



## Ultrasonic sensors UM12

UM12-1172251



**Model Name** > [UM12-1172251](#)  
**Part No.** > [6053543](#)



**At a glance**

- Reliable measurement, regardless of material color, transparency, gloss, or ambient light
- Very short and rugged M12 metal housing
- Variants with PNP/NPN switching output or analog output
- Immune to dirt, dust, humidity, and fog
- Detection, measurement, or positioning with ultrasound technology
- Cable teach-in

**Your benefits**

- Very compact housing dimensions for straightforward machine integration
- Proven M12 housing design ensures compatibility with other technologies
- Analog variants in compact design for complex measuring tasks
- Rugged, one-piece metal housing ensures highest machine uptimes
- Teach-in via cable prevents unintentional sensor adjustment reducing machine downtime
- The sensor's immunity to external factors enables it to take accurate measurements even in dirty, dusty, humid, and foggy conditions
- Integrated temperature compensation ensures high measurement accuracy at any time for best process quality



**Performance**

Resolution:	≥ 0.069 mm
Working range, limiting range:	20 mm ... 150 mm, 250 mm
Repeatability <sup>1)</sup> :	± 0.15 %
Accuracy <sup>2)</sup> :	± 1 %
Response time:	24 ms
Switching frequency:	30 Hz
Ultrasonic frequency (typical):	380 kHz
Temperature compensation:	✓
Additional function:	Set switching mode: Distance to object (DtO)/switching window (Wnd)/ Object Between Sensor and Background (ObSB) Teach-in of switching output Invertible switching output Temperature compensation Reset to factory default
Output time:	8 ms

1) 2) Referring to current measurement value

## Interfaces

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Output type: NPN  
Hysteresis: 2 mm

## Mechanics/electronics

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Sending axis: Straight  
Supply voltage  $V_s$  <sup>1)</sup>: DC 10 V ... 30 V  
Power consumption <sup>2)</sup>:  $\leq 1.2$  W  
Initialization time:  $< 300$  ms  
Design: Cylindrical  
Housing material: Nickel-plated brass  
PBT  
ultrasonic transducer: polyurethane foam, glass epoxy resin  
Electrical connection: Male connector, M12, 4-pin  
Indication: 2 x LED  
Weight: 15 g

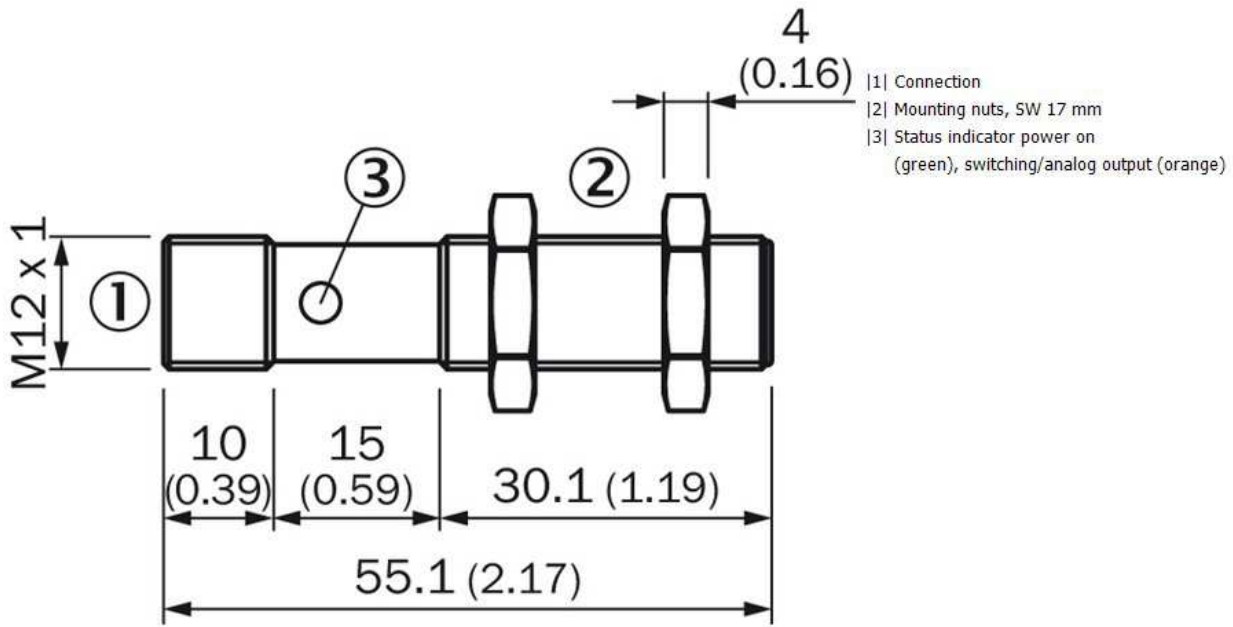
<sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A <sup>2)</sup> Without load

