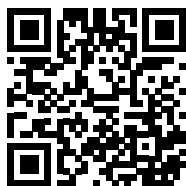


Original user's guide

Obsah

1. SOFTWARE VERSION	7
2. INTRODUCTION	7
3. DESCRIPTION	8
Basic description of the WG1000 wireless gateway	8
4. INSTALLATION	9
5. CONNECTING AND SUPPLYING	10
Description and meaning of terminals on the terminal block of the installation board of the WG1000 gateway	11
Electric schematics of wiring and power supply of the WG1000 gateway	11
6. INSTALLATION GUIDE - ATMOS WG1000	13
Installation guide schematics	13
Glossary of terms:	
1) INSTALLING the ATMOS WG1000 gateway:	15
2) CONNECTING the ATMOS WG1000 and the ACD 03/04:	16
3) SUPPLYING the ATMOS WG1000 gateway:	17
4) SWITCHING ON the COMMUNICATION between the WG1000 gateway and the ACD 03/04:	19
5) CONNECTING the ATMOS WG1000 via the Wi-Fi (SSID):	20
6) LOGIN to the ATMOS WG1000 gateway environment:	22
7) CONNECTING the ATMOS WG1000 and local network / Internet:	25
8) CONTROLLING the ATMOS ACD 03/04 by the ATMOS WG1000 via the local network or Internet (the ATMOS Cloud):	27
9) REGISTERING ACCOUNT on ATMOS Cloud - www.cloud.atmos.eu	28
10) GENERATING the KEY to connect the WG1000 gateway to the cloud	29
11) CONNECTING the WG1000 and the ATMOS Cloud using key	30
7. WG1000 GATEWAY WORKING ENVIRONMENT 	32
Basic description of managing and setting the WG1000 gateway	32
There are two ways to enter the working environment of the gateway:	32
Login to the working environment of the WG1000 gateway:	33
Communication Settings for Internet and Atmos Cloud connection:	33
8. WORKING ENVIRONMENT - ATMOS Cloud 	46
Basic description of managing and setting the ATMOS Cloud	46
REGISTERING an ACCOUNT on the ATMOS Cloud - www.cloud.atmos.eu	46
Login to the ATMOS Cloud application - www.cloud.atmos.eu	47
Connecting the ATMOS Cloud account and the WG1000 wireless gateway	48
Your device on the Atmos Cloud	49
Home Screen of the Cloud and User's Device	50
Connecting to an outside device	50
Sharing the device with another user	51
9. WIRELESS NETWORK and the ATMOS DEVICE - ATBee 	54
Basic description of the ATBee wireless network for ATMOS devices	54
10. TECHNICAL PARAMETERS	
General	57
Installation recommendation	57
Types of temperature sensors for EFW20 and EFW1000 wireless sensors	57
Resistivity values of sensors	58
Temperature measurement ranges	58
CHANGES IN ACD 03/ACD 04 CONTROL	59

1. SOFTWARE VERSION**2. INTRODUCTION****3. DESCRIPTION****4. INSTALLATION****5. CONNECTING AND SUPPLYING****6. INSTALLATION GUIDE - ATMOS WG1000****7. WORKING ENVIRONMENT of the WG1000****8. WORKING ENVIRONMENT of the CLOUD ATMOS****9. WIRELESS NETWORK and the ATMOS DEVICE - ATBEE****10. TECHNICAL PARAMETERS****ACD 03 and ACD 04 CONTROLLER CHANGES**

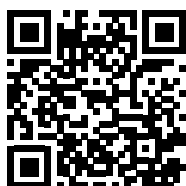


For download - on web pages www.atmos.eu

Guides

Program files - FW (Firmware)

WG1000 gateway: security certificate for web browsers



Contacts - ATMOS technical support - support@atmos.eu

Guides

Program files - FW (Firmware)

WG1000 gateway: security certificate for web browsers

1. SOFTWARE VERSION

This user's guide can be used for the **WG1000 wireless gateway** and for **ATMOS ACD 03** and **ATMOS ACD 04 controllers**, the program version **2.00** or higher

The **software package** (FW - firmware) for the **WG1000 wireless gateway** is saved on the **SD card** in the slot of the gateway itself; from **FW_2.00_2025xxxx.pck**.

The package is used to **update** the relevant **wireless devices** as well.

For ATMOS ACD 03 and ATMOS ACD 04 controllers, from the **program version (VERSION PRG) AC16D 2.00 (FW_2.00_2025xxxx.pck)**

The program version of the ACD 03/04 controller is displayed at the end of Information under the button  - System information.



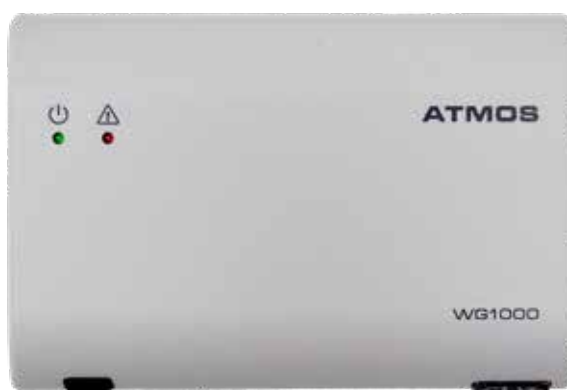
CAUTION - the software (firmware) saved on the SD card of the ACD 03/04 controller **a on the SD card of the WG1000 gateway must be of the same version to avoid mutual incompatibilities.**

2. INTRODUCTION

The **ATMOS WG1000** wireless WiFi gateway is delivered as an accessory of the ATMOS ACD 03/04 electronic controllers. There are two main functions of the gateway:

- To connect (gateway) the ACD 03/04 "AtmosNet" wired network to the "ATBee" wireless network for the communication with AFW, EFW20, EFW1000, EFW-button **wireless sensors** and ATMOS ARU5W, ARU10W, ARU30W **wireless room units**.
- To connect (gateway) a computer network via **Ethernet or Wi-Fi** to allow the direct control of the ATMOS ACD 03/04 controllers via the ATMOS WG1000 gateway or via the **ATMOS cloud** on the **Internet**.

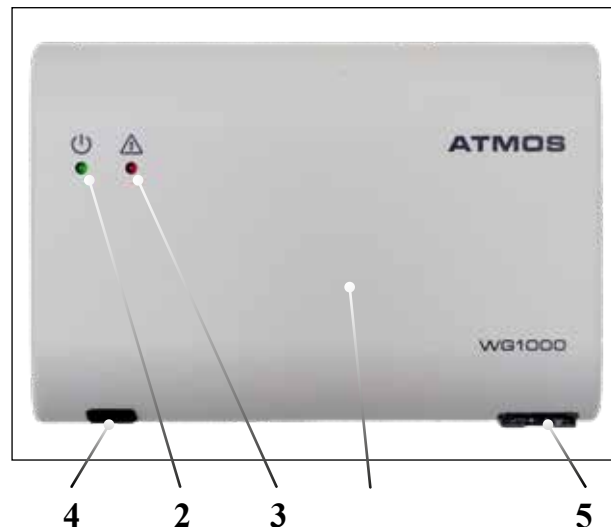
The device is equipped with an SD slot, which can be used to update the firmware of the entire system and save system settings as well.



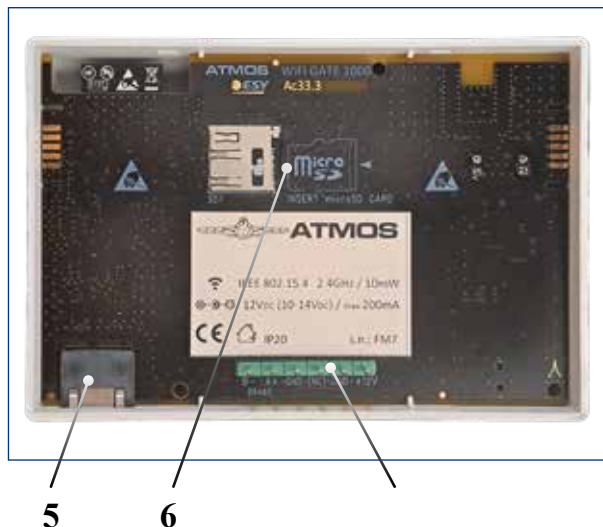
3. DESCRIPTION

Basic description of the WG1000 wireless gateway

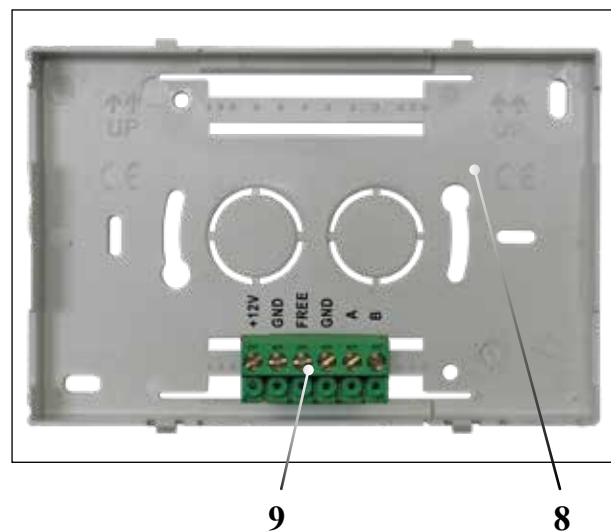
The front side of the WG1000 gateway



The inside - after opening



Installation board with the terminal block



Connectors on the bottom of the front box



- 1 - WG1000 wireless gateway
- 2 - indicating LED: green - lights up if the power supply is OK/sufficient ($\geq 10\text{VDC}$)
- 3 - indicating LED: red - flashes during a functional communication, an alarm
- 4 - connector ($\varnothing 5.5/\varnothing 2.1$ mm) for an external power supply / an adapter 12VDC
- MEAN WELL GS06E-3P1J - code: P0484
- 5 - RJ45 connector for connecting an Ethernet cable (computer network) - LAN
- 6 - SD slot - for updating firmware and saving system settings
- 7 - pins for the connecting terminal block
- 8 - installation board with mounting holes
- 9 - the connecting terminal block

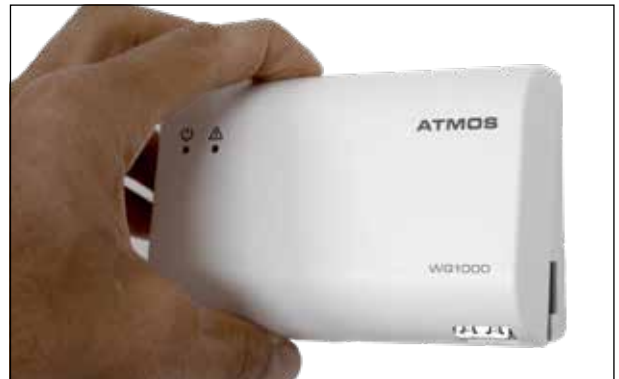
4. INSTALLATION

INSTALLATION AND INSTALLATION PLACE

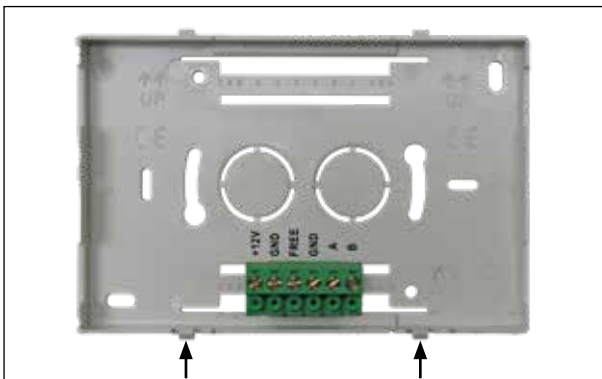
The ATMOS WG1000 wireless gateway has been designed for a wall installation using two screws (4x35) and two plugs (6x30), or for a KU 68 box installation. The wireless gateway has to be placed in a location with an available power supply and a communication connection (the ATMOSNET wired communication line RS485) with the ATMOS ACD 03/04 controller.



Opening the WG1000 gateway



Opening the WG1000 gateway



The gateway board with installation holes



Screwing the installation board of the gateway

The mounting holes on the installation board /8/ and to the connecting terminal block /9/ can be accessed after removing the front part of the box. To avoid mechanical damage of electronics, an increased caution has to be taken. To avoid twisting the back wall of the box and poor contact in the terminal block connector, attention has to be paid to the flatness of the substrate.

The wireless gateway cannot to be placed:

- on places with a direct sunlight (UV radiation - device lifetime)
- on places with electromagnetic shielding
- on and near large metal objects (e.g., mounting on the side wall of the boiler is not recommend)



CAUTION - The specialist responsible for the installation and repairs is required to have an appropriate professional authorization and training. All the services have to be performed in accordance with applicable standards and safety regulations!

5. CONNECTING AND SUPPLYING

There are three ways to power the WG1000 wireless gateway:

- **using ATMOSNET RS485 communication lines** on the connecting terminal block /9/; powering by a small safe voltage of 12V from the ACD 03/04 control unit.
Attention on the maximum output load of 12 V on the ACD 03/04 controller; 12 V / 200 mA (total), electronically fused.
- by the **power supply 12VDC - DE06-12** (the code P0488) via the terminal block /9/ located on the installation board /8/ (12V and GDN terminals); powering into the KU 68 wall box, the wireless gateway can be directly mounted on.
- by an **external power supply / adapter 12VDC MEAN WELL GS06E-3P1J** (Code: P0484); the connector ($\varnothing 5.5/\varnothing 2.1$ mm) /4/ is accessible on the left in the lower part of the box.



