



Ultrasonic sensors
UM18, UM18-2 Core

UM18-217165102



Model Name > [UM18-217165102](#)
Part No. > [6048411](#)

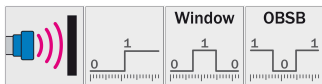


At a glance

- 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: | 20 mm ... 150 mm, 250 mm |
| Repeatability ¹⁾ : | ± 0.15 % |
| Accuracy ²⁾ : | 0.17 %/K |
| Response time: | 32 ms |
| Switching frequency: | 25 Hz |
| Ultrasonic frequency (typical): | 380 kHz |
| Detection area (typical): | See diagrams |
| 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 Reset to factory default |
| Output time: | 8 ms |

1) 2) Referring to current measurement value

Interfaces

| | |
|-----------------------------|------------------|
| Output type ¹⁾ : | 1 x NPN (200 mA) |
| Hysteresis: | 2 mm |

¹⁾ NPN: HIGH $\leq 2\text{ V}$ / LOW = V_S

Mechanics/electronics

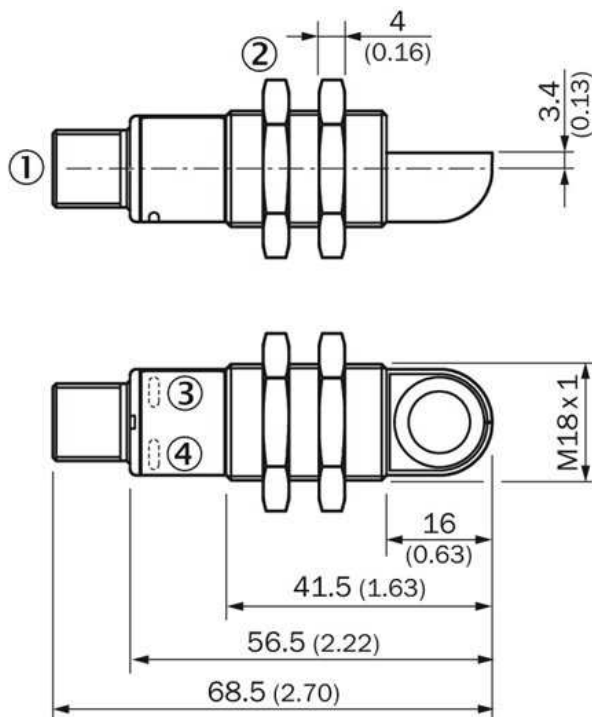
| | |
|--------------------------------------|--|
| Sending axis: | Angled |
| Supply voltage V_S ¹⁾ : | DC 10 V ... 30 V |
| Power consumption ²⁾ : | $\leq 1.2\text{ W}$ |
| Initialization time: | $< 300\text{ ms}$ |
| Design: | Cylindrical |
| Housing material: | PBT ultrasonic transducer: polyurethane foam, glass epoxy resin |
| Electrical connection: | Male connector, M12, 4-pin |
| Indication: | 2 x LED |
| Weight: | 20 g |

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

Ambient data

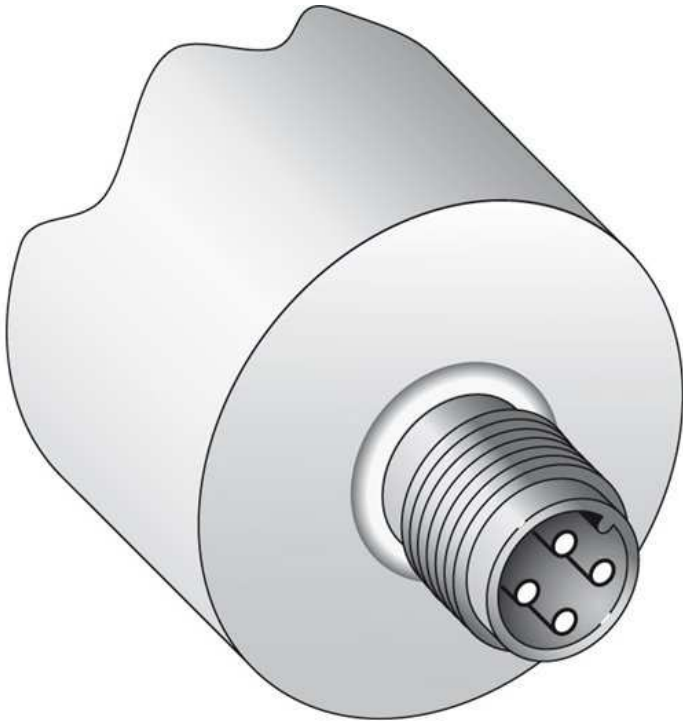
| | |
|----------------------|--|
| Enclosure rating: | IP 67 |
| Protection class: | III |
| Ambient temperature: | Operation: $-25 \dots +70\text{ }^\circ\text{C}$ Storage: $-40 \dots +85\text{ }^\circ\text{C}$ |

