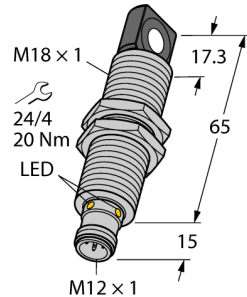


Ultrasonic Sensor

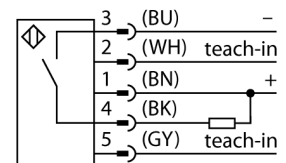
Diffuse Mode Sensor

RU40U-M18MS-UN8X2-H1151



- Rectangular transducer front
- 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 x switching output, NPN
- Teachable settings
- NO/NC programmable

Wiring Diagram



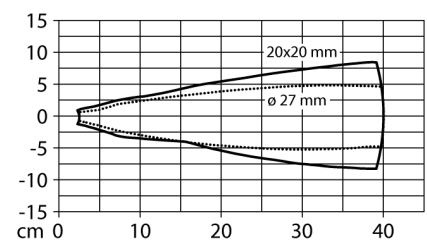
Functional principle

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-M18MS-UN8X2-H1151
Ident-No. 1610082

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 $\leq \pm 0.5 \%$
Edge lengths of the nominal actuator 20 mm
Approach speed $\leq 3 \text{ m/s}$
Pass speed $\leq 1.3 \text{ m/s}$

Operating voltage 15...30 VDC
Residual ripple 10 % U_n
DC rated operational current $\leq 150 \text{ mA}$
No-load current I_0 $\leq 50 \text{ mA}$
Load resistance $\leq 1000 \Omega$
Residual current $\leq 0.1 \text{ mA}$
Response time typical 60 ms
Readiness delay 300 ms
Output function NO/NC, NPN
Output 1 Switching output
Switching frequency 10.4 Hz
Hysteresis $\leq 5 \text{ mm}$
Voltage drop at I_0 $\leq 2.5 \text{ V}$
Short-circuit protection yes/ Cyclic
Reverse polarity protection yes
Wire breakage protection yes

Design Threaded barrel, M18
Radiation direction side
Dimensions 80 x $\varnothing 18 \text{ mm}$
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 281 years
MTTF note acc. to SN 29500 (Ed. 99) 40 °C

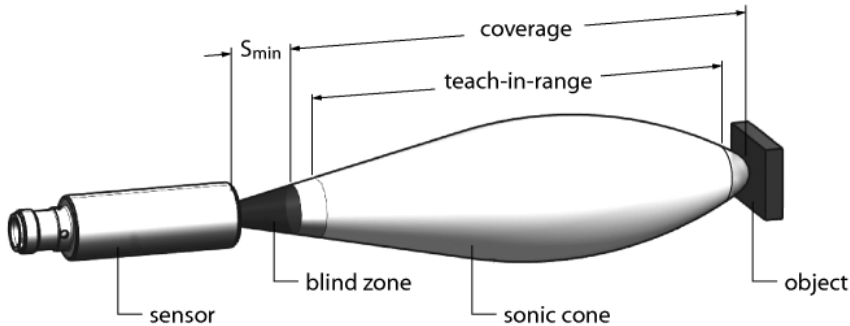
Switching state LED, Yellow
Object detected LED, Green

Ultrasonic Sensor

Diffuse Mode Sensor

RU40U-M18MS-UN8X2-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-M18MS-UN8X2-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	