

CE **OIO**-Link

#### **Model Number**

#### OBT80-R102-2P1-IO

Triangulation sensor (BGS) with 2 m fixed cable

#### **Features**

- Miniature design with versatile • mounting options
- Best background suppressor in its ٠ class
- Precision object detection, almost • irrespective of the color
- Extended temperature range -40°C ... 60°C
- High degree of protection IP69K
- IO-link interface for service and ٠ process data

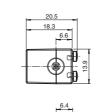
### **Product information**

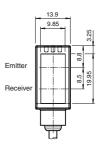
The miniature optical sensors are the first devices of their kind to offer an end-to- end solution in a small single standard design - from thru-beam sensor through to a distance measurement device. As a result of this design, the sensors are able to perform practically all standard automation tasks.

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.

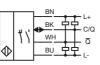
**Dimensions** 





#### **Electrical connection**

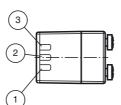
2



M2 (2X)

2000

#### Indicators/operating means



1	Operating indicator / dark on
2	Signal indicator
0	Onersting indicator / light on

3 Operating indicator / light on

Pepperl+Fuchs Group

www.pepperl-fuchs.com

eng.xml

00558

Refer to "General Notes Relating to Pepperl+Fuchs Product Information" USA: +1 330 486 0001

