

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

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## **Function**

The R100 series miniature optical sensors are the first devices of their kind to offer an endto- 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.

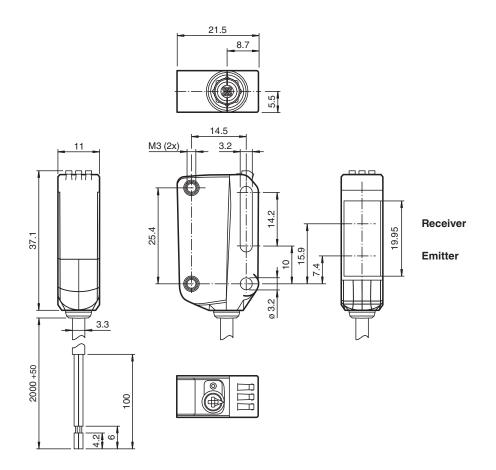
The entire series enables sensors to communicate via IO-Link.

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

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.

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

# Dimensions



# **Technical Data**

General specifications	
Detection range	5 150 mm
Detection range min.	5 20 mm
Detection range max.	5 150 mm
Adjustment range	20 150 mm
Reference target	standard white, 100 mm x 100 mm
Light source	LED
Light type	modulated visible red light
LED risk group labelling	exempt group
Black-white difference (6 %/90 %)	< 5 % at 150 mm
Diameter of the light spot	approx. 10 mm at a distance of 150 mm
Angle of divergence	approx. 4 °
Ambient light limit	EN 60947-5-2 : 30000 Lux
Functional safety related parameters	
MTTF <sub>d</sub>	600 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %
ndicators/operating means	
Operation indicator	LED green: constantly on - power on flashing (4Hz) - short circuit flashing with short break (1 Hz) - IO-Link mode

