



Retroreflective sensor OBR15M-R201-2EP-IO-V15



- 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

Retroreflective sensor with polarization filter



Function

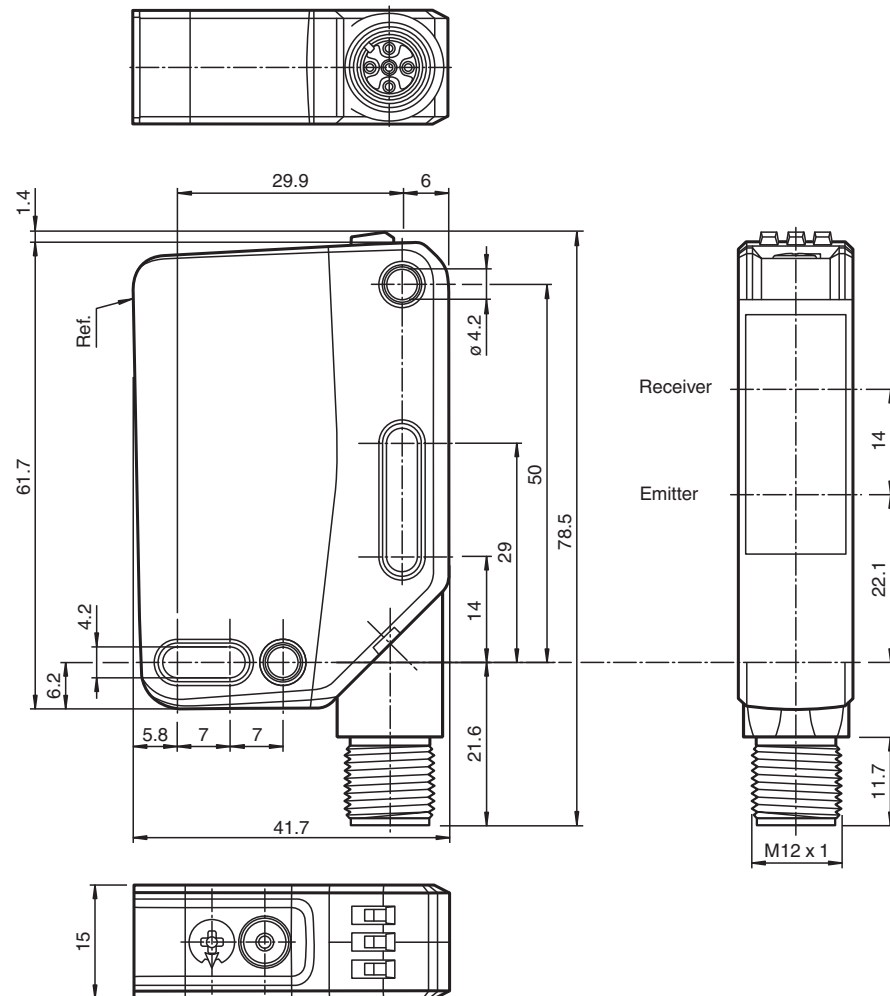
The optical sensors in the series are the first devices to offer an end-to-end solution in a medium-sized standard design – from the thru-beam sensor through to the measuring distance sensor. As a result of this design, the sensors are able to perform practically all standard automation tasks.

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



Technical Data

General specifications

Effective detection range	0 ... 15 m
Reflector distance	0.02 ... 15 m
Threshold detection range	18.5 m
Reference target	H85-2 reflector
Light source	LED
Light type	modulated visible red light
LED risk group labelling	exempt group
Polarization filter	yes
Diameter of the light spot	approx. 520 mm at a distance of 15 m
Opening angle	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)	60 %

Indicators/operating means

Operation indicator	LED green: constantly on - power on flashing (4Hz) - short circuit flashing with short break (1 Hz) - IO-Link mode
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Technical Data

