



Retroreflective sensor (glass)

OBG5000-R101-2P1-IO-V31



- Miniature design with versatile mounting options
- Detects transparent objects, i.e., clear glass, PET and transparent films
- Two machines in one: clear object detection or reflection operating mode with long range
- High degree of protection IP69K
- IO-Link interface for service and process data

Retroreflective sensor with polarization filter for clear object detection



IO-Link

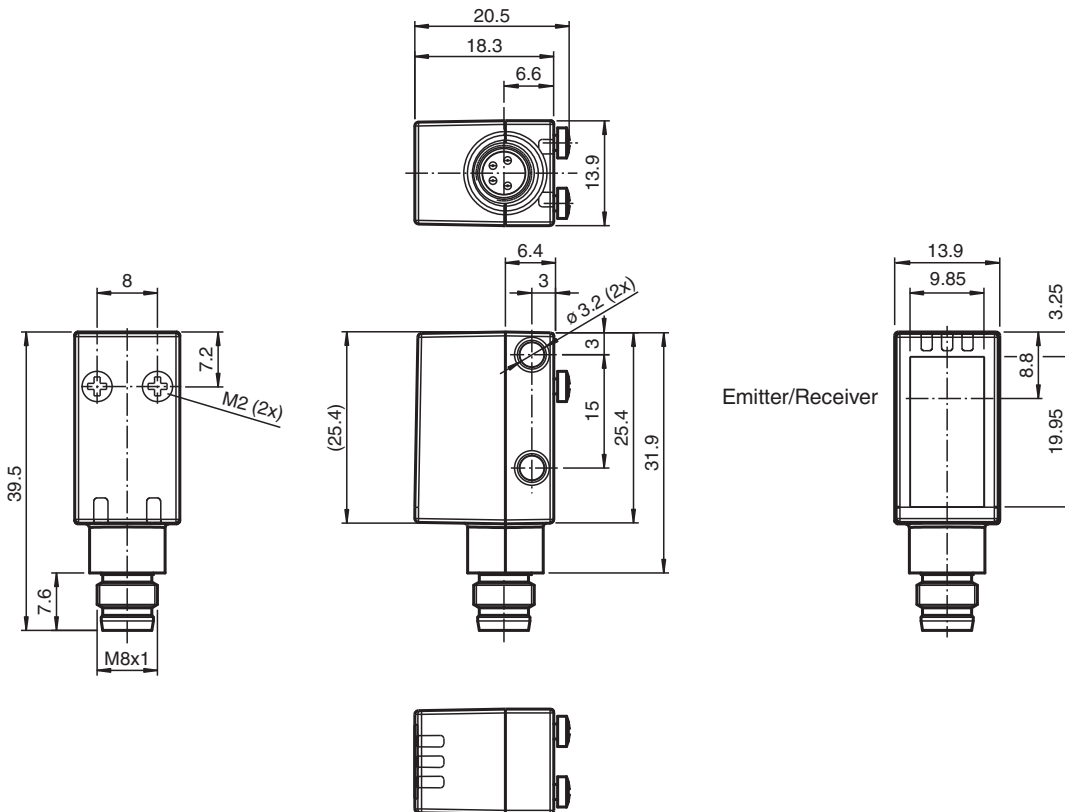
Function

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



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Technical Data

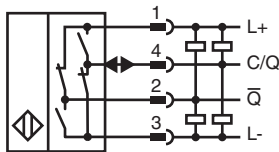
| General specifications | | |
|--------------------------------------|----------------|---|
| Effective detection range | | 0 ... 5 m |
| Reflector distance | | 0 ... 5 m |
| Threshold detection range | | 6 m |
| Reference target | | H85-2 reflector |
| Light source | | LED |
| Light type | | modulated visible red light |
| LED risk group labelling | | exempt group |
| Diameter of the light spot | | approx. 170 mm at a distance of 3.5 m |
| Opening angle | | approx. 5 ° |
| Ambient light limit | | EN 60947-5-2 |
| Functional safety related parameters | | |
| MTTF _d | | 600 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 | | Yellow LED: Permanently lit - light path clear Permanently off - object detected Flashing (4 Hz) - insufficient operating reserve |
| Electrical specifications | | |
| Operating voltage | U _B | 10 ... 30 V DC |
| Ripple | | max. 10 % |
| No-load supply current | I ₀ | < 25 mA at 24 V supply voltage |
| Protection class | | III |
| Interface | | |
| Interface type | | IO-Link (via C/Q = pin 4) |
| IO-Link revision | | 1.1 |
| Device ID | | 0x110A09 (1116681) |
| Transfer rate | | COM2 (38.4 kBit/s) |
| Min. cycle time | | 2.3 ms |
| Process data width | | Process data input 2 Bit Process data output 2 Bit |
| SIO mode support | | yes |
| 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 closed / light-on, PNP normally open / dark-on, IO-Link /Q - Pin2: NPN normally open / dark-on, PNP normally closed / 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 | 500 Hz |
| Response time | | 1 ms |
| Conformity | | |
| Communication interface | | IEC 61131-9 |
| Product standard | | EN 60947-5-2 |
| Approvals and certificates | | |
| UL approval | | E87056 , cULus Listed , class 2 power supply , type rating 1 |
| Ambient conditions | | |