INFO - The ACD 03/04 controller can directly power only the WG1000 wireless gateway with/without three ARU10 units maximum.



CAUTION - When powering the WG1000 wireless gateway from the ACD 03/04 controller and using ARU30 room units, the ARU30 room units have to be equipped with their own power supply (see connection diagrams).

To connect, a shielded four-core cable (two twisted pairs) with a cross section of 0.2 to 0.75 mm² should be used. The first pair is used for the power, the second one for data transmission.

On side of the ACD 03/04 controller, the shielding is connected to the PE protective terminal. On side of the wireless gateway, the shielding is left unconnected (see connection diagrams).

The connecting line has to be insulated from 230 V wires and other power lines (15 cm at least). In case of longer lines, the power wires have to be of a sufficient cross-section to avoid a large loss of supply voltage.

The table of maximum cable length for supply voltage drop of 1.4 V approx.:

diameter (cross section) of supply wire	max. cable length
0.6 mm (cross section 0.28 mm ²)	50 m
0.8 mm (cross section 0.5 mm ²)	90 m

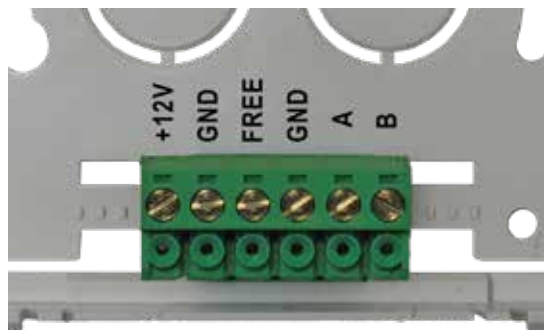
The table assumes a total resistance of the supply wire back and forth of 14 Ω .

If the cable is used to power additional devices, this fact has to be considered and the total power consumption has to be calculated!

The recommended cable type:

JY(ST)Y 2x2x0.8 cross section 0.5 mm² - order code: S0659

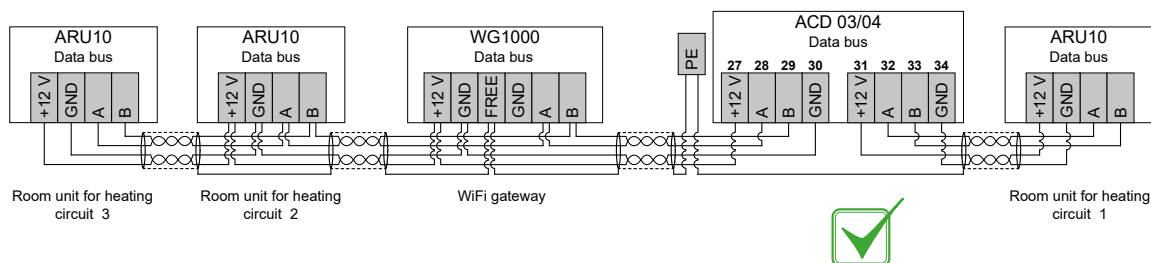
Description and meaning of terminals on the terminal block of the installation board of the WG1000 gateway



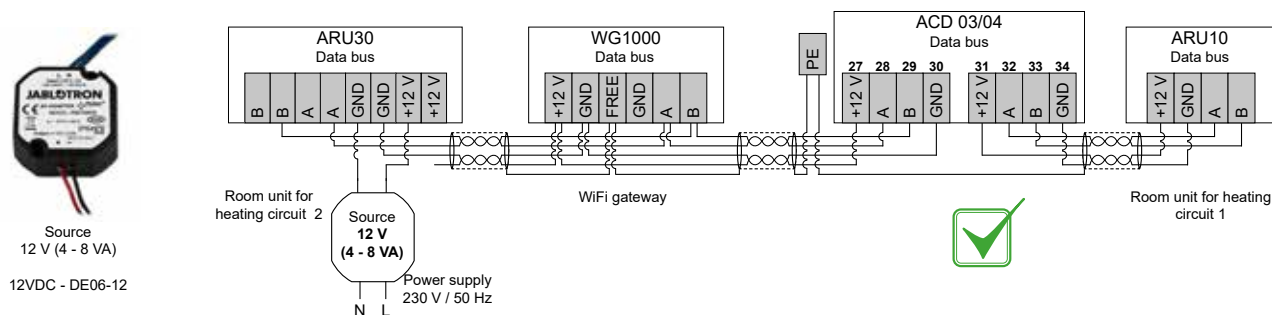
No.	description	meaning
1	+12V	+12 VDC power supply
2	GND	common potential for power supply (internally connected to 4 GND terminal)
3	FREE	not connected, the terminal can be used to connect the shield of the communication line, for example
4	GND	common potential for the RS485 line (internally connected to 2 GND terminal)
5	A	A signal of the RS485 line
6	B	B signal of the RS485 line

Electric schematics of wiring and power supply of the WG1000 gateway

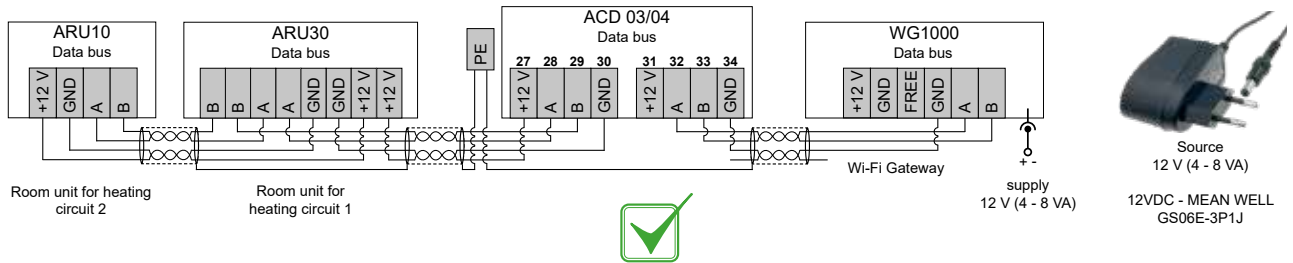
Power supply of the WG1000 wireless gateway from the ACD 03/04 controller



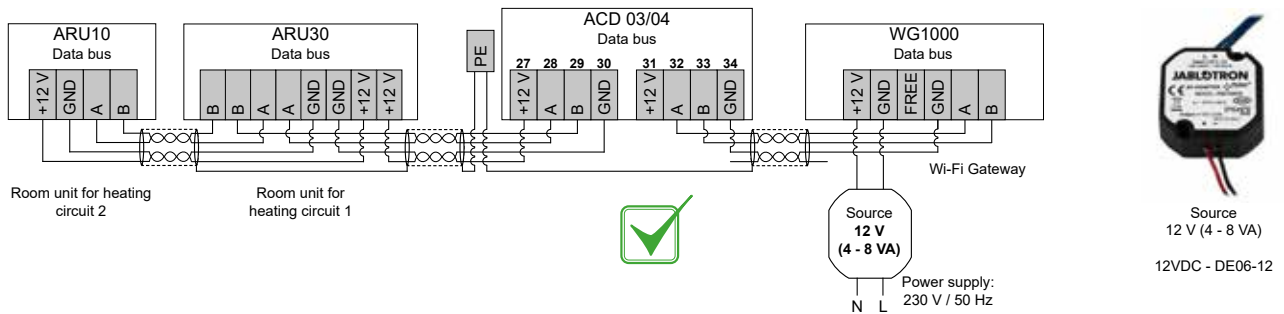
The WG1000 wireless gateway supplied from the ACD 03/04 controller and the ARU30 room unit supplied from an independent source



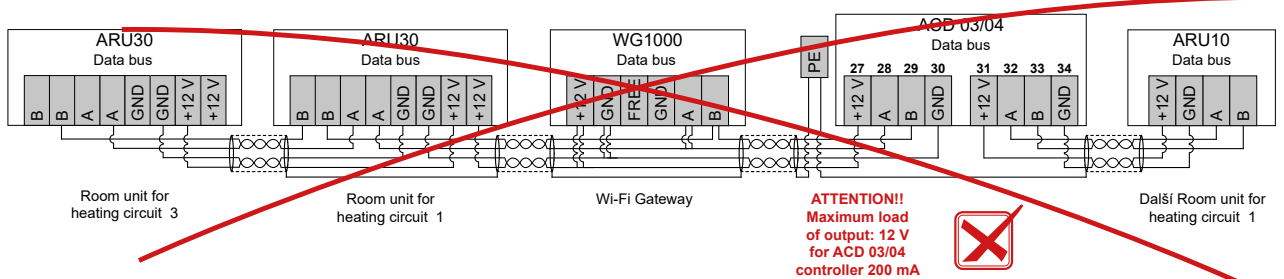
Powering the WG1000 wireless gateway by an external power supply/adaptor 12VDC MEAN WELL GS06E-3P1J



Powering the WG1000 wireless gateway by a power supply 12VDC- DE06-12



Incorrect power supply of the WG1000 wireless gateway and ARU30 room units



This is the step-by-step guide through the installation and setup of a new ATMOS WG1000 wireless gateway.

[illegible]

Glossary of terms:

AP - Access Point. The mode turns on the inherent Wi-Fi network of the WG1000 gateway that allows us to connect. This mode provides the access to the WG1000 gateway from a phone/tablet/PC. The access is provided within the range of the Wi-Fi network of the WG1000 gateway. Hence, the connection is used to set the basic parameters.

STA - STation. The mode connects the WG1000 gateway to another Wi-Fi network (local one). The wireless connection requires basic parameter settings. The connection may not be stable, but does not require cable installation.

LAN - Local Area Network. The mode connects the WG1000 gateway to a local wired Ethernet network (LAN). The gateway is connected to the local router by a cable. The connection requires a minimum setup and is very stable. Nevertheless, a LAN (Ethernet) cable is required.

SSID - Service Set Identifier. SSID is an identifier (name) of a Wi-Fi network. Thanks to SSID, the devices can distinguish between different Wi-Fi networks.

Router - A network device used to connect two or more networks. The router ensures data transfer among networks. Typically, a local network is connected to the Internet. Nevertheless, even subnets can be connected.

Wi-Fi - Wireless Fidelity. A wireless data transmission technology that allows the devices (laptops, smartphones, tablets) to connect to the Internet (router) or other networks (e.g., the WG1000 gateway) without cables.

ATBee - A wireless communication technology operated in the 2.4 GHz radio band (2400 - 2483.5 MHz). ATBee allows to connect the wireless room units and sensors with the WG1000 wireless gateway, and the ACD 03/04 controller.

ATMOSNET - ATMOS RS485 communication line (bus) connects external devices to the ATMOS ACD 03/04 controller.

Using a cable, the ACD 03/04 controller is connected to wired room units and the WG1000 gateway

ATMOS Cloud - on-line storage (Server) that is accessible from anywhere with an Internet connection. The remote control of the ATMOS ACD 03/04 equithermal regulation is provided via the working environment on the website <https://cloud.atmos.eu>.

Using the Cloud, own devices can be controlled, other devices (other gateways) can be connected, or the devices can be shared with other users (e. g. heating engineers).

1 INSTALLING the ATMOS WG1000 gateway:

The ATMOS WG1000 wireless gateway has been designed for a wall installation using two screws (4x35) and two plugs (6x30), or for a KU 68 box installation.

The wireless gateway has to be placed in a location with an available power supply and a communication connection with the ATMOS ACD 03/04 controller.



A suitable location and power supply is chosen (see ○) A necessary data connection (communication line) between the ACD 03/04 controller and the WG1000 gateway has to be taken into account.

A location covered by Wi-Fi (AP/STA) or within the range of a LAN cable (STA) is chosen. Depending on this, a required power supply is selected.



The wireless gateway cannot be placed:

- on places with a direct sunlight (UV radiation - device lifetime)
- on places with electromagnetic shielding
- on large metal objects or close to them

The ideal installation of the WG1000 gateway is on a wall in such a way that the wireless signal can spread well for WiFi and for the signal to wireless sensors and units (ATBee).

The WG1000 gateway box is opened by unlocking two latches in the lower part (e.g., by a screwdriver) and the front part of the box is removed. That way, the installation plate with mounting holes and the connecting terminal block is accessed.

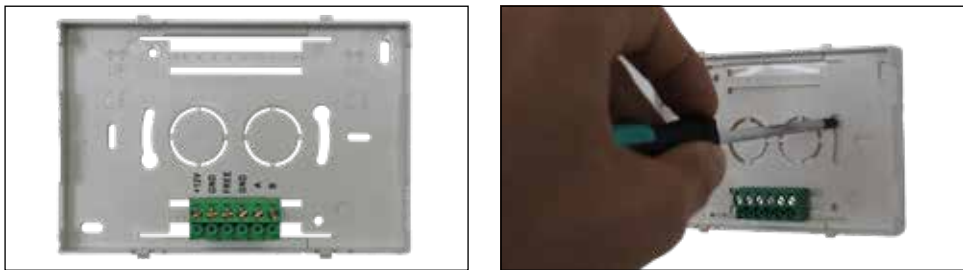
To avoid mechanical damage of electronics, an increased caution has to be taken.



Installation board is attached to the selected location. The cables for connecting the terminal block are pulled through and prepared. Depending on the selected power supply, at least two communication cables (A/B) are needed to communicate with the ACD 03/04 controller.



CAUTION - To avoid twisting the back wall of the box and poor contact in the terminal block connector, attention has to be paid to the flatness of the substrate.



