

ONLINE DATA SHEET
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Ultrasonic sensors
UM18, UM18-2 Pro

UM18-21712A211



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UM18, UM18-2 Pro

Model Name > UM18-21712A211
Part No. > 6048384

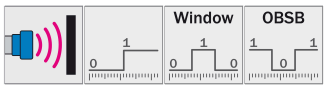


At a glance

- 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:	20 mm ... 150 mm, 250 mm
Repeatability [1]:	± 0.15 %
Accuracy [2], [3]:	± 1 %
Response time:	32 ms
Switching frequency:	25 Hz
Ultrasonic frequency (typical):	380 kHz
Detection area (typical):	See diagrams
Temperature compensation:	✓

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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 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 Functions may vary depending on sensor type
Output time:	8 ms

[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:	2 mm
Multifunctional input (MF):	1 x MF
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 Vs [1]. [2]:	DC 10 V ... 30 V
Power consumption [3]:	≤ 1.2 W
Initialization time:	< 300 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

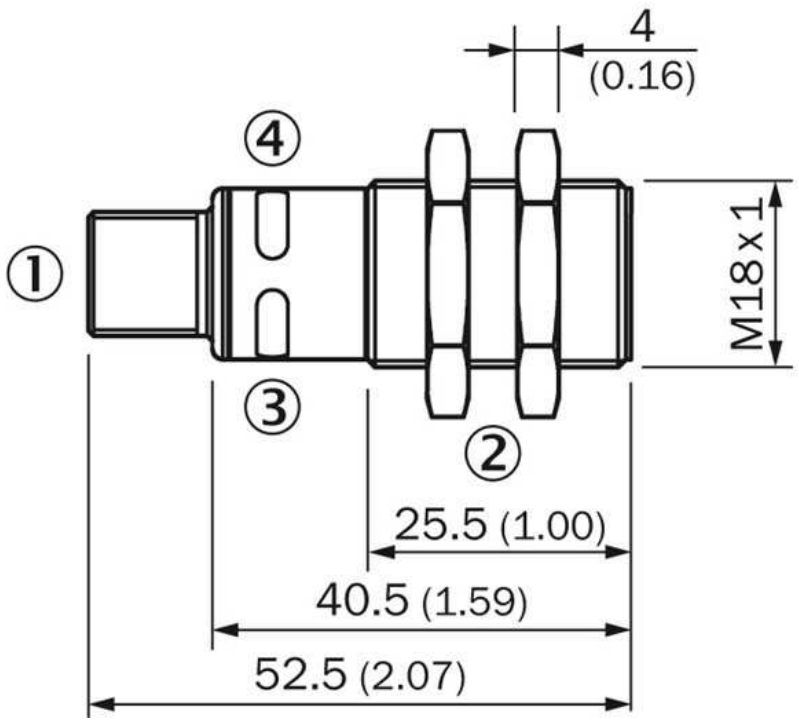
[1] Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A [2] 15 V ... 30 V when using analog voltage output [3] Without load

Ambient data

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

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Dimensional drawing



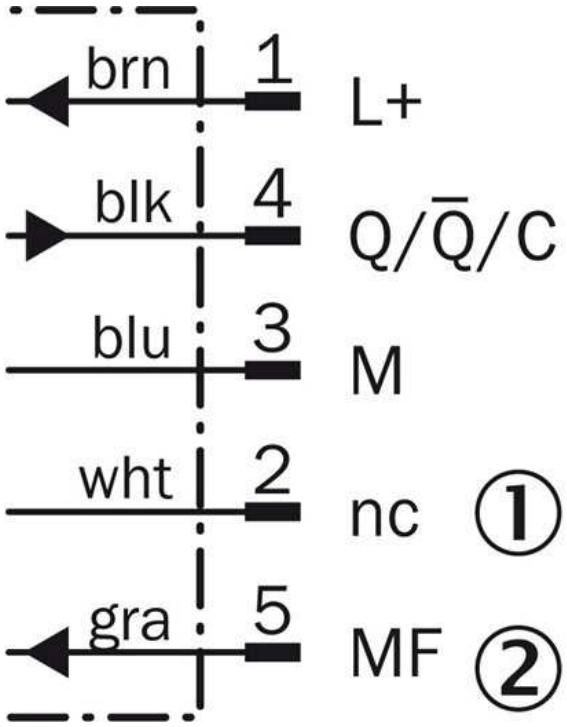
|1| Connection
|2| Mounting nuts, SW 24 mm
|3| Status indicator power on (green)
|4| Status indicator switching/analog output (orange)

Connection type



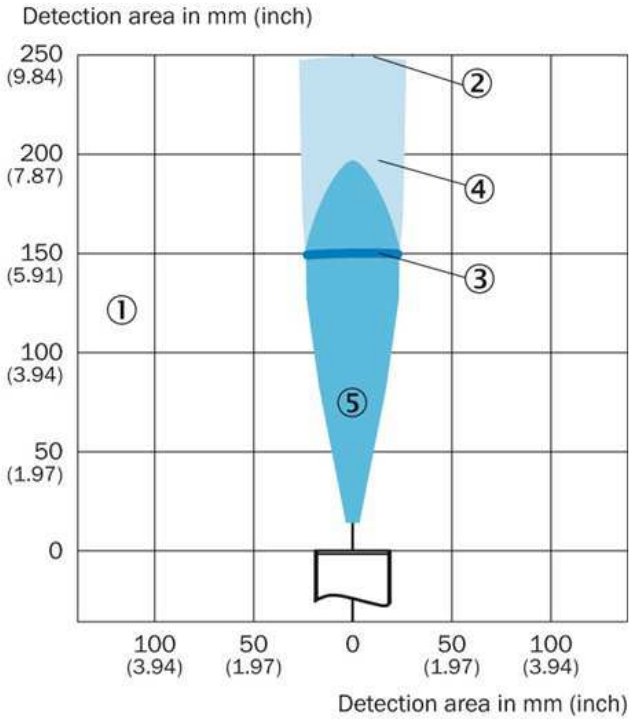
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Connection diagram



|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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