



## Ultrasonic sensors UM30, UM30-2

UM30-214113



**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 <sup>1)</sup> :	± 0.15 %
Accuracy <sup>2), 3)</sup> :	± 1 %
Response time:	180 ms
Ultrasonic frequency (typical):	120 kHz
Detection area (typical):	See diagrams
Temperature compensation:	✓

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

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

## Interfaces

Analog output <sup>1), 2), 3), 4)</sup> :	1 x 0 V ... 10 V ( $\geq 100 \text{ k}\Omega$ ), 1 x 4 mA ... 20 mA ( $\leq 500 \Omega$ )
Resolution analog output:	12 bit
Multifunctional input (MF):	1 x MF

<sup>1) 3)</sup> Automatic selection of analog current or voltage output dependent on load <sup>2)</sup> For 4 mA ... 20 mA and  $V_s \leq 20 \text{ V}$  max. load  $\leq 100 \Omega$  <sup>4)</sup> 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 $V_s$ <sup>1), 2)</sup> :	DC 9 V ... 30 V
Power consumption <sup>3)</sup> :	$\leq 2.4 \text{ W}$
Initialization time:	$< 300 \text{ ms}$
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

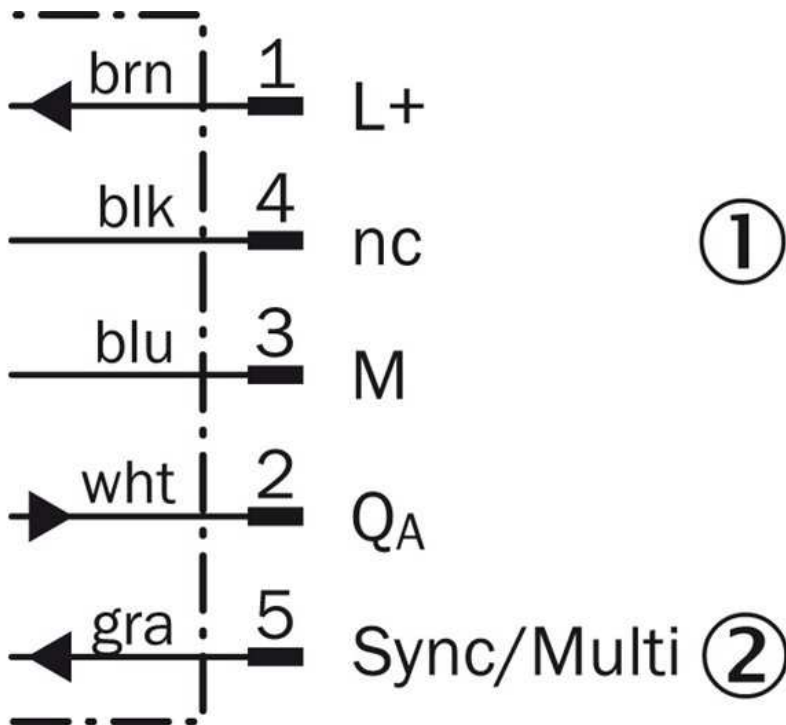
<sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A <sup>2)</sup> 15 V ... 30 V when using analog voltage output <sup>3)</sup> Without load

## Ambient data

Enclosure rating:	IP 67
Protection class:	III
Ambient temperature:	Operation: $-25 \dots +70 \text{ }^\circ\text{C}$ Storage: $-40 \dots +85 \text{ }^\circ\text{C}$

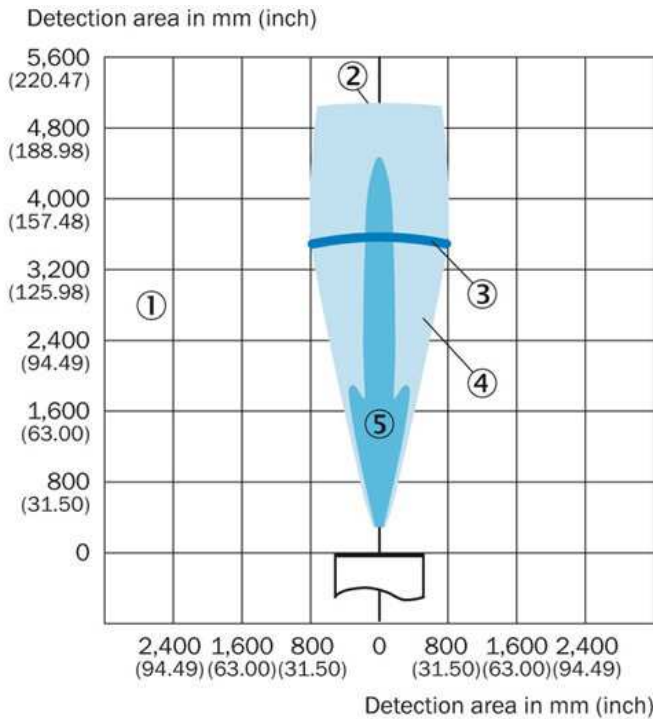


Connection diagram



- |1| not connected
- |2| Synchronization and multiplex operation/communication Connect+

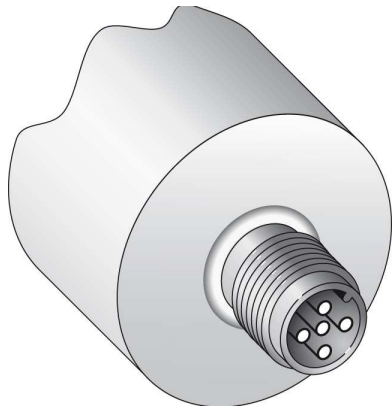
Detection area



- |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

**Connection type**

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**Australia**

Phone +61 3 9457 0600  
1800 33 48 02 – 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 marketing@sick.com.br

**Canada**

Phone +1 905 771 14 44  
E-Mail information@sick.com

**Česká republika**

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

**China**

Phone +86 4000 121 000  
E-Mail info.china@sick.net.cn  
Phone +852-2153 6300  
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 info@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 +972-4-6881000  
E-Mail info@sick-sensors.com

**Italia**

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

**Japan**

Phone +81 (0)3 5309 2112  
E-Mail support@sick.jp

**Magyarország**

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

**Nederland**

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

**Norge**

Phone +47 67 81 50 00  
E-Mail sick@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 sales.gsg@sick.com

**Slovenija**

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

**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

**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 (0) 4 88 65 878  
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)