

Switching diffuse mode sensor with measurement core technology, 150 mm detection range, red laser light, laser class 1, IO-Link, 2 x push-pull output, 2 m fixed cable

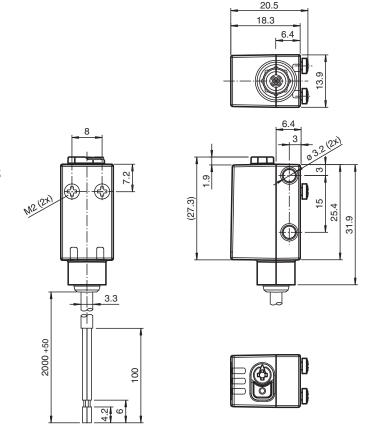


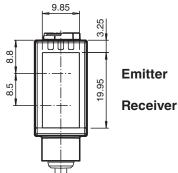
Function

The 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 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.

Dimensions





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

Pepperl+Fuchs Group www.pepperl-fuchs.com

Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 267075-100167_eng.pdf

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Technical Data

Detection range8150 mmDetection range min.68150 mmAdjustment range8150 mmAdjustment range20150 mmBeference target120150 mmLight source1Iaser diodeLight source1Iaser diodeLight source1Iaser diodeLight source1Iaser diodeLight source1Iaser diodeLight source600 mmIaser diodeLaser cominal ratings1Iaser diodeWave length600 mmSourceBaser diode divergence3 µsapprox. 3 kH2Puise length3 µsapprox. 3 kH2Repetition rate3 µsapprox. 2 mm at a distance of 150 mmBaser while divergence (8 ½00 %)143 % at 150 mmDenoter of the light spot3 paprox. 1 %Denoter of the light spot3 paprox. 2 mm at a distance of 150 mmDenoter of the light spot3 paprox. 2 mm at a distance of 150 mmDenoter of the light spot50 aDiagnostic Coverage (DC)50 aDiagnostic Coverage (DC)50 aDiagnostic Coverage (DC)5 stap rotary switch for operating modes selectionDiagnostic Coverage (DC)5 stap rotary switch for operating modes selectionDiagnostic Coverage (DC)5 stap rotary switch for operating modes selectionDiagnostic Coverage (DC)5 stap rotary switch for operating modes selectionDiagnostic Coverage (DC)5 stap rotary switch for operating modes selectionDiagnostic Covera	General specifications		
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Repetition rate approx. 3 kHz max. pulse energy 15.2 nJ Black-while difference (6 %60 %) < 3 % at 50 mm	÷		-
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Operating voltage UB 1030 V DC Ripple max. 10 % No-load supply current I0 <20 mA at 24 V supply voltage	Control elements		5-step rotary switch for operating modes selection
Ripple max. 10 % No-load supply current Io Protection class III Interface III Interface type IO-Link (via C/Q = BK) IO-Link revision 1.1 Device profile Smart Sensor Device ID Ox110802 (1116162) Transfer rate COM2 (38.4 kBit/s) Min. cycle time 2.3 ms Process data width Yes SlO mode support yes Advectored between type A Detuty Yes Subthing type The default setting is: C/2 - BK: NPN normally cosed, IO-Link Q/2 - WH: NPN normally cosed, IO-Link Q/2 - WH: NPN normally cosed Signal output 2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected,	Electrical specifications		
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Signal output 2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected, overvoltage protected	Switching type		C/Q - BK: NPN normally open, PNP normally closed, IO-Link
	Signal output		

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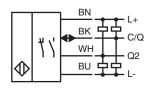
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Technical Data

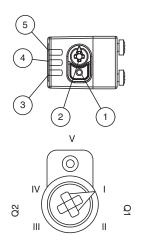
Switching voltage		max. 30 V DC
Switching current		max. 100 mA , resistive load
Usage category		DC-12 and DC-13
Voltage drop	U_d	≤ 1.5 V DC
Switching frequency	f	217 Hz
Response time		2.3 ms
Conformity		
Communication interface		IEC 61131-9
Product standard		EN 60947-5-2
Laser safety		EN 60825-1:2014
Approvals and certificates		
UL approval		E87056 , cULus Listed , class 2 power supply , type rating 1
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 -25 60 °C (-13 140 °F) , movable cable not appropriate for conveyor chains
Storage temperature		-40 70 °C (-40 158 °F)
Mechanical specifications		
Housing width		13.9 mm
Housing height		33.8 mm
Housing depth		18.3 mm
Degree of protection		IP67 / IP69 / IP69K
Connection		2 m fixed cable
Material		
Housing		PC (Polycarbonate)
Optical face		PMMA
Mass		approx. 36 g
Cable length		2 m

Connection



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

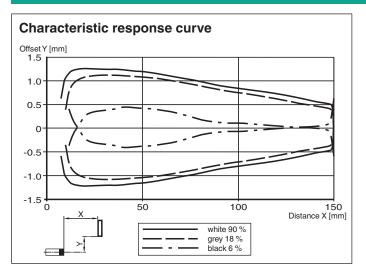
Assembly

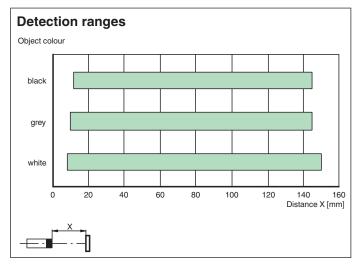


1	TEACH-IN button
2	Mode rotary switch
3	Switch output indicator Q2
4	Switch output indicator Q1
5	Operating indicator

Ι	Switch output 1 / switch point B
Ш	Switch output 1 / switch point A
Ш	Switch output 2 / switch point A
IV	Switch output 2 / B
V	Keylock

