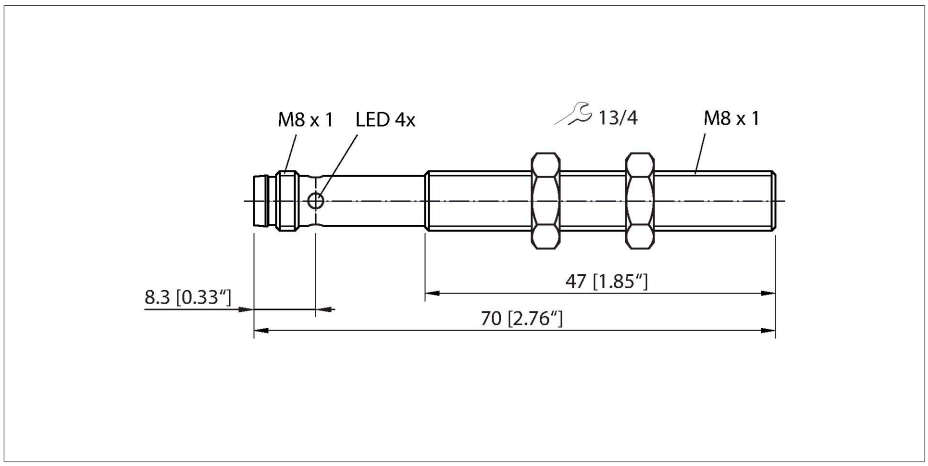
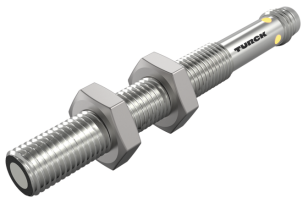
# RU10U-M08-UN8X-V1141
# Ultrasonic Sensor – Diffuse Mode Sensor



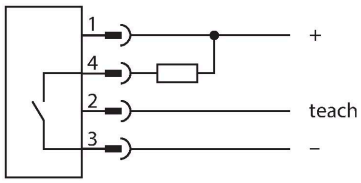
## Technical data

| | |
|---|---|
| Type | RU10U-M08-UN8X-V1141 |
| ID | 100003158 |
| **Ultrasonic data** | |
| Function | Proximity switch |
| Range | 20…100 mm |
| Resolution | 0.2 mm |
| Minimum switching range | 5 mm |
| Ultrasound frequency | 484 kHz |
| Temperature drift | ≤ 0.2 % of full scale/K |
| Approach speed | ≤ 1 m/s |
| Pass speed | ≤ 1 m/s |
| **Electrical data** | |
| Operating voltage $U_B$ | 15…30 VDC |
| No-load current | ≤ 50 mA |
| Load resistance | ≤ 1000 Ω |
| Residual current | ≤ 0.1 mA |
| Response time typical | < 50 ms |
| Readiness delay | ≤ 300 ms |
| Communication protocol | IO-Link |
| Output function | NO/NC, NPN |
| Output 1 | Switching output or IO-Link mode |
| Switching frequency | ≤ 20 Hz |
| Hysteresis | ≤ 5 mm |
| Voltage drop at $I_e$ | ≤ 2.5 V |
| Short-circuit protection | yes |
| Reverse polarity protection | yes |
| Setting option | Remote Teach |

## Features

- Smooth sonic transducer face
- Cylindrical housing M08, potted
- Connection via M8 × 1 male connector
- Teach range adjustable via connection cable
- Blind zone: 2 cm
- Range: 10 cm
- Resolution: 0.2 mm
- Aperture angle of sonic cone: ±9 °
- 1 × switching output, NPN
- Teachable settings
- NO/NC programmable
- IO-Link

## Wiring diagram





## Functional principle

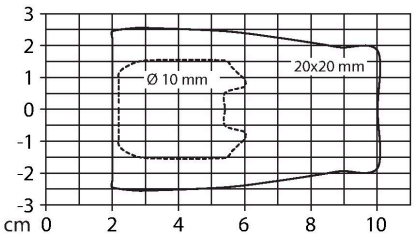
Ultrasonic sensors capture a multitude of objects contactlessly and wear-free with ultrasonic waves. It does not matter whether the object is transparent or opaque, metallic or non-metallic, firm, liquid or powdery. Even environmental conditions such as spray, dust or rain hardly affect their function.