Description and meaning of terminals on the terminal block of the installation board of the WG1000 gateway

No.	description	meaning
1	+12V	+12 VDC power supply
2	GND	common potential for power supply (internally connected to 4 GND terminal)
3	FREE	not connected, the terminal can be used to connect the shield of the communication line, for example
4	GND	common potential for the RS485 line (internally connected to 2 GND terminal)
5	A	A signal of the RS485 line
6	B	B signal of the RS485 line

2 CONNECTING the ATMOS WG1000 and the ACD 03/04:

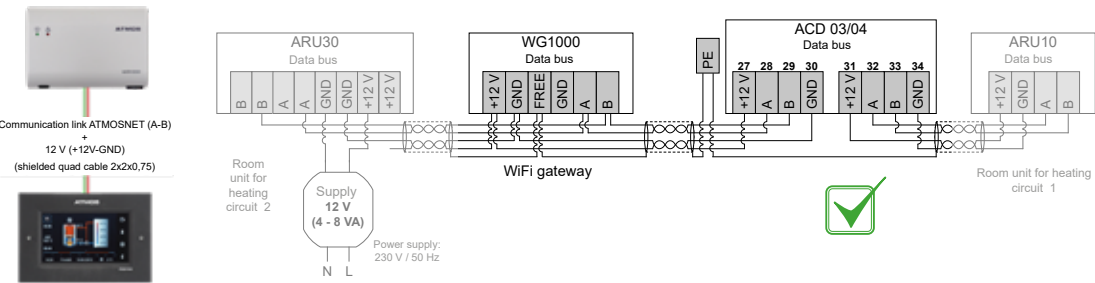
Establishing data communication between the ATMOSNET (RS 485) and the ACD 03/04 controller by the communication line (A/B) is necessary to exchange information between the controller itself and wireless devices.

To connect, a shielded four-core cable (two twisted pairs) with a cross section of 0.2 to 0.75 m² should be used. The first pair is used to transmit data (A/B), the second one to power supply, potentially.

On side of the ACD 03/04 controller, the shielding is connected to the PE protective terminal. On the room-unit side, the shielding is left unconnected (see connection diagrams).

The connecting line has to be insulated from 230 V wires and other power lines (15 cm at least). In case of longer lines, the power wires have to be of a sufficient cross-section to avoid a large loss of supply voltage.

Recommended cable type: J-Y(ST)Y 2x2x0.8 cross section 0.5 mm² - order code: S0659



3 SUPPLYING the ATMOS WG1000 gateway:

There are three ways to power the WG1000 wireless gateway:

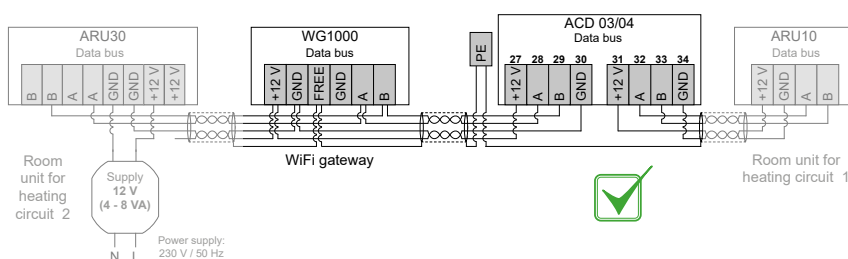
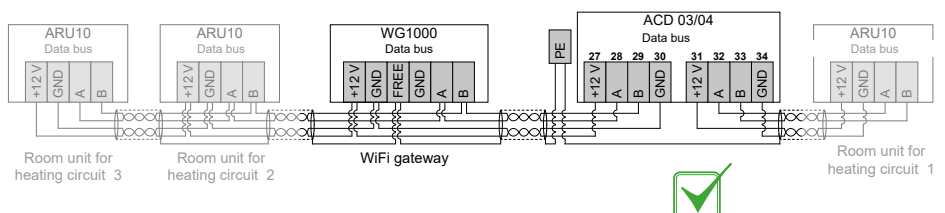
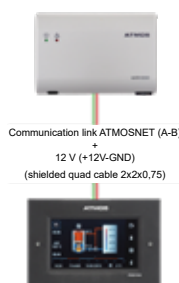
a) Supplying via the communication line of the ACD 03/04 controller (+12 V / GND)

The ACD 03/04 controller can directly power only the WG1000 wireless gateway or a single ARU30 room unit together with/without three ARU10 units maximum. When powering the WG1000 wireless gateway from the ACD 03/04 controller and using ARU30 room units, the ARU30 room units have to be equipped with their own power supply (see connection diagrams).

On the contrary, if the ARU30 room unit is powered by the ACD 03/04 controller, we the WG1000 wireless gateway has to be equipped with its own power supply (see power supply options b or c).

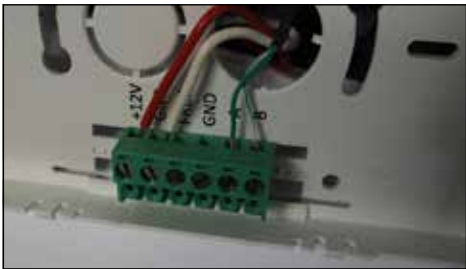
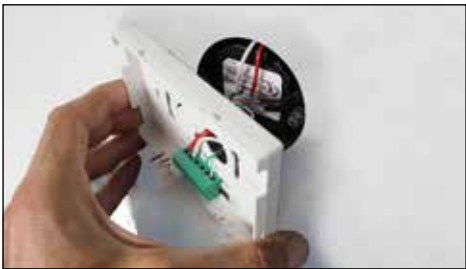
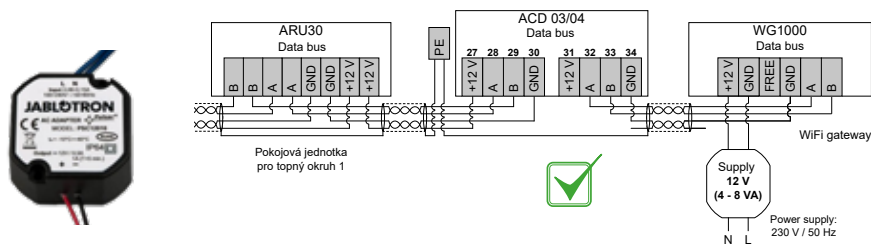


CAUTION - Maximum output load 12 V / 200 mA on the ACD 03/04 controller
(see connection diagrams).



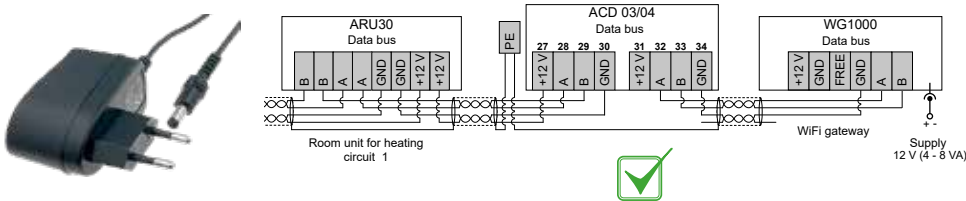
b) Supplying via an external power supply - 12 V (4 - 8 VA)

The power supply **SOURCE 12 V DE06-12** for the KU 68 wall box.



c) Supplying via an external power supply adapter - 12 V (4 - 8 VA)

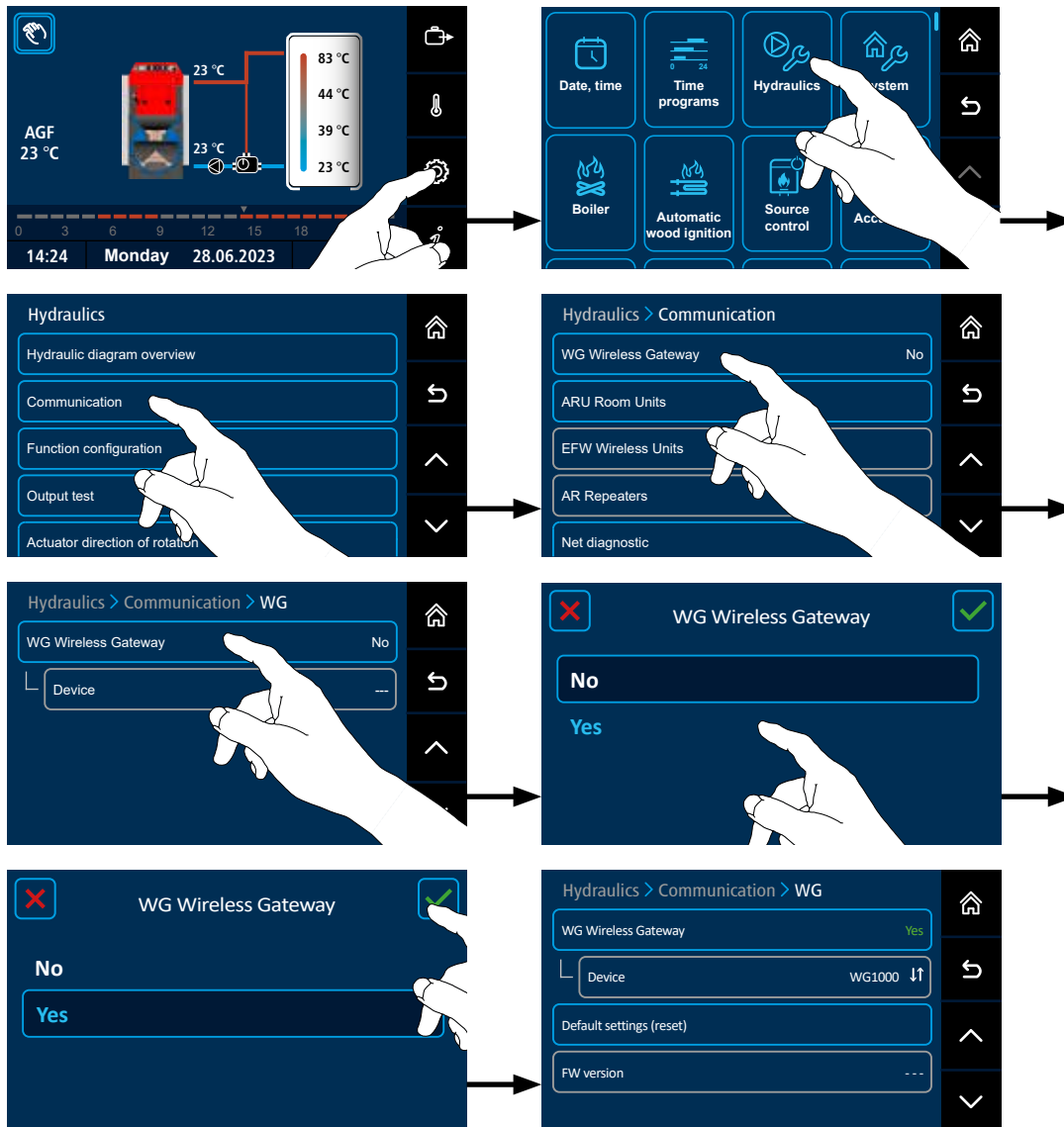
The power supply adapter **MEAN WELL GS06E-3P1J** (6W/5.5/2.1) for the 230V/50Hz socket.



4 SWITCHING ON the COMMUNICATION between the WG1000 gateway and the ACD 03/04:

In the ACD 03/04 controller, the communication between the controller itself and the WG1000 wireless gateway is turned on (enabled).

The gateway requires to have the ATMOSNET data communication (RS 485) linked with the ACD 03/04 controller, using a communication line (A/B).



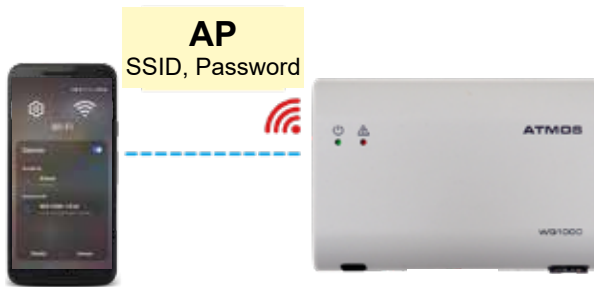
CAUTION - Only for ATMOS ACD 03 a ATMOS ACD 04 controllers from the **program version (VERSION PROG) ... 2.00** → AC16D 2.00 (FW_2.00_2025xxxx.pck)



INFO - The file **FW (firmware)** for updating the ACD 03/04 controller on the **2.00 version** can be found on the **SD card** in the **WG1000 gateway** as well. The SD card can be **ejected** from the **WG1000 wireless gateway**, can be **copied** to the **SD card** of the **ACD 03/04 controller**, and the controller can be **updated** to a new version.

5 CONNECTING the ATMOS WG1000 via the Wi-Fi (SSID):

Connecting the WG1000 gateway via the Wi-Fi network (SSID) - the AP (Access Point) mode



The mobile device, which allows to connect the Wi-Fi network, can be connected to the WG1000 gateway.

In the list of available Wi-Fi networks, the name of the Wi-Fi network (SSID) of the WG1000 gateway can be identified as "WG1000sn***". Using the password, the network can be connected.



CAUTION - If SSID of the gateway is not listed among available wireless networks, if the Wi-Fi network appears but the login to the network (the gateway) takes long time, or if the login is not successful, then the local network (router) should be turned off to eliminate mutual interferences.

After turning on, the log in to the WG1000 gateway should be successful. In settings, the Wi-Fi channel of the gateway operation should be changed to eliminate interferences (ATMOS WG1000 → Gateway Settings > Communication > Wi-Fi and Ethernet > AP - Wi-Fi access point). Then, we turn the local network back on.

