



Ultrasonic sensors UM18, UM18-2 Pro, IO-Link

UM18-21812A211



Model Name > [UM18-21812A211](#)
Part No. > [6048402](#)

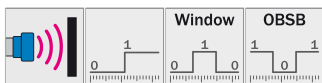


At a glance

- 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 ¹⁾ :	± 0.15 %
Accuracy ^{2), 3)} :	± 1 %
Response time:	80 ms
Output rate:	20 ms
Switching frequency:	10 Hz
Ultrasonic frequency (typical):	200 kHz
Detection area (typical):	See diagrams

Temperature compensation:

✓

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
IO-Link
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

^{1) 2)} Referring to current measurement value ³⁾ Temperature compensation can be switched off, without temperature compensation: 0.17 %/K

Interfaces

Output type ^{1), 2)} :	1 x push-pull: PNP/NPN (100 mA)
Hysteresis:	20 mm
Multifunctional input (MF):	1 x MF
BETRIEBSREICHWEITE-GR.COLL:	120 mm 1,000 mm 1,300 mm
Data interface:	IO-Link

¹⁾ Output Q short-circuit protected ²⁾ Push-Pull: PNP/NPN HIGH = $U_V - (< 4 V)/LOW < 2 V$

Mechanics/electronics

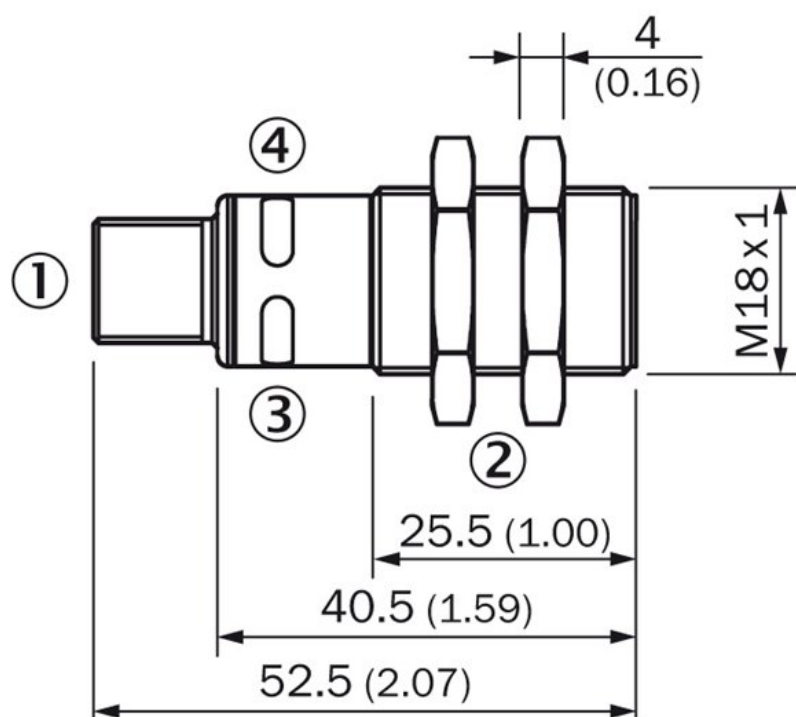
Sending axis:	Straight
Supply voltage V_s ^{1), 2)} :	DC 10 V ... 30 V
Power consumption ³⁾ :	$\leq 1.2 W$
Initialization time:	$< 300 ms$
Housing material:	Nickel-plated brass ultrasonic transducer: polyurethane foam, glass epoxy resin
Connection type:	Connector, M12, 5-pin
Indication:	2 x LED
Weight: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

