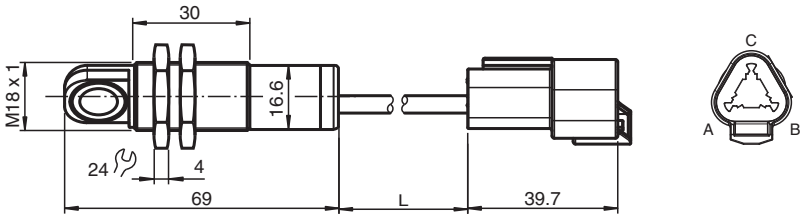
Ultrasonic sensor

UB800-18GM40A-I-0,3M-Y70110930

- Cylindrical housing
- Analog output 4 mA ... 20 mA
- Temperature compensation
- Deutsch connector 3-pin

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		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	≤ 20 mA
Output		
Output type		1 analog output 4 ... 20 mA, short-circuit/overload protected
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		± 1 % of full-scale value
Repeat accuracy		± 0.5 % of full-scale value
Load impedance		0 ... 300 Ω at U_B > 10 V; 0 ... 500 Ω at U_B > 15 V
Temperature influence		± 1.5 % of full-scale value
Compliance with standards and directives		

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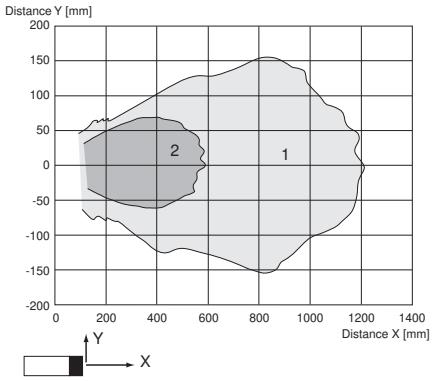
Technical Data

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 ≤36 V
Ambient conditions		
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications		
Connection type		fixed cable with plug
Degree of protection		IP67
Material		
Housing		brass, nickel-plated
Transducer		epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT
Connector		Deutsch connector DT04-3P-C015
Cable		
Material		PVC
Length	L	300 mm
Mass		55 g
Dimensions		
Length		72.6 mm
Diameter		18 mm

Characteristic Curve

Characteristic response curve



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

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Programming

Programming procedure

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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