Distance sensor



Model Number

OMT45-R103-2EP-IO-L

Distance sensor with fixed cable

Features

- Miniature design with versatile • mounting options
- Space-saving distance sensors in ٠ small standardized design
- Multi Pixel Technology (MPT) exact • and precise signal evaluation
- DuraBeam Laser Sensors durable and employable like an LED
- IO-link interface for service and • process data

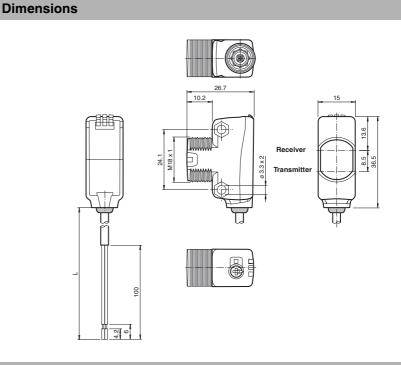
Product information

The R103 series 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.

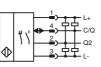
The entire series enables sensors to communicate via IO-Link.

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

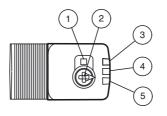
The use of Multi Pixel Technology gives the standard sensors a high level of flexibility and enables them to adapt more effectively to their operating environment.

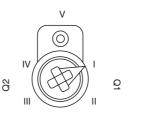


Electrical connection



Indicators/operating means





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
III	Switch output 2 / switch point A
IV	Switch output 2 / switch point B
V	Keylock

Refer to "General Notes Relating to Pepperl+Fuchs Product Information" Pepperl+Fuchs Group www.pepperl-fuchs.com

USA: +1 330 486 0001 fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 4411 fa-info@de.pepperl-fuchs.com

