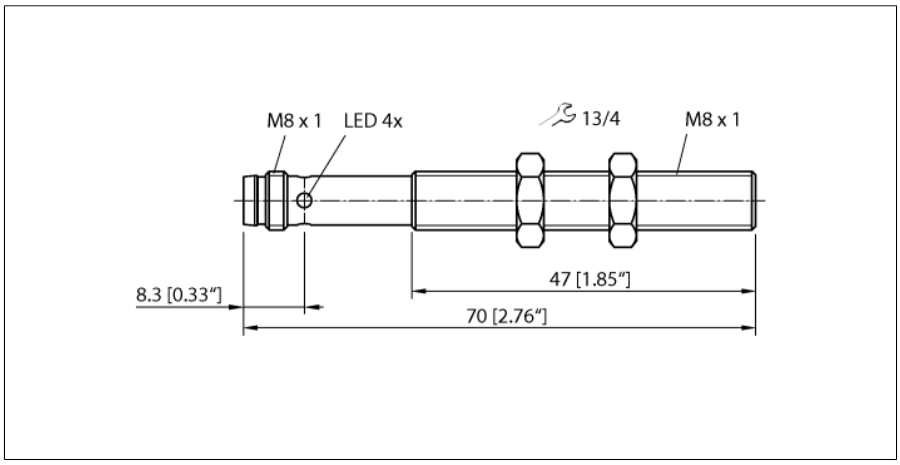
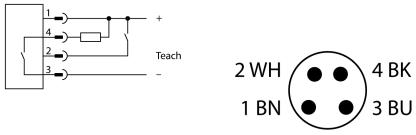
Ultrasonic Sensor
Retroreflective Sensor
RU10L-M08-UN8X-V1141



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

Type designation	RU10L-M08-UN8X-V1141
Ident-No.	100003160
Function	Ultrasonic retroreflective sensor
Range	20…100 mm
Resolution	0.2 mm
minimum switching range	5 mm
Ultrasound frequency	484 kHz
Approach speed	≤ 1 m/s
Pass speed	≤ 1 m/s
Operating voltage	18…30 VDC
No-load current I_0	≤ 50 mA
Load resistance	≤ 1000 Ω
Residual current	≤ 0.1 mA
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
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 Profil
Included in the SIDI GSDML	Yes
Design	Threaded barrel, M08
Dimensions	70 x Ø 8 mm
Housing material	Metal, CuZn, Nickel-plated
Transducer material	Plastic, Epoxyd resin and PU foam
Electrical connection	Connector, M8 × 1, 4-wire
Protection class	IP67
Ambient temperature	0…+50 °C
Storage temperature	0…+50 °C
Declaration of conformity EN ISO/IEC	EN 60947-5-2
MTTF note	acc. to SN 29500 (Ed. 99) 40 °C

Wiring Diagram



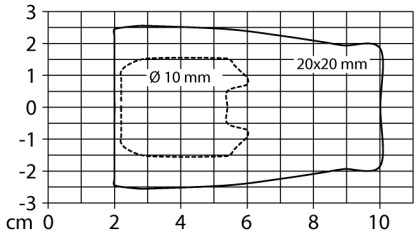
Functional principle

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.

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 x 20 mm, 100 x 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



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Switching state	LED, Yellow

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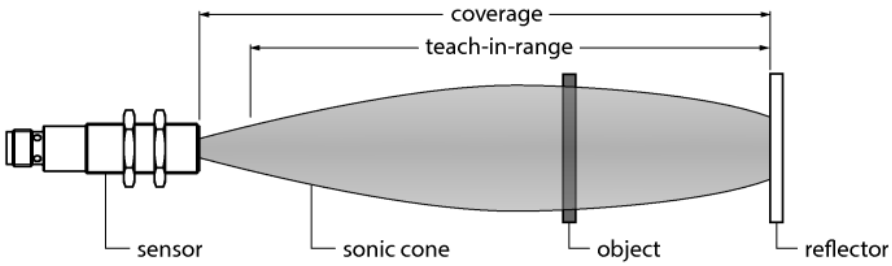

Setting the reflector position

The ultrasonic sensor features a switching output with a teachable switching range. The green and yellow LEDs indicate whether the sensor has detected the object.

A switching range is taught in. This must be within the detection range. In this operating mode, the taught reflector is detected permanently without an object.

Easy-Teach

Connect teach adapter TX1-Q20L60 between the sensor and the connection cable
Position the stationary reflector within the detection range
Press and hold button against Gnd for at least 2 s
● Return to normal operating mode after 17 s or more.

After a successful teach-in, the green LED flashes at 3 Hz and the sensor operates automatically in normal mode.

LED response

In normal operating mode, the two LEDs indicate the switching state of the sensor.
● Green: Reflector within the detection range
● Yellow: Object between the sensor and the reflector

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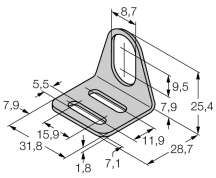
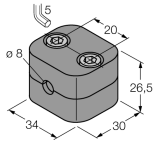
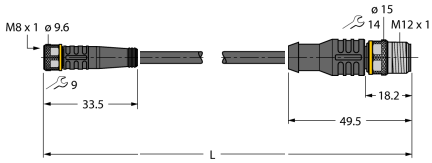
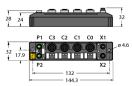
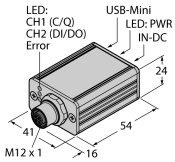
Accessories

Type code	Ident-No.	Description	Dimension drawing
MW-08	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	
PKG4M-1-RSC4.4T/TEL	6626466	Connection cable, M8 female, straight, 4-pin to M12 male, straight, 4-pin; cable length: 1m, jacket material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com	

Function accessories

Type code	Ident-No.	Description	Dimension drawing
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	
USB-2-IOL-0002	6825482	IO-Link Master with integrated USB port	

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