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# **Technical data**

light-on, IO-Link /Q - Pin2: NPN normally open / light-on, PNP normally close dark-onSignal 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 drop $U_d \leq 1.5$ V DCSwitching frequencyff500 HzResponse time1 msConformityCommunication interfaceIEC 61131-9Product standardEN 60947-5-2Ambient temperature-40 60 °C (-40 140 °F), fixed cable -25 60 °C (-13 140 °F), movable cable not appropriate conveyor chainsStorage temperature-40 70 °C (-40 158 °F)Mechanical specificationsHousing width13.9 mmHousing depth18.3 mmDegree of protectionIP67 / IP69 / IP69KConnoction2 m fixed cableMaterialPC (Polycarbonate)Optical faceFloat glassMassapprox. 36 gCable length2 mApprovals and certificates	Technical data					
Detection range max.         10 100 mm           Background suppression         standard white, 100 mm x 100 mm           Light source         LED           Light source         LED           Light source         LED           Background suppression         exempt group           Black-White difference (8*,905%)         approx.5 mm           Diameter of the light spat         approx.5 mm           Angle of divergence         approx.5 mm           Mission Time (T <sub>R</sub> )         20 a           Diamostic Coverage (DC)         0 %           Indicator         20 a           Diagnostic Coverage (DC)         0 %           Indicator         LED green: constantly on-power on flashing with short break (1 Hz) - IO-Link mode           Electrical specifications         UE option: constantly on-power on flashing with short break (1 Hz) - IO-Link mode           Protection indicator         LED green: constantly on-polent of the cond flashing with short break (1 Hz) - IO-Link mode           Protection class         UI         10 30 V DC           Ripple         nax. 10 %         10 10 %           No-load suppl current         10         2 30 %           Interface         COM 2 (28.4 KBaud)         10 10 %           IO-Link Revision         1.1         1	General specifications					
Background appression         standard white, 100 mm           Reference target         standard white, 100 mm           Light source         LED           Light source         LED           Light source         modulated visible red light           Light type         modulated visible red light           Diameter of the light spot         approx. 5 m           Angle of divergence         approx. 5 m           Anthent light mint         EN 60047-5-2: 40000 Lux           Functional safety related parameters         600 a           MTTFa         600 a           Massion Time (T <sub>M</sub> )         20 a           Diagnostic Coverage (DC)         0 %           Operation indicator         LED green: constantly on -object detected constantly on -object detec	Detection range		10 80 mm			
Reference target         standard while, 100 mm x 100 mm           Light source         LED           Light type         modulated visible red light           LED risk group labelling         exempt group           Back-White difference (6 %/90 %)         approx.5 mm           Angle of divergence         approx.5 mm           Angle of divergence         approx.5 mm           MTTF,         modulated visible red light           MTTF,         600 a           Mission Time (Tq.)         20 a           Degraterin indicator         EED green: constantly on power on constantly on power on constantly on - object detected constantly on - object detected           Functional sepecifications         EED green: constantly on - object detected constantly on - object detected           Protection class         II           Interface type         Ug           No-land suppl current         10           Process data witch         Frocess data mignt           Process data witch         Process data mignt           Process data witch         Process data output 2 Bit           Process data witch         Process data output 2 Bit           Process data mignt         Stort of Class           Stort of support         yes           Storede support         yes	Detection range max.		10 100 mm			
Liph type         HED           Liph type         modulated visible red light           ED risk group labelling         exempt group           Black-White difference (§ %90 %)         approx.5 mm           Dameter of the light spot         approx.5 mm           Andjee of divergence         approx.5 mm           Anbient light init         EN 8007-52:10000 Lux           Functional safety related parameters         modulated visible relation of the state						
Light type       modulated visible red light         Light type       modulated visible red light         Light type       approx.5 mm         Diameter of the light spot       approx.5 °         Angle of divergence       approx.5 °         Mission Time (T <sub>10</sub> )       20 a         Diamostic Coverage (DO)       0 %         Indicators/operating means       Constantly on - power on chasting on - object detected constantly on - object of detected constantly on - object detected constantly on - object of detected constantly on - object detected constantly on - power on chasting on - pow	÷					
