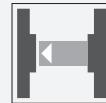


Thru-beam sensor (pair) OBE25M-R201-SEP-IO-0,3M-V3



- 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



IO-Link

Function

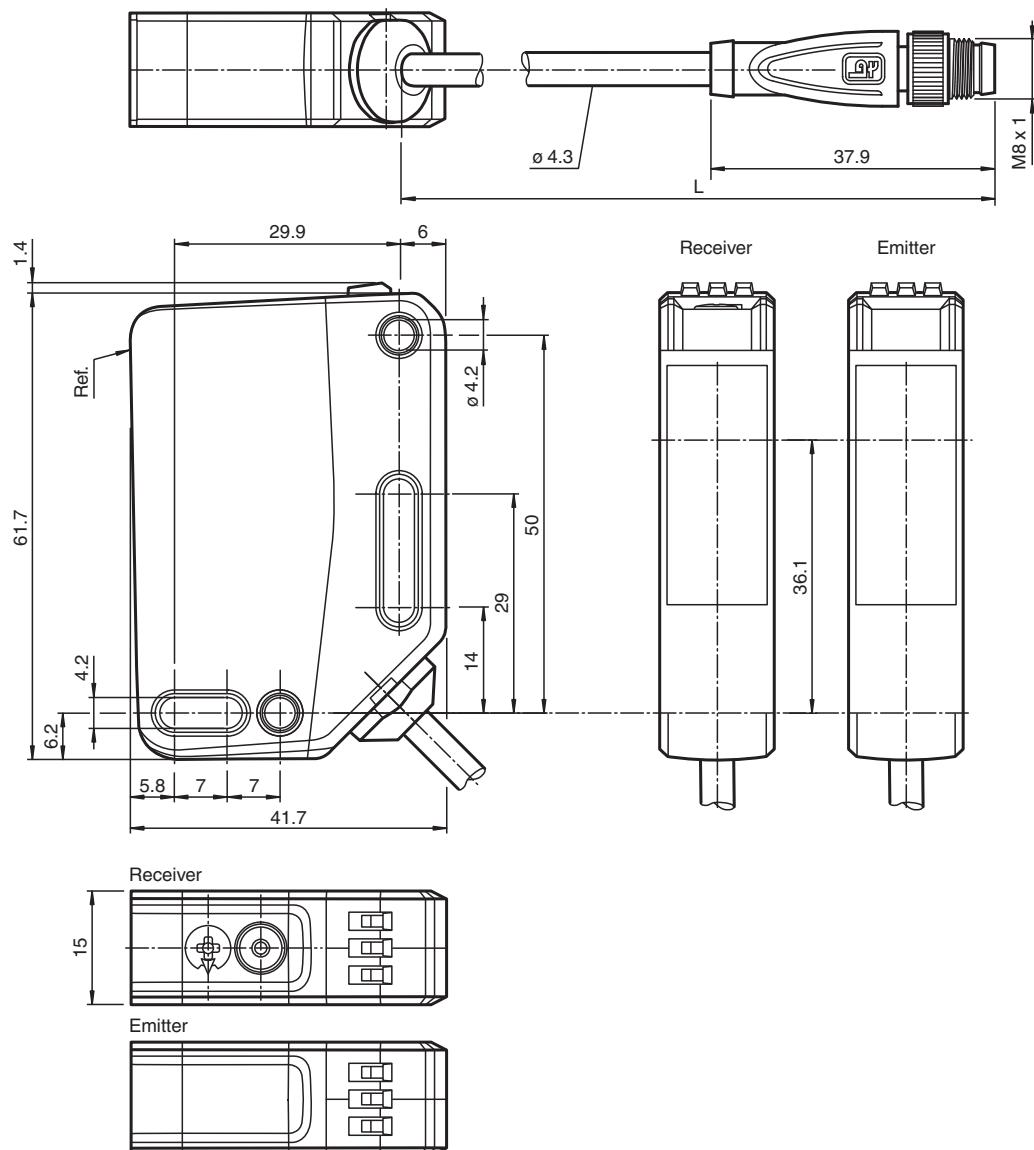
The optical sensors in the series are the first devices to offer an end-to-end solution in a medium-sized standard design – from the thru-beam sensor through to the measuring distance sensor. As a result of this design, the sensors are able to perform practically all standard automation tasks.

