



Model Number

OBE25M-R201-S2EP-IO

Thru-beam sensor (pair)
with fixed cable

Features

- Medium design with versatile mounting options
- IO-link interface for service and process data
- Various frequencies for avoiding mutual interference (cross-talk immunity)
- Extended temperature range -40°C ... 60°C
- High degree of protection IP69K

Product information

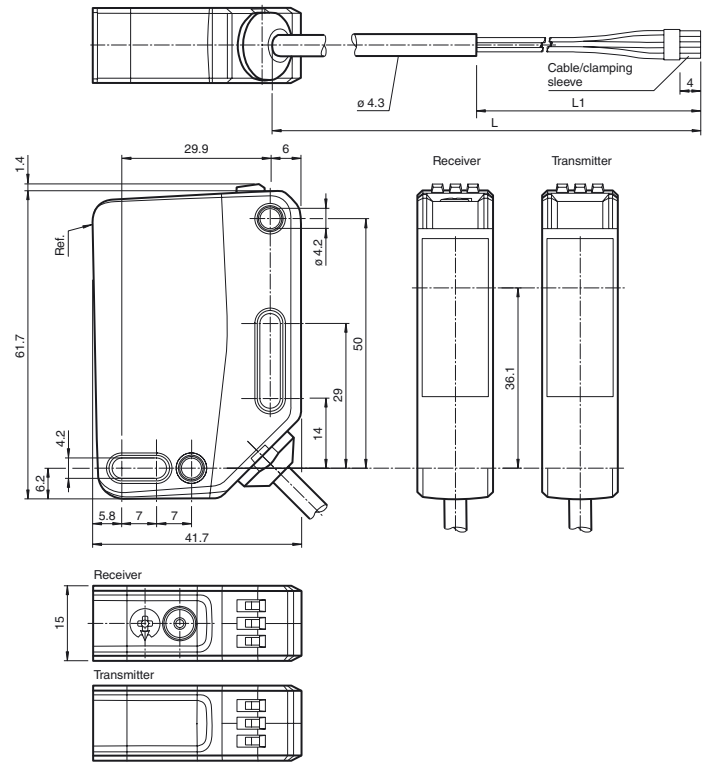
The optical sensors in the series are the first devices to offer an end-to-end solution in a medium-sized standard design—from the thru-beam sensor through to the measuring distance sensor. As a result of this design, the sensors are able to perform practically all standard automation tasks.

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

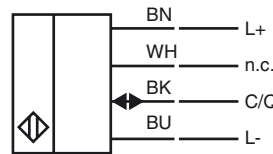
The DuraBeam laser sensors are durable and can be used in the same way as a standard sensor.

Multi Pixel Technology (MPT) ensures that the standard sensors are flexible and can be adapted to the application environment.

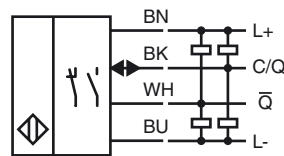
Dimensions



Electrical connection emitter

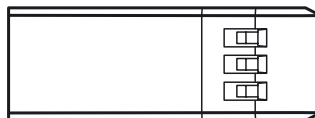


Electrical connection receiver



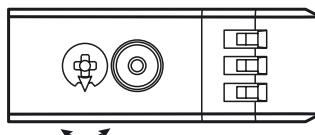
Indicators/operating means

Emitter



1	Operating indicator
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Receiver



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

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Technical data**System components**

Emitter	OBE25M-R201-S-IO
Receiver	OBE25M-R201-2EP-IO

General specifications

Effective detection range	0 ... 25 m
Threshold detection range	33 m
Light source	LED
Light type	modulated visible red light
LED risk group labelling	exempt group
Alignment aid	LED red (in receiver lens) illuminated constantly: beam is interrupted, flashes: reaching switching point, off: sufficient stability control
Diameter of the light spot	approx. 850 mm at a distance of 25 m
Angle of divergence	approx. 2 °
Ambient light limit	EN 60947-5-2 : 40000 Lux

Functional safety related parameters

MTTF _d	462 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
Function indicator	Yellow LED: Permanently lit - light path clear Permanently off - object detected Flashing (4 Hz) - insufficient operating reserve
Control elements	Receiver: light/dark switch
Control elements	Receiver: sensitivity adjustment

