

ONLINE DATA SHEET
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Ultrasonic sensors
UM30, UM30-2

UM30-214113



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Ultrasonic sensors
UM30, UM30-2

Model Name > UM30-214113
Part No. > 6036919



At a glance

- Integrated time-of-flight technology detects objects such as glass, liquids and transparent foils, independent of color
- Range up to 8,000 mm
- Display enables fast and flexible sensor adjustment
- Immune to dust, dirt and fog
- Available with combined analog and digital outputs
- Synchronization and multiplexing
- Adjustable sensitivity
- Three operation modes: Distance to Object (DtO), Window (Wnd) or Object between sensor and background (ObSB)

Your benefits

- Easy machine integration due to compact size
- Various setup options ensure flexible adaptation to applications
- Multiplex mode eliminates crosstalk interference for consistent and reliable detection and high measurement reliability
- Synchronization mode allows multiple sensors to work as one large sensor, providing a low-cost solution for area detection
- Display enables setup prior to installation, reducing on-site installation time
- Integrated temperature compensation and time-of-flight technology ensure high measurement accuracy
- ObSB-mode enables detection of any object between the sensor and a taught background



Performance

Resolution:	≤ 0.18 mm
Working range, limiting range:	350 mm ... 3,400 mm, 5,000 mm
Repeatability [1]:	± 0.15 %
Accuracy [2], [3]:	± 1 %
Response time:	180 ms
Ultrasonic frequency (typical):	120 kHz
Detection area (typical):	See diagrams
Temperature compensation:	✓

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Additional function:	Teach-in of analog output Automatic selection of analog current or voltage output Temperature compensation Synchronization of up to 10 sensors Multiplexing: no cross talk of up to 10 sensors Set measurement filters: value filter, filter strength, adjustable sensitivity, foreground suppression and detection area Reset to factory default Switch-off display Scaling of analog outputs Invertible analog output Functions may vary depending on sensor type
Output time:	43 ms

[1] [2] Referring to current measurement value [3] Temperature compensation can be switched off, without temperature compensation: 0.17 %/K

Interfaces

Analog output [1]: [2]: [3]: [4]:	1 x 0 V ... 10 V (≥ 100 kΩ), 1 x 4 mA ... 20 mA (≤ 500 Ω)
Resolution analog output:	12 bit
Multifunctional input (MF):	1 x MF

[1] [3] Automatic selection of analog current or voltage output dependent on load [2] For 4 mA ... 20 mA and V_s ≤ 20 V max. load ≤ 100 Ω [4] Subsequent smoothing of the analog output, depending on the application, may increase the response time by up to 200 %

Mechanics/electronics

Sending axis:	Straight
Supply voltage Vs [1]: [2]:	DC 9 V ... 30 V
Power consumption [3]:	≤ 2.4 W
Initialization time:	< 300 ms
Design:	Cylindrical
Housing material:	Nickel-plated brass, PBT display: TPU ultrasonic transducer: polyurethane foam, glass epoxy resin
Electrical connection:	Male connector, M12, 5-pin
Indication:	LED display, 2 x LED
Weight:	210 g

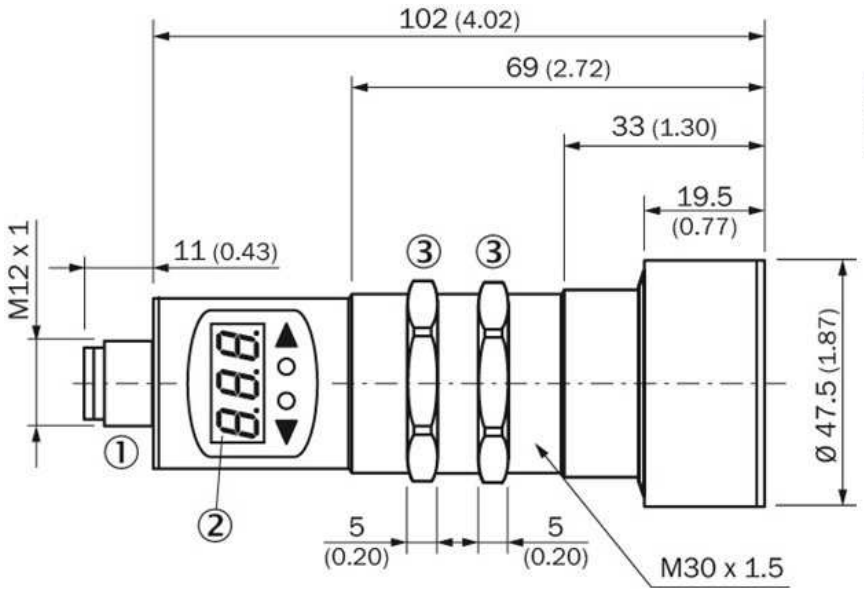
[1] Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A [2] 15 V ... 30 V when using analog voltage output [3] Without load

