

# Ultrasonic sensor

## UC500-L2M-E6-T-2M

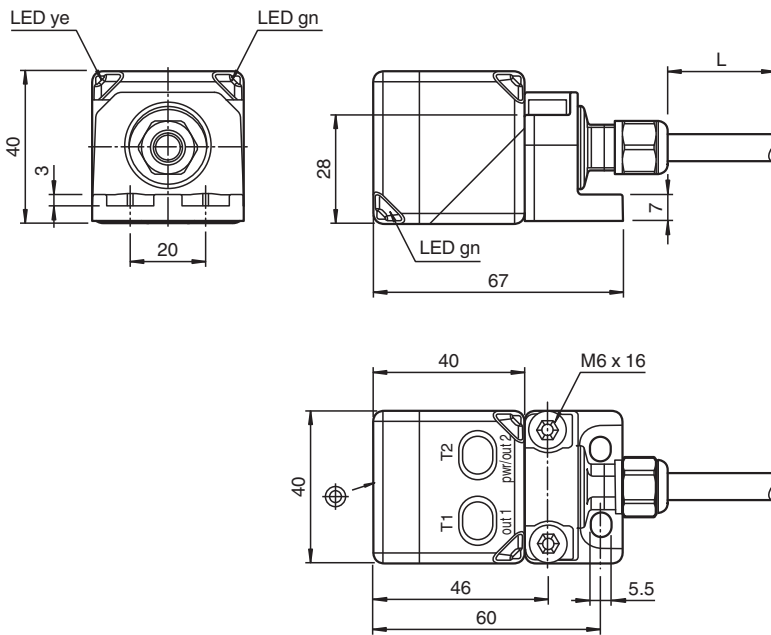


- Extended temperature range
- Cable connection
- Rugged metal base
- Sensor head bidirectional and rotatable
- Function indicators visible from all directions
- Selectable sound lobe width
- Programmable

Single head system



### Dimensions



### Technical Data

#### General specifications

Sensing range	35 ... 500 mm
Adjustment range	50 ... 500 mm
Dead band	0 ... 35 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 380 kHz

#### Nominal ratings

Response delay	minimum: 20 ms factory setting: 55 ms
Time delay before availability	$t_v$ ≤ 1600 ms

#### Indicators/operating means

LED green	Operating display
LED yellow 1	switching state switch output 1

Release date: 2025-06-24 Date of issue: 2025-06-24 Filename: 299130\_eng.pdf

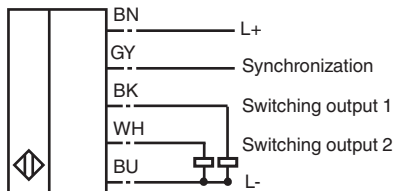
## Technical Data

LED yellow 2		switching state switch output 2
LED red		error
<b>Electrical specifications</b>		
Operating voltage	$U_B$	10 ... 30 V DC , ripple 10 % <sub>SS</sub>
No-load supply current	$I_0$	≤ 50 mA
<b>Interface</b>		
Interface type		Serial interface (programming adapter required) 9600 BPS, no parity, 8 data bits, 1 stop bit
<b>Input/Output</b>		
Input/output type		1 synchronization connection, bidirectional
0 Level		0 ... 1 V
1 Level		4 V ... $U_B$
Input impedance		> 12 k $\Omega$
Output current		< 12 mA
Pulse length		0.5 ... 300 ms (level 1)
Pulse interval		≥ 14 ms (level 0)
Synchronization frequency		
Common mode operation		≤ 70 Hz
Multiplex operation		≤ 90 Hz / n , n = number of sensors , n ≤ 10 (factory setting: n = 5 )
<b>Output</b>		
Output type		2 switch outputs PNP, NO/NC, programmable
Rated operating current	$I_e$	200 mA , short-circuit/overload protected
Voltage drop	$U_d$	≤ 2 V
Repeat accuracy		≤ 0.1 % of full-scale value
Switching frequency	f	≤ 14 Hz
Range hysteresis	H	programmable , preset to 1 mm
Temperature influence		< 1.5 % of full-scale value
<b>Compliance with standards and directives</b>		
Standard conformity		
Standards		EN IEC 60947-5-2:2020 IEC 60947-5-2:2019
<b>Approvals and certificates</b>		
UL approval		cULus Listed, Class 2 Power Source
CCC approval		CCC approval / marking not required for products rated ≤36 V
<b>Ambient conditions</b>		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
<b>Mechanical specifications</b>		
Connection type		cable , 5-pin
Degree of protection		IP67
Material		
Housing		PA-GF35
Cable		PUR
Transducer		epoxy resin/hollow glass sphere mixture; polyurethane foam
Cable		
Sheath diameter		7.25 mm
Bending radius		> 37.3 mm , fixed installation > 74.7 mm , movable installation
Core cross section		5 x 0.82 mm <sup>2</sup>
Length	L	2 m
Mass		345 g
Dimensions		
Height		40 mm

### Technical Data

Width	40 mm
Length	40 mm
<b>Factory settings</b>	
Output 1	near switch point: 50 mm far switch point: 500 mm Output mode: Window mode output behavior: NO contact
Output 2	near switch point: 100 mm far switch point: 250 mm Output mode: Window mode output behavior: NO contact
Beam width	wide
Evaluation procedure	averaging (MxN) M = 5 N = 2
<b>General information</b>	
Supplementary information	Switch settings of the external programming adapter: "output load": pull-down "output logic": inv

### Connection Assignment

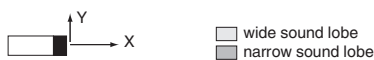
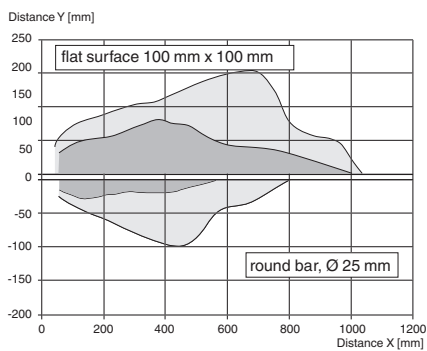


Wire colors in accordance with EN 60947-5-2

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

### Characteristic Curve

#### Characteristic response curve

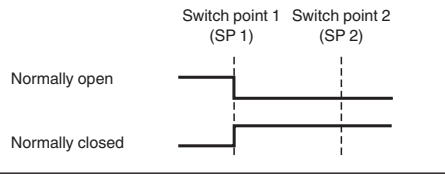


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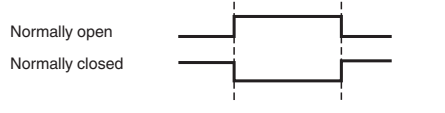
## Characteristic Curve

### Switching output modes

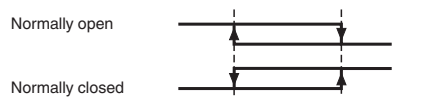
#### 1. Switch point mode



#### 2. Window mode



#### 3. Hysteresis mode



## Commissioning

### Adjustment possibilities

The sensor is equipped with 2 switching outputs with 2 programmable switch points each. The programming of the switch points, the output mode, the output logic and the beam width can be done in two different ways:

- Using the sensor's programming buttons
- 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](http://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 buttons and synchronisation you may refer to the commissioning instruction.