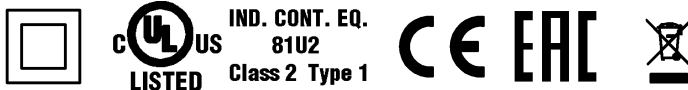


1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception/limit area, 5) Sn



**Basic features**

|                               |                             |
|-------------------------------|-----------------------------|
| <b>Approval/Conformity</b>    | cULus<br>CE<br>EAC<br>WEEE  |
| <b>Basic standard</b>         | IEC 60947-5-2               |
| <b>Principle of operation</b> | Photoelectric sensor        |
| <b>Reference reflector</b>    | BOS R-1                     |
| <b>Scope of delivery</b>      | 2x nut M18x1<br>User manual |
| <b>Series</b>                 | 18M                         |
| <b>Style</b>                  | Cylinder<br>Straight optics |

**Electrical data**

|   |             |
|---|-------------|
| <b>Load capacitance max. at Ue</b>                      | 0.2 µF      |
| <b>No-load current I<sub>o</sub> max. at Ue</b>         | 30 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       |

**Display/Operation**

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

**Environmental conditions**

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

**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                          |

## Functional safety

|              |        |
|--------------|--------|
| MTTF (40 °C) | 1046 a |
|--------------|--------|

## 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               | 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               |
| Wave length                    | 626 nm                 |

## Output/Interface

|                  |              |
|------------------|--------------|
| Switching output | PNP NC Pin 2 |
|------------------|--------------|

## Range/Distance

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

## Remarks

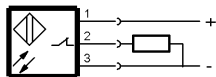
Order accessories separately.  
 For additional information, refer to user's guide.  
 Polarizing filters prevent spurious switching due to reflecting and shiny parts.  
 The sensor is functional again after the overload has been eliminated.  
 For more information about MTTF and B10d see MTTF / B10d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

