Distance sensor



CE 🚷 IO-Link C US

Model Number

OMT550-R201-2EP-IO

Distance sensor with fixed cable

Features

- Medium design with versatile • mounting options
- Space-saving distance sensors in ٠ small standardized design
- Multi Pixel Technology (MPT) exact • and precise signal evaluation
- IO-link interface for service and ٠ process data

Product information

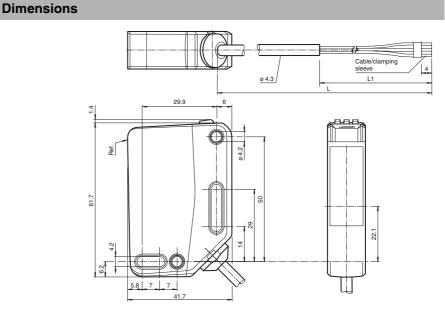
The optical sensors in the series are the first devices to offer an end-to-end solution in a medium-sized standard design-from the thru-beam sensor through to the measuring distance sensor. As a result of this design, the sensors are able to perform practically all standard automation tasks.

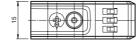
The entire series enables sensors to communicate via IO-Link.

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

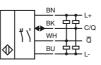
Multi Pixel Technology (MPT) ensures that the standard sensors are flexible and

can be adapted to the application environment.

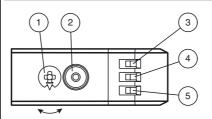


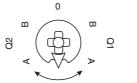


Electrical connection



Indicators/operating means





| 1 | Mode rotary switch | |
|---|-----------------------------|----|
| 2 | Teach-in button | |
| 3 | Switching output display Q2 | YE |
| 4 | Switching output display Q1 | YE |
| 5 | Operating indicator | GN |

| Q1B | Switching output 1/switch point B |
|-----|-----------------------------------|
| Q1A | Switching output 1/switch point A |
| Q2A | Switching output 2/switch point A |
| Q2B | Switching output 2/switch point B |
| 0 | Keylock |

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

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| General specificationsMeasurement range100 550 mmReference targetstandard white, 100 mm x 100 mmLight sourceLEDLight ypemodulated visible red lightLED risk group labellingexempt groupAngle deviationmax. +/-1.5 °Diameter of the light spotapprox. 20 mm at a distance of 550 mmAngle of divergence2.5 °Angle of divergence2.5 °Ambient light limitEN 60947-5-2 : 45000 LuxResolution0.1 mmFunctional safety related parametersMTTFd600 aJiagnostic Coverage (DC)0 %Indicators/operating meansOperation indicatorLED green: constantly on - power on flashing with short break (1 Hz) - 10-Link modeFunction indicatorLED green: constantly on - switch output active constantly on - switch output activeControl elementsTeach-1 keyControl elements5-step rotary switch for operating modes selectionElectrical specificationsIIIOperating voltageUBInterface typeI0-Link (via C/Q = pin 4)Protection classIIIIInterface typeSmart Smart 20 (Sa.4 kBaud)Io-Link Revision1.1Min cycle time3 masProcess data withhProcess data input 4 byte Process data input 4 byte Process data withhProcess data withfYessDevice ID0x111911 (1120529)Compatible master port typeAOutputThe default setting is: <th>chnical data</th> <th></th> | chnical data | |
|---|--------------------------------------|---|
| Measurement range 100550 mm Reference target standard white, 100 mm x 100 mm Light source LED Light type modulated visible red light Light type modulated visible red light Light type applied wisition Angle of divergence 2.5 ° Ambient light limit EN 60947-5-2: 45000 Lux Fessitution 0.1 mm Functional safety related parameters The fessitution Mission Time (T _M) 20 a Diagnostic Coverage (DC) 0.5 Constantly on - power on flashing (4Hz) - short circuit fl | | |
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| Light type LED Light type modulated visible red light Light type modulated visible red light LED risk group labelling exempt group Angle deviation max. +/. 1.5 ° Diameter of the light spin exempt group Angle of divergence 2.5 ° Ambient light limit EN 60947-5-2: 45000 Lux Percentional safety related parameters modulated visible red light Mission Time (T _w) 20 a Diagnostic Coverage (DC) 0 % Indicators/operating means Correction indicator Cyperation indicator LED green: constantly on - power on flashing (H+2) - short circuit trashing with short break (1 Hz) - Io-Link mode Function indicator LED yellow: constantly on - switch output active constantly of - switch output active Control elements Teach-In key Electrical specifications Teach-In key Protection class III Interface III Interface III Interface type IO-Link (via C/Q = pin 4) Device profile Smart Sensor type Origo 23 O SiO mode support yes Device profile Amata Sensor type Origo 23 O SiO node support yes Device ID Ox 111911 (1120529) Cor | • | |
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| Angle deviation max. 4-1.5 ° Diameter of the light spot approX.20 mm at a distance of 550 mm Angle of divergence 2.5 ° Ambient light limit EN 60947-52: 45000 Lux Resolution 0.1 mm Functional safety related parameters 600 a MTTF_6 600 a Mission Time (Ty_a) 20 a Operation indicator LED green: constantly on - power on flashing (Ht) - short circuit flashing Wth 5- short circuit flashing Wth 5- short circuit flashing Wth 2- short circuit protected, revers plashing Wth 2- whit PN normally open, PNP normally closed, IO-1 Gort circuit protected, were very lage protected flashing very 2- WH. NPN normally open, PNP normally | | |
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| Switching typeThe default setting is: C/Q - BK: NPN normally open, PNP normally closed, IO-I Q2 - WH: NPN normally open, PNP normally closedSignal output2 push-pull (4 in 1)outputs, short-circuit protected, revers polarity protected, overvoltage protectedSwitching voltagemax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropUd < ≤ 1.5 V DC | | A |
| C/Q - BK: NPN normally open, PNP normally closed, IO-I Q2 - WH: NPN normally open, PNP normally closedSignal output2 push-pull (4 in 1)outputs, short-circuit protected, revers polarity protected, overvoltage protectedSwitching voltagemax. 30 V DCSwitching currentmax. 100 mA, resistive loadUsage categoryDC-12 and DC-13Voltage dropUd < ≤ 1.5 V DC | • | |
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| Response time2 ms , see table 1ConformityIEC 61131-9Communication interfaceIEC 61131-9Product standardEN 60947-5-2Ieasurement accuracy $5 m 60947-5-2$ Temperature drift $0.05 \%/K$ Warm up time $5 m n$ Repeat accuracy $\le 1 \%$, see table 1Linearity error 0.75% Image: temperature $10 \dots 60 \degree C (50 \dots 140 \degree F)$ Storage temperature $-40 \dots 70 \degree C (-40 \dots 158 \degree F)$ Iechanical specificationsIHousing width $15 mm$ | | |
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| Repeat accuracy ≤ 1 %, see table 1 Linearity error 0.75 % mbient conditions 0.75 % Ambient temperature 10 60 °C (50 140 °F) Storage temperature -40 70 °C (-40 158 °F) lechanical specifications 15 mm | mperature drift | 0.05 %/K |
| Linearity error 0.75 % mbient conditions Ambient temperature 10 60 °C (50 140 °F) Storage temperature -40 70 °C (-40 158 °F) lechanical specifications Housing width 15 mm | arm up time | 5 min |
| Ambient conditions Ambient temperature 10 60 °C (50 140 °F) Storage temperature -40 70 °C (-40 158 °F) International specifications | peat accuracy | \leq 1 % , see table 1 |
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| echanical specifications Housing width 15 mm | • | . , |
| Housing width 15 mm | | |
| • | • | 15 mm |
| ······································ | • | |
| Housing depth 41.7 mm | | |
| Degree of protection IP67 / IP69 / IP69K | | |
| Connection 2 m fixed cable | • • | |
| Material | | |
| Housing PC (Polycarbonate) | | PC (Polycarbonate) |
| Optical face PMMA | | |
| • | • | |
| Mass approx. 73 g | 200 | appion. 70 g |

