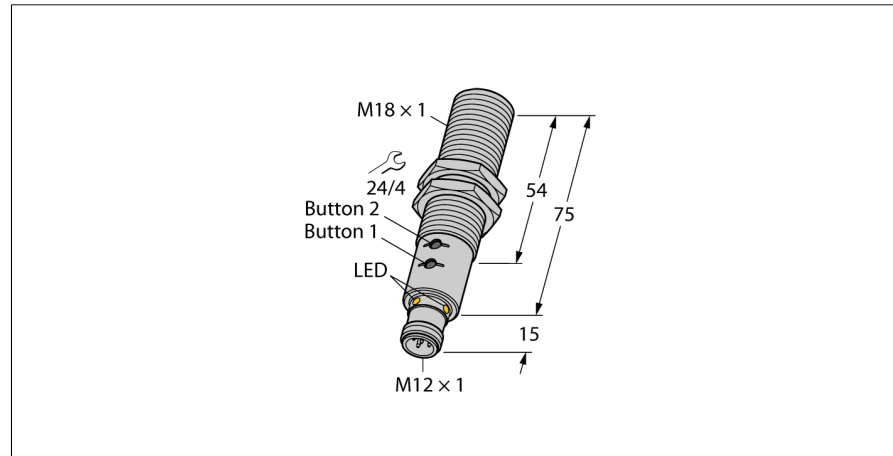


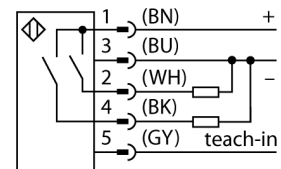
**Ultrasonic sensor
diffuse mode sensor
RU40U-M18E-2UP8X2T-H1151**



- 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 °
- 2 x switching outputs, PNP
- NO/NC programmable

Type code	RU40U-M18E-2UP8X2T-H1151
Ident no.	1610016
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 _s
Operating voltage	15...30VDC
DC rated operational current	≤ 150 mA
No-load current I ₀	≤ 50 mA
Load resistance	≤ 1000 Ω
Response time	75 ms
Readiness delay	300 ms
Output function	NO/NC , PNP
Output 1	switching output
Output 2	switching output
Switching frequency	7 Hz
Hysteresis	≤ 5 % of full scale
Voltage drop at I _l	≤ 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 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

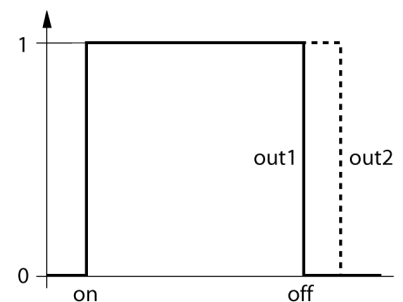
Wiring diagram



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-2UP8X2T-H1151**

TURCK

Industrial
Automation

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.

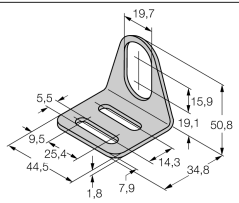
LED response

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

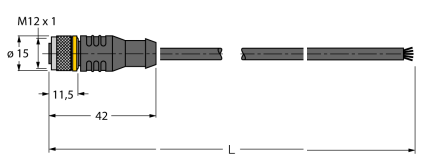
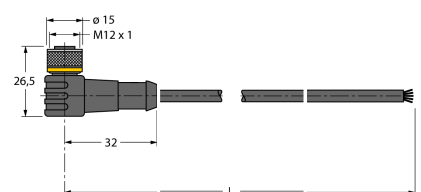
- green: Object is in the detection range but not in the switching range
- yellow: Object is in the switching range
- off: Object is outside the detection range

**Ultrasonic sensor
diffuse mode sensor
RU40U-M18E-2UP8X2T-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
TX1-Q20L60	6967114	Teach adapter for inductive encoders, linear position, angle and ultrasonic sensors	