



Ultrasonic sensors
UM18, UM18-2 Pro

UM18-211126111



Model Name > [UM18-211126111](#)
Part No. > [6048392](#)



At a glance

- Reliable measurement independent of material color, transparency, gloss and ambient light
- Four ranges up to 1,300 mm
- Short M18 metal housing with a length of 41 mm
- Straight or right-angle versions
- Analog voltage, analog current or push-pull (PNP/NPN in one) switching output with IO-Link available
- Set-up via IO-Link and/or teach-in via multifunction input
- High immunity to dirt, dust, humidity and fog

Your benefits

- Ranges up to 1,300 mm offer plenty of options for flexible use
- Easy machine integration due to short M18 housing available in straight or right-angle versions
- Intelligent measurement filters ensure reliable measurement results for highest process stability
- Integrated temperature compensation ensures high measurement accuracy at any time for best process quality
- Solid, one-piece metal housing secures highest machine availability
- Synchronization or multiplexing allow simultaneous use of up to 10 sensors, which improves application flexibility and process stability
- Unintentional adjustments to sensor settings are eliminated since teach-in process is done with an external wire
- Devices with switching output and IO-Link allow highest machine flexibility while offering easy machine operation



Performance

| | |
|---------------------------------|--------------------------|
| Resolution: | ≥ 0.069 mm |
| Working range, limiting range: | 30 mm ... 250 mm, 350 mm |
| Repeatability ¹⁾ : | ± 0.15 % |
| Accuracy ^{2), 3)} : | ± 1 % |
| Response time ⁴⁾ : | 32 ms |
| Ultrasonic frequency (typical): | 320 kHz |
| Detection area (typical): | See diagrams |
| Temperature compensation: | ✓ |

Additional function: Teach-in of analog output
 Temperature compensation
 Synchronization of up to 10 sensors
 Multiplexing: no cross talk of up to 10 sensors
 Reset to factory default
 Multifunctional input: external teach/synchronization/multiplexing
 Invertible analog output

Output time: 8 ms

1) 2) Referring to current measurement value 3) Temperature compensation can be switched off, without temperature compensation: 0.17 %/K 4) Subsequent smoothing of the analog output, depending on the application, may increase the response time by up to 200 %

Interfaces

| | |
|-------------------------------|--|
| Analog output ¹⁾ : | 1 x 4 mA ... 20 mA ($\leq 500 \Omega$) |
| Resolution analog output: | 12 bit |
| Hysteresis: | 3 mm |
| Multifunctional input (MF): | 1 x MF |

1) For 4 mA ... 20 mA and $V_s \leq 20 \text{ V}$ max. load $\leq 100 \Omega$

Mechanics/electronics

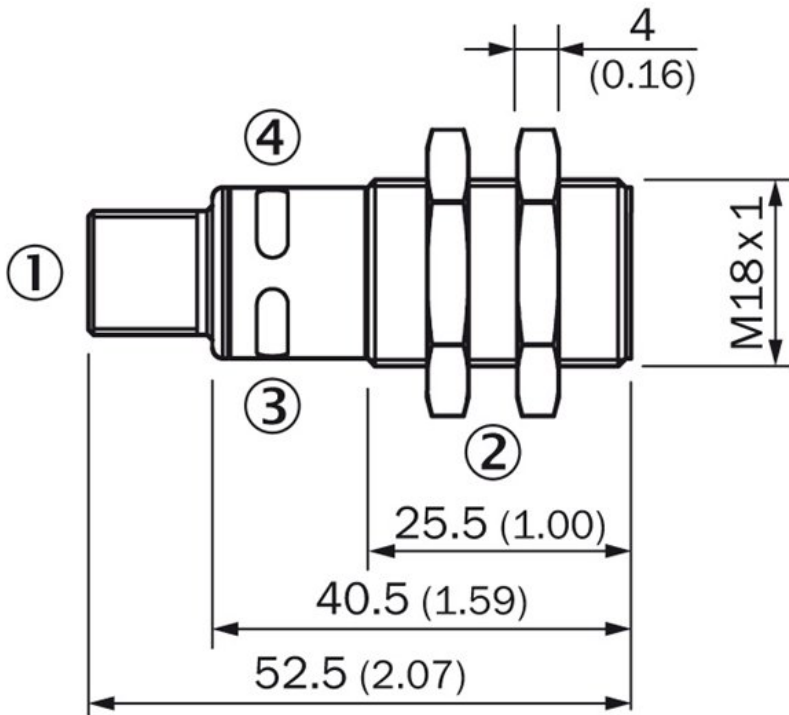
| | |
|--|--|
| Sending axis: | Straight |
| Supply voltage V_s ^{1), 2)} : | DC 10 V ... 30 V |
| Power consumption ³⁾ : | $\leq 1.2 \text{ W}$ |
| Initialization time: | $< 300 \text{ ms}$ |
| Design: | Cylindrical |
| Housing material: | Nickel-plated brass ultrasonic transducer: polyurethane foam, glass epoxy resin |
| Connection type: | Male connector, M12, 5-pin |
| Indication: | 2 x LED |
| Weight: | 25 g |