Or, the gateway can be connected using a LAN (Ethernet) cable. Then, the Wi-Fi channel settings can be changed.

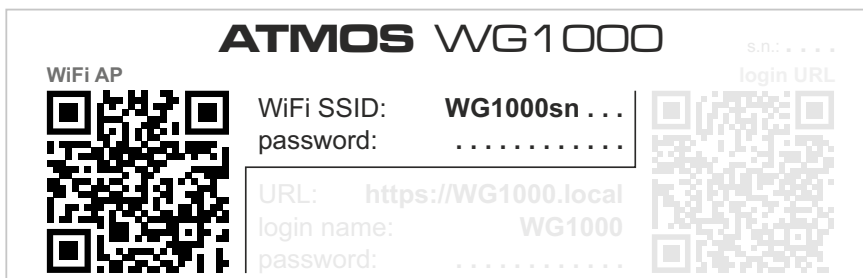


INFO - If a different Wi-Fi network is used in the building, the automatic login to the WG1000 gateway network (SSID) should be disabled on the phone (the mobile device).

In next steps of the installation wizard, the access to the gateway environment can be set up from the local Wi-Fi network without re-enrolling the networks (AP-SSID gateways / STA-SSID; see point ③).

For an **easy connection**, the **QR code** can be used which automatically connects the user to the Wi-Fi network of the gateway as an Access Point (AP).

The QR code automatically directs and connects the user to the **SSID** of the **Wi-Fi network of the WG1000 gateway** and **logs in the user with the default password**, which is **automatically prefilled** thanks to the **QR code**.



INFO - The SSID (network name) and the password can be changed in gateway settings, or the factory (default) settings can be kept.

If necessary, all settings can be reset and returned back to factory settings in ACD 03/04 controller (⚙️→🔧 Hydraulics/Communication/WG Wireless Gateway/Default settings (reset) /WiFi and Ethernet) by ☒ (complete reset of all Network interface settings).

Settings of network interfaces can be reset in the gateway working environment directly (ATMOS WG1000 → Gateway Settings > Communication > Wi-Fi and Ethernet > Default Settings).

By confirming "Default Settings" Default Values a complete reset of all the network settings is performed. Then, restarting and logging out from the WG1000 gateway will occur. A new log in to the Wi-Fi network of the gateway is requested using the default (factory) settings (SSID:/ Password:) which are on the label with the QR code; the label is attached to the gate!

6 LOGIN to the ATMOS WG1000 gateway environment:

Connecting working environment of the WG1000 gateway via HTML pages



After successful login to the Wi-Fi network of the gateway (AP), the login to the environment of the WG1000 wireless gateway is needed via the HTML page <https://wg1000.local>.

Another QR code can be used to automatically direct the user to the HTML page of the gateway. The login screen is displayed to log in using the default login name and password (can be entered manually or be pre-filled by scanning the QR code).

ATMOS WG1000		S.n.:
WiFi AP	WiFi SSID: WG1000sn . . .	login URL
	password:	
	URL: https://WG1000.local login name: WG1000 password:	



INFO - If mobile data in a phone or a tablet are switched off, the network is connected via Wi-Fi referred by the QR code, and the data transfer data over the mobile network is eliminated.



INFO - In gateway settings, the SSID (network name) and the password can be changed, or the factory (default) settings can be kept.

If necessary, all the settings can be reset and returned back to factory settings in the ACD 03/04 (⚙️→🔄 Hydraulics/Communication/WG Wireless Gateway/Default settings (reset)/User settings).



CAUTION - The web browser requires the security certificate. The certificate should be installed in advance, or a notification on security risks has to be accepted. Another web browser has to be chosen in case of functionality problems.

Each web browser, which opens html pages with parameters and settings of the WG1000 gateway, is ready to protect the computer or phone from harmful viruses. If the browser opens unknown pages, a potential risk is reported.

A security certificate has to be installed to the browser to ensure the pages are safe for the browser.

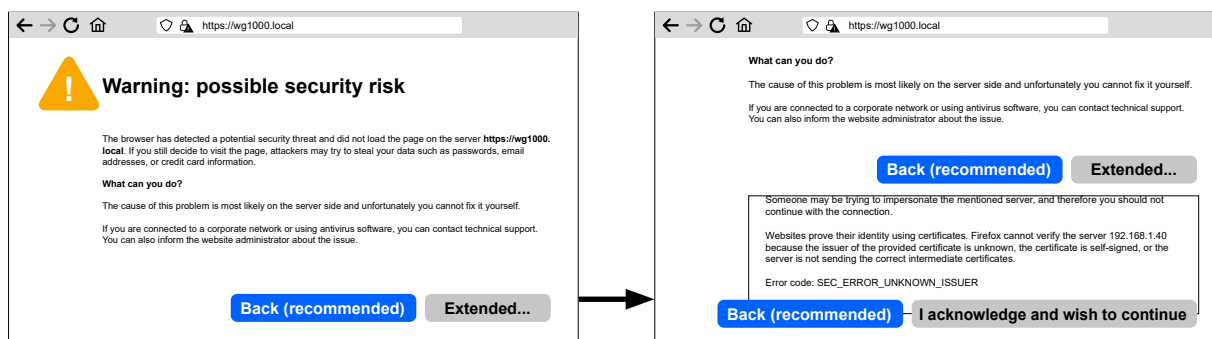
The security certificate (Atmos-Device-CA) for the WG1000 html pages (an internal working environment of the gateway) can be **downloaded from the SD card** in the slot of the WG1000 gateway. The certificate is available on www.atmos.eu/ke-stazeni or on cloud.atmos.eu as well. The installation procedure is prescribed by the manufacturer of the device (a computer, a phone, etc.). Moreover, the certificate can be downloaded from the **working environment of the gateway**; <https://WG1000.local>. First, **the warning before threats has to be manually agreed**, and second, the certificate has to be downloaded and installed.



INFO - - If a security certificate is not installed, the acceptance of security risks may be required at each login to the gateway (at each web page access). The acceptance is just formal since the gateway does not cause any risk to the browser. **The certificate is not required for the access via the Atmos Cloud.**

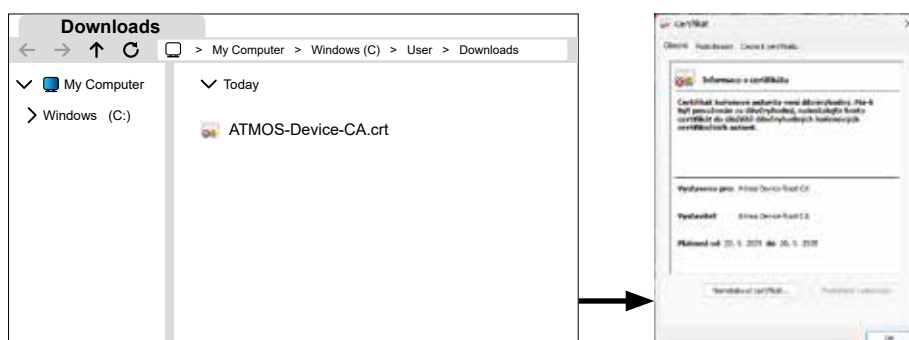
An example of a security risk notification and acceptance

Warning: potential security risk → Advanced → I accept and continue



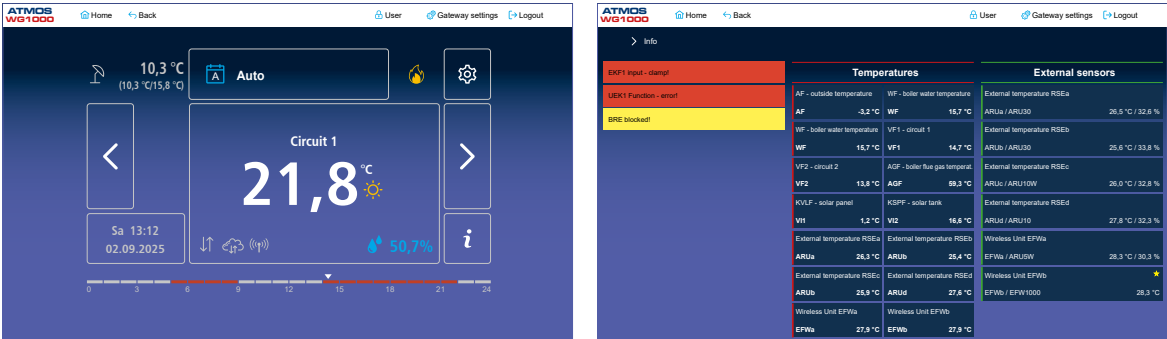
Example of security certificate installation

Downloading → Downloaded files → ATMOS-Device-CA.crt → Installing certificate...

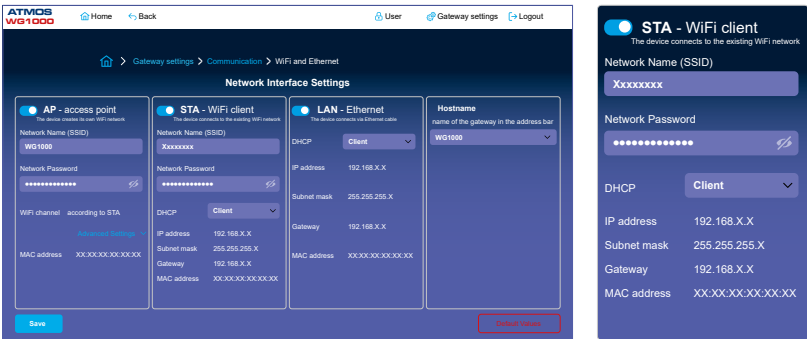


Working environment of the WG1000 gateway allows to set the gateway or to manage the ACD 03/04 controller without the Internet access (see chapter 7. Working environment of the WG1000 gateway).

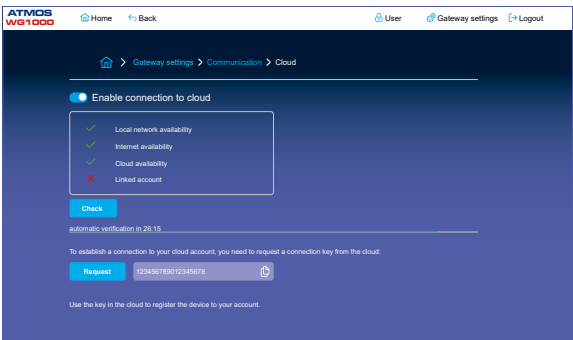
Working environment of the gateway is almost identical to the Atmos Cloud environment, both in appearance and functionality. Moreover, additional settings are provided for network connections, Cloud communication, network management of wireless devices and updates.



Environment of the WG1000 gateway allows to set and access the wireless connection to the (SSID) local network (STA). An access to the Internet and a remote management of the heating system (ACD 03/04) is allowed via Internet and Atmos Cloud as well.



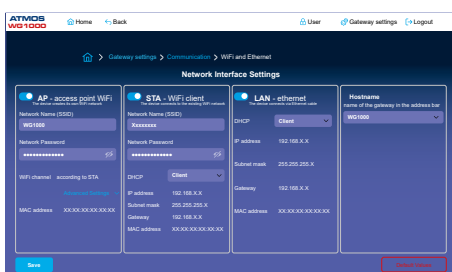
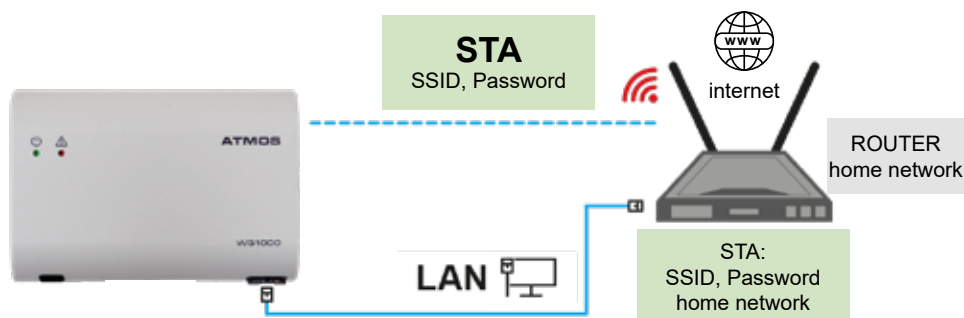
Connection to the Atmos Cloud can be enabled in the gateway environment, including the key generation to connect the WG1000 gateway to the Atmos Cloud profile. (see chapter 7. Working environment of the WG1000 gateway).



7 CONNECTING the ATMOS WG1000 and local network / Internet:

Connecting the WG1000 gateway and the local network (router) / Internet - LAN or STA

After logging in to the HTML pages of the WG1000 gateway and the internal environment, the local network and the Internet access can be set up, and the wireless access (SSID) can be enabled.



The WG1000 wireless gateway offers two ways of connecting the local network (router) / Internet:

a) LAN - A cable connection between the WG1000 gateway and the local network (router)

A smooth and stable solution, which requires a LAN data cable between the local router and the WG1000 gateway.

The access and the password for the local network do not need to be solved.



INFO - In this case, we can skip the point 5 CONNECTING the ATMOS WG1000 gateway via the Wi-Fi network (SSID)

b) STA - A wireless connection between the WG1000 gateway and the local network (router)

For the wireless communication between the WG1000 gateway and the local router (the local Wi-Fi network), an access has to be set up (allowed) in the gateway. That way, an access to the Internet and the management via the Atmos Cloud are established.

