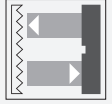


# Retroreflective sensor

## OBR2500-12GM40-E5-V1

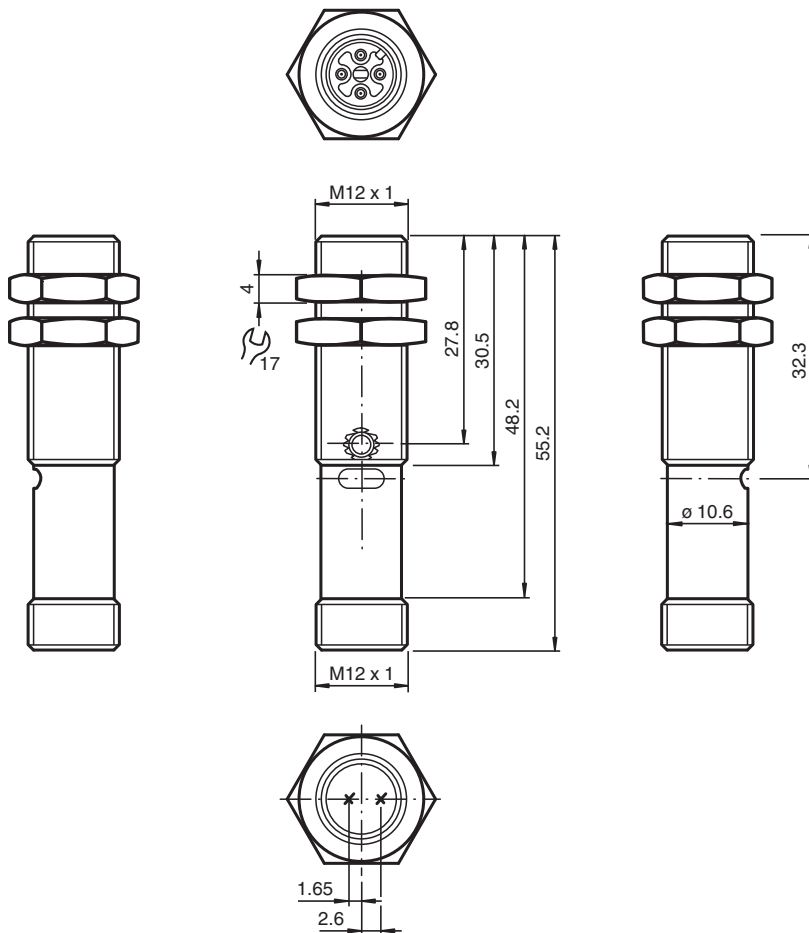


- Robust M12 threaded housing
- Less space required
- Glare protected with polarization filter
- Light-on/dark-on, programmable
- Degree of protection IP67

Retroreflective sensor with polarization filter, M12 threaded housing design, metal housing, front optical face, 2500 mm detection range, red light, light/dark on, 1 PNP output, M12 plug



### Dimensions



### Technical Data

#### General specifications

Effective detection range 0 ... 2500 mm

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

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## Technical Data

|   |                |   |
|---|----------------|---|
| Reflector distance                              |                | 50 ... 2500 mm  |
| Threshold detection range                       |                | 3000 mm   |
| Reference target                                |                | H50 reflector   |
| Light source                                    |                | LED   |
| Light type                                      |                | red , 640 nm  |
| Polarization filter                             |                | yes   |
| Angle deviation                                 |                | +/- 2 °   |
| Diameter of the light spot                      |                | approx. 150 mm at a distance of 2500 mm   |
| Opening angle                                   |                | approx. 3.5 °   |
| Optical face                                    |                | frontal   |
| Ambient light limit                             |                | EN 60947-5-2 20000 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: lights up when receiving the light beam ; flashes when falling short of the operating reserve; OFF when light beam is interrupted |
| Control elements                                |                | sensitivity adjustment  |
| <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>               |                |   |
| 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  |