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

Singapore: +65 6779 9091 fa-info@sg.pepperl-fuchs.com **Technical Data** 

# OQT150-R100-2EP-IO

Switching type       In edefault setting is: C/G = 6K: NPN normally open, PNP normally closed, IO-Link C/G = 6K: NPN normally open, PNP normally closed         Signal output       2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected, overvottage protected         Switching output       max. 30 V DC         Switching current       max. 100 mA, resistive load         Usage category       0         Voltage drop       Ug         Voltage drop       1         Switching frequency       f         Product standard       10 BC 61131-9         Product standard       EK 61031-9         Product standard       EK 8056 c. CU Lus Listed , class 2 power supply , type rating 1         Ambient conditions       TR CU 020/2011         Ambient tomperature       -40 60 °C (-40 140 °F), fixed cable -26 °C (-13 140 °F), fixed cable -26 °C (-14 158 °F)         Mosing width       I       11 mm         Housing height       I       97 / IP69 / IP69 / IP69									
Control elementsConstrol elementsConstrol elementsSetsep rolary switch for operating modes selectionElectrical specificationsU1030 V DCPippleM1030 V DCPippleM1030 V DCPippleM1030 V DCPippleM1030 V DCPippleM1030 V DCPippleM1030 V DCPippleM1010 %Pipotection classM11.Interface typeM10.Link (via C/Q = BK)Interface typeM10.Link (via C/Q = BK)Interface typeM10.Link (via C/Q = BK)Indicate resideM10.Link (via C/Q = BK)Indicate resideM10.Link (via C/Q = BK)Indicate resideM0.Link (via C/Q = BK)Indicate resideMProcess data uppl 2 BtProcess data withYYSilo mode supportYYSilo mode suppor	Function indicator		LED yellow:						
Control elements     5-step rotary switch for operating modes selection       Electrical specifications     0       Operating voltage     0       An-back supply current     0       Voltage voltage     0       No-back supply current     0       Protection class     10       Interface type     10-Link (via C/G = BK )       Interface type     0       Interface type     2.3 ms       Solid not support     10       Interface type     10       Solid not support     10       Solid not support     10       Solid not support     10       Solid notupt     2 push-gui			constantly on - switch output active						
Electrical specifications         Up         1030 V DC           Operating voltage         Up         1030 V DC           Ripple         max. 10 %         5%           No-load supply current         lp         <25 mA at 24 V supply voltage	Control elements		Teach-In key						
Operating voltageUg1030 V DCRipplemax. 10 %No-load sing/ly current< <td>&lt;<td>&lt;<td>&lt;<td>&lt;<td>&lt;<td></td><td>Control elements</td><td></td><td>5-step rotary switch for operating modes selection</td></td></td></td></td></td>	< <td>&lt;<td>&lt;<td>&lt;<td>&lt;<td></td><td>Control elements</td><td></td><td>5-step rotary switch for operating modes selection</td></td></td></td></td>	< <td>&lt;<td>&lt;<td>&lt;<td></td><td>Control elements</td><td></td><td>5-step rotary switch for operating modes selection</td></td></td></td>	< <td>&lt;<td>&lt;<td></td><td>Control elements</td><td></td><td>5-step rotary switch for operating modes selection</td></td></td>	< <td>&lt;<td></td><td>Control elements</td><td></td><td>5-step rotary switch for operating modes selection</td></td>	< <td></td> <td>Control elements</td> <td></td> <td>5-step rotary switch for operating modes selection</td>		Control elements		5-step rotary switch for operating modes selection
Pipple         max. 10 %           No-load supply current         10           Protection closs         III           Interface         III           Interface type         10           Out-link revision         1.1           Device profile         Smart Sensor           Device profile         COM2 (38.4 kBaud)           Transfer rate         COM2 (38.4 kBaud)           Transfer rate         COM2 (38.4 kBaud)           Process data ubup 2 Bit         Process data ubup 2 Bit           Silo mode support         yes           Compatible master port type         A           Output         Yes           Switching type         The default setting is: COMP (11.1 htt normally open; PNP normally closed (IO-Link CG - Witk NM normally open; PNP normally closed (IO-Link CG - Witk NM normally open; PNP normally closed (IO-Link CG - Witk NM normally open; PNP normally closed (IO-Link CG - Witk NM normally open; PNP normally closed (IO-Link CG - Witk NM normally open; PNP normally closed (IO-Link CG - Witk NM normally open; PNP normally closed (IO-Link CG - Witk NM normally open; PNP normally closed (IO-Link CG - Witk NM normally open; PNP normally closed (IO-Link CG - Witk NM normally open; PNP normally closed (IO-Link CG - Witk NM normally open; PNP normally closed (IO-Link CG - Witk NM normally open; PNP normally closed (IO-Link CG - Witk NM normally open; PNP normally closed (IO-Link CG - Witk NM normally open; PNP normally closed (IO-Link CG - Witk NM normally open; PNP normally closed (IO-Link CG - Witk NM n	Electrical specifications								