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



Puble length 3 µS Repetition rate approx. 3 kHz max. puble energy 15.2 nJ Angle deviation max. +/- 1.5 ° Diameter of the light spot approx. 0.6 ° Angle of divergence approx. 0.6 ° Angle of divergence approx. 0.6 ° Angle of divergence approx. 0.6 ° Mound approx. 0.6 ° CLAS Resolution 0.01 mm Functional safety related parameters CLAS MTTF _d 560 a Diagnostic Coverage (DC) 0 % Indicators/operating means Constantly on - power on flashing (Hz) - short circuit flashing with short break (1 Hz) - IO-Link mode Function indicator LED green: constantly on - switch output active constantly on - switch output inactive constantly off - swit			
Reference target standard white, 100 mm x 100 mm Light source laser doel Light source laser doel modulated visible red light laser doel Light type modulated visible red light light type light type Note LASER LIGHT, DO NOT STARE INTO BEAM light type light type Laser cosini and range 5 mraid 683 663 < 1 mm in the range of 50 mm 250 mm light type Make length 3µs species on the range of 50 mm 250 mm light type Make length 3µs species on the species on the range of 50 mm 250 mm light type Argie deviation max. Julke entropy 15.2 h light type light type Argie deviation max. Arkie of hype type approx. 0.6 m at a distance of 45 mm light type light type Mitting 60 a light type light type light type light type Mitting 0.0 mm 0.0 mm light type light type light type Mitting 0.0 mm max type light type light type light type Mitting 0.			
Light source Laser index Laser roumain latings Model bed Visible rol light Note CASER LIGHT, DO NOT STARE INTO BEAM Laser roumain latings 680 nm Note 680 nm Beam divergence > 5 maid d83 d83 < 1 mm in the range of 50 mm 250 nm			
Lipit type modulated visible red light Laser nominal radius Laser nominal radius Nome LASER LIGHT, DO NOT STARE INTO BEAM Laser nominal radius 1 Wave longth 80 nm Beam divergence > 5 mrad d63 d63 < 1 mm in the range of 50 mm 250 mm	CLASS 1		
Laser formal ratings Note Laser class Note ASER LUGHT, DO NOT STARE INTO BEAM Laser class I ASER LUGHT, DO NOT STARE INTO BEAM Laser class I ASER LUGHT, DO NOT STARE INTO BEAM Laser class I Bann divergence Smart 33 gas Smart 3	LASER		
Note LASER LIGHT, DO NOT STARE INTO BEAM Laser class 1 Wave length 680 nm Baam divergence > 5 mrad d63 d63 < 1 mm in the range of 50 mm 250 mm	PRODUCT		
Laser class 1 Baar divergence 5 mrad d63 d63 < 1 mm in the range of 50 mm 250 mm			
Wave length 680 nm Baard divergence > 5 mind disd 63 4 min in the range of 50 mm 250 mm Hepelation rate approx. 3 M4z max. pulse energy 152. n J Diameter of the light spot approx. 0.5 m at a distance of 45 mm Angle divustion max. pulse energy Angle divustion 0.01 mm Functional safety related parameters EN 00047-52.3:0000 Lux MTTF, f 500 a Mission Time (T ₁₀) 20 a Diagnostic Coverage (DC) 0.% Indicators/operating means Constantly on -power on flashing (4H2) - short oricuit flashing (4H2) - s			
Baar divergence > 5 mraid d63 d63 < 1 mm in the range of 50 mm 250 mm			
Pulse length 3 µs Repetition rate approx. 3 kHz max: pulse energy 15.2 n.J Angle deviation max:			
Puse length 9 jis Repetition rate approx. 8 MH2 max_v+1.5? approx.0.6 ° Angle drivingence approx.0.6 ° Angle of layergence approx.0.6 ° Angle of layergence approx.0.6 ° Angle of layergence approx.0.6 ° Margle of layergence approx.0.6 ° Mission Time (Tay) 20 a Diagnotic Coverage (DC) 0 % Indicators/operating means Constantly on power on flashing (4+2) = short cruct flashing which output active constantly of * switch output active cons			
Hepetition rate approx. 3 kHz max, pulse energy 15.2 nJ Angle deviation max, +/1.5° Jonneter of the light spot approx. 0.6° Angle deviation 0.01 mm Functional safety related parameters Million MTFr_g 560 a Massion Time (Tu) 20 a Diagnostic Coverage (DC) 0% Indicators/operating means Constantly on - power on flashing (Hz) - short crutt flashing with short break (1 Hz) -10-Link mode Function indicator LED green: constantly on - switch output active constantly of - switch output inactive constantly on - switch output inactive constantly output inactive constantly on - switch output inactive constantly o	CLASS 1 LASER PRODUCT		
max pulse energy 15.2 nJ Angle deviation max, +1.5 f Diameter of the light spot approx. 0.8 f Angle of divergence 0.0 f nm MTFR, 560 a Mission Time (Tw) 20 a Deparation indicator LED gener: Operation indicator LED yeallow: Control elements 5-step rotary switch output active Control elements 5-step rotary switch or operating modes selection Flipple max. 10 % Protection class III Interface type IO-Link (via C/Q = BK) Device profile Smax 10 % Signal output Process data input 3 Byte Process data witch Process data uput 2 Bit			
Angle diversion max. +/: 1.5 " Diameter of the light spot approx. 0.6 " Angle of divergence approx. 0.6 " Angle of divergence approx. 0.6 " Angle of divergence approx. 0.6 " Marge of divergence 0.01 nm Functional safety related parameters Mission Time (T _W) Mission Time (T _W) 20 a Diagnostic Coverage (DC) 0 % Indicators/operating means Etc green: Operation indicator LED green: Constantity on power on finashiny on power on finashiny of = switch output nactive Mission Sint Coverage (DC) Control elements Teach-In key Control elements 5-step rotary switch output nactive Control elements 5-step rotary switch for operating modes selection Bechristion class III Interface type max. 10 % No-load supply current Ig Protection class III Interface type COA 2(38.4 KBau) Dorlink Revision 1.1 Min, voje time 3 ms Process data input 3 byte Proc	IEC 60825-1: 2007 certified.		
Denser of the light spot approx. 0.5 " approx. 0.6 " Angle of divergence approx. 0.6 " Constant of the spot	Complies with 21 CFR 1040.10 and 1040.11 except		
Angle of divergence approx. 0.6* Amblent light limit EN 80947-52 : 30000 Lux Resolution 0.01 mm Functional safety related parameters Mission Time (Tw) Mission Time (Tw) 20 a Diagnostic Coverage (DC) 0% Indicators/operating means ED green: constantly on power on constantly on constant linetrace Accessori V31-GM-2M Female corco V31-GM-2M Female corco V31-GM	for deviations pursuant to Laser Notice No. 50,		
