

# Retroreflective sensor

## OBR4000-18GM60-E4-1C



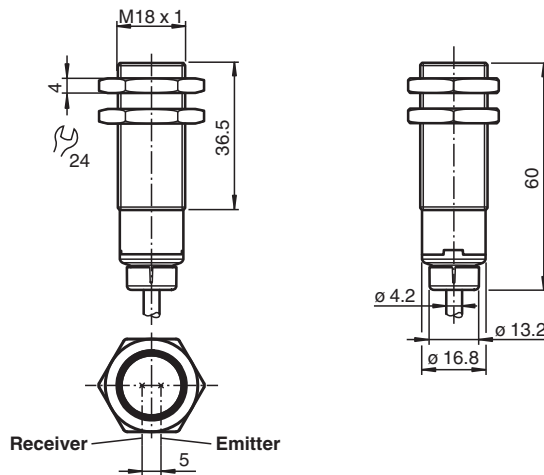
- Strong metallic housing in cylindrical shape M18 x 1
- Not sensitive to ambient light
- Degree of protection IP67
- Very high detection range



### 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     |                             |
|----------------------------|-----------------------------|
| Effective detection range  | 0 ... 4 m                   |
| Reflector distance         | 0 ... 4 m                   |
| Threshold detection range  | 4.5 m                       |
| Reference target           | H50 reflector               |
| Light source               | LED                         |
| Light type                 | modulated visible red light |
| Polarization filter        | yes                         |
| Diameter of the light spot | approx. 190 mm at 4 m       |
| Opening angle              | approx. 2.6 °               |
| Optical face               | frontal                     |
| Ambient light limit        | EN 60947-5-2 10000 Lux      |

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

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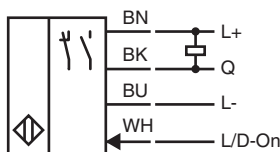
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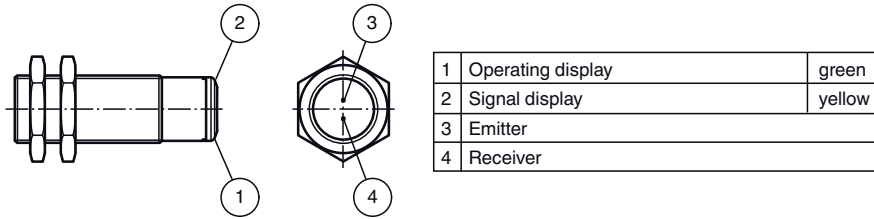
## Technical Data

| Functional safety related parameters |                |  |
|--------------------------------------|----------------|--|
| MTTF <sub>d</sub>                    |                | 962 a  |
| Mission Time (T <sub>M</sub> )       |                | 20 a   |
| Diagnostic Coverage (DC)             |                | 0 %  |
| Indicators/operating means           |                |  |
| Operation indicator                  |                | LED green:<br>on - power on<br>flashing (4 Hz) - short circuit   |
| Function indicator                   |                | Receiver: yellow LED<br>permanently lit - output active<br>permanently off - output inactive<br>flashing (4 Hz) - insufficient operating reserve |
| Control elements                     |                | light/dark on electrically switchable  |
| Electrical specifications            |                |  |
| 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  |
| Output                               |                |  |
| Switching type                       |                | The switching type of the sensor is adjustable. The default setting is: Q - Pin4: NPN output / dark-on L/D-On - WH: Low-active input             |
| 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> | ≤ 2 V DC   |
| Switching frequency                  | f              | 500 Hz   |
| Response time                        |                | ≤ 1 ms   |
| Conformity                           |                |  |
| Product standard                     |                | EN 60947-5-2   |
| Approvals and certificates           |                |  |
| UL approval                          |                | E87056 , cULus Listed , class 2 power supply , type rating 1   |
| Ambient conditions                   |                |  |
| Ambient temperature                  |                | -40 ... 60 °C (-40 ... 140 °F)   |
| Storage temperature                  |                | -40 ... 70 °C (-40 ... 158 °F)   |
| Mechanical specifications            |                |  |
| Housing length                       |                | 60 mm  |
| Degree of protection                 |                | IP67   |
| Connection                           |                | 2 m fixed cable  |
| Material                             |                |  |
| Housing                              |                | brass, nickel-plated   |
| Optical face                         |                | PMMA   |
| Cable                                |                | PVC  |
| Mass                                 |                | approx. 70 g   |

