

microsonic wms-600-RT Ultrasonic Sensor Partners Instruction Manual



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microsonic wms-600-RT Ultrasonic Sensor Partners Instruction Manual



- **Model:** WMS ultrasonic sensor
- **Available Models:** wms-25/RT/HV/M18, wms-35/RT, wms-130/RT, wms-340/RT, wms-600/RT
- **Blind Zone:** 30 mm
- **Operating Range:** Varies by model (refer to technical data)
- **Maximum Range:** Varies by model (refer to technical data)
- **Transducer Frequency:** 320 kHz
- **Resolution, Sampling Range:** 0.35 mm
- **Class of Protection:** IP67
- **Type of Connection:** 4-pin initiator plug, brass, nickel-plated
- **Weight:** Varies by model (refer to technical data)
- **Signal Input:** Controlled by an open collector (NPN); IC 3 mA, UCE 30 V
- **Signal Output:** Positive-switched (pnp), I_{max} = 10 mA, short-circuit-proof, and reverse polarity protection
- **Recommended Measuring Cycle Time:** Varies by model (refer to technical data)

Product Usage Instructions

Safety Notes Before using the WMS ultrasonic sensor, please read the operating manual thoroughly. Only qualified personnel should handle connection, installation, and adjustments. The sensor is not a safety component as per the EU Machine Directive and should not be used for personal or machine protection.

Proper Use The WMS ultrasonic sensors are designed for non-contact detection of objects. Follow the control and signal evaluation equipment setup as shown in Fig. 1 below.

Connection and Installation Connect the sensor plug according to the pin assignment and color code provided in Fig. 1. Ensure proper alignment and secure connections.

Operating Range Adjustment The operating range varies based on the model. Consider factors like reflectors and object material that may affect the sensor's performance. Refer to the technical data for specific operating ranges.

Maintenance Regularly inspect the sensor for any damages or dirt that may affect its performance. Clean the sensor gently with a soft cloth if needed.

Product Description

The WMS sensors require a connection to the customer's control and signal evaluation equipment.

Safety Notes

- Read the operating manual before starting.
- Connection, installation, and adjustments may only be carried out by qualified staff.
- No safety component per the EU Machine Directive, use in the area of personal and machine protection is not permitted.

The wms sensors indicate a blind zone, in which the distance cannot be measured. The operating range indicates the distance of the sensor that can be applied with normal reflectors with sufficient function reserve. When using good reflectors, such as a calm water surface, the sensor can also be used up to its maximum range. Objects that strongly absorb (e.g. plastic foam) or diffusely reflect sound (e.g. pebble stones) can also reduce the defined operating range.

Proper Use

wms ultrasonic sensors are used for non-contact detection of objects.

Installation

- Mount the sensor at the place of fitting.
- Connect a connection cable to the M12 device plug.
- Connect the sensor to your own control and signal evaluation equipment according to Fig. 1.

Signal input »Transmitter«

A signal on the input makes the WMS sensor emit a sound pulse. For this, an open collector output has to earth the »transmitter« signal input for the time given in the technical data table below.

Signal output »Echo«

The signal output »Echo« subsequently transmits all echo signals received depending on the duration as 1-bit values (echo yes/no).

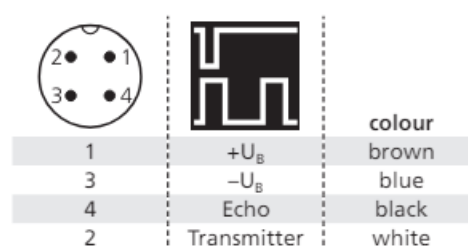


Fig. 1: Pin assignment with view onto the sensor plug and colour code of the connection cable

Technical Data

Technical Data					
	wms-25...	wms-35...	wms-130...	wms-340...	wms-600...
	Blind zone: 30 mm	65 mm	200 mm	350 mm	800 mm
	Operating range: 250 mm	350 mm	1,300 mm	3,400 mm	6,000 mm
	Maximum range: 350 mm	600 mm	2,000 mm	5,000 mm	8,000 mm
<p>for different objects: The dark grey areas represent the zone where it is easy to recognise the normal reflector (round bar). This indicates the typical operating range of the sensors. The light grey areas represent the zone where a very large reflector – for instance a plate – can still be recognized. The requirement is an optimal alignment of the sensor and reflector. It is not possible to evaluate ultrasonic reflections outside this area.</p>					
	Resolution, sampling range: 0.35 mm	0.18 mm	0.18 mm	0.18 mm	0.18 mm
	Angle of beam spread: see detection zone	see detection zone	see detection zone	see detection zone	see detection zone
	Reproducibility: ±0.15 %	±0.15 %	±0.15 %	±0.15 %	±0.15 %
	Accuracy: Temperature drift 0.17%/K	Temperature drift 0.17%/K	Temperature drift 0.17%/K	Temperature drift 0.17%/K	Temperature drift 0.17%/K
Operating voltage U _S /Voltage ripple: 10 to 30 V DC, reverse polarity protection/±10 %					
No-load current: 30 mA					
Housing: Brass sleeve, nickel-plated, plastic parts: PBT; Ultrasonic transducer: polyurethane foam, epoxy resin with glass content					
Class of protection to EN 60529: IP67					
Type of connection: 4-pin initiator plug, brass, nickel-plated					
Operating temperature: -20 to +70 °C					
Storage temperature: -40 to +85 °C					
Weight: 30 g					
Signal input (Transmitter): Controlled by open collector (npn), I _C ≥ 3 mA, U _{CE} ≥ 30 V					
Recommended transmitted pulse length: 25 µs					
Recommended measuring cycle time: 15 ms					
Signal output (Echo): Positive-switched (pnp), I _{max} = 10 mA, short-circuit-proof and reverse polarity protection					
Order No.: wms-25/RT/HV/M18					
wms-35/RT					
wms-130/RT					
wms-340/RT					
wms-600/RT					

Frequently Asked Questions (FAQ)

Q: Can the WMS ultrasonic sensor be used for personal safety? A: No, the sensor is not designed for personal or machine protection according to the EU Machine Directive.

Q: What should I do if the sensor indicates a blind zone? A: If a blind zone is indicated, consider adjusting the position or angle of the sensor for better detection.

Q: How often should I calibrate the sensor? A: Calibration frequency may vary based on usage and environmental conditions. It is recommended to calibrate the sensor periodically to ensure accurate readings.

Documents / Resources

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wms-600-RT Ultrasonic Sensor Partners, wms-600-RT, Ultrasonic Sensor Partners, Sensor Part
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References

- [microsonic | ultrasonic sensors | Made in Germany](#)
- [User Manual](#)

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