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DATA SHEET

# UM30-214118

UM30
Ultrasonic distance sensors

SICK Sensor Intelligence



# ULTRASONIC DISTANCE SENSORS

# UM30-214118

## ORDERING INFORMATION

| Type | part no. |
|---|---|
| UM30-214118 | 6036924 |

Further device versions and accessories at www.sick.com/UM30

## DETAILED TECHNICAL DATA

### FEATURES

| | |
|---|---|
| Operating range, limiting range | 350 mm ... 3,400 mm, 5,000 mm |
| Resolution | ≥ 0.18 mm |
| Repeatability | ± 0.15 % [1] |
| Measurement accuracy | ± 1 % [2] [3] |
| Temperature compensation | ✓ |
| Response time | 180 ms [4] |
| Switching frequency | 4 Hz |
| Output time | 43 ms |
| Ultrasonic frequency (typical) | 120 kHz |
| Detection area (typical) | See diagrams |
| Additional function | Adjustable operating modes: Switching point (DtO) / Switching window/Background (ObSB), teach-in of digital output, set levels of digital outputs, invertable digital output, set on delay digital output, teach-in of analog output, scaling of analog outputs, Invertable analog output, automatic selection of analog current or voltage output, synchronization of up to 50 sensors, multiplexing: no cross talk of up to 50 sensors, adjustable measurement filters: Measured value filters/Filter strength/Foreground suppression/Detection area/Sensitivity and sound beam, Display (can be deactivated), reset to factory default |
| Safety-related parameters | |
| $MTTF_D$ | 101 years |
| $DC_{avg}$ | 0% |

[1] In relation to the current measured value, minimum value ≥ resolution.

[2] Referring to current measurement value.

[3] Temperature compensation can be switched off, without temperature compensation: 0.17 % / K.

[4] Subsequent smoothing of the analog output, depending on the application, may increase the response time by up to 200 %.

## INTERFACES

| | |
|---|---|
| Digital output | |
| Number | 1 [1] |
| Type | PNP |
| Maximum output current $I_A$ | ≤ 200 mA |
| Analog output | |
| Number | 1 |
| Type | Current output / voltage output |
| Function | Automatic selection of analog current or voltage output dependent on load |
| Current | 4 mA ... 20 mA, ≤ 500 Ω [2] |
| Voltage | 0 V ... 10 V, ≥ 100,000 Ω |
| Resolution | 12 bit |
| Multifunctional input (MF) | 1 x MF |
| Hysteresis | 50 mm |

[1] PNP: HIGH = $V_S$ - (< 2 V) / LOW = 0 V.

[2] For 4 mA ... 20 mA and $V_S$ ≤ 20 V max. load ≤ 100 Ω.

## ELECTRONICS

| | |
|---|---|
| Supply voltage $U_B$ | DC 9 V ... 30 V [1] [2] |
| Power consumption | ≤ 2.4 W [3] |
| Initialization time | < 300 ms |
| Display | LED display, 2 x LED |
| Enclosure rating | IP65 / IP67 |
| Protection class | III |

[1] Limit values, reverse-polarity protected Operation in short-circuit protected network: max. 8 A, class 2.

[2] 15 V ... 30 V when using the analog voltage output.

[3] Without load.

## MECHANICS

| | |
|---|---|
| Dimensions (W x H x D) | 47.5 mm x 47.5 mm x 102 mm |
| Design | Cylindrical |
| Sending axis | Straight |
| Housing material | Metal (nickel-plated brass, PBT, ultrasonic transducer: polyurethane foam, glass epoxy resin) |
| Weight | 210 g |
| Thread size | M30 x 1.5 |
| Connection type | Male connector, M12, 5-pin |

## AMBIENT DATA

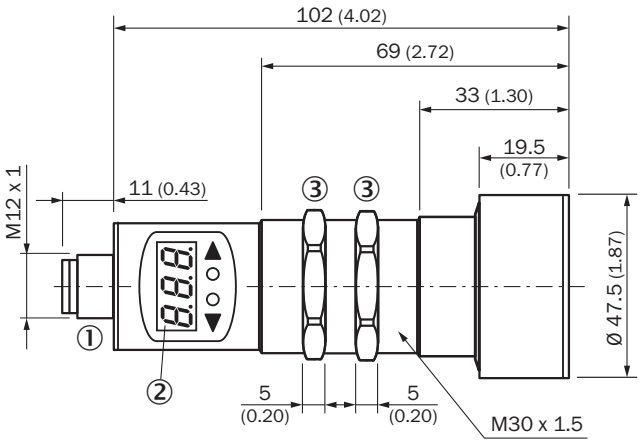
| | |
|---|---|
| Ambient temperature, operation | –25 °C ... +70 °C |
| Ambient temperature, storage | –40 °C ... +85 °C |

## CERTIFICATES

| | |
|---|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China RoHS | ✓ |

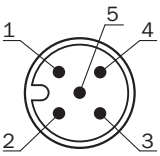
| | |
|---|---|
| China Compulsory Product Certification (CCC) exempt | ✓ |
| cULus certificate | ✓ |

**DIMENSIONAL DRAWING UM30-214**

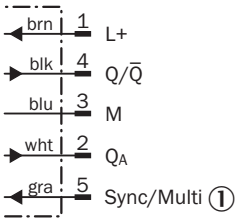



Dimensions in mm (inch)
① Connection
② Display
③ Mounting nuts, SW 36 mm

**CONNECTION TYPE**

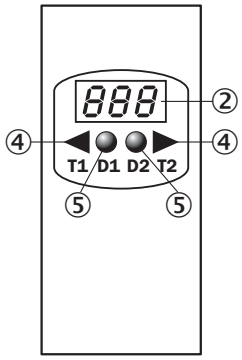



**CONNECTION DIAGRAM UM30-21X118 CONNECTOR M12, 5-PIN**



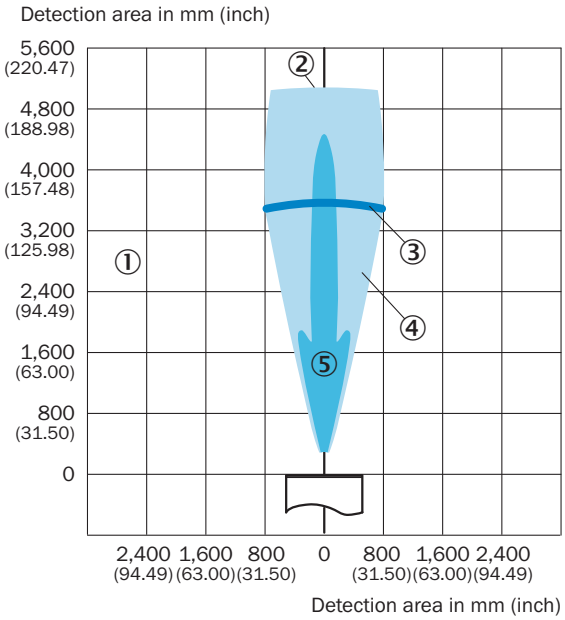

① Synchronization and multiplex mode, Connect+ communication

**ADJUSTMENT POSSIBLE**




② Display
④ Control elements
⑤ Status indicators

**DETECTION AREA**




① Detection range dependent on reflection properties, size, and alignment of the object
② Limiting range
③ operating range
④ example object: aligned plate 500 mm x 500 mm
⑤ example object: pipe with 27 mm diameter

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/6036924

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Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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