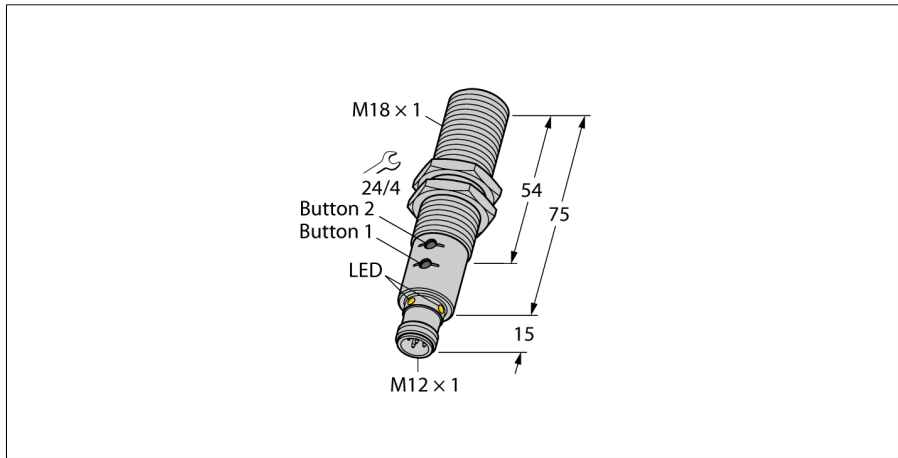


**Ultrasonic sensor  
diffuse mode sensor  
RU40U-M18E-LIU2PN8X2T-H1151**



- Smooth sonic transducer face
- Cylindrical housing M18, potted
- Connection via M12 x 1 male
- Teach range adjustable via pushbutton or adapter
- Temperature compensation
- Blind zone: 2.5 cm
- Range: 40 cm
- Resolution: 0.5 mm
- Sonic cone angle: 9°
- 1 x switching output, PNP/NPN
- 1 x analog output, 4...20 mA / 0...10V / additional switching output, PNP/NPN
- NO/NC programmable
- Transmission of process value and parametrization via IO-link

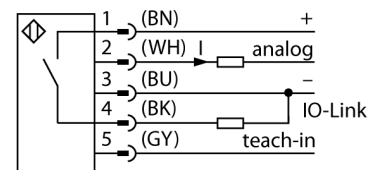
<b>Type designation</b>	RU40U-M18E-LIU2PN8X2T-H1151
Ident no.	1610024

<b>Operating mode</b>	Diffuse mode ultrasonic sensor
Range	2.5...40cm
Resolution	0.5 mm
minimum measuring range	50 mm
minimum switching range	5 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

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

<b>IO-Link</b>	
IO-Link Specification	V 1.1
IO-Link port type	class A
Communication Mode	COM 2 (38.4 kBaud)
Process data width	16 bit
Measured value information	15 bit
Switchpoint information	1 bit
Status bit information	0 bit
Frame type	2.2
Minimum cycle time	2 ms
Function Pin 4	IO-Link
Function Pin 2	DI
Maximum cable length	20 m
Profilunterstützung	Smart Sensor Profil

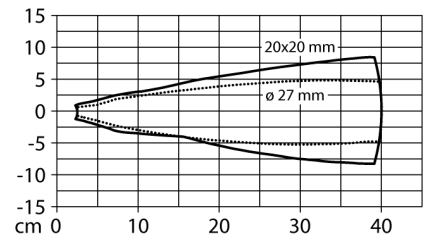
**Wiring Diagram**



**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**



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

---

<b>Construction</b>	Threaded barrel, M18
Radiation direction	straight
Dimensions	90 x Ø18 mm
Housing material	Metal, CuZn, nickel-plated
max. tightening torque right	20 Nm
Transducer material	Plastic, Epoxyd resin and PU foam
Electrical connection	Flange connector, 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
MTTF2	202 years
MTTF note	acc. to SN 29500 (Ed. 99) 40 °C

---

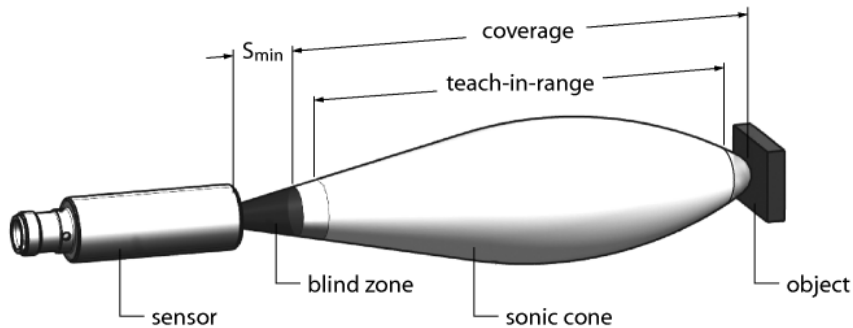
<b>Switching state</b>	LED yellow
Object detected	LED, green

**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**

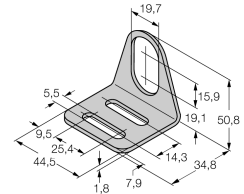
In standard operating mode both LEDs signal the switching states of the sensor.

- 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**

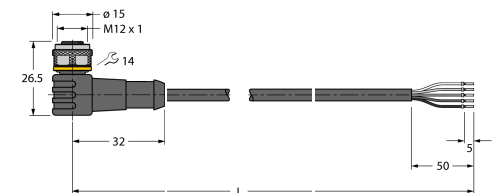
**Accessories**

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



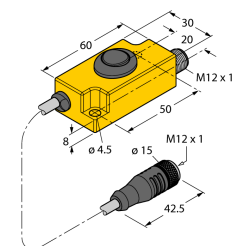
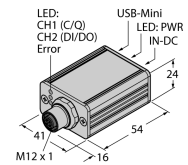
**Wiring accessories**

Type code	Ident no.	Description
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
USB-2-IOL-0002	6825482	IO-Link Master with integrated USB port
TX1-Q20L60	6967114	Teach adapter for inductive encoders, linear position, angle, ultrasonic and capacitive sensors



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

**Function accessories**

Type code	Ident no.	Description	
BL67-4IOL	6827386	4-channel IO-Link Master module for the modular BL67 I/O-system	
BL20-E-4IOL	6827385	IO-Link master module for the modular BL20 I/O system, 4-channel	
TBEN-S2-4IOL	6814024	Compact multiprotocol I/O module, 4 IO-Link Master 1.1 Class A, 4 universal PNP digital channels 0.5 A	