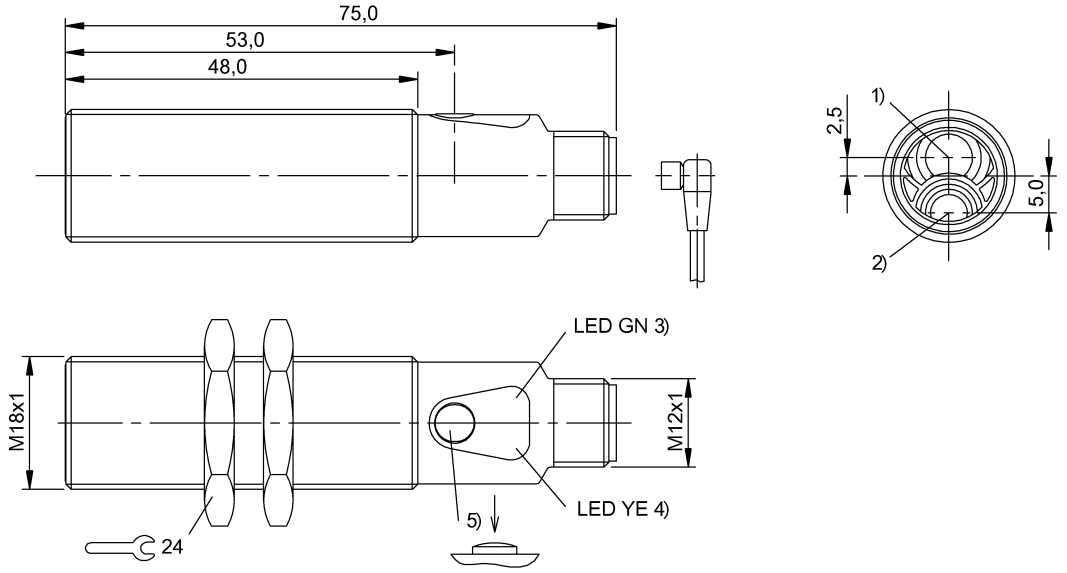
Photoelectric Sensors

BOS 18M-PI-RD30-S4
Order Code: BOS01UA



1) Optical axis receiver, 2) Optical axis emitter, 3) Power/short-circuit, 4) Light reception/limit area, 5) Sn

IND. CONT. EQ. 81U2 Class 2 Type 1

Basic features

Approval/Conformity	cULus CE EAC WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Series	18M
Style	Cylinder Straight optics

Display/Operation

Adjuster	button
Display	LED green: Power Limit range - LED yellow, flashing Short circuit - LED green, flashing LED yellow: Light received
Setting	Rated switching distance (Sn) Light-on/dark-on

Electrical connection

Connection	Connector, M12x1-Male, 4-pin
Contact, surface protection	Gold plated
Polarity reversal protected	yes
Protection against device mix-ups	yes
Short-circuit protection	yes

Electrical data

Load capacitance max. at Ue	0.3 µF
No-load current Io max. at Ue	40 mA
Operating voltage Ub	18...30 VDC
Protection class	II
Rated insulation voltage Ui	250 V AC
Rated operating current Ie	100 mA
Rated operating voltage Ue DC	24 V
Ready delay tv max.	100 ms
Residual current Ir max.	10 µA
Ripple max. (% of Ue)	15 %
Switching frequency	500 Hz
Turn-off delay toff max.	1 ms
Turn-on delay ton max.	1 ms
Utilization category	DC -13
Voltage drop Ud max. at Ie	1.5 V

Environmental conditions

Ambient temperature	-5...55 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 gn, 11 ms, 3x6
EN 60068-2-6, Vibration	10…55 Hz, amplitude 0.5 mm, 3x30 min
Protection degree	IP67

Functional safety

MTTF (40 °C)	509 a

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Material

Housing material	Brass, nickel plated
Material sensing surface	Glass
Surface protection	nickel plated

Mechanical data

Dimension	Ø 18 x 75 mm
Mounting	Nut M18x1
Tightening torque max.	15 Nm 30 Nm

Optical features

Ambient light max.	10000 Lux
Beam characteristic	Divergent
LED group per IEC 62471	Exempt Group
Light spot size	Ø 50 mm at 600 mm
Light type	LED, red light
Principle of optical operation	Diffuse sensor, energetic
Switching function, optical	Light/dark switching
Wave length	626 nm

Output/Interface

Baud rate	38.4 kBaud
Function class, smart sensor	Switching signal channel Teach channel Diagnostics Identification
Interface	IO-Link 1.1
Interface setting option	Key disable on/off Sensor name in application Teach method 2-point/dyn. BDC mode 1-pt./2-pt./window Light-on/dark-on
Process data OUT	Teaching active/inactive Limit range yes/no Switching state active/inactive Error active/inactive
Process data cycle min.	3 ms
Profile	Smart Sensor
Switching output	PNP normally open/normally closed (NO/NC)

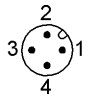
Range/Distance

Hysteresis H max. (% of Sr)	10.0 %
Range	1...500 mm
Rated operating distance Sn	500 mm Adjustable
Temperature drift max. (% of Sr)	10 %

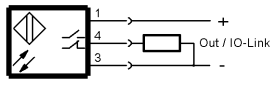
Remarks

The sensor is functional again after the overload has been eliminated.
Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.
Only for applications per NFPA 79 (machines with a supply voltage of maximum 600 V). Use an R/C (CYJV2) cable with suitable properties for attaching the device.
For additional information, refer to user's guide.
Order accessories separately.
Do not press key using a pointed tool.

Connector Drawings



Wiring Diagrams



Opto Symbols