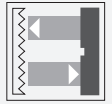




Retroreflective sensor OBR7500-R100-E5F-IO-V31



- Miniature 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

Retroreflective sensor with polarization filter



Function

The R100 series 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 entire series enables sensors to communicate via IO-Link.

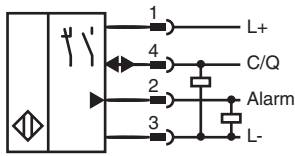
The DuraBeam laser sensors are durable and can be used in the same way as a standard sensor.

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.

Technical Data

| | | |
|-----------------------------------|-------|---|
| Control elements | | Light-on/dark-on changeover switch |
| Control elements | | sensitivity adjustment |
| Parameterization indicator | | IO link communication: green LED goes out briefly (1 Hz) |
| 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 | | 0x110212 (1114642) |
| Transfer rate | | COM 2 (38.4 kBaud) |
| 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 | | |
| Pre-fault indication output | | 1 PNP, inactive when level falls below function reserve after approx. 5 s. Immediately inactive if the beam is interrupted 4 times during the flashtime. |
| Switching type | | The switching type of the sensor is adjustable. The default setting is: C/Q - Pin4: PNP normally open / dark-on, IO-Link Alarm output - Pin2: PNP normally closed |
| Signal output | | 1 PNP, short-circuit protected, reverse polarity 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 |
| Approvals and certificates | | |
| UL approval | | E87056 , cULus Listed , class 2 power supply , type rating 1 |
| Ambient conditions | | |
| Ambient temperature | | -40 ... 60 °C (-40 ... 140 °F) |
| Storage temperature | | -40 ... 70 °C (-40 ... 158 °F) |
| Mechanical specifications | | |
| Housing width | | 11 mm |
| Housing height | | 44.5 mm |
| Housing depth | | 21.5 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 Assignment



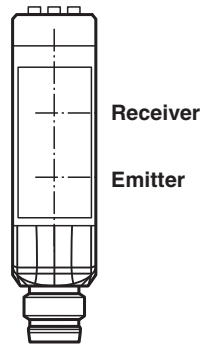
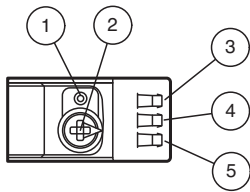
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