No.         It         < 25 mA at 24 V supply voltage           Protection class         III           Interface         III           Interface type         Io Link (via C/Q = BK )           Interface type         Smart Sensor           Device profile         Smart Sensor           Device to Io         On Link (via C/Q = BK )           Transfer rate         On Link (via C/Q = BK )           Min. cycle time         2.3 ms           Process data width         2.3 ms           Process data width         yes           Compatible master port type         A           Compatible master port type         Yes           Compatible master port type         Yes           Signal output         yes A           Signal output         Yes           Signal output         Yes           Signal output         Yes A           Velage drop         Up a YE VP normally open, PNP normally closed, IO-Link (Yes A)           Signal output         Yes A Yes A           Velage drop         Up a Yes VDC	Operating voltage	UB	10 30 V DC						
Protection class         III           Interface type         IO-Link (via C/Q = BK )           Io-Link revision         1.1           Device profile         Smart Sensor           Device profile         ONL2 (38.4 kBaud)           Transfer rate         COM2 (38.4 kBaud)           Min. cycle time         2.3 ms           Process data widh         Process data input 2 Bt           Process data widh         yes           SIO mode support         yes           Compatible master port type         A           Output         Yes           Signal output         yes           Signal output         Cover Namaly copen, PNP normally closed, IO-Link Q2 - Wit: NPN normaly copen, PNP normally closed, IO-Link Q2 - Wit: NPN normaly copen, PNP normally closed, IO-Link Q2 - Wit: NPN normaly copen, PNP normally closed, IO-Link Q2 - Wit: NPN normaly copen, PNP normally closed, IO-Link Q2 - Wit: NPN normaly copen, PNP normally closed, IO-Link Q2 - Wit: NPN normaly copen, PNP normally closed, IO-Link Q2 - Wit: NPN normaly copen, PNP normally closed, IO-Link Q2 - Wit: NPN normaly copen, PNP normally closed, IO-Link Q2 - Wit: NPN normaly copen, PNP normally closed, IO-Link Q2 - Wit: NPN normaly copen, PNP normally closed, IO-Link Q2 - Wit: NPN normaly copen, PNP normally closed, IO-Link Q2 - Wit: NPN normaly copen, PNP normally closed, IO-Link Q2 - Wit: NPN normaly copen, PNP normally closed, IO-Link Q2 - Wit: NPN normaly copen, PNP normally closed, IO-Link Q2 - Wit: NPN normaly copen, PNP normally closed, IO-Link Q2 - Wit: NPN normaly copen, PNP normally c	Ripple		max. 10 %						
Interface         interface type         interface type           Interface type         interface type         interface type           O-Link revision         1.1           Device profile         Smart Sensor           Device torolie         Ontroloof (1116161)           Transfer rate         COM2 (28 k Haaud)           Min. cycle time         2.3 ms           Process data width         COM2 (28 k Haaud)           Min. cycle time         2.3 ms           Process data width         Process data uppt 2 Bit           Silo mode support         yes           Compatible master port type         A           Output         Terdenalt setting is.           Silo notic support         Ves           Switching type         A.           Synthing type         Terdenalt setting is.           Signal output         Wes versing protected           Switching urgence         max. 100 mA, resistive load           Switching requency         10         12 Tr hz           Voltage drop         U_u         <15 VDC	No-load supply current	I <sub>0</sub>	< 25 mA at 24 V supply voltage						
Interface typeIIO-Link (via C/O = BK)IO-Link revision1.1Device profileSmart SensorDevice IDCX110801 (1116161)Transfer rateCOM2 (38.4 kBau)Min. cycle inform2.3 mProcess data widthProcess data input 2.8 ifProcess data widthProcess data input 2.8 ifSIO mode supportvsSwitching typeAOutputSignal output 2.8 ifSwitching typeTo default setting is: Compatible master port typeSwitching typeTo default setting is: Coverse data output 2.8 ifSwitching voltagemax. 30 VDCSwitching requereeTo 2.4 and DC-13Switching requeree10-12 and DC-13Voltage dropU, a < 1.5 VDC	Protection class		III						
IO-Link revision     1.1       Device ID     Smart Sensor       Device ID     Ox10601 (1116161)       Transfer rate     COM2 (38.4 kBaud)       Min. cycle time     2.3 ms       Process data width     Process data input 2 Bit       Process data width     yes       Compatible mester port type     6       Output     Yes       Switching type     Core Skit status tating is:       Core Skit Sensor     2 puch-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected, coverolage protected       Switching votage     max. 100 mA, resistive load       Switching votage     max. 300 mA, resistive load       Usage category     Uo 127 Hz       Response time     2.3 ms       Corrmulication interface     IEC 61131-9       Process of Cult Sensor     Sole 00427-52       Approvale and certificates     IEC 61131-9       Product standard     Col 00427-51       Approvale and certificates     IEC 61131-9       Product standard     IEC 61131-9       Pr	Interface								
