

WM868-TES



USAGE

The thermometer is designed for precise temperature measurement in environments for the storage of medicines and other pharmaceutical supplies, and for wireless data and measurement transmission.

UNIT DESCRIPTION

The thermometer is equipped with a highly accurate external sensor for temperature measurement. The thermometer meets the requirements for certified calibration from -40°C to 125°C . The thermometer measures temperature in minute intervals and transmits the current temperature data at adjustable intervals. Wireless data transmission is carried out in the 868 MHz radio band with the option to choose one of three transmission technologies: WACO868, wM-BUS, or LoRa. The thermometer utilizes bidirectional communication via a communication gateway for remote configuration of basic parameters. Configuration settings can be done using a configuration cable or via the Bluetooth interface from a computer, tablet, or mobile phone. The thermometer is powered by an internal battery with a capacity of 3.6 Ah. Thanks to this, the thermometer can operate for more than 5 years with a message transmission interval of 15 minutes.

TECHNICAL PARAMETERS

Wireless interface

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| • Frequency Band: | 868,0 - 868,6 MHz |
| • Wireless Technology: | WACO, wM-BUS, LoRa |
| • Protocols: | WACO, wM-BUS |
| • Modulation: | WACO GFSK, wM-BUS FSK, LoRa spread spectrum |
| • Channel Width: | WACO 100 kHz, 15 kHz, wM-BUS 200 kHz, LoRa 125 kHz |
| • Transmission Power: | 10–25 mW |
| • Receiver Sensitivity: | WACO -114 dBm, wM-BUS -105 dBm, LoRa -148 dBm |

- Data Rate: WAGO 2400, 3800 bps, wM-BUS 100 kbps, LoRa 250–11000 bps
- Output Impedance: 50 Ω
- Antenna: external, SMA-female connector

Temperature measurement

- Measured temperature Range: -40 až 125 °C
- Temperature measure resolution: 0.1 °C
- Temperature measure accuracy: ±0.2 °C (-20 ÷ 85 °C)
- Sensor cable: flat 1x5mm, length 2m

Bluetooth Specifications

- Bluetooth Version: BLE 5.2
- Bluetooth Frequency: 2.4 GHz
- Bluetooth Data Rate: 1 Mbps
- Bluetooth Maximum Power: 8 dBm

Power

- Battery: Li-SOCI2
- Battery Capacity: 7 Ah
- Battery Life: 7 years

Physical Properties

- Length: 121 mm (box alone), 153 mm (including mounting flanges), 190 mm (including small antenna)
- Width: 57 mm
- Height: 51 mm
- Weight: 220 g

Operating Conditions

- Operating Temperatures: -20 až +50 °C
- Storage Temperatures: 0 až +40 °C
- Relative Humidity: 90% (non-condensing)
- IP Rating: IP65

UART configuration

- UART Data Rate: 9,6 kbps
- Transmission method: Asynchronous
- UART parameters: 8 data bits, 1 stop bit, no parity
- Voltage Level: 3,6 V (CMOS)