Model Number

UC250-F77-EP-IO-0,2M-V31

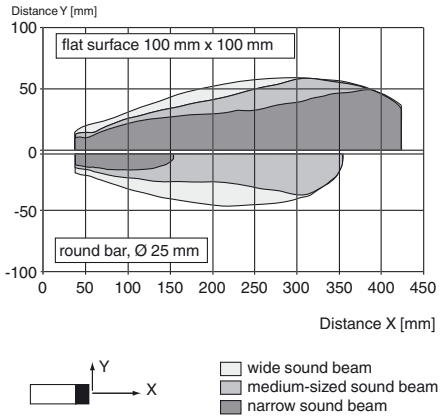
Single head system

Features

- **IO-link interface for service and process data**
- **Programmable via DTM with PACTWARE**
- **Continuous distance value via IO-Link process data**
- **Selectable sound lobe width**
- **Synchronization options**
- **Temperature compensation**
- **Push-pull output**

Diagrams

Characteristic response curve



Technical data

General specifications	
Sensing range	20 ... 250 mm
Adjustment range	25 ... 250 mm
Dead band	0 ... 20 mm
Standard target plate	10 mm x 10 mm
Transducer frequency	approx. 400 kHz
Response delay	minimum : 8 ms factory setting: 29 ms
Sensor cycle time	≥ 8 ms (factory setting) ; programmable to 60 s
Memory	
Non-volatile memory	EEPROM
Write cycles	300000
Indicators/operating means	
LED green	solid: power on flashing: standby mode or IO-Link communication
LED yellow	solid: object in evaluation range flashing: switch point programming, object detected
LED red	solid: error flashing: switch point programming, object not detected
Electrical specifications	
Operating voltage U_B	10 ... 30 V DC , ripple 10 $\%_{SS}$
No-load supply current I_0	≤ 40 mA
Power consumption P_0	≤ 400 mW
Time delay before availability t_v	≤ 300 ms
Interface	
Interface type	IO-Link (via C/Q = Pin 4)
Device profile	Smart Sensor
Transfer rate	COM 2 (38.4 kBaud)
IO-Link Revision	1.1
Min. cycle time	2.3 ms
Process data witdh	16 bit
SIO mode support	yes
Device ID	0x300300 (3146496)
Compatible master port type	A
Input/Output	
Input/output type	1 synchronization connection, bidirectional
0 Level	0 ... 1 V
1 Level	2.5 V ... U_B
Input impedance	> 22 kΩ
Output rated operating current	current source < 2.5 mA
Pulse length	≥ 1 ms with external control, low active
Synchronization frequency	
Common mode operation	≤ 141 Hz
Multiplex operation	≤ 141 Hz / n , n = number of sensors , n ≤ 10
Output	
Output type	1 push-pull (4 in 1) output, short-circuit protected, reverse polarity protected
Rated operating current I_e	100 mA , short-circuit/overload protected
Voltage drop U_d	≤ 2.5 V
Repeat accuracy	≤ ± 0.1 % of full-scale value
Switching frequency f	factory setting: 20 Hz programmable max. 45 Hz
Range hysteresis H	1 % of the adjusted operating range (default settings), programmable , min. 1 mm
Temperature influence	≤ ± 0.75 % of the end value (with temperature compensation) from 10 minutes after switching on the sensor ; 0,17 %/K (without temperature compensation)
Ambient conditions	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications	
Connection type	Cable connector M8 x 1 , 4-pin , L = 200 mm
Degree of protection	IP67
Material	
Housing	Polycarbonate
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Installation position	any position
Mass	20.5 g
Tightening torque, fastening screws	max. 0.2 Nm
Factory settings	
Output	near switch point: 25 mm far switch point: 250 mm Output mode: Window mode Output logic: normally open
Beam width	wide
Compliance with standards and directives	
Standard conformity	
Standards	EN 60947-5-2:2007+A1:2012 IEC 60947-5-2:2007 + A1:2012 IEC 61131-9:2013