On the HTML pages of the WG1000 wireless gateway, the access data (SSID) for the local Internet network (local Wi-Fi network) should be set up.



CAUTION - The WG1000 gateway has to be located in a range of the local Wi-Fi network!

How to make accessible the wireless connection to (SSID) of the local network from (HTML pages) of the internal working environment of the WG1000 gateway.

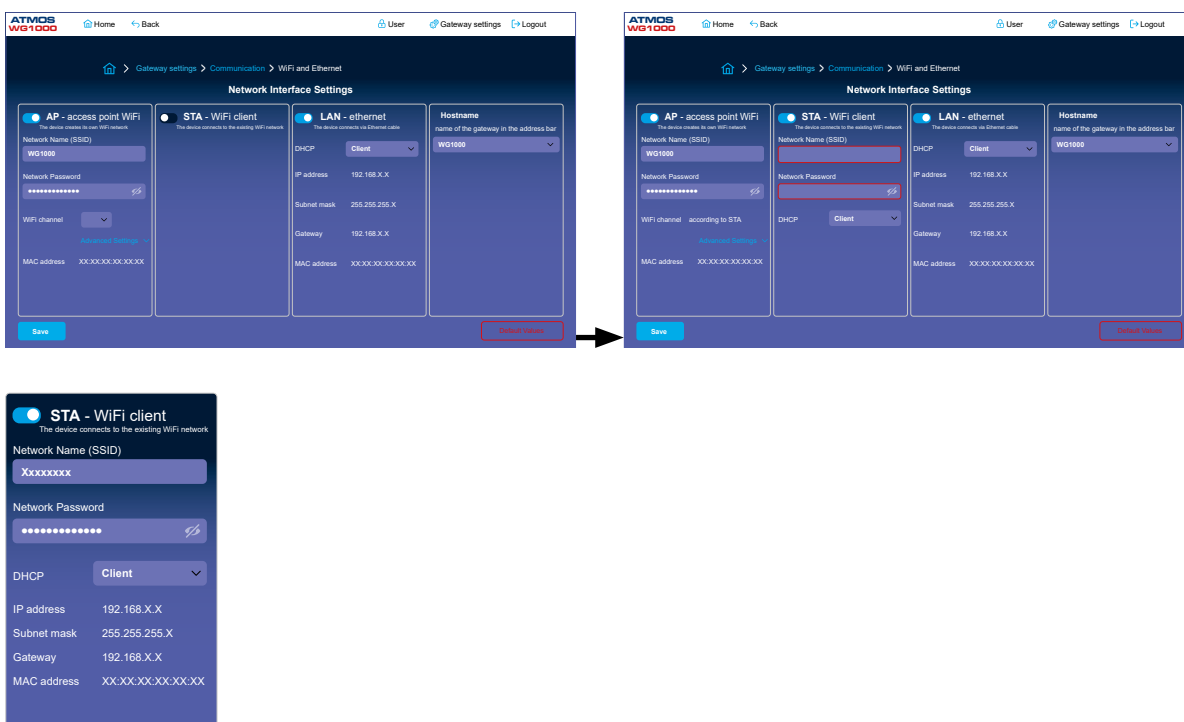


INFO - To make changes and set the Communication, you have to log in under the Technician password; tab The user changes the permission to Service technician .

In the menu **Gateway settings > Communication > WiFi and Ethernet**, we turn on the **STA - Wi-Fi client communication**. Then, we fill in the name of the local Wi-Fi network (SSID) and the access password.



INFO - The exact Name of the local network (SSID) has to be given or can be read on a connected device from Wi-Fi networks overview. All characters (case sensitive) must be respected.



INFO - If more WG1000 wireless gateways are operated in a building (on the same network), the gateways have to differ in the "Host name".

The changes have to be done **before the connection to the local network** (STA - Wi-Fi Client). That way, conflicts in the network are eliminated.

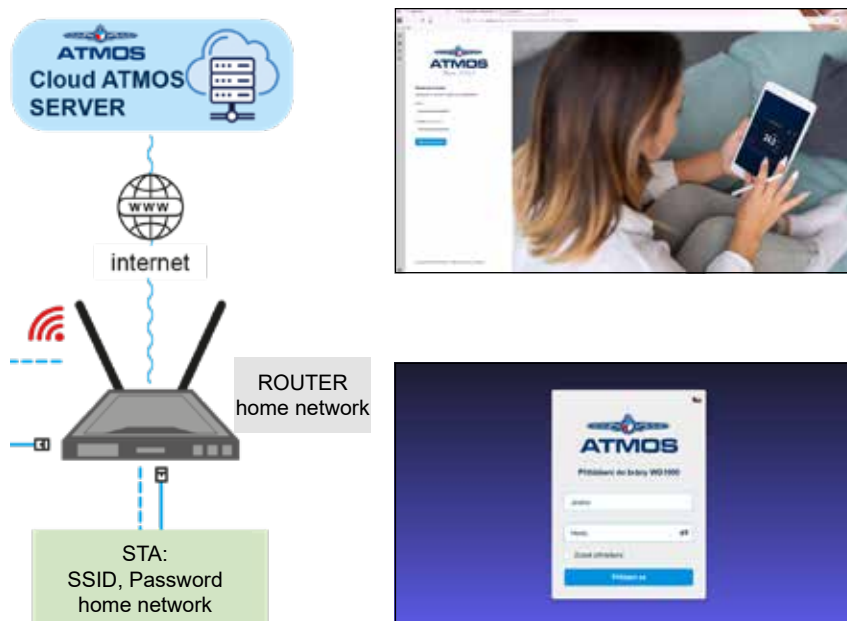
If a LAN cable is used to connect the local network especially, other WG1000 gateways are recommend to be disconnected (turned off) in the network and turned on after the Host name is reconfigured at the gateway being added. If the Host name is changed, the QR code with factory settings can no longer be used to enter pages of the working environment of the gateway. The settings have to be entered manually in the correct format according to the Host name change (e. g. <https://wg1000-2.local>).

8 CONTROLLING the ATMOS ACD 03/04 by the ATMOS WG1000 via the local network or Internet (the ATMOS Cloud):

Managing the ATMOS ACD 03/04 controller via (HTML) pages of the WG1000 gateway in range of the local network (Wi-Fi/LAN)

or

managing the ATMOS ACD 03/04 controller via Internet on the ATMOS Cloud.



Two ways of the wireless control of the ACD 03/04 controller via the WG1000 gateway connected to the local network (router) / Internet:

a) Managing via HTML pages of the WG1000 gateway and working environment

Managing the ACD 03/04 controller via HTML pages of the WG1000 gateway in range of the local network; Wi-Fi/LAN in the local network (router).

Procedure is identical with ⑥ LOGIN to the ATMOS WG1000 gateway environment; without the need to switch on the wireless Wi-Fi network of the WG1000 gateway (SSID - wg1000-xxxx).

b) Managing via the Atmos Cloud

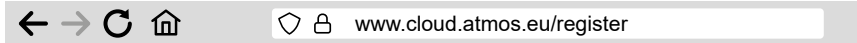
The direct control of the ACD 03/04 via Atmos Cloud on Internet. Account must be created (registered) on Atmos Cloud www.cloud.atmos.eu (see point ⑨) The WG1000 gateway has to be connected to the Atmos Cloud using the generated key (see ○).



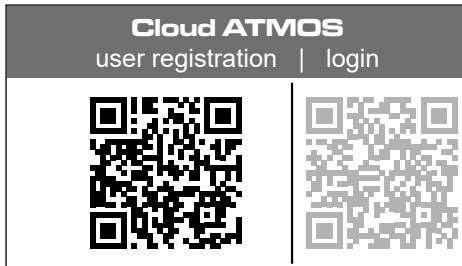
INFO - Using the Cloud, own devices can be controlled, other devices (other gateways) can be connected, or the devices can be shared with other users (e.g. heating engineers).

9 REGISTERING ACCOUNT on ATMOS Cloud - www.cloud.atmos.eu

The web browser is opened and pages of the Atmos Cloud are accessed; www.cloud.atmos.eu.



or QR codes are used to be easily directed to the relevant pages.



A new user account is created. After registering user's details, a user name is automatically generated and sent to the email address provided during the registration.

User name is generated automatically; can be changed in the profile on the Atmos Cloud (System Settings)



CAUTION - The registration is completed by a confirmation in the message sent to the email address provided during the registration.



Password - after finishing the registration, the user is asked for the **first login**. The user specifies and confirms the access password. The password can be changed in the profile on the Atmos Cloud (System Settings)

⑩ GENERATING the KEY to connect the WG1000 gateway to the cloud

Thanks to the generated key, the user can connect an own device (WG1000 gateway) to the account on the Atmos Cloud.

The key (code) consists of a sixteen-digit number and is valid for 24 hours.

Generating the key to connect the WG1000 gateway to the Atmos Cloud:

Generating the key on HTML pages of the WG1000 gateway

We have to log in to the environment of the WG1000 gateway via <https://wg1000.local> (see points ⑤ and ⑥ or ⑧a)



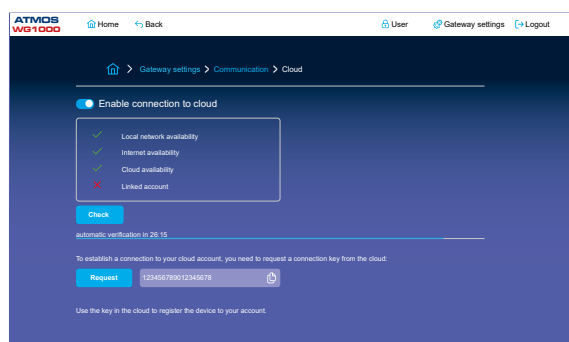
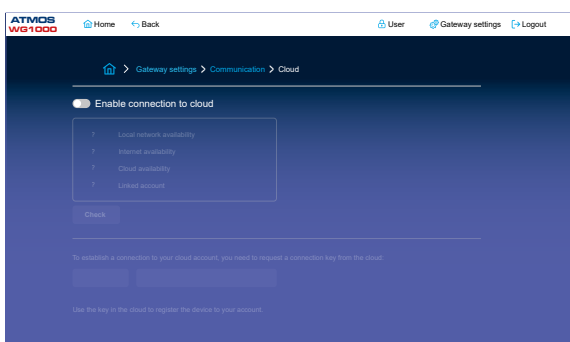
ATMOS WG1000 → Gateway settings > Communication > Cloud > Enable connection to cloud.



ATMOS WG1000 → Gateway settings > Communication > Cloud > Request.

Using the "Request" button **Request** The key is generated to connect the WG1000 gateway to the Atmos Cloud account. By the "copy" button  the code is copied to the clipboard to be inserted to the Cloud (Cloud Atmos → Devices → Add new device → Connection key → Search).

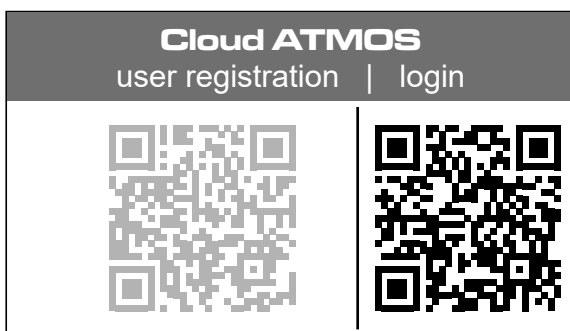
In the WG1000 gateway, we confirm the connection to the Cloud by clicking the "Check" button. **Check**.



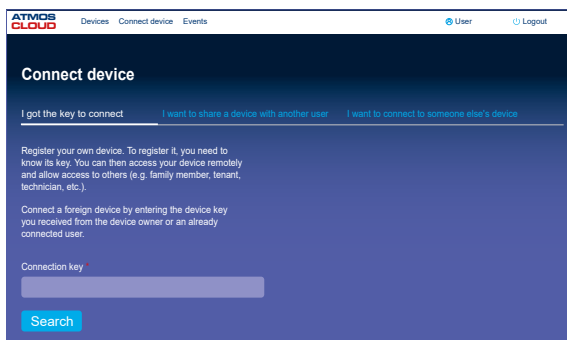
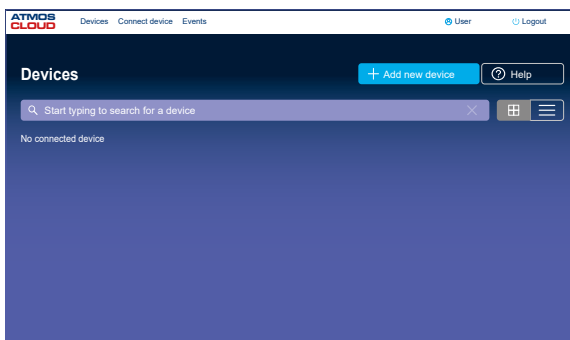
11 CONNECTING the WG1000 and the ATMOS Cloud using key

The WG1000 gateway can be connected to the Atmos Cloud using the generated key. This step completes the installation and commissioning of remote management of the heating system (the ACD 03/04 controller).

