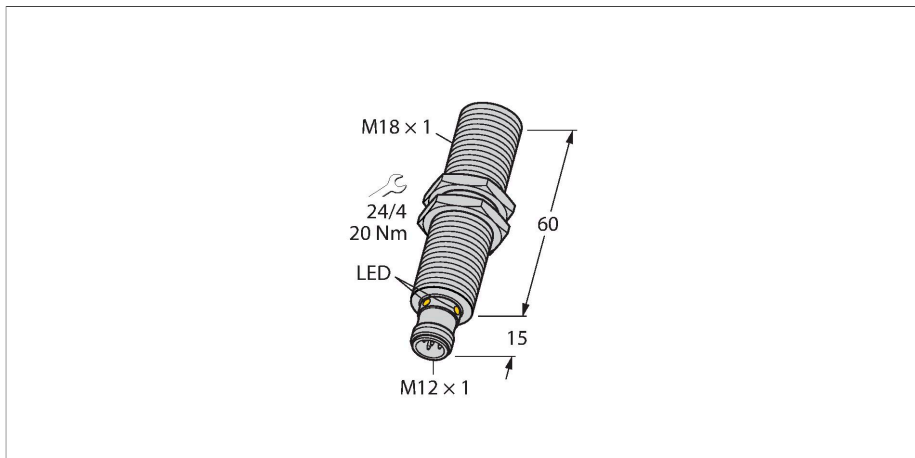


RU40U-M18E-LU8X2-H1151

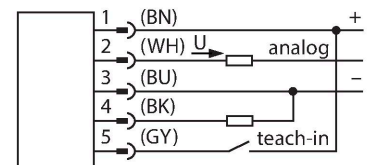
Ultrasonic Sensor – Diffuse Mode Sensor



Features

- Smooth sonic transducer face
- Cylindrical housing M18, potted
- Connection via M12 x 1 male
- Teach range adjustable via adapter
- Temperature compensation
- Blind zone: 2.5 cm
- Range: 40 cm
- Resolution: 0.5 mm
- Aperture angle of sonic cone: $\pm 15^\circ$
- 1 x analog output, 0...10 V/additional switching output, PNP

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.

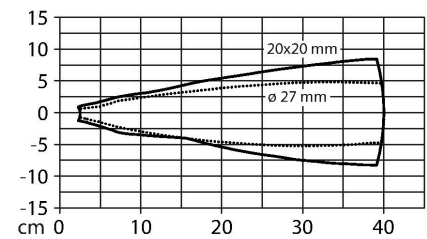
Technical data

| | |
|--------------------------------------|-----------------------------|
| Type | RU40U-M18E-LU8X2-H1151 |
| ID | 1610109 |
| Ultrasonic data | |
| Function | Proximity switch |
| Range | 25...400 mm |
| Resolution | 0.5 mm |
| Minimum measuring range | 50 mm |
| Minimum switching range | 50 mm |
| Ultrasound frequency | 300 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 | 20 mm |
| Approach speed | ≤ 3 m/s |
| Pass speed | ≤ 1.3 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 | $\leq 1000 \Omega$ |
| Response time typical | < 60 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

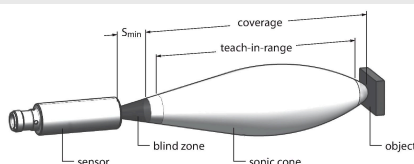
| | |
|---------------------------------------|---|
| Switching frequency | ≤ 10.4 Hz |
| Short-circuit protection | yes / Cyclic |
| Reverse polarity protection | yes |
| Wire breakage protection | yes |
| Setting option | Remote Teach |
| Mechanical data | |
| Design | Threaded barrel, M18 |
| Radiation 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 | 202 years acc. to SN 29500 (Ed. 99) 40 °C |
| Declaration of conformity EN ISO/IEC | EN 60947-5-7 |
| Vibration resistance | IEC 60068-2 |
| 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

- Press the button for 12 - 17 seconds

LED response

