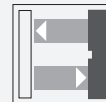




## Diffuse mode sensor OBD300-12GM40-E5-V1

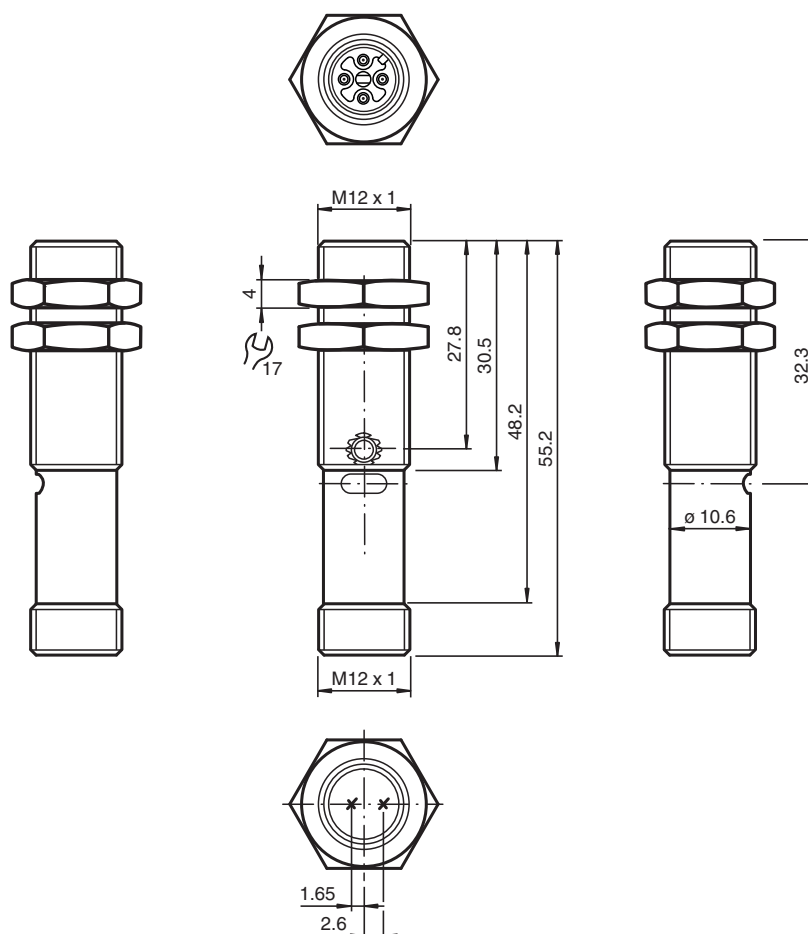


- Robust M12 threaded housing
- Less space required
- Light-on/dark-on, programmable
- Degree of protection IP67

Diffuse mode sensor, M12 threaded housing design, metal housing, front optical face, 300 mm detection range, red light, light/dark on, 1 PNP output, M12 plug



### Dimensions



### Technical Data

#### General specifications

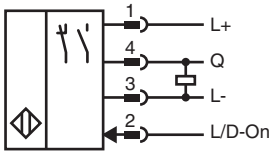
Detection range 0 ... 300 mm

## Technical Data

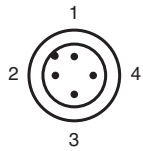
|                                                 |                |                                                                                            |
|-------------------------------------------------|----------------|--------------------------------------------------------------------------------------------|
| Adjustment range                                |                | 20 ... 300 mm                                                                              |
| Reference target                                |                | standard white 100 mm x 100 mm                                                             |
| Light source                                    |                | LED                                                                                        |
| Light type                                      |                | red , 640 nm                                                                               |
| Angle deviation                                 |                | +/- 2 °                                                                                    |
| Diameter of the light spot                      |                | approx. 20 mm at a distance of 300 mm                                                      |
| Opening angle                                   |                | approx. 4 °                                                                                |
| Optical face                                    |                | frontal                                                                                    |
| Ambient light limit                             |                | EN 60947-5-2 10000 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: Power on                                                                        |
| Function indicator                              |                | LED yellow ON: lights when object is detected                                              |
| Control elements                                |                | Sensing range adjuster                                                                     |
| <b>Electrical specifications</b>                |                |                                                                                            |
| Operating voltage                               | U <sub>B</sub> | 10 ... 30 V DC , class 2                                                                   |
| Ripple                                          |                | 10 %                                                                                       |
| No-load supply current                          | I <sub>0</sub> | ≤ 15 mA                                                                                    |
| <b>Input</b>                                    |                |                                                                                            |
| Control input                                   |                | light on +UB<br>dark on: 0 V                                                               |
| <b>Output</b>                                   |                |                                                                                            |
| Switching type                                  |                | light/dark on electrically switchable                                                      |
| Signal output                                   |                | 1 PNP 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> | ≤ 2 V                                                                                      |
| Switching frequency                             | f              | ≤ 1000 Hz                                                                                  |
| Response time                                   |                | 0.5 ms                                                                                     |
| <b>Conformity</b>                               |                |                                                                                            |
| Product standard                                |                | EN 60947-5-2                                                                               |
| <b>Compliance with standards and directives</b> |                |                                                                                            |
| Standard conformity                             |                |                                                                                            |
| Standards                                       |                | UL 508                                                                                     |
| <b>Approvals and certificates</b>               |                |                                                                                            |
| EAC conformity                                  |                | TR CU 020/2011                                                                             |
| UL approval                                     |                | cULus Listed, Class 2 Power Source, Type 1 enclosure                                       |
| CCC approval                                    |                | CCC approval / marking not required for products rated ≤36 V                               |
| Approvals                                       |                | CE, cULus Listed 57M3 (Only in association with UL Class 2 power supply; Type 1 enclosure) |
| <b>Ambient conditions</b>                       |                |                                                                                            |
| Ambient temperature                             |                | -30 ... 60 °C (-22 ... 140 °F)                                                             |
| Storage temperature                             |                | -40 ... 70 °C (-40 ... 158 °F)                                                             |
| <b>Mechanical specifications</b>                |                |                                                                                            |
| Degree of protection                            |                | IP67                                                                                       |
| Connection                                      |                | 4-pin, M12 x 1 connector                                                                   |
| Material                                        |                |                                                                                            |
| Housing                                         |                | brass, nickel-plated                                                                       |
| Optical face                                    |                | PMMA                                                                                       |
| Mass                                            |                | approx. 15 g                                                                               |

