RU10U-M08-UP8X-V1141
Ultrasonic Sensor – Diffuse Mode Sensor

M8 x 1   LED 4x   🔧 13/4   M8 x 1

8.3 [0.33"]

47 [1.85"]

70 [2.76"]
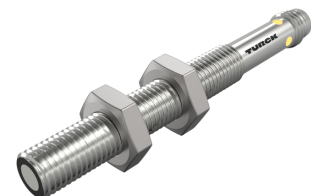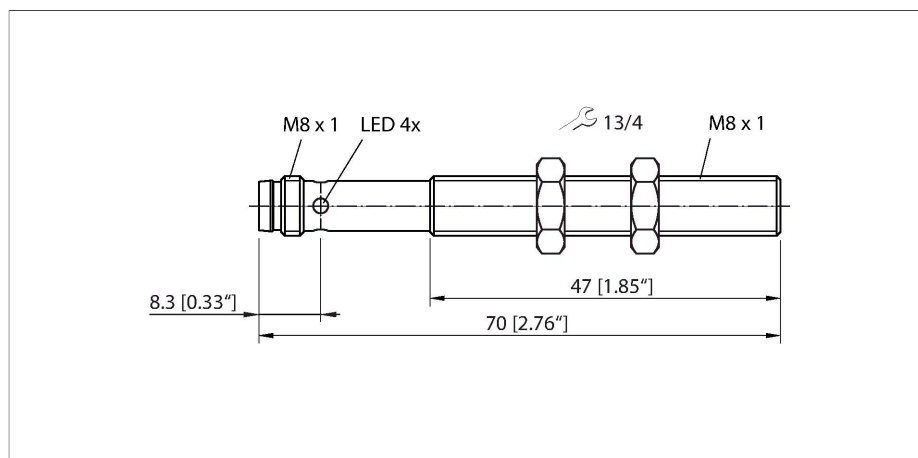
## Technical data

Type	RU10U-M08-UP8X-V1141
ID	100003157
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, PNP
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 °
- ■ 1x switching output, PNP
- ■ Teachable settings
- ■ NO/NC programmable
- ■ IO-Link

Wiring diagram

1
2
4
3

+
teach
–

2 WH   4 BK
1 BN   3 BU
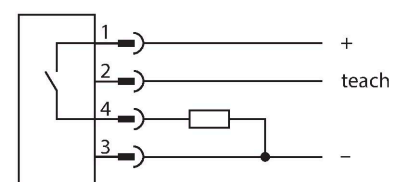
Functional principle

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 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.
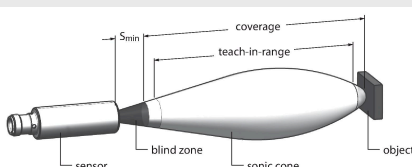Important: The detection ranges for other targets may differ from those for standard targets due to the different reflection properties and geometries.

Sonic Cone
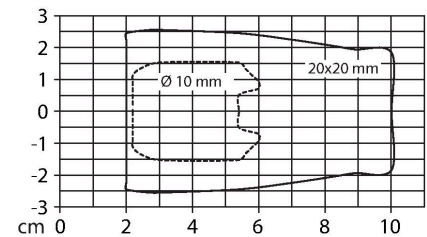
Mounting instructions

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.
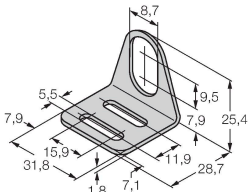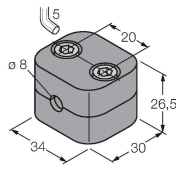
Teach
• Position the object at the desired switching point
• Bridge pin 2 with the Ub for 2–7 seconds
After a successful teach-in, the yellow LED flashes at 2 Hz and the sensor runs automatically in normal operating mode.
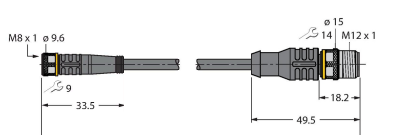
LED response
In normal operating mode, the yellow LED indicates the switching status of the sensor.
• Yellow: Object within the switching range
• Off: Object outside the detection range or signal loss

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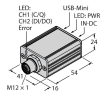
Dimension drawing	Type	ID	
	USB-2-IOL-0002	6825482	IO-Link Master with integrated USB port