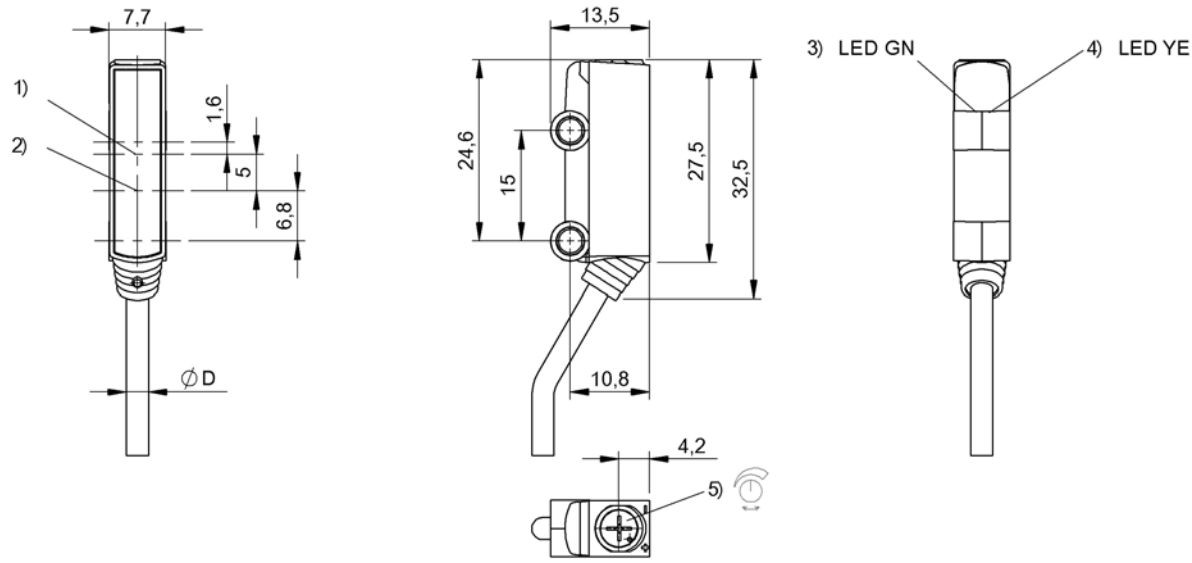


Photoelectric Sensors
BOS R020K-NS-RH12-02
Order Code: BOS0229



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



Basic features

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

Display/Operation

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

Electrical connection

| | |
|-----------------------------------|----------------------|
| Cable diameter D | 2.40 mm |
| Cable length L | 2 m |
| Conductor cross-section | 0.09 mm ² |
| Connection | Cable, 2.00 m, PVC |
| Number of conductors | 3 |
| Polarity reversal protected | yes |
| Protection against device mix-ups | 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 | 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 | 2.5 V |

Environmental conditions

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

Functional safety

| | |
|--------------|--------|
| MTTF (40 °C) | 3378 a |
|--------------|--------|

Interface

| | |
|------------------|------------------------|
| Switching output | NPN normally open (NO) |
|------------------|------------------------|

Material

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

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 | 30 mm |

Optical features

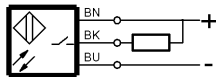
| | |
|--------------------------------|-------------------------------|
| Ambient light max. | 5000 Lux |
| Beam characteristic | Focus, typical at 15 mm |
| Light spot size | Ø 4.4 mm at 80 mm |
| Light type | LED, red light |
| Principle of optical operation | Diffuse sensor, triangulation |
| Special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

Remarks

The sensor is functional again after the overload has been eliminated.
Reference object (target): gray card, 100 x 100, 90 % remission, axial approach.
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.

Wiring Diagrams



Opto Symbols