LED risk group labeling         exempt group           Black/White difference (6 %/90 %)         approx. 5 mm           Dameter of the light spot         approx. 5 mm           Andie of divergence         approx. 5 mm           Anabient light mit         EN 6000 Lux           Functional safety related parameters         000 a           Mission Time (T <sub>M</sub> )         20 a           Diagnostic Coverage (DC)         0 %           Indicator/Second time (1 H2) - IO-Link mode         LED green: constantly of - object detected constantly of - object not detected           Function indicator         LED green: constantly of - object not detected           Portaling voltage         Ug           Protection class         1030 V DC           Ripple         max. 10 %           No-load supply current         Ig           Protection class         11           Interface         Device profile           Transfer rate         COW (28.4 kBaud)           IO-Link (Vai C/Q = BK)         Device profile           Stor mode support         yes           Device profile         Smart           Transfer rate         COW 2 (88.4 kBaud)           IO-Link Revision         1.1           Min. cycle time         2.3 ms           Pr	-					
Bianeter of the light spot         approx. 5 mm           Angle of divergence         approx. 5 s <sup>-</sup> Ambient light limit         EN 60947-52; 40000 Lux           Functional selfsy related parameters         FUTCIONAL Selfsy related parameters           MTTF_g         600 a           Mission Time (Tr_g)         20 a           Diagnostic Coverage (DC)         0 %           Indicators/operating means         Corestantly on - power on transiting which is short break (1 H2) - 10-Link mode           Electrical specifications         Corestantly on - power on transiting which is short break (1 H2) - 10-Link mode           Function indicator         LED grean: constantly of - object not detected           Electrical specifications         III           Operating voltage         Up           No-load supply current         10 30 V DC           Ripple         max. 10 %           No-load supply current         Value (38.4 Reaud)           INI- wole time         2.3 ms           Process data witch         Process data input 1 Bit Process data input 1 Bit Process data input 2 Bit Process data witch           Process data witch         Ves           Davice ID         C/O - Pinzt NPN normally closed / dark-on, PNP normally closed / dark-on, P	• ,.		-			
Denseter of the light spot       approx. 5 "         Angle of divergence       approx. 5 "         Ambent light limit       EN 80947-5.2: 40000 Lux         Functional safety related parameters       000 a         Mission Time (T <sub>W</sub> )       20 a         Diagnostic Coverage (DC)       0 %         Indicator Soperating means       000 a         Operation indicator       LED green: constantly on - object detected constantly of - object thetected constantly of - object thetected constantly of - object thetected         Portating voltage       Up         Protection class       10		<b>`</b>				
Ambient light limit       EN 60947-5-2: 40000 Lux         Functional safety related parameters       600 a         MTTrg       600 a         Mission Time (Trg)       20 a         Deprosite Coverage (DC)       0 %         Indicators/operating means       Constantity on - power on transity (H-12) = Not circuit transity (H-12) = Not circit (H-12) = Not circuit transity (H-12) = Not circuit t	· · · · ·	)				
Ambient light limit       EN 60947-5-2 : 40000 Lux         Functional safety related parameters       600 a         MITEr <sub>d</sub> 20 a         Diagnostic Coverage (DC)       0 %         Indicators/operating means       ED green: constantly on - power on flashing (4H2) - short circuit flashing with short break (1 H2) - IO-Link mode         Electrical specifications       ED green: constantly on - object detected constantly on - object detected constantly on - object detected         Protection class       III         Interface       III         Interface to class       III         Interface to class       III         Interface to class       III         Procestion class       III         Process data output 2 bit Process data o	<b>U</b> .					
Functional safety related parameters         600 a           MITFr <sub>d</sub> 600 a           Mission Time (T <sub>M</sub> )         20 a           Diagnostic Coverage (DC)         0 %           Operation indicator         EED green: constantly on-power on flashing (H4x) - short circuit flashing (H4x) - short circuit protected, reverse polar flashing (H4x) - short flashing - circuit protected, short circuit protected, reverse polar flashing - circuit protected, short circuit protected, reverse						
MTrF <sub>a</sub> 600 a         Mission Time (T <sub>b</sub> )       20 a         Diagnostic Coverage (DC)       0 %         Indicators/operating means       Coveration indicator         Operation indicator       LED green: constantly on - power on flashing (4H2) - short circuit flashing with short break (1 Hz) - IO-Link mode         Function indicator       LED green: constantly on - object detected constantly on - object not detected         Protection class       III         Interface       III         Protection class       III         Interface type       Ma. 10 %         Protection class       III         Interface type       COLink (via C/Q = BK)         Device profile       Smart Sensor         Transfer rate       COW 2(38.4 kBaud)         IO-Link Revision       1.1         Min. cycle time       2.3 ms         Process data input 1 Bit Process data input 2 Bit         Device ID       Ox 10517 (1115415)         Compatible master port type       A         Output       Signal output         Signal output       Epis-Pin2 (M2 - NPN normally closed / dark-on, PNP normally close dark-on         Signal output       CO-Pin4: NPN normally closed / dark-on, PNP normally close dark-on         Signal output       Epis-Pin2 (M2 - M2 - M2 - M2 - M2		eters				
