Your Global Automation Partner

Compact Ultrasonic Sensors with NPN Output

Previously only available with PNP outputs, Turck's compact sensors now include products with NPN outputs. Available sensing ranges are 40cm and 1 meter, with teach-by-wire capabilities.

Please see the following pages for the data sheets for the product included in this extension.

Part Number	ID Number	Com-pact	Teach By Wire	Teach by Button	Teach via IO-Link	Sensing Range	Housing	Output
RU40U-M18M-UN8X2 -H1151	M1610080	X	X			40cm	18mm Barrel	NPN
RU100U-M18M-UN8X2 -H1151	M1610081	X	X			100cm	18mm Barrel	NPN

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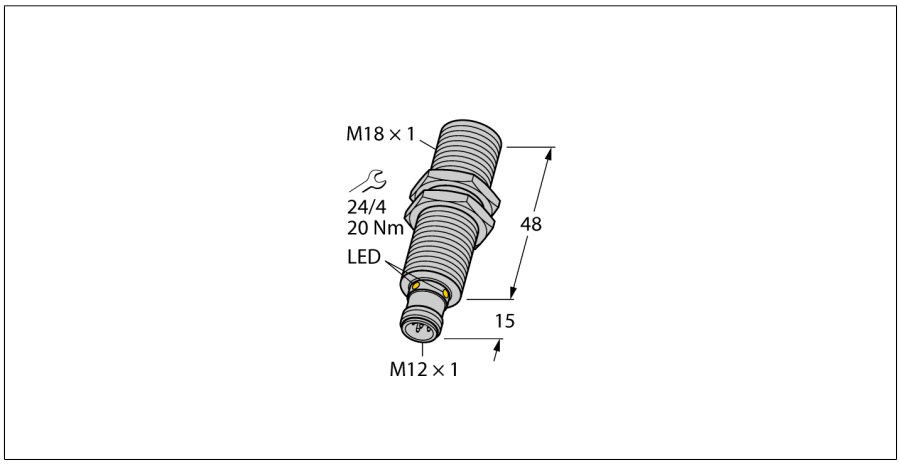
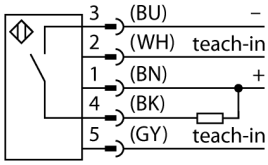
Ultrasonic sensor
diffuse mode sensor
RU40U-M18M-UN8X2-H1151



- **Smooth sonic transducer face**
- **Cylindrical housing M18, potted**
- **Connection via M12 x 1 male**
- **Temperature compensation**
- **Blind zone: 2.5 cm**
- **Range: 40 cm**
- **Resolution: 0.5 mm**
- **Sonic cone angle: 9°**
- **1xSchaltausgang, NPN**
- **Einstellbar über Teach-In**
- **Parametrierbar Schließer/Öffner**

Type code	RU40U-M18M-UN8X2-H1151
Ident-No.	1610080
Pass speed	≤ 1.5 m/s
Repeatability	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	20 mm
Hysteresis	≤ 5 mm
Ambient temperature	-25…+70 °C
Storage temperature	-40…+80°C
Operating voltage	15… 30VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 150 mA
No-load current I_0	≤ 50 mA
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 2.5 V
Wire breakage / Reverse polarity protection	yes/ yes
Output function	5-wire, NO/NC , NPN
Output 1	Switching output
Readiness delay	≤ 300 ms
Construction	Threaded barrel, M18
Dimensions	63 mm
Housing material	Metal, CuZn, nickel-plated
Electrical connection	Flange connector, M12 x 1
Protection class	IP67
MTTF	281 years acc. to SN 29500 (Ed. 99) 40 °C
Switching state	LED yellow

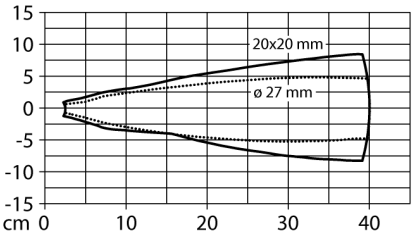
Wiring Diagram



Functional principle

Ultrasonic sensors capture a multitude of objects contactless 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.

Sonic Cone



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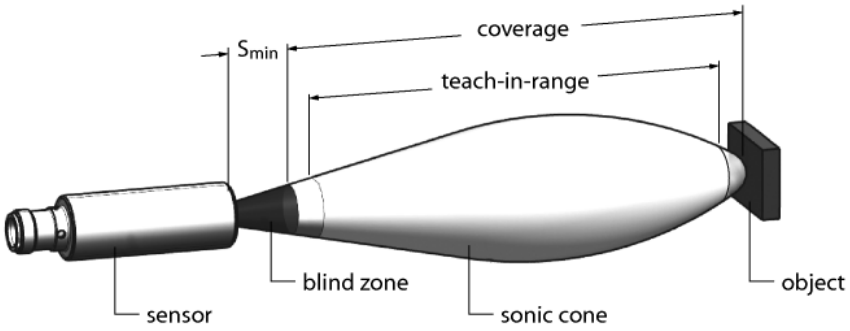
Ultrasonic sensor
diffuse mode sensor
RU40U-M18M-UN8X2-H1151

Mounting instructions / Description



Setting the switchpoint
The ultrasonic sensor features a switching output with adjustable switchpoint. The green and yellow LED indicate whether the sensor has detected an object.

