



Model Number

OBD1400-R200-2EP-IO-V1

Diffuse mode sensor
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

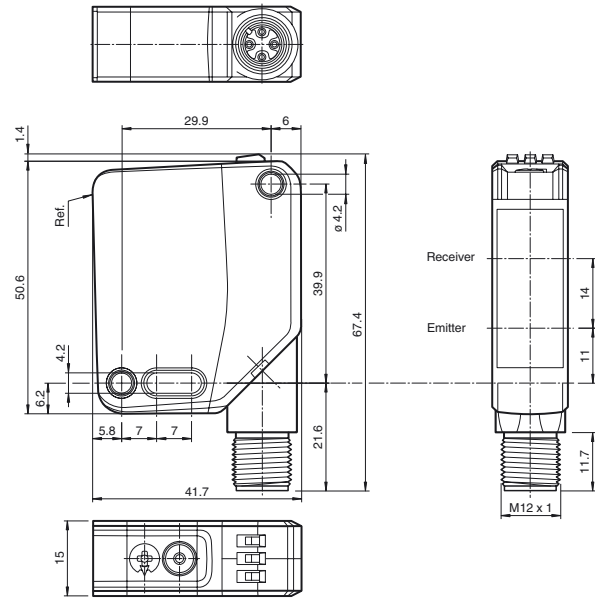
The optical sensors in the series are the first devices to offer an end-to-end solution in a medium-sized standard design—from the thru-beam sensor through to the measuring distance sensor. As a result of this design, the sensors are able to perform practically all standard automation tasks.

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

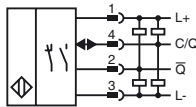
The DuraBeam laser sensors are durable and can be used in the same way as a standard sensor.

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

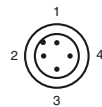
Dimensions



Electrical connection



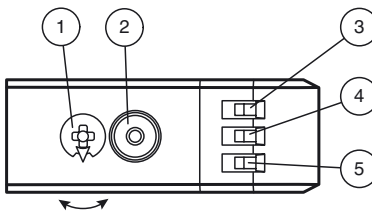
Pinout



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 295670-100005_eng.xml

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

Technical data**General specifications**

| | |
|----------------------------|--|
| Detection range | 2 ... 1400 mm |
| Detection range min. | 100 ... 200 mm |
| Detection range max. | 2 ... 1400 mm |
| Adjustment range | 200 ... 1400 mm |
| Reference target | standard white, 100 mm x 100 mm |
| Light source | LED |
| Light type | modulated visible red light |
| LED risk group labelling | exempt group |
| Diameter of the light spot | approx. 50 mm at a distance of 1400 mm |
| Angle of divergence | 2° |
| Ambient light limit | EN 60947-5-2 : 60000 Lux |

Functional safety related parameters

| | |
|--------------------------------|-------|
| MTTF _d | 724 a |
| Mission Time (T _M) | 20 a |
| Diagnostic Coverage (DC) | 0 % |

Indicators/operating means

| | |
|---------------------|---|
| Operation indicator | LED green: constantly on - power on flashing (4Hz) - short circuit flashing with short break (1 Hz) - IO-Link mode |
| Function indicator | LED yellow: constantly on - object detected constantly off - object not detected |
| Control elements | Light-on/dark-on changeover switch |
| Control elements | Sensing range adjuster |

Electrical specifications

| | | |
|------------------------|----------------|-----------------------------------|
| Operating voltage | U _B | 10 ... 30 V DC |
| Ripple | | max. 10 % |
| No-load supply current | I ₀ | < 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 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 1 Bit Process data output 2 Bit |
| SIO mode support | yes |
| Device ID | 0x111101 (1118465) |
| Compatible master port type | A |

Output

| | | |
|---------------------|---|------------|
| Switching type | The switching type of the sensor is adjustable. The default setting is: C/Q - Pin4: NPN normally open / light-on, PNP normally closed / dark-on, IO-Link /Q - Pin2: NPN normally closed / dark-on, PNP normally open / light-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 _d | ≤ 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 |