Ambient tight limit EN 60847-5-2 : 30000 Lux Resolution 0.01 mm Precisional safety related parameters Image: Control safety related parameters MTTF_g 560 a Mission Time (T ₀) 20 a Dagnostic Coverage (DC) 0 % Indicators/operating means ED green: Constrainty on - switch output active constanty on - switch output active constanty on - switch output inactive Accessori Function indicator Control elements Teach-In key constanty off - switch output active constanty off - switch output active Yai GM-2M Female core Control elements Teach-In key control elements Step rotary switch for operating modes selection Yai GM-2M Female core Interface III Min. Solution III IIII-Init.Man III-Linit.Man III-Linit.Man III-Linit.Man III-Linit.Man III-Cuink Revision III IIII-Linit.Man IIII-Linit.Man IIII-Linit.Man IIII-Linit.Man IIII-Linit.Man IIII-Linit.Man IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	dated June 24, 2007		
Resolution 0.01 mm Functional safety related parameters 0.01 mm Functional safety related parameters 0 Mission Time (T _M) 20 a Diagnostic Coverage (DC) 0 % Indicators/operating means 0 Operation indicator ED gream: constaintly on power on constaintly on power on therace Accessori Operation vitage Us 10. 10. 10. 10. 10. 10. 10. 10. 10. 10.			
Functional safety related parameters MTTF, 560 a MTTF, 560 a Mission Time (T _M) 20 a Diagnostic Coverage (DC) 0 % Indicators/operating means ED green: Operation indicator Constantly off - power on transiting (Hz) - short circuit flashing (Hz) - short circuit constantly off - switch output inactive constant constant in there constantly off - switch output ina			
MTF.g. 560 a Mission Time (T _M) 20 a Diagnostic Coverage (DC) 0 % Operation indicator EED green: constantly on power on flashing with short kreak (1 Hz) - Io-Link mode Function indicator EED green: constantly on power on flashing with short kreak (1 Hz) - Io-Link mode Control elements Teach-In key Control elements 5-step rotary switch for operating modes selection Deparing voltage Ug Protection class III Interface III Interface type OO-Link (via C/Q = BK) Device profile Smath Protection class III Interface type OCM2 (83 4 kBaud) IO-Link Revision 1.1 Min. cycle time Smath Process data input 3 Byte Process data input 3 Byte Process data withh Process data input 3 Byte Process data with CO-Link Nation (11 1000 (1116424) Compatible master port type A Signal output 2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected, coversed polarity protected, coversed polarity protected, coversed polarity protected, coversed polarity protected, coverotalge protected			
MTF.g. 560 a Mission Time (Tw) 20 a Diagnostic Coverage (DC) 0 % Operation indicator LED green: constantly on power on flashing with short break (1 Hz) - Io-Link mode Function indicator LED green: constantly on power on flashing with short break (1 Hz) - Io-Link mode Control elements Teach-In key Control elements 5-step rolary switch for operating modes selection Detrating voltage Ug Protection class III Interface specifications 5-step rolary switch for operating modes selection Deverating voltage Ug Protection class III Interface specifications III Device profile Smat Sensor Transfer rate COM2 (84 kBaud) IO-Link (via C/Q = BK) OMH-R103- Mounting br Device profile Sms Process data input 3 Byte Process data unity open, PMP normally closed, IO-Link (32 rUH). NM normally open, PMP normally closed, IO-Link (33 rule rUH). NM normally open, PMP normally closed, IO-Link (33 rule rUH). NM nor			
Mission Time (T _M) 20 a Diagnostic Coverage (DC) 0 % Operation indicator LED green: constantly on - power on flashing (4Hz) - short circuit flashing (4Hz) - short circuit constantly off - switch output inactive constantly off - switch output inactive formatic short flashing (4Hz) - loc-Link (Mai flashing 1D - switch output inactive formatic short flashing (4Hz) - loc-Link (Mai flashing 1D - switch output short circuit flashing rate flot-Link (Vai C/Q = BK) Accessori V31-GM-2M Female corc V31-UNM-2M Female corc			
Diagnostic Coverage (DC) 0 % Indicators/operating means Constantly on - power on flashing with short break (1 Hz) - IO-Link mode flashing with short break (1 Hz) - IO-Link (1 Hz) - IO-Link mode flashing with short break (1 Hz) - IO-Link (1 Hz) - IO-Link mode flashing with short break (1 Hz) - IO-Link (1 Hz) - IO-Link mode flashing voltage flashing voltage max. 30 VD C flashing voltage	1 224		
Indicators/operating means Deration indicator LED green: constantly on - power on flashing (4H2) - 40-Link mode EC 60825. Function indicator LED green: constantly on - switch output active constantly on - switch output inactive Accessori Control elements Teach-In key Accessori Control elements Teach-In key Accessori Operating voltage U _B 10 30 V DC Female corc Ripple max. 10 % No-load suppl current In No-load suppl current In <28 mA at 24 V supply voltage			
Operation indicator LED green: transitinty on - power on flashing (Ht2) - short circuit flashing with short break (1 H2) - IO-Link mode Function indicator LED yellow: constantly on - switch output active constantly on - switch output active constantly on - switch output inactive Accessori Control elements 5-step rotary switch for operating modes selection Accessori Operating voltage Ug 10 30 V DC Protection class III Interface III III IIII IIII Interface type IO-Link (via C/Q = BK) IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	SER PRODUCT		
Operation indicator LED green: constantly on - power on flashing (H42) - short circuit flashing (H42) - short circuit constantly on - switch output active constantly on - switch output inactive constantly of - switch output inactive Accessori Control elements 5-step rotary switch for operating modes selection V31-GM-2M Female corcity V31-WM-2M Female corcity V3	825-1: 2007 certified.		
Itashing (Hz) - short circuit Itashing (Hz) - short circuit Function indicator LED yellow: constantly on - switch output active constantly on - switch output inactive Accessori Control elements Teach-In key Control elements Setep rotary switch for operating modes selection Operating voltage Ug 10 30 V D C Remale conc Y31-GM-2M Ripple max. 10 % Y31-GM-2M Female conc Y31-GM-2M No-load supply current Ug <25 mA 24 V supply voltage	es with 21 CFR 1040.10 and		
