



Model Number

OBT600-R200-EP-IO-V3-L

Triangulation sensor (BGS)
with 3-pin, M8 x 1 connector

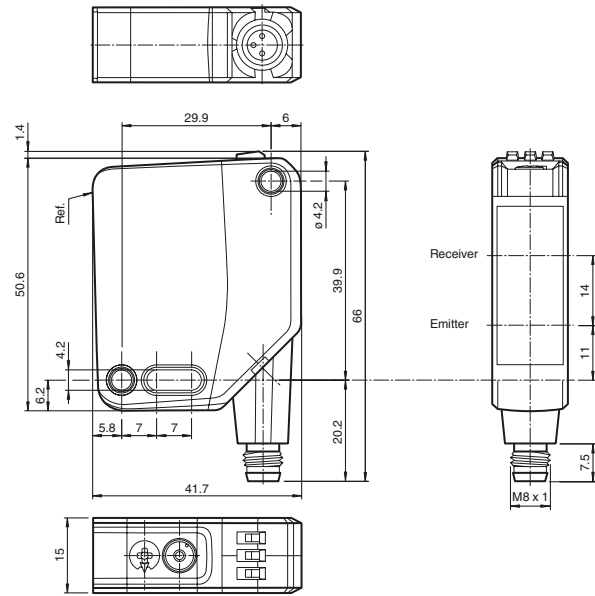
Features

- Medium design with versatile mounting options
- DuraBeam Laser Sensors - durable and employable like an LED
- Extended temperature range -40°C ... 60°C
- High degree of protection IP69K
- IO-link interface for service and process data

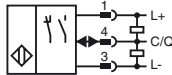
Product information

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



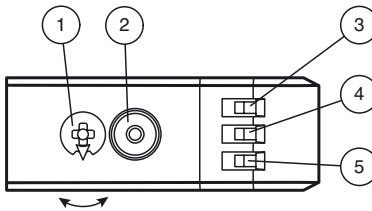
Pinout



Wire colors in accordance with EN 60947-5-2

- 1 | BN (brown)
- 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: 2018-05-22 17:12 Date of issue: 2018-09-10 295670-100223_eng.xml

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

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Technical data**General specifications**

| | |
|---------------------------------|--|
| Detection range | 40 ... 600 mm |
| Detection range min. | 40 ... 90 mm |
| Detection range max. | 40 ... 600 mm |
| Adjustment range | 90 ... 600 mm |
| Reference target | standard white, 100 mm x 100 mm |
| Light source | laser diode |
| Light type | modulated visible red light |
| Laser nominal ratings | |
| Note | LASER LIGHT , DO NOT STARE INTO BEAM |
| Laser class | 1 |
| Wave length | 680 nm |
| Beam divergence | > 5 mrad, d63 < 2,8 mm in the range of 350 mm ... 800 mm |
| Pulse length | 3 µs |
| Repetition rate | approx. 13 kHz |
| max. pulse energy | 10.4 nJ |
| Black/White difference (6%/90%) | < 5 % at 300 mm |
| Diameter of the light spot | approx. 2.5 mm at a distance of 600 mm |
| Angle of divergence | approx. 0.3 ° |
| Ambient light limit | EN 60947-5-2 : 70000 Lux |

Functional safety related parameters

| | |
|--------------------------------|-------|
| MTTF _d | 560 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 | < 15 mA at 24 V supply 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 | 0x111603 (1119747) |
| 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 | |
| Signal output | 1 push-pull (4 in 1) output, 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 | 1650 Hz |
| Response time | | 300 µs |

Conformity

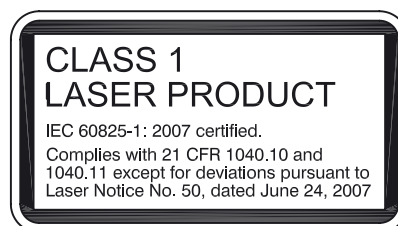
| | |
|-------------------------|-----------------|
| Communication interface | IEC 61131-9 |
| Product standard | EN 60947-5-2 |
| Laser safety | EN 60825-1:2014 |

Ambient conditions

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

Mechanical specifications

| | |
|---------------|-------|
| Housing width | 15 mm |
|---------------|-------|

