



Ultrasonic sensors
UM30, UM30-2

UM30-214114



Model Name > [UM30-214114](#)
Part No. > [6037677](#)

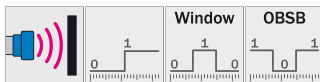


At a glance

- 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
Switching frequency:	3 Hz
Ultrasonic frequency (typical):	120 kHz
Detection area (typical):	See diagrams
Temperature compensation:	✓

Additional function:	Set switching mode: Distance to object (DtO)/switching window (Wnd)/ Object Between Sensor and Background (ObSB) Teach-in of switching output Set levels of switching outputs Set on delay switching 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 Switching output invertible 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

Output type ^{1), 2)} :	2 x NPN (200 mA)
Hysteresis:	50 mm
Multifunctional input (MF):	1 x MF

1) Output Q short-circuit protected 2) NPN: HIGH $\leq 2\text{ V}$ / LOW = V_S

Mechanics/electronics

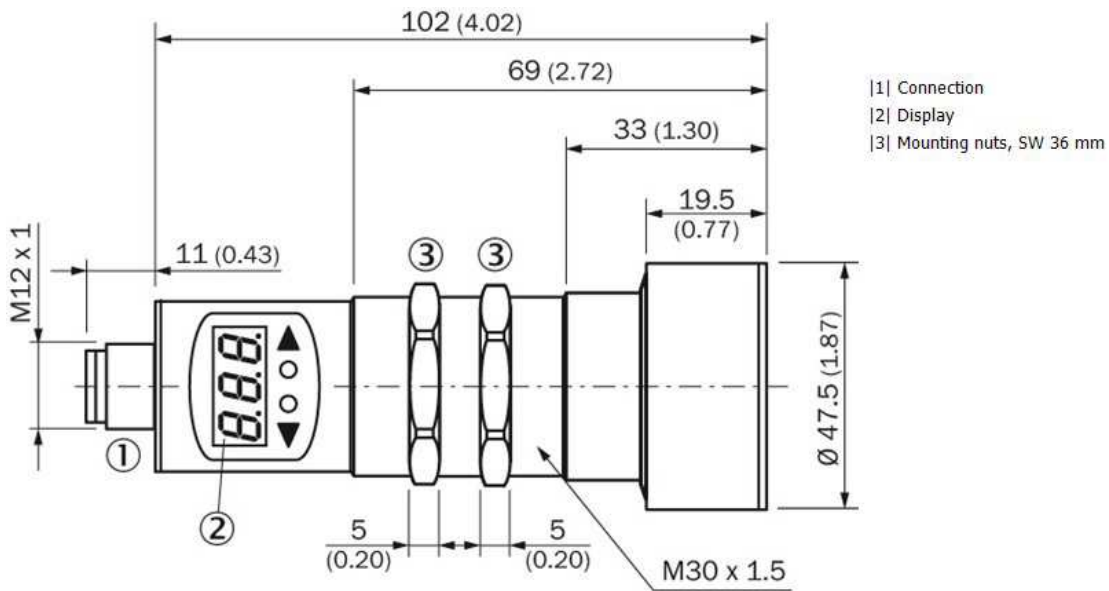
Sending axis:	Straight
Supply voltage V_S ^{1), 2)} :	DC 9 V ... 30 V
Power consumption ³⁾ :	$\leq 2.4\text{ W}$
Initialization time:	< 300 ms
Design:	Cylindrical
Housing material:	Nickel-plated brass, PBT display: TPU ultrasonic transducer: polyurethane foam, glass epoxy resin
Electrical connection:	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