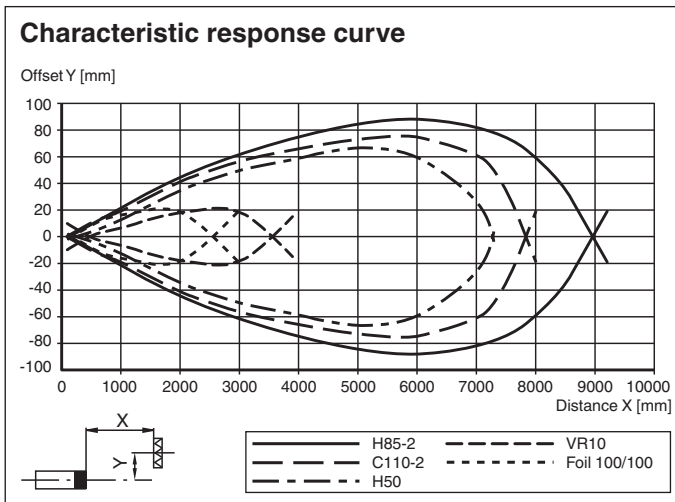
## Connection



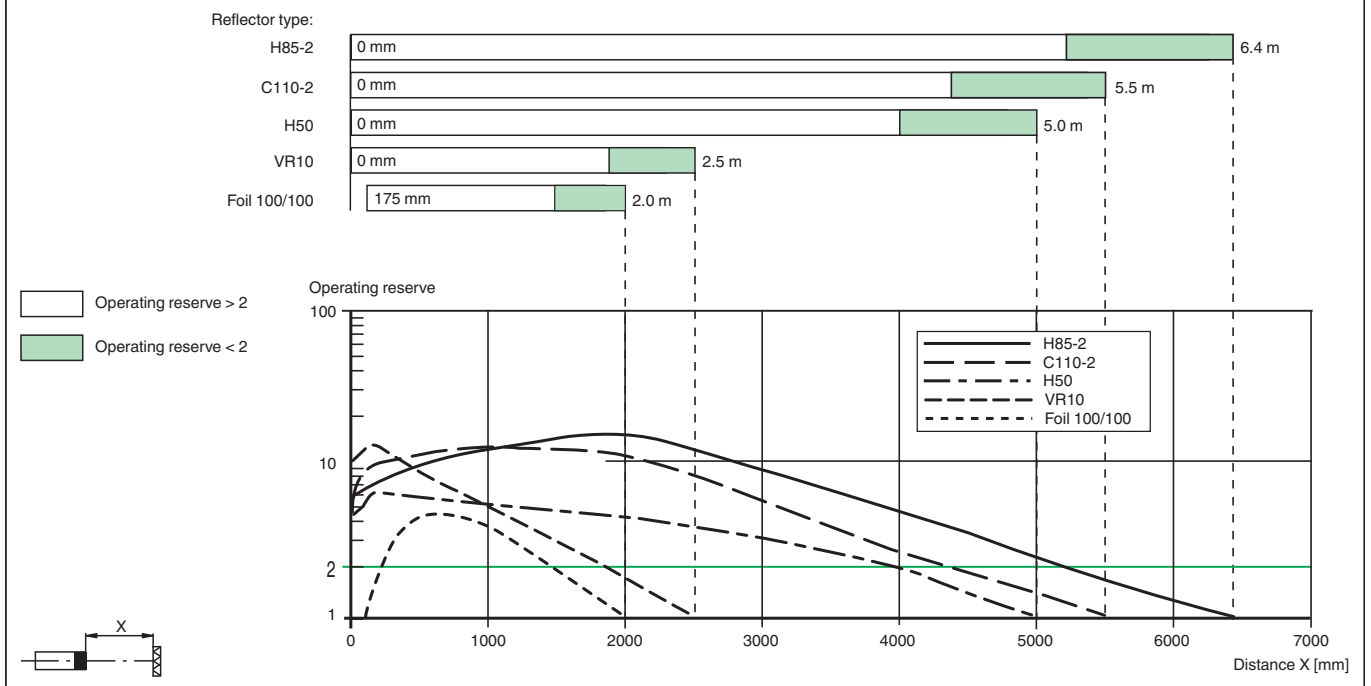
Indication



Characteristic Curve



Relative received light strength



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