flashing with short break (1 Hz) - IO-Link modeFunction indicatorLED yellow: constantly of - switch output nactive constantly of - switch output nactive constantly of - switch output inactiveControl elementsTeach-in keyControl elementsSestep rotary switch for operating modes selectionElectrical specificationsOperating voltageUp and the instant of $\%$ V31-GM-2MProtection classIIIInterfaceIIIInterface typeIO-Link (via C/Q = BK)Interface typeIO-Link (via C/Q = BK)Ob-lask supply currentIInterface typeIO-Link (via C/Q = BK)Interface typeIO-Link (via C/Q = BK)Interface typeOD-Link (via C/Q = BK)Interface typeIO-Link (via C/Q = BK)Interface typeNNin. cycle time3 msProcess data witchProcess data input 3 ByteProcess data witchProcess data output 2 BitSiO mode supportyesDevice IDOther suitableSwitching typeThe default setting is: C/Q - BK: NPN normally open, PNP normally closed, IO-Link Q2 = WH: NPN normally opend, PNP normally closedSignal output2 push-put (4 in 1)-outputs, short-circuit protected, reverse polarly protected, overvottage protectedSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Output2 msCommunication interfaceIEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014 <tr< td=""><td>1 except for deviations pursuant to</td></tr<>	1 except for deviations pursuant to		
Function indicatorLED yellow: constantly of - switch output active constantly of - switch output inactiveAccessoriControl elementsTeach-In keySetep rotary switch for operating modes selectionV31-GM-2MOperating voltageUg 10 30 V DCSetep rotary switch for operating modes selectionV31-GM-2MProtection classII \sim 25 mA at 24 V supply voltageV31-WM-2NProtection classIIInterfaceIO-Link (via C/Q = BK)V31-WM-2NInterfaceIIIO-Link (via C/Q = BK)IO-Link MasDevice profileSmart SensorSeparate porM12 plug forInterface support9 wsSetep rotary 12 BitOMH-R103-Process data witdhProcess data input 3 Byte Process data output 2 BitOMH-R103-SIO mode supportyesOther suitabitWounting br.Device ID0 x110908 (1116424)Other suitabitWww.pepperl-Switching typeThe default setting is: C/O - BK: NPN normally open, PNP normally closedIO-LinkSwitching voltagemax. 30 V DCSwitching currentmax. 30 V DCSwitching voltagemax. 30 V DCResponse time2 msConformityConstanty on the Rose Set: 2014Measurement accuracyVoltage dropUg<1.5 V DC	Notice No. 50, dated June 24, 2007		
constantly of - switch output active constantly of - switch output inactiveAccessoriControl elementsTeach-In keyY31-GM-2MControl elements5-step rotary switch for operating modes selectionY31-GM-2MDeprating voltageUB max. 10 %Y31-WM-2MProtection classIIIIIIInterfaceIIIIO-Link (via C/Q = BK)Interface typeIO-Link (via C/Q = BK)IO-Link MasDore or profileSmart SensorSeparate poorTransfer rateCOM2 (38.4 kBaud)IO-Link MasIO-Link Kwision1.1Min. cycle timeSiO mode supportyesYesProcess data witchProcess data input 3 Byte Process data input 3 Byte Process data output 2 BitOther suitable www.pepperfSiO mode supportyesC/Q - BK: NPN normally open, PNP normally closed, IO-Link Vara witch ing typeOther suitable www.pepperfSwitching typeZ push-pull (4 in 1)outputs, short-circuit protected, reverse policity protected, overovidage protectedWeixer Separate Process data witch overovidage protectedSwitching currentmax. 10 WA, resistive loadUsage categoryDC-12 and DC-13Usage categoryDC-12 and DC-13UIn House Senite Product standardContornityEN 60927-5-2Laser safetyEN 60927-5-2La			
constantly off - switch output inactiveControl elementsCachen keyControl elementsSetep rotary switch for operating modes selectionV31-GM-2MOperating voltageUg10 30 V DCRipplemax. 10 %V31-GM-2MNo-load supply currentIoColspan="2">Colspan="2"Colspan="2">Colspan="2"Colspan="2"Colspan="2"Colspan="2"Control elementsColspan="2"Colspan="2"Colspan="2"To default setting is: Colspan="2"Colspan="2"Colspan="2"Control sponColspan="2"Control sponColspan="2"To default setting is: Colspan="2"Colspan="2"Control sponSwitching voltageThe default setting is: Colspan="2"Colspan="2"Colspan="2"Switching voltageSwitching voltage <td <="" colspan="2" t<="" td=""><td></td></td>	<td></td>		
Control elements Teach-In key Accessori Control elements 5-step rotary switch for operating modes selection V31-GM-2M Deprating voltage Ug 1030 V DC Y31-GM-2M Ripple max. 10 % Y31-GM-2M No-load supply current Io <25 mA at 24 V supply voltage			
Control elements 5-step rotary switch for operating modes selection V31-GM-2M Electrical specifications max. 10 % Female conc Operating voltage Ug 1030 V DC V31-GM-2M Ripple max. 10 % V31-GM-2M No-load supply current Ig <25 mA at 24 V supply voltage	orioo		
V31-GM-2MQuesting voltageUp b1030 V DCRipplemax. 10 %Y31-GM-2MNo-load supply currentIp c $< 25 \text{ m Å at 24 V supply voltage}$ V31-WM-2MProtection classIIIIIIIIIInterfaceIIIInterface typeIO-Link (via $C/Q = BK$)IO-Link MaxDevice profileSmart SensorSeparate pointTransfer rateCOM (28.4 kBaud)OMH-R103Of O-Link Revision1.1OMH-R103Process data witchProcess data output 2 BitOMH-R103Process data witchProcess data output 2 BitOMH-R103SiO mode supportyesOther suitableDevice IDOx110908 (1116424)Other suitableCompatible master port typeAOutputSignal output2 push-puil (4 in 1)outputs short-circuit protected, reverse polarity protected, overroltage protected, reverse polarity protected, overroltage protected, reverse polarity protected, overroltage protectedSwitching voltagemax. 30 V DCSwitching voltagemax. 30 V DCSwitching voltagemax. 30 V DCSwitching voltageEIC 61131-9Product standardEN 60825-1:2014Measument accuracyS min Repeat accuracyConformityEIC 61131-9Communication interfaceEIC 61131-9Product standardEN 60825-1:2014Measument accuracyS nim Repeat accuracyLinearity errorto 3.0 mAmbient conditions <td>Shes</td>	Shes		
Female cordCoperating voltage U_B 1030 V DCRipplemax. 10 %V31-WM-2MNo-load supply current I_0 <25 mA at 24 V supply voltage	2M-PUR		