Electrical specifications

Operating voltage	U _B	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I ₀	Emitter: ≤ 15 mA Receiver: ≤ 15 mA at 24 V Operating voltage
Protection class		III

Interface

Interface type	IO-Link (via C/Q = BK)
Device profile	Identification and diagnosis Smart Sensor: Receiver: type 2.4 Emitter: -
Transfer rate	COM 2 (38.4 kBaud)
IO-Link Revision	1.1
Min. cycle time	2.3 ms
Process data width	Emitter: Process data input: 0 bit Process data output: 1 bit Receiver: Process data input: 2 bit Process data output: 2 bit
SIO mode support	yes
Device ID	Emitter: 0x111411 (1119249) Receiver: 0x111311 (1118993)
Compatible master port type	A

Input

Test input	emitter deactivation at +U _B
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Output

Switching type	The switching type of the sensor is adjustable. The default setting is: C/Q - BK: NPN normally open / dark-on, PNP normally closed / light-on, IO-Link /Q - WH: 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

Ambient conditions**Accessories****IO-Link-Master02-USB**

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

OMH-RL31-02

Mounting bracket narrow

OMH-RL31-03

Mounting bracket narrow

OMH-RL31-04

Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

OMH-RL31-07

Mounting bracket including adjustment

OMH-R20x-Quick-Mount

Quick mounting accessory

Other suitable accessories can be found at

Ambient temperature	-40 ... 60 °C (-40 ... 140 °F) , fixed cable -20 ... 60 °C (-4 ... 140 °F) , movable cable not appropriate for conveyor chains
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)

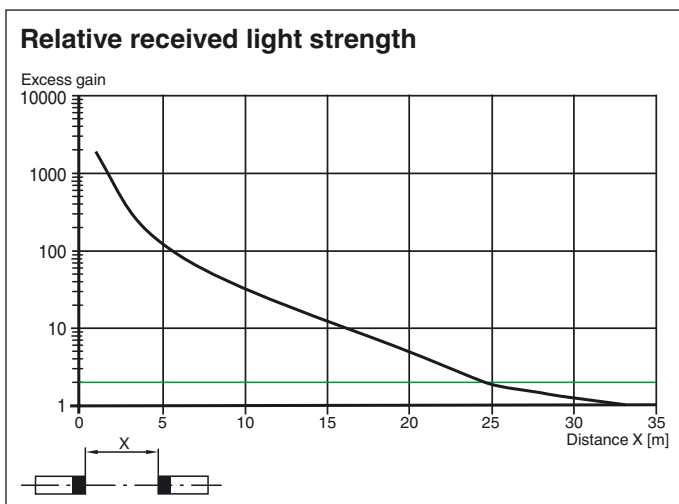
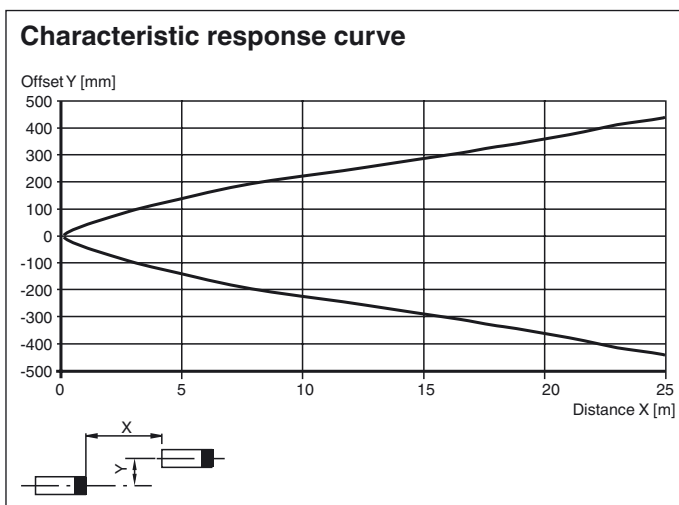
Mechanical specifications

Housing width	15 mm
Housing height	61.7 mm
Housing depth	41.7 mm
Degree of protection	IP67 / IP69 / IP69K
Connection	2 m fixed cable
Material	
Housing	PC (Polycarbonate)
Optical face	PMMA
Mass	Emitter: approx. 83 g receiver: approx. 83 g
Cable length	2 m

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

Curves/Diagrams



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.

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

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.