



Ultrasonic sensors
UM18, UM18-2 Core

UM18-211161101



Model Name > [UM18-211161101](#)
Part No. > [6048412](#)

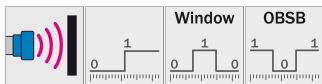


At a glance

- Reliable measurement independent of material color, transparency, gloss and ambient light
- Four ranges up to 1,300 mm
- Short plastic M18 housing with a length of 41 mm
- Straight or right-angle version
- High immunity to dirt, dust, humidity and fog
- PNP/NPN switching output

Your benefits

- Four sensing ranges up to 1,300 mm provide a range of flexible mounting options
- Easy machine integration due to short M18 housing available in straight or right-angle versions
- Solid, one-piece metal housing secures highest machine availability
- Unintentional adjustments to sensor settings are eliminated since teach-in process is done with an external wire
- Variety of application solutions due to insensitivity and reliability of ultrasound technology



Performance

| | |
|---------------------------------|--|
| Resolution: | 0.2 mm |
| Working range, limiting range: | 30 mm ... 250 mm, 350 mm |
| Repeatability ¹⁾ : | ± 0.15 % |
| Accuracy ²⁾ : | 0.17 %/K |
| Response time: | 32 ms |
| Output rate: | 8 ms |
| Switching frequency: | 25 Hz |
| Ultrasonic frequency (typical): | 320 kHz |
| Detection area (typical): | See diagrams |
| Additional function: | Set switching mode: Distance to object (DtO)/Window (Wnd)/Object between sensor and background (ObsB) Teach-in of switching output Inverted switching output Reset to factory default |

1) 2) Referring to current measurement value

Interfaces

| | |
|-----------------------------|---------------------|
| Output type ¹⁾ : | 1 x PNP (200 mA) |
| Hysteresis: | 3 mm |
| BETRIEBSREICHWEITE-GR.COLL: | 30 mm 250 mm 350 mm |

¹⁾ PNP: HIGH = $V_S - (< 2 V)$ /LOW = 0 V

Mechanics/electronics

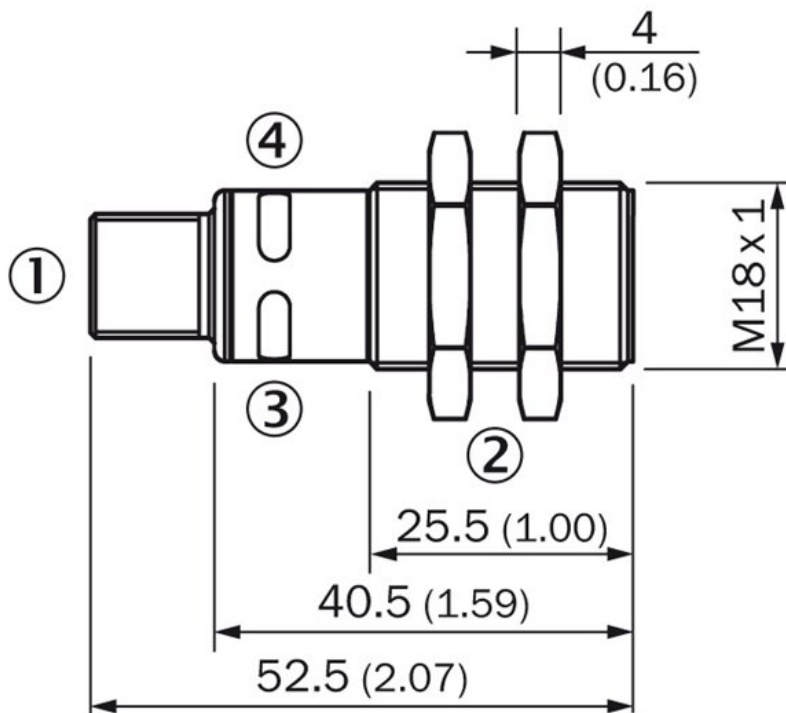
| | |
|--------------------------------------|--|
| Sending axis: | Straight |
| Supply voltage V_S ¹⁾ : | DC 10 V ... 30 V |
| Power consumption ²⁾ : | $\leq 1.2 W$ |
| Initialization time: | $< 300 ms$ |
| Housing material: | PBT ultrasonic transducer: polyurethane foam, glass epoxy resin |
| Connection type: | 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

