



**Model Number**

**OBT50-R2-E2**

Background suppression sensor with 2 m fixed cable

**Features**

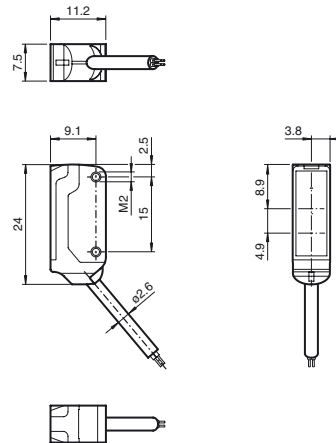
- Ultra-small housing design
- 45° cable outlet for maximum mounting freedom under extremely tight space constraints
- Improvement in machine availability with abrasion-resistant, antistatic glass front
- Highly visible light spot, even on dark materials
- Precision object detection, almost irrespective of the color
- Extremely long detection range paves the way for new applications

**Product information**

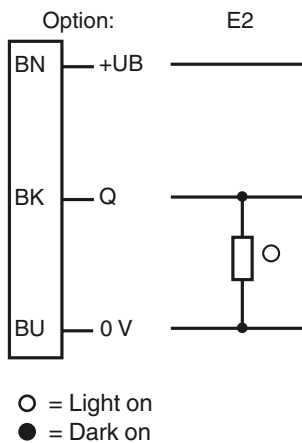
The R2 series nano sensor has been developed for a broad range of applications. It offers excellent durability and is exceptionally easy to install. The housing is compact and, with its 45° cable outlet, can be installed in the smallest spaces. New functional principles and functionality open up a range of new options. The abrasion-resistant lens allows long operating times close to the moving object.

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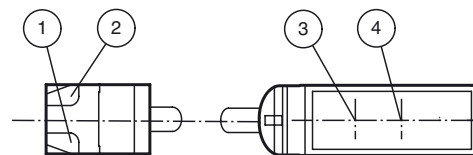
**Dimensions**



**Electrical connection**



**Indicators/operating means**



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

**Technical data****General specifications**

|                                   |                                       |
|-----------------------------------|---------------------------------------|
| Detection range                   | 3 ... 50 mm                           |
| Background suppression            | starts from 70 mm                     |
| Reference target                  | standard white, 100 mm x 100 mm       |
| Light source                      | LED                                   |
| Light type                        | modulated visible red light , 630 nm  |
| Black/White difference (6 %/90 %) | < 15 % at 50 mm                       |
| Angle deviation                   | approx. 2 °                           |
| Diameter of the light spot        | approx. 3.5 mm at a distance of 50 mm |
| Angle of divergence               | approx. 2 °                           |
| Optical face                      | frontal                               |
| Ambient light limit               | EN 60947-5-2 : 30000 Lux              |

**Functional safety related parameters**

|                                |       |
|--------------------------------|-------|
| MTTF <sub>d</sub>              | 800 a |
| Mission Time (T <sub>M</sub> ) | 20 a  |
| Diagnostic Coverage (DC)       | 0 %   |

**Indicators/operating means**

|                   |  |
|-------------------|--|
| Operating display | LED green, statically lit Power on , short-circuit : LED green flashing (approx. 4 Hz) |
| Function display  | LED yellow ON: lights when object is detected  |

**Electrical specifications**

|                        |                |                          |
|------------------------|----------------|--------------------------|
| Operating voltage      | U <sub>B</sub> | 10 ... 30 V DC , class 2 |
| No-load supply current | I <sub>0</sub> | < 10 mA                  |

**Output**

|                     |   |                |
|---------------------|---|----------------|
| Switching type      | NO contact  |                |
| Signal output       | 1 PNP 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 <sub>d</sub>  | ≤ 1.5 V DC     |
| Switching frequency | f   | approx. 800 Hz |
| Response time       |   | 600 μs         |

**Ambient conditions**

|                     |                                |
|---------------------|--------------------------------|
| Ambient temperature | -25 ... 60 °C (-13 ... 140 °F) |
| Storage temperature | -30 ... 70 °C (-22 ... 158 °F) |

**Mechanical specifications**

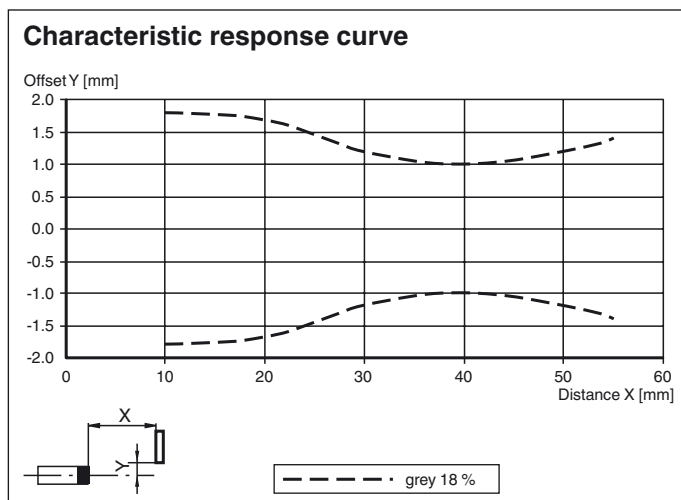
|                   |   |
|-------------------|---|
| Protection degree | IP67  |
| Connection        | 2 m fixed cable   |
| Material          |   |
| Housing           | PC/ABS and PBT  |
| Optical face      | glass   |
| Cable             | PUR   |
| Installation      | Fixing screws , 2 x M2 allen head screws included with delivery |
| Mass              | approx. 20 g  |

**Compliance with standards and directives**

|                           |                   |
|---------------------------|-------------------|
| Directive conformity      |                   |
| EMC Directive 2004/108/EC | EN 60947-5-2:2007 |

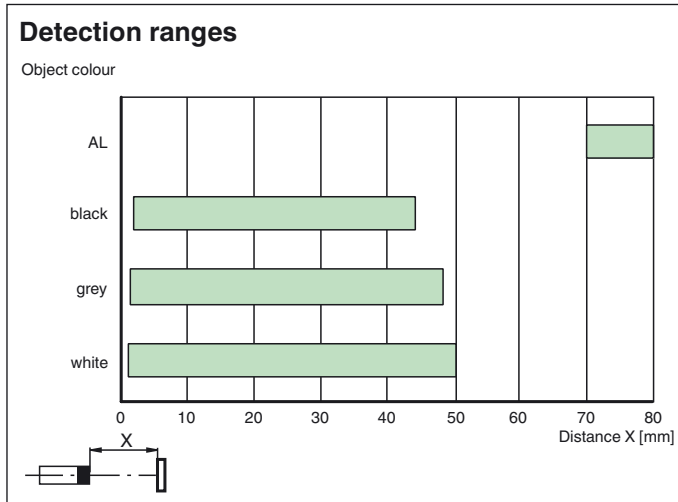
**Approvals and certificates**

|              |  |
|--------------|--|
| UL approval  | cULus Recognized, Class 2 Power Source                       |
| CCC approval | CCC approval / marking not required for products rated ≤36 V |

**Curves/Diagrams****Accessories**

- MH-R2-01**  
Mounting bracket
- MH-R2-02**  
Mounting bracket
- MH-R2-03**  
Mounting bracket
- MH-R2-04**  
Mounting bracket

Other suitable accessories can be found at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)



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Subject to modifications without notice

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