IO-Link revision     1.1       Device ID     Smart Sensor       Device ID     Ox10601 (1116161)       Transfer rate     COM2 (38.4 kBaud)       Min. cycle time     2.3 ms       Process data width     Process data input 2 Bit       Process data width     yes       Compatible mester port type     6       Output     Yes       Switching type     Core Skit status tating is:       Core Skit Sensor     2 puch-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected, coverolage protected       Switching votage     max. 100 mA, resistive load       Switching votage     max. 300 mA, resistive load       Usage category     Uo 127 Hz       Response time     2.3 ms       Corrmulication interface     IEC 61131-9       Process of Cult Sensor     Sole 00427-52       Approvale and certificates     IEC 61131-9       Product standard     Col 00427-51       Approvale and certificates     IEC 61131-9       Product standard     IEC 61131-9       Pr	Interface type		IO-Link ( via C/Q = BK )						
Device ID         0x110801 (1116161)           Transfer rate         COM2 (38.4 KBaud)           Min. cycle time         2.3 ms           Process data width         Process data input 2 Bit           Process data input 2 Bit         Process data input 2 Bit           Stor doe support         yes           Compatible master port type         A           Output         The default setting is: C/G - Bit: NPN normally open, PNP normally closed, IO-Link Q2 - Wit: NPN normally open, PNP normally closed           Signal output         2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected, Q2 - Bit: NPN normally open, PNP normally closed           Switching voltage         max. 30 V DC           Switching voltage         max. 30 V DC           Switching requency         DC 1 2 and DC-13           Voltage drop         U <sub>4</sub> ≤ 1.5 V DC           Switching frequency         f         217 Hz           Response time         2.3 ms         Contomit           Contormity         EC 61131-9         EC 61131-9           Product standard         EN 60947-52         Approvalia destilication interface           Approvalia destilication interface         EC 61131-9         EC 61131-9           Product standard         Conformity         TA CU 020/2011         Cu and 0 +5), fixed	IO-Link revision								
Transfer rate     COM2 (38.4 kBaud)       Min. cycle time     2.3 ms       Process data width     Process data output 2 Bit       Process data width     yes       Compatible master port type     A       Output     EXEX NPN normally open, PNP normally closed, IO-Link       Signal output     2 publ-puble science       Switching type     CG - Bit: NPN normally open, PNP normally closed, IO-Link       Signal output     2 publ-puble science       Switching voltage     Res: NPN normally open, PNP normally closed, IO-Link       Switching voltage     Res: NPN normally open, PNP normally closed, IO-Link       Switching voltage     Res: NPN normally open, PNP normally closed, IO-Link       Switching voltage     Res: NPN normally open, PNP normally closed, IO-Link       Switching requeres     Res: NPN normally open, PNP normally closed, IO-Link       Switching requeres     Res: NPN normally open, PNP normally closed, IO-Link       Switching requeres     Res: NPN normally open, PNP normally closed, IO-Link       Switching requeres     Res: NPN normally open, PNP normally closed, IO-Link       Switching requeres     Res: NPN normally open, PNP normally closed, IO-Link       Switching requeres     Res: NPN normally open, PNP normally closed, IO-Link       Communication interface     IEC 61131-9       Product standard     EN 60947-5-2       Approxil     ET CU 02	Device profile		Smart Sensor						
Transfer rate     COM2 (38.4 kBaud)       Min. cycle time     2.3 ms       Process data width     Process data output 2 Bit       Process data width     yes       Compatible master port type     A       Output     EXEX NPN normally open, PNP normally closed, IO-Link       Signal output     2 publ-puble science       Switching type     CG - Bit: NPN normally open, PNP normally closed, IO-Link       Signal output     2 publ-puble science       Switching voltage     Res: NPN normally open, PNP normally closed, IO-Link       Switching voltage     Res: NPN normally open, PNP normally closed, IO-Link       Switching voltage     Res: NPN normally open, PNP normally closed, IO-Link       Switching voltage     Res: NPN normally open, PNP normally closed, IO-Link       Switching requeres     Res: NPN normally open, PNP normally closed, IO-Link       Switching requeres     Res: NPN normally open, PNP normally closed, IO-Link       Switching requeres     Res: NPN normally open, PNP normally closed, IO-Link       Switching requeres     Res: NPN normally open, PNP normally closed, IO-Link       Switching requeres     Res: NPN normally open, PNP normally closed, IO-Link       Switching requeres     Res: NPN normally open, PNP normally closed, IO-Link       Communication interface     IEC 61131-9       Product standard     EN 60947-5-2       Approxil     ET CU 02	•		0x110801 (1116161)						