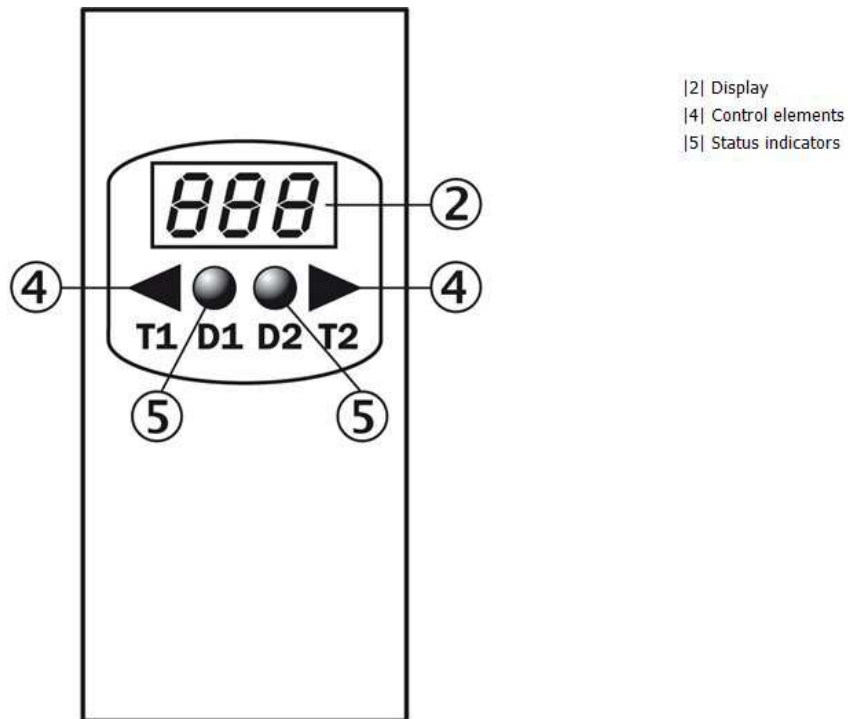
Ambient data

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

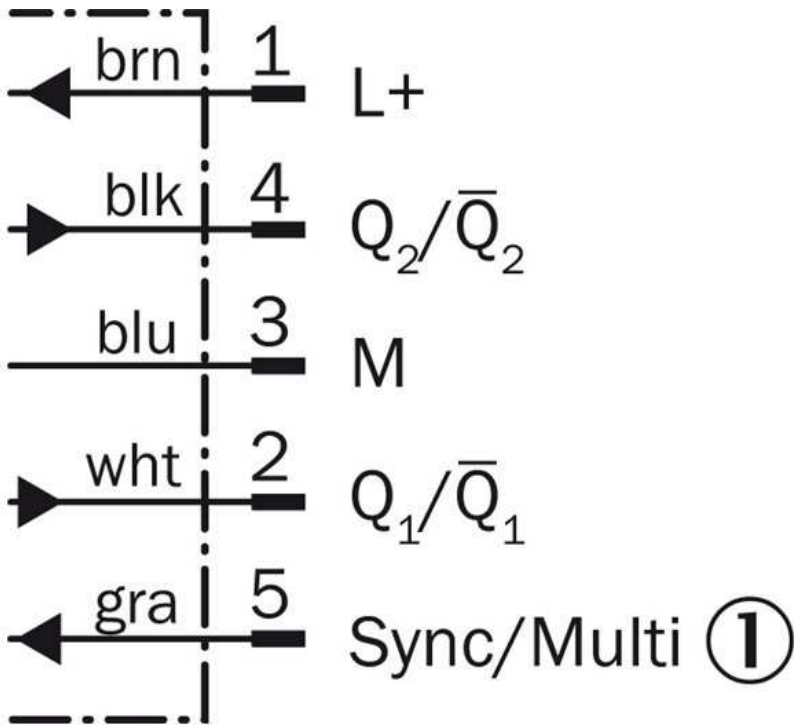
Dimensional drawing



Adjustments

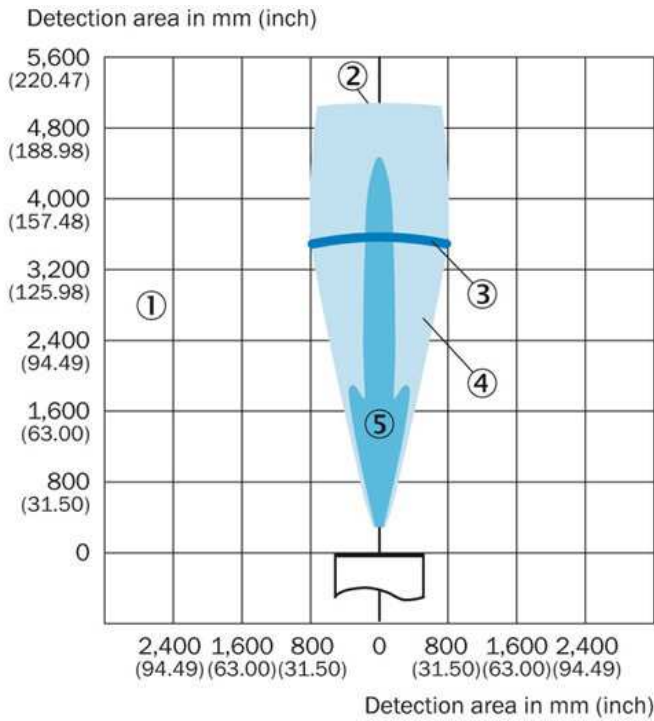


Connection diagram



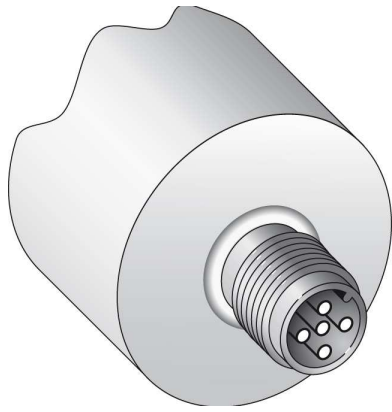
[1] Synchronization and multiplex operation/communication Connect+

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

Connection type



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