



Ultrasonic sensors UM30, UM30-2

UM30-211118



Model Name > [UM30-211118](#)
Part No. > [6036921](#)

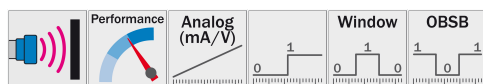


At a glance

- 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:	30 mm ... 250 mm, 350 mm
Repeatability ¹⁾ :	± 0.15 %
Accuracy ^{2), 3)} :	± 1 %
Response time:	50 ms
Output rate:	8 ms
Switching frequency:	11 Hz
Ultrasonic frequency (typical):	320 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
 Set levels of switching outputs
 Inverted switching output
 Set on delay switching output
 Teach-in of analog output
 Invertible 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
 Multifunctional input: synchronization/multiplexing
 Switch-off display
 Scaling of analog outputs

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 PNP (200 mA)
Multifunctional input:	1 x MF
Analog output ^{3), 4), 5), 6)} :	1 x 0 V ... 10 V ($\geq 100 \text{ k}\Omega$), 1 x 4 mA ... 20 mA ($\leq 500 \text{ }\Omega$)
Resolution analog output:	12 bit
Hysteresis:	3 mm

1) Output Q short-circuit protected 2) PNP: HIGH = $V_S - (< 2 \text{ V})$ /LOW = 0 V 3) 5) Automatic selection of analog current or voltage output dependent on load 4) For 4 mA ... 20 mA and $V_S \leq 20 \text{ V}$ max. load $\leq 100 \text{ }\Omega$ 6) 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 V_S ^{1), 2)} :	DC 9 V ... 30 V
Power consumption ³⁾ :	$\leq 2.4 \text{ W}$
Initialization time:	$< 300 \text{ ms}$
Housing material ⁴⁾ :	Nickel-plated brass, PBT, TPU
Connection type:	Connector M12, 5-pin
Indication:	LED display, 2 x LED
Weight:	150 g

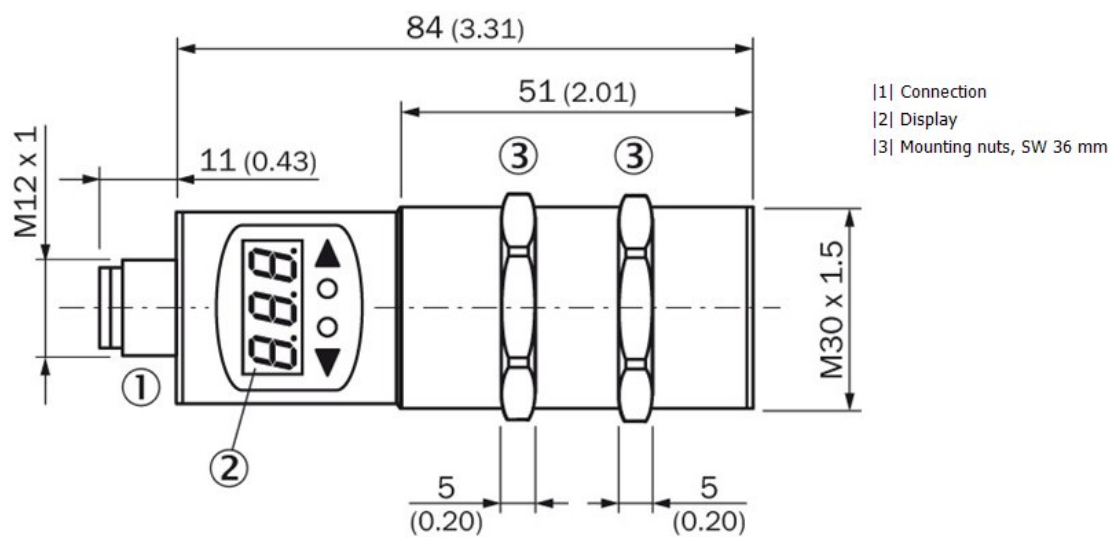
1) Limit values, reverse-polarity protected, operation in short-circuit protected network, max. 8 A 2) 15 V ... 30 V when using analog voltage output 3) Without load 4)

