



### Model Number

**OBT60-R101-2P1-IO-IR**

Triangulation sensor (BGS)  
with 2 m fixed cable

### Features

- Miniature design with versatile mounting options
- Best background suppressor in its class
- Precision object detection, almost irrespective of the color
- Extended temperature range -40°C ... 60°C
- High degree of protection IP69K
- IO-link interface for service and process data

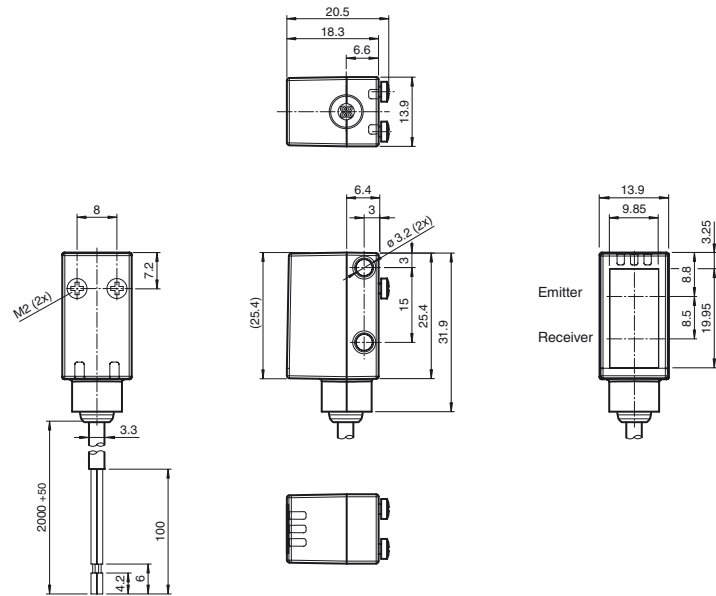
### Product information

The miniature optical sensors are the first devices of their kind to offer an end-to-end solution in a small single standard design — from thru-beam sensor through to a distance measurement device. As a result of this design, the sensors are able to perform practically all standard automation tasks.

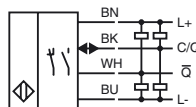
The DuraBeam laser sensors are durable and can be used in the same way as a standard sensor.

The use of Multi Pixel Technology gives the standard sensors a high level of flexibility and enables them to adapt more effectively to their operating environment.

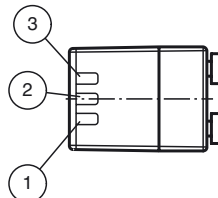
### Dimensions



### Electrical connection



### Indicators/operating means



|   |                                |
|---|--------------------------------|
| 1 | Operating indicator / dark on  |
| 2 | Signal indicator               |
| 3 | Operating indicator / light on |

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

|                                   |                                 |
|-----------------------------------|---------------------------------|
| Detection range                   | 10 ... 60 mm                    |
| Detection range max.              | 10 ... 80 mm                    |
| Background suppression            | starts from 80 mm               |
| Reference target                  | standard white, 100 mm x 100 mm |
| Light source                      | LED                             |
| Light type                        | modulated infrared light 850 nm |
| LED risk group labelling          | exempt group                    |
| Black/White difference (6 %/90 %) | approx. 3 mm                    |
| Diameter of the light spot        | approx. 4 mm at 60 mm           |
| Angle of divergence               | approx. 5 °                     |
| Ambient light limit               | EN 60947-5-2 : 40000 Lux        |

**Functional safety related parameters**

|                                |       |
|--------------------------------|-------|
| MTTF <sub>d</sub>              | 600 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  | LED yellow:<br>constantly on - object detected<br>constantly off - object not detected                                      |

**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 at 24 V supply voltage |
| Protection class       |                | III                            |

**Interface**

|                             |                                                       |
|-----------------------------|-------------------------------------------------------|
| Interface type              | IO-Link ( via C/Q = BK )                              |
| Device profile              | Smart Sensor                                          |
| 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<br>Process data output 2 Bit |
| SIO mode support            | yes                                                   |
| Device ID                   | 0x11050B (1115403)                                    |
| Compatible master port type | A                                                     |

**Output**

|                     |                                                                                                                                                            |            |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Switching type      | C/Q - Pin4: NPN normally closed / dark-on, PNP normally open / light-on, IO-Link<br>/Q - Pin2: NPN normally open / light-on, PNP normally closed / 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                                                                                                                                                          | 500 Hz     |
| Response time       | 1 ms                                                                                                                                                       |            |

**Conformity**

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

**Ambient conditions**

|                     |                                                                                                                                    |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Ambient temperature | -40 ... 60 °C (-40 ... 140 °F) , fixed cable<br>-25 ... 60 °C (-13 ... 140 °F) , movable cable not appropriate for conveyor chains |
| Storage temperature | -40 ... 70 °C (-40 ... 158 °F)                                                                                                     |

**Mechanical specifications**

|                      |                     |
|----------------------|---------------------|
| Housing width        | 13.9 mm             |
| Housing height       | 31.9 mm             |
| Housing depth        | 18.3 mm             |
| Degree of protection | IP67 / IP69 / IP69K |
| Connection           | 2 m fixed cable     |
| Material             |                     |
| Housing              | PC (Polycarbonate)  |
| Optical face         | PMMA                |
| Mass                 | approx. 36 g        |
| Cable length         | 2 m                 |

**Approvals and certificates**

|             |                                                              |
|-------------|--------------------------------------------------------------|
| UL approval | E87056 , cULus Listed , class 2 power supply , type rating 1 |
|-------------|--------------------------------------------------------------|

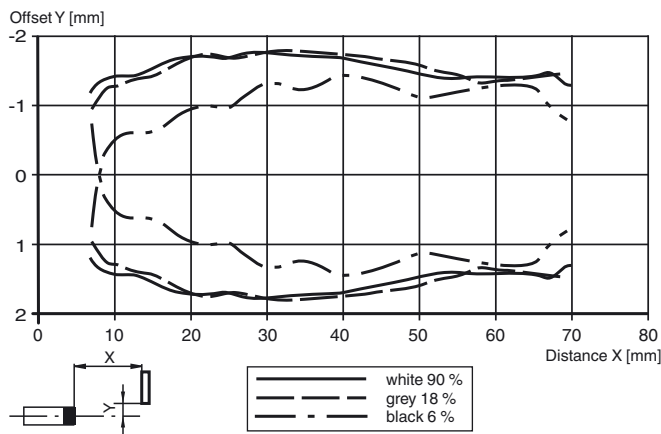
**Accessories****IO-Link-Master02-USB**

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

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

## Curves/Diagrams

### Characteristic response curve



### Detection ranges

