

Wireless sensor node

WILSEN.valve

WS-VAL-2ZL-F406-B41-01-02

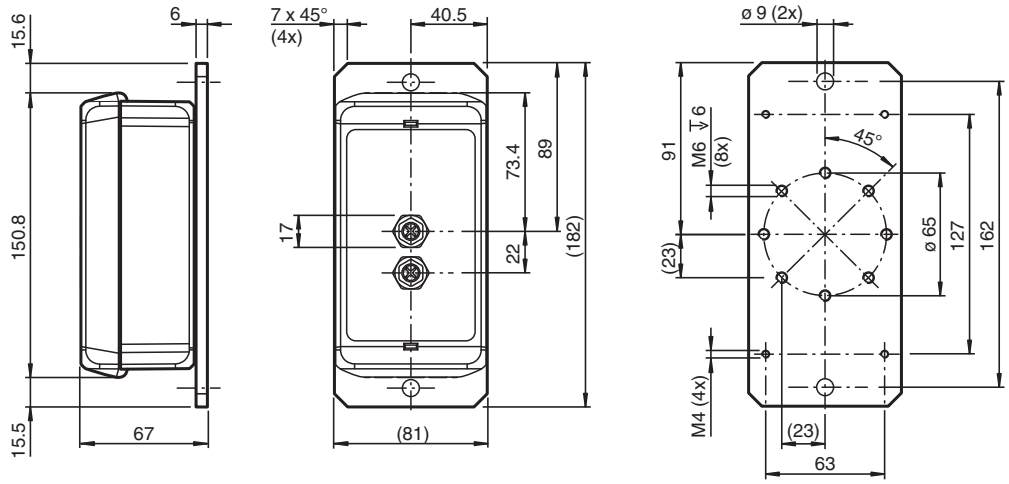
- LoRaWAN EU868 frequency plan
- Battery operated
- Data transfer via LoRaWAN
- LoRaWAN downlink channel for querying and adjusting parameter values
- Bluetooth interface for commissioning, parameterization and diagnostics

Wireless sensor node with LoRaWAN interface, especially for monitoring the valve positions of 90° hand lever valves, for connecting up up to 2 low-power two-wire single sensors

Function

The wireless sensor node is used to remotely monitor the valve positions of 90°-hand lever valves. The valve position(s) and other measurement and status data from the connected sensors and 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		Inductive sensors 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 - 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		

Release date: 2026-08-19 Date of issue: 2026-08-19 Filename: 70162455_eng.pdf

Technical Data

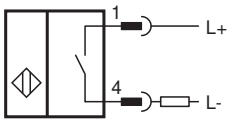
Resolution	0.5 °C
Accuracy	± 2 °C
Electrical specifications	
Battery type	high capacity lithium battery 3.6 V , 13000 mAh
Operating duration	battery lifetime approx. 10 years under Central European environmental conditions, 3 measurements and 3 wireless transmission per day with sufficient network coverage.
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 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 V1.1.1:2017
RoHS	
Directive 2011/65/EU (RoHS)	EN 63000:2018
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	
Connection type	socket
Degree of protection	IP66 / IP67
Material	
Housing	PC (UL94-V0)
Socket	brass, nickel-plated
Socket	
Threading	M12 x 1

Release date: 2026-08-19 Date of issue: 2026-08-19 Filename: 70162455_eng.pdf

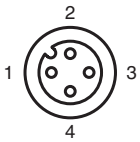
Technical Data

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 LoRaWAN Downlink channel = enabled LoRaWAN Downlink acknowledgement = enabled 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.

Release date: 2026-08-19 Date of issue: 2026-08-19 Filename: 70162455_eng.pdf

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.

Release date: 2026-08-19 Date of issue: 2026-08-19 Filename: 70162455_eng.pdf