



**Model Number**

**OBR15M-R200-2EP-IO-V1**

Retroreflective sensor with polarization filter  
with 4-pin, M12 x 1 connector

**Features**

- Medium design with versatile mounting options
- Extended temperature range -40°C ... 60°C
- High degree of protection IP69K
- IO-link interface for service and process data

**Product information**

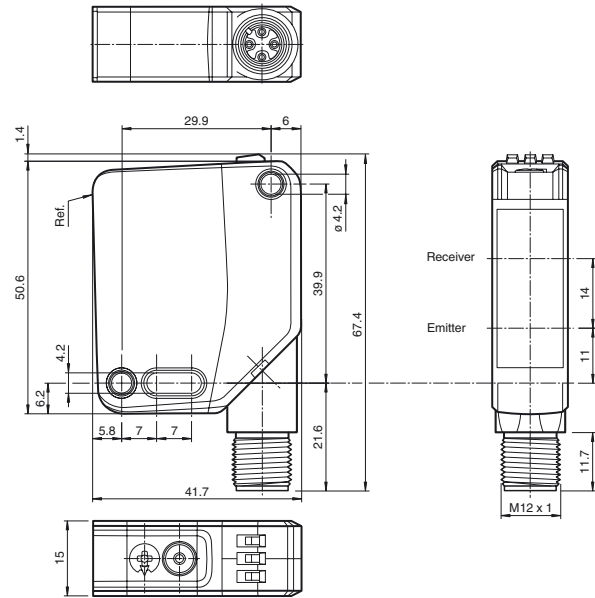
The optical sensors in the series are the first devices to offer an end-to-end solution in a medium-sized standard design—from the thru-beam sensor through to the measuring distance sensor. As a result of this design, the sensors are able to perform practically all standard automation tasks.

The entire series enables sensors to communicate via IO-Link.

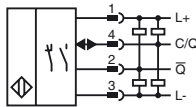
The DuraBeam laser sensors are durable and can be used in the same way as a standard sensor.

Multi Pixel Technology (MPT) ensures that the standard sensors are flexible and can be adapted to the application environment.

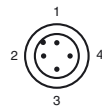
**Dimensions**



**Electrical connection**



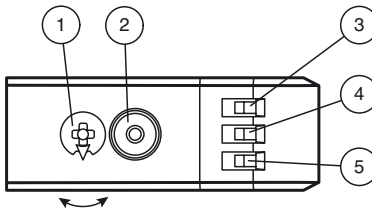
**Pinout**



Wire colors in accordance with EN 60947-5-2

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

**Indicators/operating means**



|   |                                      |    |
|---|--------------------------------------|----|
| 1 | Sensitivity adjustment               |    |
| 2 | Light-on / dark-on changeover switch |    |
| 3 | Operating indicator / dark on        | GN |
| 4 | Signal indicator                     | YE |
| 5 | Operating indicator / light on       | GN |

Release date: 2019-02-11 10:56 Date of issue: 2019-10-31 295670-100012\_eng.xml

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

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

|                            |                                      |
|----------------------------|--------------------------------------|
| Effective detection range  | 0 ... 15 m                           |
| Reflector distance         | 0.02 ... 15 m                        |
| Threshold detection range  | 18.5 m                               |
| Reference target           | H85-2 reflector                      |
| Light source               | LED                                  |
| Light type                 | modulated visible red light          |
| LED risk group labelling   | exempt group                         |
| Polarization filter        | yes                                  |
| Diameter of the light spot | approx. 520 mm at a distance of 15 m |
| Angle of divergence        | 2 °                                  |
| Ambient light limit        | EN 60947-5-2 : 60000 Lux             |

**Functional safety related parameters**

|                                |       |
|--------------------------------|-------|
| MTTF <sub>d</sub>              | 724 a |
| Mission Time (T <sub>M</sub> ) | 20 a  |
| Diagnostic Coverage (DC)       | 0 %   |

