



Ultrasonic sensors
UM18, UM18-2 Pro

UM18-212127111



Model Name > [UM18-212127111](#)
Part No. > [6048400](#)



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:	65 mm ... 350 mm, 600 mm
Repeatability ¹⁾ :	± 0.15 %
Accuracy ^{2), 3)} :	± 1 %
Response time ⁴⁾ :	64 ms
Ultrasonic frequency (typical):	400 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
Functions may vary depending on sensor type

Output time: 16 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 x 0 V ... 10 V ($\geq 100 \text{ k}\Omega$)
Resolution analog output: 12 bit
Multifunctional input (MF): 1 x MF

Mechanics/electronics

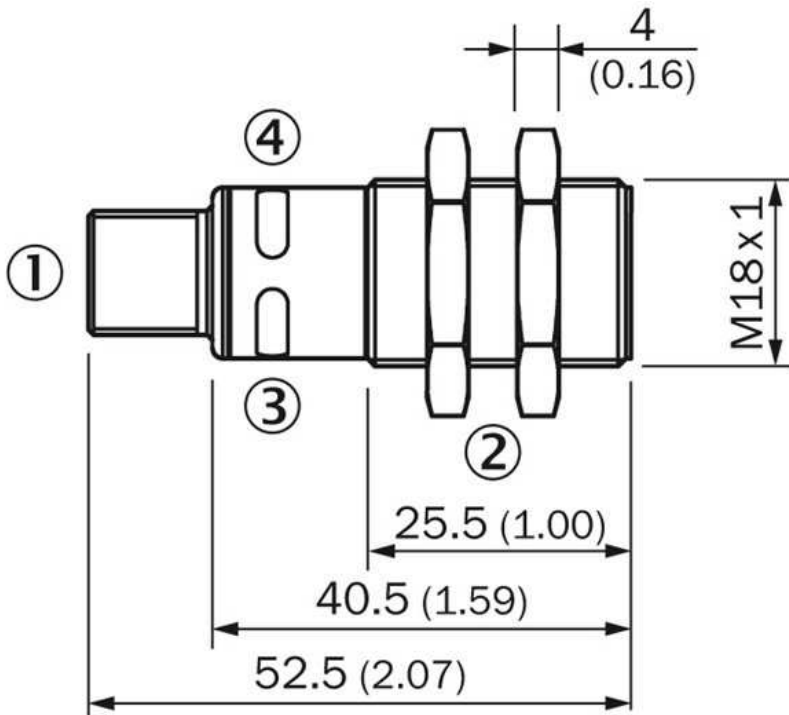
Sending axis: Straight
Supply voltage V_s ^{1), 2)}: DC 10 V ... 30 V
Power consumption ³⁾: $\leq 1.2 \text{ W}$
Initialization time: $< 300 \text{ ms}$
Design: Cylindrical
Housing material: Nickel-plated brass
ultrasonic transducer: polyurethane foam, glass epoxy resin
Electrical connection: Male connector, 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

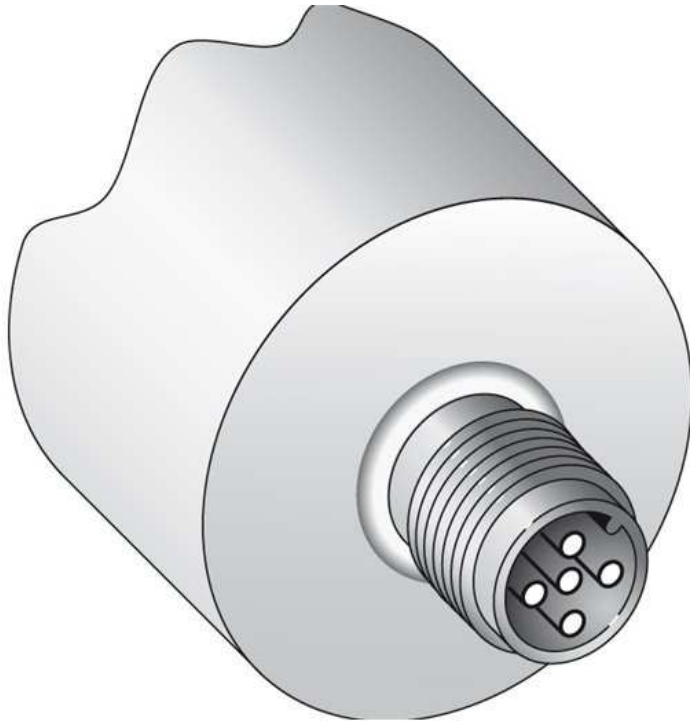
Enclosure rating: IP 67
Protection class: III
Ambient temperature: Operation: $-25 \dots +70 \text{ }^\circ\text{C}$
Storage: $-40 \dots +85 \text{ }^\circ\text{C}$

