



Thru-beam sensor (pair) OBE40M-R200-SEP-IO-0,3M-V3-L



- Medium design with versatile mounting options
- DuraBeam Laser Sensors durable and employable like an LED
- IO-Link interface for service and process data
- Various frequencies for avoiding mutual interference (cross-talk immunity)
- Extended temperature range -40 °C ... 60 °Ċ
- High degree of protection IP69K

Laser thru-beam sensor











Function

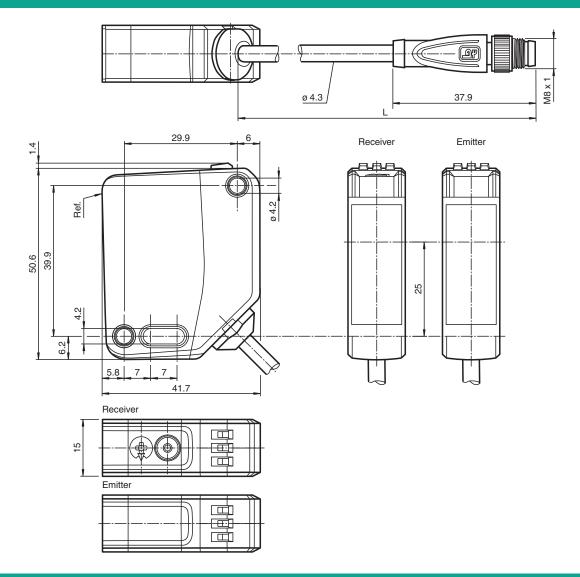
The optical sensors in the series are the first devices to offer an end-to-end solution in a medium-sized standard design – from the thru-beam sensor through to the measuring distance sensor. As a result of this design, the sensors are able to perform practically all standard automation

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.

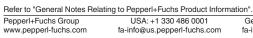
Dimensions



Technical Data

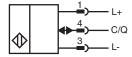
System components	
Emitter	OBE40M-R200-S-IO-0,3M-V3-L
Receiver	OBE40M-R200-EP-IO-0,3M-V3-L
General specifications	
Effective detection range	0 40 m
Threshold detection range	50 m
Light source	laser diode
Light type	modulated visible red light
Laser nominal ratings	
Note	LASER LIGHT , DO NOT STARE INTO BEAM
Laser class	1
Wave length	680 nm
Beam divergence	> 5 mrad ; d63 < 2 mm in the range of 250 mm 750 mm
Pulse length	1.6 µs
Repetition rate	max. 17.6 kHz
max. pulse energy	9.6 nJ
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. 80 mm at a distance of 40 m

