

Ultrasonic sensor

UBC400-18GH40-I-V1

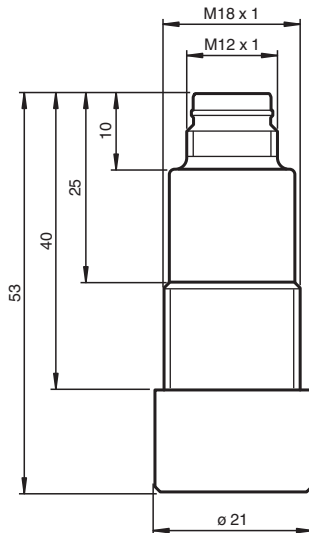


- Short design, 40 mm
- Analog output 4 mA ... 20 mA
- Measuring window adjustable
- Program input
- Temperature compensation

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

Input

Input type	1 program input lower evaluation limit A1: $-U_B$... +1 V, upper evaluation limit A2: +4 V ... $+U_B$ input impedance: > 4.7 kΩ, pulse duration: ≥ 1 s
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Output

Output type	1 analog output 4 ... 20 mA, short-circuit/overload protected
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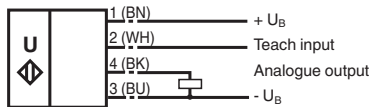
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Technical Data

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 Ohm
Temperature influence	± 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 ≤36 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
Degree of protection	IP67
Material	
Housing	Stainless steel 1.4435 / AISI 316L O-ring for cover seal: Viton
Transducer	PTFE
Mass	25 g
Dimensions	
Length	40 mm
Diameter	18 mm
Factory settings	
Output	evaluation limit A1: 50 mm evaluation limit A2: 400 mm output behavior: rising ramp

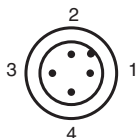
Connection Assignment

Standard symbol/Connections:
(version I)



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

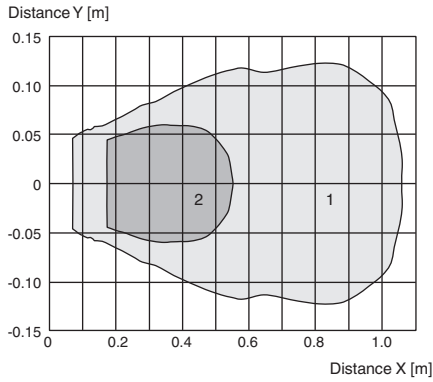
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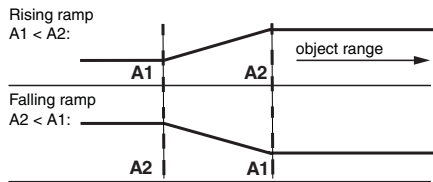
Characteristic Curve

Characteristic response curves



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

Programming the analog output mode



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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 $-U_B$