



## Triangulation sensor (BGS)

### OBT50-R3-E0-P



- 45° cable outlet for maximum mounting freedom under extremely tight space constraints
- Highly visible light spot, even on dark materials
- Precision object detection, almost irrespective of the color
- Extremely long detection range paves the way for new applications

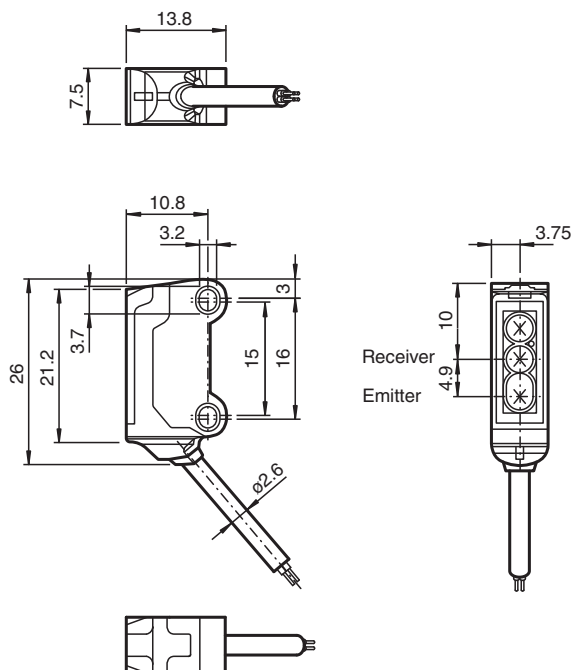
Triangulation sensor with background suppression for standard applications, miniature design, 50 mm detection range, red light, light on, NPN output, 2 m fixed cable



### Function

The nano sensor has been developed for a broad range of applications. It offers excellent durability and is exceptionally easy to install. The housing is compact and, with its 45° cable outlet, can be installed in the smallest spaces. New functional principles and functionality open up a range of new options.

### Dimensions



### Technical Data

#### General specifications

|                  |                                      |
|------------------|--------------------------------------|
| Detection range  | 3 ... 50 mm                          |
| Reference target | standard white, 100 mm x 100 mm      |
| Light source     | LED                                  |
| Light type       | modulated visible red light , 630 nm |

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

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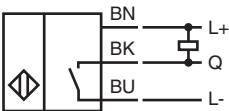
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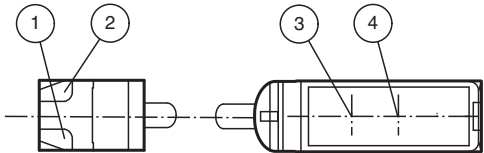
## Technical Data

|                                             |                |                                                                                        |
|---------------------------------------------|----------------|----------------------------------------------------------------------------------------|
| Black-white difference (6 %/90 %)           |                | < 15 % at 50 mm                                                                        |
| Angle deviation                             |                | approx. 2 °                                                                            |
| Diameter of the light spot                  |                | approx. 3.5 mm at a distance of 50 mm                                                  |
| Opening angle                               |                | approx. 2 °                                                                            |
| Optical face                                |                | frontal                                                                                |
| Ambient light limit                         |                | EN 60947-5-2 : 30000 Lux                                                               |
| <b>Functional safety related parameters</b> |                |                                                                                        |
| MTTF <sub>d</sub>                           |                | 800 a                                                                                  |
| Mission Time (T <sub>M</sub> )              |                | 20 a                                                                                   |
| Diagnostic Coverage (DC)                    |                | 0 %                                                                                    |
| <b>Indicators/operating means</b>           |                |                                                                                        |
| Operation indicator                         |                | LED green, statically lit Power on , short-circuit : LED green flashing (approx. 4 Hz) |
| Function indicator                          |                | LED yellow ON: lights when object is detected                                          |
| <b>Electrical specifications</b>            |                |                                                                                        |
| Operating voltage                           | U <sub>B</sub> | 10 ... 30 V DC , class 2                                                               |
| No-load supply current                      | I <sub>0</sub> | < 10 mA                                                                                |
| Protection class                            |                | III                                                                                    |
| <b>Output</b>                               |                |                                                                                        |
| Switching type                              |                | NO contact / light on                                                                  |
| Signal output                               |                | 1 NPN output, short-circuit protected, reverse polarity protected, open collector      |
| Switching voltage                           |                | max. 30 V DC                                                                           |
| Switching current                           |                | max. 50 mA , resistive load                                                            |
| Voltage drop                                | U <sub>d</sub> | ≤ 1.5 V DC                                                                             |
| Switching frequency                         | f              | approx. 800 Hz                                                                         |
| Response time                               |                | 600 μs                                                                                 |
| <b>Conformity</b>                           |                |                                                                                        |
| Product standard                            |                | EN 60947-5-2                                                                           |
| <b>Approvals and certificates</b>           |                |                                                                                        |
| UL approval                                 |                | E87056 , cULus Recognized, Class 2 Power Source                                        |
| CCC approval                                |                | CCC approval / marking not required for products rated ≤36 V                           |
| <b>Ambient conditions</b>                   |                |                                                                                        |
| Ambient temperature                         |                | -25 ... 60 °C (-13 ... 140 °F)                                                         |
| Storage temperature                         |                | -30 ... 70 °C (-22 ... 158 °F)                                                         |
| <b>Mechanical specifications</b>            |                |                                                                                        |
| Housing width                               |                | 7.5 mm                                                                                 |
| Housing height                              |                | 26 mm                                                                                  |
| Housing depth                               |                | 13.8 mm                                                                                |
| Degree of protection                        |                | IP67                                                                                   |
| Connection                                  |                | 2 m fixed cable                                                                        |
| Material                                    |                |                                                                                        |
| Housing                                     |                | PC/ABS and TPU                                                                         |
| Optical face                                |                | PC                                                                                     |
| Cable                                       |                | PUR                                                                                    |
| Mass                                        |                | approx. 20 g                                                                           |
| Cable length                                |                | 2 m                                                                                    |

