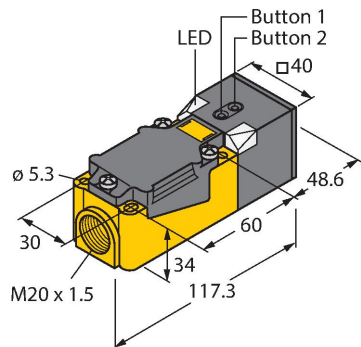


# RU200-CP40-LIU2N8X2T

## Ultrasonic Sensor – Diffuse Mode Sensor



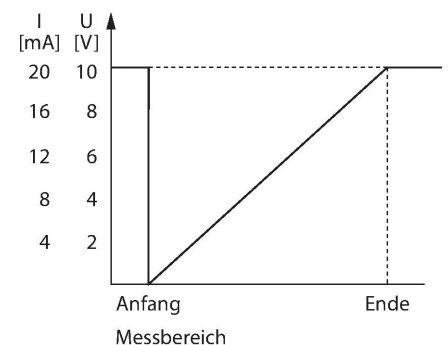
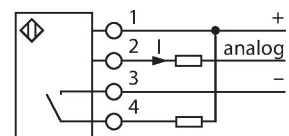
### Technical data

|                                      |                        |
|--------------------------------------|------------------------|
| Type                                 | RU200-CP40-LIU2N8X2T   |
| ID                                   | 1610056                |
| <b>Ultrasonic data</b>               |                        |
| Function                             | Proximity switch       |
| Range                                | 50...2000 mm           |
| Resolution                           | 1 mm                   |
| Minimum measuring range              | 200 mm                 |
| Minimum switching range              | 20 mm                  |
| Ultrasound frequency                 | 120 kHz                |
| Repeat accuracy                      | ≤ 0.25 % of full scale |
| Edge lengths of the nominal actuator | 100 mm                 |
| Approach speed                       | ≤ 3 m/s                |
| Pass speed                           | ≤ 3 m/s                |
| <b>Electrical data</b>               |                        |
| Operating voltage                    | 15...30 VDC            |
| Residual ripple                      | 10 % U <sub>ss</sub>   |
| DC rated operational current         | ≤ 150 mA               |
| No-load current                      | ≤ 50 mA                |
| Load resistance                      | ≤ 1000 Ω               |
| Residual current                     | ≤ 0.1 mA               |
| Response time typical                | < 160 ms               |
| Readiness delay                      | ≤ 300 ms               |
| Output function                      | NO/NC, NPN             |
| Output 1                             | Switching output       |
| Output 2                             | Analog output          |
| Current output                       | 4...20 mA              |
| Load resistance current output       | ≤ 0.5 kΩ               |

### Features

- Separate transducers for transmitter and receiver
- Rectangular housing 40 x 40 x 166 mm
- Connection via screw terminals
- Terminal chamber for M20 x 1.5 cable gland
- Teach range adjustable via button
- Blind zone: 5 cm
- Range: 200 cm
- Resolution: 1 mm
- Aperture angle of sonic cone: ±60 °
- 1 × switching output, NPN
- NO/NC programmable
- 1 × analog output 4...20 mA/0...10 V

### Wiring diagram



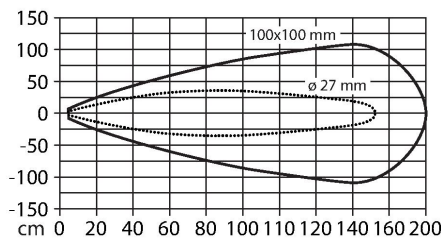
Technical data

|                                      |                                                         |
|--------------------------------------|---------------------------------------------------------|
| Voltage output                       | 0...10 V                                                |
| Load resistance voltage output       | ≥ 1 kΩ                                                  |
| Switching frequency                  | ≤ 3 Hz                                                  |
| Hysteresis                           | ≤ 20 mm                                                 |
| Voltage drop at I <sub>e</sub>       | ≤ 2.5 V                                                 |
| Short-circuit protection             | yes / Latching                                          |
| Reverse polarity protection          | yes                                                     |
| Wire breakage protection             | yes                                                     |
| Setting option                       | Push Button                                             |
| Mechanical data                      |                                                         |
| Design                               | Rectangular, CP40                                       |
| Radiation direction                  | straight                                                |
| Dimensions                           | 166 x 40 x 40 mm                                        |
| Housing material                     | Plastic, PBT-GF30-V0                                    |
| Electrical connection                | Terminal chamber, Terminal box with cable gland, 4-wire |
| Ambient temperature                  | 0...+70 °C                                              |
| Pressure resistance                  | 0.5...5 bar                                             |
| Protection class                     | IP40                                                    |
| Switching state                      | LED, Yellow                                             |
| Object detected                      | LED, Green                                              |
| Tests/approvals                      |                                                         |
| Declaration of conformity EN ISO/IEC | EN 60947-5-7                                            |
| Approvals                            | CE<br>cULus                                             |

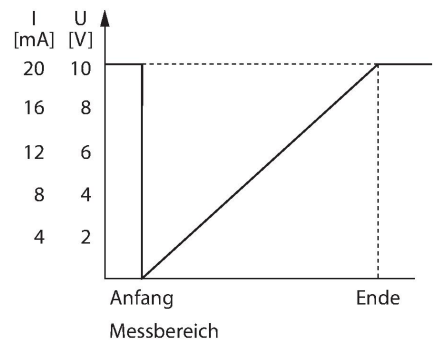
Functional principle

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.

Sonic Cone

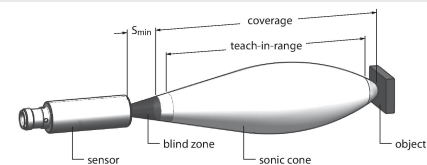


Output behaviour



Mounting instructions

Mounting instructions/Description



Setting the limits

The ultrasonic sensor has an analog and a switching output with teachable measuring and switching range. Teaching via buttons on the housing. The green and yellow LED indicate whether the sensor has detected an object. Various functions such as single switchpoint, window mode or reflection mode to a fixed

target can be taught. Further information is described in the operating instructions. How to set the window mode is described below. The limits of the window may be selected freely within the detection range.

- For the first limit value, place object accordingly
- Press and hold button 1 to select output 1 or 2 for 2 or 8 s against Gnd
- Press and hold button 1 for at least 8 s
- For the second limit value, place object accordingly
- Press and hold button 1 for at least 2 s

#### LED response

Successful teaching is indicated by a fast flashing green LED. Thereafter, the sensor automatically runs in normal operating mode. Unsuccessful teaching is indicated by the LED flashing alternately green and yellow.

In normal operating mode both LEDs signal the switching state of output 1.

- green: object is in the detection range but not in the switching range
- yellow: object is in the switching range
- off: object is outside the detection range or signal loss