



## Triangulation sensor (BGS) OBT1250-R202-K2-IR



- Version for universal voltages
- Medium design with versatile mounting options
- Degree of protection IP67
- Mounting on full metal sockets
- Version with infrared light
- Highly visible LEDs for Power ON and switching state
- Easy to use
- Image is generic for this device type and may deviate from the specific variant

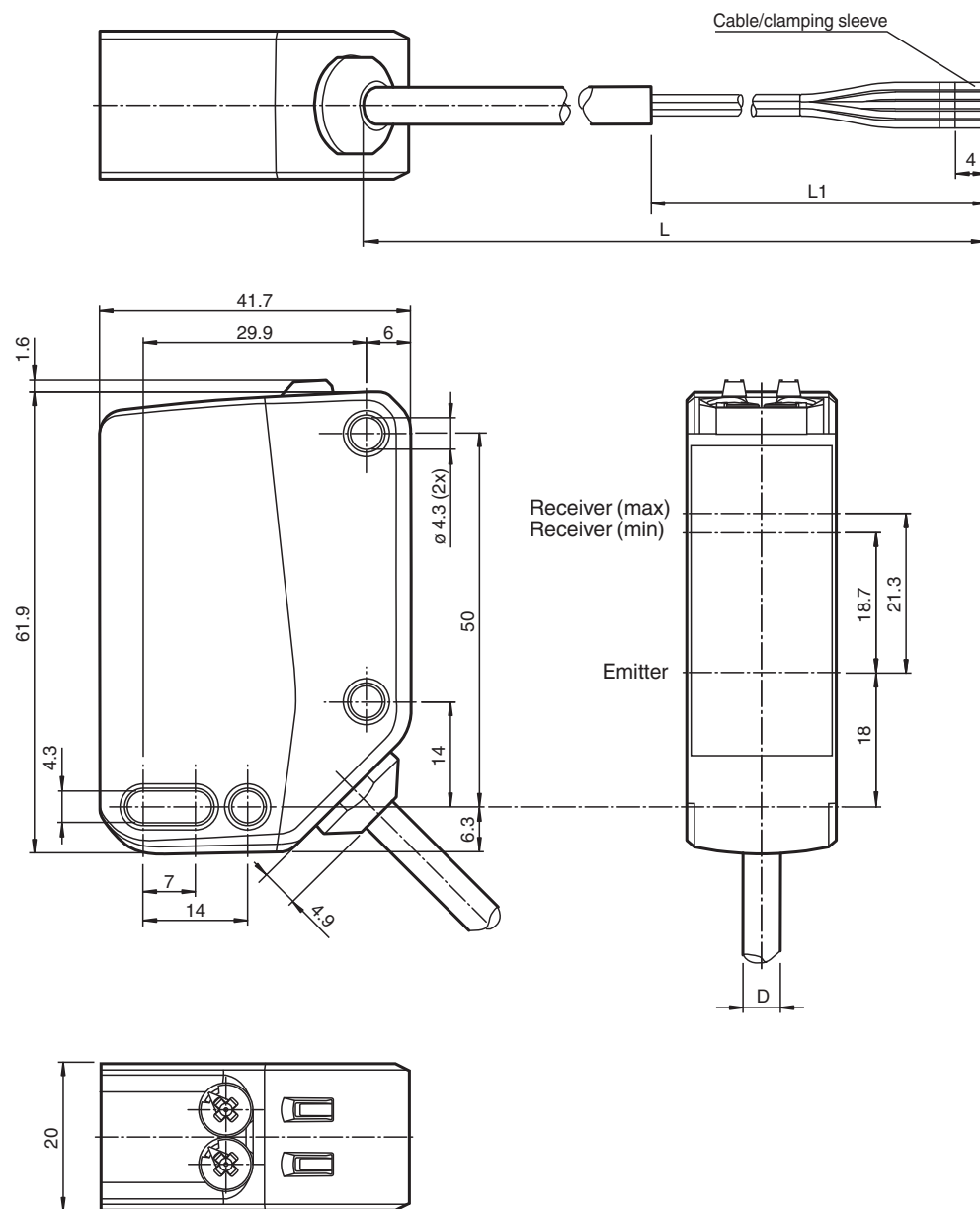


### Function

The optical sensors of this series for applications in standard automation have a modern housing design. The sensors are characterized by the many mounting options, easy handling and highly visible LED status indicators. The integrated full metal bushings ensure long-term secure and dimensionally stable mounting.