1-GM-2M-PUR male cordset, M8, 4-pin, PUR cable

1-WM-2M-PUR nale cordset, M8, 4-pin, PUR cable

Link-Master02-USB

Link master, supply via USB port or parate power supply, LED indicators, 2 plug for sensor connection

er suitable accessories can be found at w.pepperl-fuchs.com

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



2

| Cable length | |
|--------------|--|
| | |
| | |

| Approvals and certificates | |
|----------------------------|--|
| UL approval | |
| CCC approval | |

E87056 , cULus Listed , class 2 power supply , type rating 1 CCC approval / marking not required for products rated ${\leq}36$ V

Table 1: Information on Measured Value Filters

| Measured value filter | | | | | | |
|-----------------------|-------|-------|-------|--------|--------|---------|
| Filter | 1-way | 2-way | 4-way | 16-way | 64-way | 256-way |
| Response time (ms) | 2 | 4 | 8 | 32 | 128 | 512 |
| Repeatability (%) | | <1% | | | | |

2 m

Settings

Teach-In (TI)

Use the rotary switch for switching signal Q1 or Q2 to select the relevant switching threshold A and/or B to teach in.

• The yellow LEDs indicate the current state of the selected output.

To teach in a switching threshold, press and hold the "TI" button for approximately 1 s, until the yellow and green LEDs flash in phase. Teach-in starts when the "TI" button is released.

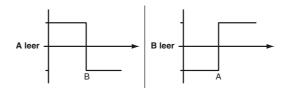
• Teach-in successful: the yellow and green LEDs flash alternately at 2.5 Hz.

• Teach-in unsuccessful: the yellow and green LEDs quickly flash alternately at 8 Hz.

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

Set switching mode: you can define different switching modes by teaching in the relevant distance data for switching thresholds A and B.

1. Single point mode:



2. Window mode:



Teach in switching thresholds: you can teach in or overwrite a taught-in switching threshold at any time. To do this, press the "TI" button again. Reset a value: you can reset a taught-in value. To do this, press the "TI" button for > 4 s, until the yellow and green LEDs go out. The reset process itself starts when the "TI" button is released.

• Reset successful: the yellow and green LEDs flash alternately at 2.5 Hz.

Resetting to Factory Settings

To revert back to factory settings, press the "TI" button for > 10 s with the rotary switch set to position "O," until the yellow and green LEDs go out at the same time. The reset process itself starts when the "TI" button is released.

• Reset to factory settings successful: the yellow and green LEDs light up at the same time. The sensor then continues to operate with factory settings.

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- Factory setting for switching signal Q1: Switching signal is high active, window mode
- Factory setting for switching signal Q2:
- Switching signal is high active, window mode

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):

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fa-info@us.pepperl-fuchs.com

- "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.

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



Distance sensor

| active detection 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 detection range | |
| | |
| | J |
| 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 a | round 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. | |
| | |
| active detection range | 5 |
| | |
| | |
| | |
| Output | |
| Output Output | |

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.

