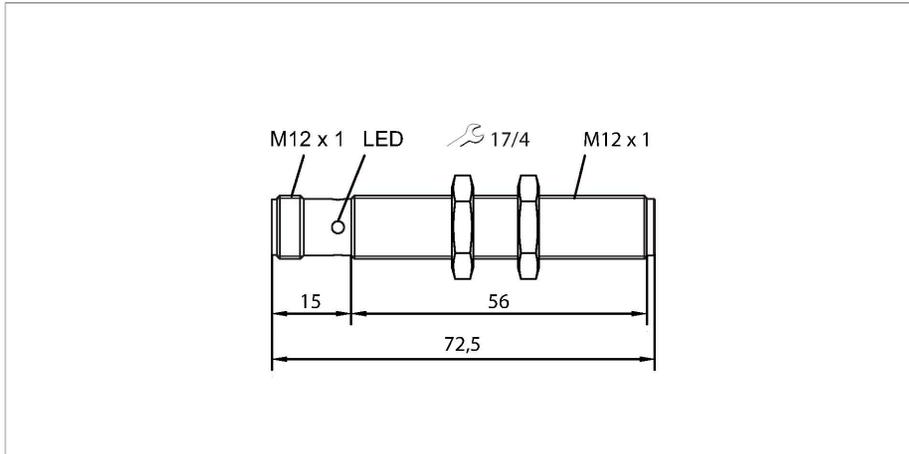


RU20U-M12-LU8X2-H1141

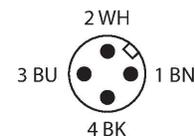
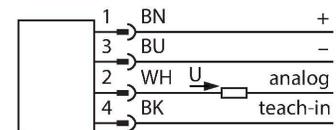
Ultrasonic Sensor – Diffuse Mode Sensor



Features

- Smooth sonic transducer face
- Cylindrical housing M12, potted
- Connection via M12 × 1 male connector
- Teach range adjustable via connection cable
- Blind zone: 2.5 cm
- Range: 20 cm
- Resolution: 0.5 mm
- Aperture angle of sonic cone: ±9 °
- Analog output 0...10 V

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

Type	RU20U-M12-LU8X2-H1141
ID	100000282
Ultrasonic data	
Function	Proximity
Range	25...200 mm
Resolution	0.5 mm
Minimum measuring range	30 mm
Ultrasound frequency	400 kHz
Repeat accuracy	≤ 0.15 % of full scale
Linearity error	≤ ± 0.5 %
Edge lengths of the nominal actuator	10 mm
Approach speed	≤ 3 m/s
Pass speed	≤ 1.1 m/s
Electrical data	
Operating voltage U_s	15...30 VDC
Residual ripple	10 % U_{ss}
No-load current	≤ 50 mA
Response time typical	< 50 ms
Readiness delay	≤ 300 ms
Output function	Analog output
Voltage output	0...10 V
Load resistance voltage output	≥ 1 kΩ
Short-circuit protection	yes

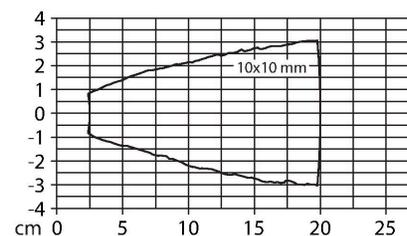
Technical data

Reverse polarity protection	yes
Wire breakage protection	yes
Setting option	Remote Teach
Mechanical data	
Design	Threaded barrel, M12
Radiation direction	straight
Dimensions	Ø 12 x 72.5 mm
Housing material	Metal, CuZn, Chrome-plated
Max. tightening torque of housing nut	20 Nm
Transducer material	Plastic, Epoxyd resin and PU foam
Electrical connection	Connector, M12 × 1, 4-wire
Ambient temperature	-10...+60 °C
Storage temperature	-40...+80 °C
Pressure resistance	0.5...5 bar
Protection class	IP67
Object detected	LED, Green
Tests/approvals	
MTTF	304 years acc. to SN 29500 (Ed. 99) 40 °C
Declaration of conformity EN ISO/IEC	EN 60947-5-7
Vibration resistance	20 g, 10...55 Hz, sine, 3 axes, 30 min/ axis according to IEC 60068-2-6
Shock test	30 g, 11 ms, half sine, 3 axes according to IEC 60068-2-27
Approvals	CE cULus

The sonic cone diagram indicates the detection range of the sensor. In accordance with standard EN 60947-5-7, 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.

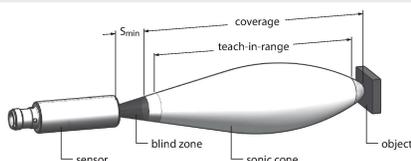
Important: The detection ranges for other targets may differ from those for standard targets due to the different reflection properties and geometries.

Sonic Cone



Mounting instructions

Mounting instructions/Description



Setting the limit values

The ultrasonic sensor has an analog output with a teachable measuring range. The green and yellow LEDs indicate whether the sensor has detected the object.

Teach

- Position object for remote limit value
 - Short-circuit pin 4 (BK) against Ub for 2–7 seconds
 - Position object for close limit value
 - Short-circuit pin 4 (BK) against Ub for 8–11 seconds
- Optional: Short-circuit pin 4 (BK) against Ub for 12–17 seconds to invert the analog output (no object required)

- Return to normal operating mode after 17 s or more.

LED response

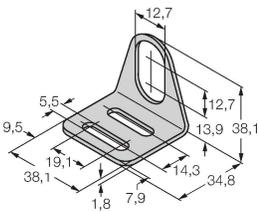
Successful teach-in is displayed with a fast flashing LED. The sensor then automatically runs in normal operating mode. Unsuccessful teach-in is indicated by the LED flashing alternately green and yellow. In normal operation, the two LEDs indicate the status of the sensor.

- Green: Object within the detection range, but not in the measuring range
- Yellow: Object is within the measuring range
- Off: Object is outside the detection range or signal loss

Accessories

MW12

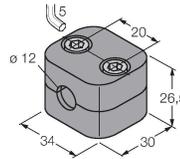
6945003



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

BSS-12

6901321



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

Wiring accessories

Dimension drawing

Type

ID

RKC4.5T-2/TEL

6625016

Connection cable, M12 female connector, straight, 5-pin, cable length: 2 m, jacket material: PVC, black; cULus approval



WKC4.5T-2/TEL

6625028

Connection cable, M12 female connector, angled, 5-pin, cable length: 2 m, jacket material: PVC, black; cULus approval

