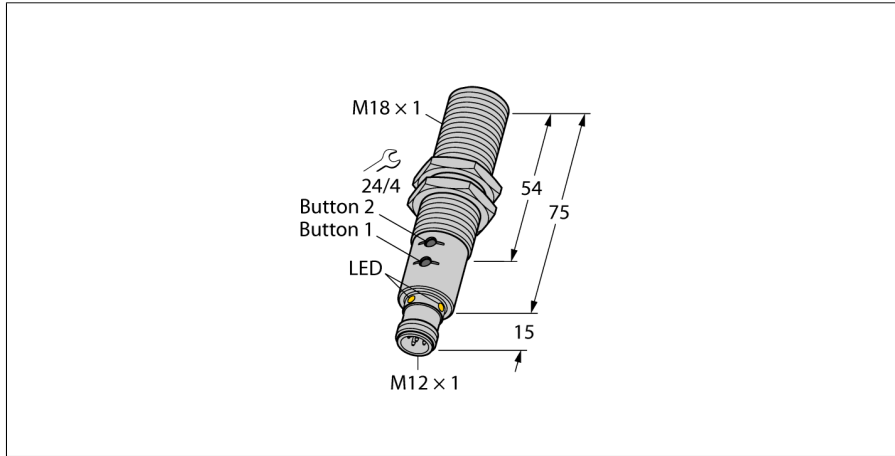


**Ultrasonic sensor  
diffuse mode sensor  
RU40U-M18E-LIU2PN8X2T-H1151**



- Smooth sonic transducer face
- Cylindrical housing M18
- Connection via male M12 x 1
- Measuring range adjustable via teach button/Easy-Teach
- Temperature compensation
- Blind zone: 2.5 cm
- Range: 40 cm
- Resolution: 0.5 mm
- Aperture angle of sonic cone: 7 °
- 1 x switching output, PNP/NPN
- 1 x analog output, 4...20 mA / 0...10V / additional switching output, PNP/NPN
- NO/NC programmable
- Parametrizable via IO-Link

**Type code** RU40U-M18E-LIU2PN8X2T-H1151  
**Ident no.** 1610024

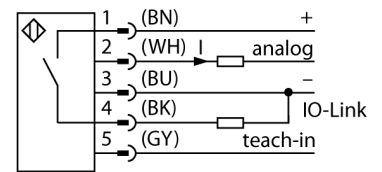
**Design** cylindrical/threaded, M18  
**Dimensions** Ø18 x 90 mm  
**Housing material** metal, CuZn, nickel-plated  
**Sonic converter material** plastic, PBT  
**Connection** male, M12 x 1, 5-wire  
**Protection class** IP67  
**Ambient temperature** -25...+70 °C  
**Storage temperature** -40...+80 °C  
**Declaration of conformity EN ISO/IEC** EN 60947-5-2  
**Vibration resistance** IEC 60068-2  
**MTTF** 195 years  
**MTTF note** acc. to SN 29500 (Ed. 99) 40 °C

**Switching state** LED green / yellow

**Residual ripple** 10 % U<sub>s</sub>  
**Operating voltage** 15...30VDC  
**DC rated operational current** ≤ 150 mA  
**No-load current I<sub>0</sub>** ≤ 50 mA  
**Load resistance** ≤ 1000 Ω  
**Response time** 75 ms  
**Readiness delay** 300 ms  
**Output function** NO/NC , PNP/NPN  
**Output 1** analog output  
**Output 2** switching output or IO-Link mode  
**Current output** 4...20mA  
**Voltage output** 0...10V  
**Switching frequency** 7 Hz  
**Hysteresis** ≤ 5 % of full scale  
**Voltage drop at I<sub>s</sub>** ≤ 2.5 V  
**Short-circuit protection** yes/ cyclic  
**Reverse polarity protection** yes  
**Wire breakage protection** yes

**Operating mode** diffuse mode ultrasonic sensor  
**Range** 2.5...40 cm  
**Resolution** 0,5 mm  
**minimum measuring range** 50 mm  
**Ultrasound frequency** 300 kHz  
**Repeatability** 0.15 % of full scale  
**Temperature drift** 1.5% of full scale  
**Linearity error** ≤ ± 0.5 %  
**Edge lengths of the nominal actuator** 20 mm  
**Approach speed** ≤ 4 m/s  
**Pass speed** ≤ 1.5 m/s