Due to the integrated all-voltage power supply, the sensors can be operated in the range of 24 ... 240 V AC/DC.

## Dimensions



## Technical Data

### General specifications

|                      |                                 |
|----------------------|---------------------------------|
| Detection range      | 0 ... 1250 mm                   |
| Detection range min. | 0 ... 200 mm                    |
| Detection range max. | 0 ... 1250 mm                   |
| Adjustment range     | 200 ... 1250 mm                 |
| Reference target     | standard white, 100 mm x 100 mm |
| Light source         | LED                             |
| Light type           | modulated infrared light        |

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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## Technical Data

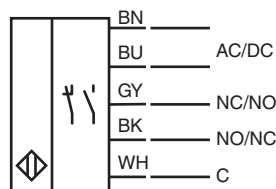
|                                             |                  |                                                                                                                                                                     |
|---------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LED risk group labelling                    |                  | exempt group                                                                                                                                                        |
| Black-white difference (6 %/90 %)           |                  | < 35 % at 1250 mm                                                                                                                                                   |
| Diameter of the light spot                  |                  | approx. 50 mm at a distance of 1250 mm                                                                                                                              |
| Opening angle                               |                  | 3 °                                                                                                                                                                 |
| Ambient light limit                         |                  | EN 60947-5-2 : 30000 Lux                                                                                                                                            |
| <b>Functional safety related parameters</b> |                  |                                                                                                                                                                     |
| MTTF <sub>d</sub>                           |                  | 642 a                                                                                                                                                               |
| Mission Time (T <sub>M</sub> )              |                  | 20 a                                                                                                                                                                |
| Diagnostic Coverage (DC)                    |                  | 0 %                                                                                                                                                                 |
| <b>Indicators/operating means</b>           |                  |                                                                                                                                                                     |
| Operation indicator                         |                  | LED green: Power on                                                                                                                                                 |
| Function indicator                          |                  | LED yellow:<br>constantly on - object detected<br>constantly off - object not detected<br>Flashing (8 Hz) - fault detected, the outputs maintain the status         |
| Control elements                            |                  | Light-on/dark-on changeover switch                                                                                                                                  |
| Control elements                            |                  | Sensing range adjuster                                                                                                                                              |
| <b>Electrical specifications</b>            |                  |                                                                                                                                                                     |
| Operating voltage                           | U <sub>B</sub>   | 24 ... 240 V AC/DC                                                                                                                                                  |
| No-load supply current                      | I <sub>0</sub>   | < 30 mA at 24 V Operating voltage                                                                                                                                   |
| Protection class                            |                  | II                                                                                                                                                                  |
| Rated insulation voltage                    | U <sub>i</sub>   | 250 V                                                                                                                                                               |
| Rated impulse withstand voltage             | U <sub>imp</sub> | 2500 V                                                                                                                                                              |
| Power consumption                           | P <sub>0</sub>   | ≤ 3.5 VA                                                                                                                                                            |
| Fuse                                        |                  | Safety fuse ≤ 2 A (slow-blow) according to IEC 60127-2 Sheet 1<br>Recommendation: after a short circuit, check that the device is functioning correctly.            |
| <b>Output</b>                               |                  |                                                                                                                                                                     |
| Switching type                              |                  | The switching type of the sensor is adjustable. The default setting is:<br>Q - BK: normally-open / light-on<br>/Q - GY: normally-closed / dark-on<br>C - WH: Common |
| Signal output                               |                  | Relay, 1 alternator                                                                                                                                                 |
| Switching voltage                           |                  | max. 240 V AC/DC                                                                                                                                                    |
| Switching current                           |                  | max. 2.5 A , see section characteristic curve                                                                                                                       |
| Switching power                             |                  | DC: max. 95 W AC: max. 600 VA                                                                                                                                       |
| Usage category                              |                  | DC-12 , DC-13 , AC-12 u. AC-140                                                                                                                                     |
| Switching frequency                         | f                | 25 Hz                                                                                                                                                               |
| Response time                               |                  | ≤ 20 ms                                                                                                                                                             |
| <b>Conformity</b>                           |                  |                                                                                                                                                                     |
| Product standard                            |                  | EN 60947-5-2 , EN 60947-1                                                                                                                                           |
| <b>Approvals and certificates</b>           |                  |                                                                                                                                                                     |
| UL approval                                 |                  | E87056 , cULus Listed                                                                                                                                               |
| <b>Ambient conditions</b>                   |                  |                                                                                                                                                                     |
| Ambient temperature                         |                  | -30 ... 60 °C (-22 ... 140 °F) , cable, fixed installation<br>-20 ... 60 °C (-4 ... 140 °F) , movable cable not appropriate for conveyor chains                     |
| Storage temperature                         |                  | -40 ... 70 °C (-40 ... 158 °F)                                                                                                                                      |
| Pollution degree                            |                  | 3                                                                                                                                                                   |
| <b>Mechanical specifications</b>            |                  |                                                                                                                                                                     |
| Degree of protection                        |                  | IP67                                                                                                                                                                |
| Connection                                  |                  | 2 m fixed cable                                                                                                                                                     |
| Material                                    |                  |                                                                                                                                                                     |
| Housing                                     |                  | PC (Polycarbonate)                                                                                                                                                  |
| Optical face                                |                  | PMMA                                                                                                                                                                |
| Mass                                        |                  | approx. 120 g                                                                                                                                                       |
| Dimensions                                  |                  |                                                                                                                                                                     |
| Height                                      |                  | 61.9 mm                                                                                                                                                             |