Approvals and certificates**Accessories****IO-Link-Master02-USB**

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

V1-G-2M-PUR

Female cordset, M12, 4-pin, PUR cable

V1-W-2M-PUR

Female cordset, M12, 4-pin, PUR cable

OMH-MLV12-HWG

Mounting bracket for series MLV12 sensors

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

Other suitable accessories can be found at www.pepperl-fuchs.com

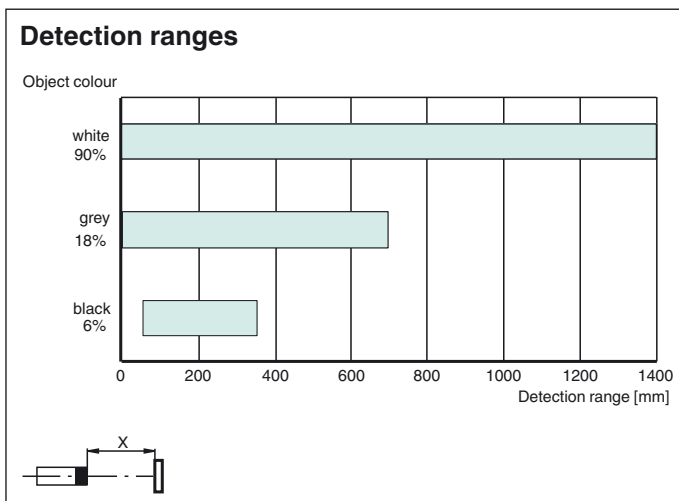
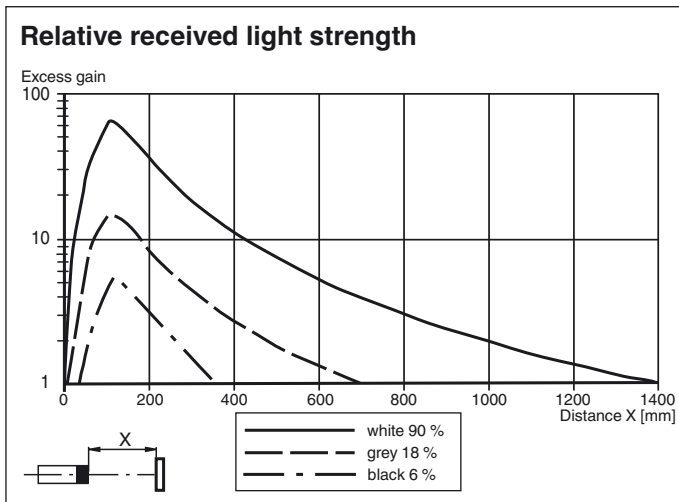
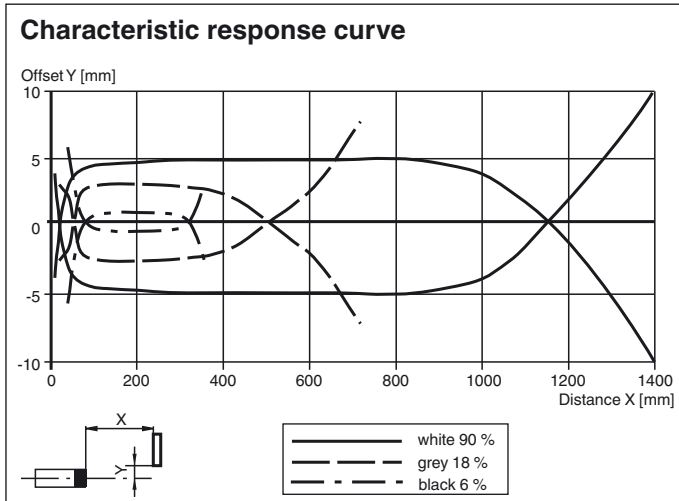
UL approval

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.

Release date: 2019-02-11 10:56 Date of issue: 2019-10-31 295670-100005_eng.xml

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

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.