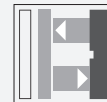




## Triangulation sensor (BGS) OBT50-R3-E2-0,2M-V3



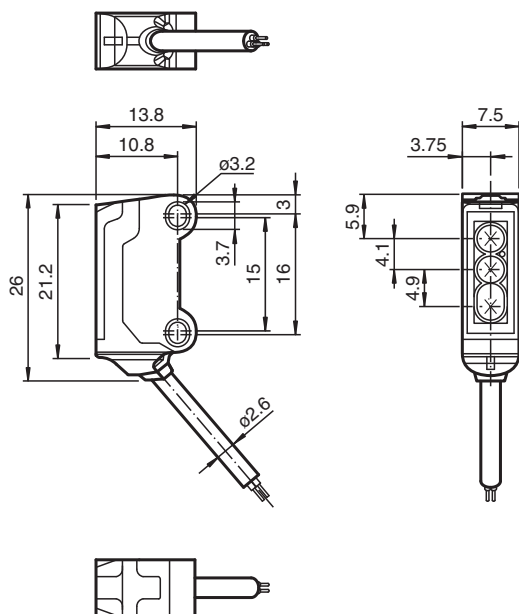
- 45° cable outlet for maximum mounting freedom under extremely tight space constraints
- Improvement in machine availability with abrasion-resistant, antistatic glass front
- Highly visible light spot, even on dark materials
- Precision object detection, almost irrespective of the color
- Extremely 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, PNP output, fixed cable with M8 plug



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  |
| 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              |

## Technical Data

### Functional safety related parameters

|                                |  |       |
|--------------------------------|--|-------|
| MTTF <sub>d</sub>              |  | 800 a |
| Mission Time (T <sub>M</sub> ) |  | 20 a  |
| Diagnostic Coverage (DC)       |  | 0 %   |

### Indicators/operating means

|                     |  |                                                                                        |
|---------------------|--|----------------------------------------------------------------------------------------|
| 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                                          |

### Electrical specifications

|                        |                |                          |
|------------------------|----------------|--------------------------|
| 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                      |

### Output

|                     |                |                                                                                   |
|---------------------|----------------|-----------------------------------------------------------------------------------|
| Switching type      |                | NO contact                                                                        |
| Signal output       |                | 1 PNP 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                                                                            |

### Conformity

|                  |  |              |
|------------------|--|--------------|
| Product standard |  | EN 60947-5-2 |
|------------------|--|--------------|

### Approvals and certificates

|                |  |                                                              |
|----------------|--|--------------------------------------------------------------|
| EAC conformity |  | TR CU 020/2011                                               |
| UL approval    |  | E87056 , cULus Recognized, Class 2 Power Source              |
| CCC approval   |  | CCC approval / marking not required for products rated ≤36 V |

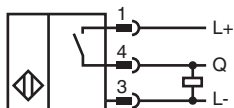
### Ambient conditions

|                     |  |                                |
|---------------------|--|--------------------------------|
| Ambient temperature |  | -25 ... 60 °C (-13 ... 140 °F) |
| Storage temperature |  | -30 ... 70 °C (-22 ... 158 °F) |

### Mechanical specifications

|                      |  |                                                 |
|----------------------|--|-------------------------------------------------|
| Housing width        |  | 7.5 mm                                          |
| Housing height       |  | 26 mm                                           |
| Housing depth        |  | 13.8 mm                                         |
| Degree of protection |  | IP67                                            |
| Connection           |  | 200 mm fixed cable with 3-pin, M8 x 1 connector |
| Material             |  |                                                 |
| Housing              |  | PC/ABS and TPU                                  |
| Optical face         |  | glass                                           |
| Cable                |  | PUR                                             |
| Mass                 |  | approx. 20 g                                    |
| Cable length         |  | 200 mm                                          |