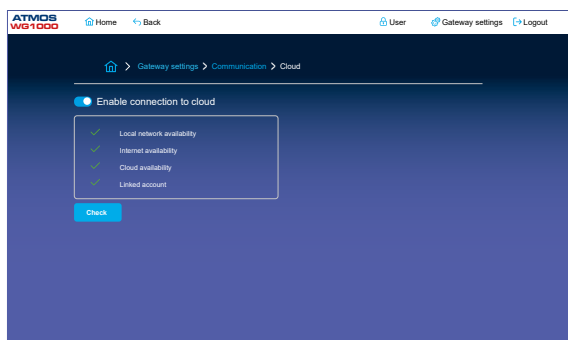
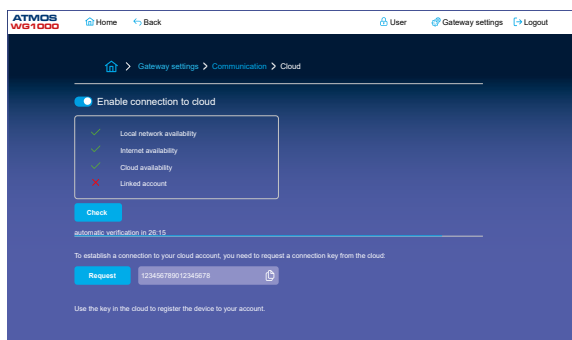
The user can log in with the user name and password to the created account on the Atmos Cloud. alternatively, the QR codes can be used which easily direct the user to the relevant pages.



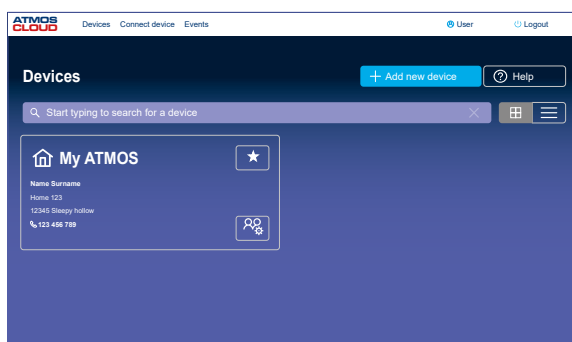
On the ATMOS Cloud, in the top menu select “Devices” and the “+Add new device” button. In the “I got the key to connect” tab, type or paste the generated key into the “Connection key **” field and click “Search” **Search**.



INFO - After inserting the key into the Atmos Cloud, the working environment of the WG1000 gateway "Check" **Check** gateway should be clicked. If everything is all right, the "Linked account" is checked green ✓, The timer (the verification time), the code request button and the code disappear.

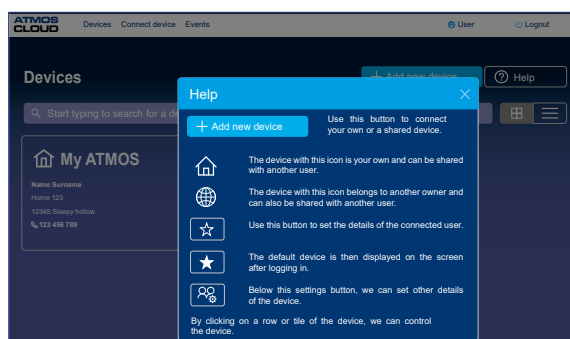


The connected gateway appears on the Cloud under the "Devices" tab



Help and settings options

-  This icon represents own device which can be shared with another user.
-  - This icon represents the device which belongs to another owner, and can be shared with another user.
-  - By this button, the device is set as default
-  - The default device, set that way, is displayed on the screen after log in.
-  - Under this settings button, we can set additional device details



That way, the ATMOS WG1000 wireless gateway and the Atmos Cloud are ready to manage and set the heating system; the ATMOS ACD 03/04 equithermal regulation can be controlled remotely.

7. WG1000 GATEWAY WORKING ENVIRONMENT



Basic description of managing and setting the WG1000 gateway

Internal working environment of the WG1000 wireless gateway (Wi-Fi gateway) running on the html pages of the gateway itself (<https://wg1000.xxxx>).

This working environment allows the complete management of the gateway itself and the connected ACD 03/04 controller. Connection to the Internet and Atmos Cloud are not required.

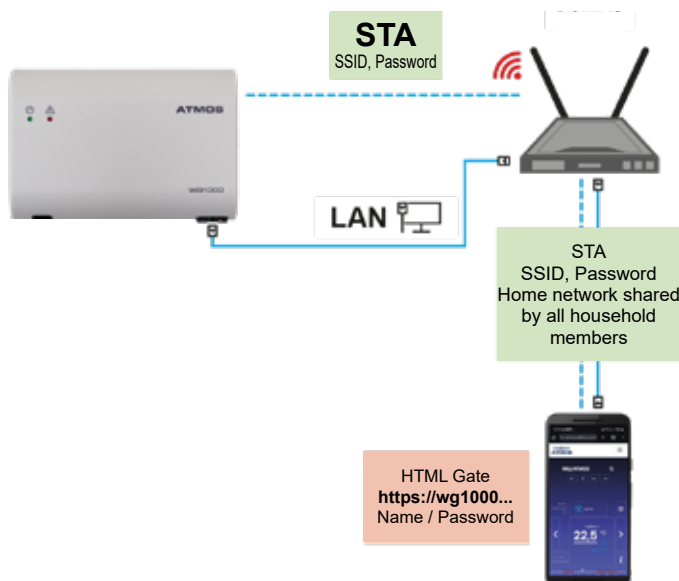
There are two ways to enter the working environment of the gateway:

- 1 - Connecting the own Wi-Fi network of the gateway - connecting the Wi-Fi network of the WG1000 gateway - AP (Access Point)



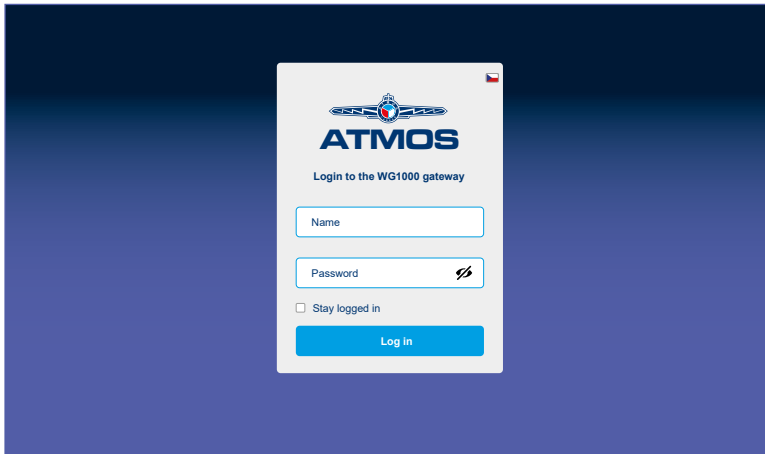
- 2 - Connecting the local network (router) - connecting Wi-Fi (LAN) of the local network (router) - STA (Station) without the need to switch on the Wi-Fi network of the WG1000 gateway.

The Wi-Fi can be connected that way after setting up the network interface in the gateway by the method 1 (WG1000 > Gateway settings > Communication > WiFi a Ethernet > STA - WiFi client - Network Name (SSID)/Password).



Login to the working environment of the WG1000 gateway:

Log in by manual entering the default login items (name and password) or using a QR code.



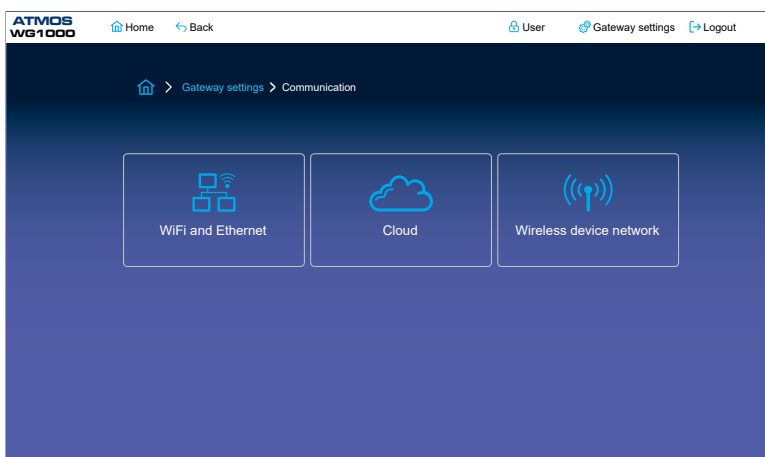
INFO - In gateway settings, the SSID (network name) and the password can be changed, or the default settings can be kept.

If necessary, all the settings can be reset and returned back to factory settings in the ACD 03/04 (⚙️→🔄 Hydraulics/Communication/WG Wireless Gateway/Default settings (reset)/User settings).

Communication Settings for Internet and Atmos Cloud connection:

Communication Settings for Internet and Atmos Cloud connection:

The working environment of the gateway is intended to set up the Communication among the gateway, the local network / Internet, the Atmos Cloud and the network management of ATMOS wireless devices.



INFO - To make changes and set the **Communication**, you have to log in under the **password** on the service tab 🔒 The User changes the permission to Technician 🔒.



Wi-Fi and Ethernet - setting up network connections of the gateway.

AP - Wi-Fi access point. In this mode, the WG1000 gateway acts as an access point. The AP broadcasts the **Wi-Fi network** which can be accessed by a mobile phone, a tablet, a PC, etc.

The menu allows to set the Network Name (SSID) and the Password. In this mode, a direct connection between a mobile phone, a tablet, a PC and the WG1000 gateway is allowed. A connection between the WG1000 gateway and the Internet / the Cloud is not possible.

The Access Point mode is enabled by default since this way of connection to the WG1000 gateway is expected at least.



CAUTION - If AP mode settings are changed via the device (a mobile phone, a tablet, a PC) which is connected in the AP mode (the network), the user is logged out from the WG1000 after saving new settings, and needs to log in to the new network (with a new password)! The WG1000 gateway can be whenever identified by the MAC address in the given mode.



INFO - If necessary, all the settings can be reset and returned back to factory settings in the ACD 03/04 controller (⚙️→🔧 Hydraulics/Communication/WG Wireless Gateway/Default settings (reset)/WiFi and Ethernet) confirms ☒ (a complete reset of all the Settings of network interfaces).

The Wi-Fi channel - . If there is **another Wi-Fi network in range, using the same or neighboring channels, interferences of Wi-Fi networks can appear**, and channel settings have to be changed.

Advanced settings - The gateway IP address, the network mask and the network gateway can be changed. Since collisions with duplicate devices in the network are not expected, **parameters modifications** are not necessary, or rather **are not recommended!**

STA - Wi-Fi client - The STA mode is used when the gateway should connect to a local (home) Wi-Fi network. Then, the gateway can be accessed from the local network using a mobile phone, a tablet, a PC. If the local network provides an Internet access, the WG1000 gateway can be connected to the Cloud, see > Gateway settings > Communication > Cloud.



INFO - Since this is a wireless connection, the device should be in a place with sufficient and high-quality local network signal (a local router Wi-Fi).

To connect a local network, the Local Network Name (SSID) and the access Password have to be entered. Parameters of the IP address, network mask and network gateway can be assigned automatically by the local DHCP server = client, or can be set to a fixed value, see DHCP = Static IP



CAUTION - The exact name of the local Wi-Fi network (SSID) should be known or should be read on a connected device from Wi-Fi networks overview.

All characters (case sensitive) must be respected.



INFO - If necessary, all the settings can be reset and returned back to factory settings in ACD 03/04 (⚙️→🔧 Hydraulics/Communication/WG Wireless Gateway/Default settings (reset)/WiFi a Ethernet) confirms ☒ (a complete reset of all the Settings of network interfaces).

LAN - Ethernet - The LAN mode is used when the gateway should be connected to a local Ethernet network using a LAN cable. Then, the gateway of the local network or the cloud can be accessed from a mobile phone, a tablet, a PC; see Cloud Settings

When connecting via a LAN cable, entering login items is not needed to connect the local network. Moreover, the connection is very stable.

Parameters of the IP address, network mask and network gateway can be assigned automatically by the local DHCP server = client; the WG1000 gateway becomes a DHCP server = server. Or, the parameters can be set to a fixed value, see DHCP = Static IP



INFO - If necessary, all the settings can be reset and returned back to factory settings in the ACD 03/04 (⚙️→🔧 Hydraulics/Communication/WG Wireless Gateway/Default settings (reset)/WiFi a Ethernet) confirms ☒ (a complete reset of all the Settings of network interfaces).

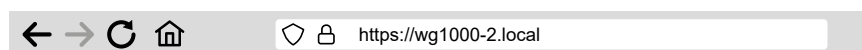
Hostname - (gateway name in address line is used to distinguish multiple WG1000 wireless gateways in one network. In that case, each gateway should have a different "Host name".

Up to 10 gateways in one network can be operated.



CAUTION - Changing the "Host name", the URL address entered in the address line of the browser is changed as well.

Saving changes, we restart and log out from the WG1000 gateway. We have to go to new gateway pages (URL) and log in.



If a second gateway is added and the "Host name" is set to WG1000-2, the URL becomes: <https://wg1000-2.local> (in the AP mode).

If that case, the QR code with factory settings can no longer be used to enter pages of the working environment of the gateway.

The settings have to be correctly entered manually.



INFO - The changes have to be done before the connection to the local network (STA - Wi-Fi Client). That way, conflicts in the network are eliminated.

If a LAN cable is used to connect the local network especially, other WG1000 gateways are recommend to be disconnected (turned off) in the network and turned on after the Host name is reconfigured at the gateway being added.

