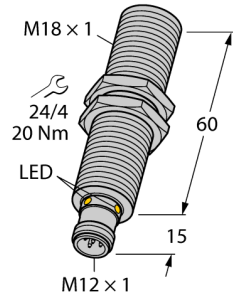


Ultrasonic Sensor

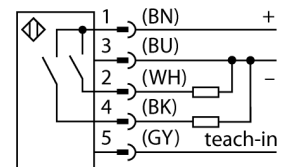
Diffuse Mode Sensor

RU130U-M18E-2UP8X2-H1151



- Smooth sonic transducer face
- Cylindrical housing M18, potted
- Connection via M12 x 1 male
- Teach range adjustable via adapter
- Temperature compensation
- Blind zone: 15 cm
- Range: 130 cm
- Resolution: 1 mm
- Sonic cone angle: 16°
- 2 x switching outputs, PNP
- NO/NC programmable

Wiring Diagram



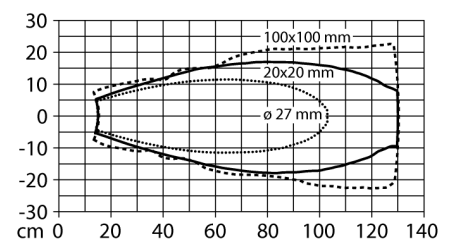
Functional principle

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



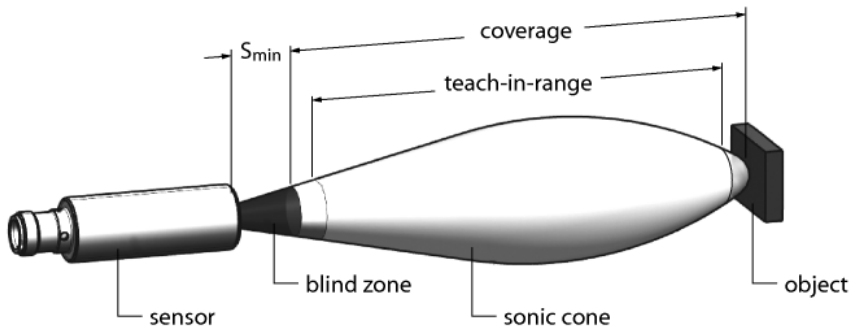
Type designation	RU130U-M18E-2UP8X2-H1151
Ident-No.	1610014
Function	Ultrasonic diffuse mode sensor
Range	150...1300 mm
Resolution	1 mm
minimum measuring range	100 mm
minimum switching range	10 mm
Ultrasound frequency	200 kHz
Repeat accuracy	0.15 % of full scale
Temperature drift	1.5% of full scale
Linearity error	≤ ± 0.5 %
Edge lengths of the nominal actuator	100 mm
Approach speed	≤ 10 m/s
Pass speed	≤ 2 m/s
Operating voltage	15...30 VDC
Residual ripple	10 % U _{in}
DC rated operational current	≤ 150 mA
No-load current I ₀	≤ 50 mA
Load resistance	≤ 1000 Ω
Residual current	≤ 0.1 mA
Response time typical	90 ms
Readiness delay	300 ms
Output function	NO/NC, PNP
Output 1	Switching output
Output 2	Switching output
Switching frequency	6.9 Hz
Hysteresis	≤ 10 mm
Voltage drop at I ₀	≤ 2.5 V
Short-circuit protection	yes/ Cyclic
Reverse polarity protection	yes
Wire breakage protection	yes
Design	Threaded barrel, M18
Radiation direction	straight
Dimensions	75 x Ø 18 mm
Housing material	Metal, CuZn, Nickel-plated
Transducer material	Plastic, Epoxyd resin and PU foam
Electrical connection	Connector, M12 x 1, 5-wire
Protection class	IP67
Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Declaration of conformity EN ISO/IEC	EN 60947-5-2
Vibration resistance	IEC 60068-2
MTTF	246 years
MTTF note	acc. to SN 29500 (Ed. 99) 40 °C
Switching state	LED, Yellow
Object detected	LED, Green

Ultrasonic Sensor

Diffuse Mode Sensor

RU130U-M18E-2UP8X2-H1151

Mounting instructions/Description



Settings

The ultrasonic sensor features two switching outputs with adjustable switching range. The adjustments can either be made via Easy-Teach adapter or via buttons (please note, only the RU...U-M...E-2UP8X2T-H1151 types have buttons!). Object presence is signalled by the green and yellow LED.

Two switchpoints are taught. They mark the limits of the switching range and may be selected freely within the detection range.

Via Easy-Teach adapter

- Connect the teach adapter TX1-Q20L60 between sensor and connection cable
- For the first limit value, place object accordingly
- Press and hold button for at least 2 to 7 s against Gnd
- For the second limit value, place object accordingly
- Press and hold button for at least 2 to 7 s against Ub

Teach button (please note, only the RU...U-M...E-2UP8X2T-H1151 types have buttons!)

- For the first limit value, place object accordingly
- Press and hold button 2 for at least 2 to 7 s
- For the second limit value, place object accordingly
- Press and hold button 1 for at least 2 to 7 s

After successful teach-in the sensor automatically runs in standard operating mode. Unsuccessful teach-in is signalled by the LED flashing slowly at a frequency of 5 Hz.

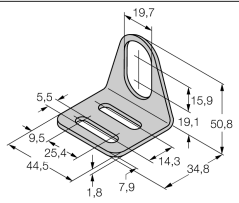
LED response

In standard operating mode both LEDs signal the switching states of the sensor.

- green: Object is in the detection range but not in the switching range
- yellow: Object is in the switching range
- off: Object is outside the detection range

Ultrasonic Sensor Diffuse Mode Sensor RU130U-M18E-2UP8X2-H1151

Accessories

Type code	Ident-No.	Description	Dimension drawing
MW-18	6945004	Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)	

Function accessories

Type code	Ident-No.	Description	Dimension drawing
TX1-Q20L60	6967114	Teach adapter for inductive encoders, linear position, angle, ultrasonic and capacitive sensors	