Mission Time (T <sub>M</sub> )       20 a         Diagnostic Coverage (DC)       0 %         Indicators/coperating means       ED green:         Operation indicator       LED green:         Function indicator       LED yellow:         Function indicator       LED yellow:         Operating voltage       Ug         10	• •		600 a			
Indicators/operating means       LED green: constantily on - power on flashing (4fts) reshort circuit flashing (4fts) reshort circuit flashing flashing (4fts) reshort circuit flashing (reset flashing (4ft) reshort circuit flashing (4ft) reshing (4ft) reshort circuit flashing (4ft) reshort circ	Mission Time (T <sub>M</sub> )		20 a			
Operation indicator         LED green: constantly on - power on flashing (Mth Short break (1 Hz) - IO-Link mode           Function indicator         LED yellow: constantly on - object detected constantly on - object not detected           Operating voltage         Ug max. 10 %           No-load supply current Interface type         Io 30 V DC           Interface         III           Interface type         IO-Link (via C/Q = BK)           Device profile         Smart Sensor           Transfer rate         COM2 (38.4 kBaud)           IO-Link Revision         1.1           Min. cycle time         2.3 ms           Process data witch         Process data input 1 Bit Process data input 1 Bit Process data witch           Process data witch         Process data input 1 Bit Process data witch           Stor mode support         yes           Device ID         Ox 110517 (1115415)           Compatible master port type         A           Output         2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected, overroitage protected           Switching voltage         max. 30 V DC           Switching voltage         max. 30 V DC           Switching voltage         max. 30 V DC           Switching voltage         max. 10 mA, resistive load           Usage category         U-C-12	Diagnostic Coverage (DC)		0 %			
constantly on - power on flashing (4H2) - short circuit flashing (4H2) - short circuit flashing (4H2) - short circuit flashing (4H2) - short circuit flashing with short break (1 H2) - IO-Link mode         Function indicator       Leby ellow: constantly of - object detected constantly of - object not detected         Operating voltage       Up flapple       1030 V DC         Ripple       max. 10 %         No-load supply current       lp extection class       III         Interface Protection class       III         Interface type       IO-Link (via C/Q = BK )         Device profile       Smatt Sensor         Transfer rate       COM2 (38.4 kBaud)         IO-Link Revision       1.1         Min. cycle time       2.3 ms         Process data witch       Process data output 1 Bit Process data output 2 Bit Process data output 2 Bit         SIO mode support       yes         Device ID       Ox110517 (1115415)         Compatible master port type       A         Output       Switching type         Signal output       2 puls-pull (4 n1)outputs, short-circuit protected, reverse polarity protected, overvottage protected         Switching voltage       max. 100 MA, resistive load         Usage category       DC - 12 and DC - 13         Voltage drop       Ud 4 < 1.5 V DC	Indicators/operating means					
Constantly on - object detected constantly off - object not detected         Electrical specifications         Operating voltage       Up         Ripple       max. 10 %         No-load supply current       Up         Interface type       IO-Link (via C/Q = BK )         Interface type       IO-Link (via C/Q = BK )         Device profile       Smart Sensor         Transfer rate       COM 2 (38 4 KBaud)         IO-Link Revision       1.1         Min. cycle time       2.3 ms         Process data witch       Process data input 1 Bit Process data output 2 Bit         Process data witch       Process data output 2 Bit         SIO mode support       yes         Device ID       0x110517 (1115415)         Compatible master port type       A         Output       C/Q - Pin2: NPN normally closed / dark-on, PNP normally closed / dark-on, PNP normally closed dark-on         Signal output       2 push-pull (4 in 1)outputs, short-circuit protected, reverse polatiny protected, overvoitage protected         Switching voltage       max. 100 mA, resistive load         Usage category       Dc-12 and DC-13         Voltage drop       U_d       < 1.5 V DC	Operation indicator		constantly on - power on flashing (4Hz) - short circuit			
Operating voltage       UB       1030 V DC         Ripple       max. 10 %         No-load supply current       I0       <25 mA t 24 V supply voltage	Function indicator		constantly on - object detected			
Ripple       max. 10 %         No-load supply current $I_0$ $I_0$ <25 mA at 24 V supply voltage	Electrical specifications					
No-load supply currentI0< 25 mA at 24 V supply voltageProtection classIIIInterfaceIIIInterface typeIO-Link (via C/Q = BK)Device profileSmart SensorTransfer rateCOM 2 (38.4 kBaud)IO-Link Revision1.1Min. cycle time2.3 msProcess data witchProcess data input 1 Bit Process data output 2 BitSiO mode supportyesDevice IDOx 110517 (1115415)Compatible master port typeAOutputSwitching typeSwitching typeC/Q - Pin4: NPN normally closed / dark-on, PNP normally of light-on, IO-Link (70 - Pin2: NPN normally open / light-on, PNP normally of sed dark-onSignal output2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvoltage protectedSwitching voltagemax. 30 V DCSwitching requencyfSoutput500 HzResponse time1 msConformityEC 61131-9Product standardEN 60947-5-2Ambient conditions1.9 mmAmbient standardEN 60947-5-2Ambient standard1.9 mmHousing width13.9 mmHousing depth18.3 mmHousing depth18.3 mmHousing depth18.3 mmHousing depth18.3 mmHousing depth18.3 mmHousing height31.9 mmHousing depth18.3 mmHousing depth18.3 mmHousing depth18.3 mmHousing depth18	Operating voltage	UB	10 30 V DC			
