



## Ultrasonic sensors UM30

UM30-214118

**Model Name** > [UM30-214118](#)  
**Part No.** > [6036924](#)



#### 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
Repeatability <sup>1)</sup> :	± 0.15 %
Accuracy <sup>2), 3)</sup> :	± 1 %
Response time:	180 ms
Output rate:	43 ms
Switching frequency:	3 Hz
Working range, limiting range:	350 mm ... 3,400 mm5,000 mm
Ultrasonic frequency (typical):	120 kHz
Detection area (typical):	See diagrams

Additional feature:

switch off display, invertable analog output, automatic selection of analog current or voltage output, teach-in of analog output, teach-in of switching outputs, set switching mode: distance to object (DtO), switching window (Wnd), object between sensor and background (OBSB), set on delay switching output, set measurement filters: value filter, filter strength, adjustable sensitivity, foreground suppression and detection area, multiplexing: no cross talk of up to 10 Sensors, scaling of analog outputs, set levels of switching outputs, switching output invertable, synchronization of up to 10 sensors, temperature compensation, reset to factory default

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

## Interfaces

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Switching hysteresis:	± 50 mm
Switching output:	1 x PNP (200 mA) <sup>1) 2)</sup>
Multifunctional input:	1 x MF
Analog output:::	1x 0 V ... 10 V (≥ 100 kΩ) /, 1x 4 mA ... 20 mA (≤ 500 Ω) <sup>3) 4) 5) 6)</sup>
Resolution analog output:	12 bit

1) Output Q short-circuit protected 2) PNP: HIGH =  $V_s$  - (< 2 V), LOW = 0 V 3) 5) Automatic selection of analog current or voltage output dependent on load 4) For  $V_s \leq 20$  V max. load ≤ 100 Ω 6) Subsequent smoothing of the analog output, dependent on the application, may increase the response time by up to 100 %

## Mechanics/electronics

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Supply voltage $V_s$ :	DC 9 V ... 30 V
Power consumption <sup>1)</sup> :	≤ 2.4 W
Initialization time:	< 300 ms
Housing material <sup>2)</sup> :	Nickel-plated brass, PBT, TPU
Connection type:	Connector M12, 5-pin
Indication:	2 x LED, LED display
Weight:	210 g

Limit values, reverse-polarity protected, operation in short-circuit protected network, max. 8 A; 15 V ... 30 V when using analog voltage output;

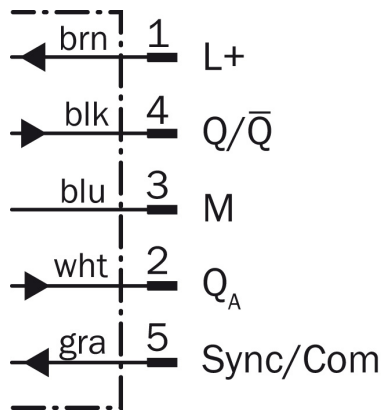
1) Without load 2) Ultrasonic transducer: polyurethan foam, glass epoxy resin

## Ambient data

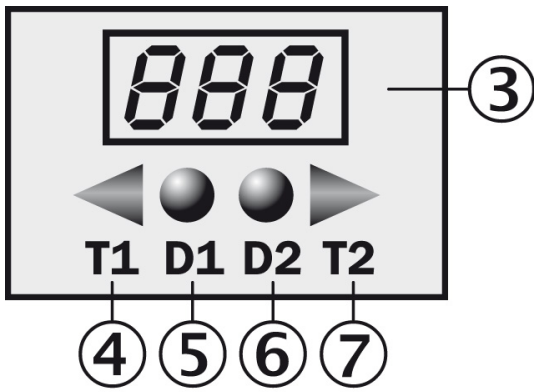
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Enclosure rating:	IP 67
Protection class:	III
Ambient temperature:	Operation: -25 ... 70 °C Storage: -40 ... 85 °C
Temperature compensation:	1

