

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



### Basic features

|                        |                          |
|------------------------|--------------------------|
| Approval/Conformity    | CE<br>cULus<br>WEEE      |
| Basic standard         | IEC 60947-5-2            |
| Principle of operation | Photoelectric sensor     |
| Series                 | R020K                    |
| Style                  | Square<br>Connection 60° |

### Display/Operation

|          |  |
|----------|--|
| Adjuster | 3-turn potentiometer                           |
| Display  | LED green: Power<br>LED yellow: Light received |
| Setting  | Rated switching distance (Sn)                  |

### Electrical connection

|                             |  |
|-----------------------------|--|
| Cable diameter D            | 2.40 mm  |
| Cable length L              | 0.2 m  |
| Connection                  | Cable with connector, M8x1-Male,<br>4-pin, 0.20 m, PVC |
| Polarity reversal protected | yes  |
| Short-circuit protection    | yes  |

### Electrical data

|                                     |             |
|-------------------------------------|-------------|
| No-load current $I_0$ max. at $U_e$ | 20 mA       |
| Operating voltage $U_b$             | 10...30 VDC |
| Protection class                    | III         |
| Rated insulation voltage $U_i$      | 50 V DC     |
| Rated operating current $I_e$       | 50 mA       |
| Rated operating voltage $U_e$ DC    | 24 V        |
| Ripple max. (% of $U_e$ )           | 20 %        |
| Switching frequency                 | 800 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 $I_e$    | 2.5 V       |

### Environmental conditions

|                     |             |
|---------------------|-------------|
| Ambient temperature | -20...50 °C |
| IP rating           | IP67        |

### Functional safety

|              |        |
|--------------|--------|
| MTTF (40 °C) | 3487 a |
|--------------|--------|

### Interface

|                  |                              |
|------------------|------------------------------|
| Switching output | PNP normally open (NO) Pin 4 |
|------------------|------------------------------|

### Material

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

Photoelectric Sensors  
**BOS R020K-PS-RH12-00,2-S75**  
**Order Code: BOS0234**



**Mechanical data**

|               |                      |
|---------------|----------------------|
| Dimension     | 7.7 x 32.5 x 13.5 mm |
| Mounting part | Screw M3             |

**Range/Distance**

|                             |            |
|-----------------------------|------------|
| Range                       | 1...150 mm |
| Rated operating distance Sn | 150 mm     |

**Optical features**

|                                |                               |
|--------------------------------|-------------------------------|
| Ambient light max.             | 5000 Lux                      |
| Beam characteristic            | Focus, typical at 15 mm       |
| Light spot size                | Ø 4.4 mm at 80 mm             |
| Light type                     | LED, red light                |
| Principle of optical operation | Diffuse sensor, triangulation |
| Special optical feature        | Background suppression        |
| Switching function, optical    | Light-on                      |
| Wave length                    | 660 nm                        |

**Remarks**

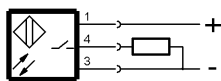
Order accessories separately.  
 For additional information, refer to user's guide.  
 Reference object (target): gray card, 100 x 100, 90 % remission, axial approach.  
 The sensor is functional again after the overload has been eliminated.  
 For more information about MTTF and B10d see MTTF / B10d 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**