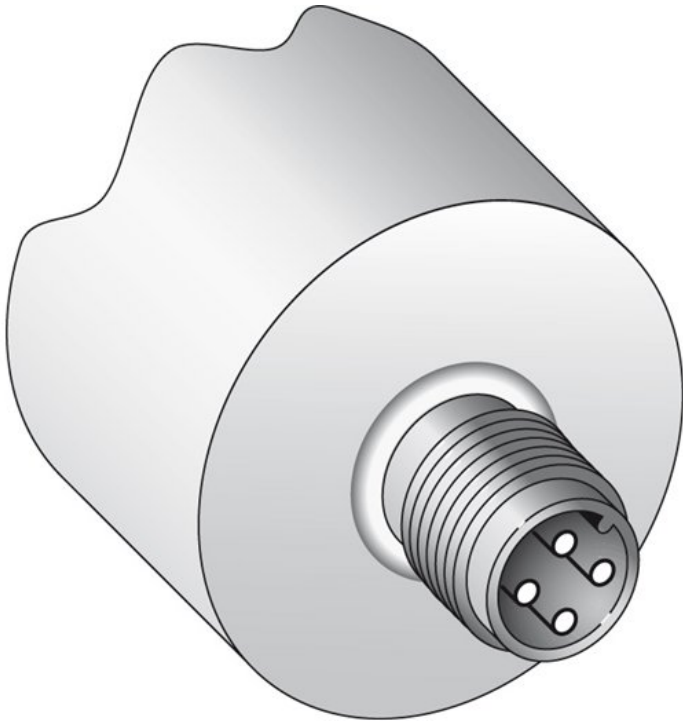
| | |
|----------------------|--|
| Enclosure rating: | IP 67 |
| Protection class: | III |
| Ambient temperature: | Operation: $-25 \dots 70 \text{ }^\circ\text{C}$ Storage: $-40 \dots 85 \text{ }^\circ\text{C}$ |

Dimensional drawing

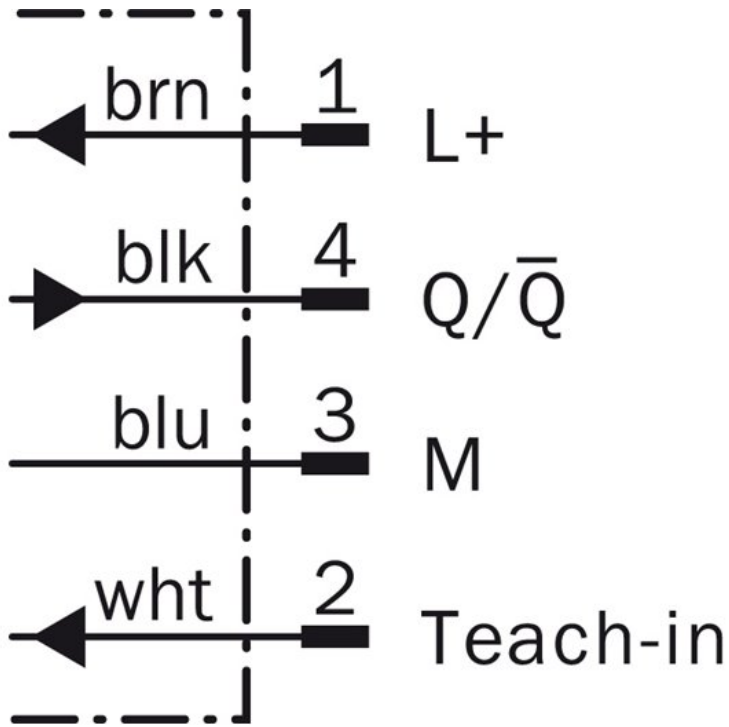


- [1] Connection
- [2] Mounting nuts, SW 24 mm
- [3] Status indicator power on (green)
- [4] Status indicator switching/analog output (orange)

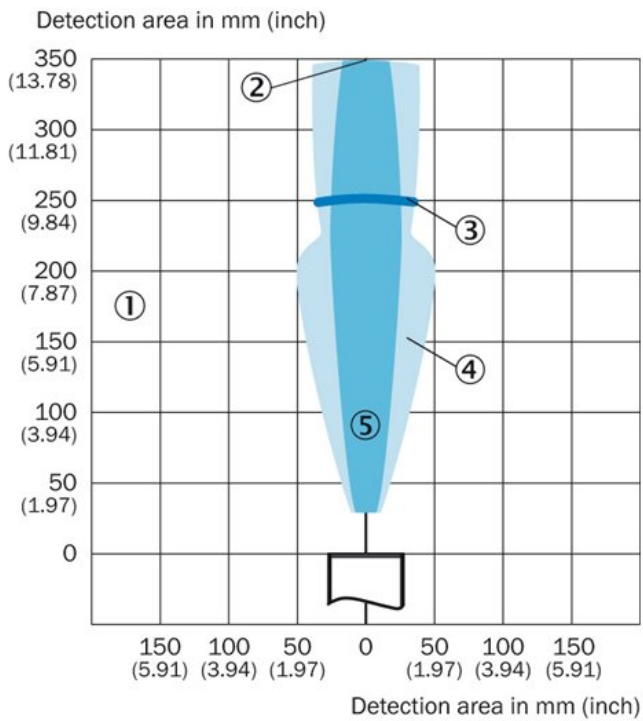
Connection type



Connection diagram



Characteristic curve



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

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