**Indicators/operating means**

|                     |  |
|---------------------|--|
| Operation indicator | LED green:<br>constantly on - power on<br>flashing (4Hz) - short circuit<br>flashing with short break (1 Hz) - IO-Link mode                |
| Function indicator  | Yellow LED:<br>Permanently lit - light path clear<br>Permanently off - object detected<br>Flashing (4 Hz) - insufficient operating reserve |
| Control elements    | Light-on/dark-on changeover switch   |
| Control elements    | sensitivity adjustment   |

**Electrical specifications**

|                        |                |                                   |
|------------------------|----------------|-----------------------------------|
| Operating voltage      | U <sub>B</sub> | 10 ... 30 V DC                    |
| Ripple                 |                | max. 10 %                         |
| No-load supply current | I <sub>0</sub> | < 18 mA at 24 V Operating voltage |
| Protection class       |                | III                               |

**Interface**

|                             |   |
|-----------------------------|---|
| Interface type              | IO-Link ( via C/Q = pin 4 )                           |
| Device profile              | Identification and diagnosis<br>Smart Sensor type 2.4 |
| Transfer rate               | COM 2 (38.4 kBaud)                                    |
| IO-Link Revision            | 1.1   |
| Min. cycle time             | 2.3 ms  |
| Process data width          | Process data input 2 Bit<br>Process data output 2 Bit |
| SIO mode support            | yes   |
| Device ID                   | 0x111201 (1118721)                                    |
| Compatible master port type | A   |

**Output**

|                     |   |            |
|---------------------|---|------------|
| Switching type      | The switching type of the sensor is adjustable. The default setting is:<br>C/Q - Pin4: NPN normally open / dark-on, PNP normally closed / light-on, IO-Link<br>/Q - Pin2: NPN normally closed / light-on, PNP normally open / dark-on |            |
| Signal output       | 2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected, overvoltage protected  |            |
| Switching voltage   | max. 30 V DC  |            |
| Switching current   | max. 100 mA , resistive load  |            |
| Usage category      | DC-12 and DC-13   |            |
| Voltage drop        | U <sub>d</sub>  | ≤ 1.5 V DC |
| Switching frequency | f   | 1000 Hz    |
| Response time       |   | 0.5 ms     |

**Conformity**

|                         |              |
|-------------------------|--------------|
| Communication interface | IEC 61131-9  |
| Product standard        | EN 60947-5-2 |

**Ambient conditions**

|                     |                                |
|---------------------|--------------------------------|
| Ambient temperature | -40 ... 60 °C (-40 ... 140 °F) |
| Storage temperature | -40 ... 70 °C (-40 ... 158 °F) |

**Mechanical specifications**

|                      |   |
|----------------------|---|
| Housing width        | 15 mm                                   |
| Housing height       | 50.6 mm                                 |
| Housing depth        | 41.7 mm                                 |
| Degree of protection | IP67 / IP69 / IP69K                     |
| Connection           | 4-pin, M12 x 1 connector, 90° rotatable |
| Material             |   |
| Housing              | PC (Polycarbonate)                      |
| Optical face         | PMMA                                    |
| Mass                 | approx. 37 g                            |

**Accessories****IO-Link-Master02-USB**

IO-Link master, supply via USB port or separate power supply, LED indicators, M12 plug for sensor connection