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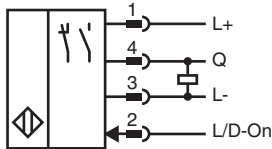
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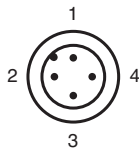
## Technical Data

|            |              |  |
|------------|--------------|--|
| Mass       | approx. 15 g |  |
| Dimensions |              |  |
| Length     | 55 mm        |  |
| Diameter   | 12 mm        |  |

## Connection



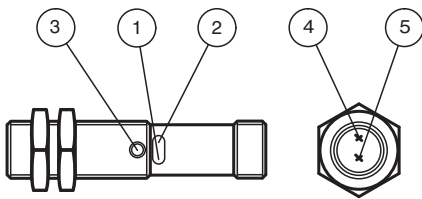
## Connection Assignment



Wire colors in accordance with EN 60947-5-2

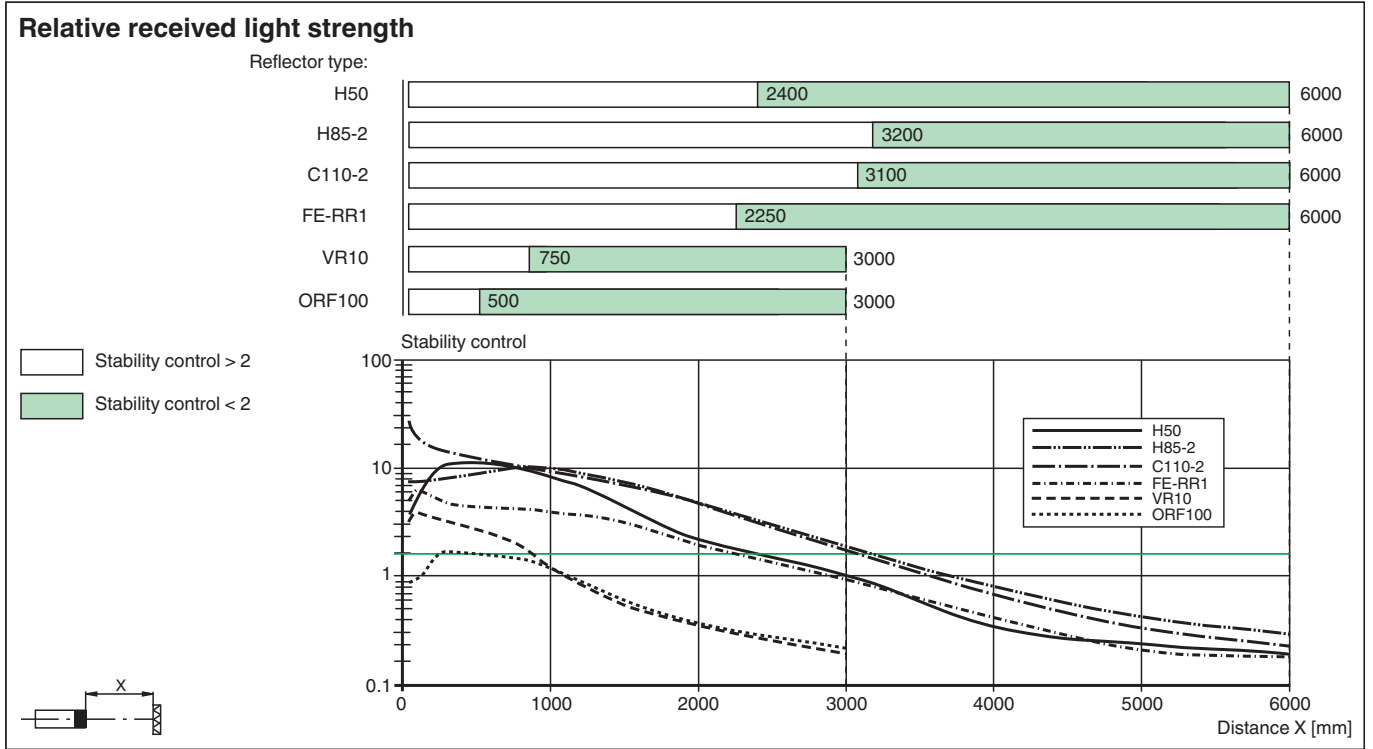
|   |    |         |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue)  |
| 4 | BK | (black) |

## Assembly



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

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