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

Ambient data

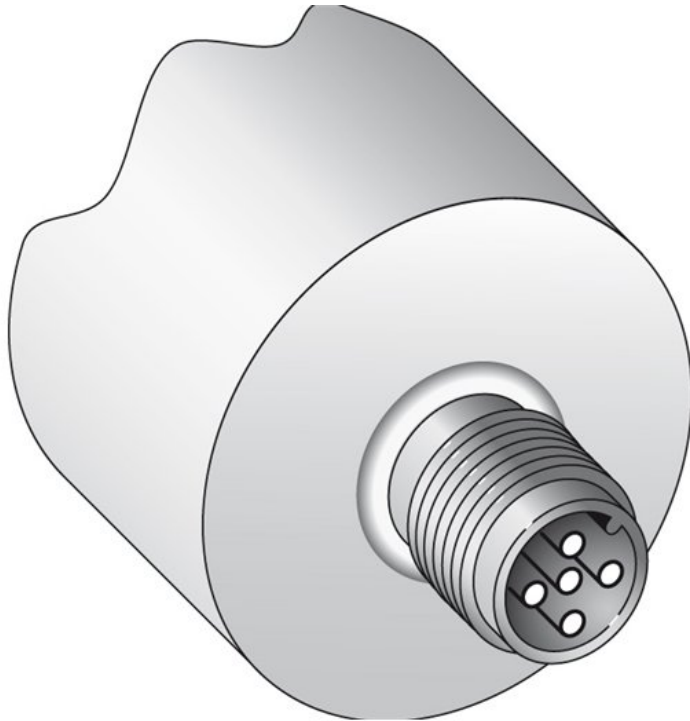
| | |
|----------------------|--|
| Enclosure rating: | IP 67 |
| Protection class: | III |
| Ambient temperature: | Operation: $-25 \dots +70 \text{ }^\circ\text{C}$ Storage: $-40 \dots +85 \text{ }^\circ\text{C}$ |

Dimensional drawing

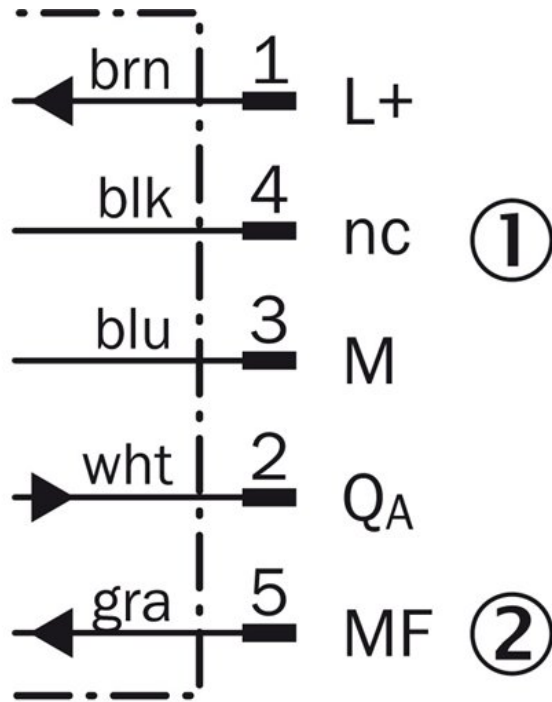


- |1| Connection
- |2| Mounting nuts, SW 24 mm
- |3| Status indicator power on (green)
- |4| Status indicator switching/analog output (orange)

Connection type

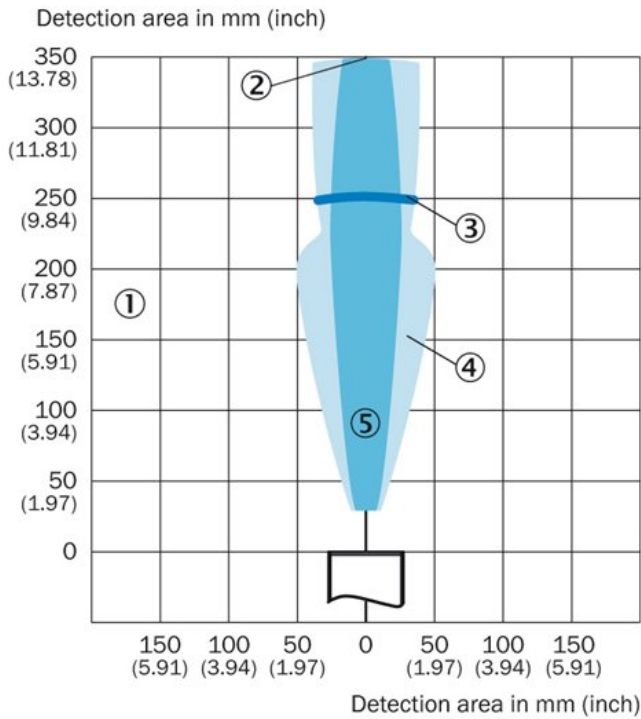


Connection diagram



- |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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