Function indicator		Yellow LED: Permanently lit - light path clear Permanently off - object detected Flashing (4 Hz) - insufficient operating reserve
Control elements		Light-on/dark-on changeover switch
Control elements		sensitivity adjustment
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)
IO-Link revision		1.1
Device profile		Identification and diagnosis Smart Sensor type 2.4
Device ID		0x111213 (1118739)
Transfer rate		COM2 (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
Input		
Test input		emitter deactivation at $+U_B$
Output		
Switching type		The switching type of the sensor is adjustable. The default setting is: C/Q - Pin4: NPN normally open / dark-on, PNP normally closed / light-on, IO-Link /Q - Pin2: NPN normally closed / light-on, PNP normally open / 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_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		
EAC conformity		TR CU 020/2011
UL approval		E87056 , cULus Listed , class 2 power supply , type rating 1
CCC approval		CCC approval / marking not required for products rated ≤ 36 V
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		61.7 mm
Housing depth		41.7 mm
Degree of protection		IP67 / IP69 / IP69K
Connection		5-pin, M12 x 1 connector, 90° rotatable
Material		
Housing		PC (Polycarbonate)

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

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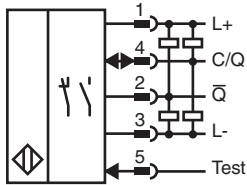
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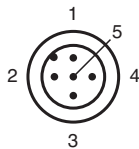
Technical Data

Optical face	PMMA
Mass	approx. 47 g

Connection



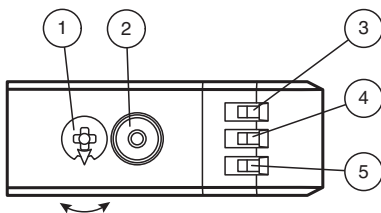
Connection Assignment



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

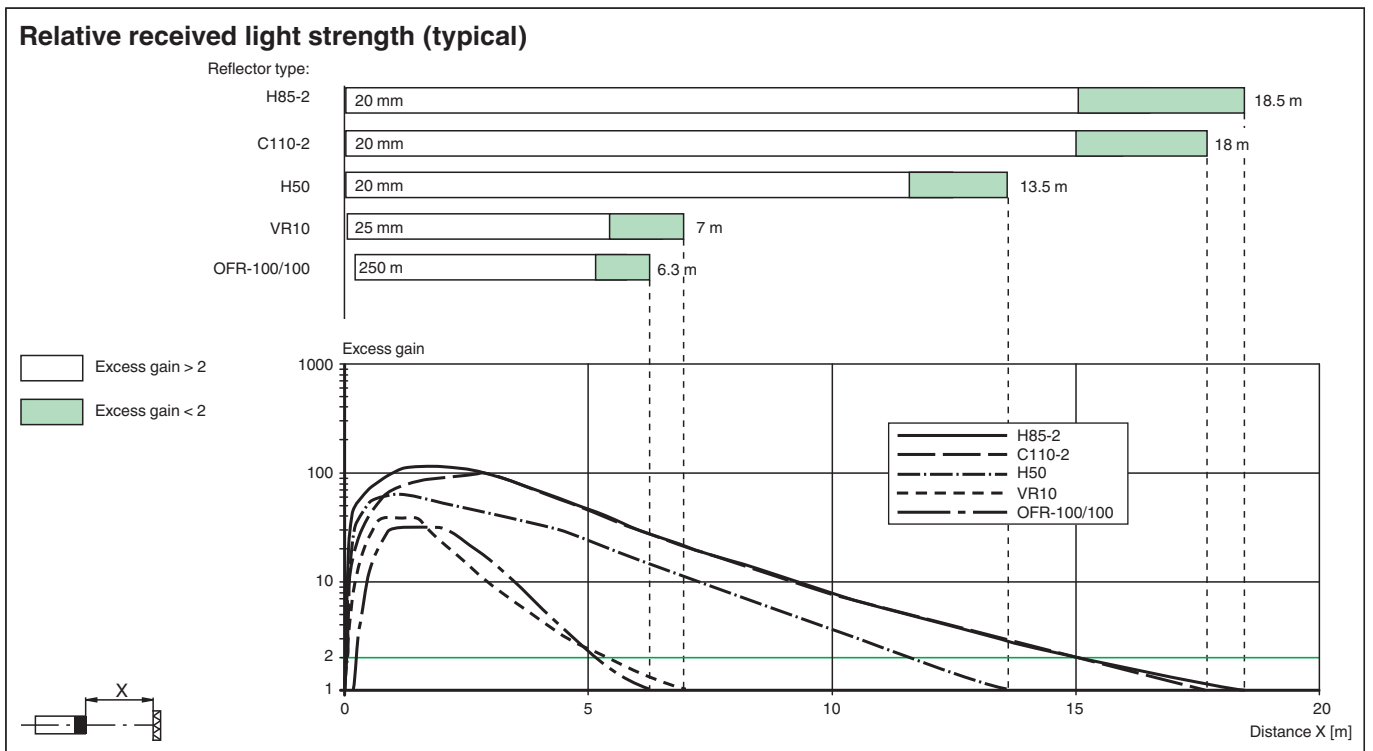
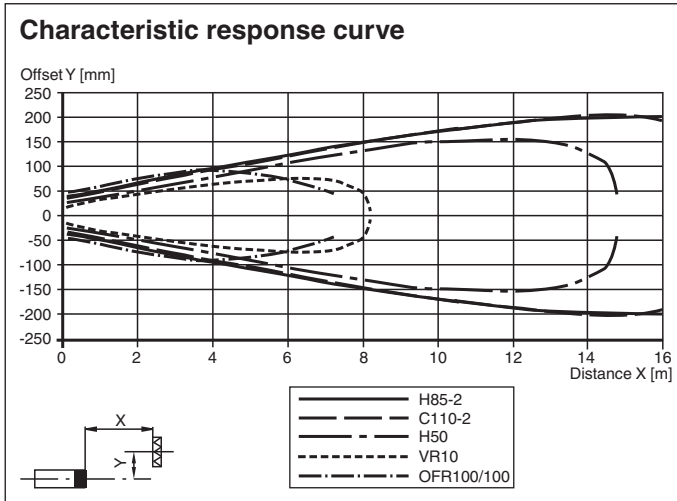
Assembly