Min. cycle time         2.3 ms           Process data width         Process data input 2 Bit Process data input 2 Bit           SIO mode support         yes           Compatible master port type         A           Output         The default setting is: CO. Bit: NPN normally open, PNP normally closed, IO-Link CQ - WH: NPN normally open, PNP normally closed           Signal output         2 push-puil (4 in 1) outputs, short-circuit protected, reverse polarity protected, coveroitage protected           Switching voltage         max. 30 V DC           Switching voltage         max. 30 V DC           Switching frequency         max. 30 V DC           Switching current         max. 30 V DC           Usage category         DC-12 and DC-13           Voltage drop         Ug         \$1.5 V DC           Switching frequency         f 2 17 Hz           Response time         2.3 ms           Contormity         EK 60947-5-2           Approvals and certificates         EK 00947-5-2           Product standard         E 80056 to, ULus Listed , class 2 power supply type rating 1           Ambient conditions         -4060°C (-40140°F), fixed cable           Voltage bergerature         e 80°C (-51									
Process data width         Process data output 2 Bit Process data output 2 Bit           SIO mode support         yes           Compatible master port type         A           Output         The default setting is: C/G - BK: NPN normally open, PNP normally closed, IO-Link C/G - BK: NPN normally open, PNP normally closed, IO-Link C/G - BK: NPN normally open, PNP normally closed, IO-Link C/G - BK: NPN normally open, PNP normally closed, IO-Link C/G - BK: NPN normally open, PNP normally closed, IO-Link C/G - BK: NPN normally closed, IO-Link									
Process data output 2 BitSIC mode supportyesCompatible master port typeAOutputThe default setting is: COVERNIAN COVERNIAN CO	,								
Compatible master port type       A         Output       Find effault setting is:         Switching type       CP - BK: NPN normally open, PNP normally closed. IO-Link         Signal output       Spish-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected, overvotage protected         Switching votage       max. 30 V DC         Switching current       max. 100 mA, resistive load         Usage category       U       CC-13         Votage drop       U       stift NPN         Switching frequency       f       217 Hz         Response time       23 ms       Conformity         Product standard       EC 61131-9       Conformity         Product standard       EC 61131-9       Conformity         Up aproval       TR CU 020/2011       CU 20/2011         UL approval       CO C(14)									
Output           Switching type         The default setting is: C/O - BK: NPN normally open, PNP normally closed, IO-Link Q2 - WH: NPN normally open, PNP normally closed           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. 30 V DC           Switching current         max. 30 V DC           Switching frequency         f           Voltage drop         U_g           Voltage drop         U_g           Symitching frequency         f           Z17 Hz         Response time           Communication interface         IEC 61131-9           Product standard         EN 60947-5-2           Approval         EN 600°C (-40			yes						
Switching type       In edefault setting is: C/G = 6K: NPN normally open, PNP normally closed, IO-Link C/G = 6K: NPN normally open, PNP normally closed         Signal output       2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected, overvottage protected         Switching output       max. 30 V DC         Switching current       max. 100 mA, resistive load         Usage category       0         Voltage drop       Ug         Voltage drop       1         Switching frequency       f         Product standard       10 BC 61131-9         Product standard       EK 61031-9         Product standard       EK 8056 c. CU Lus Listed , class 2 power supply , type rating 1         Ambient conditions       TR CU 020/2011         Ambient tomperature       -40 60 °C (-40 140 °F), fixed cable -26 °C (-13 140 °F), fixed cable -26 °C (-14 158 °F)         Mosing width       I       11 mm         Housing height       I       97 / IP69 / IP69 / IP69	Compatible master port type		A						
CVQ - BK: NPN normally open, PNP normally losed, IO-Link Q2 - WH: NPN normally open, PNP normally losedSignal output2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected, overvitage protectedSwitching voltagemax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryUVoltage dropUSwitching frequencyfPasponse time2.3 msConformityIEC 61131-9Product standardBO947-5-2Approvals and certificatesIEC 61131-9EAC conformityTR CU 020/2011UL approvalE87056, cULus Listed , class 2 power supply , type rating 1Ambient conditions-40 60 °C (-40 140 °F), fixed cable -25 60 °C (-13 140 °F), movable cable not appropriate for conveyor chainsStorage temperature-40 60 °C (-40 140 °F), movable cable -25 60 °C (-13 140 °F), movable cable not appropriate for conveyor chainsHousing width11 nmHousing height37.1 mmHousing height97.1 PG9 / IP69 / IP69 KConnection12 PG7 / IP69 / IP69 KConnection12 PG7 / IP69 / IP69 KConnection10 PG7 / IP69 / IP69 K	Output								
