Model Number

UC250-F77-IU-IO-5M

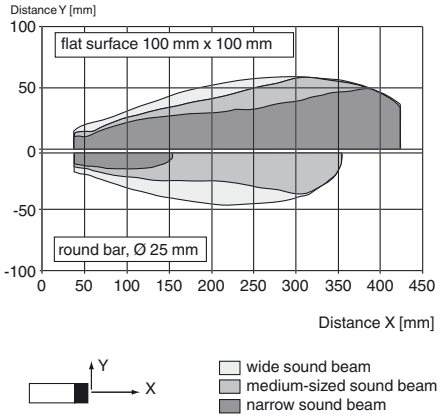
Single head system

Features

- **IO-Link interface for parameterization**
- **Programmable via DTM with PACTWARE**
- **Selectable sound lobe width**
- **Synchronization options**
- **Temperature compensation**
- **Analog 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: programming of the limits, object detected
LED red	solid: fault flashing: programming limits, object not detected
Electrical specifications	
Operating voltage U_B	18 ... 30 V DC , ripple 10 $\%_{SS}$
No-load supply current I_0	≤ 50 mA
Power consumption P_0	≤ 500 mW
Time delay before availability t_v	≤ 300 ms
Interface	
Interface type	IO-Link (available after activation via programming button until next reset)
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 analog output 0 (4) ... 20 mA or 1 analog output 0 ... 10 V
Resolution	current output: evaluation range [mm]/3200 but ≥ 0.35 mm voltage output: evaluation range [mm]/4000 but ≥ 0.35 mm
Deviation of the characteristic curve	≤ ± 1 % of full-scale value
Repeat accuracy	≤ ± 0.1 % of full-scale value
Load impedance	current output: ≤ 500 Ohm voltage output: ≥ 1000 Ohm
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	current output -25 ... 60 °C (-13 ... 140 °F) voltage output -25 ... 70 °C (-13 ... 158 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications	
Connection type	cable PUR , 5 m
Core cross-section	4 x 0.19 mm^2
Degree of protection	IP67
Material	
Housing	Polycarbonate
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Installation position	any position
Mass	114 g
Tightening torque, fastening screws	max. 0.2 Nm
Factory settings	
Output	near limit: 25 mm far limit: 250 mm Output mode: rising ramp output type: 4 ... 20 mA
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 EN 60947-5-7:2003 IEC 60947-5-7:2003
Approvals and certificates	
UL approval	cULus Listed, Class 2 Power Source
CCC approval	CCC approval / marking not required for products rated ≤36 V

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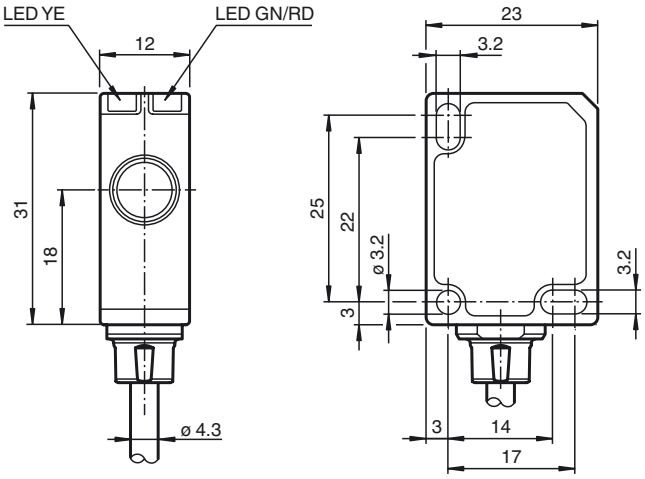
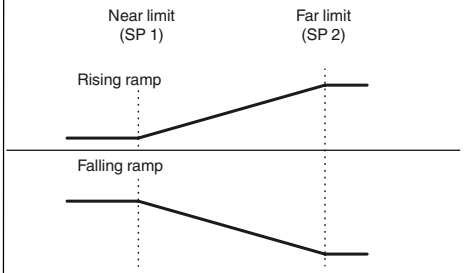
Dimensions

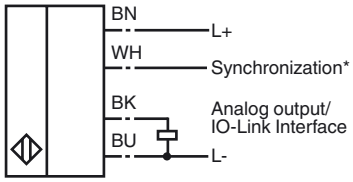


Additional Information

Analog output modes



Electrical Connection



*if not used connect to ground (0V)

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

V15-G-PG9
Female connector, M12, 5-pin, field attachable

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 an analog output with 2 programmable limits. Programming the limits, the output mode, the output type 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-

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link-Master02-USB) and the associated software. The download link is available on the product page for the sensor at www.pepperl-fuchs.de

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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