



## Triangulation sensor (BGS)

OBT15-R2-E3-0,2M-V31



- High-performance miniature photoelectric sensors
- 45° cable outlet for maximum mounting freedom under extremely tight space constraints
- Improvement in machine availability with abrasion-resistant, antistatic glass front
- Extremely small light spot for very high switching point accuracy
- Highly visible light spot, even on dark materials
- Precision object detection, almost irrespective of the color

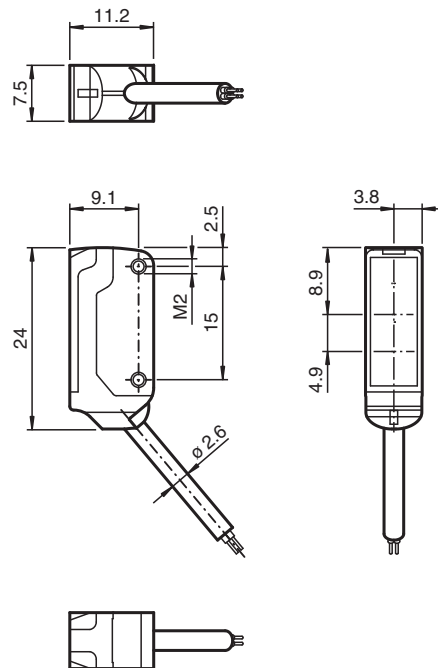
Triangulation sensor with background suppression for standard applications, miniature design, 15 mm detection range, red light, light on, PNP output, fixed cable



### 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. The abrasion-resistant lens allows long operating times close to the moving object.

### Dimensions



## Technical Data

| General specifications               |                |  |
|--------------------------------------|----------------|--|
| Detection range                      |                | 2 ... 15 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 %)    |                | < 5 % at 15 mm   |
| Angle deviation                      |                | approx. 2 °  |
| Diameter of the light spot           |                | approx. 2 mm at a distance of 15 mm  |
| Angle of divergence                  |                | approx. 2 °  |
| Optical face                         |                | frontal  |
| Ambient light limit                  |                | EN 60947-5-2 : 30000 Lux   |
| 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  |
| Output                               |                |  |
| Switching type                       |                | NC 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                          |                | 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                       |                | 24 mm  |
| Housing depth                        |                | 11.2 mm  |
| Degree of protection                 |                | IP67   |
| Connection                           |                | 200 mm fixed cable with 4-pin, M8x1 connector  |
| Material                             |                |  |
| Housing                              |                | PC/ABS and TPU   |
| Optical face                         |                | glass  |
| Cable                                |                | PUR  |
| Installation                         |                | Fixing screws , 2 x M2 allen head screws included with delivery                        |
| Mass                                 |                | approx. 20 g   |
| Cable length                         |                | 200 mm   |

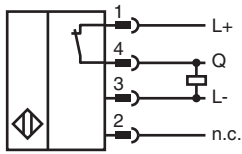
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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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Connection



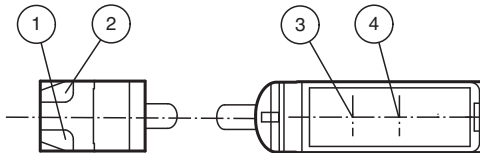
Connection Assignment



Wire colors in accordance with EN 60947-5-2

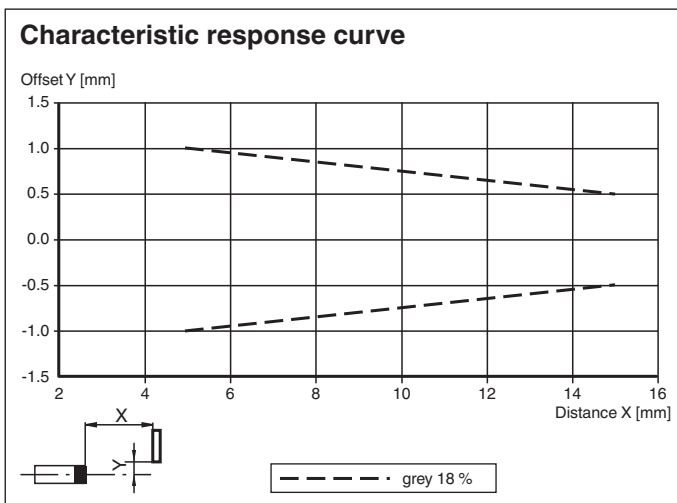
- 1 | BN (brown)
- 2 | WH (white)
- 3 | BU (blue)
- 4 | BK (black)

Assembly

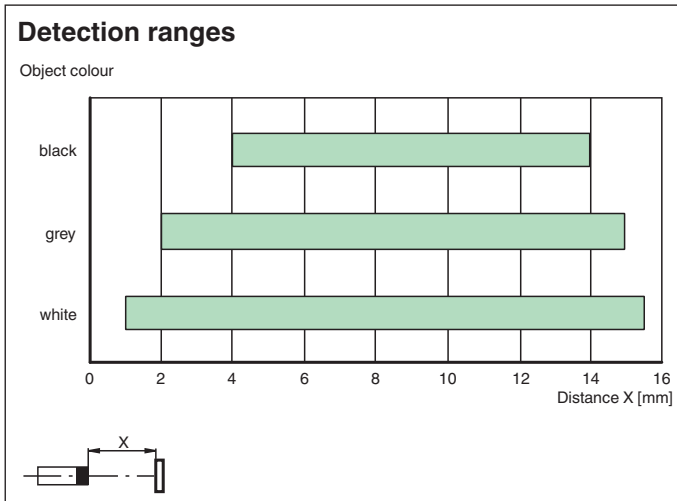


|   |                   |        |
|---|-------------------|--------|
| 1 | Operating display | green  |
| 2 | Signal display    | yellow |
| 3 | Emitter           |        |
| 4 | Receiver          |        |







Characteristic Curve



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## Accessories

|   |                      |  |
|---|----------------------|--|
|    | <b>MH-R2-01</b>      | Mounting aid for R2 series, Mounting bracket                           |
|    | <b>MH-R2-02</b>      | Mounting aid for R2 series, Mounting bracket                           |
|    | <b>MH-R2-03</b>      | Mounting aid for R2 series, Mounting bracket                           |
|   | <b>MH-R2-04</b>      | Mounting aid for R2 series, Mounting bracket                           |
|  | <b>V31-GM-2M-PUR</b> | Female cordset single-ended M8 straight A-coded, 4-pin, PUR cable grey |
|  | <b>V31-WM-2M-PUR</b> | Female cordset single-ended M8 angled A-coded, 4-pin, PUR cable grey   |

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