Dimensional drawing

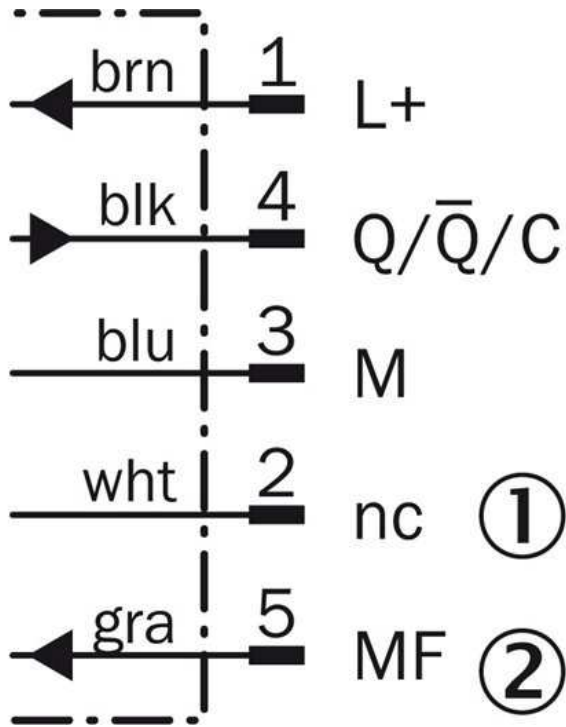


- |1| Connection
- |2| Mounting nuts, SW 24 mm
- |3| Status indicator power on (green)
- |4| Status indicator switching/analog output (orange)

Connection type



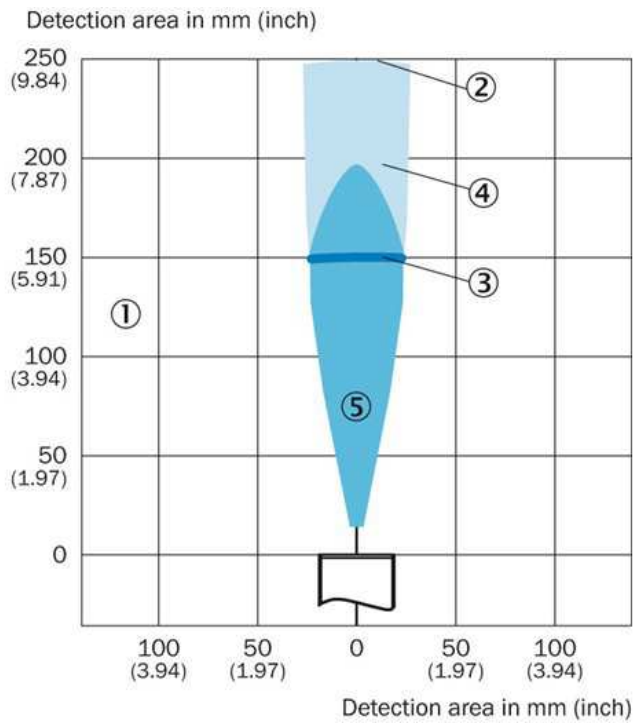
Connection diagram



|1| not connected

|2| multifunctional input/synchronization
and multiplex operation/communication Connect+

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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