



Ultrasonic sensors  
UM18, UM18-2 Pro

UM18-218127111



**Model Name** > [UM18-218127111](#)  
**Part No.** > [6048406](#)



#### 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:	120 mm ... 1,000 mm, 1,300 mm
Repeatability <sup>1)</sup> :	± 0.15 %
Accuracy <sup>2), 3)</sup> :	± 1 %
Response time <sup>4)</sup> :	80 ms
Ultrasonic frequency (typical):	200 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: 20 ms

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

## Interfaces

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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

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Sending axis: Straight  
Supply voltage  $V_s$  <sup>1), 2)</sup>: DC 10 V ... 30 V  
Power consumption <sup>3)</sup>:  $\leq 1.2 \text{ W}$   
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

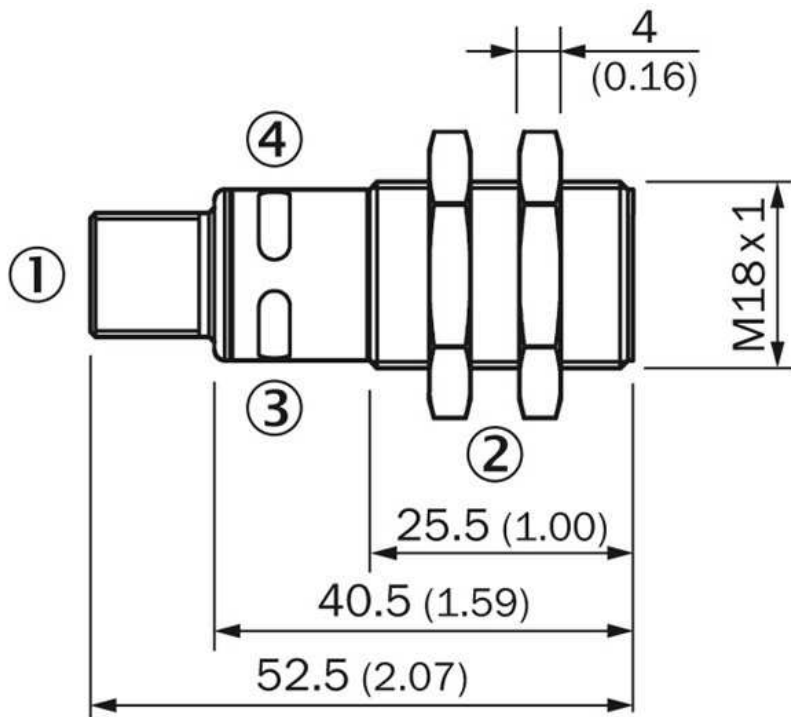
<sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A <sup>2)</sup> 15 V ... 30 V when using analog voltage output <sup>3)</sup> Without load

## Ambient data

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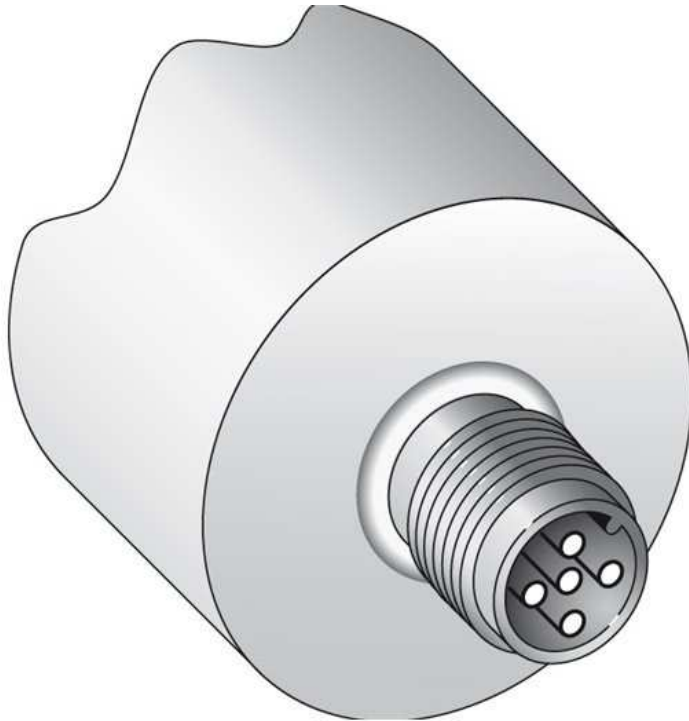
Enclosure rating: IP 67  
Protection class: III  
Ambient temperature: Operation:  $-25 \dots +70 \text{ }^\circ\text{C}$   
Storage:  $-40 \dots +85 \text{ }^\circ\text{C}$

**Dimensional drawing**

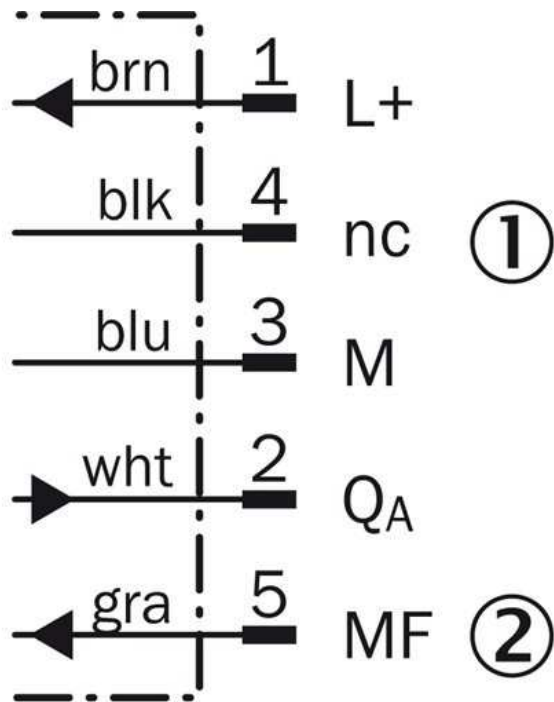


- |1| Connection
- |2| Mounting nuts, SW 24 mm
- |3| Status indicator power on (green)
- |4| Status indicator switching/analog output (orange)

**Connection type**

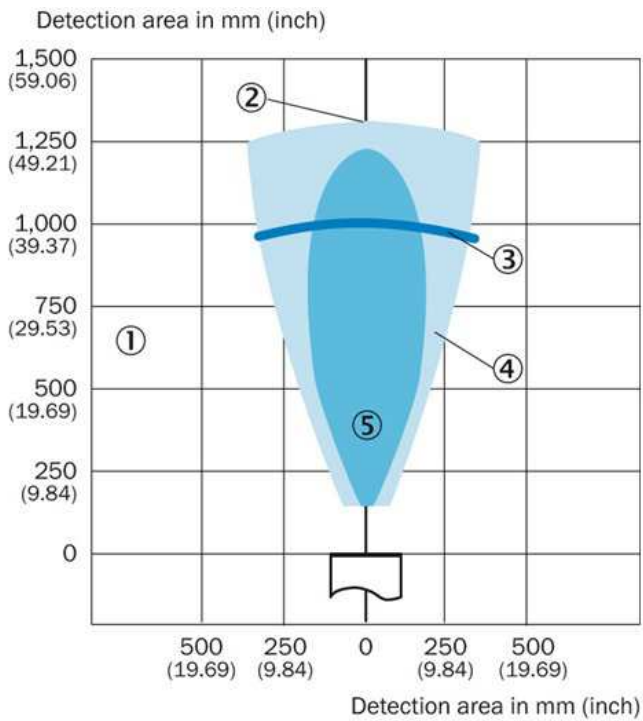


## Connection diagram



- |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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