Switching voltage         overvoltage protected           Switching vortent         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         fd         217 Hz           Response time         2.3 ms           Conformity         EC 61131-9           Product standard         EC 61131-9           Product standard         EC 610947-5-2           Approvals and certificates         EX Coofformity           EAC conformity         TR CU 020/2011           UL approval         Con505, cULus Listed, class 2 power supply, type rating 1           Ambient conditions         -25 60 °C (-40 140 °F), fixed cable           -25 60 °C (-41 140 °F), movable cable not appropriate for conveyor chains           Storage temperature         40 60 °C (-40 140 °F), movable cable not appropriate for conveyor chains           Identical specifications         -25 60 °C (-13 140 °F), fixed cable           -25 60 °C (-13 140 °F), movable cable not appropriate for conveyor chains           Idousing height         11 mm           Housing widh         11 mm           Housing height         21.5 mm	Switching type		C/Q - BK: NPN normally open, PNP normally closed, IO-Link						
Witching current         max. 100 mA, resistive load           Usage category         DC-12 and DC-13           Voltage drop         U <sub>d</sub> ≤ 1.5 V DC           Switching frequency         f         217 Hz           Response time         2.3 ms         Conformity           Conformity         IEC 61131-9         Communication interface         IEC 61131-9           Product standard         IEC 61131-9         Communication interface         IEC 61131-9           Approvals and certificates         IEC 6000/0000/0000000000000000000000000000	Signal output								
Usage category         Image of the category         Im	Switching voltage		max. 30 V DC						
Voltage drop         U <sub>d</sub> ≤ 1.5 V DC           Switching frequency         f         217 Hz           Response time         2.3 ms           Conformity         EC 61131-9           Product standard         6         EN 60947-5-2           Approvals and certificates         EC 020/2011           EAC conformity         7 R CU 020/2011           UL approval         7 R CU 020/2011           UL approval         7 R CU 020/2011           Mabient conditions         -40 60 °C (-40 140 °F), fixed cable           Ambient temperature         -40 60 °C (-40 140 °F), movable cable not appropriate for conveyor chains           Storage temperature         -40 70 °C (-40 158 °F)           Housing width         11 mm           Housing depth         21.5 mm           Degree of protection         1267 /IP69 /IP6	Switching current		max. 100 mA , resistive load						
Switching frequency         f         217 Hz           Response time         2.3 ms           Conformity         EC 61131-9           Product standard         EC 61131-9           Product standard         EC 61131-9           Approvals and certificates         EC 60002011           EAC conformity         TR CU 020/2011           UL approval         EX8506, cULus Listed, class 2 power supply, type rating 1           Ambient conditions         -40 60 °C (-40 140 °F), fixed cable           Ambient temperature         -40 60 °C (-40 140 °F), movable cable not appropriate for conveyor chains           Storage temperature         -40 70 °C (-40 158 °F)           Housing width         11 mm           Housing depth         21.5 mm           Podrection         12.5 mm           Degree of protection         1967 /IP69 /IP69K           Connection         EQ for Material           Material         PC (Polycarbonate)           Material         PC (Polycarbonate)           Mass         approx. 36 g	Usage category		DC-12 and DC-13						
Response time       2.3 ms         Conformity       IEC 61131-9         Product standard       EN 60947-5-2         Approvals and certificates       EX Conformity         EAC conformity       TR CU 020/2011         UL approval       E87056 , cULus Listed , class 2 power supply , type rating 1         Ambient conditions       -40 60 °C (-40 140 °F) , fixed cable         Ambient temperature       -40 60 °C (-40 140 °F) , fixed cable         Storage temperature       -40 60 °C (-40 140 °F) , fixed cable         Bechanical specifications       -25 60 °C (-40 158 °F)         Housing width       11 mm         Housing height       37.1 mm         Ibegree of protection       IP67 / IP69 / IP69K         Connection       2 m fixed cable         Material       PC (Polycarbonate)         Material       PC (Polycarbonate)         Mass       approx. 36 g	Voltage drop	$U_d$	≤ 1.5 V DC						
