



Wireless ultrasonic sensor

WS-UCC4000-F406-B15-B41-01-02

- Battery operated
- Data transfer via LoRaWAN
- Bluetooth interface for commissioning, parameterization and diagnostics

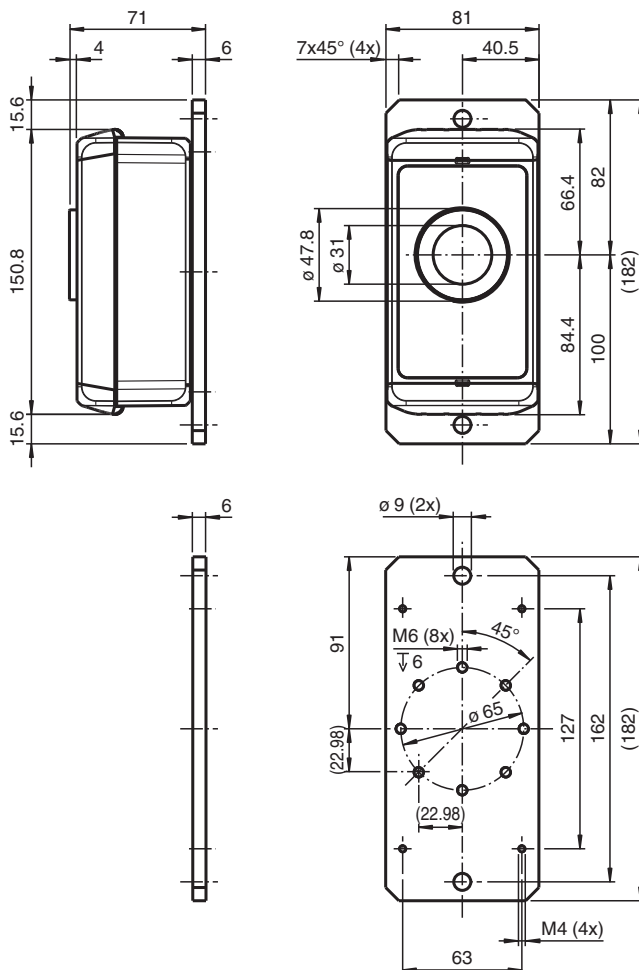
Wireless ultrasonic sensor with LoRaWAN interface, especially for fill level measurement in tanks and silos, sensing range 250 ... 4000 mm, resolution 1 mm



Function

The wireless ultrasonic sensor can be used for remote monitoring of fill level. The fill level, but also other parameters such as geo data and sensor status data, are measured or recorded in configurable time intervals and transmitted to a counterpart in the LoRa network from where they are available for pure display or further processing. The sensor is parameterised via a Bluetooth interface using a mobile device (smartphone or tablet) and the WILSEN app belonging to the sensor.

Dimensions



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

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Technical Data

Main sensor	
Detection type	ultrasonic
Sensing range	250 ... 4000 mm
Dead band	0 ... 250 mm
Resolution	16 mm
Accuracy	± 3 % of full-scale value over the entire temperature range
Measurement frequency	5 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	
Power supply	high capacity lithium battery 3.6 V , 13000 mAh battery lifetime approx. 5 years under Central European environmental conditions (- 25 °C + 70 °C) 3 measurements/day, 1 geolocation/day with 1 wireless transmission/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
Specification	LoRaWAN interface specification V1.0.3
Device type	LoRaWAN class A device
Transmitter frequency	868 MHz
Transmitter radiated power	+ 8 dBm
Frequency range	863 ... 870 MHz (Europe)
Transfer frequency	5 min ... 24 h
Directive conformity	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 301 489-1 V2.2.0:2017 EN 301 489-3 V2.1.1:2019 EN 301 489-17 V3.2.0:2017 EN 301 489-19 V2.1.0:2017
Radio and telecommunication terminal equipment	
Directive 2014/53/EU	EN 300 220-2 V3.1.1:2017 EN 300 328 V2.1.1:2016 EN 303 413 V1.1.1:2017
RoHS	
Directive 2011/65/EU (RoHS)	EN 50581:2012-09
Conformity	
Mech. capacity	EN IEC 60947-5-2:2020 IEC 60947-5-2:2019
Shock resistance	EN IEC 60947-5-2:2020 IEC 60947-5-2:2019
Vibration resistance	EN IEC 60947-5-2:2020 IEC 60947-5-2:2019
Climatic conditions	EN IEC 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

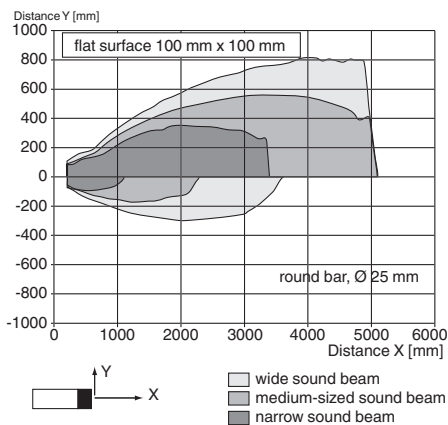
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Technical Data

Material	
Housing	PC (UL94-V0)
Transducer	PTFE coated housing: PBT
Mass	600 g
Factory settings	
Beam width	wide
Transfer frequency	24 h
Measurement frequency	24 h

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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