



Ultrasonic sensors UM12

UM12-1172271



Model Name > [UM12-1172271](#)
Part No. > [6053545](#)



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 ¹⁾ :	± 0.15 %
Accuracy ²⁾ :	± 1 %
Response time ³⁾ :	24 ms
Ultrasonic frequency (typical):	380 kHz
Temperature compensation:	✓
Additional function:	Teach-in of analog output Temperature compensation Reset to factory default Invertible analog output
Output time:	8 ms

^{1) 2)} Referring to current measurement value ³⁾ Subsequent smoothing of the analog output, depending on the application, may increase the response time by up to 200 %

Interfaces

Analog output: 1 x 0 V ... 10 V ($\geq 100 \text{ k}\Omega$)

Mechanics/electronics

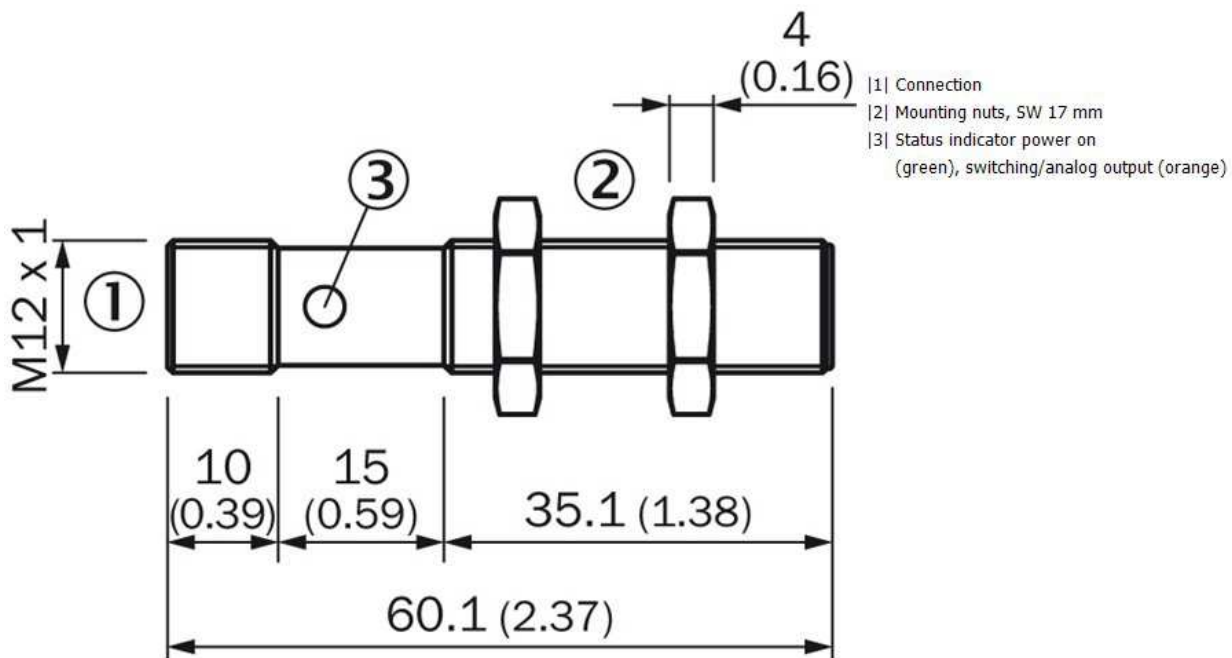
Sending axis: Straight
Supply voltage V_s ¹⁾: DC 15 V ... 30 V
Power consumption ²⁾: $\leq 1.2 \text{ W}$
Initialization time: $< 300 \text{ ms}$
Design: Cylindrical
Housing material: Nickel-plated brass
PBT
ultrasonic transducer: polyurethane foam, glass epoxy resin
Electrical connection: Male connector,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