Approvals and certificates         EC 61131-9           Product standard         EN 60947-5-2           Approvals and certificates         EX C conformity           EAC conformity         TR CU 020/2011           UL approval         E870566, cULus Listed, class 2 power supply, type rating 1           Ambient conditions         -40 60 °C (-40 140 °F), fixed cable           Ambient temperature         -40 70 °C (-40 140 °F), movable cable not appropriate for conveyor chains           Storage temperature         -40 70 °C (-40 140 °F), movable cable not appropriate for conveyor chains           Housing width         11 mm           Housing height         37.1 mm           Pogree of protection         IP67 / IP69 / IP69K           Connection         2 m fixed cable           Material         PC (Polycarbonate)           Material         PC (Polycarbonate)           Material         PMMA           Mass         approx.36 g	Switching frequency	f	217 Hz						
Communication interfaceIEC 61131-9Product standardEN 60947-5-2Approvals and certificatesEN C0 020/2011UL approvalTR CU 020/2011UL approvalE87056 , cULus Listed , class 2 power supply , type rating 1Ambient conditions-40 60 °C (-40 140 °F) , fixed cable -25 60 °C (-13 140 °F) , movable cable not appropriate for conveyor chainsStorage temperature-40 70 °C (-40 158 °F)Mechanical specifications-40 70 °C (-40 158 °F)Housing width11 mmHousing depth21.5 mmDegree of protectionIP67 / IP69 / IP69KConnection2 m fixed cable 2 m fixed cableMaterialPC (Polycarbonate)MetrialPC (Polycarbonate)MaterialPMMAMassapprox. 36 g	Response time		2.3 ms						
Product standardEN 60947-5-2Approvals and certificatesTR CU 020/2011EAC conformityE87056, cULus Listed, class 2 power supply, type rating 1UL approvalE87056, cULus Listed, class 2 power supply, type rating 1Ambient conditions	Conformity								
Approvals and certificates           EAC conformity         TR CU 020/2011           UL approval         E87056 , cULus Listed , class 2 power supply , type rating 1           Ambient conditions         -40 60 °C (-40 140 °F) , fixed cable           Ambient temperature         -40 60 °C (-40 140 °F) , movable cable not appropriate for conveyor chains           Storage temperature         -40 70 °C (-40 158 °F)           Mechanical specifications         11 mm           Housing width         11 mm           Housing depth         21.5 mm           Degree of protection         1P67 / IP69 / IP69K           Connection         2 m fixed cable           Material         PC (Polycarbonate)           Material         PMMA           Mass         approx. 36 g	Communication interface		IEC 61131-9						
AC conformity     ITR CU 020/2011       UL approval     E87056, cULus Listed, class 2 power supply, type rating 1       Ambient conditions     -4060°C (-40140°F), fixed cable -2560°C (-13140°F), movable cable not appropriate for conveyor chains       Storage temperature     -4070°C (-40158°F)       Mechanical specifications     -4070°C (-40158°F)       Housing width     11 mm       Housing depth     37.1 mm       Degree of protection     1967 / IP69 / IP69K       Connection     2 m fixed cable       Material     PC (Polycarbonate)       Material     PC (Polycarbonate)       Mass     approx.36 g	Product standard		EN 60947-5-2						
UL approvalE87056, cULus Listed, class 2 power supply, type rating 1Ambient conditionsAmbient temperature-40 60 °C (-40 140 °F), fixed cable -25 60 °C (-13 140 °F), movable cable not appropriate for conveyor chainsStorage temperature-40 70 °C (-40 158 °F)Mechanical specificationsHousing width11 mmHousing depth37.1 mmDegree of protectionIP67 / IP69 / IP69KConnection2 m fixed cableMaterialPC (Polycarbonate)HousingPC (Polycarbonate)Materialapprox. 36 g	Approvals and certificates								
Ambient conditionsAmbient temperature-40 60 °C (-40 140 °F), fixed cable -25 60 °C (-13 140 °F), movable cable not appropriate for conveyor chainsStorage temperature-40 70 °C (-40 158 °F)Mechanical specifications-40 70 °C (-40 158 °F)Housing width11 mmHousing height37.1 mmHousing depth21.5 mmDegree of protectionIP67 / IP69 / IP69KConnection2 m fixed cableMaterialPC (Polycarbonate)HousingPC (Polycarbonate)MaterialPMMAMassapprox. 36 g	EAC conformity		TR CU 020/2011						
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Housing widthIn mHousing height37.1 mmHousing depth21.5 mmDegree of protectionIP67 / IP69 / IP69KConnection2 m fixed cableMaterialPC (Polycarbonate)HousingPC (Polycarbonate)Optical facePMMAMassapprox.36 g	Storage temperature		-40 70 °C (-40 158 °F)						
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Degree of protection     IP67 / IP69 / IP69K       Connection     2 m fixed cable       Material     PC (Polycarbonate)       Optical face     PMMA       Mass     approx. 36 g	Housing height		37.1 mm						
Connection     2 m fixed cable       Material     PC (Polycarbonate)       Housing     PC (Polycarbonate)       Optical face     PMMA       Mass     approx. 36 g	Housing depth		21.5 mm						
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HousingPC (Polycarbonate)Optical facePMMAMassapprox. 36 g	Connection		2 m fixed cable						
Optical face     PMMA       Mass     approx. 36 g	Material								
Optical face     PMMA       Mass     approx. 36 g	Housing		PC (Polycarbonate)						
Mass approx. 36 g	-		· • · ·						
			approx. 36 g						
	Cable length								