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Connection



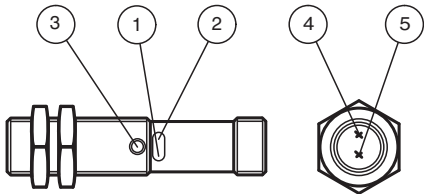
Connection Assignment



Wire colors in accordance with EN 60947-5-2

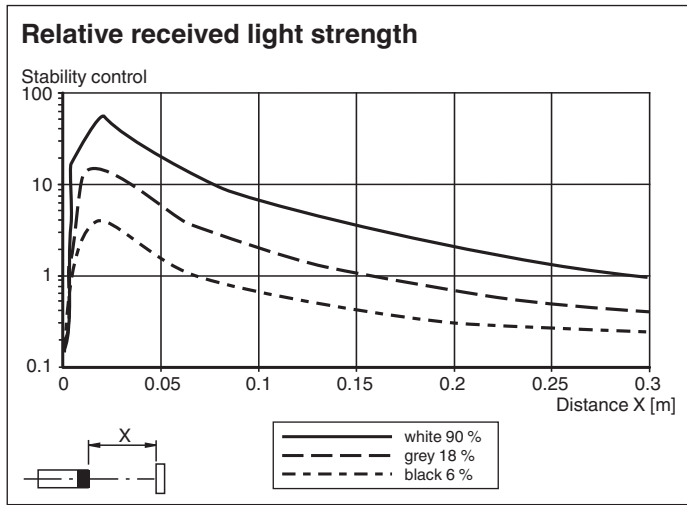
|   |    |         |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue)  |
| 4 | BK | (black) |

Assembly



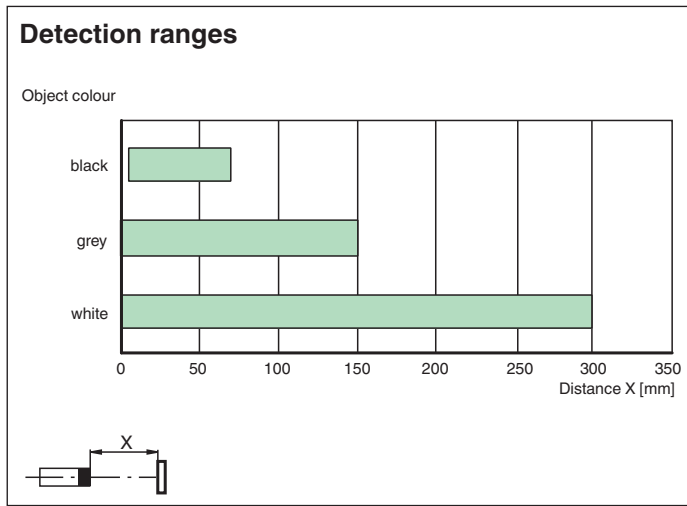
|   |                   |        |
|---|-------------------|--------|
| 1 | Operating display | green  |
| 2 | Signal display    | yellow |
| 3 | Potentiometer     |        |
| 4 | Emitter           |        |
| 5 | Receiver          |        |

Characteristic Curve



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Characteristic Curve



Accessories

|                                                                                     |                    |                                                                                   |
|-------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------|
|    | <b>BF 12</b>       | Mounting flange, 12 mm                                                            |
|    | <b>BF 12-F</b>     | Plastic mounting adapter, 12 mm                                                   |
|   | <b>BF 5-30</b>     | Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm |
|  | <b>V1-G-2M-PUR</b> | Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable grey           |
|  | <b>V1-W-2M-PUR</b> | Female cordset single-ended M12 angled A-coded, 4-pin, PUR cable grey             |

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