

Ultrasonic sensor

UC4000-L2M-I-T-2M

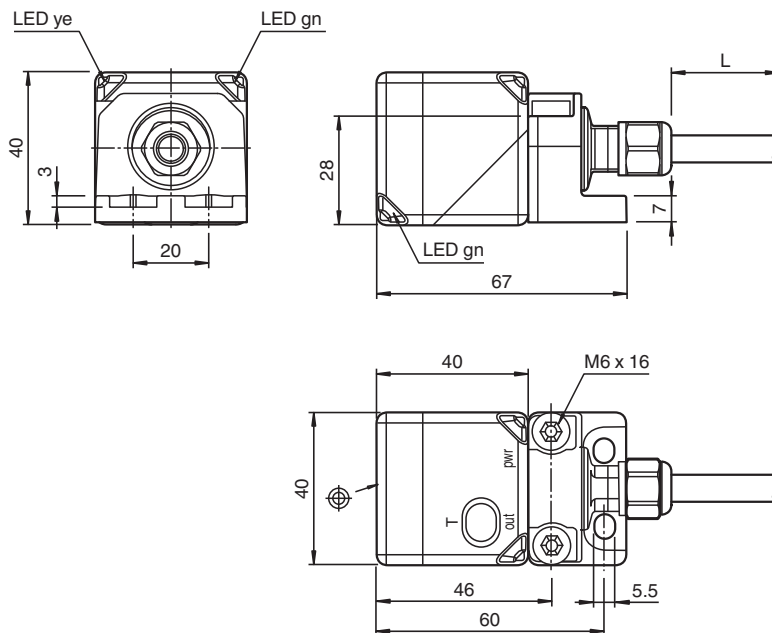


- Extended temperature range
- Cable connection
- Rugged metal base
- Sensor head bidirectional and rotatable
- Function indicators visible from all directions
- Selectable sound lobe width
- Programmable

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

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

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Technical Data

Indicators/operating means

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
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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 ≥ 14V ≤ 300 Ω at U_B < 14V
Temperature influence	≤ 1.5 % of full-scale value

Compliance with standards and directives

Standard conformity	
Standards	EN IEC 60947-5-2:2020 IEC 60947-5-2:2019 EN 60947-5-7:2003 IEC 60947-5-7:2003

Approvals and certificates

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)

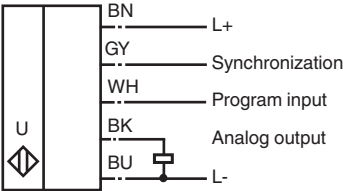
Mechanical specifications

Connection type	cable , 5-pin
Degree of protection	IP67
Material	
Housing	PA-GF35
Cable	PUR
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam

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

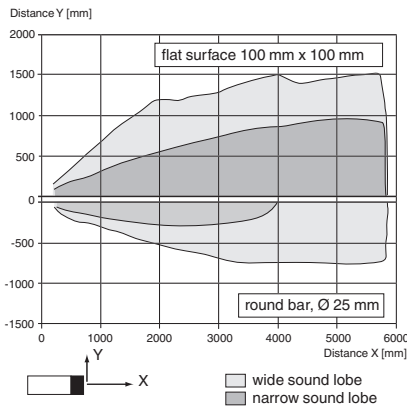


Wire colors in accordance with EN 60947-5-2

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

Characteristic Curve

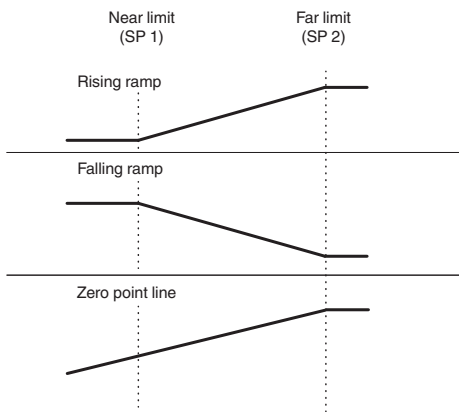
Characteristic response curve



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Characteristic Curve

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.