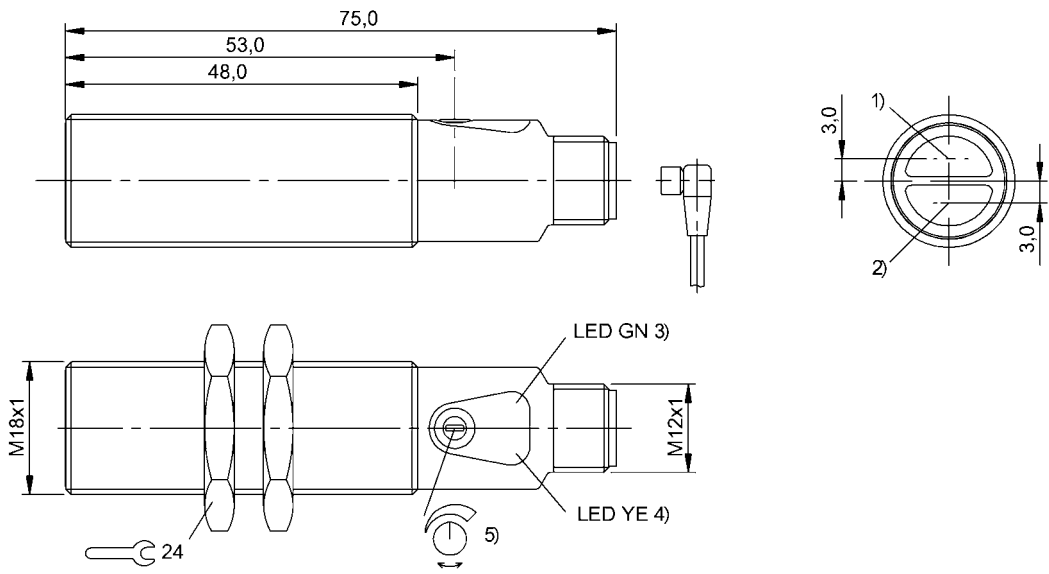


Photoelectric Sensors  
BOS 18M-NA-PR20-S4  
Order Code: BOS01E2



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        |
| Reference reflector    | BOS R-1                     |
| 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  | Sensitivity (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          | 30 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-PR20-S4  
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Functional safety

|              |       |
|--------------|-------|
| MTTF (40 °C) | 889 a |
|--------------|-------|

Interface

|                  |                                                             |
|------------------|-------------------------------------------------------------|
| Switching output | NPN normally closed (NC)<br>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<br>30 Nm |

Optical features

|                                |                        |
|--------------------------------|------------------------|
| Ambient light max.             | 10000 Lux              |
| Beam characteristic            | Divergent              |
| LED group per IEC 62471        | Exempt Group           |
| Light spot size                | Ø 300 mm at 7 m        |
| Light type                     | LED, red light         |
| Polarizing filter              | yes                    |
| Principle of optical operation | Retroreflective sensor |
| Switching function, optical    | Light-on<br>dark-on    |
| Wave length                    | 626 nm                 |

Range/Distance

|                             |                |
|-----------------------------|----------------|
| Range                       | 0...7 m        |
| Rated operating distance Sn | 7 m Adjustable |

Remarks

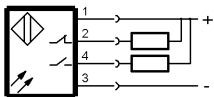
The sensor is functional again after the overload has been eliminated.  
Polarizing filters prevent spurious switching due to reflecting and shiny parts.  
For additional information, refer to user's guide.  
Order accessories separately.  
For more information about MTTF and B10d see MTTF / B10d Certificate

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

