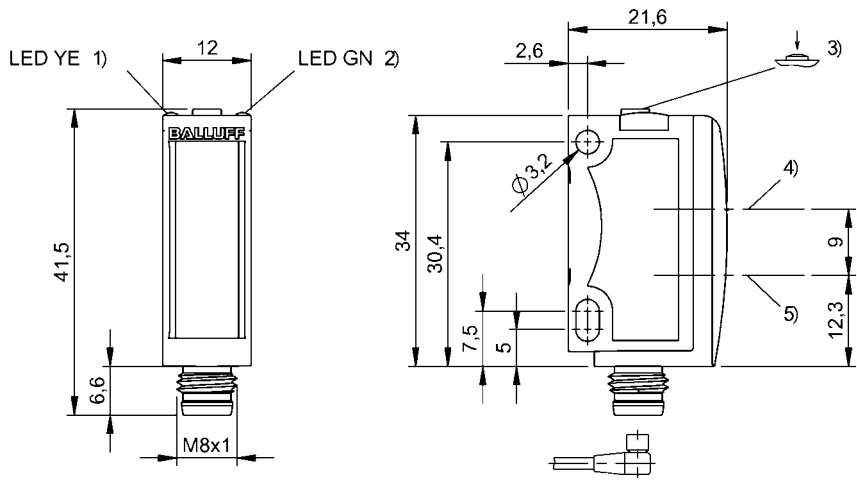


Photoelectric Sensors  
BOD 6K-RA02-S75  
Order Code: BOD001L



1) Output function, 2) Operating voltage, 3) Sn, light/dark, 4) Optical axis receiver, 5) Optical axis emitter



Basic features

|                        |                               |
|------------------------|-------------------------------|
| Application            | Distance measurement          |
| Approval/Conformity    | CE<br>cULus<br>Ecolab<br>WEEE |
| Basic standard         | IEC 60947-5-2, IEC 60947-5-7  |
| Principle of operation | Photoelectric distance sensor |
| Series                 | 6K                            |
| Style                  | Square<br>Connection 90°      |

Electrical data

|                                     |             |
|-------------------------------------|-------------|
| No-load current $I_o$ max. at $U_e$ | 30 mA       |
| Operating voltage $U_b$             | 13...30 VDC |
| Rated operating current $I_e$       | 100 mA      |
| Rated operating voltage $U_e$ DC    | 24 V        |
| Ripple max. (% of $U_e$ )           | 10 %        |
| Switching frequency                 | 1000 Hz     |
| Turn-off delay $t_{off}$ max.       | 0.5 ms      |
| Turn-on delay $t_{on}$ max.         | 0.5 ms      |
| Voltage drop $U_d$ max. at $I_e$    | 2.4 V       |

Display/Operation

|          |  |
|----------|--|
| Adjuster | button   |
| Display  | Output function- LED yellow<br>LED green: Power  |
| Setting  | Switching output Q<br>Light-on/dark-on<br>Factory setting (Reset)<br>Switching distance, 2 values<br>Output curve rising / falling<br>Measuring range QA |

Environmental conditions

|                         |  |
|-------------------------|--|
| Ambient temperature     | -20...60 °C                            |
| EN 60068-2-27, Shock    | Half-sinus, 30 $g_r$ , 11 ms, 3x6      |
| EN 60068-2-6, Vibration | 10...55 Hz, amplitude 0.5 mm, 3x30 min |
| IP rating               | IP67                                   |
| IP rating per DIN 40050 | IP69K                                  |

Functional safety

|              |       |
|--------------|-------|
| MTTF (40 °C) | 395 a |
|--------------|-------|

Electrical connection

|                             |                             |
|-----------------------------|-----------------------------|
| Connection                  | Connector, M8x1-Male, 4-pin |
| Polarity reversal protected | yes                         |
| Short-circuit protection    | yes                         |

Interface

|                       |   |
|-----------------------|---|
| Analog output         | Analog, voltage 1...10 V                  |
| Output characteristic | linear rising/falling                     |
| Switching output      | PNP normally open/normally closed (NO/NC) |

Material

|                          |      |
|--------------------------|------|
| Housing material         | ABS  |
| Material sensing surface | PMMA |

Mechanical data

|               |                     |
|---------------|---------------------|
| Dimension     | 12 x 41.5 x 21.6 mm |
| Mounting part | Screw M3            |

Optical features

|                                |                      |
|--------------------------------|----------------------|
| Ambient light max.             | 5000 Lux             |
| Beam characteristic            | Divergent            |
| Light spot size                | Ø 5 mm at 50 mm      |
| Light type                     | LED, red light       |
| Principle of optical operation | Triangulation        |
| Switching function, optical    | Light/dark switching |
| Wave length                    | 632 nm               |

Range/Distance

|  |                  |
|--|------------------|
| Accuracy                               | ±0.5 % FS        |
| Distance deviation 18 % max. (% of Sr) | 7 %              |
| Range                                  | 20...80 mm       |
| Rated operating distance Sn            | 80 mm Adjustable |
| Repeat accuracy                        | 0.5 %FS          |
| Resolution                             | ≤ 120 µm         |

Remarks

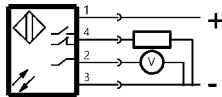
Order accessories separately.  
Only for applications per NFPA 79 (machines with a supply voltage of maximum 600 V). Use an R/C (CYJV2) cable with suitable properties for attaching the device.  
For additional information, refer to user's guide.  
Do not press key using a pointed tool.  
The sensor is functional again after the overload has been eliminated.  
Reference object (target): gray card, 200 x 200, 18 % remission, axial approach.  
When using as a UL product the ambient temperature Ta max. must not exceed 50°C.  
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



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Opto Symbols

