



Wireless ultrasonic sensor

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WS-UCC4000-F406-B41-01-02-Y

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

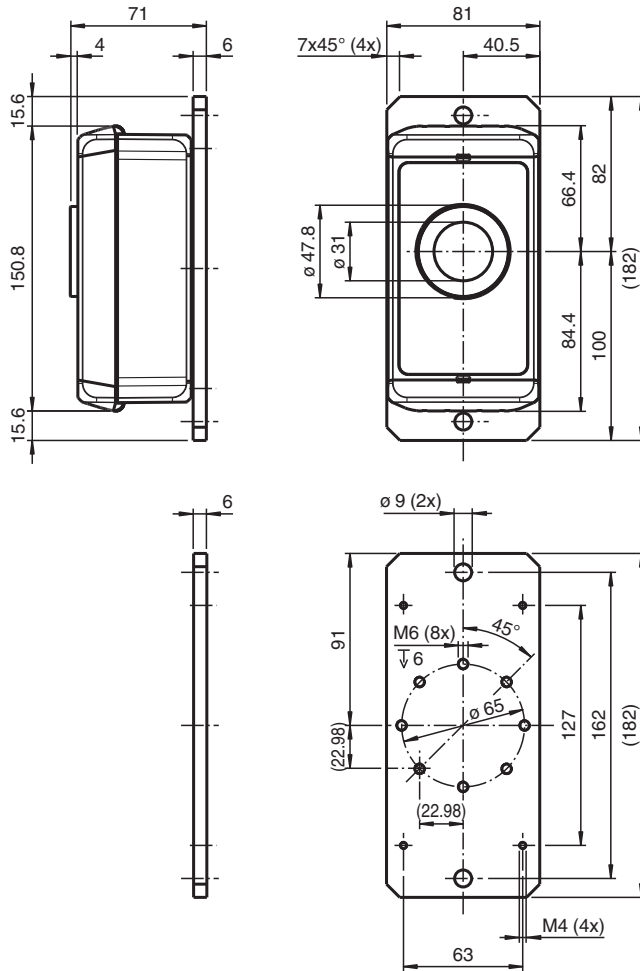
Wireless ultrasonic sensor with LoRaWAN interface, especially for level monitoring in rivers and distance measurement , sensing range 250 ... 4000 mm, resolution 1 mm



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	250 ... 4000 mm
Dead band	0 ... 250 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

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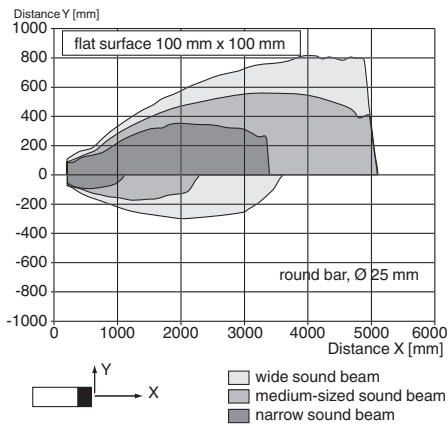
Technical Data

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	

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Characteristic Curve

Characteristic response curve



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.

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