## Ambient data

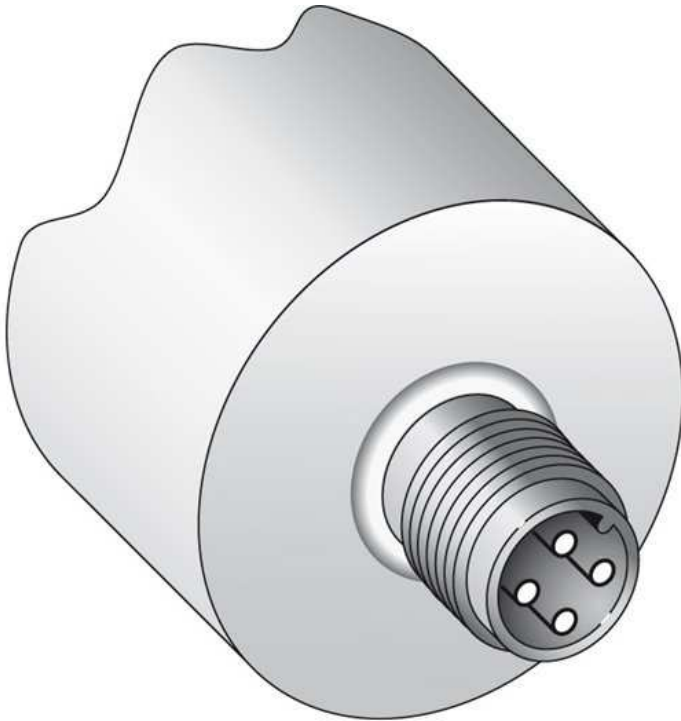
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Enclosure rating: IP 67  
Protection class: III  
Ambient temperature: Operation:  $-25 \dots +70$  °C  
Storage:  $-40 \dots +85$  °C

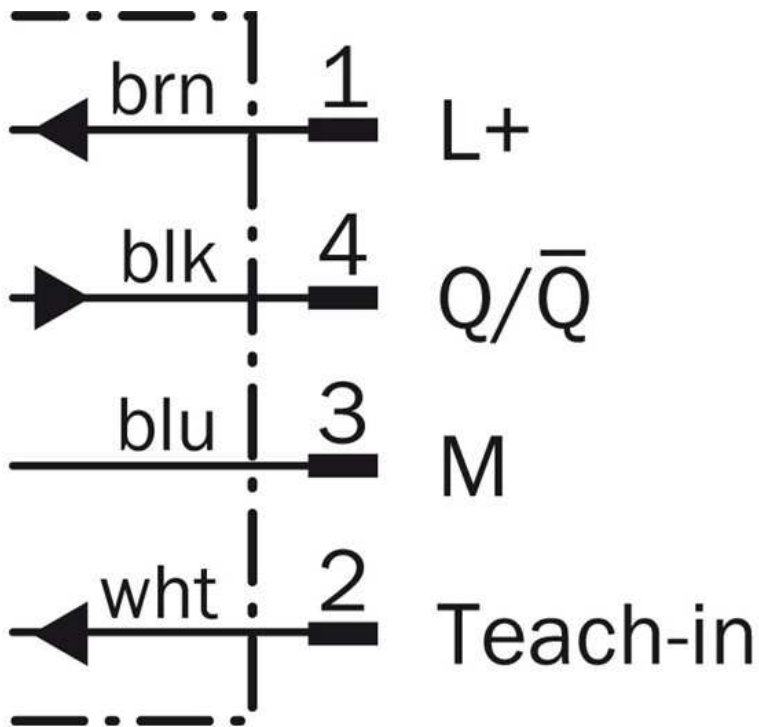
**Dimensional drawing**



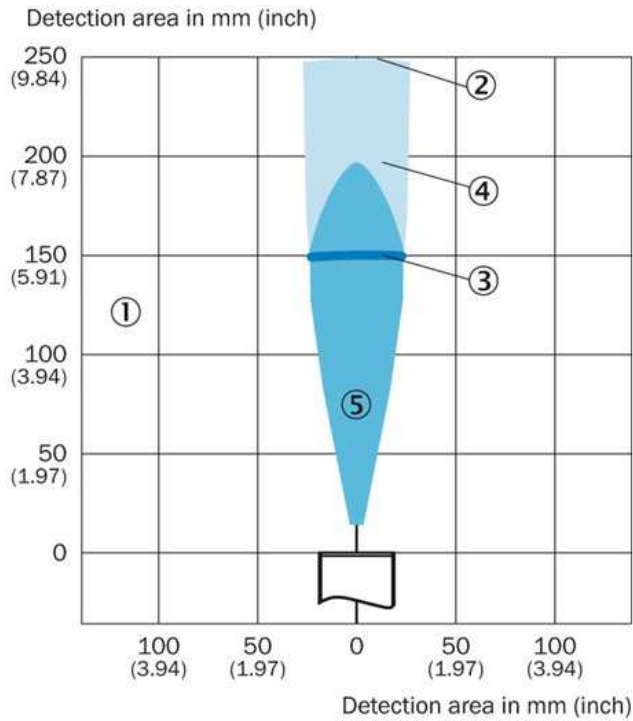
**Connection type**



Connection diagram



Detection area



- [1] Sensing range dependent on reflection properties, size and orientation of the object
- [2] Limiting range
- [3] Working range
- [4] example object: aligned plate 500 mm x 500 mm
- [5] example object: pipe with 10 mm diameter

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