## Technical data

| | IO-Link |
|---|---|
| **IO-Link** | |
| IO-Link specification | V 1.1 |
| IO-Link port type | Class A |
| Communication mode | COM 2 (38.4 kBaud) |
| Process data width | 16 bit |
| Measured value information | 15 bit |
| Switchpoint information | 1 bit |
| Frame type | 2.2 |
| Minimum cycle time | 2 ms |
| Function pin 4 | IO-Link |
| Maximum cable length | 20 m |
| Profile support | Smart Sensor Profile |
| Included in the SIDI GSDML | Yes |
| **Mechanical data** | |
| Design | Threaded barrel, M08 |
| Dimensions | Ø 8 x 70 mm |
| Housing material | Metal, CuZn, Nickel Plated |
| Transducer material | Plastic, Epoxyd resin and PU foam |
| Electrical connection | Connector, M8 × 1, 4-wire |
| Ambient temperature | 0…+50 °C |
| Storage temperature | 0…+50 °C |
| Pressure resistance | 0.5…5 bar |
| Protection class | IP67 |
| Switching state | LED, Yellow |
| **Tests/approvals** | |
| MTTF | 103 years acc. to SN 29500 (Ed. 99) 40 °C |
| Declaration of conformity EN ISO/IEC | EN 60947-5-2 |
| Shock test | 30 g, 11 ms/10…55 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 |
| Approvals | CE<br>cULus |

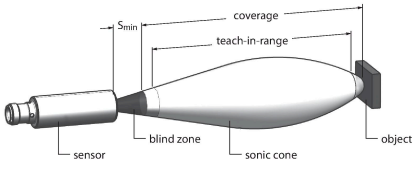
The sonic cone diagram indicates the detection range of the sensor. In accordance with standard EN 60947-5-2, quadratic targets in a range of sizes (20 × 20 mm, 100 × 100 mm) and a round rod with a diameter of 27 mm are used.
Important: The detection ranges for other targets may differ from those for standard targets due to the different reflection properties and geometries.

## Sonic Cone




## Mounting instructions

| Mounting instructions/Description |
|---|



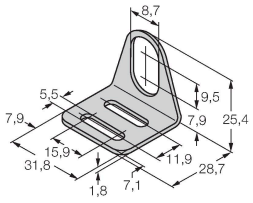

Setting the switching point
The ultrasonic sensor features a switching output with a teachable switching point. The yellow LED indicates whether the sensor has detected an object in the taught window.

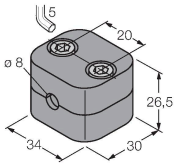
One switching point is taught. This must be within the detection range. In this operating mode the background is suppressed.

Teach
• Position the object at the desired switching point
• Bridge pin 2 with the Ub for 2–7 seconds
After a successful teach-in, the yellow LED flashes at 2 Hz and the sensor runs automatically in normal operating mode.

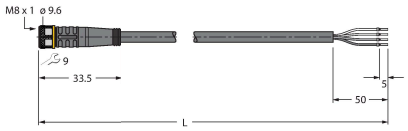
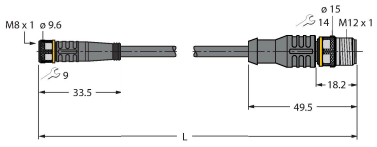
LED response
In normal operating mode, the yellow LED indicates the switching status of the sensor.
• Yellow: Object within the switching range
• Off: Object outside the detection range or signal loss

## Accessories

| MW08 | 6945008 |
|---|---|
|  | Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304) |

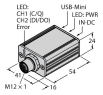
| BSS-08 | 6901322 |
|---|---|
|  | Mounting clamp for smooth and threaded barrel sensors; material: Polypropylene |

## Accessories

| Dimension drawing | Type | ID | |
|---|---|---|---|
|  | PKG4M-2/TEL | 6625061 | Connection cable, M8 female connector, straight, 4-pin, cable length: 2 m, jacket material: PVC, black; cULus approval |
|  | PKW4M-2/TEL | 6625067 | Connection cable, M8 female connector, angled, 4-pin, cable length: 2 m, jacket material: PVC, black; cULus approval |
|  | PKG4M-2-RSC4.4T/TXL | 6627063 | Extension cable, M8 female connector, straight, 4-pin to M12 male connector, straight, 4-pin, cable length: 2 m, jacket material: PUR, black; cULus approval |

## Accessories

| Dimension drawing | Type | ID | |
|---|---|---|---|
|  | TBEN-S2-4IOL | 6814024 | Compact multiprotocol I/O module, 4 IO-Link Master 1.1 Class A, 4 universal PNP digital channels 0.5 A |

| Dimension drawing | Type | ID | |
|---|---|---|---|
|  | USB-2-IOL-0002 | 6825482 | IO-Link Master with integrated USB port |