NB-TE-V

USAGE

The thermometer is designed to measure air temperature and
radio data transmission of the measured values.

UNIT DESCRIPTION

The thermometer is equipped with an external temperature sensor. The thermometer senses the temperature in minute intervals and transmits an indication at adjustable intervals of
the current temperature, which is expressed as an average of the measured values, to a central data acquisition system via a communication gateway. Wireless data transmission is realized by NB-IoT technology. The thermometer uses the possibility of two-way communication via the communication gateway for remote setting of basic parameters. The configuration parameters can be set using a configuration cable or via Bluetooth from a computer, tablet or mobile phone. The thermometer is powered by an internal 17 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 outdoor use, but it can also be used outdoors where the influence of splashing water is excluded.

TECHNICAL PARAMETERS

Wireless interface

- Frequency Band: 832 to 862 MHz (Uplink), 791 to 821 MHz (Downlink)
- Wireless Technology: NB-IoT NB1
- Protocols: UDP, NEP (proprietary)
- Modulation: QPSK, BPSK, OFDMA, SC-FDMA
- LTE Bands: B1, B3, B5, B8, B20, B28
- Channel Width: 180 kHz

- Transmission Power: 200 mW
- Receiver Sensitivity: -129 dBm
- Data Rate: 0.35 - 240 Mbps
- 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 (-10 ÷ 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-SOCl2
- Battery Capacity: 17 Ah
- Battery Life: 5 years

Physical Properties

- Length: 145 mm
- Width: 45 mm
- Height: 100 mm
- Weight: 300 g

Operating Conditions

- Operating Temperatures: (-20 to +50) ^{o}C
- Storage Temperatures: (0 to +40) ^{o}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)