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

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Characteristic Curve






















Accessories

	V15-W-2M-PUR	Female cordset single-ended M12 angled A-coded, 5-pin, PUR cable grey
	V15-G-2M-PUR	Female cordset single-ended M12 straight A-coded, 5-pin, PUR cable grey
	REF-H85-2	Reflector, rectangular 84.5 mm x 84.5 mm, mounting holes
	REF-C110-2	Reflector, round ø 84 mm, central mounting hole
	REF-H50	Reflector, rectangular 51 mm x 61 mm, mounting holes, fixing strap

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Accessories

	REF-VR10	Reflector, rectangular 60 mm x 19 mm, mounting holes
	OFR-100/100	Reflective tape 100 mm x 100 mm
	V1-G-2M-PUR	Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable grey
	V1-W-2M-PUR	Female cordset single-ended M12 angled A-coded, 4-pin, PUR cable grey
	OMH-RL31-02	Mounting bracket narrow
	OMH-RL31-03	Mounting bracket narrow
	OMH-RL31-04	Mounting aid for round steel \varnothing 12 mm or sheet 1.5 mm ... 3 mm
	OMH-RL31-07	Mounting bracket including adjustment
	OMH-RL31-08	Mounting aid for round steel \varnothing 12 mm or sheet 1.5 mm ... 3 mm
	OMH-R20x-Quick-Mount	Quick mounting accessory
	ICE2-8IOL-G65L-V1D	EtherNet/IP IO-Link master with 8 inputs/outputs
	ICE3-8IOL-G65L-V1D	PROFINET IO IO-Link master with 8 inputs/outputs
	ICE2-8IOL-K45S-RJ45	EtherNet/IP IO-Link master with 8 inputs/outputs, DIN rail, screw terminal
	ICE3-8IOL-K45P-RJ45	PROFINET IO IO-Link master with 8 inputs/outputs, DIN rail, push-in terminals
	ICE3-8IOL-K45S-RJ45	PROFINET IO IO-Link master with 8 inputs/outputs, DIN rail, screw terminal
	IO-Link-Master02-USB	IO-Link master, supply via USB port or separate power supply, LED indicators, M12 plug for sensor connection
	ICE1-8IOL-G30L-V1D	Ethernet IO-Link module with 8 inputs/outputs
	ICE1-8IOL-G60L-V1D	Ethernet IO-Link module with 8 inputs/outputs
	ICE2-8IOL-K45P-RJ45	EtherNet/IP IO-Link master with 8 inputs/outputs, DIN rail, push-in connectors

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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.

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.