

USP 4.0 250

Measuring range 25 - 250 mm

Ultrasonic Positioning Sensor



Application/customer benefits

- Non-contact distance measurement using ultrasonic technology
- Ready for Industry 4.0
- Selectable sound lobe width
- Analog output signal and adjustable switching signals
- Very large measuring range

Technical features

- Ultrasonic measuring system
- No interference from magnetic fields
- Measuring range = 25 - 250 mm
- Compact design / simple installation
- Analog output 0 - 10 V (Id.-Nr. 211501) / 4 - 20 mA (Id.-Nr. 211500)
- Protection class IP 67
- Reverse polarity protection

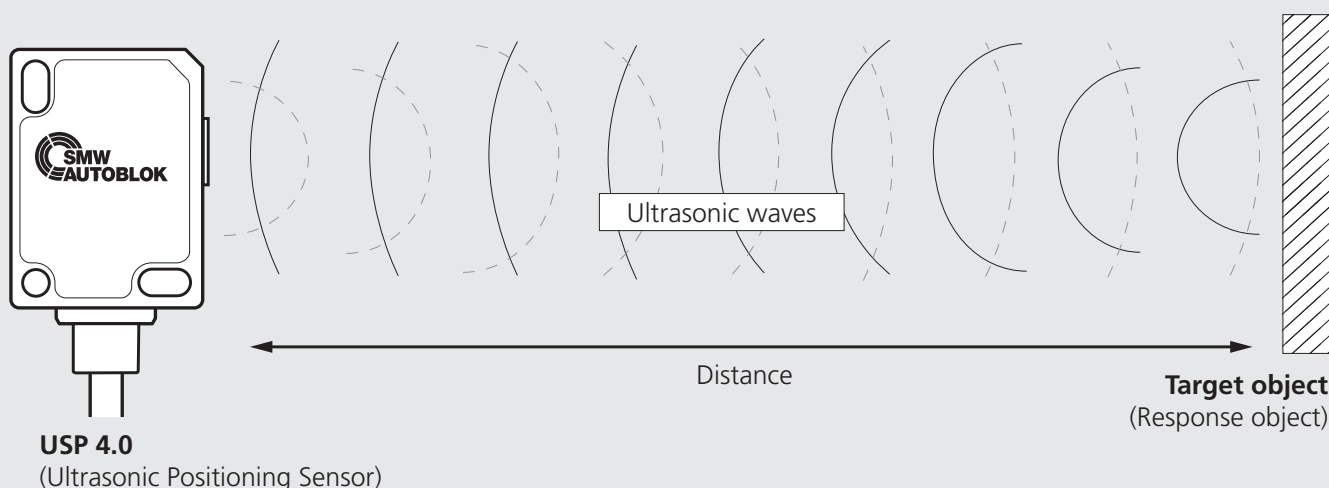
Standard equipment

USP 4.0

Ordering example

USP 4.0 20 - 250 mm
ID.-Nr. 211500

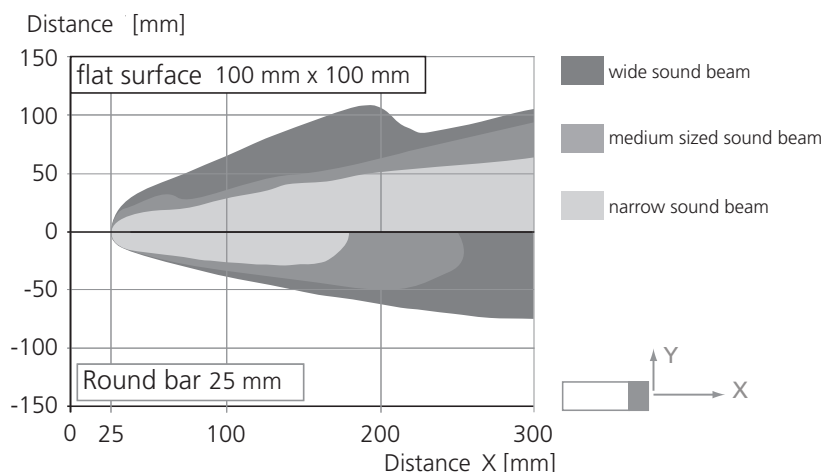
Function



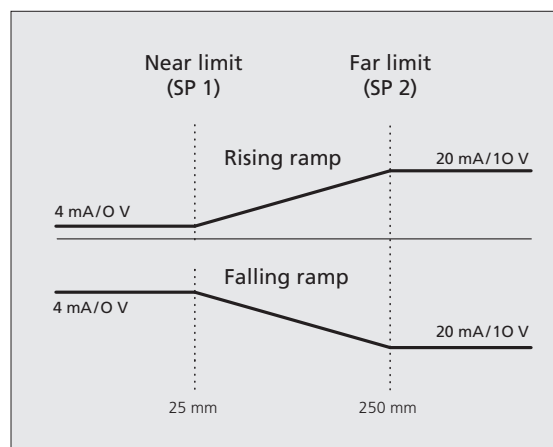
The **USP 4.0 Ultrasonic Positioning Sensor** measures the distance to objects without contact. The sensor emits ultrasonic waves. If these hit an object, they are reflected. The resulting echo is picked up by the sensor and the distance to the object is calculated from the time between the transmission and reception of the sound pulse.