Ultrasonic transducer: polyurethane foam, glass epoxy resin

Ambient data

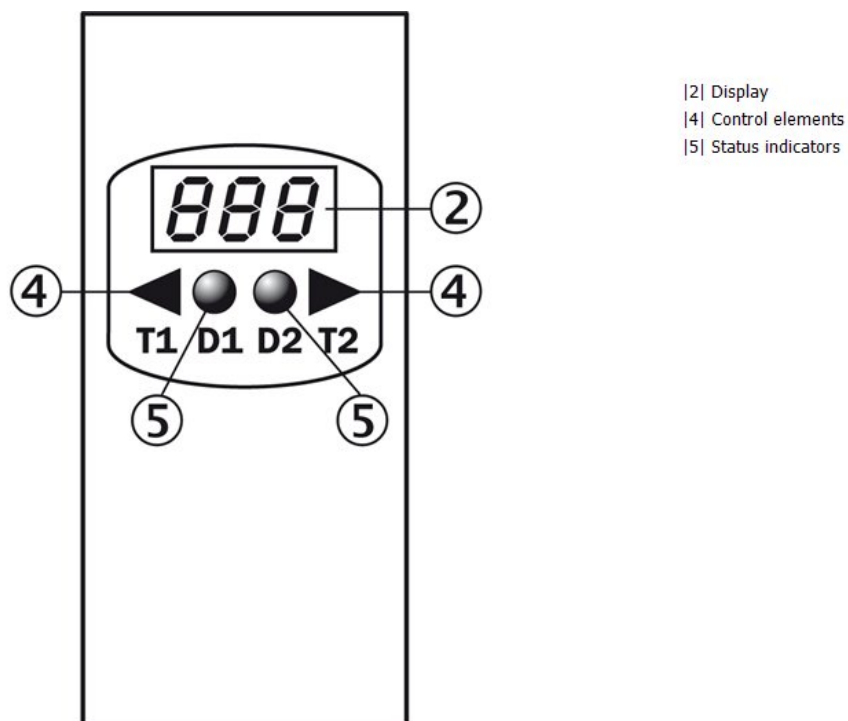
Enclosure rating:	IP 67
Protection class:	III
Ambient temperature:	Operation: -25 ... 70 °C Storage: -40 ... 85 °C

Dimensional drawing

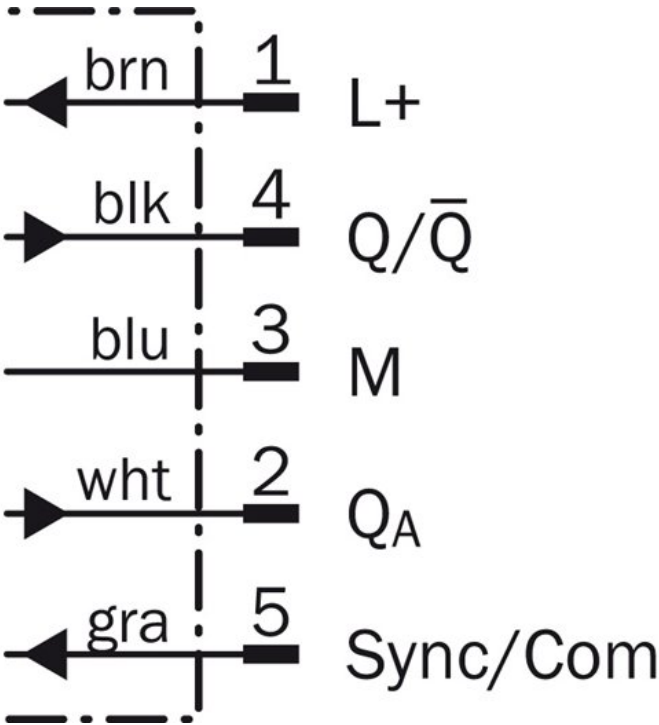


All dimensions in mm (inch)

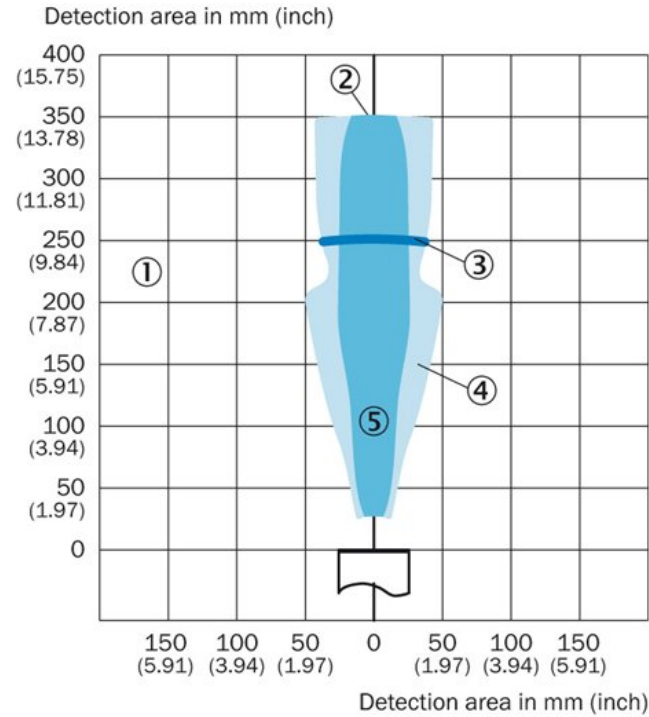
Adjustments



Connection diagram

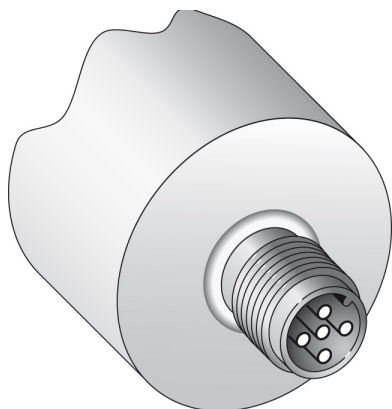


Detection area



- |1| Limiting range
- |2| Aligned plate 500 mm x 500 mm
- |3| Working range
- |4| Pipe diameter 10 mm

Connection type



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