### Connection diagram



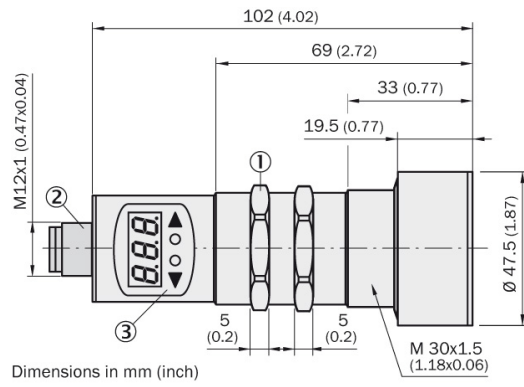
### Adjustment possible



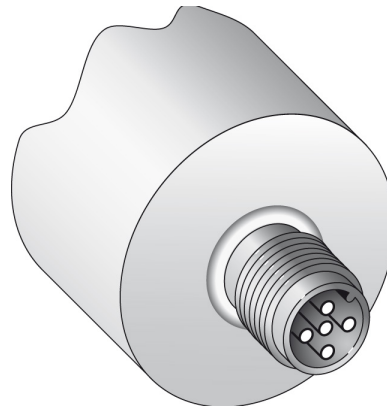
### Characteristic curve

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### Dimensional drawing



### Connection type



**Australia**

Phone +61 3 9497 4100  
1800 334 802 – tollfree  
E-Mail sales@sick.com.au

**Belgium/Luxembourg**

Phone +32 (0)2 466 55 66  
E-Mail info@sick.be

**Brasil**

Phone +55 11 3215-4900  
E-Mail sac@sick.com.br

**Canada**

Phone +1(952) 941-6780  
1 800-325-7425 – tollfree  
E-Mail info@sickusa.com

**Ceská Republika**

Phone +420 2 57 91 18 50  
E-Mail sick@sick.cz

**China**

Phone +852-2763 6966  
E-Mail ghk@sick.com.hk

**Danmark**

Phone +45 45 82 64 00  
E-Mail sick@sick.dk

**Deutschland**

Phone +49 211 5301-301  
E-Mail kundenservice@sick.de

**España**

Phone +34 93 480 31 00  
E-Mail info@sick.es

**France**

Phone +33 1 64 62 35 00  
E-Mail info@sick.fr

**Great Britain**

Phone +44 (0)1727 831121  
E-Mail info@sick.co.uk

**India**

Phone +91-22-4033 8333  
E-Mail info@sick-india.com

**Israel**

Phone +972-4-999-0590  
E-Mail info@sick-sensors.com

**Italia**

Phone +39 02 27 43 41  
E-Mail info@sick.it

**Japan**

Phone +81 (0)3 3358 1341  
E-Mail support@sick.jp

**Magyarország**

Phone +36 1 371 2680  
E-Mail office@sick.hu

**Nederlands**

Phone +31 (0)30 229 25 44  
E-Mail info@sick.nl

**Norge**

Phone +47 67 81 50 00  
E-Mail austefjord@sick.no

**Österreich**

Phone +43 (0)22 36 62 28 8-0  
E-Mail office@sick.at

**Polska**

Phone +48 22 837 40 50  
E-Mail info@sick.pl

**România**

Phone +40 356 171 120  
E-Mail office@sick.ro

**Russia**

Phone +7 495 775 05 30  
E-Mail info@sick.ru

**Schweiz**

Phone +41 41 619 29 39  
E-Mail contact@sick.ch

**Singapore**

Phone +65 6744 3732  
E-Mail admin@sicksgp.com.sg

**South Africa**

Phone +27 11 472 3733  
E-Mail info@sickautomation.co.za

**South Korea**

Phone +82-2 786 6321/4  
E-Mail info@sickkorea.net

**Slovenija**

Phone +386 (0)1-47 69 990  
E-Mail office@sick.si

**Suomi**

Phone +358-9-25 15 800  
E-Mail sick@sick.fi

**Sverige**

Phone +46 10 110 10 00  
E-Mail info@sick.se

**Taiwan**

Phone +886 2 2375-6288  
E-Mail sales@sick.com.tw

**Türkiye**

Phone +90 216 528 50 00  
E-Mail info@sick.com.tr

**United Arab Emirates**

Phone +971 4 8865 878  
E-Mail info@sick.ae

**USA/México**

Phone +1(952) 941-6780  
1 800-325-7425 – tollfree  
E-Mail info@sickusa.com

More representatives and agencies  
at [www.sick.com](http://www.sick.com)