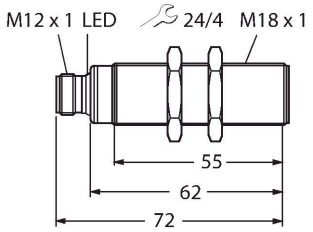
RU50U-S18-LI8X-H1141
Ultrasonic Sensor – Diffuse Mode Sensor



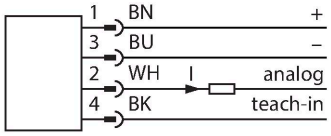
Technical data

Type	RU50U-S18-LI8X-H1141
ID	100000748
Ultrasonic data	
Function	Proximity switch
Range	50…500 mm
Resolution	0.2 mm
Minimum measuring range	50 mm
Ultrasound frequency	300 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	20 mm
Approach speed	≤ 5 m/s
Pass speed	≤ 3 m/s
Electrical data	
Operating voltage U_B	15…30 VDC
No-load current	≤ 50 mA
Response time typical	< 65 ms
Readiness delay	≤ 300 ms
Output function	Analog output
Output 1	Analog output
Current output	4…20 mA
Load resistance current output	≤ 0.5 kΩ
Short-circuit protection	yes
Reverse polarity protection	yes
Wire breakage protection	yes
Setting option	Remote Teach

Features

- Smooth sonic transducer face
- Cylindrical housing S18, potted
- Connection via M12 × 1 male connector
- Temperature compensation
- Blind zone: 5 cm
- Range: 50 cm
- Aperture angle of sonic cone: ±20 °
- Analog output, 4…20 mA
- Adjustable measuring range

Wiring diagram



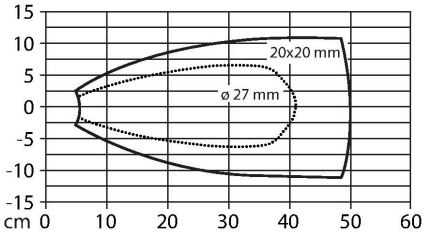
Functional principle

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 60947-5-7, quadratic targets in a range of sizes (20 × 20 mm, 100 × 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.

Technical data

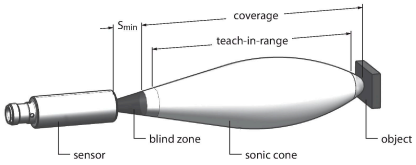
Mechanical data	
Design	Threaded barrel, S18
Radiation direction	straight
Dimensions	Ø 18 x 72 mm
Housing material	Plastic, LCP, Yellow
Transducer material	Plastic, Epoxyd resin and PU foam
Electrical connection	Connector, M12 × 1, 4-wire
Ambient temperature	-20…+50 °C
Storage temperature	-40…+80 °C
Pressure resistance	0.5…5 bar
Protection class	IP67
Tests/approvals	
MTTF	253 years acc. to SN 29500 (Ed. 99) 40 °C
Declaration of conformity EN ISO/IEC	EN 60947-5-7
Vibration resistance	20 g, 10…55 Hz, sine, 3 axes, 30 min/axis according to IEC 60068-2-6
Shock test	30 g, 11 ms, half sine, 3 axes according to IEC 60068-2-27
Approvals	CE cULus

Sonic Cone



Mounting instructions

Mounting instructions/Description

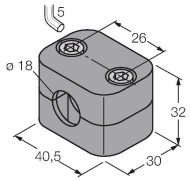


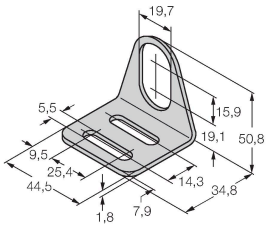
Setting the limit values
The ultrasonic sensor has an analog output with a teachable measuring range. Teaching is implemented via the teach input. The yellow LED indicates whether the object is within the measuring range of the sensor.

Simple Teach-In
•Place object at the end of the measuring range
• Pin 4/seal the black core against Ub for 2… 7 s
• Return to normal operating mode after 17 s or more.

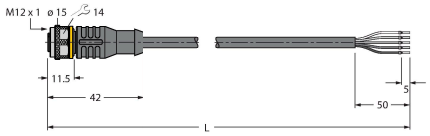
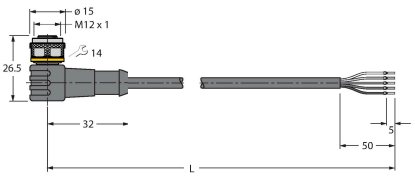
LED response
Successful teach-in is indicated via 3 flashes of the LED. The sensor then automatically runs in normal operating mode.
In normal operating mode, the LED indicates the status of the sensor.
• Yellow: Object is within the measuring range
• Off: Object is outside the detection range or signal loss

Accessories

BSS-18	6901320
	Mounting clamp for smooth and threaded barrel sensors; material: Polypropylene

MW18	6945004
	Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)

Accessories

Dimension drawing	Type	ID	
	RKC4.5T-2/TEL	6625016	Connection cable, M12 female connector, straight, 5-pin, cable length: 2 m, jacket material: PVC, black; cULus approval
	WKC4.5T-2/TEL	6625028	Connection cable, M12 female connector, angled, 5-pin, cable length: 2 m, jacket material: PVC, black; cULus approval