Dimensional drawing

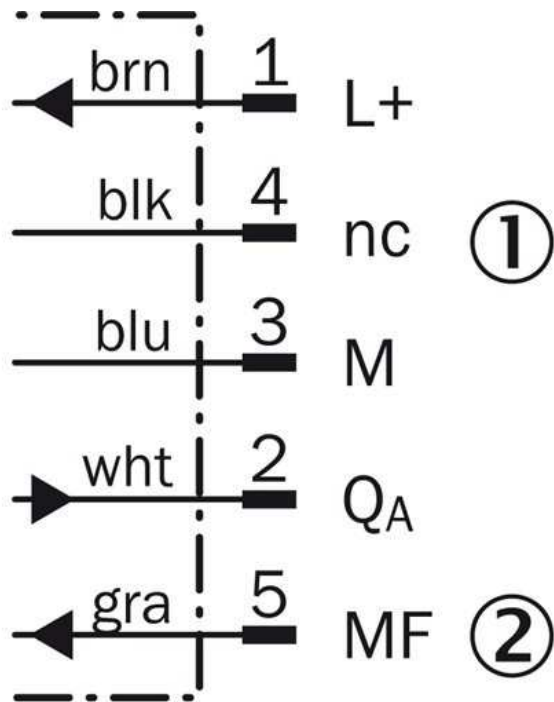


- |1| Connection
- |2| Mounting nuts, SW 24 mm
- |3| Status indicator power on (green)
- |4| Status indicator switching/analog output (orange)

Connection type

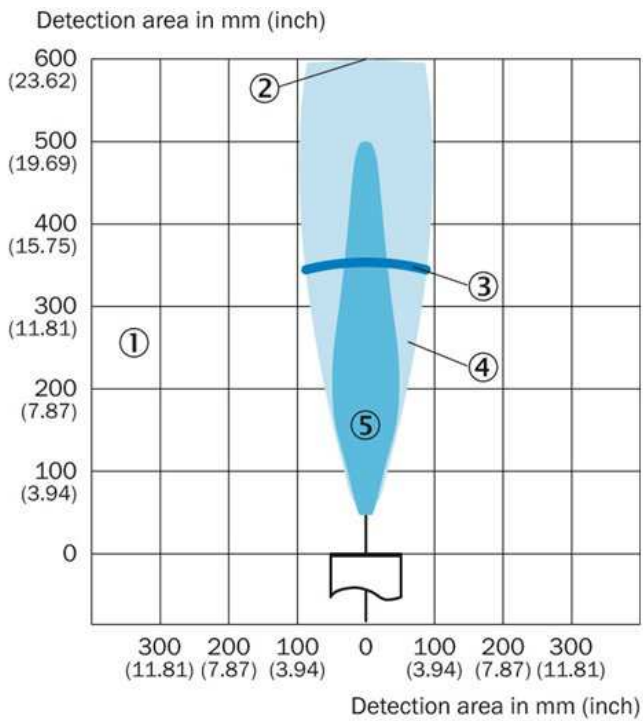


Connection diagram



- |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 27 mm diameter

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