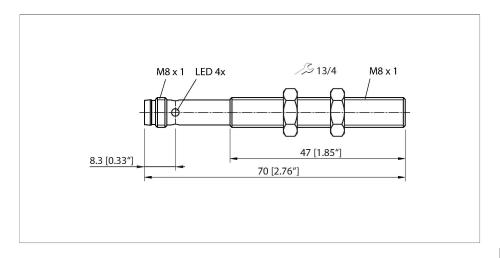


RU10L-M08-UN8X-V1141 Ultrasonic Sensor – Retroreflective Sensor





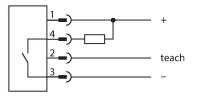
Technical data

Туре	RU10L-M08-UN8X-V1141		
ID	100003160		
Ultrasonic data			
Function	Retroreflective Sensor		
Range	20100 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	1830 VDC		
No-load current	≤ 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		
Setting option	Remote Teach IO-Link		

Features

- ■Smooth sonic transducer face
- Cylindrical housing M08, potted
- Connection via M8 × 1 male connector
- ■Teach range adjustable via connection ca
 - ble
- ■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.



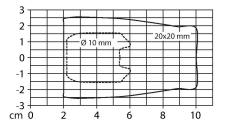
Technical data

Approvals bration according to EN 60947-5-2 CE	IO-Link	
Communication mode Process data width Process data width Measured value information 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 Included in the SIDI GSDML Wes Mechanical data Design Threaded barrel, M08 Dimensions Ø 8 x 70 mm Housing 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 Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals	IO-Link specification	V 1.1
Process data width Measured value information Switchpoint information 1 bit Frame type 2.2 Minimum cycle time 2 ms Function pin 4 IO-Link Maximum cable length Profile support Included in the SIDI GSDML 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 x 1, 4-wire Ambient temperature 0+50 °C Storage temperature 0+50 °C Pressure resistance Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals	IO-Link port type	Class A
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 x 1, 4-wire Ambient temperature 0+50 °C Storage temperature 0+50 °C Pressure resistance 0.55 bar Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals	Communication mode	COM 2 (38.4 kBaud)
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 x 1, 4-wire Ambient temperature 0+50 °C Storage temperature 0+50 °C Pressure resistance 0.55 bar Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals	Process data width	16 bit
Frame type Minimum cycle time 2 ms Function pin 4 Maximum cable length Profile support Included in the SIDI GSDML Mechanical data Design Threaded barrel, M08 Dimensions Metal, CuZn, Nickel Plated Transducer material Plastic, Epoxyd resin and PU foam Electrical connection Ambient temperature O+50 °C Storage temperature Protection class IP67 Switching state Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	Measured value information	15 bit
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 0.55 bar Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals	Switchpoint information	1 bit
Function pin 4 Maximum cable length Profile support Included in the SIDI GSDML Mechanical data Design Dimensions Metal, CuZn, Nickel Plated Transducer material Electrical connection Ambient temperature Pressure resistance Protection class IP67 Switching state Tests/approvals MTTF Declaration of conformity EN ISO/IEC Approvals Included in the SIDI GSDML Yes Maximum cable length 20 m Pressor Profile Metal, CuZn, M08 Dimensions Metal, CuZn, Nickel Plated Cunnector, M8 × 1, 4-wire Onnector, M8 × 1, 4-wire Design Tests/approval connection Connector, M8 × 1, 4-wire Onnector, M8 × 1,	Frame type	2.2
Maximum cable length Profile support Included in the SIDI GSDML 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 0.55 bar Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	Minimum cycle time	2 ms
Profile support 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 x 1, 4-wire Ambient temperature 0+50 °C Storage temperature 0+50 °C Pressure resistance Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	Function pin 4	IO-Link
Included in the SIDI GSDML 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 x 1, 4-wire Ambient temperature 0+50 °C Storage temperature 0+50 °C Pressure resistance 0.55 bar Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	Maximum cable length	20 m
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 0.55 bar Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	Profile support	Smart Sensor Profile
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 x 1, 4-wire Ambient temperature 0+50 °C Storage temperature 0+50 °C Pressure resistance 0.55 bar Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals	Included in the SIDI GSDML	Yes
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 0.55 bar Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	Mechanical data	
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 0.55 bar Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	Design	Threaded barrel, M08
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 0.55 bar Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	Dimensions	Ø 8 x 70 mm
Electrical connection Connector, M8 × 1, 4-wire Ambient temperature 0+50 °C Storage temperature 0+50 °C Pressure resistance 0.55 bar Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	Housing material	Metal, CuZn, Nickel Plated
Ambient temperature 0+50 °C Storage temperature 0+50 °C Pressure resistance 0.55 bar Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	Transducer material	Plastic, Epoxyd resin and PU foam
Storage temperature 0+50 °C Pressure resistance 0.55 bar Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	Electrical connection	Connector, M8 × 1, 4-wire
Pressure resistance 0.55 bar Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	Ambient temperature	0+50 °C
Protection class IP67 Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	Storage temperature	0+50 °C
Switching state LED, Yellow Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	Pressure resistance	0.55 bar
Tests/approvals MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	Protection class	IP67
MTTF acc. to SN 29500 (Ed. 99) 40 °C Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	Switching state	LED, Yellow
Declaration of conformity EN ISO/IEC EN 60947-5-2 Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	Tests/approvals	
Shock test 30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2 Approvals CE	MTTF	acc. to SN 29500 (Ed. 99) 40 °C
Approvals bration according to EN 60947-5-2 CE	Declaration of conformity EN ISO/IEC	EN 60947-5-2
	Shock test	30 g, 11 ms/1055 Hz, 1.0 mm shock/vibration according to EN 60947-5-2
00200	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 \times 20 mm, 100 \times 100 mm) and a round rod with a diameter of 27 mm are used.

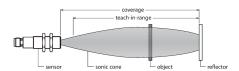
Important: The detection ranges for other targets may differ from those for standard targets due to the different reflection properties and geometries.

Sonic Cone



Mounting instructions

Mounting instructions/Description



Setting the 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

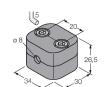
In normal operating mode, the two LEDs indicate the switching state of the sensor.

- Green: Reflector within the detection range
- Yellow: Object between the sensor and the reflector

Accessories

MW08 6945008 BSS-08

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



Mounting clamp for smooth and threaded barrel sensors; material: Polypropylene

6901322

Accessories

Dimension drawing	Туре	ID	
M8 x 1 0 9.6	PKG4M-2/TEL	6625061	Connection cable, M8 female connector, straight, 4-pin, cable length: 2 m, jacket material: PVC, black; cULus approval
M8 x 1— 0 9.5 10.5	PKW4M-2/TEL	6625067	Connection cable, M8 female connector, angled, 4-pin, cable length: 2 m, jacket material: PVC, black; cULus approval
M8x1 o 9.6 0 15 14 M12x1 18.2 49.5 49.5	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	Туре	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
ULIA More COLLEGE OF THE COLLEGE OF	USB-2-IOL-0002	6825482	IO-Link Master with integrated USB port