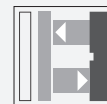




# Triangulation sensor (BGS) OBT300-18GM40-E0



- Strong metallic housing in cylindrical shape M18 x 1
- Adjustable background suppression
- Not sensitive to ambient light
- Degree of protection IP67
- High operating distance

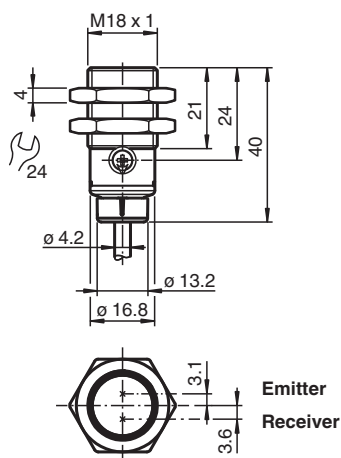
Triangulation sensor with background suppression



## Function

The optical sensors of this series have an M18 threaded housing that is optionally available in plastic or metal. The sensors are robust and versatile. Focusing on the essential requirements simplifies selection and commissioning, saving time and costs.

## Dimensions



## Technical Data

### General specifications

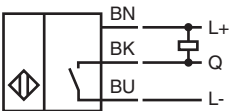
|                                   |                                         |
|-----------------------------------|-----------------------------------------|
| Detection range                   | 10 ... 300 mm                           |
| Detection range min.              | 10 ... 50 mm                            |
| Detection range max.              | 12 ... 300 mm                           |
| Adjustment range                  | 50 ... 300 mm                           |
| Reference target                  | standard white, 100 mm x 100 mm         |
| Light source                      | LED                                     |
| Light type                        | modulated visible red light             |
| Black-white difference (6 %/90 %) | < 40 % at 300 mm                        |
| Diameter of the light spot        | approx. 16 mm at detection range 300 mm |
| Opening angle                     | approx. 2 °                             |
| Optical face                      | frontal                                 |

## Technical Data

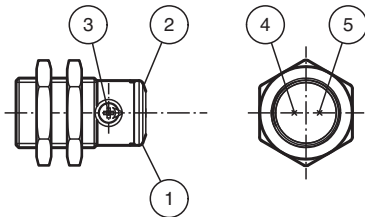
|                                             |                |                                                                                        |
|---------------------------------------------|----------------|----------------------------------------------------------------------------------------|
| Ambient light limit                         |                | EN 60947-5-2 100000 Lux                                                                |
| Hysteresis                                  | H              | < 4 %                                                                                  |
| <b>Functional safety related parameters</b> |                |                                                                                        |
| MTTF <sub>d</sub>                           |                | 1734 a                                                                                 |
| Mission Time (T <sub>M</sub> )              |                | 20 a                                                                                   |
| Diagnostic Coverage (DC)                    |                | 0 %                                                                                    |
| <b>Indicators/operating means</b>           |                |                                                                                        |
| Operation indicator                         |                | LED green:<br>on - power on<br>flashing (4 Hz) - short circuit                         |
| Function indicator                          |                | LED yellow:<br>constantly on - object detected<br>constantly off - object not detected |
| Control elements                            |                | sensitivity adjustment                                                                 |
| <b>Electrical specifications</b>            |                |                                                                                        |
| Operating voltage                           | U <sub>B</sub> | 10 ... 30 V DC                                                                         |
| Ripple                                      |                | max. 10 %                                                                              |
| No-load supply current                      | I <sub>0</sub> | < 25 mA                                                                                |
| Protection class                            |                | III                                                                                    |
| <b>Output</b>                               |                |                                                                                        |
| Switching type                              |                | Q - Pin4: NPN normally open / light-on                                                 |
| Signal output                               |                | 1 NPN output, short-circuit protected, reverse polarity protected, open collector      |
| Switching voltage                           |                | max. 30 V DC                                                                           |
| Switching current                           |                | max. 100 mA , resistive load                                                           |
| Voltage drop                                | U <sub>d</sub> | ≤ 1.5 V DC                                                                             |
| Switching frequency                         | f              | 500 Hz                                                                                 |
| Response time                               |                | ≤ 1 ms                                                                                 |
| <b>Conformity</b>                           |                |                                                                                        |
| Product standard                            |                | EN 60947-5-2                                                                           |
| <b>Approvals and certificates</b>           |                |                                                                                        |
| UL approval                                 |                | E87056 , cULus Listed , class 2 power supply , type rating 1                           |
| <b>Ambient conditions</b>                   |                |                                                                                        |
| Ambient temperature                         |                | -40 ... 60 °C (-40 ... 140 °F)                                                         |
| Storage temperature                         |                | -40 ... 70 °C (-40 ... 158 °F)                                                         |
| <b>Mechanical specifications</b>            |                |                                                                                        |
| Degree of protection                        |                | IP67                                                                                   |
| Connection                                  |                | 2 m fixed cable                                                                        |
| <b>Material</b>                             |                |                                                                                        |
| Housing                                     |                | brass, nickel-plated                                                                   |
| Optical face                                |                | PMMA                                                                                   |
| Cable                                       |                | PVC                                                                                    |
| Mass                                        |                | approx. 60 g                                                                           |
| <b>Dimensions</b>                           |                |                                                                                        |
| Length                                      |                | 40 mm                                                                                  |
| Diameter                                    |                | 18 mm                                                                                  |
| Thread size                                 |                | M18                                                                                    |

