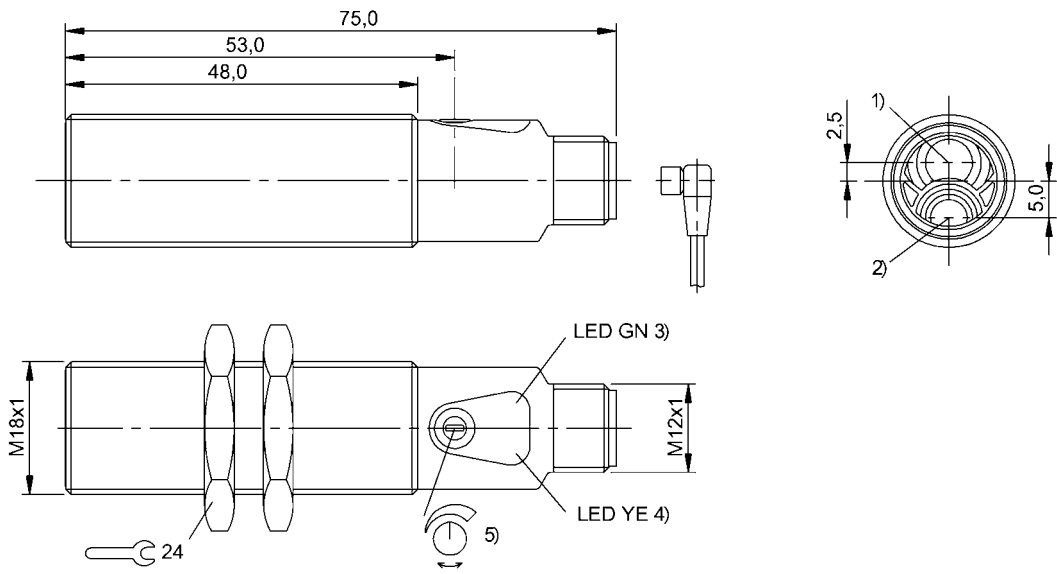


Photoelectric Sensors  
BOS 18M-NA-ID20-S4  
Order Code: BOS01EZ



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



Basic features

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

Display/Operation

|          |                                                                                                                     |
|----------|---------------------------------------------------------------------------------------------------------------------|
| Adjuster | 1-turn potentiometer                                                                                                |
| Display  | LED green: Power<br>Error - LED green, flashing<br>LED yellow: Light received<br>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<br>Half-sinus, 100 g <sub>n</sub> , 2 ms, 3x8000     |
| EN 60068-2-6, Vibration | 10...55 Hz, amplitude 1 mm, 3x30 min<br>10...2000 Hz, amplitude 1 mm, 30 g <sub>n</sub> , 3x5 h |
| IP rating               | IP67                                                                                            |

Photoelectric Sensors  
BOS 18M-NA-ID20-S4  
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**BALLUFF**

Functional safety

MTTF (40 °C) 872 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. 5000 Lux  
Beam characteristic Divergent  
LED group per IEC 62471 Exempt Group  
Light type LED infrared  
Principle of optical operation Diffuse sensor, energetic  
Switching function, optical Light-on  
dark-on  
Wave length 850 nm

Range/Distance

Hysteresis H max. (% of Sr) 10.0 %  
Range 1...800 mm  
Rated operating distance Sn 800 mm Adjustable  
Temperature drift max. (% of Sr) 10 %

Remarks

Order accessories separately.

For additional information, refer to user's guide.

Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.

The sensor is functional again after the overload has been eliminated.

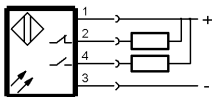
For more information about MTTF and B10d see MTTF / B10d Certificate

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

