

Ultrasonic sensor

UB500-F42-E6-V15-Y70123089

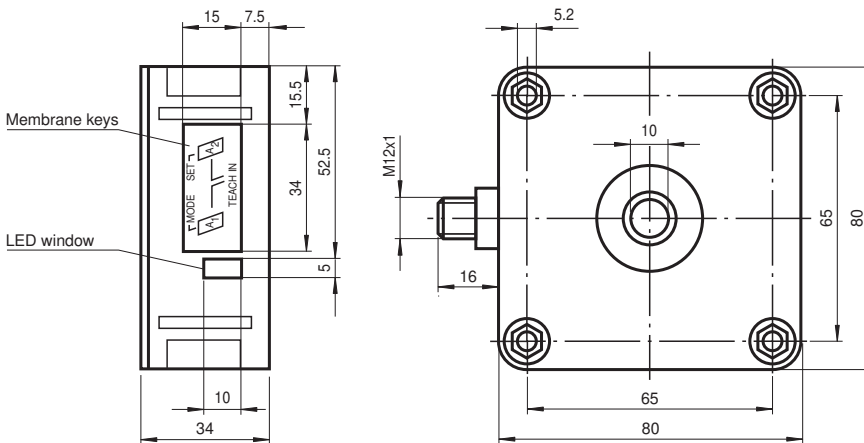


- 2 independent switch outputs
- Extremely small unusable area
- Synchronization options
- Customer-specific configuration

Single head system



Dimensions



Technical Data

General specifications

Sensing range	30 ... 203 mm
Adjustment range	fixed
Dead band	0 ... 30 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 390 kHz
Response delay	approx. 50 ms

Indicators/operating means

LED green	solid green: Power on
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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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Technical Data

LED yellow 1		solid: switching state switch output 1 flashing: program function
LED yellow 2		solid: switching state switch output 2 flashing: program function
LED red		normal operation: "fault" program function: no object detected
Electrical specifications		
Operating voltage	U_B	10 ... 30 V DC , ripple 10 % _{SS}
No-load supply current	I_0	≤ 50 mA
Input/Output		
Synchronization		bi-directional 0 level: $-U_B \dots +1$ V 1 level: $+4$ V $\dots +U_B$ input impedance: > 12 K Ω synchronization pulse: ≥ 100 μ s, synchronization interpulse period: ≥ 2 ms
Synchronization frequency		
Common mode operation		max. 95 Hz
Multiplex operation		≤ 95/n Hz, n = number of sensors
Output		
Output type		2 switch outputs PNP, NC
Rated operating current	I_e	200 mA , short-circuit/overload protected
Default setting		Switch point A1: 203 mm , Switch point A2: 203 mm , Normally closed (NC) , wide sound lobe
Voltage drop	U_d	≤ 2.5 V
Repeat accuracy		≤ 0.5 % of switching point
Switching frequency	f	≤ 8 Hz
Range hysteresis	H	1 % of the set operating distance
Temperature influence		± 1 % of full-scale value
Compliance with standards and directives		
Standard conformity		
Standards		EN IEC 60947-5-2:2020 IEC 60947-5-2:2019
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		-25 ... 70 °C (-13 ... 158 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications		
Connection type		Connector plug M12 x 1 , 5-pin
Degree of protection		IP54
Material		
Housing		ABS
Transducer		epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT
Mass		140 g
Factory settings		
Beam width		wide

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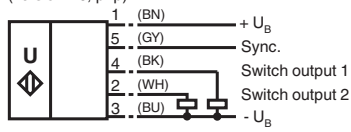
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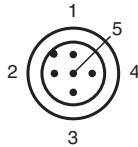
Connection

Standard symbol/Connections:
(version E6, pnp)



Core colours in accordance with EN 60947-5-2.

Connection Assignment

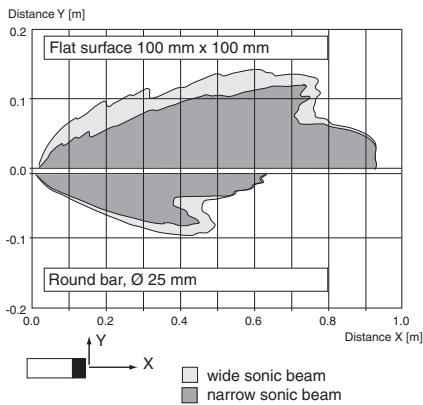


Wire colors in accordance with EN 60947-5-2

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

Characteristic Curve

Characteristic response curve



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Accessories

	MH 04-3505	Mounting aid for FP and F42 sensors
	MHW 11	Mounting brackets for sensors
	V15-G-2M-PVC	Female cordset single-ended M12 straight A-coded, 5-pin, PVC cable grey

Operation

Synchronisation

The sensor is equipped with a synchronisation connection to suppress mutual interaction. If it is not turned on, the sensor works at an internally generated cycle rate. Synchronisation of more than one sensor is possible in a number of different ways.

External synchronisation:

The sensor can be synchronised by the application of a square wave voltage externally. A synchronisation pulse on the synchronisation input results in the execution of a measurement cycle. The pulse width must be greater than 100 μ s. The measurement cycle must be started with the falling signal edge. A Low level > 1 s or an open synchronisation input results in normal operation of the sensor. A High level on the synchronisation input deactivates the sensor.

Two different operating modes are possible

- Multiple sensors can be controlled by the same synchronisation signal. The sensors work on synonymous cycle.
- Synchronisation pulses are sent cyclically to only one sensor each time. The sensors work in Multiplex mode.

Self synchronisation:

The synchronisation connections of up to 5 sensors with option for self-synchronisation are connected with each other. These sensors work after turning on the operating voltage in Multiplex mode. The On delay increases depending on the number of sensors to be synchronised. Synchronisation is possible during Teach-in and vice-versa. Sensors must be operated unsynchronised to perform Teach-in of switching points.

Note:

If the option for synchronisation is not used, the synchronisation input can be connected with ground (0 V) or the sensor can be operated with a V1 connection cable (4-pin).