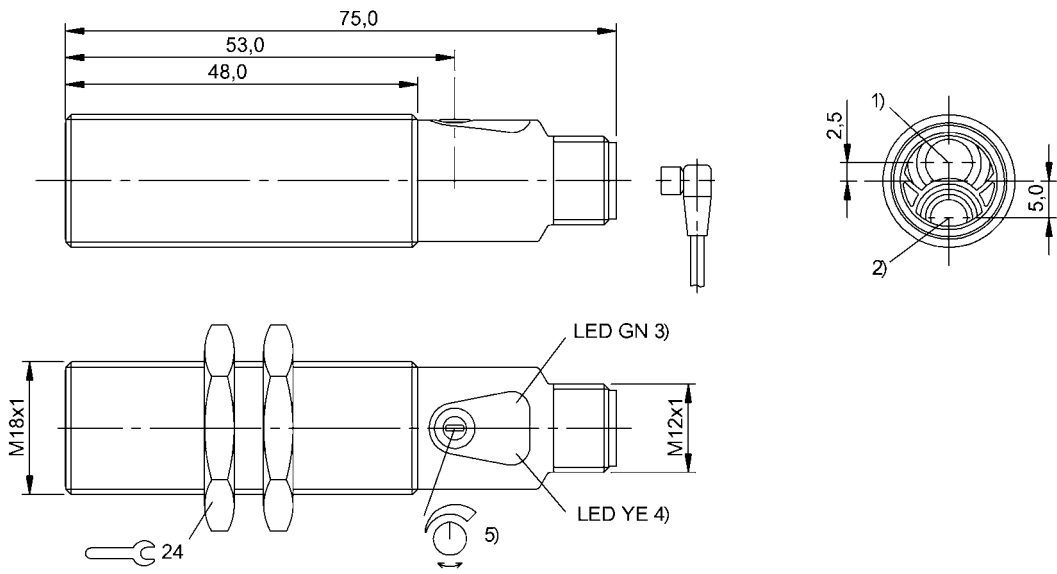


Photoelectric Sensors  
BOS 18M-NA-RD21-S4  
Order Code: BOS01EC



1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception/limit area, 5) Sn



Basic features

Approval/Conformity	CE UKCA cULus WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Scope of delivery	2x nut M18x1 User manual
Series	18M
Style	Cylinder Straight optics

Display/Operation

Adjuster	1-turn potentiometer
Display	LED green: Power Error - LED green, flashing LED yellow: Light received Limit range - LED yellow, flashing
Setting	Rated switching distance (Sn)

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	0.2 $\mu$ F
No-load current I <sub>o</sub> max. at Ue	25 mA
Operating voltage U <sub>b</sub>	10...30 VDC
Protection class	II
Rated insulation voltage U <sub>i</sub>	75 V DC
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.	20 ms
Residual current I <sub>r</sub> max.	30 $\mu$ A
Ripple max. (% of U <sub>e</sub> )	15 %
Switching frequency	800 Hz
Turn-off delay t <sub>off</sub> max.	0.63 ms
Turn-on delay t <sub>on</sub> max.	0.63 ms
Utilization category	DC -13
Voltage drop U <sub>d</sub> max. at I <sub>e</sub>	2.5 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 Half-sinus, 100 g <sub>n</sub> , 2 ms, 3x8000
EN 60068-2-6, Vibration	10...55 Hz, amplitude 1 mm, 3x30 min 10...2000 Hz, amplitude 1 mm, 30 g <sub>n</sub> , 3x5 h
IP rating	IP67

Functional safety

MTTF (40 °C)	1066 a
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Interface

Switching output	NPN normally closed (NC) NPN normally open (NO) Pins 4-2
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Material

Housing material	Brass, nickel-plated
Housing material, surface protection	nickel-plated
Material sensing surface	Glass, anti-glare
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 25 mm at 300 mm
Light type	LED, red light
Principle of optical operation	Diffuse sensor, energetic
Switching function, optical	Light-on dark-on
Wave length	626 nm

Range/Distance

Hysteresis H max. (% of Sr)	10.0 %
Range	0...300 mm
Rated operating distance Sn	300 mm Adjustable
Temperature drift max. (% of Sr)	10 %

Remarks

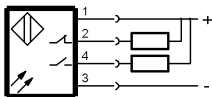
Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.  
The sensor is functional again after the overload has been eliminated.  
For additional information, refer to user's guide.  
Order accessories separately.  
For more information about MTTF and B10d see MTTF / B10d Certificate

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



Wiring Diagrams



Opto Symbols