Operating votageOgToNo votageV31-WM-2NRipplemax. 10 %V31-WM-2NFernale coreProtection classIIIIIIInterfaceIIIIIIInterface typeIO-Link (via C/Q = BK)IO-Link masDovice profileSmart Sensorseparate porTransfer rateCOM 2 (38.4 kBaud)IO-Link masIO-Link Revision1.1IIIMin. cycle time3 msOMH-R103-Process data witdhProcess data output 2 BitOMH-R103-Dovice IDOx110908 (1116424)Other suitableCompatible master port typeAOther suitableOutputSwitching typeC/C - BK: NPN normally open, PNP normally closed, IO-LinkSignal output2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvoltage protectedSwitching voltagemax. 30 V DCSwitching voltagemax. 30 V DCSwitching voltagemax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropUd V_{01} S N BO25-1:2014Measurement accuracyS 0.15 mmLinearity error \pm 0.3 mmAmbient conditions $10 \dots 60^{\circ}$ (5 0 140 °F), fixed cable $10 \dots 60^{\circ}$ (5 0 140 °F), movable cable not appropriate for	ordset, M8, 4-pin, PUR cable		
No-load supply current I_0 < 25 mA at 24 V supply voltageVol TeVIM-24Protection classIIIFemale corroInterfaceIIIIIIInterface typeIO-Link (via C/Q = BK)IO-Link massDevice profileSmart SensorIO-Link massTransfer rateCOM 2 (38.4 kBaud)IO-Link massIO-Link Revision1.1IIIMin. cycle time3 msOMH-R103-Process data witdhProcess data input 3 ByteMounting br.Process data witdhProcess data output 2 BitOther suitableSIO mode supportyesC/O-Link Normally open, PNP normally closed, IO-LinkDevice ID0x110908 (1116424)Other suitableCompatible master port typeAOther suitableSwitching typeC/O-2 -BK: NPN normally open, PNP normally closed, IO-LinkOther suitableSignal output2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overoslage protectedreverseSwitching voltagemax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13UotageStore 20Voltage dropUd< 1.5 V DC	oruset, Mo, 4-pin, FOR Cable		
No-load supply current I_0 < 25 mA at 24 V supply voltageProtection classIIIProtection classIIIInterfaceIIIInterface typeIO-Link (via C/Q = BK)Device profileSmart SensorTransfer rateCOM 2 (38.4 kBaud)IO-Link Revision1.1Min. cycle time3 msProcess data output 2 BitOMH-FR103Noode supportyesDevice IDOx110908 (1116424)Compatible master port typeAOutputC/2 - WH: NPN normally open, PNP normally closed, IO-Link Q2 - WH: NPN normally open, PNP normally closedSignal output2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvoltage protectedSwitching currentmax. 30 V DCSwitching currentmax. 30 V DCSwitching currentmax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropUdSto Source yEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60925-1:2014Measurement accuracy Linearity error \pm 0.15 mmLinearity error \pm 0.3 mmAmbient conditions10 60 °C (50 140 °F), fixed cable no °C (50 140 °F), movable cable not appropriate for	2M-PUR		
Protection classIIIIPerinale ConcInterfaceInterfaceIO-Link (via $C/Q = BK$)IO-Link (massInterface typeIO-Link (via $C/Q = BK$)IO-Link (massDevice profileSmart Sensorseparate poilTransfer rateCOM 2 (38.4 kBaud)M12 plug forIO-Link Revision1.1M12 plug forIN: cycle time3 msOMH-R103-Process data witchProcess data input 3 Byte Process data output 2 BitOMH-R103-StO mode supportyesOther suitableDevice ID0x110908 (1116424)Other suitableCompatible master port typeAOther suitableSwitching typeThe default setting is: $C/Q - BK$: NPN normally open, PNP normally closed, IO-Link $Q2 + WH$: NPN normally open, PNP normally closed, IO-Link $Q2 + WH$: NPN normally open, PNP normally closed, IO-Link $Q2 + WH$: NPN normally open, PNP normally closed, IO-Link $Q2 + WH$: NPN normally open, PNP normally closed, IO-Link $Q2 + WH$: NPN normally open, PNP normally closed, IO-Link $Q2 + WH$: NPN normally open, PNP normally closed, IO-Link $Q2 + WH$: NPN normally open, PNP normally closedSignal output2 push-puil (a in 1) outputs, short-circuit protected, reverse polarity protected, overvoltage protectedSwitching currentmax: 30 V DCBesponse time2 msConformityEEC 61131-9Conduct standardEN 60947-5-2Laser safetyEN 60825-1:2014Measurement accuracy50.15 mmLinearity error \pm 0.3 mmAmbient conditions10 60 °C (50 140 °F), fixed cable 10			
Interface typeIO-Link (via C/Q = BK)IO-Link mass separate por mart SensorDevice profileSmart SensorIO-Link mass separate por M12 plug for M12 plug for <br< td=""><td>ordset, M8, 4-pin, PUR cable</td></br<>	ordset, M8, 4-pin, PUR cable		
Interface typeIO-Link (via C/Q = BK)IO-Link mass separate por M12 plug for M12 plug for M11 plug for M11 plug for M2 plug for 	Aaster02-USB		
Device profile Smart Sensor Separate point Transfer rate COM 2 (38.4 kBaud) M12 plug for M12 plug fo			
Transfer rateCOM 2 (38.4 kBaud)March 2 (38.4 kBaud)March 2 (38.4 kBaud)March 2 (38.4 kBaud)IO-Link Revision1.1Min. cycle time3 msM12 plug forProcess data witdhProcess data input 3 Byte Process data output 2 BitOMH-R103- Mounting br.SIO mode supportyesOther suitableDevice ID0x110908 (1116424)Other suitableCompatible master port typeAOther suitableSwitching typeThe default setting is: C/Q - BK: NPN normally open, PNP normally closed, IO-Link Q2 - WH: NPN normally open, PNP normally closedOther suitableSignal output2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvoltage protectedNowSwitching voltagemax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropU_d1.5 V DCResponse time2 msConformityCommunication interfaceIEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Measurement accuracy Laser safetySo in mTemperature diff20 µm/KWarm up time5 minRepeat accuracy Linearity error± 0.3 mmAmbient conditionsAmbient temperature10 60 °C (50 140 °F), fixed cable 10 60 °C (50 140 °F), movable cable not appropriate for	aster, supply via USB port o		
IO-Link Revision1.1IM 12 plug toMin. cycle time3 msOMH-R103Process data witdhProcess data input 3 Byte Process data output 2 BitOMH-R103SIO mode supportyesOther suitable www.pepperf-Device ID0x110908 (1116424)Other suitable www.pepperf-Compatible master port typeAOther suitable www.pepperf-Output $\mathbb{C}/Q - BK: NPN normally open, PNP normally closed, IO-LinkQ2 - WH: NPN normally closed, IO-Link (PO - No PN normally closed, IO-LinkQ2 - WH: NPN normally closed, IO-Link (PO $	power supply, LED indicator		
