



Ultrasonic sensor

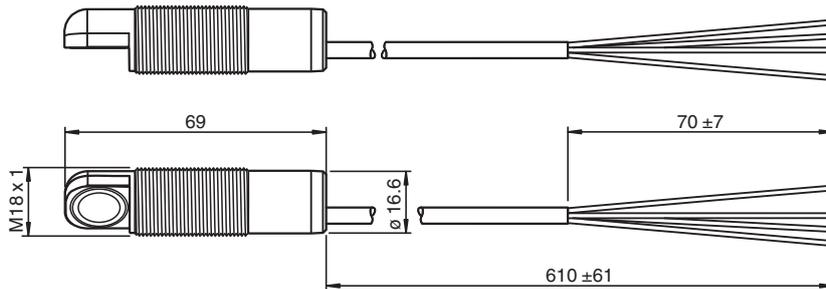
UB800-18GM40A-U-610MM-Y

- Analog output 0.5 ... 4.5 V
- Measuring window adjustable
- Program input
- Temperature compensation
- Customer-specific cable length
- Deutsch 4-pin, DT04 connector

Single head system



Dimensions



Technical Data

General specifications			
Sensing range			50 ... 800 mm
Adjustment range			70 ... 800 mm
Dead band			0 ... 50 mm
Standard target plate			100 mm x 100 mm
Transducer frequency			approx. 255 kHz
Response delay			approx. 100 ms
Indicators/operating means			
LED green			Power on
LED yellow			solid yellow: object in the evaluation range yellow, flashing: program function, object detected
LED red			solid red: Error red, flashing: program function, object not detected
Electrical specifications			
Operating voltage	U_B		10 ... 30 V DC
No-load supply current	I_0		≤ 20 mA
Input			

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

Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0001
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com

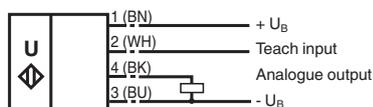
PEPPERL+FUCHS

Technical Data

Input type	1 program input lower evaluation limit A1: $-U_B \dots +1 \text{ V}$, upper evaluation limit A2: $+4 \text{ V} \dots +U_B$ input impedance: $> 4.7 \text{ k}\Omega$, pulse duration: $\geq 1 \text{ s}$	
Output		
Output type	1 analog output 0.5 ... 4.5 V	
Default setting	evaluation limit A1: 70 mm evaluation limit A2: 800 mm	
Resolution	0.4 mm at max. sensing range	
Deviation of the characteristic curve	$\pm 1 \%$ of full-scale value	
Repeat accuracy	$\pm 0.5 \%$ of full-scale value	
Load impedance	$> 1 \text{ k}\Omega$	
Temperature influence	$\pm 1.5 \%$ 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, Class 2 Power Source	
CCC approval	CCC approval / marking not required for products rated $\leq 36 \text{ V}$	
Ambient conditions		
Ambient temperature	$-25 \dots 70 \text{ }^\circ\text{C}$ ($-13 \dots 158 \text{ }^\circ\text{F}$)	
Storage temperature	$-40 \dots 85 \text{ }^\circ\text{C}$ ($-40 \dots 185 \text{ }^\circ\text{F}$)	
Mechanical specifications		
Connection type	cable	
Housing length	69 mm	
Housing diameter	18 mm	
Degree of protection	IP67	
Material		
Housing	brass, nickel-plated	
Transducer	epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT	
Cable		
Sheath diameter	4.8 mm	
Bending radius	$> 38.4 \text{ mm}$, fixed $> 72 \text{ mm}$, moving	
Material	PVC	
Number of cores	4	
Core cross section	$4 \times 0.5 \text{ mm}^2$	
Length	L	610 mm
Mass	65 g	
General information		
Scope of delivery	Deutsch connector DT04-4P-CE01 Deutsch wedge W4P German contact 0460-202-1631	

Connection

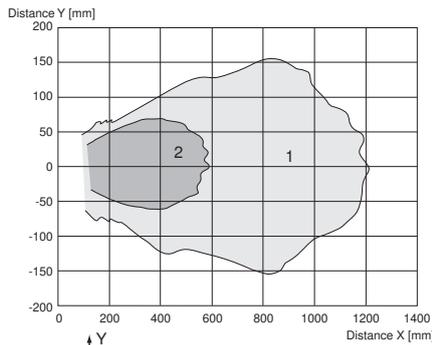
Standard symbol/Connections:
(version U)



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

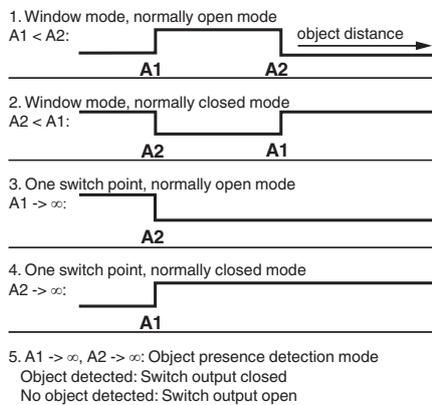
Characteristic Curve

Characteristic response curve



Curve 1: flat surface 100 mm x 100 mm
 Curve 2: round bar, Ø 25 mm

Programmable output modes



Programming

The sensor features a programmable analog output with two programmable evaluation boundaries. Programming the evaluation boundaries and the operating mode is done by applying the supply voltage $-U_B$ or $+U_B$ to the Teach-In input. The supply voltage must be applied to the Teach-In input for at least 1 s. LEDs indicate whether the sensor has recognized the target during the programming procedure.

Note:

Evaluation boundaries may only be specified directly after Power on. A time lock secures the adjusted switching points against unintended modification 5 minutes after Power on. To modify the evaluation boundaries later, the user may specify the desired values only after a new Power On.

Note:

If a programming adapter UB-PROG2 is used for the programming procedure, button A1 is assigned to $-U_B$ and button A2 is assigned to $+U_B$.

Programming the analog output

Rising ramp

1. Place the target at the near end of the desired evaluation range
2. Program the evaluation boundary by applying $-U_B$ to the Teach-In input (yellow LED flashes)
3. Disconnect the Teach-In input from $-U_B$ to save the evaluation boundary
4. Place the target at the far end of the desired evaluation range
5. Program the evaluation boundary by applying $+U_B$ to the Teach-In input (yellow LED flashes)
6. Disconnect the Teach-In input from $+U_B$ to save the evaluation boundary

Falling ramp

1. Place the target at the far end of the desired evaluation range
2. Program the evaluation boundary by applying $-U_B$ to the Teach-In input (yellow LED flashes)
3. Disconnect the Teach-In input from $-U_B$ to save the evaluation boundary
4. Place the target at the near end of the desired evaluation range
5. Program the evaluation boundary by applying $+U_B$ to the Teach-In input (yellow LED flashes)
6. Disconnect the Teach-In input from $+U_B$ to save the evaluation boundary

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Additional Information

If the sensor is installed at places, where the environment temperature can fall below 0 °C, for the sensors fixation, one of the mounting flanges BF 12, BF 12-F or BF 5-30 must be used. In case of direct mounting of the sensor in a through hole, it has to be fixed at the middle of the housing thread.