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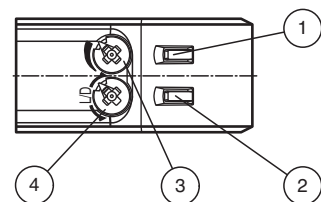
Technical Data

|              |         |
|--------------|---------|
| Width        | 20 mm   |
| Depth        | 41.7 mm |
| Cable length | 2 m     |

Connection

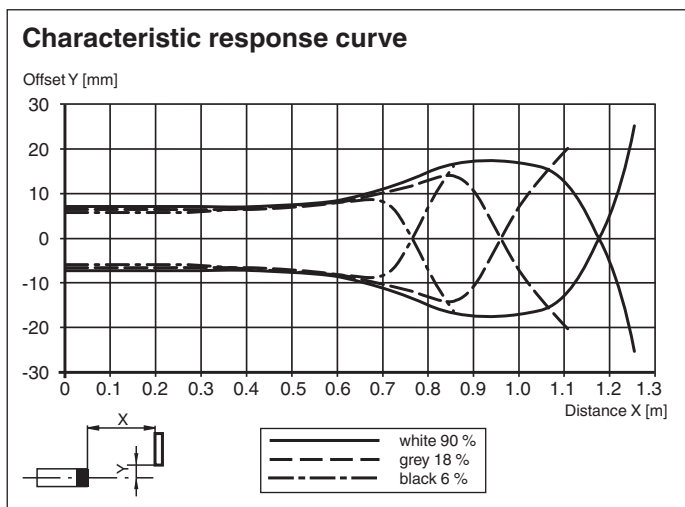


Assembly



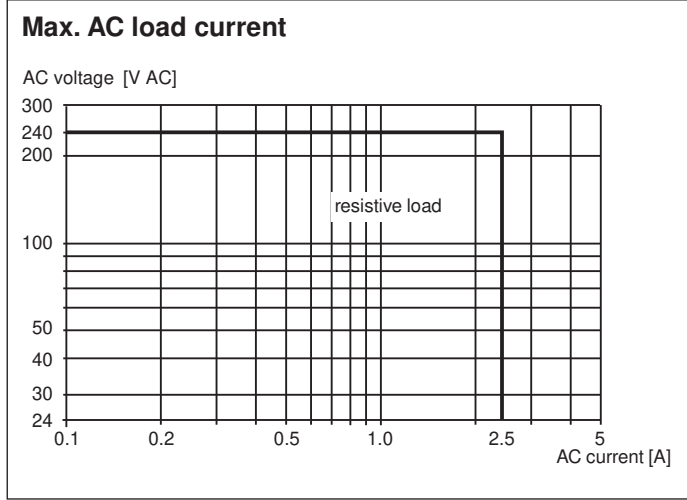
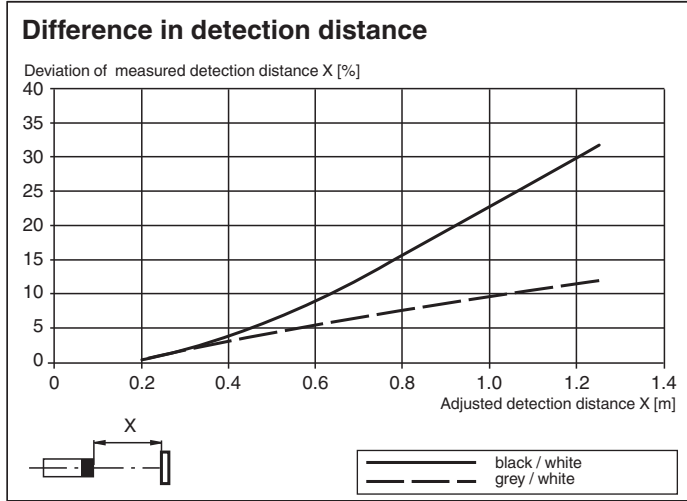
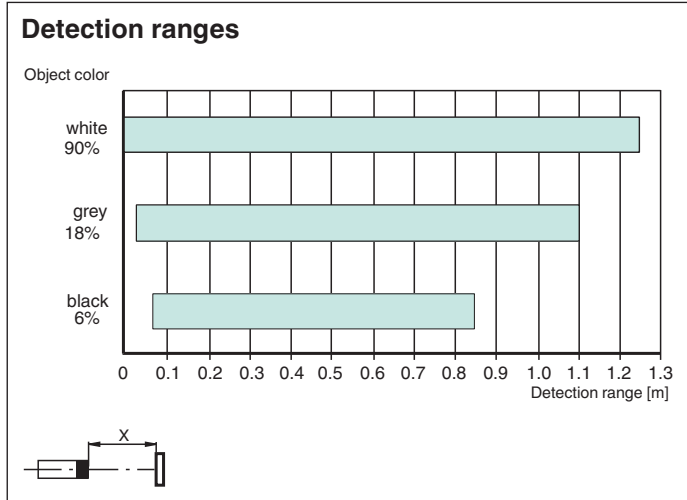
|   |                                      |    |
|---|--------------------------------------|----|
| 1 | Function indicator                   | YE |
| 2 | Operation indicator                  | GN |
| 3 | Sensitivity adjuster                 |    |