IO-LIK Revision 1.1 Min. cycle time 3 ms Process data witch Process data input 3 Byte Process data output 2 Bit Mounting brack SIO mode support yes Other suitable Device ID 0x110908 (1116424) Other suitable Compatible master port type A Other suitable Output The default setting is: C/Q - BK: NPN normally open, PNP normally closed, IO-Link Q2 - WH: 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 Switching voltage max. 30 V DC max. 30 V DC Switching current max. 100 mA, resistive load Usage category Voltage drop Ud <1.5 V DC	for sensor connection		
Process data witchProcess data input 3 Byte Process data output 2 BitMounting braSIO mode supportyesOther suitableDevice ID0x110908 (1116424)Other suitable www.pepperf-Compatible master port typeAOutputThe default setting is: $C/O - BK: NPN normally open, PNP normally closed, IO-LinkQ2 - WH: NPN normally open, PNP normally closedSignal output2 push-pull (4 in 1)outputs, short-circuit protected, reversepolarity protected, overvoltage protectedSwitching voltagemax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropUd\leq 1.5 V DCResponse time2 msConformityCommunication interfaceIEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Measurement accuracyUrime\leq 0.15 mmLinearity error\pm 0.3 mmAmbient conditionsAmbient conditionsAmbient temperature10 60 °C (50 140 °F), fixed cable10 60 °C (50 140 °F), movable cable not appropriate for$			
Process data oùtput 2 Bit Internet of the suitable SiO mode support yes Device ID 0x110908 (1116424) Compatible master port type A Output C/Q - 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 outrage max. 30 V DC Switching outge max. 100 mA, resistive load Usage category DC-13 Voltage drop Ud Communication interface IEC 61131-9 Product standard EN 60947-5-2 Laser safety EN 60825-1:2014 Measurement accuracy ≤ 0.15 mm Linearity error ± 0.3 mm Ambient conditions 10 60 °C (50 140 °F), fixed cable not appropriate for	03-01		
Process data output 2 Bit Other suitable SIO mode support yes Other suitable Device ID 0x110908 (1116424) Www.pepperl- Compatible master port type A Www.pepperl- Switching type The default setting is: C/Q - BK: NPN normally open, PNP normally closed, IO-Link Q2 - WH: NPN normally open, PNP normally closed O-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 Weise State	bracket		
Device ID $0x110908 (1116424)$ www.pepperl-Compatible master port typeAOutputSwitching typeThe default setting is: $C/Q - BK: NPN normally open, PNP normally closed, IO-LinkQ2 - WH: NPN normally open, PNP normally closedSignal output2 push-pull (4 in 1)outputs, short-circuit protected, reversepolarity protected, overvoltage protectedSwitching voltagemax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropUd\leq 1.5 V DCResponse time2 msConformityCommunication interfaceIEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60925-1:2014Measurement accuracyUramptime5 minRepeat accuracyLinearity error\pm 0.3 mmAmbient conditions10 60 °C (50 140 °F), fixed cable10 60 °C (50 140 °F), movable cable not appropriate for$			
Device ID $0x110908 (1116424)$ www.pepperl-Compatible master port typeADutputSwitching typeThe default setting is: C/Q - BK: NPN normally open, PNP normally closed, IO-Link Q2 - WH: NPN normally open, PNP normally closedSignal output2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvoltage protectedSwitching voltagemax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropUd ≤ 1.5 V DCResponse time2 msConformityEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Measurement accuracy Linearity error ± 0.3 mmRepeat accuracy Linearity error ± 0.3 mmAmbient conditions10 60 °C (50 140 °F), fixed cable $10 60 °C (50 140 °F), movable cable not appropriate for$	able accessories can be foun		
Compatible master port typeADutputSwitching typeThe default setting is: $C/Q - BK: NPN normally open, PNP normally closed, IO-LinkQ2 - WH: NPN normally open, PNP normally closedSignal output2 push-pull (4 in 1)outputs, short-circuit protected, reversepolarity protected, overvoltage protectedSwitching voltagemax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropUd\leq 1.5 V DCResponse time2 msConformityCommunication interfaceIEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Measurement accuracy\leq 0.15 mmTemperature drift20 \mu m/KWarm up time5 minRepeat accuracy\leq 0.15 mmLinearity error\pm 0.3 mmAmbient conditions10 60 °C (50 140 °F), fixed cable10 60 °C (50 140 °F), movable cable not appropriate for$	erl-fuchs.com		
DurbutSwitching typeThe default setting is: $C/Q - BK: NPN normally open, PNP normally closed, IO-LinkQ2 - WH: NPN normally open, PNP normally closedSignal output2 push-pull (4 in 1)outputs, short-circuit protected, reversepolarity protected, overvoltage protectedSwitching voltagemax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropUd\leq 1.5 V DCResponse time2 msConformityCommunication interfaceIEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Weasurement accuracy\leq 0.15 mmRepeat accuracy\leq 0.15 mmLinearity error\pm 0.3 mmAmbient conditions10 60 °C (50 140 °F), fixed cable10 60 °C (50 140 °F), movable cable not appropriate for$			
Switching typeThe default setting is: C/Q - BK: NPN normally open, PNP normally closed, IO-Link Q2 - WH: NPN normally open, PNP normally closedSignal output2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvoltage protectedSwitching voltagemax. 30 V DCSwitching currentmax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropU_d ≤ 1.5 V DCResponse time2 msCommunication interfaceIEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Weasurement accuracy ≤ 0.15 mmTemperature drift20 µm/KWarm up time5 minRepeat accuracy ≤ 0.15 mmLinearity error ± 0.3 mmAmbient conditions10 60 °C (50 140 °F), fixed cable $10 60 °C (50 140 °F), movable cable not appropriate for$			
C/Q - BK: NPN normally open, PNP normally closed, IO-Link Q2 - WH: NPN normally open, PNP normally closedSignal output2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvoltage protectedSwitching voltagemax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropUd ≤ 1.5 V DCResponse time2 msCommunication interfaceIEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Weasurement accuracy ≤ 0.15 mmTemperature drift20 µm/KWarm up time5 minRepeat accuracy ≤ 0.15 mmLinearity error ± 0.3 mmAmbient temperature10 60 °C (50 140 °F), fixed cable $10 60 °C (50 140 °F), movable cable not appropriate for$			
