MIDAM WRU01009

Wireless room sensor (T, rH)

Wireless, battery powered HMI unit. The device features temperature and humidity sensors, the values of which can be displayed to user on a large LCD display. Native modbus map grants seamless integration into the 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

- HVAC control
- Measurement of temperature and humidity
- Display of status values
- Wireless integration into SCADA control systems

Function

The wireless room sensor WRU01009 measures temperature and relative humidity. 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. There is also an option with rotating knob and display available (refer to WRU01001 HMI room unit) to provide a variety of possibilities for building up a project. 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 controller can be integrated into DDC or SCADA systems directly via the WCOM51, WCOM01 wireless gateways or fancoil controller WFC01001 respectively.

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.

MIDAM WRU01009

Wireless room sensor (T, rH)

Technical data

Power supply	4.5V, 3x main alkaline battery 1.5V, type AA, not included
Consumption	idle <5 uA, avg. typical 10 uA, max. 25 mA
Battery life	> 10 years
Communication	868,950 MHz, 100 kbps, WMBUS T1, KFP (default factory setting) 868,300 MHz, 32 kbps, WMBUS S1, KFP 868,100 MHz, 100 kbps, KFP 869,525 MHz, 100 kbps, WMBUS C, KFP 868,300 MHz, 38 kbps, KFP
Protocol	WMBUS (EN 13757-4), KFP (dual stack)
Encryption	AES 128 PCBC, EN 13757-4
RF power	+10 to - 20 dBm, step 5 dB
Antenna	Integrated
Communication range	100 m in free space, 30 m in buildings
Mechanical and dimensions	90x115x30 mm Enclosure ABS, IP20 2 x DIP switch (PRG mode, USR mode)
Temperature measurement range	-20 to +55 °C, ± 0,5 °C
Humidity measuring range	10 to 90 % rH, ±3% rH
Ambient conditions	-5 to +45 °C, 5 % to 95 % rH (EN 60721-3-3 class 3K5)
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.

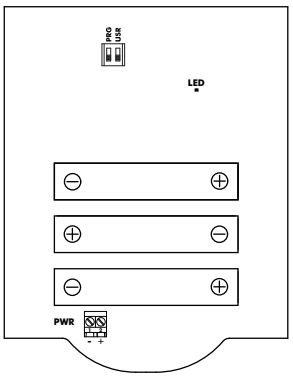
WIRELESS SOLUTIONS

MIDAM WRU01009

Wireless room sensor (T, rH)

Terminals and DIP switches

PRG	In ON position, default frequency, power and password
USR	In ON position, asynchronous communication mode with WOUT2x1 remote outputs
LED	RED/GREEN LED - sending/receiving data, RED still ON - error indication
PWR1	Power supply terminal 1 (+)
PWR2	Power supply terminal 2 (-)

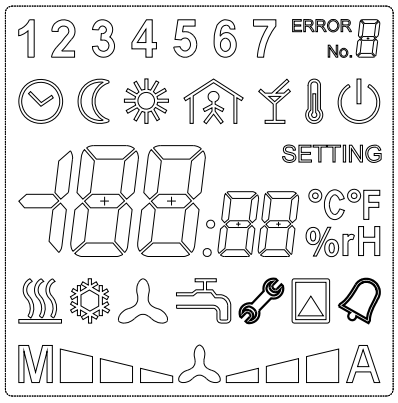


Battery/adapter power supply

The AA type 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. Open the controller by gently pressing it on the sides. Remove old batteries from the bracket and place new batteries or connect appropriate wired power supply. Observe the battery type and polarity. Always replace both bateries with fresh ones. Then put both parts together and close the controller again. If powered simultaneously from 5 VDC, the batteries may serve as a power supply backup in case of mains supply problems.

Display

The large LCD shows the current temperature, humidity and fancoil controller status using segment symbols, standard symbols for day and night mode, time programs and activated output. At the top of the display there are symbols indicating the day of the week. The bell symbol indicates a communication error, while the side wrench symbol indicates weak batteries.



Changes in versions

06/2020	New datasheet version (v20/06).
08/2020	Added asynchronous communication with WOUT2x1 - remote output control. (v20/08).
10/2020	WFC01001 compatibility added (v20/10).
07/2023	Power supply options added (v23/07).
07/2025	The wording of the section "Midam KFP Password change" has been modified (v25/07).

Subject to technical changes and General Terms and Conditions.

WIRELESS SOLUTIONS