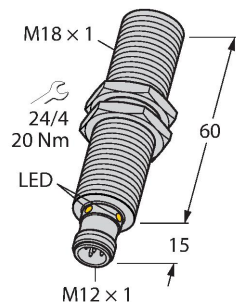


RU100U-M18E-LU8X2-H1151

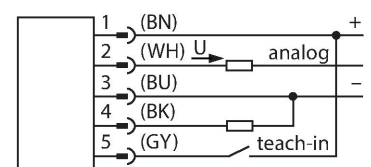
Ultrasonic Sensor – Diffuse Mode Sensor



Features

- Smooth sonic transducer face
- Cylindrical housing M18, potted
- Connection via M12 x 1 male
- Teach range adjustable via adapter
- Temperature compensation
- Blind zone: 10 cm
- Range: 100 cm
- Resolution: 1 mm
- Aperture angle of sonic cone: $\pm 16^\circ$
- 1 x analog output, 0...10 V/additional switching output, PNP
- Approval: cULus
- UL cond.: amb. air temp. 85 °C, encl. type 1, input: 30 VDC, 150 mA; class 2, binary OUT: 30 VDC, 150 mA each output, max. 2 A; use same supply source for all circuits

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 60947-5-7, 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.

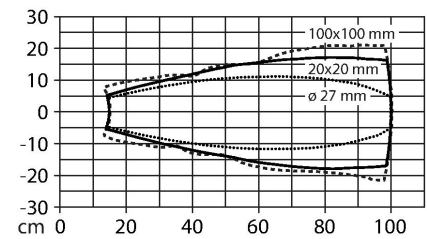
Technical data

Type	RU100U-M18E-LU8X2-H1151
ID	100017715
Ultrasonic data	
Function	Proximity switch
Range	100...1000 mm
Resolution	1 mm
Minimum measuring range	100 mm
Minimum switching range	100 mm
Ultrasound frequency	200 kHz
Repeat accuracy	$\leq 0.15\%$ of full scale
Temperature drift	$\pm 1.5\%$ of full scale
Linearity error	$\leq \pm 0.5\%$
Edge lengths of the nominal actuator	100 mm
Approach speed	≤ 4 m/s
Pass speed	≤ 0.7 m/s
Electrical data	
Operating voltage U_B	15...30 VDC
Residual ripple	10 % U_{ss}
DC rated operating current I_o	≤ 150 mA
No-load current	≤ 50 mA
Load resistance	$\leq 1000 \Omega$
Response time typical	< 180 ms
Readiness delay	≤ 300 ms
Output function	Analog output
Output 1	Analog output
Voltage output	0...10 V
Load resistance voltage output	≥ 1 k Ω

Technical data

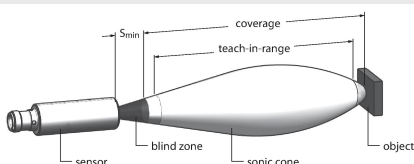
Switching frequency	≤ 3.5 Hz
Short-circuit protection	yes/Cyclic
Reverse polarity protection	yes
Wire breakage protection	yes
Setting option	Remote Teach
Mechanical data	
Design	Threaded barrel, M18
Radiation direction	straight
Dimensions	Ø 18 x 75 mm
Housing material	Metal, CuZn, Nickel Plated
Max. tightening torque of housing nut	20 Nm
Transducer material	Plastic, Epoxyd resin and PU foam
Electrical connection	Connector, M12 × 1, 5-wire
Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Pressure resistance	0.5...5 bar
Protection class	IP67
Switching state	LED, Yellow
Object detected	LED, Green
Tests/approvals	
MTTF	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

Sonic Cone



Mounting instructions

Mounting instructions/Description



Setting the limit values

The ultrasonic sensor has an analog output with teachable measuring range. Teaching is implemented via the teach adapter. The green and yellow LEDs indicate whether the sensor has detected the object.

Teach

Connect the TX1-Q20L60 teach adapter between the sensor and connection cable

- Position object for remote limit value
- Press the button against Ub for 2 - 7 seconds
- Position object for close limit value
- Press the button against Ub for 8 - 11 seconds

Optional: Inversion of analog output