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

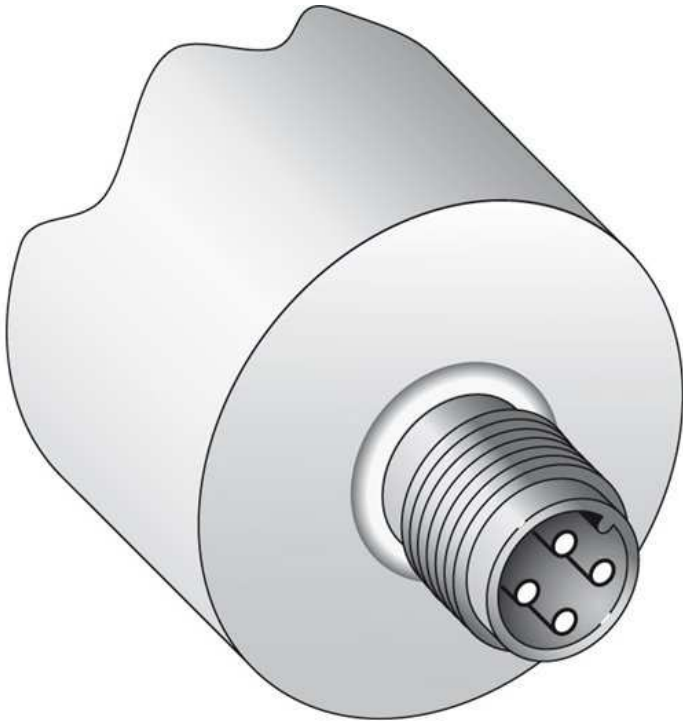
Ambient data

Enclosure rating: IP 67
Protection class: III
Ambient temperature: Operation: $-25 \dots +70 \text{ }^\circ\text{C}$
Storage: $-40 \dots +85 \text{ }^\circ\text{C}$

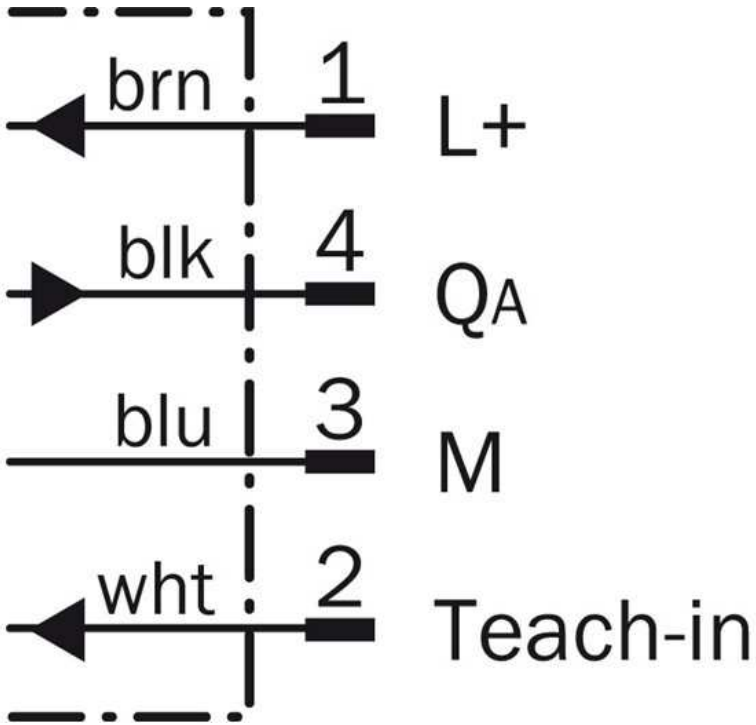
Dimensional drawing



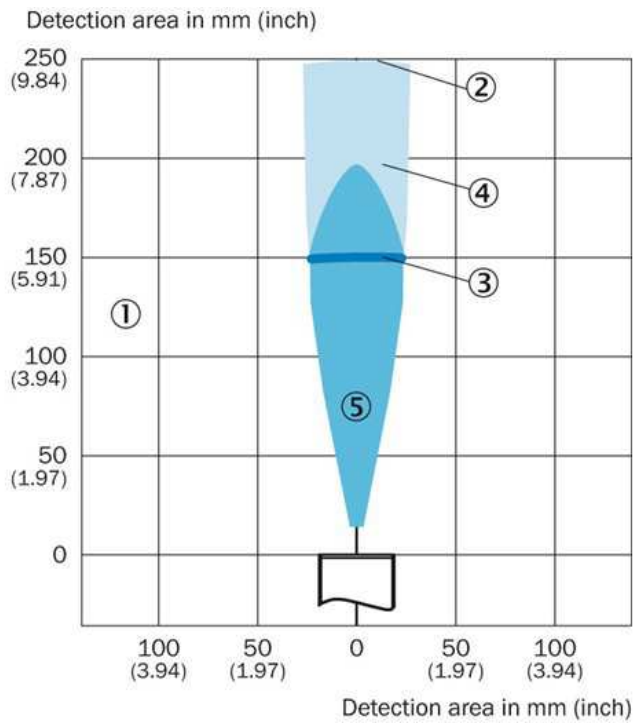
Connection type



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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