One switchpoint is taught. This must be within the sensing range. In this operating mode the background is suppressed.

Easy-Teach
- Connect teach adapter TX1-Q20L60 between sensor and connection cable
- Place object at the end of the switching range
- Press and hold button for at least 2 s against Gnd

After successful teaching, the green LED flashes at 3 Hz and the sensor runs automatically in normal mode.

LED response
In standard operating mode both LEDs signal the switching state 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 or signal loss

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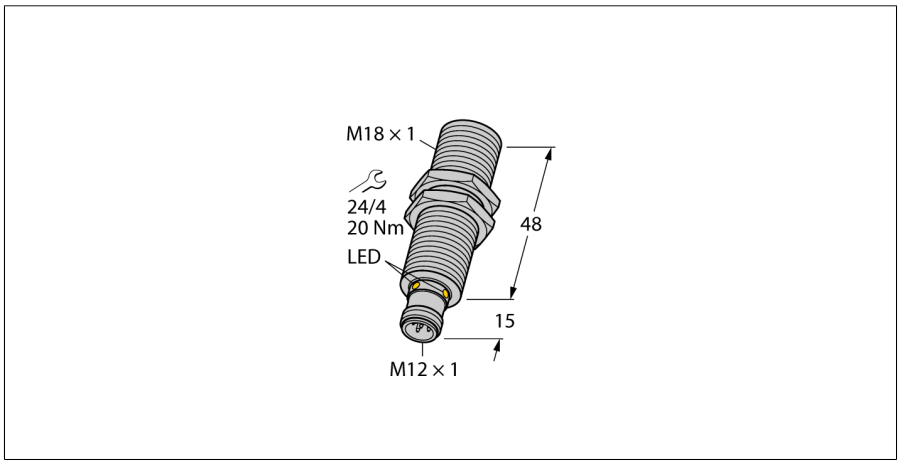
Ultrasonic sensor
diffuse mode sensor
RU100U-M18M-UN8X2-H1151



- **Smooth sonic transducer face**
- **Cylindrical housing M18, potted**
- **Connection via M12 x 1 male**
- **Temperature compensation**
- **Blind zone: 15 cm**
- **Range: 100 cm**
- **Resolution: 1 mm**
- **Sonic cone angle: 16°**
- **1xSchaltausgang, NPN**
- **Einstellbar über Teach-In**
- **Parametrierbar Schließer/Öffner**

Type code	RU100U-M18M-UN8X2-H1151
Ident-No.	1610081
Pass speed	≤ 1.5 m/s
Repeatability	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	100 mm
Hysteresis	≤ 10 mm
Ambient temperature	-25…+70 °C
Storage temperature	-40…+80°C
Operating voltage	15… 30VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 150 mA
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Short-circuit protection	yes/ cyclic
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Protection class	IP67
MTTF	281 years acc. to SN 29500 (Ed. 99) 40 °C
Switching state	LED yellow

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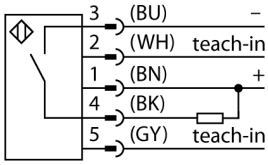

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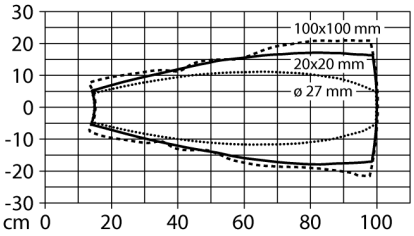

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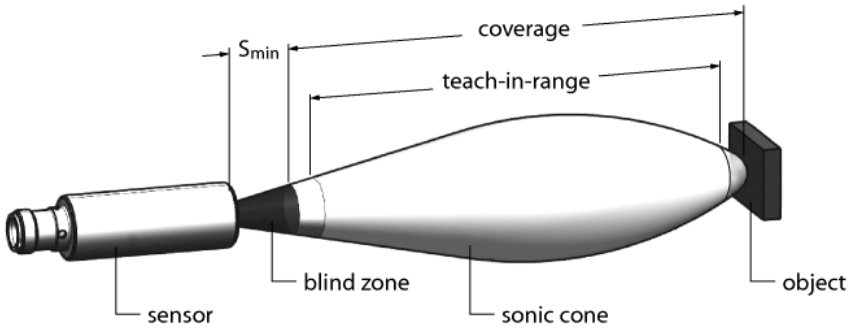
Ultrasonic sensor
diffuse mode sensor
RU100U-M18M-UN8X2-H1151

Mounting instructions / Description



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