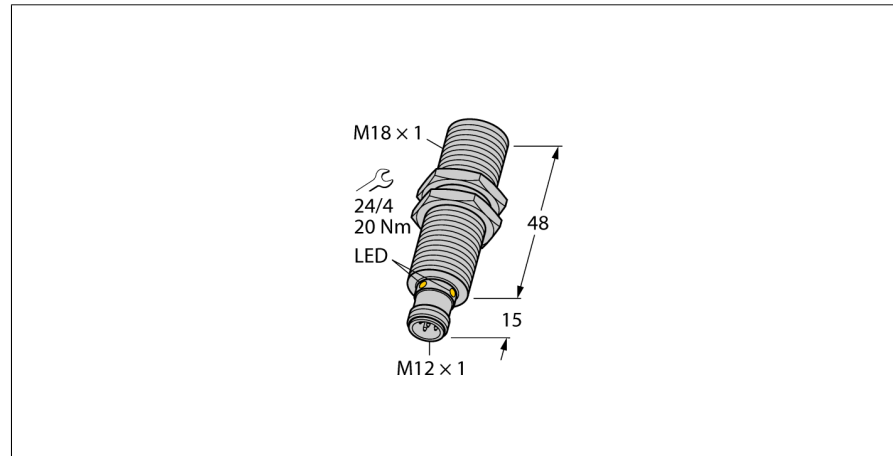
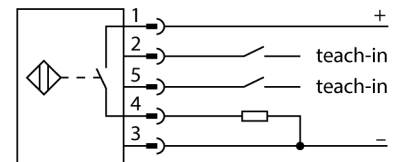


**Ultrasonic Sensor
Diffuse Mode Sensor
RU40U-M18M-UP8X2-H1151**



- Smooth sonic transducer face
- Cylindrical housing M18, potted
- Connection via M12 x 1 male
- Temperature compensation
- Blind zone: 2.5cm
- Range: 40cm
- Resolution: 0.5mm
- Aperture angle of sonic cone: 15°
- 1 × switching output, PNP
- Teachable settings
- NO/NC programmable

Wiring Diagram



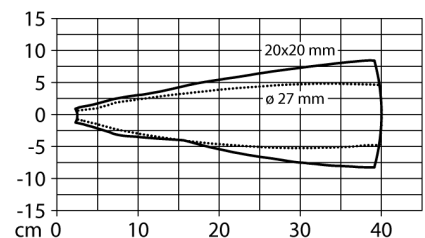
Functional principle

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.

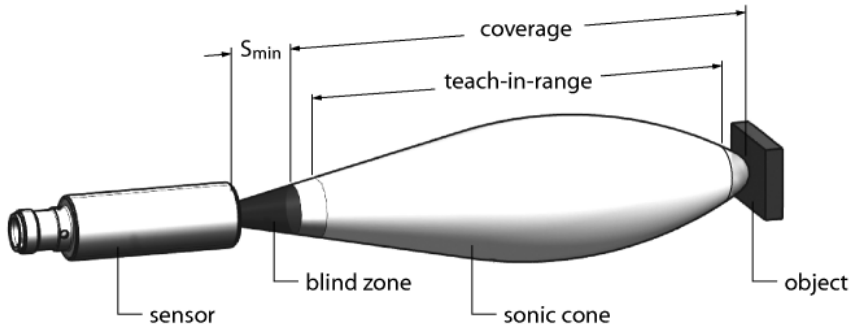
Sonic Cone



Type designation	RU40U-M18M-UP8X2-H1151
Ident no.	1610008
Function	Ultrasonic diffuse mode sensor
Range	25...400 mm
Resolution	0.5 mm
minimum measuring range	50 mm
minimum switching range	5 mm
Ultrasound frequency	300 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	20 mm
Approach speed	≤ 3 m/s
Pass speed	≤ 1.3 m/s
Operating voltage	15...30 VDC
Residual ripple	10 % U _s
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	60 ms
Readiness delay	300 ms
Output function	NO/NC, PNP
Output 1	Switching output
Switching frequency	10.4 Hz
Hysteresis	≤ 5 mm
Voltage drop at I _s	≤ 2.5 V
Short-circuit protection	yes/ Cyclic
Reverse polarity protection	yes
Wire breakage protection	yes
Design	Threaded barrel, M18
Radiation direction	straight
Dimensions	63 x Ø 18 mm
Housing material	Metal, CuZn, Nickel-plated
Max. tightening torque of connector B	20 Nm
Transducer material	Plastic, Epoxyd resin and PU foam
Electrical connection	Connectors, 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	281 years
MTTF note	acc. to SN 29500 (Ed. 99) 40 °C
Switching state	LED, Yellow
Object detected	LED, Green

**Ultrasonic Sensor
Diffuse Mode Sensor
RU40U-M18M-UP8X2-H1151**

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.

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.

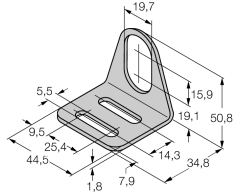
Green: Object within the detection range but not in switching range

Yellow: Object is within the switching range

Off: Object is outside the detection range or signal loss

**Ultrasonic Sensor
Diffuse Mode Sensor
RU40U-M18M-UP8X2-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	