Protection class       III         Interface       Interface type         Interface type       IO-Link (via C/Q = BK )         Device profile       Smart Sensor         Transfer rate       COM 2 (38.4 kBaud)         IO-Link Revision       1.1         Min. cycle time       2.3 ms         Process data witch       Process data output 2 Bit         SIO mode support       yes         Device ID       Ox110517 (1115415)         Compatible master port type       A         Output       Switching type         Signal output       2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overoltage protected         Switching voltage       max. 30 V DC         Switching voltage       max. 30 V DC         Switching voltage       max. 30 V DC         Switching requency       f 500 Hz         Response time       1 ms         Conformity       Communication interface         Product standard       EN 60947-5-2         Ambient temperature       -40 60 °C (-40 140 °F), fixed cable         -25 60 °C (-40 140 °F), movable cable not appropriate conveyor chains         Storage temperature       -40 70 °C (-40 158 °F)         Mechanical specifications       Material<						
InterfaceInterface typeIO-Link (via $C/Q = BK$ )Device profileSmart SensorTransfer rateCOM 2 (88.4 kBaud)IO-Link Revision1.1Min. cycle time2.3 msProcess data witchProcess data input 1 Bit Process data uppot 2 BitSIO mode supportyesDevice ID0x110517 (115415)Compatible master port typeAOutputC/Q - Pin4: NPN normally closed / dark-on, PNP normally closed dark-onSwitching typeC/Q - Pin4: NPN normally closed / dark-on, PNP normally closed dark-onSignal output2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvoltage protectedSwitching troupUd dark-onSwitching frequencyfSouthing frequencyfProduct standardEIC 61131-9Product standardEIC 61131-9Ambient conditions-40 60 °C (-40 140 °F), fixed cable -25 60 °C (-13 140 °F), movable cable not appropriate conveyor chainsStorage temperature-40 70 °C (-40 158 °F)Mechanical specifications13.9 mmHousing width13.9 mmHousing width13.9 mmHousing depth18.3 mmDegre	11.2	I <sub>0</sub>				
Interface type       IO-Link (via C/Q = BK)         Device profile       Smart Sensor         Transfer rate       COM 2 (38.4 kBaud)         IO-Link Revision       1.1         Min. cycle time       2.3 ms         Process data witch       Process data input 1 Bit Process data output 2 Bit         SIO mode support       yes         Device ID       0x110517 (1115415)         Compatible master port type       A         Output       Switching type         Signal output       2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvitage protected of evervitage protected are verse polarity protected, overvitage protected         Switching voltage       max. 100 mA, resistive load         Usage category       DC-13         Voltage drop       Ud         Softhisting frequency       f         The No 0°C (-40 140 °F), fixed cable         -25 60 °C (-40 140 °F), fixed cable         -25 60 °C (-40 140 °F), fixed cable         -25 60 °C (-40 140 °F), movable cable not appropriate conveyor chains         Storage temperature       -40 60 °C (-40 140 °F), movable cable not appropriate conveyor chains         Storage temperature       -40 70 °C (-40 158 °F)         Mechanical specifications       Fixed cable						
Device profile       Smart Sensor         Transfer rate       COM 2 (38.4 KBaud)         IO-Link Revision       1.1         Min. cycle time       2.3 ms         Process data witch       Process data input 1 Bit Process data output 2 Bit         SIO mode support       yes         Device ID       0x110517 (1115415)         Compatible master port type       A         Output       EV         Switching type       C/Q - Pin4: NPN normally closed / dark-on, PNP normally open / light-on, IO-Link //Q - Pin2: NPN normally open / light-on, PNP normally close dark-on         Signal output       2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvoltage protected         Switching voltage       max. 30 V DC         Switching frequency       f         Voltage drop       Ud         Voltage drop       Ud         Conformity       Communication interface         Confunction       IEC 61131-9         Product standard       EN 60947-5-2         Ambient conditions       -40 60 °C (-40 140 °F), ixed cable         Ambient denditions       -25 60 °C (-40 140 °F), movable cable not appropriate convey or chains         Storage temperature       -40 70 °C (-40 158 °F)         Mechanical specifications       -25 60 °						
Transfer rate       COM 2 (38.4 kBaud)         IO-Link Revision       1.1         Min. cycle time       2.3 ms         Process data witch       Process data input 1 Bit Process data output 2 Bit         SIO mode support       yes         Device ID       0x110517 (1115415)         Compatible master port type       A         Output       Switching type         Signal output       2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvoltage protected         Switching voltage       max. 30 V DC         Switching requency       f         Switching requency       f         Switching requency       f         Product standard       EN 60947-5-2         Ambient temperature       -40 60 °C (-40 140 °F), fixed cable -25 60 °C (-40 160 °F), movable cable not appropriate conveyor chains         Storage temperature       -40 70 °C (-40 158 °F)         Mechanical specifications       1         Housing width       13.9 mm         Housing height       31.9 mm         Housing height       31.9 mm         Housing width       13.9 mm         Housing Height       1.9 mm         Housing Height       31.9 mm         Housing Height       13.9 mm<			· · · · · · · · · · · · · · · · · · ·			
