MIDAM
CONTROL SYSTEM

MIDAM W10009

Wireless temperature sensor

Wireless, battery powered temperature sensor. Native modbus map grants seamless integration into the DDC/SCADA system. The communication is based on the AES128 encrypted Midam KFP protocol, which allows to update the device firmware on a wireless basis. IP65 protection level ensures reliable function of the sensor even in harsh environment.

WIRELESS SOLUTIONS

Application

- HVAC control
- Measurement of temperature
- Wireless integration into SCADA control systems

Function

The wireless temperature sensor W10009 measures temperature in non-aggressive environments using the probe situated outside the device body. The values are transmitted through the 868 MHz unlicensed band to the WCOM51, or WCOM01 gateways. Embedded AES 128-bit, provides the most secure encryption standard for wireless connections. The device has factory-set values to ensure the correct default function and allows direct reading and writing of values to the Modbus map, which is available in a separate document. All settings are also stored in the Modbus map directly in the device. Before using the device for the first time, it is necessary to pair it and it is recommended to perform individual configuration, especially to change the encryption password.

SCADA system integration

The sensor can be integrated into DDC or SCADA systems directly via the WCOM51, or WCOM01 wireless gateways.

Pairing

Two devices are required for mutual communication. Both must be powered and located in close proximity to each other. Usually, wireless gateway or configuration dongle is used to set up remote wireless devices. Use look-up function in software tool to display a list of all available devices in range and assign or adjust parameters based on wireless ID code for each single device. There is a comprehensive help section integrated in the software tool to provide support during the wireless device set up procedure.

Password or frequency change

The encryption password (default "MIKROKLIMA1234AB") and the communication frequency (default 868.95 MHz) can be changed using the WUSB01 configuration dongle and appropriate software tool.

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Technical data

Power supply	3V, 1 main alkaline battery 1.5V, type AAA, not included
Consumption	idle <2 uA, avg. typical 5 uA, max. 25 mA
Battery life	> 10 years
Communication	868,950 MHz, 100 kbps, KFP 868,300 MHz, 32 kbps, KFP 868,100 MHz, 100 kbps, KFP 869,525 MHz, 100 kbps, KFP
Protocol	KFP (dual stack)
Encryption	AES 128 PCBC, EN 13757-4
RF power	+10 to - 20 dBm, step 5 dB
Antenna	SMA female connector for external antenna
Communication range	1000 m in free space, 300 m in buildings
Mechanical and dimensions	154x33x63 mm (incl. antenna and measurement probe) Polyamide enclosure, IP65 (EN 60529) 1 x clamp switch (INIT mode)
Temperature measurement range	-20 to +55 °C, ± 0,5 °C
Ambient conditions	-20 to +55 °C, 5 % to 95 % rH, (non condesated), atmospheric pressure 70 to 107 kPa
RoHS notice	The device contains a non-rechargeable battery. After the device is not operable, please return it to the manufacturer or dispose of it in compliance with local regulations.

WIRELESS SOLUTIONS

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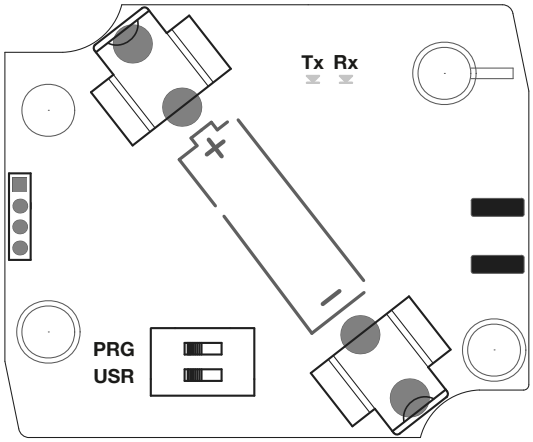
LEDs and DIP switches

Tx	Red LED, 10s after power on intermittently on, indicates data transmission during operation
Rx	Green LED, indicates receipt of a request from a remote device
PRG	Without clamp - user defined frequency and password With clamp - default frequency and password



Battery insert/change

The AAA type battery should keep your device running smoothly for more than 120 months but the time will come when you need to replace it. The KFP Tool app can also indicate and report the remaining battery power so that you are aware when it's proper time for change. We recommend using non-rechargeable alkaline batteries. Remove the front cover lid of the sensor. Use wide flat screw driver or appropriate plastic tool which fits into slots between the cover and body of the sensor. Remove battery from the bracket and place a new one. Observe the battery type and polarity. Then put the sensor cover back and press both parts of the sensor tight to ensure the IP protection again.

Changes in versions

07/2020	New datasheet version (v20/07).
08/2020	New product scheme and pairing options (v20/08).
04/2024	HW update (v24/04).