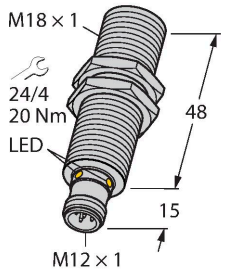
RU70U-M18M-RP8X2-H1151/S713
Ultrasonic Sensor – Diffuse Mode Sensor



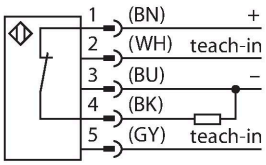
Features

- Smooth sonic transducer face
- Cylindrical housing M18, potted
- Connection via M12 x 1 male
- Temperature compensation
- Blind zone: 10 cm
- Range: 70 cm
- Resolution: 1 mm
- Aperture angle of sonic cone: ±16 °
- 1 × switching output, PNP
- Teachable settings

Technical data

Type	RU70U-M18M-RP8X2-H1151/S713
ID	1610068
Special version	S713 corresponds to: Pre-set ultrasonic sensor
Ultrasonic data	
Function	Proximity switch
Range	100…700 mm
Resolution	1 mm
Minimum switching range	10 mm
Ultrasound frequency	200 kHz
Repeat accuracy	≤ 0.15 % of full scale
Temperature drift	± 1.5 % of full scale
Linearity error	≤ ± 0.5 %
Edge lengths of the nominal actuator	100 mm
Approach speed	≤ 4 m/s
Pass speed	≤ 2 m/s
Electrical data	
Operating voltage	15…30 VDC
Residual ripple	10 % U_{ss}
DC rated operational current	≤ 150 mA
No-load current	≤ 50 mA
Load resistance	≤ 1000 Ω
Residual current	≤ 0.1 mA
Response time typical	< 117 ms
Readiness delay	≤ 300 ms
Output function	NO/NC, PNP
Output 1	Switching output

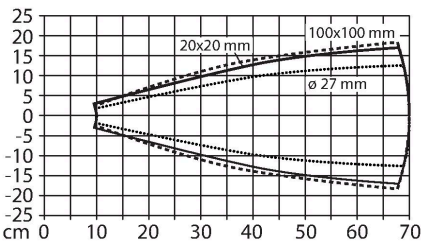
Wiring diagram



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 × 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



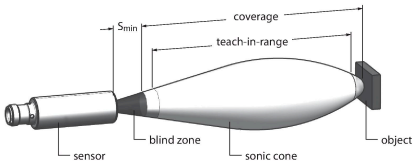
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Technical data

Switching frequency	≤ 4.8 Hz
Hysteresis	≤ 10 mm
Voltage drop at I_e	≤ 2.5 V
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 63 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
Protection class	IP67
Switching state	LED, Yellow
Object detected	LED, Green
Tests/approvals	
MTTF	281 years acc. to SN 29500 (Ed. 99) 40 °C
Declaration of conformity EN ISO/IEC	EN 60947-5-2
Vibration resistance	IEC 60068-2
Approvals	CE cULus

Mounting instructions

Mounting instructions/Description



Setting the switching point

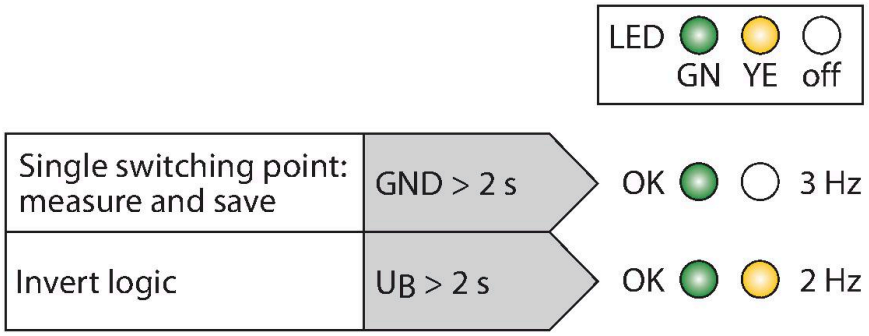
The ultrasonic sensor features a switching output with a teachable switching point. The green and yellow LEDs indicate whether the sensor has detected the object.

One switching point is taught. This must be within the detection range. In this operating mode the background is suppressed.

Easy-Teach

Connect the TX1-Q20L60 teach adapter between the sensor and connection cable
Place object at the end of the switching range
Press and hold button for at least 2 s against Gnd
After a successful teach-in, the green LED flashes at 3 Hz and the sensor runs automatically in normal mode.

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To invert the output function, press and hold the button against the Ub for 2…7s

LED response

In standard operating mode, the two LEDs indicate the switching state of the sensor.
Green: Object within the detection range but not in switching range
Yellow: Object is within the switching range
Off: Object is outside the detection range or signal loss

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