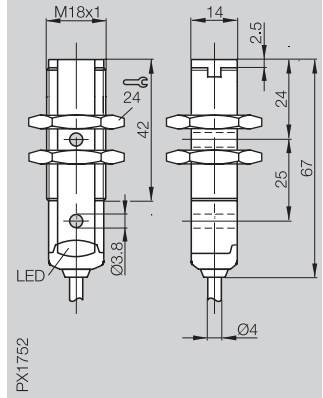
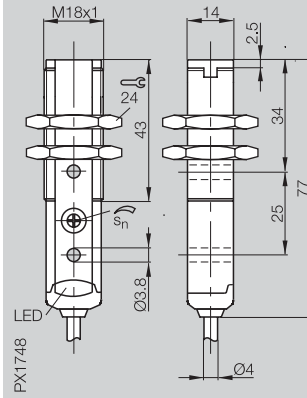
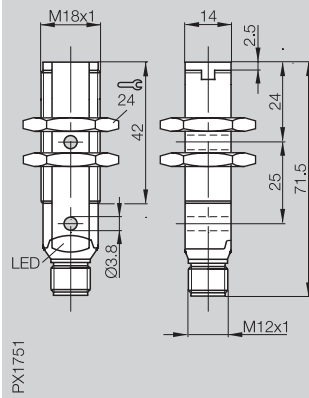
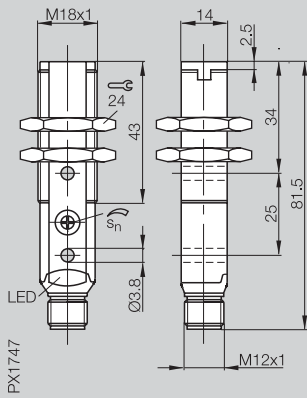
Wiring diagrams, characteristics and accessories see page 2.1.52 and 2.1.53.

0...20 m

0...20 m

0...20 m

0...20 m



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

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

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

BLS 18KF-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

Test input

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

0...15 m

0...15 m

LED, infrared

880 nm

approx. 500 mm at 15 m

0...15 m

0...15 m

LED, infrared

880 nm

approx. 500 mm at 15 m

LED green
LED yellow

LED green

LED green
LED yellow

LED green

2 ms
250 Hz

2 ms
250 Hz

M18x81.5 mm
M12 connector, 4-pin

M18x71.5 mm
M12 connector, 4-pin

M18x77 mm
2 m cable, PVC
4x0.14 mm²

M18x67 mm
2 m cable, PVC
4x0.14 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 ...

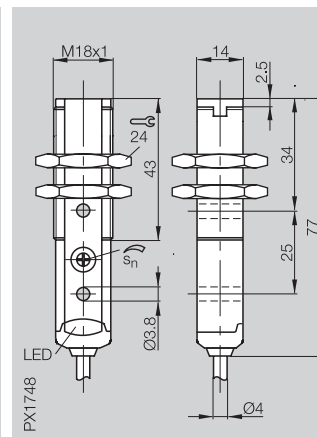
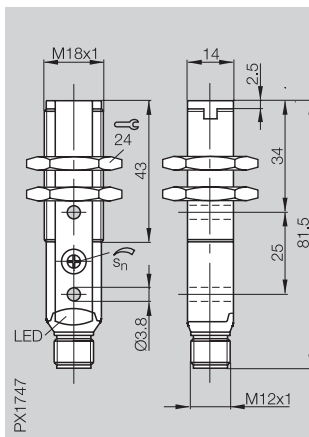
6

Connectors page 6.2 ...

Diffuse	maximum range
Retroreflective with polarizing filter	maximum range

0...350 mm

0...350 mm



Diffuse

PNP	350 mm
NPN	350 mm

BOS 18KF-PA-1LOC-S4-C
BOS 18KF-NA-1LOC-S4-C

BOS 18KF-PA-1LOC-C-02
BOS 18KF-NA-1LOC-C-02

Retroreflective

PNP	0.1...16 m	Polarizing filter
NPN	0.1...16 m	Polarizing filter

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°

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...350 mm
Emitter, light type	Laser, red light
Wavelength	650 nm
Laser class	Class 1
Resolution	approx. 0.3 mm at 50 mm approx. 0.3 mm at 100 mm approx. 0.5 mm at 150 mm

0...350 mm
Laser, red light
650 nm
Class 1
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
Stability indicator	LED green

LED yellow
LED green

Time data

Response time	333 μ s
Frequency of operating cycles f	1.5 kHz

333 μ s
1.5 kHz

Mechanical data

Dimensions	M18x81.5 mm
Connection	M12 connector, 4-pin
No. of wires \times cross-section	
Housing material	PBT
Optical surface	PMMA
Weight	25 g

M18x77 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	-10...+50 °C
Reference standard	EN 60947-5-2

IP 67
yes
yes
-10...+50 °C
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 2.1.52 and 2.1.53.