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Connection Assignment



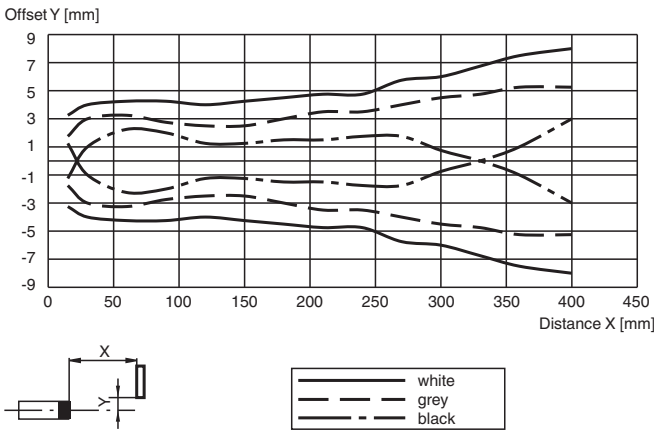
Indication



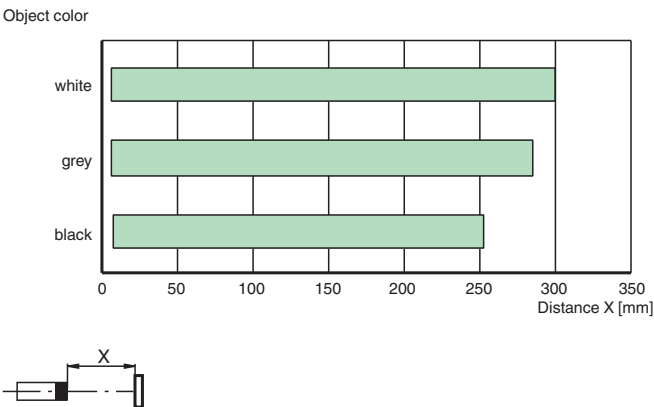
|   |                        |        |
|---|------------------------|--------|
| 1 | Operating display      | green  |
| 2 | Signal display         | yellow |
| 3 | Sensitivity adjustment |        |
| 4 | Emitter                |        |
| 5 | Receiver               |        |

Characteristic Curve

Characteristic response curve

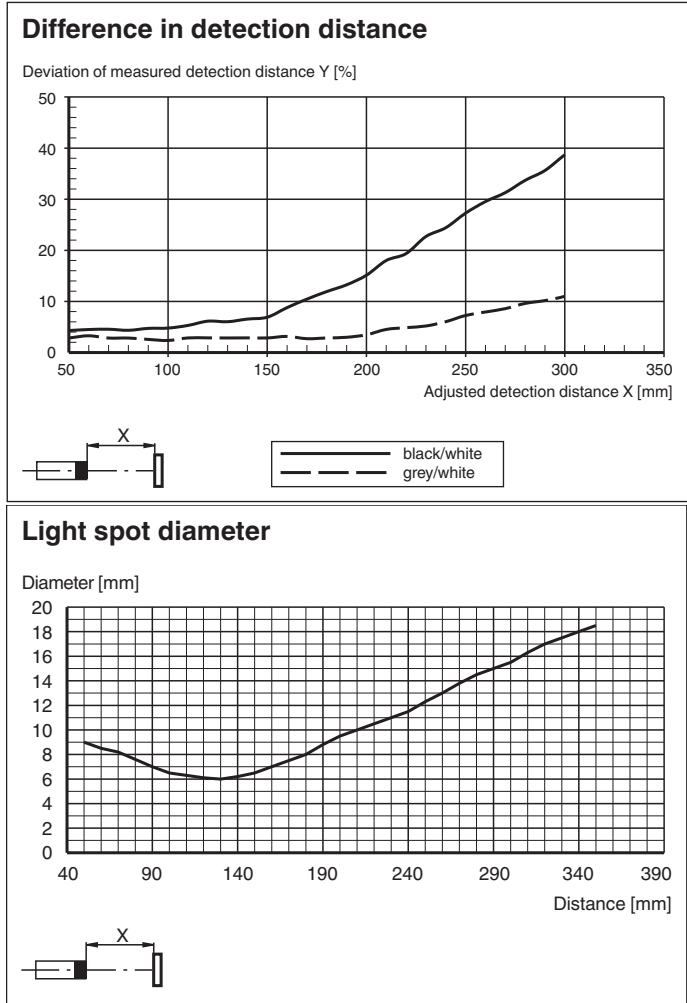


Detection ranges



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Characteristic Curve



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