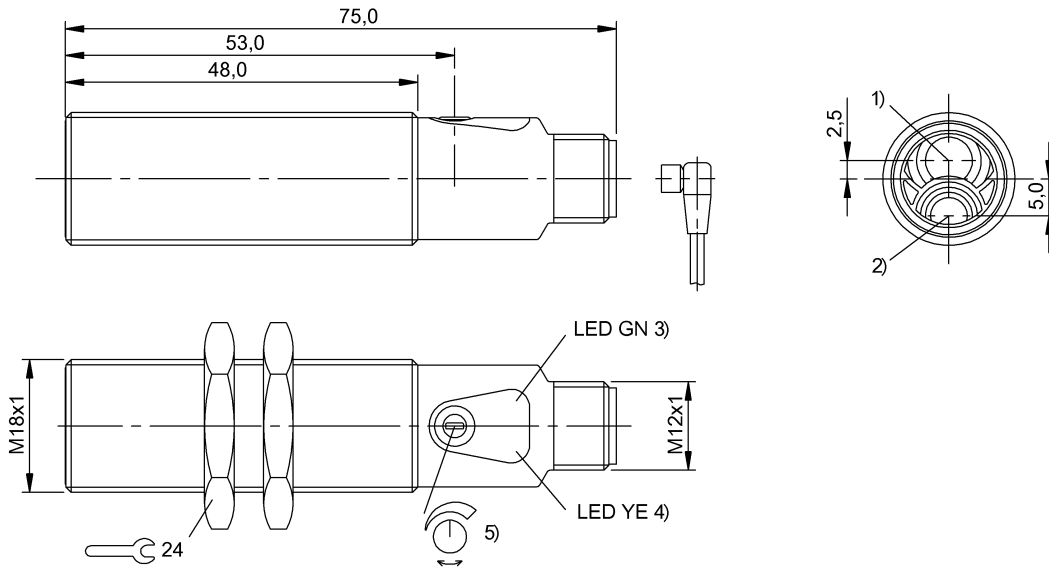


Photoelectric Sensors
BOS 18M-NA-RD21-S4
Order Code: BOS01EC

BALLUFF



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



Basic features

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

Electrical data

Load capacitance max. at Ue	0.2 µF
No-load current I_o max. at Ue	25 mA
Operating voltage U_b	10...30 VDC
Protection class	II
Rated insulation voltage U_i	75 V DC
Rated operating current I_e	100 mA
Rated operating voltage U_e DC	24 V
Ready delay t_v max.	20 ms
Residual current I_r max.	30 µA
Ripple max. (% of U_e)	15 %
Switching frequency	800 Hz
Turn-off delay t_{off} max.	0.63 ms
Turn-on delay t_{on} max.	0.63 ms
Utilization category	DC -13
Voltage drop U_d max. at I_e	2.5 V

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)

Environmental conditions

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

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

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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

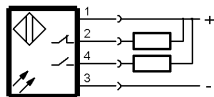
Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.
 The sensor is functional again after the overload has been eliminated.
 For additional information, refer to user's guide.
 Order accessories separately.
 For more information about MTTF and B10d see MTTF / B10d Certificate

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

