


# Wireless sensor node

# WILSEN.node

## WSN-2ZL-F406-B41-01-02

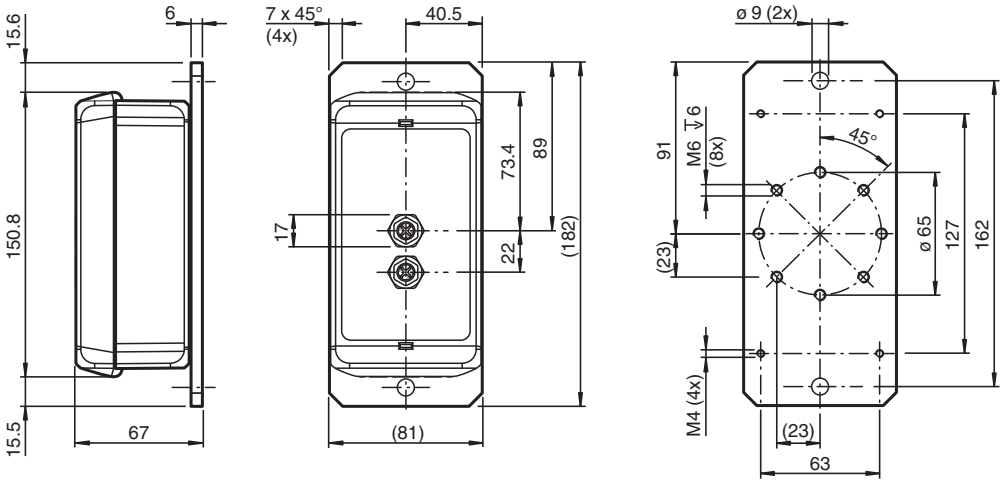
- LoRaWAN EU868 frequency plan
- Battery operated
- Data transfer via LoRaWAN
- LoRaWAN downlink channel for querying and adjusting parameter values
- Bluetooth interface for commissioning, parameterization and diagnostics

Wireless sensor node with LoRaWAN interface, 2 independent channnels for connecting up to 2 low-power two-wire single sensors

## Function

The wireless sensor node is used to remotely monitor the status of the connected front-end sensors. The status of the front-end sensors, as well as other measurement and status data from the wireless sensor node, are recorded at adjustable time intervals and transmitted to the remote station in the LoRaWAN network. The data is available there for display or further processing.
The wireless sensor node can be accessed remotely from the LoRaWAN network via the downlink channel of the wireless sensor node in order to query or adjust device parameter values. Parameterization can also be carried out via the additional Bluetooth interface in the sensor node using a mobile device (smartphone or tablet) and the corresponding WILSEN app.

## Dimensions




## Technical Data

| | | |
|---|---|---|
| **Main sensor** | | |
| Suitable sensors | | 2-wire sensor , output type: Two-wire with minimum off-state current |
| Number of connectable sensors | | up to 2 |
| Measurement interval | | 5 min ... 24 h |
| Query interval | | - cylically according to the set LoRaWan transmission interval and or GPS acquistion interval<br>- if required, additionally triggered by events at intervals of 1 min ... 24 h |
| **Integrated sensor technology** | | |
| GPS sensor | | for geo-positioning |
| Acquisition interval | | 30 min ... 24 h |
| Temperature sensor | | |

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## Technical Data

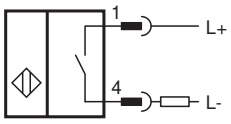
| | |
|---|---|
| Resolution | 0.5 °C |
| Accuracy | ± 2 °C |
| **Electrical specifications** | |
| Battery type | high capacity lithium battery 3.6 V , 13000 mAh |
| Operating duration | battery lifetime approx. 10 years under Central European environmental conditions, 3 measurements and 3 wireless 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 |
| 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 | 5 min ... 24 h |
| **Inputs** | |
| Number of channels | 2 |
| Connection | max. cable length 10 m |
| Input type | Two-wire |
| **Directive conformity** | |
| Electromagnetic compatibility | |
| Directive 2014/30/EU | EN 301 489-1 V2.2.3:2019<br>EN 301 489-3 V2.3.2:2023<br>EN 301 489-17 V3.3.1:2024<br>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<br>EN 300 328 V2.2.2:2019<br>EN 303 413 V1.1.1:2017 |
| RoHS | |
| Directive 2011/65/EU (RoHS) | EN 63000:2018 |
| **Conformity** | |
| Mech. capacity | EN IEC 60947-5-2:2020<br>IEC 60947-5-2:2019 |
| Shock resistance | EN IEC 60947-5-2:2020<br>IEC 60947-5-2:2019 |
| Vibration resistance | EN IEC 60947-5-2:2020<br>IEC 60947-5-2:2019 |
| Climatic conditions | EN IEC 60947-5-2:2020<br>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** | |
| Connection type | socket |
| Degree of protection | IP66 / IP67 |
| Material | |
| Housing | PC (UL94-V0) |
| Socket | brass, nickel-plated |
| Socket | |
| Threading | M12 x 1 |

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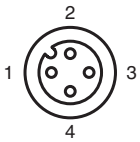
## Technical Data

| | | |
|---|---|---|
| Number of pins | | 4 |
| Mass | | 570 g |
| Dimensions | | |
| Height | | 74 mm |
| Width | | 81 mm |
| Length | | 182 mm |
| **Factory settings** | | |
| Default setting | | LoRaWAN transmission interval = 24 h<br>LoRaWAN Downlink channel = enabled<br>LoRaWAN Downlink acknowledgement = enabled<br>GPS = disabled |

## Connection Assignment




## Connection Assignment




Wire colors in accordance with EN 60947-5-2

| | | |
|---|---|---|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue) |
| 4 | BK | (black) |

## Dimensions



YouTube Video: Battery Replacement
https://www.youtube.com/watch?v=CG1_72SXxkM

## 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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## Accessories

Accessories for this product can be found on the internet at www.pepperl-fuchs.com.
The sensors and cables listed are to be considered "exemplary". Further sensors of the same types in other design and cables in other lengths can also be used.

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