| 4 | Light-on / dark-on changeover switch |    |

Characteristic Curve



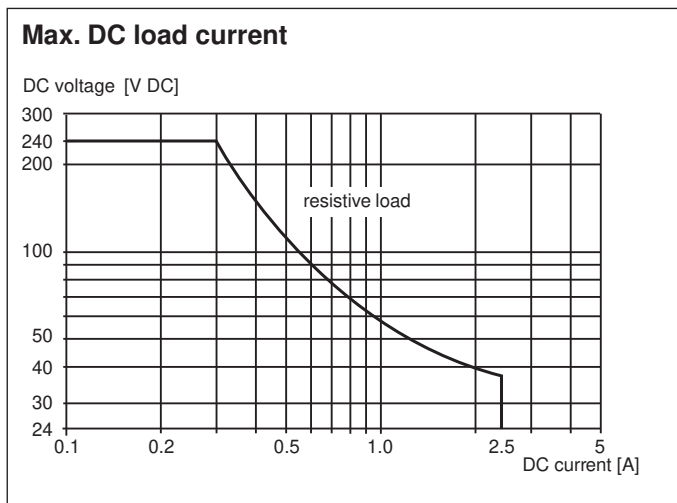
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## Characteristic Curve



## Commissioning

### Sensing Range / Sensitivity

Turn sensing range / sensitivity adjuster clockwise to increase sensing range / sensitivity.  
 Turn sensing range / sensitivity adjuster counter clockwise to decrease sensing range / sensitivity.  
 The internal end stop signals the end of the adjustment range.

### Light-on / Dark-on Configuration

To set light switching or dark switching, turn the light/dark changeover switch to the end stop:

- clockwise: dark switching
- counterclockwise: light switching