## Connection



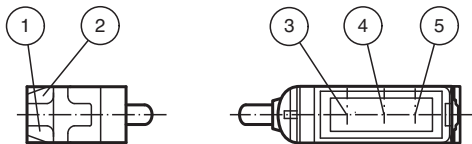
Connection Assignment



Wire colors in accordance with EN 60947-5-2

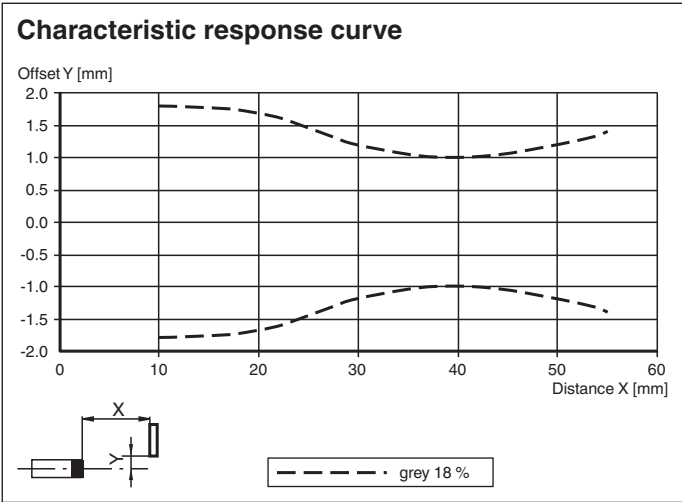
|   |    |         |
|---|----|---------|
| 1 | BN | (brown) |
| 3 | BU | (blue)  |
| 4 | BK | (black) |

Assembly



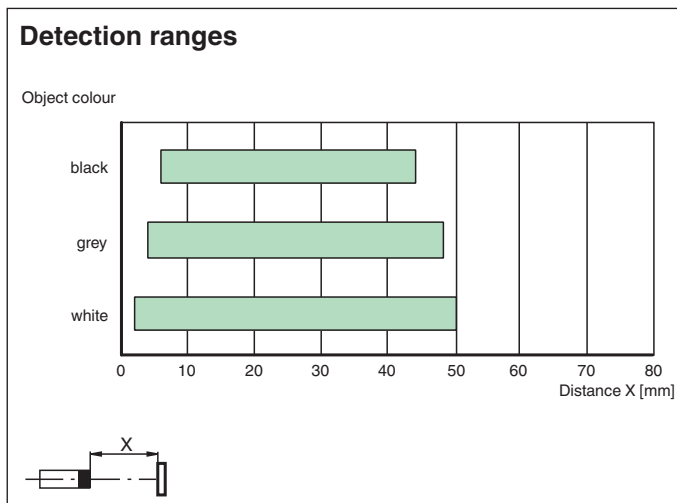
|   |                   |        |
|---|-------------------|--------|
| 1 | Operating display | green  |
| 2 | Signal display    | yellow |
| 3 | Emitter           |        |
| 4 | Receiver 1        |        |
| 5 | Receiver 2        |        |

Characteristic Curve



Release date: 2022-06-03 Date of issue: 2022-06-03 Filename: 269711\_eng.pdf

## Characteristic Curve



## Accessories

|  |                     |                                                                        |
|--|---------------------|------------------------------------------------------------------------|
|  | <b>MH-R3-01</b>     | Mounting aid for sensors from the R3 series, mounting bracket          |
|  | <b>MH-R3-02</b>     | Mounting aid for sensors from the R3 series, mounting bracket          |
|  | <b>MH-R3-03</b>     | Mounting aid for sensors from the R3 series, mounting bracket          |
|  | <b>MH-R3-04</b>     | Mounting aid for sensors from the R3 series, mounting bracket          |
|  | <b>V3-GM-2M-PUR</b> | Female cordset single-ended M8 straight A-coded, 3-pin, PUR cable grey |
|  | <b>V3-WM-2M-PUR</b> | Female cordset single-ended M8 angled A-coded, 3-pin, PUR cable grey   |