

Ultrasonic sensor UC4000-L2M-I-T-2M

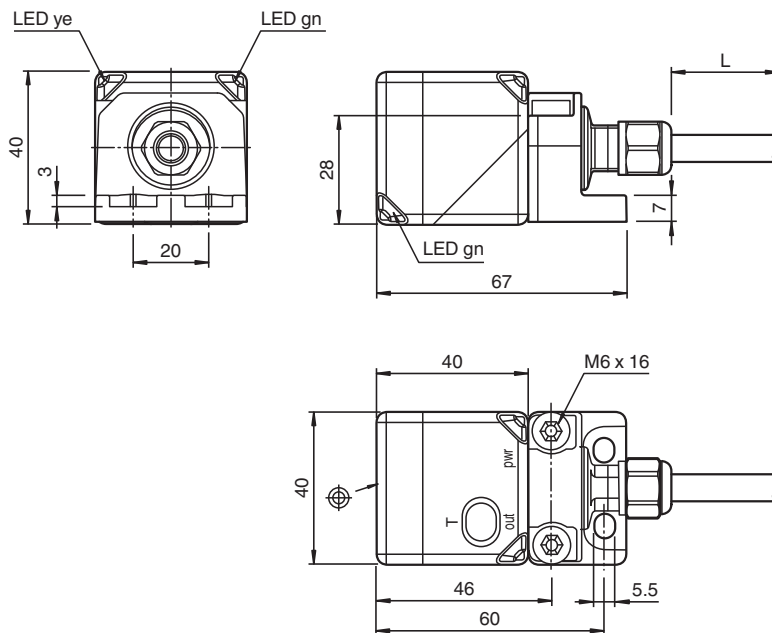


- Extended temperature range
- Cable connection
- Rugged metal base
- Sensor head bidirectional and rotatable
- Function indicators visible from all directions
- Selectable sound lobe width
- Programmable

Single head system



Dimensions



Technical Data

General specifications

Sensing range	200 ... 4000 mm
Adjustment range	240 ... 4000 mm
Dead band	0 ... 200 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 85 kHz

Nominal ratings

Response delay	minimum: 110 ms factory setting: 615 ms
Time delay before availability	t_v ≤ 1600 ms

Indicators/operating means

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

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Technical Data

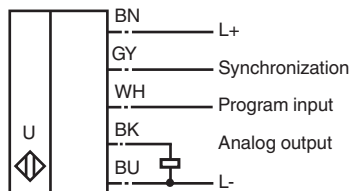
LED green		Operating display
LED yellow		object in evaluation range
LED red		error
Electrical specifications		
Operating voltage	U_B	10 ... 30 V DC , ripple 10 % _{SS}
No-load supply current	I_0	≤ 50 mA
Interface		
Interface type		Serial interface (programming adapter required) 9600 BPS, no parity, 8 data bits, 1 stop bit
Input/Output		
Input/output type		1 synchronization connection, bidirectional
0 Level		0 ... 1 V
1 Level		4 V ... U_B
Input impedance		> 12 kΩ
Output rated operating current		< 12 mA
Pulse length		0.5 ... 300 ms (level 1)
Pulse interval		≥ 62.5 ms (level 0)
Synchronization frequency		
Common mode operation		≤ 16 Hz
Multiplex operation		≤ 17 Hz / n , n = number of sensors , n ≤ 10 (factory setting: n = 5)
Input		
Input type		1 program input
Level (evaluation limit 1)		0 ... 1 V
Level (evaluation limit 2)		4 V ... U_B
Input impedance		> 12 kΩ
Pulse length		2 ... 10 s
Output		
Output type		1 analog output 4 ... 20 mA
Resolution		Evaluation range [mm]/3200, however ≥ 0.4 mm
Deviation of the characteristic curve		≤ 0.2 % of full-scale value
Repeat accuracy		≤ 0.1 % of full-scale value
Load impedance		≤ 500 Ω at $U_B \geq 14V$ ≤ 300 Ω at $U_B < 14V$
Temperature influence		≤ 1.5 % of full-scale value
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		
EAC conformity		TR CU 020/2011 TR CU 037/2016
UL approval		cULus Listed, General Purpose
CCC approval		CCC approval / marking not required for products rated ≤36 V
Ambient conditions		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications		
Connection type		cable , 5-pin
Degree of protection		IP67
Material		
Housing		PA-GF35
Cable		PUR
Transducer		epoxy resin/hollow glass sphere mixture; polyurethane foam

Release date: 2021-03-05 Date of issue: 2021-03-05 Filename: 299138_eng.pdf

Technical Data

Cable		
Sheath diameter		7.25 mm
Bending radius		> 37.3 mm , fixed > 74.7 mm , moving
Core cross-section		5 x 0.82 mm ²
Length	L	2 m
Mass		355 g
Factory settings		
Output		near limit: 240 mm far limit: 4000 mm Output mode: rising ramp
Beam width		wide
Evaluation procedure		low-pass behavior
General information		
Supplementary information		Switch settings of the external programming adapter: "output load": pull-down "output logic": noninv

Connection

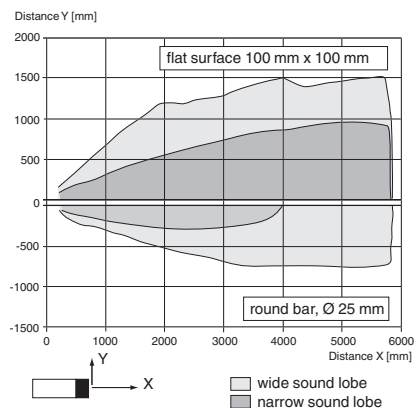


Wire colors in accordance with EN 60947-5-2

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

Characteristic Curve

Characteristic response curve



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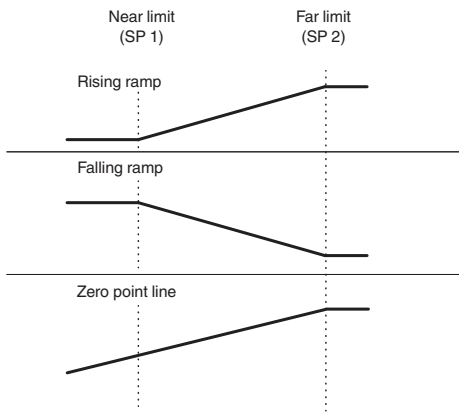
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Programming

Analog output modes



Accessories

	UC-PROG1-USB	Programming adapter
	V15S-G-0,3M-PUR-WAGO	Male cordset, M12, 5-pin, PUR cable with WAGO terminals

Commissioning

Adjustment possibilities

The sensor is equipped with 1 analog output with 2 programmable limits. The programming of the limits, the output mode and the beam width can be done in 3 different ways:

- Using the teach input of the sensor
- By means of the sensor's programming button
- Using the sensor's serial interface. This method requires an external programming adapter and the corresponding software. You will find the download link for the software at www.pepperl-fuchs.com on the product page of the sensor.

Synchronization

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

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

Further Documentation

For information on programming via programming button and synchronisation you may refer to the commissioning instruction.