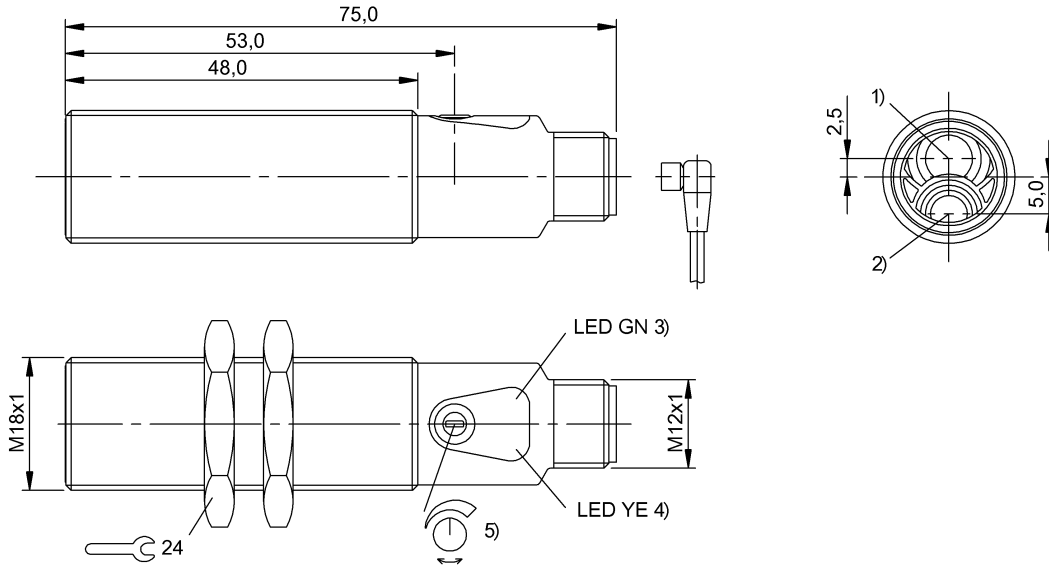


Photoelectric Sensors  
**BOS 18M-NA-RD21-S4**  
**Order Code: BOS01EC**

**BALLUFF**



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



**Basic features**

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

**Display/Operation**

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

**Electrical connection**

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

**Electrical data**

<b>Load capacitance max. at Ue</b>	0.2 µF
<b>No-load current I<sub>o</sub> max. at Ue</b>	25 mA
<b>Operating voltage U<sub>b</sub></b>	10...30 VDC
<b>Protection class</b>	II
<b>Rated insulation voltage U<sub>i</sub></b>	75 V DC
<b>Rated operating current I<sub>e</sub></b>	100 mA
<b>Rated operating voltage U<sub>e</sub> DC</b>	24 V
<b>Ready delay t<sub>v</sub> max.</b>	20 ms
<b>Residual current I<sub>r</sub> max.</b>	30 µA
<b>Ripple max. (% of U<sub>e</sub>)</b>	15 %
<b>Switching frequency</b>	800 Hz
<b>Turn-off delay t<sub>off</sub> max.</b>	0.63 ms
<b>Turn-on delay t<sub>on</sub> max.</b>	0.63 ms
<b>Utilization category</b>	DC -13
<b>Voltage drop U<sub>d</sub> max. at I<sub>e</sub></b>	2.5 V

**Environmental conditions**

<b>Ambient temperature</b>	-5...55 °C
<b>Contamination scale</b>	3
<b>EN 60068-2-27, Shock</b>	Half-sinus, 30 g <sub>n</sub> , 11 ms, 3x6 Half-sinus, 100 g <sub>n</sub> , 2 ms, 3x8000
<b>EN 60068-2-6, Vibration</b>	10...55 Hz, amplitude 1 mm, 3x30 min 10...2000 Hz, amplitude 1 mm, 30 g <sub>n</sub> , 3x5 h
<b>IP rating</b>	IP67

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**Functional safety**

MTTF (40 °C) 1066 a

**Interface**

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

**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**

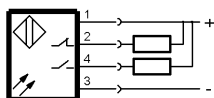
Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.  
 The sensor is functional again after the overload has been eliminated.  
 For additional information, refer to user's guide.  
 Order accessories separately.  
 For more information about MTTF and B10d see MTTF / B10d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