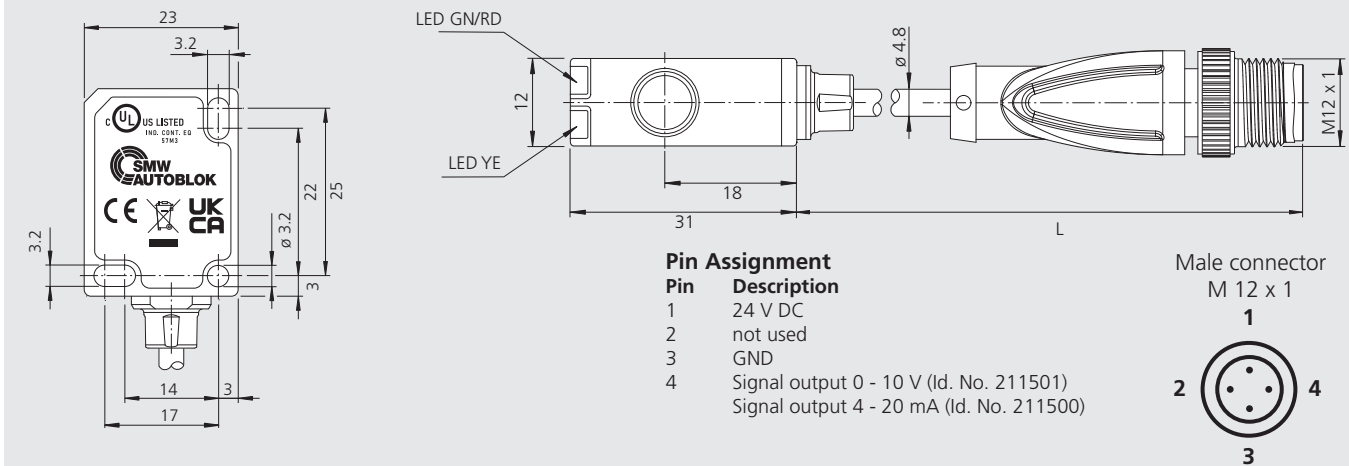
The **USP 4.0 Ultrasonic Positioning Sensor** for distance measurement makes it possible to detect objects made of different materials such as metal, wood or plastic. Only sound-absorbing materials, such as absorbent cotton or smooth sloping surfaces, can be poorly detected by the ultrasonic sensor.

Characteristic response curve



Analog output / switching signal





SMW-AUTOBLOK Type		USP 4.0 25 - 250 0 - 10 V	USP 4.0 25 - 250 4 - 20 mA
Id. No.		211501	211500
Sensing range		25 - 250 mm	
Adjustment range		25 - 250 mm	
Output signal		0 - 10 V	4 - 20 mA
Power supply		18 ... 30 V DC	
Repeat accuracy		< ± 0.1 %	
Linearity		< ± 1.0 %	
Operating range		-25 - 60°	
Protection class		IP 67	
Material		PC	
Weight		21 g	
Blind zone		0 ... 20 mm	
Standard target plate		10 mm x 10 mm	
Response delay		min. 8 ms (Factory setting: 29ms)	
Sensor cycle time		≥ 8 ms (Factory setting), parameterizable to 60 s	
Memory			
Non-volatile memory		EEPROM	
Write cycles		300000	
Displays/controls			
LED green	permanently on flashing	Power on Standby-Operation / IO-Link Kommunikation	
LED yellow	permanently on flashing	Object in the evaluation area Programming the limits, object detected	
LED red	permanently on flashing	Malfunction Programming the limits, object not recognized	
Electrical data			
No-load current	I_0	≤ 50 mA	
Power input	P_0	≤ 500 mW	
Standby delay	t_v	≤ 300 ms	
Cable			
length	L	200 mm	
Mounting position		any	
Tightening torque	mounting screws	max. 0.2 Nm	
Factory setting			
Output	close border distant border output mode	25 mm 250 mm rising ramp	
Beam width		wide	
Pin assignment			
Pin 1	brown BN	24 V DC	
Pin 2	white WH	-	
Pin 3	blue BU	GND	
Pin 4	black BK	0 - 10 V	4 - 20 mA