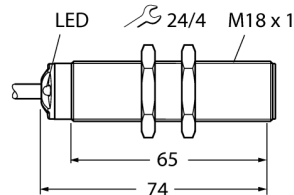


Ultrasonic Sensor

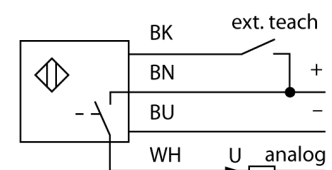
Diffuse Mode Sensor

RU50U-S18-LU8X



- Smooth sonic transducer face
- Cylindrical housing S18, potted
- Connection via cable, 2 m
- Temperature compensation
- Blind zone: 5 cm
- Range: 50 cm
- Aperture angle of sonic cone: 20°
- 1x analog outputs 0...10 V
- Adjustable measuring range

Wiring Diagram



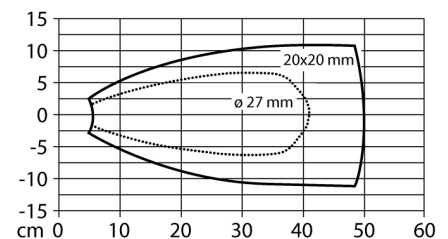
Functional principle

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 x 20 mm, 100 x 100 mm) and a round rod with a diameter of 27 mm are used.

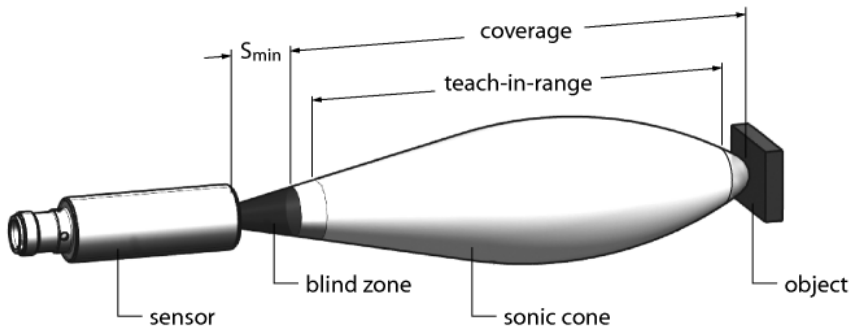
Important: The detection ranges for other targets may differ from those for standard targets due to the different reflection properties and geometries.

Sonic Cone



Type designation	RU50U-S18-LU8X
Ident-No.	100000749
Function	Ultrasonic diffuse mode sensor
Range	50...500 mm
Resolution	0.2 mm
minimum measuring range	50 mm
minimum switching range	5 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
Operating voltage	15...30 VDC
No-load current I ₀	≤ 50 mA
Response time typical	65 ms
Readiness delay	300 ms
Output 1	Analog output
Voltage output	0...10V
Load resistance voltage output	≥ 1 kΩ
Short-circuit protection	yes
Reverse polarity protection	yes
Wire breakage protection	yes
End cap	Plastic, EPTR, black
Design	Threaded barrel, S18
Radiation direction	straight
Dimensions	74 x Ø 18 mm
Housing material	Plastic, LCP, Yellow
Transducer material	Plastic, Epoxyd resin and PU foam
Electrical connection	Cable, 2 m, 4-wire
Protection class	IP67
Ambient temperature	-20...+50 °C
Storage temperature	-40...+80 °C
Declaration of conformity EN ISO/IEC	EN 60947-5-7
Vibration resistance	IEC 60068-2-6
MTTF	253 years
MTTF note	acc. to SN 29500 (Ed. 99) 40 °C

Ultrasonic Sensor Diffuse Mode Sensor RU50U-S18-LU8X



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

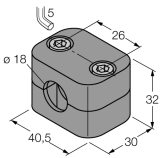
Successful teach-in is indicated via 3 flashes of the LED. The sensor then automatically runs in normal operating mode.

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

Ultrasonic Sensor
Diffuse Mode Sensor
RU50U-S18-LU8X

Accessories

Type code	Ident-No.	Description	Dimension drawing
BSS-18	6901320	Mounting clamp for smooth and threaded barrel sensors; material: Polypropylene	
MW-18	6945004	Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)	