IO-Link Revision       1.1         Min. cycle time       2.3 ms         Process data witch       Process data input 1 Bit Process data output 2 Bit         SIO mode support       yes         Device ID       0x110517 (1115415)         Compatible master port type       A         Output       Switching type         Switching type       C/Q - Pin4: NPN normally closed / dark-on, PNP normally close dark-on         Signal output       2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvoltage protected         Switching voltage       max. 30 V DC         Switching requency       f         Voltage drop       U <sub>d</sub> Switching frequency       f         Solage category       DC-12 and DC-13         Voltage drop       U <sub>d</sub> Switching frequency       f         Forduct standard       EN 60%C (-40 140 °F), fixed cable         Response time       1 ms         Conformity       Construction interface         Product standard       EN 60%C (-40 140 °F), fixed cable         Ambient temperature       -40 60 °C (-40 140 °F), fixed cable         Ambient temperature       -40 60 °C (-40 140 °F), fixed cable         Housing width       13.9 mm	•					
Min. cycle time       2.3 ms         Process data witch       Process data input 1 Bit Process data output 2 Bit         SIO mode support       yes         Device ID       0x110517 (1115415)         Compatible master port type       A         Output       Switching type         Switching type       C/Q - Pin4: NPN normally closed / dark-on, PNP normally op light-on, IO-Link //Q - Pin2: NPN normally closed / dark-on, PNP normally close dark-on         Signal output       2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvoltage protected         Switching voltage       max. 30 VDC         Switching requency       f         Voltage drop       Ud         Voltage drop       Ud         Switching frequency       f         Product standard       EN 60947-5-2         Ambient conditions       -40 60 °C (-40 140 °F), fixed cable -25 60 °C (-40 140 °F), movable cable not appropriate conveyor chains         Storage temperature       -40 70 °C (-40 158 °F)         Mechanical specifications       -40 70 °C (-40 158 °F)         Housing width       13.9 mm         Housing vidth       13.9 mm         Housing vidth       13.9 mm         Housing depth       18.3 mm         Degree of protection       PR6/PB9						
Process data witch       Process data output 1 Bit Process data output 2 Bit         SIO mode support       yes         Device ID       0x110517 (1115415)         Compatible master port type       A         Output       Silomode support         Switching type       C/Q - Pin4: NPN normally closed / dark-on, PNP normally close dark-on, IO-Link /Q - Pin2: NPN normally open / light-on, PNP normally close dark-on         Signal output       2 push-pull (4 in 1)outputs, short-circuit protected, overvoltage protected overvoltage protected, overvoltage protected         Switching voltage       max. 30 V DC         Switching requency       f         Usage category       Ud         Voltage drop       Ud         Switching frequency       f         Storage temperature       1 ms         Communication interface       IEC 61131-9         Product standard       EN 60947-5-2         Ambient conditions       -40 60 °C (-40 140 °F), fixed cable -25 60 °C (-40 140 °F), movable cable not appropriate conveyor chains         Storage temperature       -40 70 °C (-40 140 °F), movable cable not appropriate conveyor chains         Storage temperature       -40 70 °C (-40 140 °F), movable cable not appropriate conveyor chains         Musing height       31.9 mm         Housing height <td></td> <td></td> <td></td>						
SIO mode support       yes         Device ID       0x110517 (1115415)         Compatible master port type       A         Output       Switching type         Switching type       C/Q - Pin4: NPN normally closed / dark-on, PNP normally open / light-on, PNP normally close dark-on         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. 100 mA, resistive load         Usage category       DC-12 and DC-13         Voltage drop       Ud         Switching frequency       f         Sommunication interface       IEC 61131-9         Product standard       EN 60947-5-2         Ambient conditions       -40 60 °C (-40 140 °F), fixed cable         -25 60 °C (-13 140 °F), movable cable not appropriate conveyor chains         Storage temperature       -40 70 °C (-40 158 °F)         Mechanical specifications       -40 70 °C (-40 158 °F)         Housing width       13.9 mm         Housing depth       18.3 mm         Degree of protection       IP67 / IP69 / IP69K         Connection       2 m fixed cable         Material						
Device ID       0x110517 (1115415)         Compatible master port type       A         Output       C/Q - Pin4: NPN normally closed / dark-on, PNP normally op light-on, IO-Link         Switching type       C/Q - Pin4: NPN normally open / light-on, PNP normally close dark-on         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. 100 mA, resistive load         Usage category       DC-12 and DC-13         Voltage drop       Ud       ≤ 1.5 V DC         Switching frequency       f< 500 Hz						