M18 plastic Laser

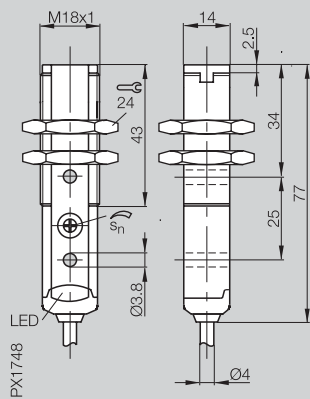
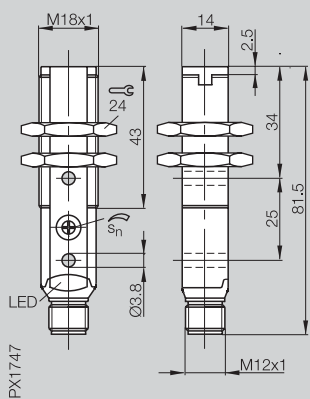


Photoelectric Sensors

BOS 18KF Laser
Range 16 m

0.1...16 m

0.1...16 m



BOS 18KF-PA-1LQP-S4-C
BOS 18KF-NA-1LQP-S4-C

BOS 18KF-PA-1LQP-C-02
BOS 18KF-NA-1LQP-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...16 m

Laser, red light

650 nm

Class 1

approx. 9 mm over 1 m

0.1...16 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

M18x81.5 mm

M12 connector, 4-pin

M18x77 mm

2 m cable, PVC

4x0.14 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 ...

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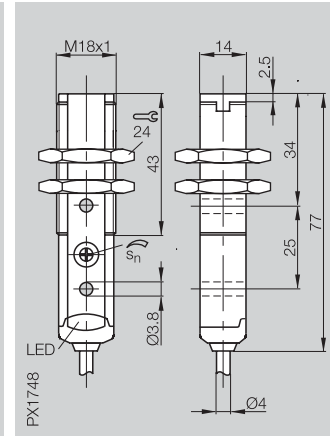
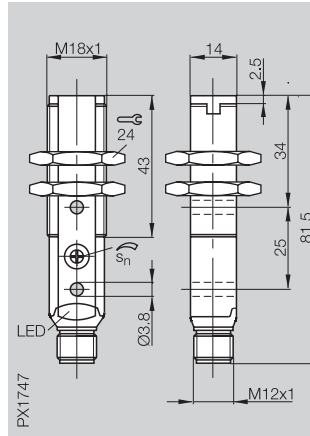
Connectors
page 6.2 ...

Through-beam

maximum range

0...60 m

0...60 m



Through-beam

PNP	60 m	Receiver
NPN	60 m	Receiver
	60 m	Emitter

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

BLE 18KF-PA-1LT-C-02
BLE 18KF-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...60 m

0...60 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 μ s

333 μ s

Frequency of operating cycles f

1.5 kHz

1.5 kHz

Mechanical data

Dimensions

M18x81.5 mm

M18x77 mm

Connection

M12 connector, 4-pin

2 m cable, PVC

No. of wires \times cross-section

4x0.14 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

Wiring diagrams, characteristics and accessories see page 2.1.52 and 2.1.53.

M18 plastic Laser

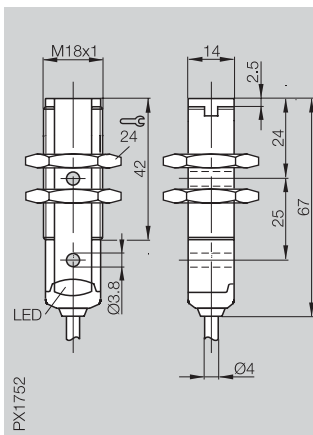
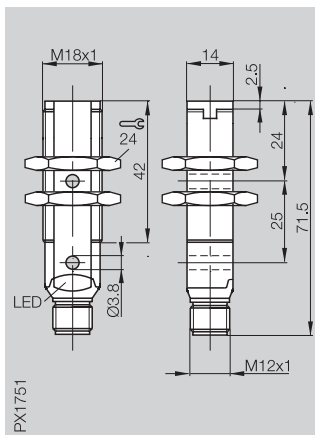


Photoelectric Sensors

BOS 18KF Laser
Range 60 m

0...60 m

0...60 m



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

BLS 18KF-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...60 m
Laser, red light
650 nm
Class 1

0...60 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

approx. 2.5 mm at 5 m
approx. 5 mm at 10 m
approx. 10 mm at 20 m

LED green

LED green

M18x71.5 mm
M12 connector, 4-pin

M18x77 mm
2 m cable, PVC
4x0.14 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

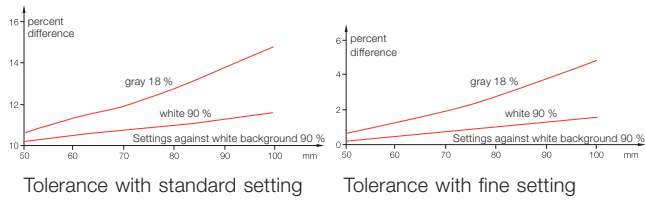
2.3

Photoelectric sensors
accessories
page 2.3.2 ...

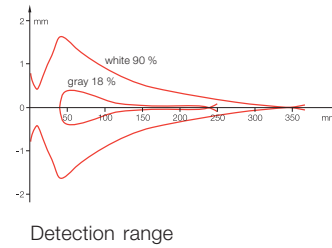
6

Connectors
page 6.2 ...