Q2 - WH: NPN normallý open, PNP normallý closedSignal output2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvoltage protectedSwitching voltagemax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropUd≤ 1.5 V DCResponse time2 msConformityTCommunication interfaceIEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Measurement accuracy≤ 0.15 minRepeat accuracy≤ 0.15 mmLinearity error± 0.3 mmAmbient conditions10 60 °C (50 140 °F), fixed cable 10 60 °C (50 140 °F), movable cable not appropriate for			
Signal output2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvoltage protectedSwitching voltagemax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropU_d≤ 1.5 V DCResponse time2 msConformityEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Measurement accuracy2 0 μm/KWarm up time5 minRepeat accuracy≤ 0.15 mmLinearity error± 0.3 mmAmbient conditions10 60 °C (50 140 °F), fixed cable 10 60 °C (50 140 °F), movable cable not appropriate for			
polarity protected, overvoltage protectedSwitching voltagemax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage drop $U_d \leq 1.5$ V DCResponse time2 msConformityConformityCommunication interfaceIEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Measurement accuracy20 µm/KTemperature drift20 µm/KWarm up time5 minRepeat accuracy ≤ 0.15 mmLinearity error ± 0.3 mmAmbient conditions10 60 °C (50 140 °F), fixed cable $10 60 °C (50 140 °F), movable cable not appropriate for$			
Switching voltagemax. 30 V DCSwitching currentmax. 100 mA , resistive loadUsage categoryDC-12 and DC-13Voltage dropUd ≤ 1.5 V DCResponse time2 msConformityCommunication interfaceIEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Measurement accuracyTemperature drift20 μ m/KWarm up time5 minRepeat accuracy ≤ 0.15 mmLinearity error ± 0.3 mmAmbient conditions10 60 °C (50 140 °F) , fixed cable $10 60 °C (50 140 °F) , movable cable not appropriate for$			
Switching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropUd ≤ 1.5 V DCResponse time2 msConformityEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Measurement accuracyEN 60825-1:2014Yarm up time5 minRepeat accuracy ≤ 0.15 mmLinearity error ± 0.3 mmAmbient conditions10 60 °C (50 140 °F), fixed cable $10 60 °C (50 140 °F), movable cable not appropriate for$			
Usage categoryDC-12 and DC-13Voltage drop U_d < 1.5 V DC			
Voltage drop U_d $\leq 1.5 \text{ V DC}$ Response time2 msConformityCommunication interfaceIEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Measurement accuracyTemperature drift20 µm/KWarm up time5 minRepeat accuracy $\leq 0.15 \text{ mm}$ Linearity error $\pm 0.3 \text{ mm}$ Ambient conditions10 60 °C (50 140 °F) , fixed cable $10 60 °C (50 140 °F) , movable cable not appropriate for$			
Response time2 msConformityIEC 61131-9Communication interfaceIEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Measurement accuracyVTemperature drift20 μ m/KWarm up time5 minRepeat accuracy< 0.15 mm			
ConformityCommunication interfaceIEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Measurement accuracyEN 60825-1:2014Yeasurement accuracy $20 \ \mu m/K$ Warm up time5 minRepeat accuracy $\leq 0.15 \ mm$ Linearity error $\pm 0.3 \ mm$ Ambient conditions $10 \dots 60 \ ^{\circ}C (50 \dots 140 \ ^{\circ}F)$, fixed cable $10 \dots 60 \ ^{\circ}C (50 \dots 140 \ ^{\circ}F)$, movable cable not appropriate for			
Communication interfaceIEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Measurement accuracyZ0 μ m/KYemperature drift20 μ m/KWarm up time5 minRepeat accuracy ≤ 0.15 mmLinearity error ± 0.3 mmAmbient conditions10 60 °C (50 140 °F) , fixed cable $10 60 °C (50 140 °F) , movable cable not appropriate for$			
Communication interfaceIEC 61131-9Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Measurement accuracyZ0 μ m/KYemperature drift20 μ m/KWarm up time5 minRepeat accuracy ≤ 0.15 mmLinearity error ± 0.3 mmAmbient conditions10 60 °C (50 140 °F) , fixed cable $10 60 °C (50 140 °F) , movable cable not appropriate for$			
Product standardEN 60947-5-2Laser safetyEN 60825-1:2014Measurement accuracy $20 \ \mu m/K$ Temperature drift $20 \ \mu m/K$ Warm up time $5 \ min$ Repeat accuracy $\leq 0.15 \ mm$ Linearity error $\pm 0.3 \ mm$ Ambient conditions $10 \ \dots 60 \ ^{\circ}C (50 \ \dots 140 \ ^{\circ}F)$, fixed cable $10 \ \dots 60 \ ^{\circ}C (50 \ \dots 140 \ ^{\circ}F)$, movable cable not appropriate for			
Laser safety EN 60825-1:2014 Measurement accuracy 20 μm/K Temperature drift 20 μm/K Warm up time 5 min Repeat accuracy ≤ 0.15 mm Linearity error ± 0.3 mm Ambient conditions 10 60 °C (50 140 °F) , fixed cable 10 60 °C (50 140 °F) , movable cable not appropriate for			
Measurement accuracy Temperature drift 20 μm/K Warm up time 5 min Repeat accuracy ≤ 0.15 mm Linearity error ± 0.3 mm Ambient conditions 10 60 °C (50 140 °F) , fixed cable 10 60 °C (50 140 °F) , movable cable not appropriate for			
Temperature drift20 μm/KWarm up time5 minRepeat accuracy ≤ 0.15 mmLinearity error ± 0.3 mmAmbient conditions10 60 °C (50 140 °F) , fixed cable $10 60 °C (50 140 °F) , movable cable not appropriate for$			
Warm up time5 minRepeat accuracy $\leq 0.15 \text{ mm}$ Linearity error $\pm 0.3 \text{ mm}$ Ambient conditions10 60 °C (50 140 °F), fixed cable $10 60 °C (50 140 °F), movable cable not appropriate for$			
Repeat accuracy ≤ 0.15 mm Linearity error ± 0.3 mm Ambient conditions 10 60 °C (50 140 °F) , fixed cable Ambient temperature 10 60 °C (50 140 °F) , fixed cable 10 60 °C (50 140 °F) , movable cable not appropriate for			
Linearity error ± 0.3 mm Ambient conditions Image: Condition state of the state o			
Linearity error ± 0.3 mm Ambient conditions Image: Condition of the state of the			
Ambient conditions Ambient temperature 10 60 °C (50 140 °F) , fixed cable 10 60 °C (50 140 °F) , movable cable not appropriate for			
Ambient temperature 10 60 °C (50 140 °F) , fixed cable 10 60 °C (50 140 °F) , movable cable not appropriate for			
10 60 °C (50 140 °F) , movable cable not appropriate for			
convevor chains			
Storage temperature -40 70 °C (-40 158 °F)			
Mechanical specifications			

