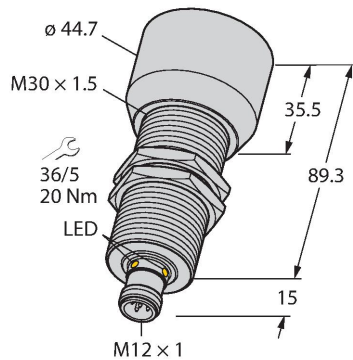


# RU600U-M30E-LU8X2-H1151

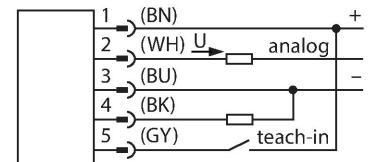
## Ultrasonic Sensor – Diffuse Mode Sensor



### Features

- Smooth sonic transducer face
- Cylindrical housing M30, potted
- Connection via M12 x 1 male
- Measuring range adjustable via Easy-Teach
- Temperature compensation
- Blind zone: 60 cm
- Range: 600 cm
- Resolution: 1 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 × 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.

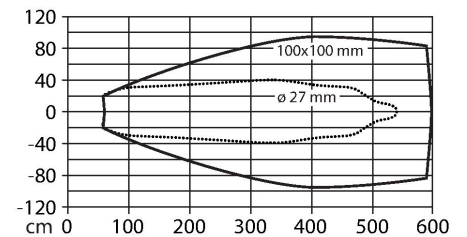
### Technical data

|                                      |                             |
|--------------------------------------|-----------------------------|
| Type                                 | RU600U-M30E-LU8X2-H1151     |
| ID                                   | 1610114                     |
| <b>Ultrasonic data</b>               |                             |
| Function                             | Proximity switch            |
| Range                                | 600...6000 mm               |
| Resolution                           | 1 mm                        |
| Minimum measuring range              | 500 mm                      |
| Minimum switching range              | 500 mm                      |
| Ultrasound frequency                 | 75 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 | 100 mm                      |
| Approach speed                       | $\leq 11$ m/s               |
| Pass speed                           | $\leq 3.7$ m/s              |
| <b>Electrical data</b>               |                             |
| Operating voltage                    | 15...30 VDC                 |
| Residual ripple                      | 10 % $U_{ss}$               |
| DC rated operational current         | $\leq 150$ mA               |
| No-load current                      | $\leq 50$ mA                |
| Load resistance                      | $\leq 1000 \Omega$          |
| Response time typical                | $< 380$ ms                  |
| Readiness delay                      | $\leq 300$ ms               |
| Output function                      | Analog output               |
| Output 1                             | Analog output               |
| Voltage output                       | 0...10 V                    |
| Load resistance voltage output       | $\geq 1$ k $\Omega$         |

## Technical data

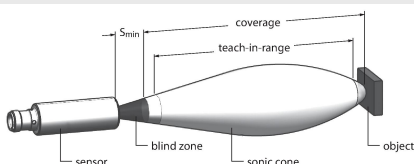
|                                       |                                           |
|---------------------------------------|-------------------------------------------|
| Switching frequency                   | ≤ 1.6 Hz                                  |
| Short-circuit protection              | yes / Cyclic                              |
| Reverse polarity protection           | yes                                       |
| Wire breakage protection              | yes                                       |
| Setting option                        | Remote Teach                              |
| <b>Mechanical data</b>                |                                           |
| Design                                | Threaded barrel, M30                      |
| Radiation direction                   | straight                                  |
| Dimensions                            | Ø 44.7 x 104.3 mm                         |
| Housing material                      | Metal, CuZn, Nickel Plated                |
| Max. tightening torque of housing nut | 75 Nm                                     |
| Transducer material                   | Plastic, Epoxyd resin and PU foam         |
| Electrical connection                 | Connector, M12 × 1, 5-wire                |
| Ambient temperature                   | -25...+50 °C                              |
| Storage temperature                   | -40...+80 °C                              |
| Pressure resistance                   | 0.5...5 bar                               |
| Protection class                      | IP67                                      |
| Switching state                       | LED, Yellow                               |
| Object detected                       | LED, Green                                |
| <b>Tests/approvals</b>                |                                           |
| MTTF                                  | 193 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<br>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

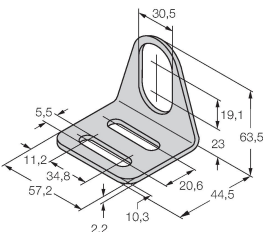
Successful teaching is displayed with a fast flashing LED. Thereafter, the sensor automatically runs in normal operating mode. Unsuccessful teaching is indicated by the LED flashing alternately green and yellow. In normal operation, the two LEDs indicate the status of the sensor.

- Green: Object within the detection range, but not in the measuring range
- Yellow: Object is within the measuring range
- Off: Object outside the detection range or signal loss

Accessories

|       |         |
|-------|---------|
| MW-30 | 6945005 |
|-------|---------|

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, M12 female connector, straight, 5-pin, cable length: 2 m, jacket material: PVC, black; cULus approval |
|                   | WKC4.5T-2/TEL | 6625028 | Connection cable, M12 female connector, angled, 5-pin, cable length: 2 m, jacket material: PVC, black; cULus approval   |

Accessories

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