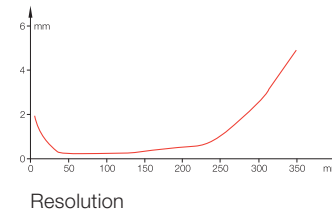
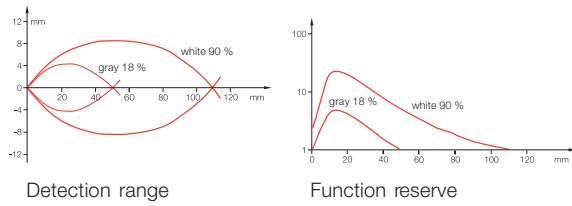
BOS 18KF--1HA--...



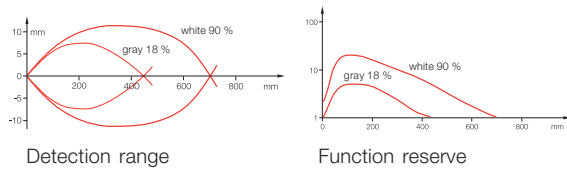
BOS 18KF--1LOC--...



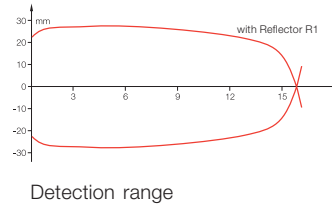
BOS 18KF--1XA--...



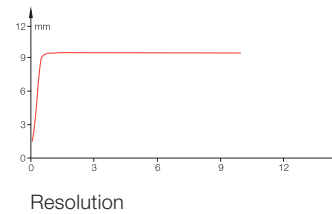
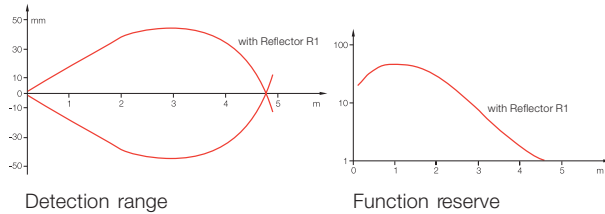
BOS 18KF--1PE--...



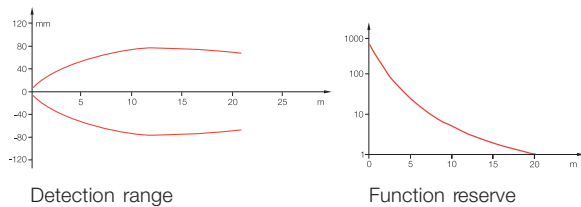
BOS 18KF--1LQP--...



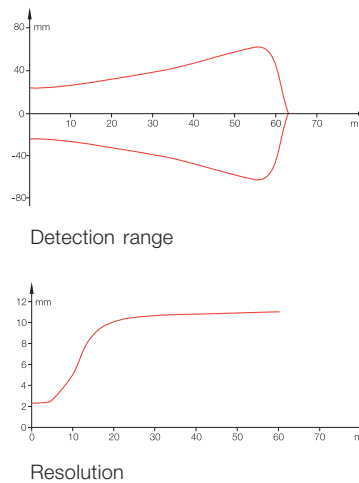
BOS 18KF--1QD--...



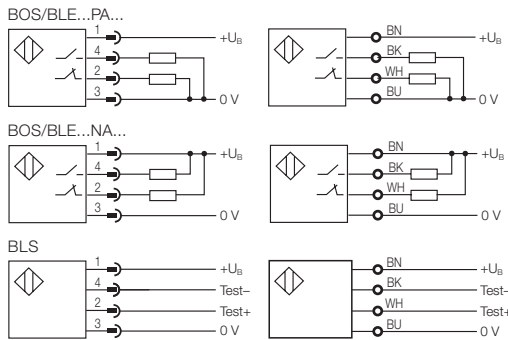
BLE/BLS 18KF--1PP/1P--...



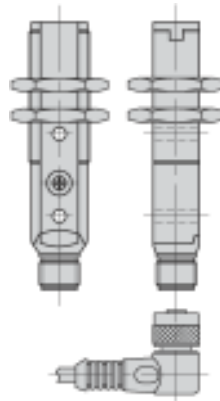
BLE/BLS 18KF--1LT--...



Wiring diagrams



Connector orientation



BOS 18KF

2.1

2.3

Photoelectric sensors accessories page 2.3.2 ...

Recommended accessories please order separately



Reflector
BOS R-1



Connector
BKS-_ 19/BKS-_ 20



Mounting clamp
BOS 18,0-KB-2



Mounting clamp
BOS 18,0-KB-1



Mounting bracket
BES 18-HW-1



Round aperture
BOS 18-BL-1
for BLE/BLS 18KF



Protective end cap
BOS 18-SM-1
for BOS 18KF and
BOS 18KF Laser



Air shield
BOS 18-LT-1
for BOS 18KF and
BOS 18KF Laser

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Connectors, holders ... page 6.2 ...