

## WM868-THI4



## USAGE

The thermometer with hygrometer is designed to measure air temperature, relative humidity and radio transmission of measured data.

## UNIT DESCRIPTION

The thermometer is equipped with an integrated sensor for measuring temperature and humidity. Thanks to the side vents, rapid detection of changes in ambient temperature and humidity is achieved. The thermometer senses temperature and humidity at minute intervals and transmits the current temperature and humidity, which is expressed as an average of the measured values, to a central data acquisition system via a communication gateway at adjustable intervals. Wireless data transmission is implemented in the 868 MHz radio band with a choice of one of three transmission technologies: WACO868, wM-BUS or LoRa. The thermometer uses the option of two-way communication via the communication gateway for remote setting of basic parameters. Configuration parameters can be set using the configuration cable, or via Bluetooth from a computer, tablet, or mobile phone. The thermometer is powered by an internal 3.6 Ah battery. Thanks to this, the thermometer can operate for more than 5 years with a reporting period of 15 min. The thermometer is primarily designed for indoor environments, but it can also be used outdoors where the influence of splashing water is excluded.

## TECHNICAL PARAMETERS

**Wireless interface**

- |                        |   |
|------------------------|---|
| • 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: WACO 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 to 125 °C
- Temperature measure resolution: 0.1 °C
- Temperature measure accuracy: ±0.2 °C (-20 ÷ 85 °C)

### 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: 3.6 Ah
- Battery Life: 10 years

### Physical Properties

- Length: 70 mm
- Width: 70 mm
- Height: 27 mm
- Weight: 220 g

### Operating Conditions

- Operating Temperatures: (-20 to +50) °C
- Storage Temperatures: (0 to +40) °C
- Relative Humidity: 90% (non-condensing)
- IP Rating: IP20

### 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)