

Ultrasonic sensor

UBC400-18GH40-I-V1

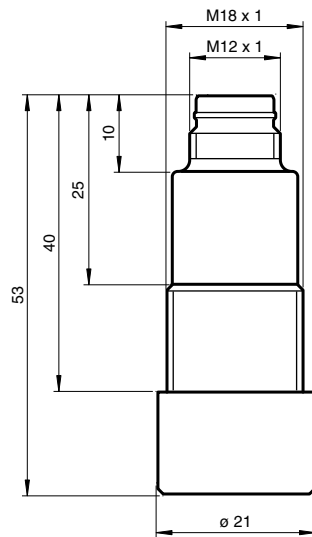


- Short design, 40 mm
- Analog output 4 mA ... 20 mA
- Measuring window adjustable
- Program input
- Temperature compensation

Single head system



Dimensions



Technical Data

General specifications

Sensing range	40 ... 400 mm
Adjustment range	50 ... 400 mm
Dead band	0 ... 40 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 255 kHz
Response delay	approx. 100 ms

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC , ripple 10 % _{SS}
No-load supply current	I_0	≤ 20 mA

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

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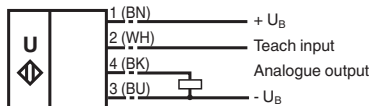
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Technical Data

Input	
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 4 ... 20 mA, short-circuit/overload protected
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	0 ... 300 Ohm
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	0 ... 70 °C (32 ... 158 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications	
Connection type	Connector plug M12 x 1 , 4-pin
Housing diameter	18 mm
Degree of protection	IP67
Material	
Housing	Stainless steel 1.4435 / AISI 316L O-ring for cover seal: Viton
Transducer	PTFE
Mass	25 g
Factory settings	
Output	evaluation limit A1: 50 mm evaluation limit A2: 400 mm output behavior: rising ramp

Connection

Standard symbol/Connections:
(version I)



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

Connection Assignment

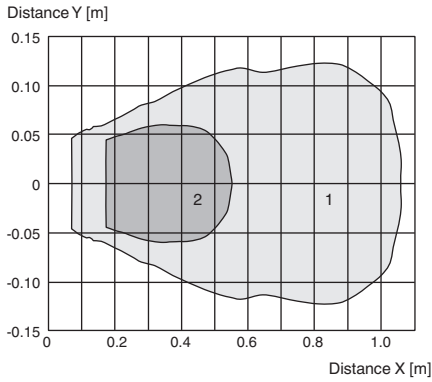
Connector V1



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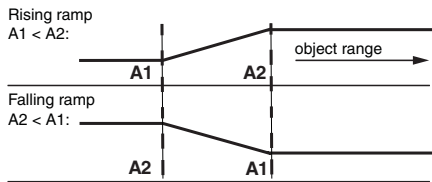
Characteristic Curve

Characteristic response curves










Curve 1: flat plate 100 mm x 100 mm
Curve 2: round bar, Ø 8 mm

Programming the analog output mode



Accessories

	UB-PROG2	Programming unit
	OMH-04	Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm
	BF 18	Mounting flange, 18 mm
	BF 18-F	Plastic mounting adapter, 18 mm
	BF 5-30	Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm
	V1-G-2M-PVC	Female cordset single-ended M12 straight A-coded, 4-pin, PVC cable grey
	V1-W-2M-PUR	Female cordset single-ended M12 angled A-coded, 4-pin, PUR cable grey

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Teach-In

Adjusting the evaluation limits

The ultrasonic sensor features an analogue output with two teachable evaluation limits. These are set 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. The lower evaluation limit A1 is taught with $-U_B$, A2 with $+U_B$.

Two different output functions can be set:

1. Analogue value increases with rising distance to object (rising ramp)
2. Analogue value falls with rising distance to object (falling ramp)

Teach-In rising ramp (A2 > A1)

- Position object at lower evaluation limit
- Teach-In lower limit A1 with $-U_B$
- Position object at upper evaluation limit
- Teach-In upper limit A2 with $+U_B$

Teach-In falling ramp (A1 > A2):

- Position object at lower evaluation limit
- Teach-In lower limit A2 with $+U_B$
- Position object at upper evaluation limit
- Teach-In upper limit A1 with $-U_B$