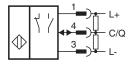
Operating voltage U _b 10 30 V DC Ripple max. 10 % No-load supply current I _b Emitter: ≤ 15 mA at 24 V Operating voltage Protection class III miterface Voltak (via C/Q = pin 4) IO-Link revision I 1.1 Device profile Identification and diagnosis Smard Sensor:	Technical Data		
Ambient light limit EN 60947-5-2 : 40000 Lux Unctional safety related parameters William (Mission Time (Tw)) 20 a Mission Time (Tw) 20 a Common (Mission Time (Tw)) Diagnostic Coverage (DC) 60 % Indicators/Operating means LED green: Constainty on -power on on	Opening angle		approx. 0.12 °
### Add 0 a MITF₁			••
MTTF, Mission Time (T _M) 440 a Diagnostic Coverage (DC) 60 % Operation indicator LED green: constantly on - power on flashing (41-2) - short circult flashing with short broak (11-2) - short circult flashing (41-2) - short circult specifications Control elements Receiver: sensitivity adjustment Electrical specifications Up 10 - 30 V DC Ripple max. 10 % 10 - 30 V DC Ripple max. 10 % 10 - 30 V DC No-load supply current Ig Emitter, s 13 mA Receiver: s 15 mA at 24 V Operating voltage III Interface type IO-Link (via C/Q = pin 4) IO-Link revision 1.1 Device profile Emitter, s 13 mA Flacewer: pc 2-4 Emitter Emitter 1.1 Device ID Emitter or 11-1402 (1119234) Flacewer: pc 2-4 Emitter Emitter Process data width Froses data width	Functional safety related parameters		
Diagnostic Overage (DC) 60 %			440 a
Care and indicator Care an	Mission Time (T _M)		20 a
Care and indicator Care an	Diagnostic Coverage (DC)		60 %
Operation indicator LED green: constantly on - power on fleashing (AHz) - short circuit (1zb) - 10-Link mode Function indicator Yellow LED: Permanently it - light path clear Permanently of - object detected reparating reserve Control elements Receiver: light/dark switch Control elements Receiver: sensitivity adjustment Electrical specifications Image: sensitivity adjustment Operating voltage Up 10 30 V DC Ripple max. 10 % 10 30 V DC No-load supply current Ip Emitter 3.13 mA Receiver 3.1 mA Interface Immediate 10 V DC 10 V DC Immediate 10 V DC Interface 10 V DC Immediate 10 V DC Immediate 10 V DC Immediate 10 V DC Device profile Sentitication and diagnosis Sent 11 V DC Sent 11 V DC Section 11 V DC Device profile Lemitter 0x 11 V DC Lemitter 0x 11 V DC Sent 11 V DC Device profile Lemitter 0x 11 V DC Lemitter 0x 11 V DC			
Permanenty lit - light path clear			constantly on - power on flashing (4Hz) - short circuit
Receiver: sensitivity adjustment Receiver: sensitivity adjustment	Function indicator		Permanently lit - light path clear Permanently off - object detected
Sector	Control elements		Receiver: light/dark switch
Operating voltage Un 10 30 V DC Ripple max. 10 % max. 10 % No-load supply current Interface I 3 mA Receiver. ≤ 15 mA at 24 V Operating voltage Protection class Interface V I Interface type Interface V I IO-Link revision Interface I I Device profile Identification and diagnosis Smart Sensor. Smart Sensor. Smart Sensor. Process of Interface V I I I I I I I I I I I I I I I I I I	Control elements		Receiver: sensitivity adjustment
Ripple	Electrical specifications		
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Receiver: ≤ 15 mA at 24 V Operating voltage	Ripple		max. 10 %
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Device profile	nterface		
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Smart Sensor: Receiver: type 2.4 Emitter: 0x111402 (1119234) Receiver: (0x111302 (1118978) Transfer rate COM2 (38.4 kBit/s) Comess data width Process data input: 0 bit Process data output: 1 bit Receiver: Process data output: 2 bit	IO-Link revision		1.1
Receiver: 0x111302 (1118978) Transfer rate	Device profile		Smart Sensor: Receiver: type 2.4
Min. cycle time Process data width Process data width Emitter: Process data input: 0 bit Process data output: 1 bit Receiver: Process data output: 2 bit Proces data	Device ID		
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Test input Dutput 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 Ud ≤ 1.5 V DC Switching frequency f 1250 Hz Response time 0.4 ms Conformity Communication interface Product standard emitter deactivation at +UB mitter deactivation at +UB classes default setting is: C/Q - Pin4: NPN normally open / dark-on, PNP normally closed / light-on, IO-Link 1 push-pull (4 in 1) output, short-circuit protected, reverse polarity protected, overvoltage protected max. 30 V DC max. 30 V DC max. 100 mA , resistive load U-12 and DC-13 Voltage drop Ud ≤ 1.5 V DC Switching frequency f 1250 Hz Response time 0.4 ms Conformity Communication interface IEC 61131-9 Product standard	Compatible master port type		A
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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 1250 Hz Response time 0.4 ms Conformity Communication interface IEC 61131-9 Product standard EN 60947-5-2	· ·		overvoltage protected
Usage category DC-12 and DC-13 Voltage drop U _d \leq 1.5 V DC Switching frequency f 1250 Hz Response time 0.4 ms Conformity Communication interface IEC 61131-9 Product standard EN 60947-5-2			
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Product standard EN 60947-5-2	Conformity		
	Communication interface		IEC 61131-9
Laser safety EN 60825-1:2014	Product standard		EN 60947-5-2
	Laser safety		EN 60825-1:2014



Technical Data	
UL approval	E87056 , cULus Listed , class 2 power supply , type rating 1
CCC approval	CCC approval / marking not required for products rated ≤36 V
FDA approval	IEC 60825-1:2007 Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007
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
Storage temperature	-40 70 °C (-40 158 °F)
Mechanical specifications	
Housing width	15 mm
Housing height	50.6 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. 41 g receiver: approx. 41 g
Cable length	0.3 m

Connection





Connection Assignment



Wire colors in accordance with EN 60947-5-2

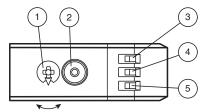
1 BN (brown) 3 BU (blue) 4 BK (black)

Emitter



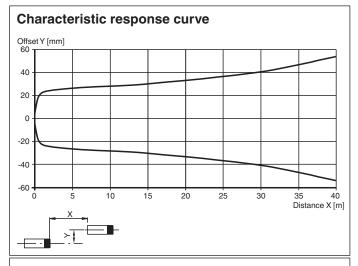
1 Operating indicator

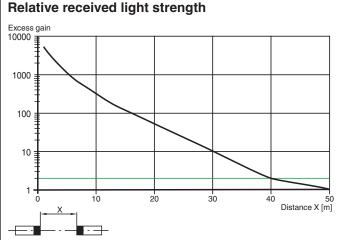
Receiver



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





Safety Information



CLASS 1 LASER PRODUCT

IEC 60825-1: 2007 certified. Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

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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.

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

61	V3-GM-2M-PUR	Female cordset single-ended M8 straight A-coded, 3-pin, PUR cable grey
West.	OMH-MLV12-HWG	Mounting bracket for series MLV12 sensors
	OMH-R200-01	Mounting aid for round steel ø 12 mm or sheet 1.5 mm 3 mm
E	OMH-MLV12-HWK	Mounting bracket for series MLV12 sensors
77	OMH-R20x-Quick-Mount	Quick mounting accessory
61	V3-WM-2M-PUR	Female cordset single-ended M8 angled A-coded, 3-pin, PUR cable grey

Accessories 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