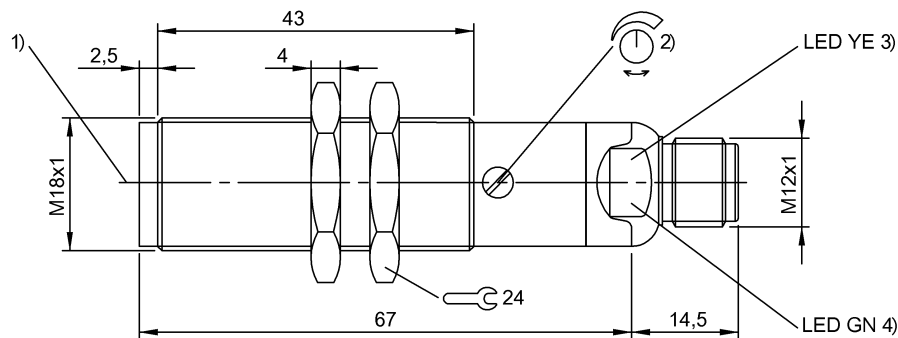




1) Optical axis, 2) Sn, 3) Output function, 4) stability



Basic features

|                        |                             |
|------------------------|-----------------------------|
| Approval/Conformity    | CE<br>cULus<br>EAC<br>WEEE  |
| Basic standard         | IEC 60947-5-2               |
| Principle of operation | Photoelectric sensor        |
| Reference reflector    | BOS R-1                     |
| Series                 | 18M                         |
| Style                  | Cylinder<br>Straight optics |

Display/Operation

|          |                                                 |
|----------|-------------------------------------------------|
| Adjuster | Potentiometer 270°                              |
| Display  | Output function- LED yellow<br>LED green: Power |
| Setting  | Sensitivity (Sn)                                |

Electrical connection

|                             |                              |
|-----------------------------|------------------------------|
| Connection                  | Connector, M12x1-Male, 4-pin |
| Polarity reversal protected | yes                          |
| Short-circuit protection    | yes                          |

Electrical data

|                                     |             |
|-------------------------------------|-------------|
| No-load current $I_0$ max. at $U_e$ | 35 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        |
| Ripple max. (% of $U_e$ )           | 8 %         |
| Switching frequency                 | 1500 Hz     |
| Turn-off delay $t_{off}$ max.       | 0.33 ms     |
| Turn-on delay $t_{on}$ max.         | 0.33 ms     |
| Voltage drop $U_d$ max. at $I_e$    | 2 V         |

Environmental conditions

|                         |                                        |
|-------------------------|----------------------------------------|
| Ambient temperature     | -10...50 °C                            |
| EN 60068-2-27, Shock    | Half-sinus, 50 gn, 500 ms, 3x3         |
| EN 60068-2-6, Vibration | 10...55 Hz, amplitude 0.5 mm, 3x30 min |
| IP rating               | IP67                                   |

Functional safety

|              |       |
|--------------|-------|
| MTTF (40 °C) | 739 a |
|--------------|-------|

Interface

|                  |                                                             |
|------------------|-------------------------------------------------------------|
| Switching output | PNP normally closed (NC)<br>PNP normally open (NO) Pins 2-4 |
|------------------|-------------------------------------------------------------|

Material

|                          |                      |
|--------------------------|----------------------|
| Housing material         | Brass, nickel-plated |
| Material sensing surface | PMMA                 |
| Surface protection       | nickel-plated        |

Mechanical data

|                        |                |
|------------------------|----------------|
| Dimension              | Ø 18 x 81.5 mm |
| Mounting part          | Nut M18x1      |
| Tightening torque max. | 22 Nm          |

Optical features

|                                |                        |
|--------------------------------|------------------------|
| Ambient light max.             | 3000 Lux               |
| Average power Po max.          | 390 µW                 |
| Blind zone                     | 100 mm                 |
| Laser class per IEC 60825-1    | 1                      |
| Light type                     | Laser red light        |
| Polarizing filter              | yes                    |
| Principle of optical operation | Retroreflective sensor |
| Pulse duration t max.          | 6.0 µs                 |
| Pulse frequency                | 25 kHz                 |
| Switching function, optical    | dark-on                |
| Wave length                    | 650 nm                 |

Range/Distance

|                             |                  |
|-----------------------------|------------------|
| Range                       | 0...16 m         |
| Rated operating distance Sn | 16 m, Adjustable |

Remarks

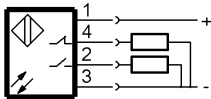
Actuation object (target): gray card, 200 x 200, 90 % remission, lateral approach, approach direction vertical to lens axis plane.  
Polarizing filters prevent spurious switching due to reflecting and shiny parts.  
For additional information, refer to user's guide.  
Order accessories separately.  
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



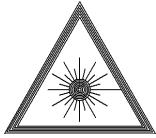
Wiring Diagrams (Schematic)



Opto Symbols



## Warning Symbols



LASER CLASS 1 per IEC 60825-1