Connection Assignment



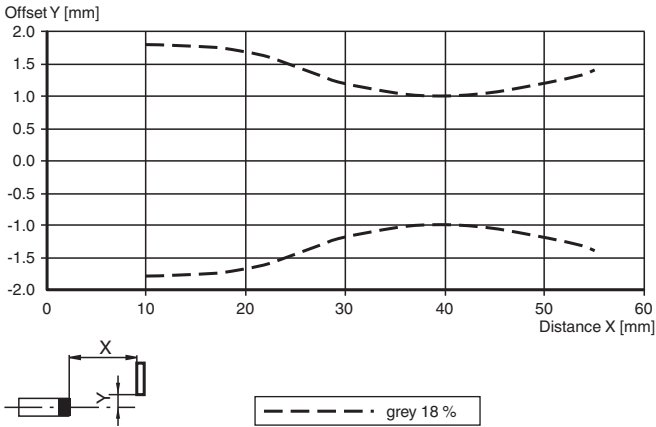
Assembly



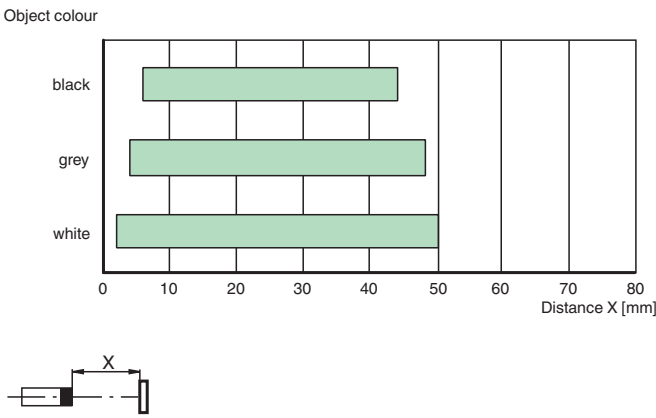
|   |                   |        |
|---|-------------------|--------|
| 1 | Operating display | green  |
| 2 | Signal display    | yellow |
| 3 | Emitter           |        |
| 4 | Receiver          |        |

Characteristic Curve

Characteristic response curve



Detection ranges



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Accessories

|                                                                                   |          |                                                               |
|-----------------------------------------------------------------------------------|----------|---------------------------------------------------------------|
|  | MH-R3-01 | Mounting aid for sensors from the R3 series, mounting bracket |
|  | MH-R3-02 | Mounting aid for sensors from the R3 series, mounting bracket |
|  | MH-R3-03 | Mounting aid for sensors from the R3 series, mounting bracket |
|  | MH-R3-04 | Mounting aid for sensors from the R3 series, mounting bracket |

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