Compatible master port typeAOutputSwitching type $C/Q - Pin4: NPN normally closed / dark-on, PNP normally oplight-on, IQ-Link/Q - Pin2: NPN normally open / light-on, PNP normally closedark-onSignal output2 push-pull (4 in 1)outputs, short-circuit protected, reversepolarity protected, overvoltage protectedSwitching voltagemax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropUd\leq 1.5 V DCSwitching frequencyff500 HzResponse time1 msConformityCommunication interfaceConformityEC 61131-9Product standardEN 60947-5-2Ambient temperature-40 60 °C (-40 140 °F), fixed cable-25 60 °C (-13 140 °F), movable cable not appropriateconveyor chainsStorage temperature-40 70 °C (-40 158 °F)Mechanical specifications13.9 mmHousing height31.9 mmHousing depth18.3 mmDegree of protectionIP67 / IP69 / IP69KConnection2 m fixed cableMaterialHousingHousingPC (Polycarbonate)Optical faceFloat glassMassapprox. 36 gCable length2 m$			•			
OutputSwitching type $C/Q - Pin4: NPN normally closed / dark-on, PNP normally oplight-on, IO-Link/Q - Pin2: NPN normally open / light-on, PNP normally closedark-onSignal output2 push-pull (4 in 1)outputs, short-circuit protected, reversepolarity protected, overvoltage protectedSwitching voltagemax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropUd\leq 1.5 V DCSwitching frequencyf500 HzResponse time1 msConformityConformityCommunication interfaceProduct standardEN 60947-5-2Ambient temperature-40 60 °C (-40 140 °F), fixed cable-25 60 °C (-13 140 °F), movable cable not appropriateconveyor chainsStorage temperature-40 70 °C (-40 158 °F)Mechanical specificationsHousing depth13.9 mmHousing depth18.3 mmDegree of protectionIP67 / IP69 / IP69KConnection2 m fixed cableMaterialHousingPC (Polycarbonate)Optical faceFloat glassMassapprox. 36 gCable length2 m$						
Switching type       C/Q - Pin4: NPN normally closed / dark-on, PNP normally oplight-on, IO-Link /Q - Pin2: NPN normally open / light-on, PNP normally close dark-on         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. 100 mA, resistive load         Usage category       DC-12 and DC-13         Voltage drop       U <sub>d</sub> Switching frequency       f         Southing frequency       f         South and the set of			А			
C/Q - Fin4: NPN normally closed / dark-on, PNP normally op light-on, IO-Link (Q - Fin2: NPN normally open / light-on, PNP normally close dark-onSignal 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_dSwitching frequencyfSowitching frequencyfSwitching frequencyfConformityCommunication interfaceIEC 61131-9Product standardEN 60947-5-2Ambient temperature-40 60 °C (-40 140 °F), fixed cable -25 60 °C (-13 140 °F), movable cable not appropriate conveyor chainsStorage temperature-40 70 °C (-40 158 °F)Mechanical specificationsHousing width13.9 mmHousing depth18.3 mmDegree of protectionIP67 / IP69 / IP69KConnection2 m fixed cable Float glassMassapprox. 36 gCable length2 m	•					
polarity protected, overvoltage protected         Switching voltage       max. 30 V DC         Switching current       max. 100 mA, resistive load         Usage category       DC-12 and DC-13         Voltage drop       U <sub>d</sub> Switching frequency       f         Communication interface       IEC 61131-9         Product standard       EN 60947			/ $\bar{\rm Q}$ - Pin2: NPN normally open / light-on, PNP normally closed / dark-on			
Switching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropUd $\leq 1.5$ V DCSwitching frequencyf500 HzResponse time1 msConformityCommunication interfaceIEC 61131-9Product standardEN 60947-5-2Ambient conditions-40 60 °C (-40 140 °F), fixed cable -25 60 °C (-13 140 °F), movable cable not appropriate conveyor chainsStorage temperature-40 70 °C (-40 158 °F)Mechanical specifications1.9 mmHousing width13.9 mmHousing depth18.3 mmDegree of protectionIP67 / IP69 / IP69KConnection2 m fixed cableMaterialPC (Polycarbonate)Optical faceFloat glassMassapprox. 36 gCable length2 m	- ·		polarity protected, overvoltage protected			
Usage categoryDC-12 and DC-13Voltage drop $U_d$ < 1.5 V DC						
Voltage drop $U_d$ $\leq 1.5 \ V DC$ Switching frequencyf500 HzResponse time1 msConformityImsCommunication interfaceIEC 61131-9Product standardEN 60947-5-2Ambient conditions-40 60 °C (-40 140 °F), fixed cable -25 60 °C (-13 140 °F), movable cable not appropriate conveyor chainsStorage temperature-40 70 °C (-40 140 °F), movable cable not appropriate conveyor chainsMechanical specifications-40 70 °C (-40 158 °F)Mechanical specifications-40 70 °C (-40 158 °F)Housing width13.9 mmHousing height31.9 mmHousing depth18.3 mmDegree of protectionIP67 / IP69 / IP69KConnection2 m fixed cableMaterial	•					
Switching frequency       f       500 Hz         Response time       1 ms         Conformity       IEC 61131-9         Product standard       EN 60947-5-2         Ambient conditions       -40 60 °C (-40 140 °F), fixed cable -25 60 °C (-13 140 °F), movable cable not appropriate conveyor chains         Storage temperature       -40 70 °C (-40 158 °F)         Mechanical specifications       -40 70 °C (-40 158 °F)         Housing width       13.9 mm         Housing height       31.9 mm         Degree of protection       IP67 / IP69 / IP69K         Connection       2 m fixed cable         Material		U,				
Conformity       IEC 61131-9         Product standard       EN 60947-5-2         Ambient conditions       -40 60 °C (-40 140 °F), fixed cable -25 60 °C (-13 140 °F), movable cable not appropriate conveyor chains         Storage temperature       -40 70 °C (-40 158 °F)         Mechanical specifications       -40 70 °C (-40 158 °F)         Housing width       13.9 mm         Housing height       31.9 mm         Housing depth       18.3 mm         Degree of protection       IP67 / IP69 / IP69K         Connection       2 m fixed cable         Material	• •	ŭ				
