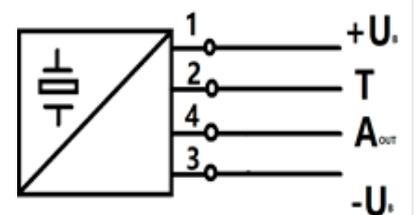
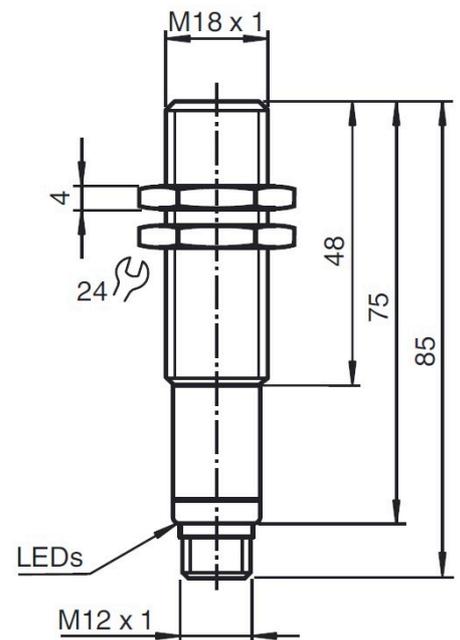


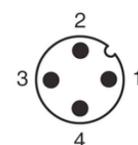
Ultrasonic Sensor

UM1000-18GM-AI-V1



- 1 BN=BROWN
- 2 WH=WHITE
- 3 BU=BLUE
- 4 BK=BLACK

V1 Connector



Technical data

General Specifications

Sensing distance	80...1000mm
Adjustment range	80...1000mm
Unusable area	0...80mm
Standard target plate	100mm×100mm
Transducer frequency	About 200 kHz
Response delay	About 85ms

Indicators/Operating means

LED Blue	solid: object in evaluation range flashing: program function
LED Red	flashing: fault or program function object not detected

Electrical specifications

Operating voltage U_B	10...30VDC, ripple 10%ss
No-load supply current	≤ 20 mA

Output

Output type	1 analogue output 4...20mA
Resolution	0.11mm at max.sensing range

Deviation of the characteristic curve $\pm 1\%$ of full-scale value

Repeat accuracy $\pm 0.1\%$ of full-scale value

Load impedance > 1 k Ohm

Temperature influence $\pm 1.5\%$ of full-scale value

Ambient conditions

Ambient temperature	-25...70°C
Storage temperature	-40...85°C

Mechanical specifications

Protection grade IP67

Connection Connector M12x1,4-PIN

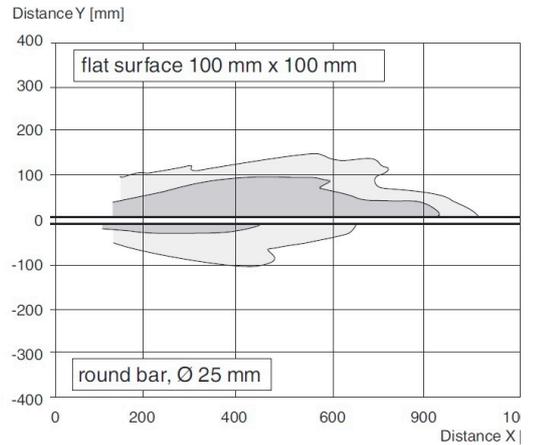
Material

Housing brass,nickel-plated

Transducer epoxy resin/hollow glass sphere mixture;
Polyurethane foam

Weight 60g

Characteristic response curve



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. LEDs indicate whether the sensor has recognised the target during the TEACH-IN procedure. 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)

Evaluation limits may only be specified within the first 5 minutes after Power on. To modify the evaluation limits later, the user may specify the desired values only after a new Power On.

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 ($A1 > A2$):

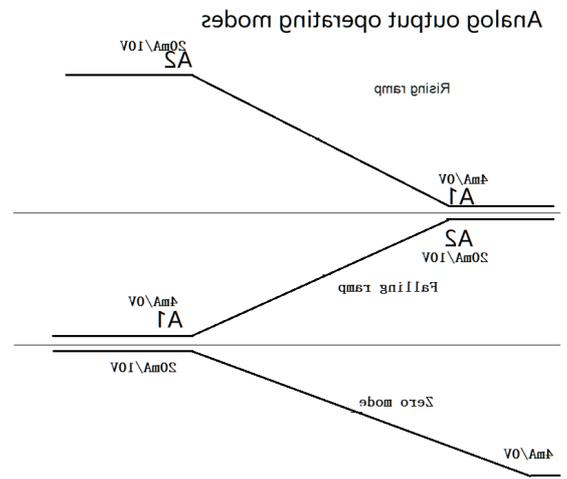
- Position object at lower evaluation limit
- TEACH-IN lower limit A2 with $+U_B$
- Position object at upper evaluation limit
- TEACH-IN upper limit A1 with $-U_B$

Default setting

A1: unusable area

A2: nominal sensing range

Mode of operation: rising ramp



LED Displays

Displays in dependence on operating mode	Red LED	Blue LED
TEACH-IN evaluation limit		
Object detected	off	flashes
No object detected	off	off
Object uncertain (TEACH-IN invalid)	on	off
Normal mode (evaluation range)	off	on
Fault	on	previous state