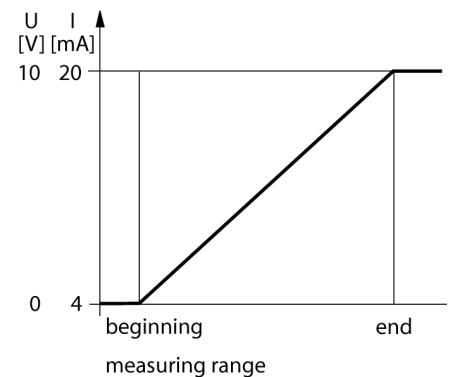
**Wiring diagram**



**Functional principle**

Ultrasonic sensors use ultrasonic waves for non-contact and wear-free detection of many objects. Regardless of whether the object is transparent or opaque, metallic or non-metallic, or of liquid, solid or powdery consistency. Even environmental conditions such as spray, dust or rain hardly affect their function.

**Characteristic**

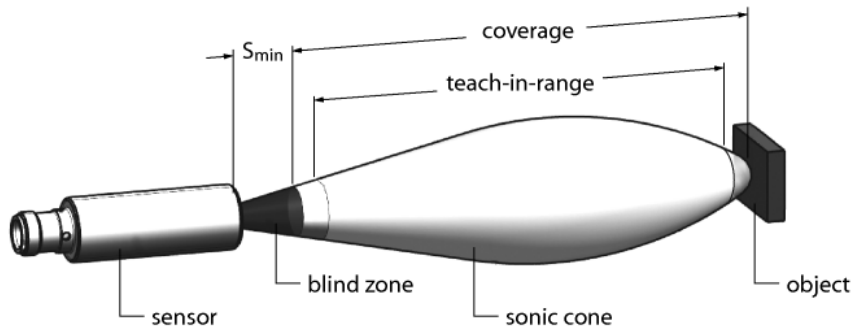


**Ultrasonic sensor  
diffuse mode sensor  
RU40U-M18E-LIU2PN8X2T-H1151**

**TURCK**

Industrial  
Automation

**Mounting instructions / Description**



**Settings**

The ultrasonic sensor can be parametrized in such a way that you can either set a measuring range via an analog and a switching output, or a switching range via two switching outputs. These settings are done with the Easy-Teach adapter or with the buttons at the sensor. Object presence is signalled by the green and yellow LED.

Two limiting values are taught. They mark the end-points of a measuring window and may be selected freely within the overall 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 Ub
- For the second limit value, place object accordingly
- Press and hold button for at least 2 to 7 s against Gnd

**Via buttons**

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

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

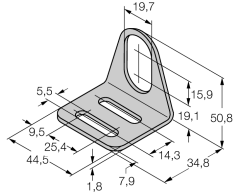
**LED response**

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

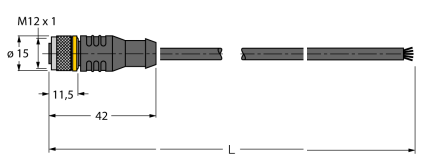
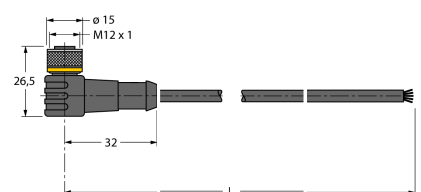
- green: Object is in the detection range but not in the measuring range
- yellow: Object is in the measuring range
- off: Object is outside the detection range

**Ultrasonic sensor  
diffuse mode sensor  
RU40U-M18E-LIU2PN8X2T-H1151**

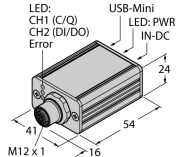
**Accessories**

Type code	Ident no.	Description	Dimension drawing
MW-18	6945004	Mounting bracket for threaded barrel devices; material: Stainless steel A2 1.4301 (AISI 304)	

**Wiring accessories**

Type code	Ident no.	Description	Dimension drawing
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	

**Function accessories**

Type code	Ident no.	Description	Dimension drawing
USB-2-IOL-0002	6825482	IO-Link master with integrated USB port	

**Ultrasonic sensor**  
**diffuse mode sensor**  
**RU40U-M18E-LIU2PN8X2T-H1151**

**Function accessories**

Type code	Ident no.	Description	Dimension drawing
TX1-Q20L60	6967114	Teach adapter for inductive encoders, linear position, angle and ultrasonic sensors	