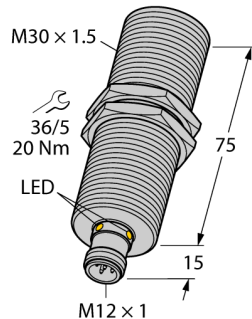


Ultrasonic Sensor Diffuse Mode Sensor RU300U-M30M-2UP8X2-H1151



- Smooth sonic transducer face
- Cylindrical housing M30, potted
- Connection via M12 × 1 male connector
- Measuring range adjustable via Easy-Teach
- Temperature compensation
- Blind zone: 30 cm
- Range: 300 cm
- Resolution: 1 mm
- Sonic cone angle: 15°
- 2 x switching outputs, PNP
- NO/NC programmable

Type designation RU300U-M30M-2UP8X2-H1151
Ident-No. 1610036

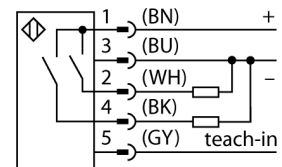
Function Ultrasonic diffuse mode sensor
Range 300...3000 mm
Resolution 1 mm
minimum measuring range 250 mm
minimum switching range 25 mm
Ultrasound frequency 120 kHz
Repeat accuracy 0.15 % of full scale
Temperature drift 1.5% of full scale
Linearity error ≤ ± 0.5 %
Edge lengths of the nominal actuator 100 mm
Approach speed ≤ 11 m/s
Pass speed ≤ 4.2 m/s

Operating voltage 15...30 VDC
Residual ripple 10 % U_n
DC rated operational current ≤ 150 mA
No-load current I₀ ≤ 50 mA
Load resistance ≤ 1000 Ω
Residual current ≤ 0.1 mA
Response time typical 190 ms
Readiness delay 300 ms
Output function NO/NC, PNP
Output 1 Switching output
Output 2 Switching output
Switching frequency 3.3 Hz
Hysteresis ≤ 25 mm
Voltage drop at I₀ ≤ 2.5 V
Short-circuit protection yes/ Cyclic
Reverse polarity protection yes
Wire breakage protection yes

Design Threaded barrel, M30
Radiation direction straight
Dimensions 75 x Ø 30 mm
Housing material Metal, CuZn, Nickel-plated
Transducer material Plastic, Epoxyd resin and PU foam
Electrical connection Connector, M12 × 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 232 years
MTTF note acc. to SN 29500 (Ed. 99) 40 °C

Switching state LED, Yellow
Object detected LED, Green

Wiring Diagram



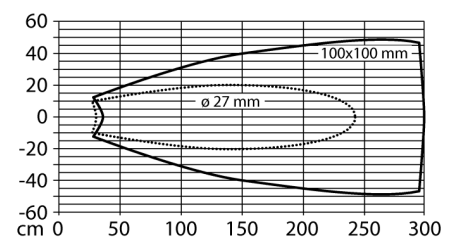
Functional principle

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

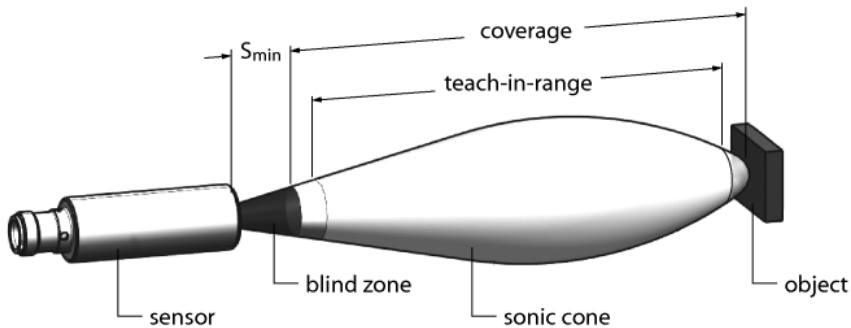


Ultrasonic Sensor

Diffuse Mode Sensor

RU300U-M30M-2UP8X2-H1151

Mounting instructions/Description



Settings

The ultrasonic sensor features two switching outputs with adjustable switching range. The adjustments can either be made via Easy-Teach adapter or via buttons (please note, only the RU...U-M...E-2UP8X2T-H1151 types have buttons!). Object presence is signalled by the green and yellow LED.

Two switchpoints are taught. They mark the limits of the switching range and may be selected freely within the detection range.

Via Easy-Teach adapter

- Connect the teach adapter TX1-Q20L60 between sensor and connection cable
- For the first limit value, place object accordingly
- Press and hold button for at least 2 to 7 s against Gnd
- For the second limit value, place object accordingly
- Press and hold button for at least 2 to 7 s against Ub

Teach button (please note, only the RU...U-M...E-2UP8X2T-H1151 types have buttons!)

- For the first limit value, place object accordingly
- Press and hold button 2 for at least 2 to 7 s
- For the second limit value, place object accordingly
- Press and hold button 1 for at least 2 to 7 s

After successful teach-in the sensor automatically runs in standard operating mode. Unsuccessful teach-in is signalled by the LED flashing slowly at a frequency of 5 Hz.

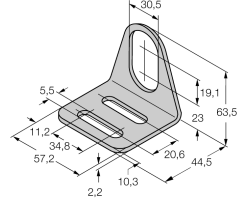
LED response

In standard operating mode both LEDs signal the switching states of the sensor.

- 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

Ultrasonic Sensor
Diffuse Mode Sensor
RU300U-M30M-2UP8X2-H1151

Accessories

Type code	Ident-No.	Description	Dimension drawing
MW-30	6945005	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	