



## Ultrasonic sensors UM12

UM12-1192261



**Model Name** > [UM12-1192261](#)  
**Part No.** > [6053548](#)



**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:	40 mm ... 240 mm, 350 mm
Repeatability <sup>1)</sup> :	± 0.15 %
Accuracy <sup>2)</sup> :	± 1 %
Response time <sup>3)</sup> :	30 ms
Ultrasonic frequency (typical):	500 kHz
Temperature compensation:	✓
Additional function:	Teach-in of analog output Temperature compensation Reset to factory default Invertible analog output
Output time:	10 ms

<sup>1) 2)</sup> Referring to current measurement value    <sup>3)</sup> Subsequent smoothing of the analog output, depending on the application, may increase the response time by up to 200 %

## Interfaces

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Analog output <sup>1)</sup>: 1 x 4 mA ... 20 mA ( $\leq 500 \Omega$ )

<sup>1)</sup> For 4 mA ... 20 mA and  $V_s \leq 20$  V max. load  $\leq 100 \Omega$

## Mechanics/electronics

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Sending axis: Straight  
Supply voltage  $V_s$  <sup>1), 2)</sup>: DC 10 V ... 30 V  
Power consumption <sup>3)</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

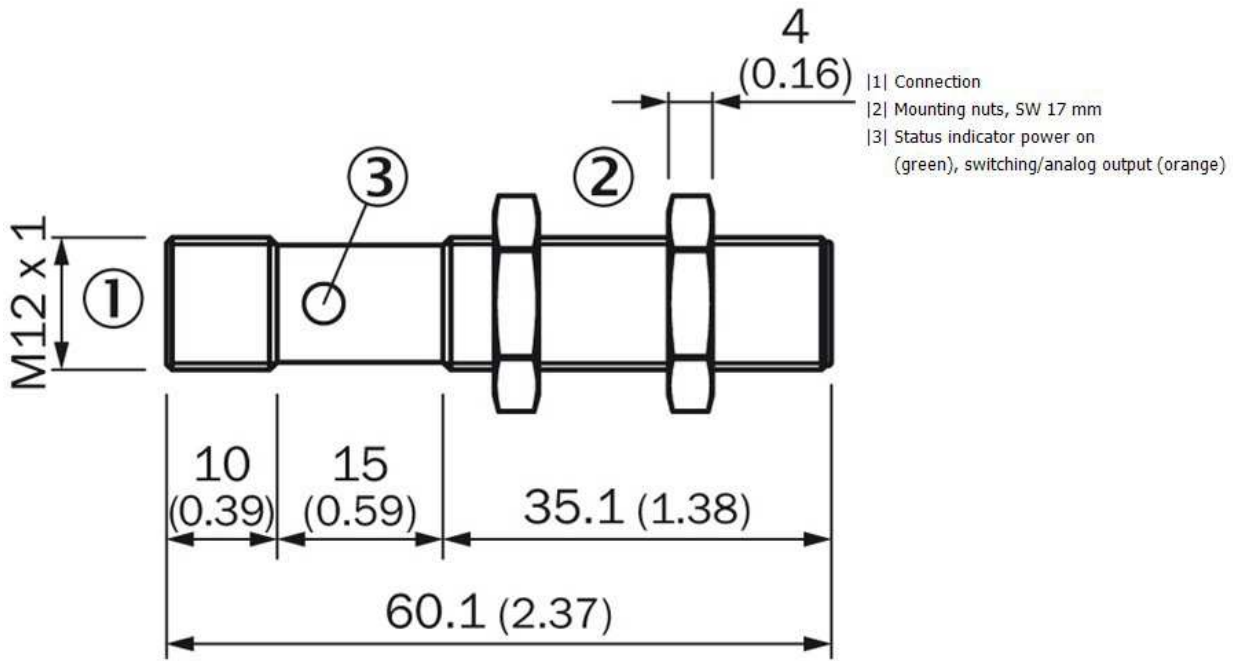
<sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A <sup>2)</sup> 15 V ... 30 V when using analog voltage output <sup>3)</sup> Without load