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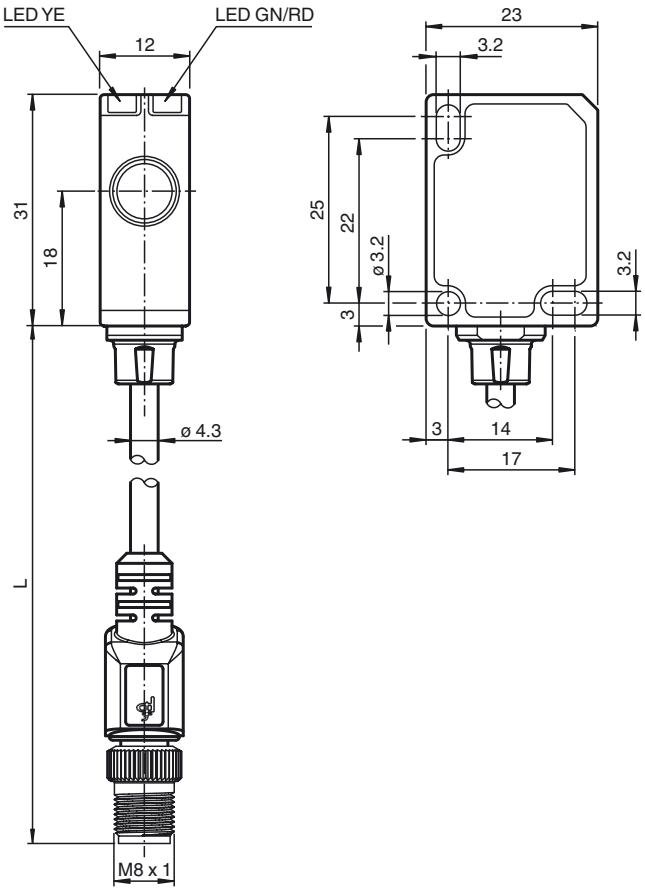
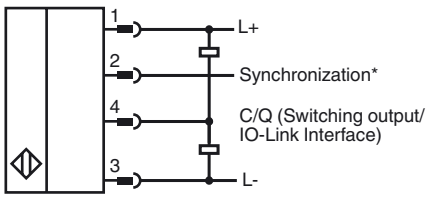
Approvals and certificates	
UL approval	cULus Listed, Class 2 Power Source
CCC approval	CCC approval / marking not required for products rated ≤36 V

Dimensions



Electrical Connection



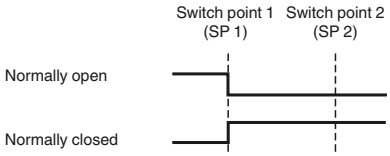
*if not used connect to ground (0V)

Pinout

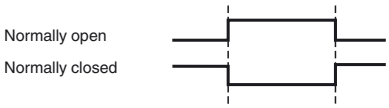
Additional Information

Switching output modes

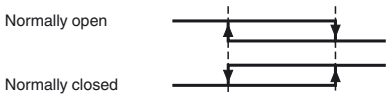
1. Switch point mode



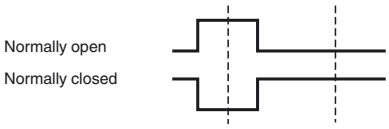
2. Window mode



3. Hysteresis mode



4. Retroreflective mode



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Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Accessories

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

V31-GM-2M-PVC
Female cordset, M8, 4-pin, PVC cable

V31-GM-1M-PVC-V1-G
Double-ended cordset, M8 to M12

OMH-ML7-01
Mounting aid for ML7 and ML8 series, Mounting bracket

OMH-ML7-02
Mounting aid for ML7 and ML8 series, Mounting bracket

Description of Sensor Functions

Adjustment possibilities

The sensor features a switching output with 2 programmable switch points. Programming the switch points, the output mode, the output logic and the beam width can be done in two different ways:

- Using the sensor's programming button
- Using the IO-link interface of the sensor. This method requires an IO-link master (e.g. IO-link-Master02-USB) and the associated software. The download link is available on the product page for the sensor at www.pepperl-fuchs.

Synchronization

The sensor features a synchronization input for suppressing ultrasonic mutual interference („cross talk").
The following synchronization modes are available:

1. Automatic multiplex mode.
2. Automatic common mode
3. Externally controlled synchronization

Further Documentation

- For information on programming via programming button and synchronisation you may refer to the commissioning instruction.
- For detailed information on application and programming via IO-Link we provide a manual.

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