FEATURES

- Ultrasonic sensors

- insensitivity to countless materials, surface types, and colors

- Wood, metal, orplastic; colored, reflective or transparent

- Narrow Beam and Short Dead Band

- Temperature Compensated

- Intrinsically Safe CE & IP67 compliant in properly designed integrated system

- Tamperproof & Rugged

- IP67 Enclosure Rating

- Accurate under demanding environmental conditions

RS PRO Ultrasonic Proximity Sensor

RS Stock No.: 2181168

RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price.

Ultrasonic Proximity Sensors

Ultrasonic sensors precisely detect objects made from various materials regardless of their shape, colour, or surface contour. The operate using high-frequency sound waves that are inaudible to the human ear.

- Liquid and Solid Level Measurement
- Position Detection
- Factory automation
- Tanks, Totes, Processing

Series	M30
Detection Range	100mm – 2000mm
Transducer Frequency	180KHz
Sensor Configuration	Diffuse Reflection
Output Type	4 → 20 mA
Response Time	85ms
Beam Angle	8°
Directivity (Deg)	
Sensitivity (mVp-p)	
Terminal Type	M12 - 4 Pin
Communication Interface	
Indicator	LED
Wire Technique	4-wire
Electrical Connection	Male connector M12 4 pins
Cable Length	2m
Minimum Operating Temperature	-25℃
Maximum Operating Temperature	75℃
Shock Resistance	
Vibration Resistance	

Operating Voltage Range	10V dc to 30V dc
Current Consumption	≤15mA（No-load）
Voltage Drop	2V
Maximum Load	500 Ohm
Switching Frequency	
Switching Current	
Reverse Polarity Protection	Yes
Short Circuit Protection	Yes
Overload Protection	Yes

Ultrasonic Proximity Sensors

Body Style	Cylindrical
Thread Size	M30
Housing Material	Brass, nickel-plated
Front Material	Epoxy
Dimensions	¢30mm x 110mm
Width / Diameter	¢30mm
Length	110mm
Depth	
Weight	160g

IP Rating	IP67

EAN	
Custom Tariff Number	

eCl@ss	
UNSPSC	

Compliance/Certifications	CE / RoHS EN 60947-5-2:2020
Declarations	MFR Declaration of Conformity

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
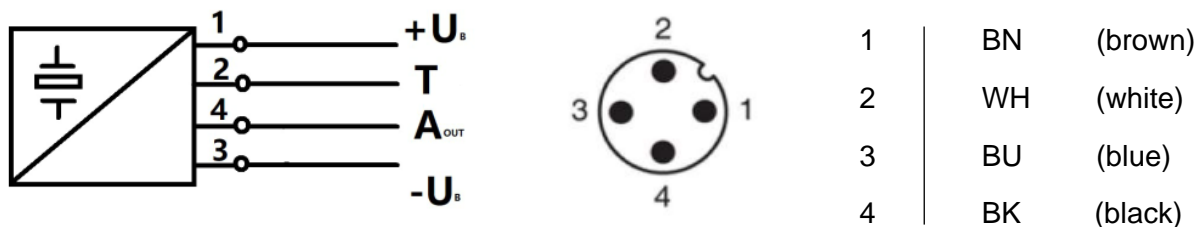
Wire Colors in accordance with EN 60947-5-2

Adjusting the evaluation limits

The ultrasonic sensor features an analogue output with two teachable evaluation limits. These are set by applying the supply voltage $-U_B$ or $+U_B$ to the TEACH-IN input. The supply voltage must be applied to the TEACH-IN input for at least 1 s. LEDs indicate whether the sensor has recognised the target during the TEACH-IN procedure. The lower evaluation limit A1 is taught with $-U_B$, A2 with $+U_B$.

Two different output functions can be set:

1. Analogue value increases with rising distance to object (rising ramp)

2. Analogue value falls with rising distance to object (falling ramp)

Evaluation limits may only be specified within the first 5 minutes after

Power on. To modify the evaluation limits later,the user may specify the desired values only after a new Power On.

TEACH-IN rising ramp (A2 > A1)

- Position object at lower evaluation limit

- TEACH-IN lower limit A1 with - U_B

- Position object at upper evaluation limit

- TEACH-IN upper limit A2 with + U_B

TEACH-IN falling ramp (A1 > A2):

- Position object at lower evaluation limit

- TEACH-IN lower limit A2 with + U_B

- Position object at upper evaluation limit
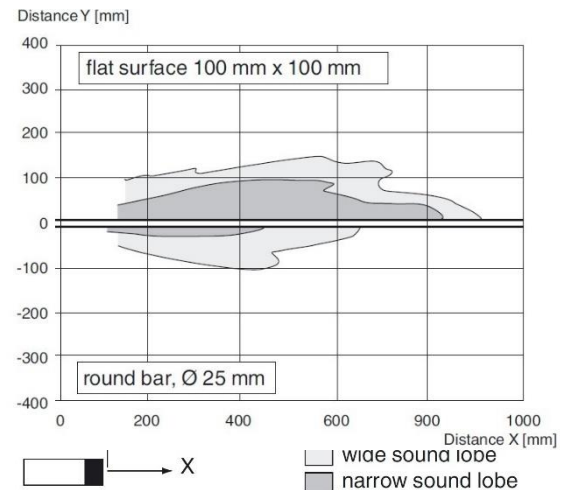
- TEACH-IN upper limit A1 with - U_B

Default setting

A1: unusable area

A2: nominal sensing range

Mode of operation: rising ramp

Characteristic response curve

Distance Y [mm]

flat surface 100 mm x 100 mm

round bar, Ø 25 mm

Distance X [mm]

wide sound lobe

narrow sound lobe

DIMENSIONAL DRAWING / CONNECTION DIAGRAM / DETECTION AREA

Analog output operating modes

Rising ramp

20mA/10V A2

4mA/0V A1

A2 20mA/10V

Falling ramp

4mA/0V A1

20mA/10V

Zero mode

4mA/0V
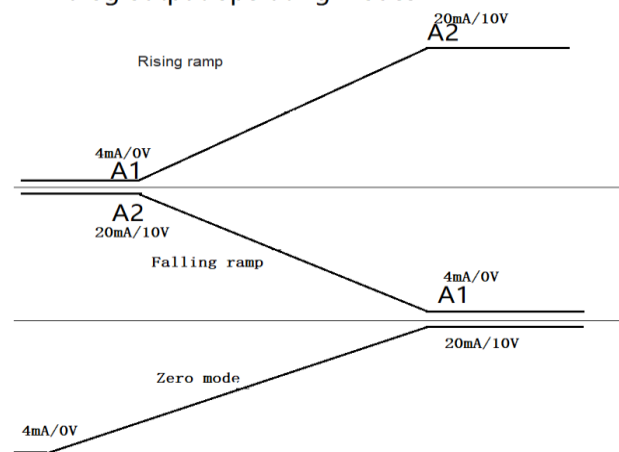
LED display

Displays in dependence on operating mode	Red LED	Blue LED
TEACH-IN evaluation limit		
Object detected	off	flashes
No object detected	flashes	off
Object uncertain (TEACH-IN invalid)	on	off
Normal mode (evaluation range)	off	on
Fault	on	previous state