## Ambient data

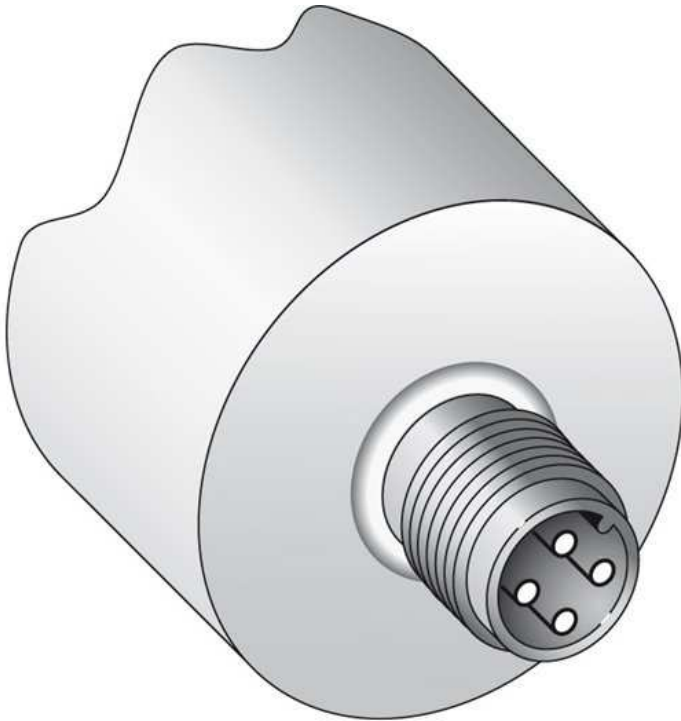
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Enclosure rating: IP 67  
Protection class: III  
Ambient temperature: Operation:  $-25 \dots +70$  °C  
Storage:  $-40 \dots +85$  °C

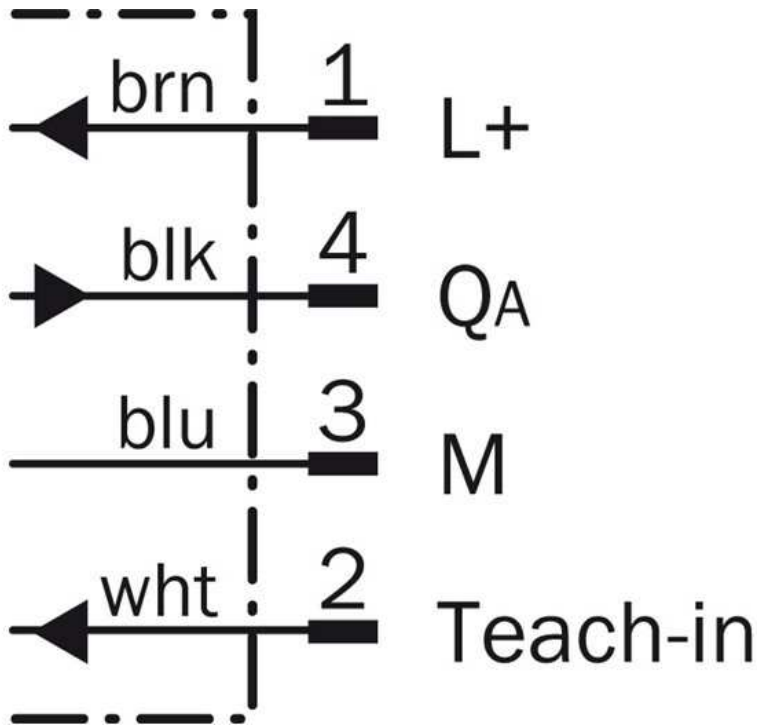
**Dimensional drawing**



**Connection type**

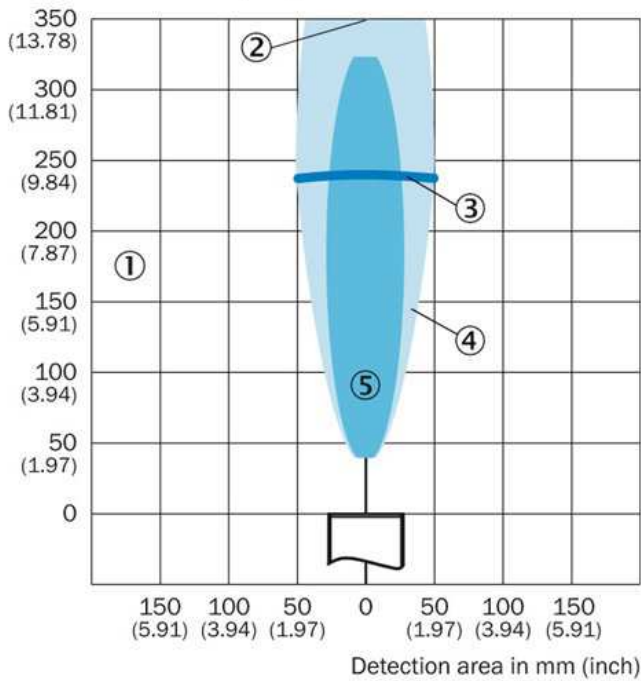


Connection diagram



Detection area

Detection area in mm (inch)



- [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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