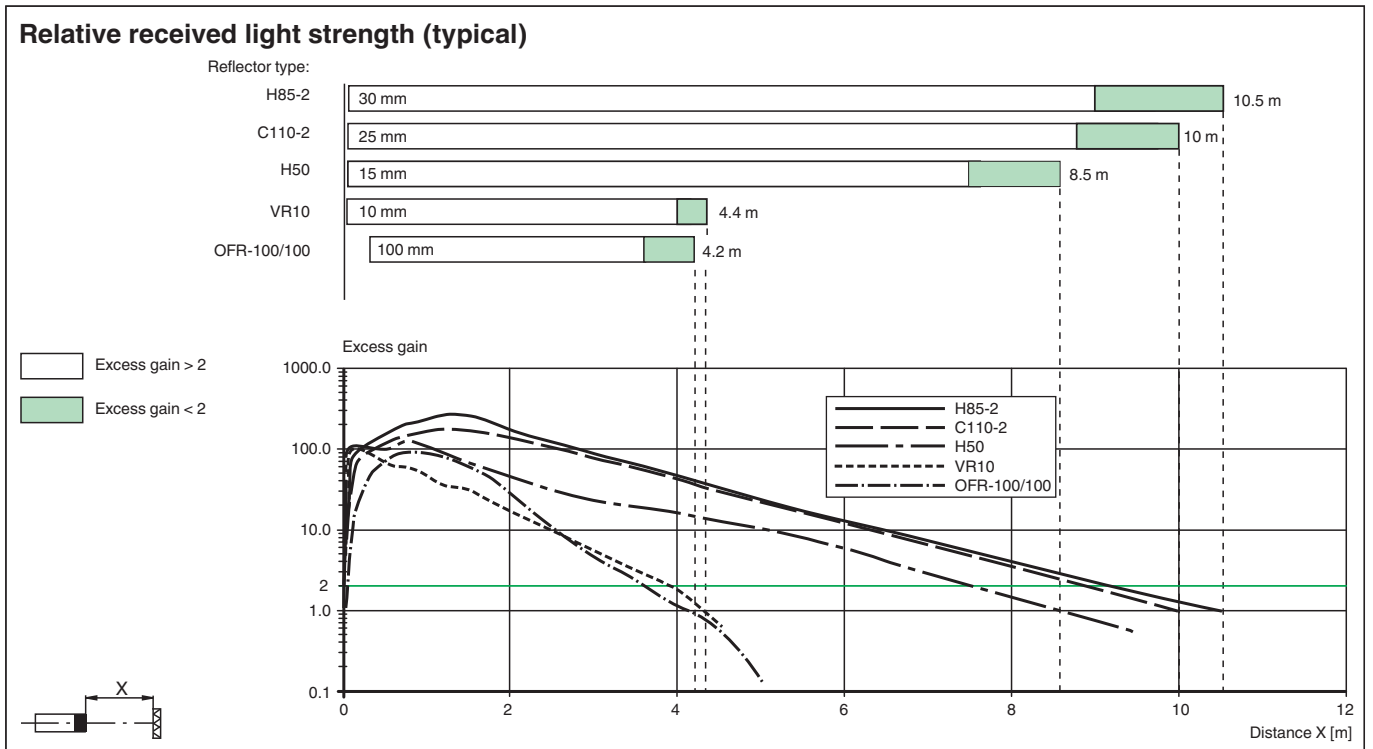
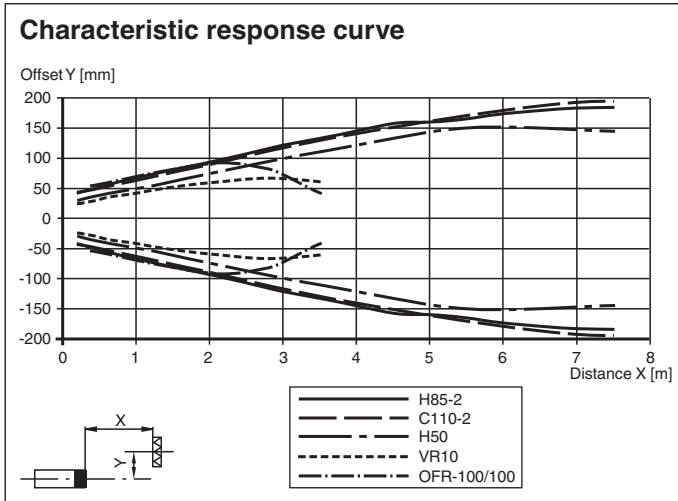
Assembly



| | |
|---|------------------------------------|
| 1 | Light-on/Dark-on changeover switch |
| 2 | Sensitivity adjuster |
| 3 | Operating indicator / dark on |
| 4 | Signal indicator |
| 5 | Operating indicator / light on |

Release date: 2020-06-11 Date of issue: 2020-06-11 Filename: 267075-100493_eng.pdf

Characteristic Curve






Accessories

| | | |
|--|--------------------|--|
| | REF-H85-2 | Reflector, rectangular 84.5 mm x 84.5 mm, mounting holes |
| | 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 |
| | REF-H33 | Reflector with screw fixing |

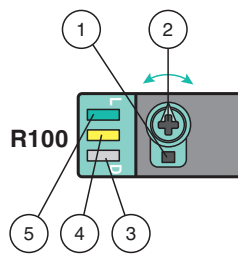
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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Accessories

| | | |
|---|-----------------------------|--|
|  | V31-WM-2M-PUR | Female cordset single-ended, M8, 4-pin, PUR cable |
|  | V31-GM-2M-PUR | Female cordset single-ended, M8, 4-pin, PUR cable |
|  | IO-Link-Master02-USB | IO-Link master, supply via USB port or separate power supply, LED indicators, M12 plug for sensor connection |

Functions and Operation



- 1 - Light-on / dark-on changeover switch
- 2 - Sensing range / sensitivity adjuster
- 3 - Operating indicator / dark on
- 4 - Signal indicator
- 5 - Operating indicator / light on

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.

Accessories

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