Ambient data

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

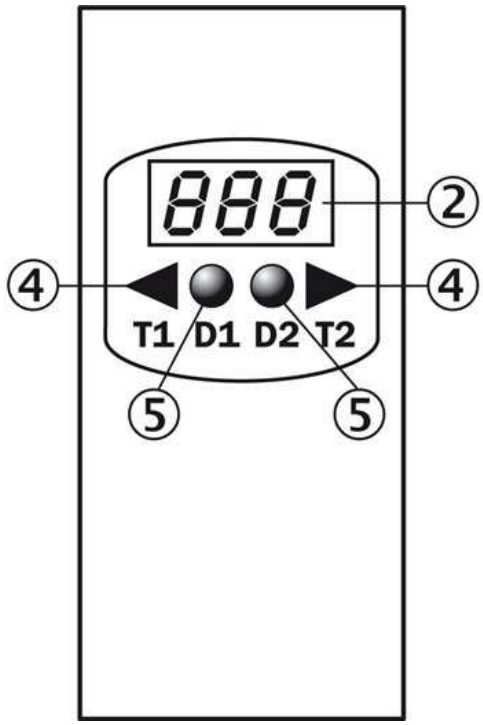
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Dimensional drawing



|1| Connection
|2| Display
|3| Mounting nuts, SW 36 mm

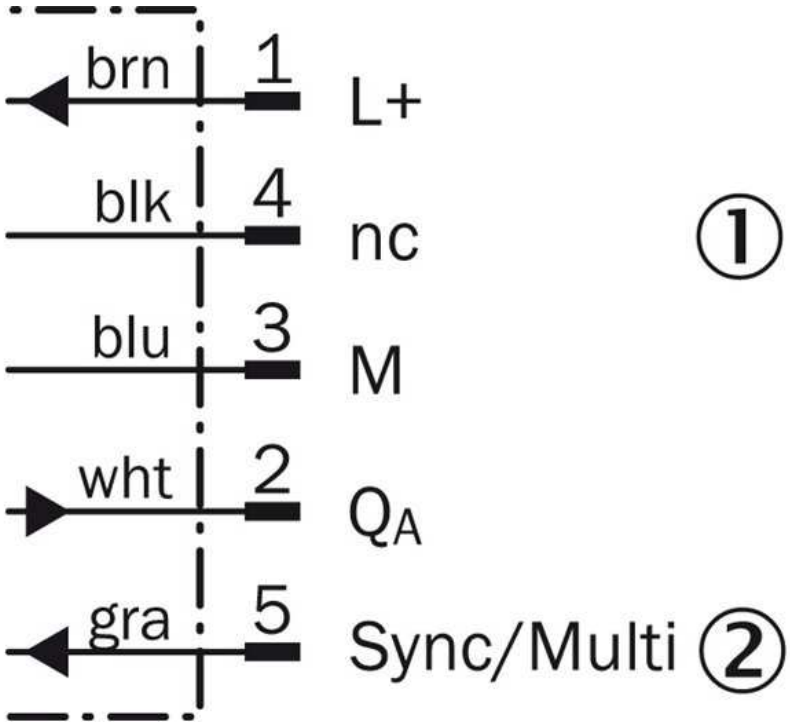
Adjustments



|2| Display
|4| Control elements
|5| Status indicators

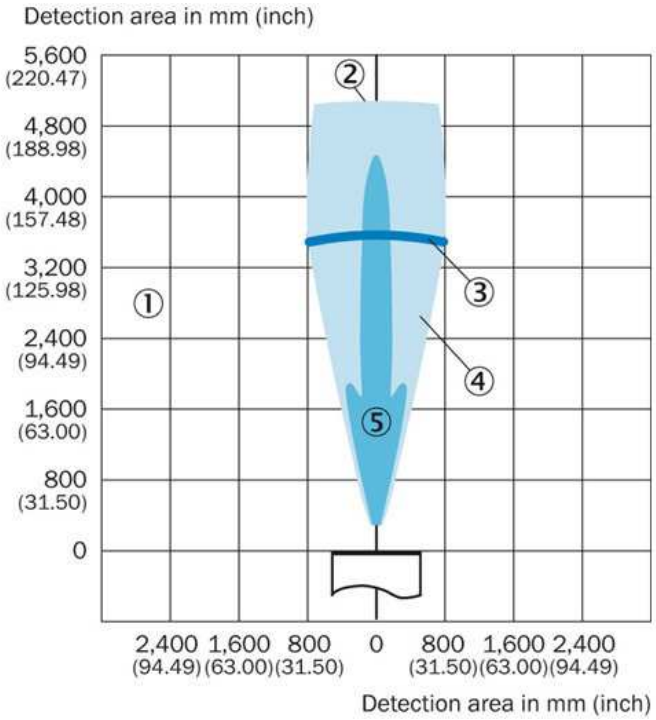
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Connection diagram



|1| not connected
|2| 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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Connection type



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