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Technical Data

| | |
|----------------------------------|--------------------------------|
| Ambient temperature | -20 ... 60 °C (-4 ... 140 °F) |
| Storage temperature | -40 ... 70 °C (-40 ... 158 °F) |
| Mechanical specifications | |
| Housing width | 13.9 mm |
| Housing height | 39.5 mm |
| Housing depth | 18.3 mm |
| Degree of protection | IP67 / IP69 / IP69K |
| Connection | M8 x 1 connector, 4-pin |
| Material | |
| Housing | PC (Polycarbonate) |
| Optical face | PMMA |
| Mass | approx. 10 g |

Connection



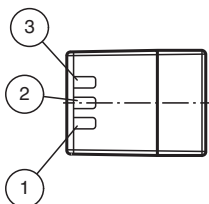
Connection Assignment



Wire colors in accordance with EN 60947-5-2

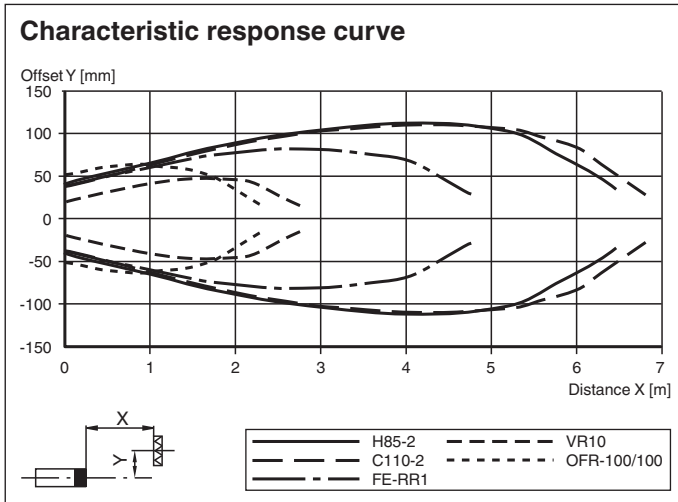
| | | |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue) |
| 4 | BK | (black) |

Assembly



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

Characteristic Curve

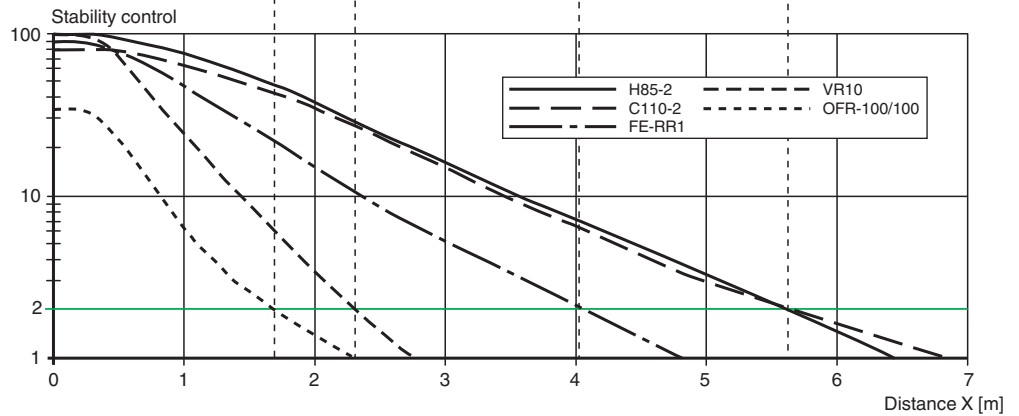


Relative received light strength

Reflector type:

| | | | |
|-------------|-----|-------|-------|
| H85-2 | 0 m | 5.6 m | 6.4 m |
| C110-2 | 0 m | 5.6 m | 6.8 m |
| FE-RR1 | 0 m | 4.0 m | 4.8 m |
| VR10 | 0 m | 2.3 m | 2.8 m |
| OFR-100/100 | 0 m | 1.7 m | 2.2 m |

□ Stability control > 2
 ■ Stability control < 2



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