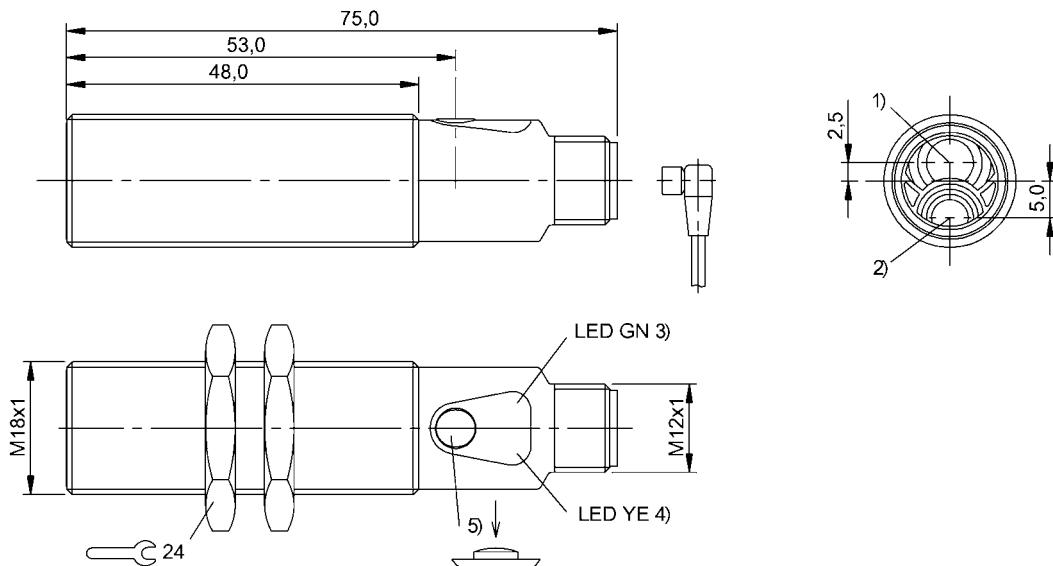


Photoelectric Sensors  
BOS 18M-PI-RD30-S4  
Order Code: BOS01UA

**BALLUFF**



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



#### Basic features

Approval/Conformity	cULus CE UKCA 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 $\mu$ F
No-load current I <sub>0</sub> max. at Ue	40 mA
Operating voltage U <sub>b</sub>	18...30 VDC
Protection class	II
Rated insulation voltage U <sub>i</sub>	250 V AC
Rated operating current I <sub>e</sub>	100 mA
Rated operating voltage U <sub>e</sub> DC	24 V
Ready delay t <sub>v</sub> max.	100 ms
Residual current I <sub>r</sub> max.	10 $\mu$ A
Ripple max. (% of Ue)	15 %
Switching frequency	500 Hz
Turn-off delay t <sub>off</sub> max.	1 ms
Turn-on delay t <sub>on</sub> max.	1 ms
Utilization category	DC-13
Voltage drop U <sub>d</sub> max. at I <sub>e</sub>	1.5 V

#### Environmental conditions

Ambient temperature	-5...55 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 g <sub>n</sub> , 11 ms, 3x6
EN 60068-2-6, Vibration	10...55 Hz, amplitude 0.5 mm, 3x30 min
IP rating	IP67

#### Functional safety

MTTF (40 °C)	509 a
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**IO-Link**

IO-Link Profil IDs 0x0001 SSP0

**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)

**Material**

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

**Mechanical data**

**Dimension** Ø 18 x 75 mm  
**Mounting part** 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

**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.

For more information about MTTF and B10d see MTTF / B10d Certificate

Indication of the MTTF- / B10d value does not represent a binding composition and/or life expectancy assurance; these are simply experiential values with no warranty implications. These declared values also do not extend the expiration period for defect claims or affect it in any way.

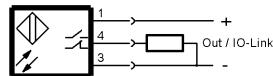
**Connector Drawings**



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**BALLUFF**

### Wiring Diagrams



### Opto Symbols