Characteristic Curve



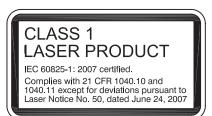


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Refer to "General Notes Relating to Pepperl+Fuchs Product Information"

Safety Information





Accessories

	OMH-R101	Mounting Clamp
	OMH-R101-Front	Mounting Clamp
	OMH-4.1	Mounting Clamp
×.	OMH-ML6	Mounting bracket
	OMH-ML6-U	Mounting bracket
WE	OMH-ML6-Z	Mounting bracket
and the second	ICE2-8IOL-G65L-V1D	EtherNet/IP IO-Link master with 8 inputs/outputs
Ir	ICE3-8IOL-G65L-V1D	PROFINET IO IO-Link master with 8 inputs/outputs
and the second	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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Accessories

Acces	Series	
	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
Contraction of the second seco	IO-Link-Master02-USB	IO-Link master, supply via USB port or separate power supply, LED indicators, M12 plug for sensor connection

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

Teach-In

You can use the rotary switch to select the relevant switching threshold A and/or B for teaching in for switch signal Q1 or Q2. The yellow LEDs indicate the current state of the selected output.

To store a threshold value, press and hold the "TI" button until the yellow and green LEDs flash in phase (approx. 1 s). Teach-In starts when the "TI" button is released.

Successful Teach-In is indicated by alternating flashing (2.5 Hz) of the yellow and green LEDs.

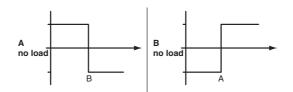
An unsuccessful Teach-In is indicated by rapidly alternating flashing (8 Hz) of the yellow and green LEDs.

After an unsuccessful Teach-In, the sensor continues to operate with the previous valid setting after the relevant visual fault signal is issued.

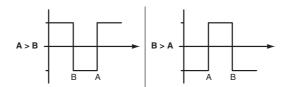
Different switching modes can be defined by teaching in the relevant distance measured values

for the switching thresholds A and B:

Single point mode:



Window mode:



Every taught-in switching threshold can be retaught (overwritten) by pressing the "TI" button again.

Pressing and holding the "TI" button for > 4 s completely deletes the taught-in value. The yellow and green LEDs go out simultaneously to indicate that this procedure has been completed. Successful resetting is indicated by alternating flashing (2.5 Hz) of the yellow and green LEDs.

Resetting to Factory Default Settings

Press the "TI" button for > 10 s in rotary switch position ,O' to reset to factory default settings. The yellow and green LEDs go out simultaneously to indicate the resetting.

Resetting process starts when the "TI" button is released and is indicated by the yellow LED. After the process the sensor works with factory default settings, immediately.

OMT:

- Factory default settings switch signal Q1: Switch signal active, window mode
- Factory default settings switch signal Q2: Switch signal active, window mode

OQT:

- Factory default settings switch signal Q1:
- Switch signal active, BGS mode (background suppression) • Factory default settings switch signal Q2:
- Switch signal active, BGS mode (background suppression)

Configuration

Configuring different operating modes via the IO-Link interface

The devices are equipped with an IO-Link interface as standard for diagnostics and parameterization tasks to ensure optimum adjustment of the sensors to the relevant application. Four different operating modes can be set, among other features:

Background suppression operating mode (one switch point):

• Detection of objects irrespective of type and color in a defined detection range. Objects in the background are suppressed.

active detection range	
	Background suppression

Background evaluation operating mode (one switch point):

· Detection of objects irrespective of type and color against a defined background. Reliable detection of objects at close range



Triangulation sensor (SbR)

OQT150-R101-2EP-IO-L

(detection range >= 0 mm). The background serves as reference.

active detection range	
	Background evaluation
Cingle point mode exercise mode (and owitch point).	

Single point mode operating mode (one switch point):

- Detection of objects irrespective of type and color in a defined detection range. Objects in the background are suppressed.
- The switch point corresponds exactly to the set point.



Window mode operating mode (two switch points):

- Detection of objects irrespective of type and color in a defined detection range. Reliable detection when object leaves the detection range.
- Window mode with two switch points.

e	active detection range
Foreground suppression	Background suppression

Center window mode operating mode (one switch point):

- Detection of objects irrespective of type and color in a defined detection range. Sets a defined window around a given object. Objects outside this window are not detected.
- Window mode with one switch point.

active	detection range
Foreground suppression	Background suppression

Two point mode operating mode (hysteresis operating mode):

· Detection of objects irrespective of type and color between a defined switch-on and switch-off point.

	I.	active detection ra	ange	
				Output
Output	▼	Hysteresis		

Inactive operating mode:

• Evaluation of switching signals is deactivated.

The associated IODD device description file can be found in the download area at www.pepperl-fuchs.com.

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