Communication interface       IEC 61131-9         Product standard       EN 60947-5-2         Ambient conditions       -40 60 °C (-40 140 °F), fixed cable -25 60 °C (-13 140 °F), movable cable not appropriate conveyor chains         Storage temperature       -40 70 °C (-40 158 °F)         Mechanical specifications       -40 70 °C (-40 158 °F)         Housing width       13.9 mm         Housing height       31.9 mm         Housing depth       18.3 mm         Degree of protection       IP67 / IP69 / IP69K         Connection       2 m fixed cable         Material       PC (Polycarbonate)         Optical face       Float glass         Mass       approx. 36 g         Cable length       2 m						
Product standard       EN 60947-5-2         Ambient conditions       -40 60 °C (-40 140 °F), fixed cable -25 60 °C (-13 140 °F), movable cable not appropriate conveyor chains         Storage temperature       -40 70 °C (-40 158 °F)         Mechanical specifications       -40 70 °C (-40 158 °F)         Housing width       13.9 mm         Housing height       31.9 mm         Housing depth       18.3 mm         Degree of protection       IP67 / IP69 / IP69K         Connection       2 m fixed cable         Material	Conformity					
Ambient conditions         Ambient temperature       -40 60 °C (-40 140 °F), fixed cable         -25 60 °C (-13 140 °F), movable cable not appropriate conveyor chains         Storage temperature       -40 70 °C (-40 158 °F)         Mechanical specifications         Housing width       13.9 mm         Housing height       31.9 mm         Housing depth       18.3 mm         Degree of protection       IP67 / IP69 / IP69K         Connection       2 m fixed cable         Material       Image: Storage temperature         Housing       PC (Polycarbonate)         Optical face       Float glass         Mass       approx.36 g         Cable length       2 m	Communication interface					
Ambient temperature       -40 60 °C (-40 140 °F), fixed cable         -25 60 °C (-13 140 °F), movable cable not appropriate conveyor chains         Storage temperature       -40 70 °C (-40 158 °F)         Mechanical specifications         Housing width       13.9 mm         Housing height       31.9 mm         Housing depth       18.3 mm         Degree of protection       IP67 / IP69 / IP69K         Connection       2 m fixed cable         Material       Image: Storage file         Housing       PC (Polycarbonate)         Optical face       Float glass         Mass       approx.36 g         Cable length       2 m	Product standard		EN 60947-5-2			
-25 60 °C (-13 140 °F), movable cable not appropriate conveyor chains         Storage temperature       -40 70 °C (-40 158 °F)         Mechanical specifications         Housing width       13.9 mm         Housing height       31.9 mm         Housing depth       18.3 mm         Degree of protection       IP67 / IP69 / IP69K         Connection       2 m fixed cable         Material       Image: Storage factor of the storage fact	Ambient conditions					
Mechanical specifications         Housing width       13.9 mm         Housing height       31.9 mm         Housing depth       18.3 mm         Degree of protection       IP67 / IP69 / IP69K         Connection       2 m fixed cable         Material       Housing         Housing       PC (Polycarbonate)         Optical face       Float glass         Mass       approx.36 g         Cable length       2 m	Ambient temperature		-25 60 °C (-13 140 °F) , movable cable not appropriate for			
Housing width     13.9 mm       Housing height     31.9 mm       Housing depth     18.3 mm       Degree of protection     IP67 / IP69 / IP69K       Connection     2 m fixed cable       Material        Housing     PC (Polycarbonate)       Optical face     Float glass       Mass     approx. 36 g       Cable length     2 m	Storage temperature		-40 70 °C (-40 158 °F)			
Housing height     31.9 mm       Housing depth     18.3 mm       Degree of protection     IP67 / IP69 / IP69K       Connection     2 m fixed cable       Material     PC (Polycarbonate)       Optical face     Float glass       Mass     approx. 36 g       Cable length     2 m	•					
Housing depth     18.3 mm       Degree of protection     IP67 / IP69 / IP69K       Connection     2 m fixed cable       Material     IPC (Polycarbonate)       Optical face     Float glass       Mass     approx. 36 g       Cable length     2 m	•					
Degree of protection       IP67 / IP69 / IP69K         Connection       2 m fixed cable         Material						
Connection     2 m fixed cable       Material        Housing     PC (Polycarbonate)       Optical face     Float glass       Mass     approx. 36 g       Cable length     2 m	• •					
Material       Housing     PC (Polycarbonate)       Optical face     Float glass       Mass     approx. 36 g       Cable length     2 m						
Housing     PC (Polycarbonate)       Optical face     Float glass       Mass     approx. 36 g       Cable length     2 m						
Optical face     Float glass       Mass     approx. 36 g       Cable length     2 m			PC (Polycarbonate)			
Mass     approx. 36 g       Cable length     2 m	-					
Cable length 2 m Approvals and certificates	•		-			
UL approval E87056, cULus Listed . class 2 power supply . type rating						
······································	UL approval		E87056 , cULus Listed , class 2 power supply , type rating 1			

#### Accessories

IO-Link-Master02-USB IO-Link master, supply via USB port or separate power supply, LED indicators, M12 plug for sensor connection

Other suitable accessories can be found at www.pepperl-fuchs.com

Refer to "General Notes Relating to Pepperl+Fuchs Product Information" USA: +1 330 486 0001

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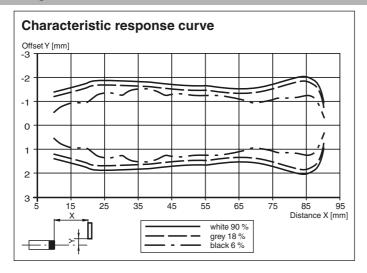
fa-info@us.pepperl-fuchs.com

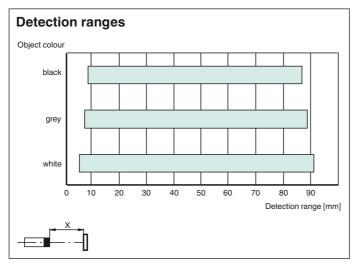
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## **Curves/Diagrams**





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