



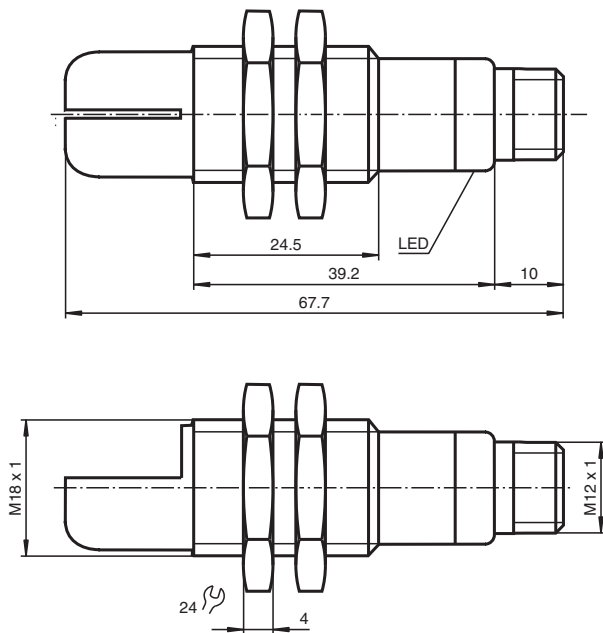
Ultrasonic sensor UB300-18GM40A-U-V1

- Short design, 40 mm
- Function indicators visible from all directions
- Analog output 0 ... 10 V
- Measuring window adjustable
- Program input
- Temperature compensation

Single head system



Dimensions



Technical Data

General specifications

Sensing range	35 ... 300 mm
Adjustment range	50 ... 300 mm
Dead band	0 ... 35 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 390 kHz
Response delay	approx. 50 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

Release date: 2025-05-16 Date of issue: 2025-05-16 Filename: 220355_eng.pdf

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

Electrical specifications

Operating voltage	U_B	15 ... 30 V DC , ripple 10 % _{SS}
No-load supply current	I_0	≤ 20 mA

Input

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

Output

Output type	1 analog output 0 ... 10 V
Default setting	evaluation limit A1: 50 mm evaluation limit A2: 300 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	> 1 kΩ
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

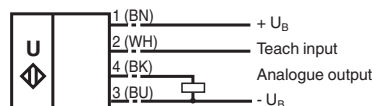
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)

Mechanical specifications

Connection type	Connector plug M12 x 1 , 4-pin
Degree of protection	IP67
Material	
Housing	brass, nickel-plated
Transducer	epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT
Mass	25 g
Dimensions	
Length	40 mm
Diameter	18 mm

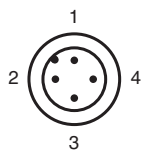
Connection Assignment

Standard symbol/Connections: (version U)



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

Connection Assignment

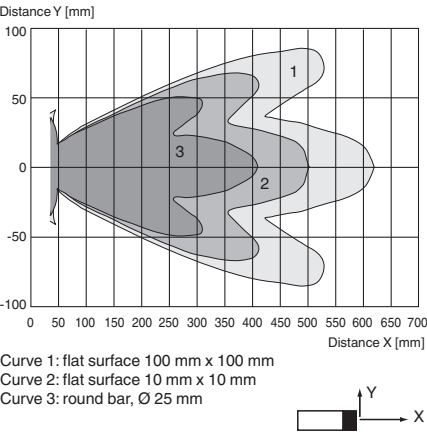


Wire colors in accordance with EN 60947-5-2

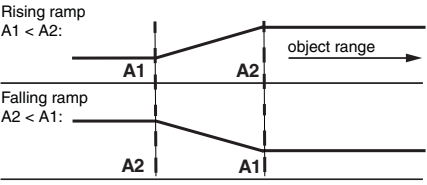
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Characteristic Curve

Characteristic response curve



Programming the analog output mode



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 $+U_B$.

Release date: 2025-05-16 Date of issue: 2025-05-16 Filename: 220355_eng.pdf

Programming

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