

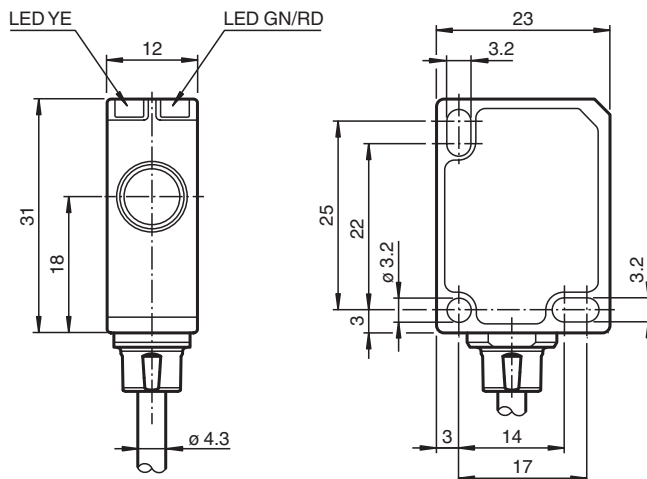
Ultrasonic sensor UC250-F77-IU-IO-2M

- IO-Link interface for parameterization
- Programmable via DTM with PACTWARE
- Selectable sound lobe width
- Synchronization options
- Temperature compensation
- Analog output

Single head system



Dimensions



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

Release date: 2020-12-17 Date of issue: 2021-02-05 Filename: 266632-100003_eng.pdf

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 1111
fa-info@de.pepperl-fuchs.com

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

PEPPERL+FUCHS

Technical Data

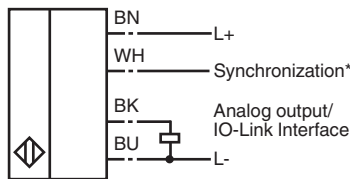
Non-volatile memory		EEPROM
Write cycles		300000
Indicators/operating means		
LED green		solid: power on flashing: standby mode or IO-Link communication
LED yellow		solid: object in evaluation range flashing: programming of the limits, object detected
LED red		solid: fault flashing: programming limits, 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)
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
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, 2 m
Core cross-section		4 x 0.19 mm ²
Degree of protection		IP67
Material		
Housing		Polycarbonate

Release date: 2020-12-17 Date of issue: 2021-02-05 Filename: 266632-100003_eng.pdf

Technical Data

Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Installation position	any position
Mass	51 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

Connection



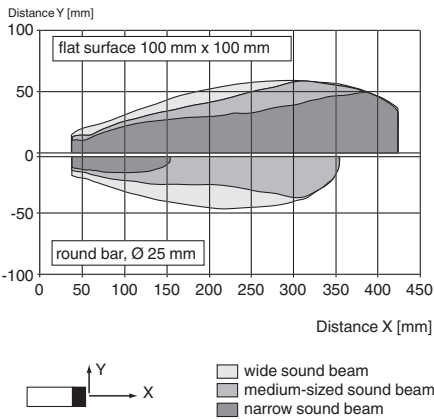
*if not used connect to ground (0V)

Wire colors in accordance with EN 60947-5-2

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

Characteristic Curve

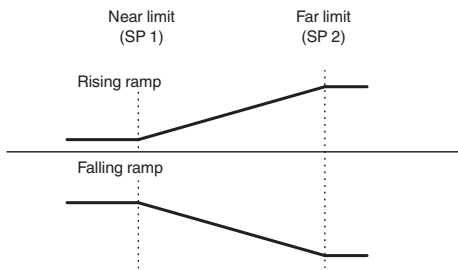
Characteristic response curve



Release date: 2020-12-17 Date of issue: 2021-02-05 Filename: 266632-100003_eng.pdf

Programming

Analog output modes



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

Release date: 2020-12-17 Date of issue: 2021-02-05 Filename: 266632-100003_eng.pdf

Function

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-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.