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

System components

Emitter	OBE25M-R201-S-IO-0,3M-V3
Receiver	OBE25M-R201-EP-IO-0,3M-V3

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
Opening angle	approx. 2 °
Ambient light limit	EN 60947-5-2 : 40000 Lux

Functional safety related parameters

MTTF _d	462 a
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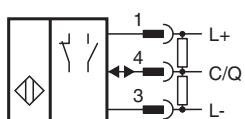
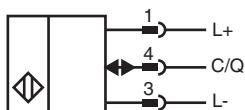
Technical Data

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 = pin 4)	
IO-Link revision	1.1	
Device profile	Identification and diagnosis Smart Sensor: Receiver: type 2.4 Emitter: -	
Device ID	Emitter: 0x111411 (1119249) Receiver: 0x111311 (1118993)	
Transfer rate	COM2 (38.4 kBit/s)	
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	
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	
Signal output	1 push-pull (4 in 1) output, 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		
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), fixed cable -20 ... 60 °C (-4 ... 140 °F), movable cable not appropriate for conveyor chains	

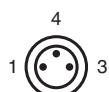
Technical Data

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	300 mm fixed cable with M8 x 1, 3-pin connector
Material	
Housing	PC (Polycarbonate)
Optical face	PMMA
Mass	Emitter: approx. 51 g receiver: approx. 51 g
Cable length	0.3 m

Connection



Connection Assignment

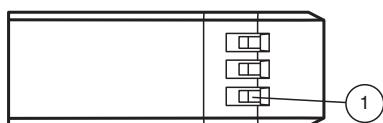


Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)

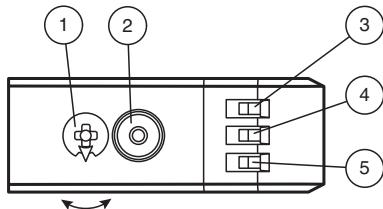
Assembly

Emitter



1 Operating indicator

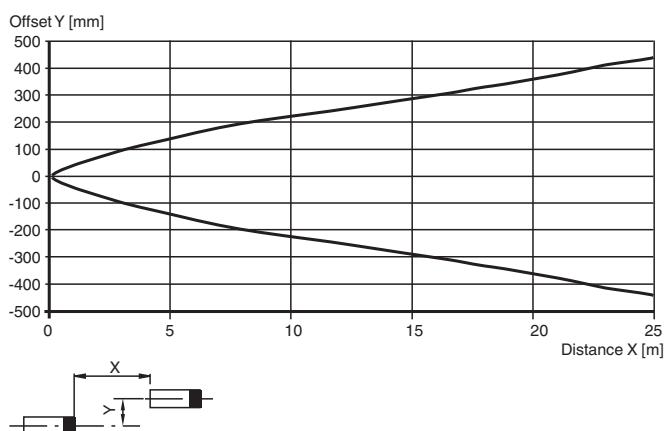
Receiver



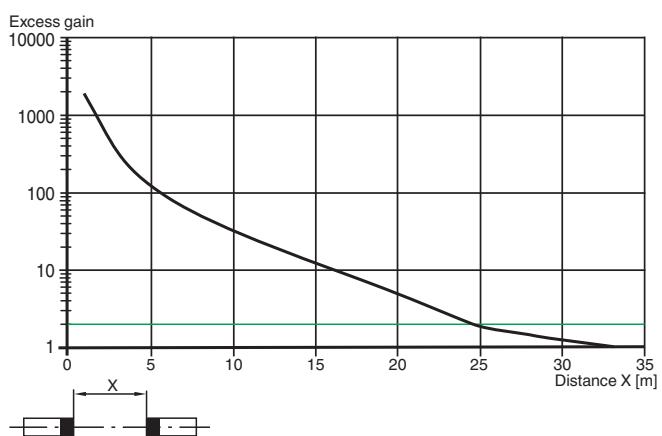
1	Sensitivity adjustment	
2	Light-on / dark-on changeover switch	
3	Operating indicator / dark on	GN
4	Signal indicator	YE
5	Operating indicator / light on	GN

Characteristic Curve

Characteristic response curve



Relative received light strength



Commissioning

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.

Commissioning

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

	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-RL31-08	Mounting aid for round steel ø 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
	V3-GM-2M-PUR	Female cordset single-ended M8 straight A-coded, 3-pin, PUR cable grey
	V3-WM-2M-PUR	Female cordset single-ended M8 angled A-coded, 3-pin, PUR cable grey