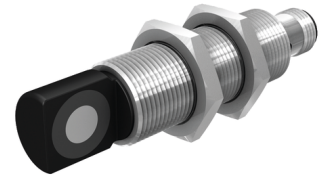
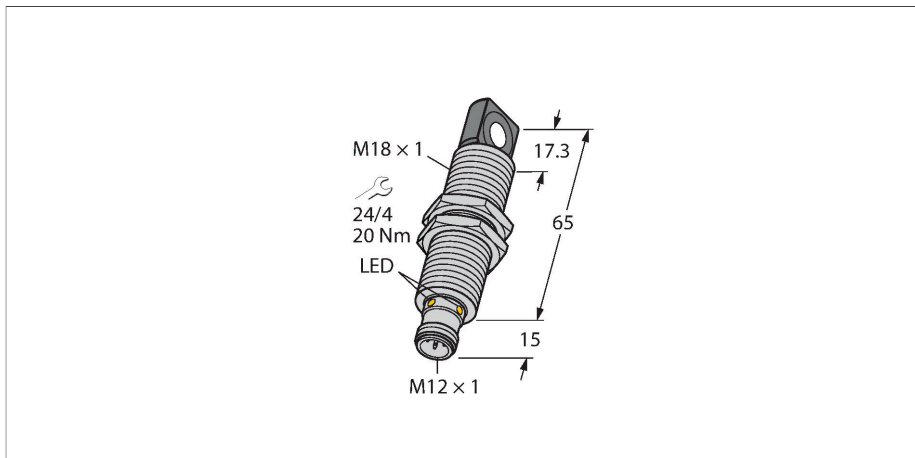


RU100L-M18MS-UN8X2-H1151

Ultrasonic Sensor – Retroreflective Sensor



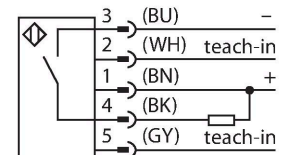
Technical data

| | |
|--------------------------------------|--------------------------|
| Type | RU100L-M18MS-UN8X2-H1151 |
| ID | 1610087 |
| Ultrasonic data | |
| Function | Retroreflective Sensor |
| Range | 150...1000 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 | ≤ 8 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 | < 90 ms |
| Readiness delay | ≤ 300 ms |
| Output function | NO/NC, NPN |
| Output 1 | Switching output |
| Switching frequency | ≤ 6.9 Hz |
| Hysteresis | ≤ 10 mm |

Features

- Rectangular transducer front
- Cylindrical housing M18, potted
- Connection via M12 x 1 male
- Temperature compensation
- Teach-in range: 15...98 cm
- Resolution: 1 mm
- Aperture angle of sonic cone: ±16 °
- 1 x switching output, NPN
- Configurable via Teach-In
- Parameterizable NO/NC

Wiring diagram



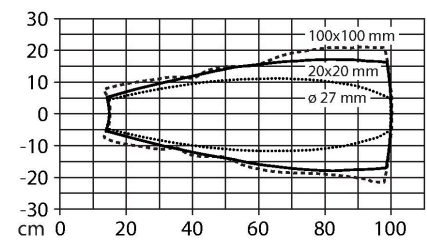
Functional principle

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.

Technical data

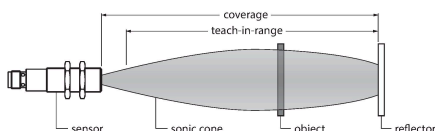
| | |
|---------------------------------------|---|
| Voltage drop at I _e | ≤ 2.5 V |
| Short-circuit protection | yes / Cyclic |
| Reverse polarity protection | yes |
| Wire breakage protection | yes |
| Setting option | Remote Teach |
| Mechanical data | |
| Design | Threaded barrel, M18 |
| Radiation direction | side |
| Dimensions | Ø 18 x 80 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 |

Sonic Cone



Mounting instructions

Mounting instructions/Description



Teaching the reflector position

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

A switching range is taught in. This must be within the detection range. In this operating mode, the taught reflector position is detected permanently without an object.

Easy-Teach

- Connect the teach adapter TX1-Q20L60 between the sensor and connection cable
- Stationary reflector within the detection 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

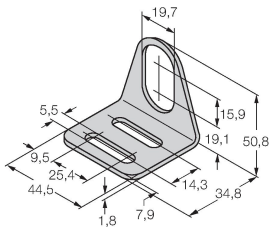
In standard operating mode, the two LEDs indicate the switching state of the sensor.

- Green: reflector within the detection range
- Yellow: object between the sensor and reflector

Accessories

| | |
|-------|---------|
| MW-18 | 6945004 |
|-------|---------|

Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)



Accessories

| Dimension drawing | Type | ID | |
|-------------------|---------------|---------|--|
| | RKC4.5T-2/TEL | 6625016 | Connection cable, female M12, straight, 5-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com |
| | WKC4.5T-2/TEL | 6625028 | Connection cable, female M12, angled, 5-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com |

Accessories

| Dimension drawing | Type | ID | |
|-------------------|------------|---------|---|
| | TX1-Q20L60 | 6967114 | Teach adapter for inductive encoders, linear position, angle, ultrasonic and capacitive sensors |