



Wireless ultrasonic sensor

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WS-UCC2500-F406-B41-01-02

- Battery operated
- Data transfer via LoRaWAN
- LoRaWAN downlink channel for querying and adjusting parameter values
- Bluetooth interface for commissioning, parameterization and diagnostics

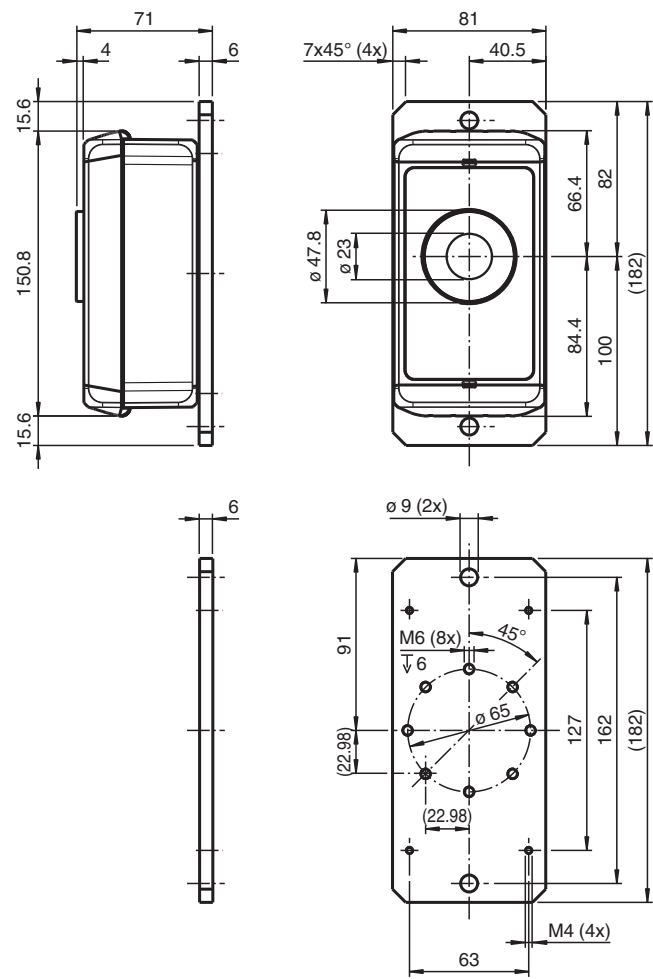
Wireless ultrasonic sensor with LoRaWAN interface, especially for fill level measurement in tanks and silos, sensing range 150 ... 2500 mm, resolution 1 mm



Function

The wireless ultrasonic sensor can be remotely used for fill level measurement, level monitoring and distance measurement. The measured variables and other measurement and status data of the sensor are recorded in configurable time intervals and transmitted to a counterpart in the LoRa network. There, the data is available for pure display or further processing. The sensor's downlink channel can be used to remotely access the sensor from the LoRa network to query or adjust sensor parameter values. Sensor parameterization is additionally also possible via the integrated Bluetooth interface using a mobile device (smartphone or tablet) and the WILSEN app associated with the sensor.

Dimensions



Technical Data

Main sensor		
Detection type		ultrasonic
Sensing range		150 ... 2500 mm
Dead band		0 ... 150 mm
Resolution		1 mm
Measurement interval		10 min ... 24 h
Integrated sensor technology		
GPS sensor		for geo-positioning
Acquisition interval		30 min ... 24 h
Temperature sensor		
Resolution		0.5 °C
Accuracy		± 2 °C
Electrical specifications		
Battery type		high capacity lithium battery 3.6 V , 13000 mAh
Operating duration		battery lifetime approx. 10 years under Central European environmental conditions, 3 measurements and 3 wireless transmission per day with sufficient network coverage.
Interface 1		
Interface type		Bluetooth 5.0 LE
Transmitter radiated power		+ 8 dBm
Frequency range		2402 ... 2480 MHz
Interface 2		
Interface type		LoRaWAN

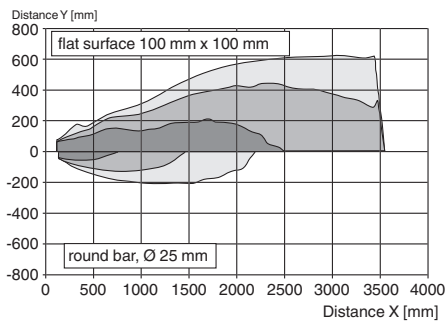
Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Technical Data

Specification	LoRaWAN interface specification V1.0.3	
Device type		LoRaWAN class A device
Downlink channel		yes
Transmitter frequency		868 MHz
Transmitter radiated power		+ 14 dBm
Frequency range		863 ... 870 MHz (Europe)
Transmission interval		10 min ... 24 h
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 301 489-1 V2.2.3:2019 EN 301 489-3 V2.3.2:2023 EN 301 489-17 V3.3.1:2024 EN 301 489-19 V2.2.1:2022
Radio and telecommunication terminal equipment		
Directive 2014/53/EU		EN 300 220-2 V3.1.1:2017 EN 300 328 V2.2.2:2019 EN 303 413 V1.2.1:2021
RoHS		
Directive 2011/65/EU (RoHS)		EN 63000:2018
Conformity		
Mech. capacity		EN 60947-5-2:2020 IEC 60947-5-2:2019
Shock resistance		EN 60947-5-2:2020 IEC 60947-5-2:2019
Vibration resistance		EN 60947-5-2:2020 IEC 60947-5-2:2019
Climatic conditions		EN 60947-5-2:2020 IEC 60947-5-2:2019
Ambient conditions		
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications		
Degree of protection		IP66 / IP67
Material		
Housing		PC (UL94-V0)
Transducer		PTFE coated housing: PBT
Mass		620 g
Dimensions		
Height		70 mm
Width		81 mm
Length		182 mm
Factory settings		
Beam width		wide
Transmission interval		24 h
Measurement interval		24 h

Characteristic Curve

Characteristic response curve



wide sound beam
 medium-sized sound beam
 narrow sound beam

Additional Information

Further Documentation

For commissioning, parameterization and usage of the sensor, there are also a brief commissioning instructions, a manual and further technical information for download from the product page at www.pepperl-fuchs.com.