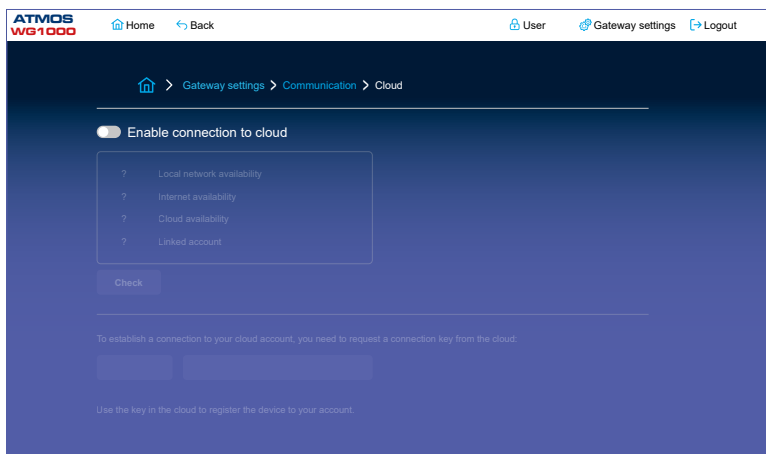
Default values. All **Settings of network interfaces** are completely reset and the WG1000 gateway is restarted.

By confirming the command, we are logged out from the WG1000, and we have to log in to the WiFi network of the gateway again. The default (factory) data (SSID (network name):/Password:) have to be used; those data are on the QR code attached to the gateway!

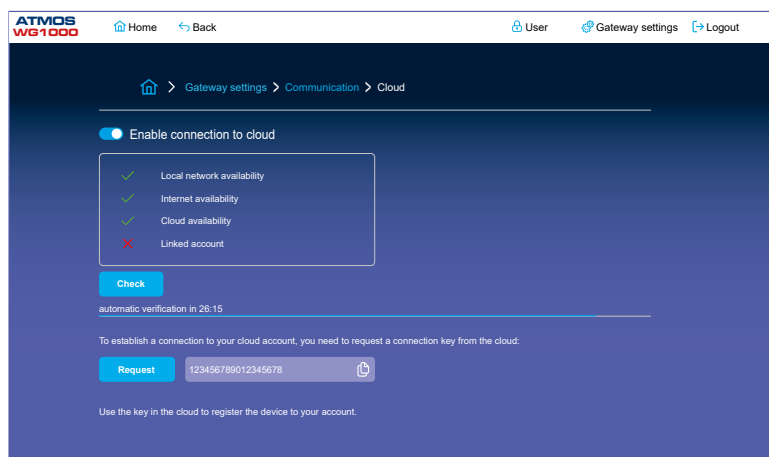




Cloud - Communication between the WG1000 gateway and the Atmos Cloud can be enabled.



Access enabled - Enabling the access to the Cloud, additional options are opened to check the connection and generate a key for connecting the Atmos Cloud to the WG1000 gateway.



Verify: The button checks and tests separate parts of the connection between the gateway and the Cloud.

The button can be used as a diagnostic tool for problems with connecting the Cloud.

Request: Click the button to generate a key for connecting the gateway with the Atmos Cloud. Use the "Copy" button to copy the generated code to the clipboard so you can paste it into the Atmos Cloud.

The generated key is inserted in the created profile in the Cloud on the tab "Connect device → Connection key → Search"



INFO - After inserting the key into the Atmos Cloud, we click environment of WG1000 on

Check If everything is all right, the "Linked account" is checked and the timer (the verification time), the code request button and the code disappear.

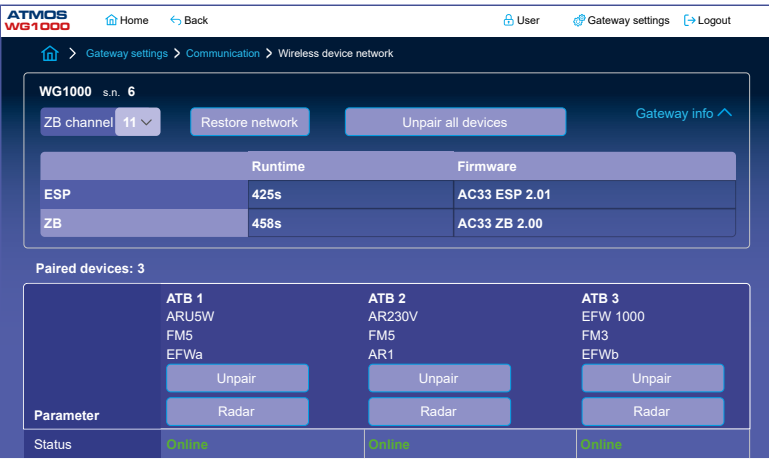


Wireless network of devices - ATMOS wireless devices in the ATBee wireless network

The screen provides an overview of wireless devices connected to the WG1000 gateway. For each device, the overview shows the signal strength, the connection point, and the ability to unpair or re-establish the network.

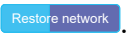
Overview of possible devices

- ARU5W - wireless room unit (a sensor)
- ARU10W - wireless room unit with temperature correction
- ARU30W - wireless room unit with touch screen
- AFW - wireless outdoor temperature sensor
- EFW20 - wireless temperature sensor (water) - KTF20 (-10 ÷ +120 °C)
- EFW1000 - wireless solar temperature sensor - PT1000 (-25 ÷ +140 °C)
- EFW button - wireless button (without the button)
- AR12V - signal repeater - for external power supply/adaptor 12VDC
- AR230V - signal repeater - for wall socket (230V/50Hz)



ZBchannel - The ZB (ATBee) network channel of the WG1000 gateway has to be changed in case of interferences from existing wireless (WiFi) devices. This is the case of the ATBee network interference and problems to connect wireless devices to the WG1000 gateway; the case of recurring errors - alarm messages in the ACD 03/04 controller.

Restore network - An ideal communication connection of wireless devices in the ATBee network is reset; in case of recurring errors - alarm messages in the ACD 03/04 controller.

Clicking the tile, the progress of the restore is shown .

7. WG1000 gateway working environment

Unpair all devices - unpairing all wireless devices connected to the WG1000 gateway.

The function is needed, for example, when resetting the ACD 03/04 controller to the factory settings. If wireless devices in the controller were not unpaired before the reset, the communication of wireless devices would no longer work. The function allows to unpair all the devices en bloc. Then, all the devices in the reset controller have to be paired and set up again

After that, we can remove (deactivate) the device  →  Hydraulics/Communication/EFW wireless unit/EFW Unit Permission/EFWx by confirming the command with No ☒.

Gateway info 

Runtime - gateway runtime - ESP gateway processor, ATB -processor ATbee.
(the counter is reset by disconnecting from the supply)

Firmware - program (software) installed in the WG1000 gateway

Paired devices:

Unpair - possibility to unpair separate wireless devices connected to the WG1000 gateway.

Radar - activation of signal strength monitoring mode - the signal strength measurement is turned on for 20 minutes to find the best location of the wireless device.

Descriptions of the parameters displayed for paired wireless devices

- these are informational and analytical data

Label / Alias	Standard name	Explanation
Status	Status	Current device status – whether On-line, Off-line or in another mode (e.g. Sleep, Error).
RSSI	RSSI	Instantaneous wireless signal strength (in dBm). Higher value = better signal.
RSSI Avg	RSSI Avg	Average signal strength over a period of time; indicates connection stability.
PARENT	Parent	Identification of the parent node; used by the device to communicate through (e.g. gateway, repeater).
nROUTE	Rep Cnt	The number of hops or repeaters; passed by signal before reaching the destination node.
TEMP	Temp	Temperature from the internal sensor of the device (in °C); helps to monitor operating conditions and overheating.
HUMIDITY	Humidity	Relative humidity (%) measured by the sensor in the device.
ExtTemp	Ext Temp	Temperature from an external sensor connected to the device (e.g. an outdoor sensor).
Battery	Batt Stat	Battery status – can be expressed in percentage, voltage or as a status indication (OK / Low).
Lost Conn	Lost Conn	The number of connection failures recorded since the last restart or in a given period.
Lost Dur	Lost Dur	Duration of the last connection failure (in seconds).
Lost Avg	Lost Avg	The average length of all connection failures (in seconds).
Lost Max	Lost Max	The longest recorded connection failure (in seconds).
Run Time	Run Time	The total operating time of the device (format d hh:mm:ss) since the last power-on or restart.
Tx OK	Pkt OK	The number of packets those were successfully sent and acknowledged without errors (“Tx” = Transmit).
Tx Retry	Pkt Retry	The number of packets those had to be retransmitted due to the lost acknowledgment or transmission error.
Tx Fail	Pkt Fail	The number of packets those failed to be delivered even after repeated attempts.
Rx Packets	Pkt Nr. / Pack Nr.	The sequence number or the number of received packets – used to detect lost packets (“Rx” = Receive).
Rx Time	Recv Time	The time when a valid packet was last received from the device (from the viewpoint of the coordinator/gateway).



The System for setting parameters of the user:

The screen is used to manage personal data and user's settings.

Language - allows to select the language for the WG1000 gateway.

Color scheme - allows individual setting of the color scheme according to user's preferences.

Default circuit - is used to set the default circuit (Circuit 1, Circuit 2, Circuit 3 (Circuit 4)), which is displayed on the Home screen first.

Security certificate for trustworthy connection to the gateway - pressing the button "Certificate", a security certificate of the device used to connect the gateway, is downloaded to be installed into the (browser). Then the WG1000 gateway can be connect without security risk messages.

User name - allows individual setting of the user name and password for logging to the working environment of the WG1000 gateway.

New password: setting of user's password.



INFO - If necessary, all the settings can be reset and returned back to factory settings in ACD 03/04 controller (⚙️→🔧 Hydraulics/Communication/WG Wireless Gateway/Default settings (reset)/User settings).

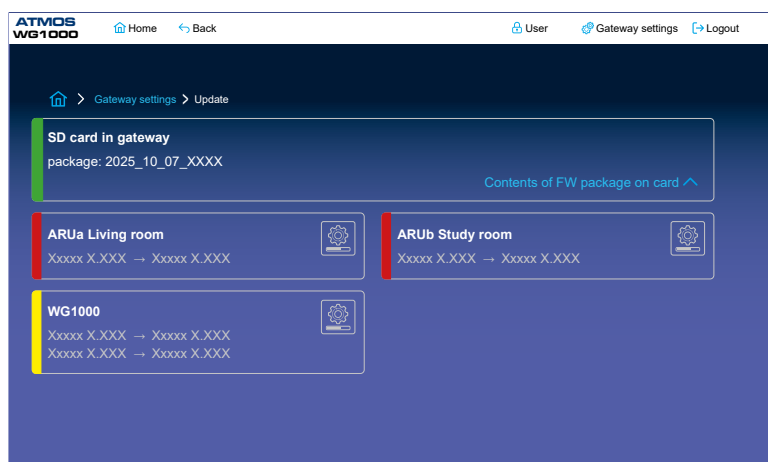


Update - allows to update wireless devices:

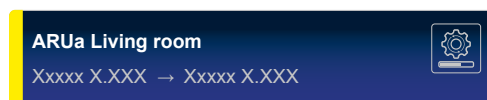
The screen is used to update all connected wireless devices, including the firmware of the WG1000 gateway.

The update is done by the firmware stored on the SD card in the WG1000 gateway.

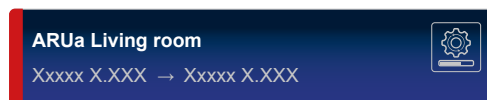
First, all the wireless devices (sensors, buttons, room units, repeaters) have to be updated. At the end, the WG1000 gateway itself is updated.



A device to be updated is marked with a yellow stripe on the left stating "old FW → new FW". A button  to perform the update is displayed.

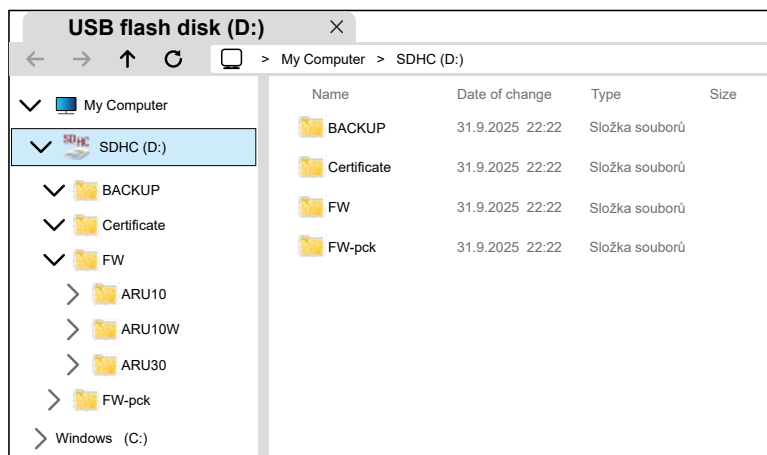


The device marked with a red stripe has a problem; the update was not completed successfully, or the update was not performed (bad or incorrect firmware). The button  to perform an update.....



INFO - **Update**  can be performed after logging in under **the password** on tab  **User** changes the permission to  **Technician**.

The gateway and wireless devices are updated by the firmware saved on the SD card in the WG1000 gateway.



- FW** - the folder contains the firmware for the ACD 03/04 controller, version 2.00 (2.10)
- ARU10** - the sub-folder contains the firmware for the ARU10 room unit
- ARU10W** - the sub-folder contains the firmware for the ARU10W wireless unit
- ARU30** - the sub-folder contains the firmware for the ARU30 room unit
- AC16D PRG 2.00** - the file contains the firmware for the ACD 03/04 controller itself (AC16D PRG 2.00 (2.10))

Data on the SD card in the WG1000 gateway can be used to update the ACD 03/04 controller.