Release date: 2018-06-08 14:57 Date of issue: 2018-06-08 267075-100383_eng.xml

Refer to "General Notes Relating to Pepperl+Fuchs Product Information" Pepperl+Fuchs Group www.pepperl-fuchs.com

Germany: +49 621 776 4411 fa-info@de.pepperl-fuchs.com

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

Housing height	36.5 mm
Housing depth	26.7 mm
Degree of protection	IP67 / IP69 / IP69K
Connection	2 m fixed cable
Material	
Housing	PC (Polycarbonate)
Optical face	PMMA
Mass	approx. 38 g
Cable length	2 m
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

Preferences

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.

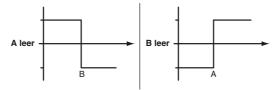
An unsuccessful Teach-In is indicated by rapidly alternating flashing (8 Hz) of the yellow and green LEDs.

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

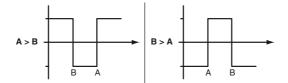
Different switching modes can be defined by teaching in the relevant distance measured values

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:

267075-100383_eng.xml

- 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 via IO-Link interface

Setting 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.

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.

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



Distance sensor

active dete	ction range					
	Background suppression					
 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. 						
active det	ection range					
Foreground suppression	Background suppression					
this window are not detected.Window mode with one switch point.	e 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. 						
	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.