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

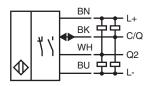
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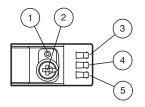
Germany: +49 621 776 1111 fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091 fa-info@sg.pepperl-fuchs.com

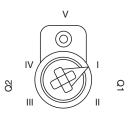
# Connection



# Assembly

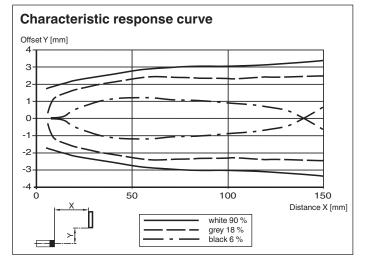


1	Teach-in button
2	Mode rotary switch
3	Switch output indicator Q2
4	Switch output indicator Q1
5	Operating indicator



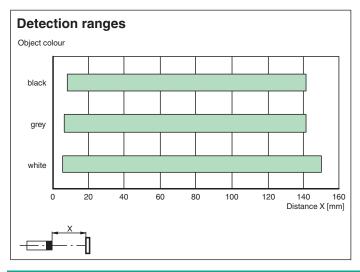
T	Switch output 1 / switch point B
Ш	Switch output 1 / switch point A
Ш	Switch output 2 / switch point A
IV	Switch output 2 / switch point B
V	Keylock

## **Characteristic Curve**



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

4



## Accessories

Contraction of the second seco	OMH-ML100-09	Mounting aid for round steel ø 12 mm or sheet 1.5 mm 3 mm
	IO-Link-Master02-USB	IO-Link master, supply via USB port or separate power supply, LED indicators, M12 plug for sensor connection
H 8.8	OMH-R10X-01	Mounting bracket
	OMH-R10X-02	Mounting bracket
15-	OMH-R10X-04	Mounting bracket
t. el	OMH-R10X-10	Mounting bracket
and the second sec	OMH-ML100-03	Mounting aid for round steel ø 12 mm or sheet 1.5 mm 3 mm
er .	OMH-ML100-031	Mounting aid for round steel ø 10 14 mm or sheet 1 mm 5 mm

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

5

## 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.

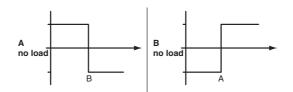
An unsuccessful Teach-In is indicated by rapidly alternating flashing (8 Hz) of the yellow and green LEDs.

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

www.pepperl-fuchs.com

## 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.

e	active detection range	
		Background suppression

fa-info@de.pepperl-fuchs.com

#### Background evaluation operating mode (one switch point):

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

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# Triangulation sensor (SbR)

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

active detection range	
	Background evaluation
Cingle point mode exercing mode (and quitch 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.

a	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	<b></b>	

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"