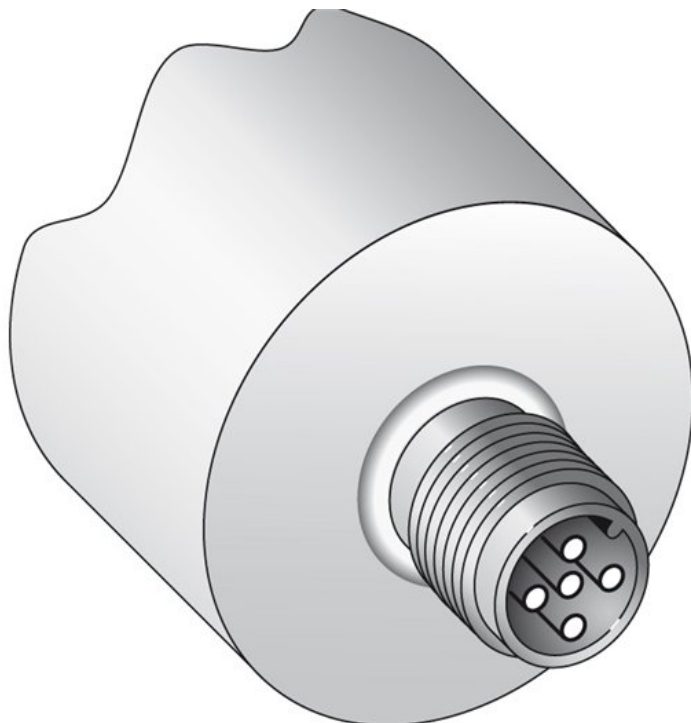
Ambient data

Enclosure rating:	IP 67
Protection class:	III
Ambient temperature:	Operation: -25 ... 70 °C Storage: -40 ... 85 °C

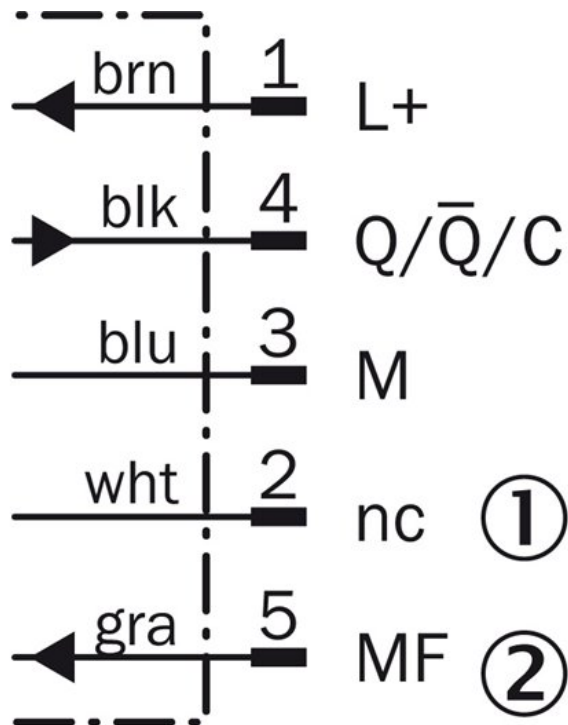
Dimensional drawing



Connection type

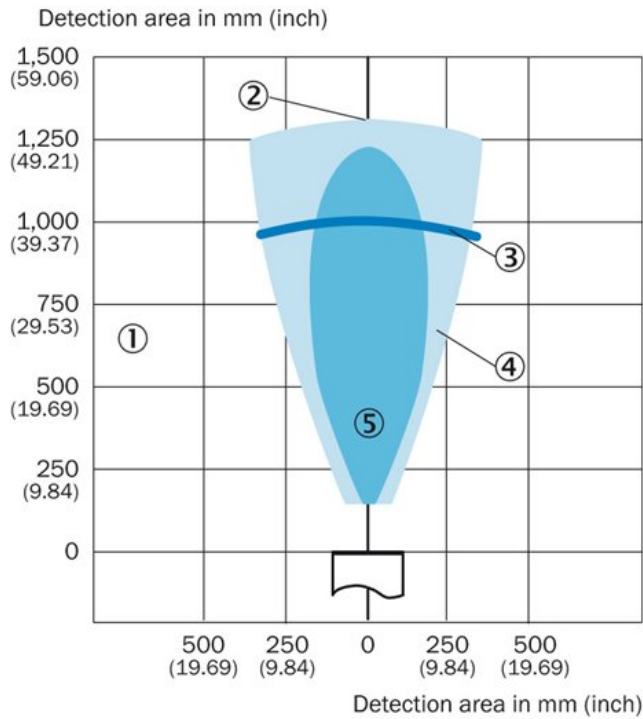


Connection diagram



- |1| not connected
- |2| multifunctional input/synchronization and multiplex operation/communication Connect+

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 27 mm diameter

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