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

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

V3-GM-2M-PUR

Cable socket, M8, 3-pin, PUR cable

V3-WM-2M-PUR

Cable socket, M8, 3-pin, PUR cable

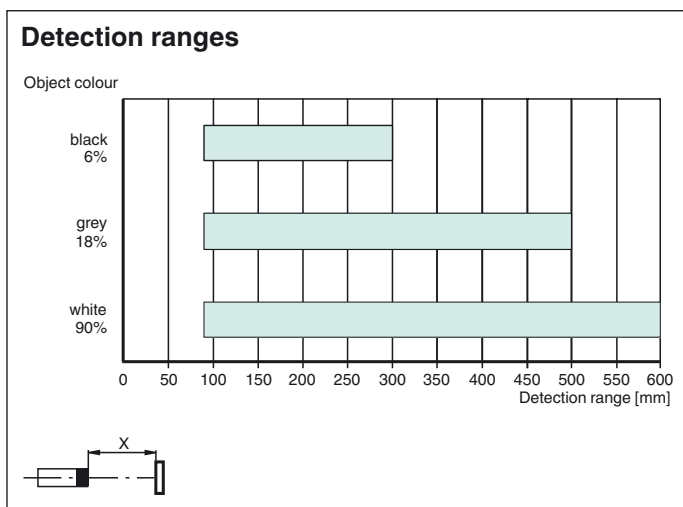
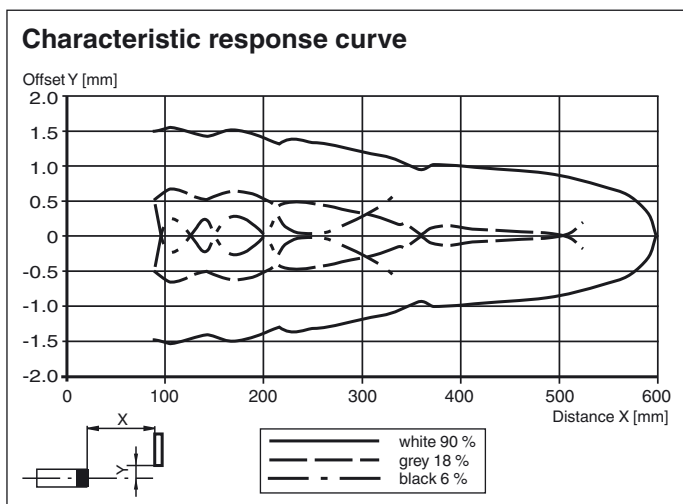
Other suitable accessories can be found at www.pepperl-fuchs.com

| | |
|----------------------|---|
| Housing height | 50.6 mm |
| Housing depth | 41.7 mm |
| Degree of protection | IP67 / IP69 / IP69K |
| Connection | Connector plug, M8 x 1, 3 pin, rotatable by 90° |
| Material | |
| Housing | PC (Polycarbonate) |
| Optical face | PMMA |
| Mass | approx. 35 g |

Approvals and certificates

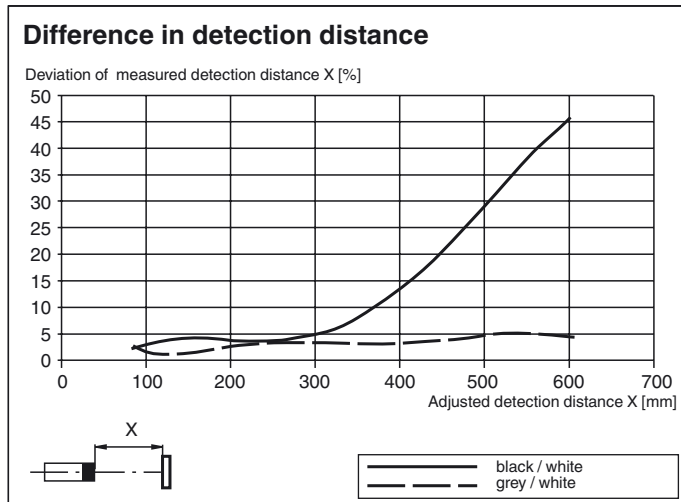
| | |
|--------------|--|
| UL approval | E87056 , cULus Listed , class 2 power supply , type rating 1 |
| CCC approval | CCC approval / marking not required for products rated ≤36 V |
| FDA approval | IEC 60825-1:2007 Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007 |

Curves/Diagrams



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To unlock the adjustment functions, rotate the sensing range/sensitivity adjuster by more than 180°.

Sensing Range/Sensitivity

To increase the sensing range/sensitivity, rotate the sensing range/sensitivity adjuster clockwise.

To reduce the sensing range/sensitivity, rotate the sensing range/sensitivity adjuster counter-clockwise.

As soon as the end of the adjustment range is reached, the signal indicator flashes at 8 Hz.

Configuring Light On/Dark On

Press the light-on/dark-on changeover switch for more than 1 second (but less than 4 seconds). "Light on/dark on" mode changes and the relevant operating indicator lights up.

If you press the light-on/dark-on changeover switch for longer than 4 seconds, the "light on/dark on" mode will switch back to the original setting. The current status is activated when the light-on/dark-on changeover switch is released.

Restoring Factory Settings

Press the light-on/dark-on changeover switch for more than 10 seconds (but less than 30 seconds) until all LEDs go out. When the light-on/dark-on changeover switch is released, the signal indicator lights up. After 5 seconds, the sensor resumes operation with the factory settings.

The adjustment functions are locked after 5 minutes of inactivity. To unlock the adjustment functions, rotate the sensing range/sensitivity adjuster again by more than 180°.