

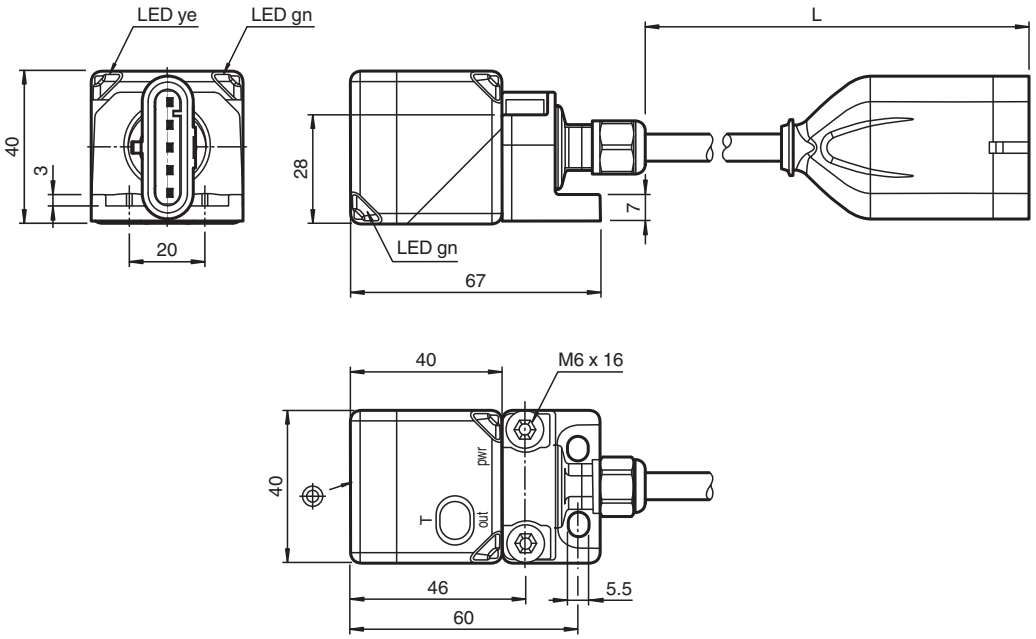
Ultrasonic sensor

UC4000-L2M-I-0,3M-APS5P

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

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		
LED green		Operating display
LED yellow		object in evaluation range

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Technical Data

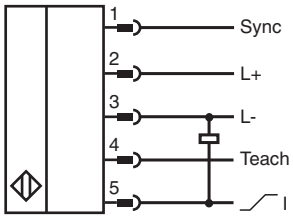
LED red		error
Electrical specifications		
Operating voltage	U_B	10 ... 30 V DC , ripple 10 %$_{SS}$
No-load supply current	I_0	≤ 50 mA
Interface		
Interface type		Serial interface (programming adapter required) 9600 BPS, no parity, 8 data bits, 1 stop bit
Input/Output		
Input/output type		1 synchronization connection, bidirectional
0 Level		0 ... 1 V
1 Level		4 V ... U_B
Input impedance		> 12 kΩ
Output 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		UL Recognized , General purpose , Class 2 power source
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		fixed cable with plug
Degree of protection		IP67
Material		
Housing		PA-GF35
Transducer		epoxy resin/hollow glass sphere mixture; polyurethane foam
Connector		
Number of pins		5
Connection assembly		AMP connector Superseal 282107-1 AMP contact Superseal 282109-1
Cable		

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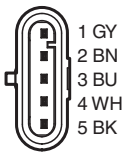
Technical Data

Cable diameter		7.25 mm ± 0.2 mm
Bending radius		> 10 x cable diameter
Material		PUR
Color		black
Number of cores		5
Core cross section		0.8 mm^2
Length	L	345 mm ± 5 mm
Mass		245 g
Dimensions		
Height		40 mm
Width		40 mm
Length		40 mm
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



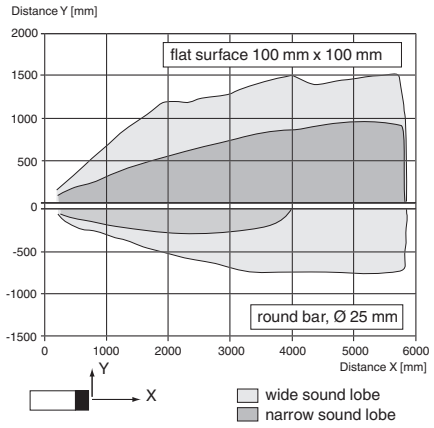
Connection Assignment



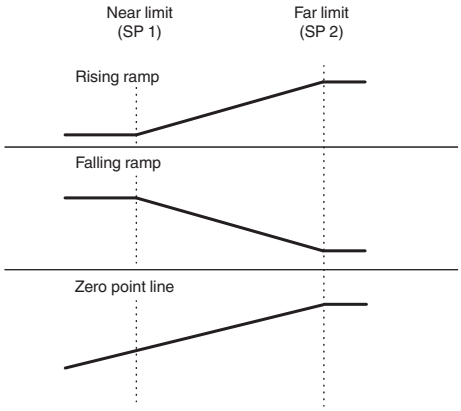
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Characteristic Curve

Characteristic response curve



Analog output modes



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.

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