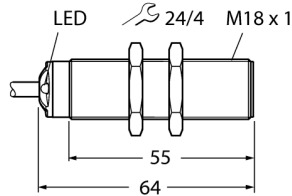


# Ultrasonic Sensor

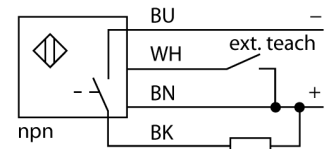
## Diffuse Mode Sensor

### RU50U-S18-AN8X



- Smooth sonic transducer face
- Cylindrical housing S18, potted
- Connection via cable, 2 m
- Teach range adjustable via adapter
- Temperature compensation
- Blind zone: 5 cm
- Range: 50 cm
- Aperture angle of sonic cone: 20°
- NPN switching output, NO contact
- Switching range adjustable

#### Wiring Diagram



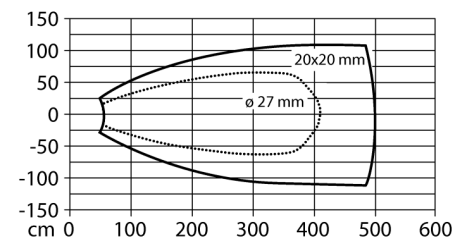
#### Functional principle

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 60947-5-2, 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.

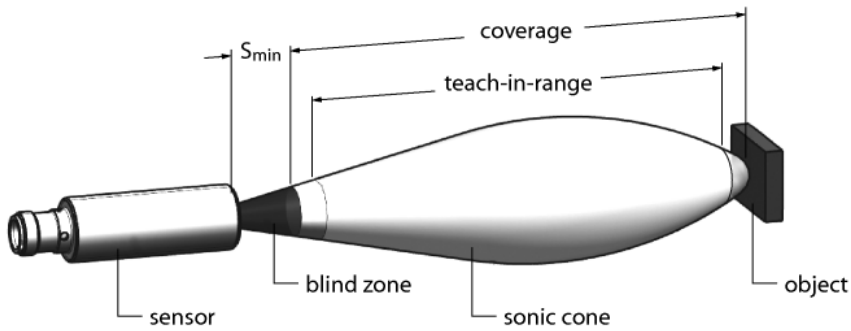
Important: The detection ranges for other targets may differ from those for standard targets due to the different reflection properties and geometries.

#### Sonic Cone



<b>Type designation</b>	RU50U-S18-AN8X
Ident-No.	100000984
<b>Repeat accuracy</b>	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	20 mm
Hysteresis	≤ 5 mm
Ambient temperature	-20...+50 °C
Storage temperature	-40...+80 °C
<b>Operating voltage</b>	15...30 VDC
Residual ripple	≤ 10 % U <sub>s</sub>
DC rated operational current	≤ 150 mA
No-load current I <sub>0</sub>	≤ 50 mA
Residual current	≤ 0.1 mA
Short-circuit protection	yes/ Cyclic
Voltage drop at I <sub>e</sub>	≤ 2.5 V
Wire breakage/Reverse polarity protection	yes/ yes
Output function	4-wire, NO contact, NPN
Output 1	Switching output
Readiness delay	≤ 300 ms
<b>Design</b>	Threaded barrel, M18
Dimensions	64 mm
Housing material	Plastic, LCP, Yellow
End cap	Plastic, EPTR, black
Electrical connection	Cables
Protection class	IP67
MTTF	293 years acc. to SN 29500 (Ed. 99) 40 °C
Packaging unit	1
<b>Switching state</b>	LED, Yellow

# Ultrasonic Sensor Diffuse Mode Sensor RU50U-S18-AN8X



## Setting the switching point

The ultrasonic sensor features a switching output with a teachable switching point. The yellow LED indicates whether the object is within the switching range of the sensor.

One switching point is taught. This must be within the detection range. In this operating mode the background is suppressed.

## Simple Teach-In

Place object at the end of the switching range

Pin 2/seal the white core against  $U_b$  for 2...7 s

- Return to normal operating mode after 17 s or more.

After a successful teach-in, the yellow LED flashes 3 times and the sensor runs automatically in normal operating mode.

## LED response

In normal operating mode, the LED signals the switching state of the sensor.

**Ultrasonic Sensor  
Diffuse Mode Sensor  
RU50U-S18-AN8X**

**Accessories**

Type code	Ident-No.	Description	
VB2-SP1	A3501-29	Teach adapter	 <p>The technical drawing shows a teach adapter with the following dimensions and features:</p> <ul style="list-style-type: none"> <li>Overall length: 0.2 m</li> <li>Top diameter: <math>\phi 4.5</math> [0.18]</li> <li>Top hole diameter: <math>\phi 8</math> [0.31]</li> <li>Top hole offset: 23 [0.91]</li> <li>Top hole diameter: 38 [1.50]</li> <li>Top hole offset: 39.3 [1.55]</li> <li>Top hole thread: M12 x 1</li> <li>Top hole label: P1</li> <li>Bottom diameter: <math>\phi 14.5</math> [0.57]</li> <li>Bottom hole diameter: <math>\phi 5.1</math> [0.20]</li> <li>Bottom hole offset: 18 [0.71]</li> <li>Bottom hole offset: 42.5 [1.67]</li> <li>Bottom hole thread: M12 x 1</li> <li>Bottom hole label: J1</li> <li>Bottom hole offset: 25 [0.98]</li> <li>Bottom hole offset: 12.7 [0.50]</li> <li>Bottom hole offset: 13 [0.51]</li> <li>Bottom hole offset: 20 [0.79]</li> </ul>