MIDAM WBBS09

Wireless temperature sensor with magnetic probe

Wireless, battery powered temperature sensor with magnetic probe providing easy snap on function to M8 socket screw in so called BUSBAR electrical cabinets. 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.

Application

- Electric distribution bus bar cabinet monitoring

- Measurement of temperature

- Wireless integration into SCADA control systems

Function

The wireless temperature sensor WBBS09 measures temperature in non-aggressive environments using the magnetic 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.

Midam KFP Password change

Prior to the first use, the encryption password (default "MIKROKLIMA1234AB") must be changed using the WUSB01 configuration dongle and the relevant software tool.

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Technical data

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Power supply	Main lithium battery 3V, industry grade type CR2450, included and ready fo use upon activation of the device
Consumption	idle <2 uA, avg. typical 3 uA, max. 25 mA
Battery life	> 5 years
Communication	868,950 MHz, 100 kbps, KFP (default factory setting) 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	+13 to - 20 dBm, step 5 dB
Antenna	Integrated (omnidirectional)
Communication range	100 m in free space, 30 m in buildings
Mechanical and dimensions	50x35x15 mm (excl. measurement probe) Polyamide enclosure, IP20 (EN60529) 1 x jumper switch (PRG mode)
Temperature measurement range	- 40 to125 °C, typical accuracy ± 0,5 °C in range 0 to +70 °C, max. ± 2 °C in range below 0°C or over +70°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

LEDs and DIP switches

LED	RED/GREEN LED - sending/receiving data, RED still ON - error indication
PRG	Without clamp - user defined frequency and password With clamp - default frequency and password

LED

PRG

BAT +
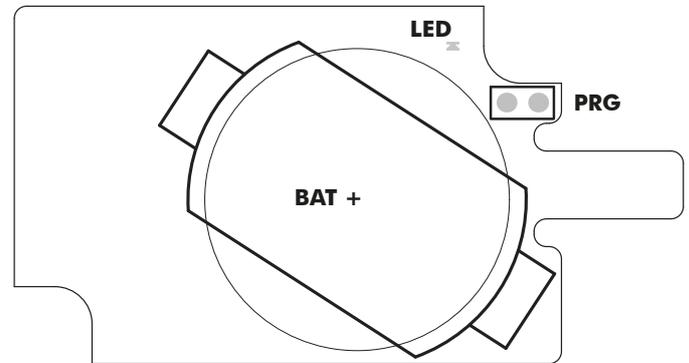
Battery insert/change

The CR2450N type battery should keep your device running smoothly for more than 60 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 Renata CR2450N alkaline batteries. Remove the front cover lid of the sensor. Use appropriate Phillips screw driver (unmount the two screws). Remove battery from the bracket and place a new one. Observe the battery type and polarity. Then put the sensor cover back and tighten both screws of the cover tight to ensure the IP protection again.

Changes in versions

11/2020	New datasheet version (v20/07).
04/2024	HW update (v24/04).
07/2025	The wording of the section "Midam KFP Password change" has been modified (v25/07).

WIRELESS SOLUTIONS

Subject to technical changes and General Terms and Conditions.