**OMH-MLV12-HWK**

Mounting bracket for series MLV12 sensors

**OMH-R200-01**

Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

**OMH-R20x-Quick-Mount**

Quick mounting accessory

**OMH-MLV12-HWG**

Mounting bracket for series MLV12 sensors

**REF-H85-2**

Reflector, rectangular 84.5 mm x 84.5 mm, mounting holes

**REF-C110-2**

Reflector, round ø 84 mm, central mounting hole

**REF-H50**

Reflector, rectangular 51 mm x 61 mm, mounting holes, fixing strap

**REF-VR10**

Reflector, rectangular 60 mm x 19 mm, mounting holes

**OFR-100/100**

Reflective tape 100 mm x 100 mm

**V1-G-2M-PUR**

Female cordset, M12, 4-pin, PUR cable

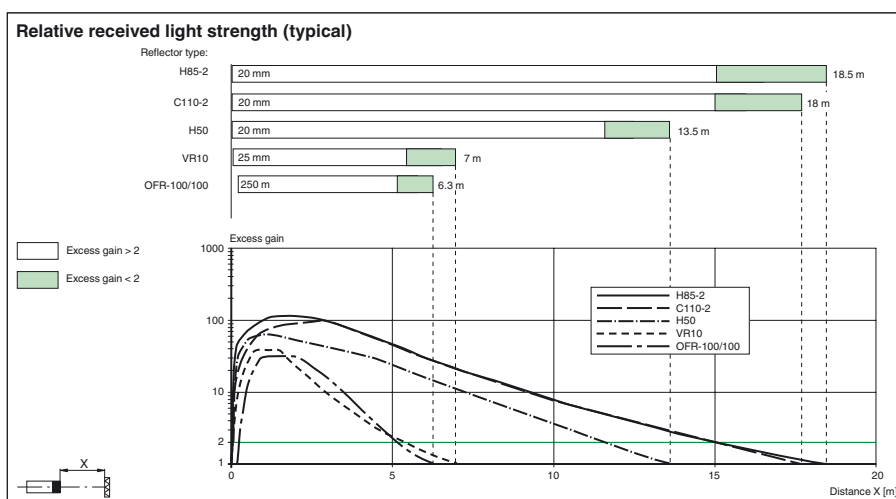
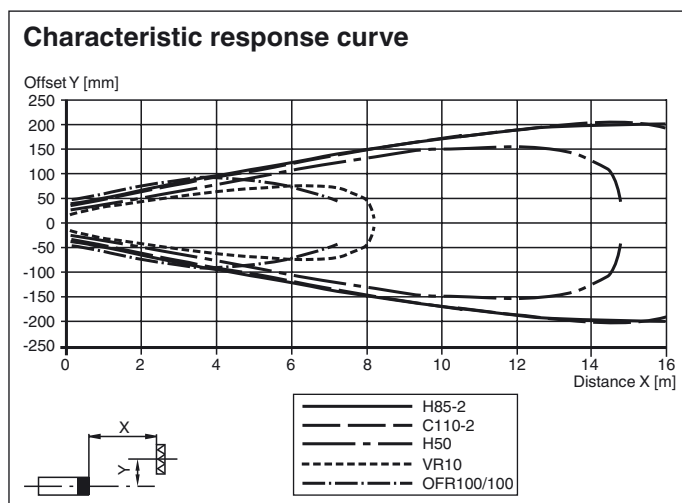
**V1-W-2M-PUR**

Female cordset, M12, 4-pin, PUR cable

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

**Approvals and certificates**

|              |  |
|--------------|--|
| UL approval  | E87056 , cULus Listed , class 2 power supply , type rating 1 |
| CCC approval | CCC approval / marking not required for products rated ≤36 V |

**Curves/Diagrams****Functions and Operation**

To unlock the adjustment functions turn the sensing range /sensitivity adjuster for more than 180 degrees.

**Sensing Range / Sensitivity**

Turn sensing range / sensitivity adjuster clockwise to increase sensing range / sensitivity.

Turn sensing range / sensitivity adjuster counter clockwise to decrease sensing range / sensitivity.

If the end of the adjustment range is reached, the signal indicator starts flashing with 8 Hz.

**Light-on / Dark-on Configuration**

Press the light-on / dark-on changeover switch for more than 1 second (less than 4 seconds). The light-on / dark-on mode changes and the operating indicators are activated accordingly.

If you press the light-on / dark-on changeover switch for more than 4 seconds, the light-on /dark-on mode changes back to the original setting. On release of the light-on / dark-on changeover switch the current state is activated.

**Restore Factory Settings**

Press the light-on / dark-on changeover switch for more than 10 seconds (less than 30 seconds) until all LEDs turn off. On release of the light-on / dark-on changeover switch the signal indicator turns on. After 5 seconds the sensor resumes operation with factory default settings.

After 5 minutes of inactivity the sensing range / sensitivity adjustment is locked. In order to reactivate the sensing range / sensitivity adjustment, turn the sensing range /sensitivity adjuster for more than 180 degrees.