



Triangulation sensor (BGS)

OBT20-R2-E0-P



- High-performance miniature photoelectric sensors
- 45° cable outlet for maximum mounting freedom under extremely tight space constraints
- Extremely small light spot for very high switching point accuracy
- Highly visible light spot, even on dark materials
- Precision detection of objects within the defined sensing range, almost irrespective of the color

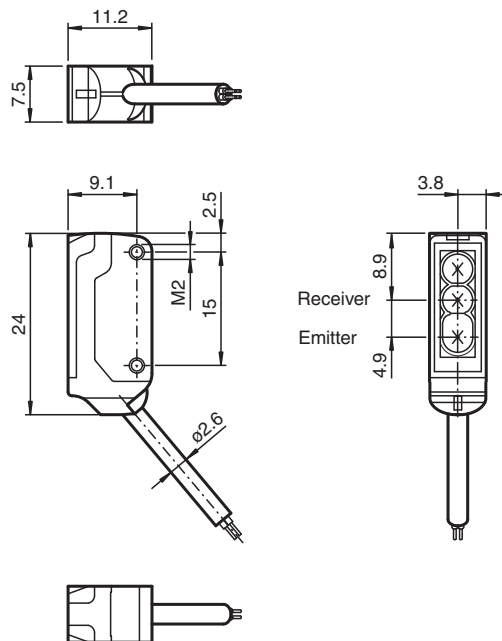
Triangulation sensor with background suppression for standard applications, miniature design, 20 mm detection range, red light, light on, NPN output, 2 m fixed cable



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

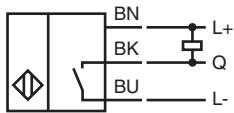
| | |
|------------------|--------------------------------------|
| Detection range | 4 ... 20 mm |
| Reference target | standard black, 100 mm x 100 mm |
| Light source | LED |
| Light type | modulated visible red light , 630 nm |

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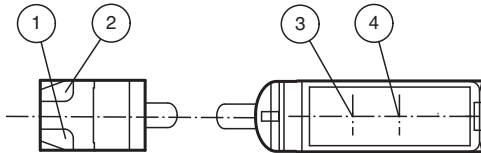
Technical Data

| | | |
|---|----------------|--|
| Black-white difference (6 %/90 %) | | < 5 % at 20 mm |
| Angle deviation | | approx. 2 ° |
| Diameter of the light spot | | approx. 2 mm at a distance of 20 mm |
| Opening angle | | approx. 2 ° |
| Optical face | | frontal |
| Ambient light limit | | EN 60947-5-2 : 30000 Lux |
| Functional safety related parameters | | |
| MTTF _d | | 800 a |
| Mission Time (T _M) | | 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 _B | 10 ... 30 V DC , class 2 |
| No-load supply current | I ₀ | < 10 mA |
| Protection class | | III |
| Output | | |
| 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 _d | ≤ 1.5 V DC |
| Switching frequency | f | approx. 800 Hz |
| Response time | | 600 μs |
| Conformity | | |
| Product standard | | EN 60947-5-2 |
| Approvals and certificates | | |
| 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 | | 24 mm |
| Housing depth | | 11.2 mm |
| Degree of protection | | IP67 |
| Connection | | 2 m fixed cable |
| Material | | |
| Housing | | PC/ABS and TPU |
| Optical face | | PC |
| Cable | | PUR |
| Installation | | Fixing screws , 2 x M2 allen head screws included with delivery |
| Mass | | approx. 20 g |
| Cable length | | 2 m |

Connection

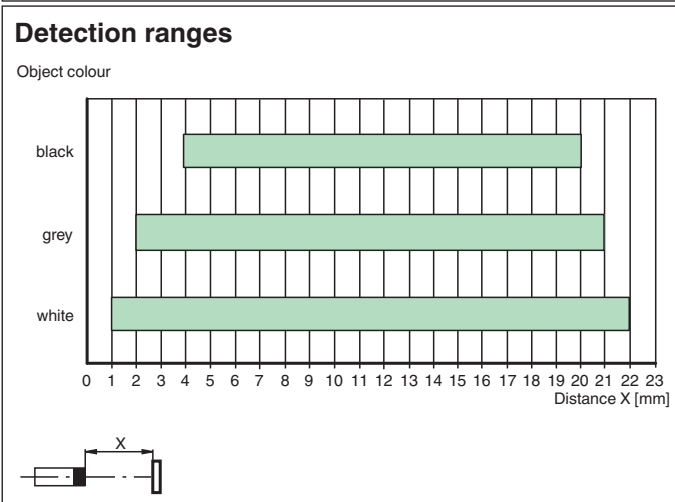
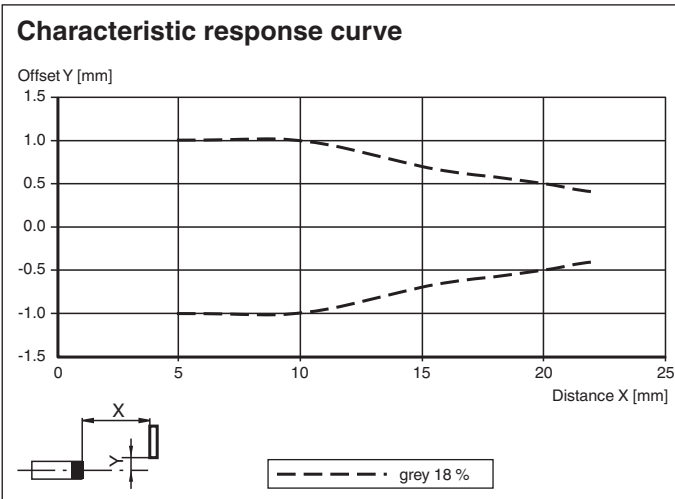


Assembly







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

Characteristic Curve



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Accessories

| | | |
|---|-----------------|--|
|  | MH-R2-01 | Mounting aid for R2 series, Mounting bracket |
|  | MH-R2-02 | Mounting aid for R2 series, Mounting bracket |
|  | MH-R2-03 | Mounting aid for R2 series, Mounting bracket |
|  | MH-R2-04 | Mounting aid for R2 series, Mounting bracket |