- FW-pck** - the folder contains the complete software package for the WG1000 gateway and wireless devices - WG_2.00_2025xxxx.pck (FW_2.10_2025xxxx.pck).
- Certificate** - Security CERTIFICATE (Atmos-Device-CA) for trusted connection to the WG1000 gateway. To open the web interface of the WG1000 gateway in the local network, the certificate has to be installed in the computer (browser) or the mobile phone. The browser does not display warning messages then.
 The certificate **is not required** for an access via the **Atmos Cloud**



CAUTION - The structure of folders and files on the SD card has to be always maintained. Then, the gateway can correctly identify and install the program (software). The old firmware (the program being replaced) can be moved to another folder (e.g. "OLD").



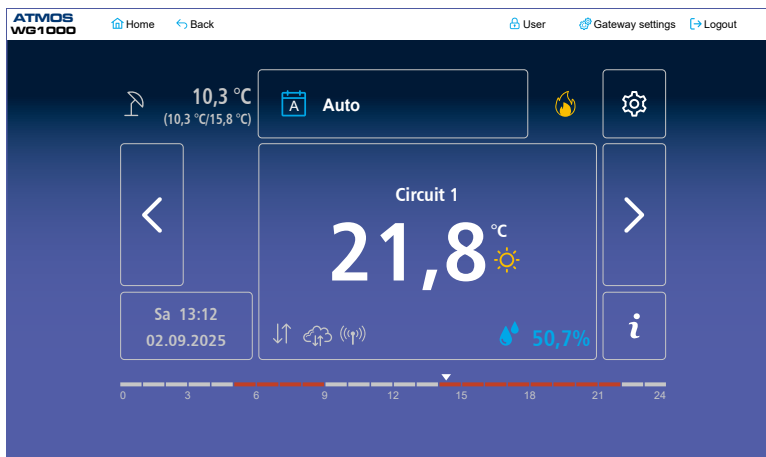
INFO - the **ACD 03/04 controller** can be updated to **the version 2.00 (2.10)** using the **FW** (firmware) located **on the SD card in the WG1000 gateway (the folder FW)**. The SD card can be **ejected from the WG1000 wireless gateway, can be copied to the SD card of the ACD 03/04 controller, and the controller can be updated** to a new version FW 2.00 (2.10).



Home screen / Home - the screen to control the heating system in the connected ACD 03/04 control unit.

In the working environment of the gateway, a connected device (Wi-Fi/LAN) can manage the heating system similarly to the ARU30 and ARU30W room units (see **user's ACD 03/04 guide**).

Everything is done within the range of the Wi-Fi network of the WG1000 gateway itself or within the range of the Wi-Fi (LAN) network of the local router (**Internet connection is not needed**).



Communication - wired, RS 485 ATMOSNET - between the WG1000 wireless gateway and the ACD 03/04 controller

↕ - **communicates**

↕ - **communication is working** (the wired connection is functional), but the gateway is not enabled in the ACD 03/04 control ⚙️ → ⚙️ Hydraulics/Communication/WG Wireless Gateway/WG Wireless Gateway, by confirming the command with Yes ☒.

✖ - **does not communicate** - a cable connection failure

Cloud

☁ - **communicates**

☁✖ - **does not communicate**

- **communication forbidden** (no icon) - WG1000 gateway access to Cloud is not allowed - Gateway settings > Communication > Cloud

Wireless devices - ATMOS wireless devices - ATBee

((())) - **all wireless devices (devices) are on-line**

((())) - **some wireless device (device) is off-line**

- **no wireless device (device) connected (no icon)**

i Information - under the button **i** there are all the necessary information about the ACD 03/04 controller and the heating system, including the connected wireless devices.

ATMOS

WG1000

Home

Back

UserGateway settingsLogout

> Info

EKF1 input - clamp!

UEK1 funktion - error !

BRE Blocked!

Temperatures

AF - outside temperature

AF-3,2 °C

WF - teplota vody kotle

WF15,7 °C

VF2 - circuit 2

VF213,8 °C

KVLF - solar panel

VI11,2 °C

External temperature RSEa

ARUa26,3 °C

External temperature RSEc

ARUb25,9 °C

Wireless Unit EFWa

EFWa27,9 °C

WF - teplota vody kotle

VF1 - circuit 1

VF114,7 °C

AGF - teplota spalín kotle

AGF59,3 °C

KSPF - solar tank

VI216,6 °C

External temperature RSEb

ARUb25,4 °C

External temperature RSEd

ARUd27,6 °C

Wireless Unit EFWb

EFWb27,9 °C

External sensors

External temperature RSEa

ARUa / ARU3026,5 °C / 32,6 %

External temperature RSEb

ARUb / ARU3025,6 °C / 33,8 %

External temperature RSEc

ARUc / ARU10W26,0 °C / 32,8 %

External temperature RSEd

ARUd / ARU1027,8 °C / 32,3 %

Wireless Unit EFWa

EFWa / ARU5W28,3 °C / 30,3 %

Wireless Unit EFWb

EFWb / EFW100028,3 °C

★ **Favorite item** - in Information, a favorite item can be marked (both the entire group and an individual tile). Such an indexed position is always active when entering Information.



INFO - If an Alarm is declared, the "Favorite item" function is ignored..

8. WORKING ENVIRONMENT - ATMOS Cloud



Basic description of managing and setting the ATMOS Cloud

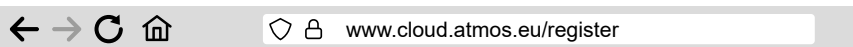
ATMOS Cloud is on-line storage (Server) that is accessible from anywhere with an Internet connection.

Working environment of the ATMOS Cloud on the website **www.cloud.atmos.eu** allows a remote management of the **ATMOS ACD 03/04 equithermal regulation** - thanks to the WiFi **WG1000** wireless gateway.

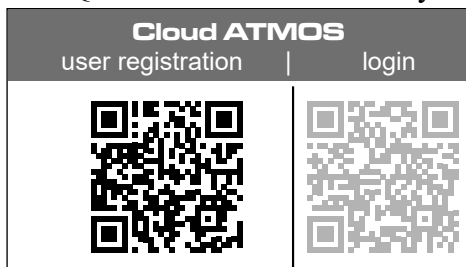
Using the Cloud, own devices (own heating systems) can be controlled, other devices (other gateways) can be connected, or the devices can be shared with other users (e.g. heating engineers).

REGISTERING an ACCOUNT on the ATMOS Cloud - www.cloud.atmos.eu

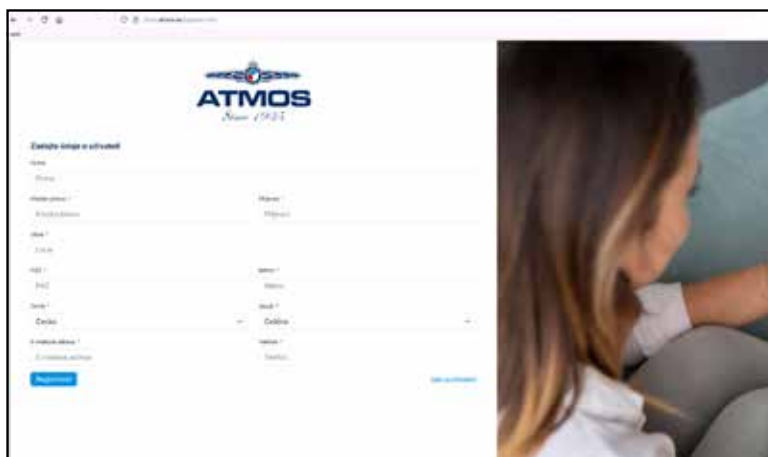
The web browser is opened and HTML pages of the Atmos Cloud are accessed
- www.cloud.atmos.eu.



or the QR code is used to be easily directed to the relevant pages.



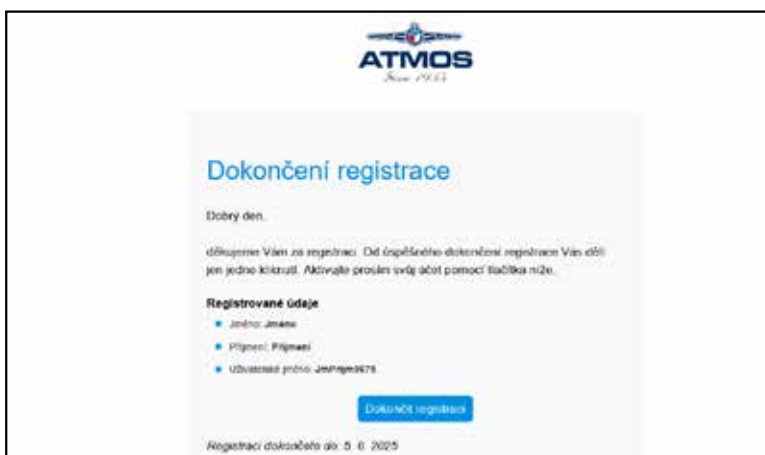
A new user account is created. After registering user's details, a user name is automatically generated and sent to the email address provided during the registration.



User name is generated automatically; can be changed in the profile on the Atmos Cloud (System Settings).



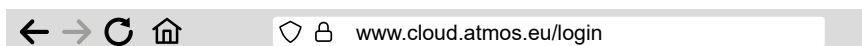
CAUTION - The registration is completed by a confirmation in the message sent to the email address provided during the registration.



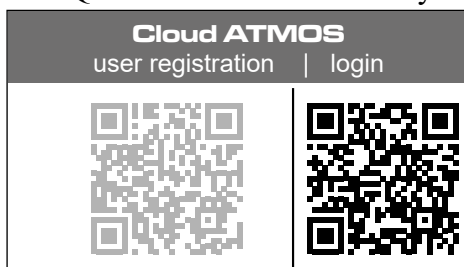
Password - after finishing the registration, the user is asked for the **first login**. The **user specifies and confirms the access password**. The password can be changed in the profile on the Atmos Cloud (System Settings)

Login to the ATMOS Cloud application - www.cloud.atmos.eu

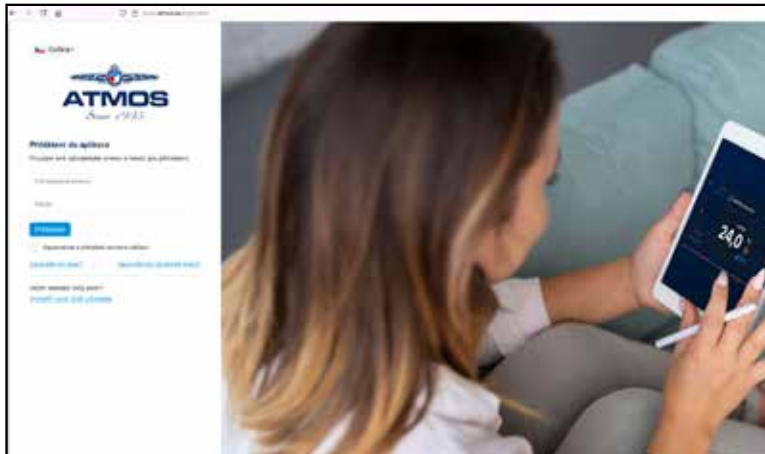
The web browser is opened and HTML pages of the Atmos Cloud are accessed - www.cloud.atmos.eu.



or the QR code is used to be easily directed to the relevant pages.



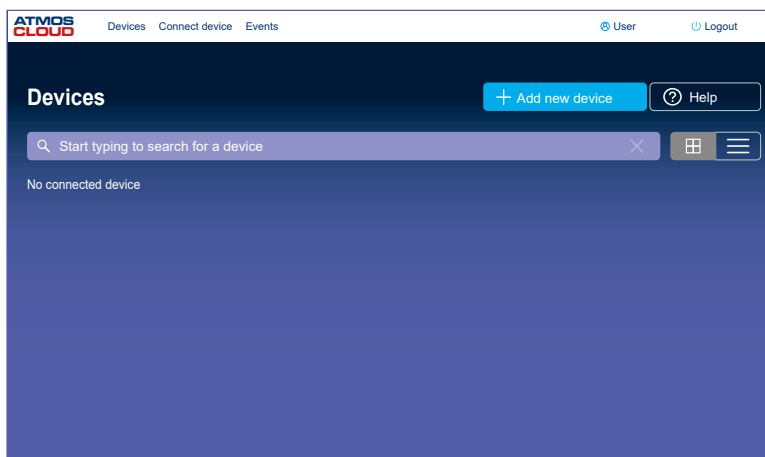
We log in to our **created Atmos Cloud account** using the username found in the email sent after completing the registration and the password we chose ourselves.



Connecting the ATMOS Cloud account and the WG1000 wireless gateway

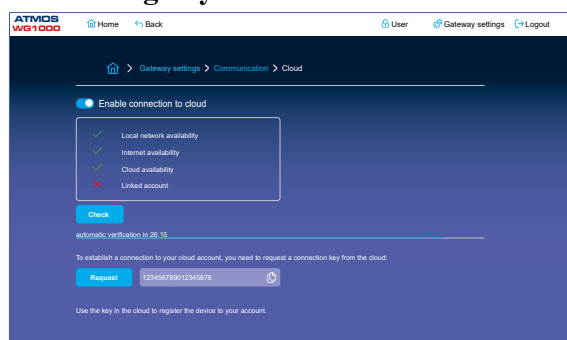
We link your Atmos Cloud account with the WG1000 gateway using the key that we generate in the gateway's working environment.

(ATMOS WG1000 > Gateway settings > Communication > Cloud).



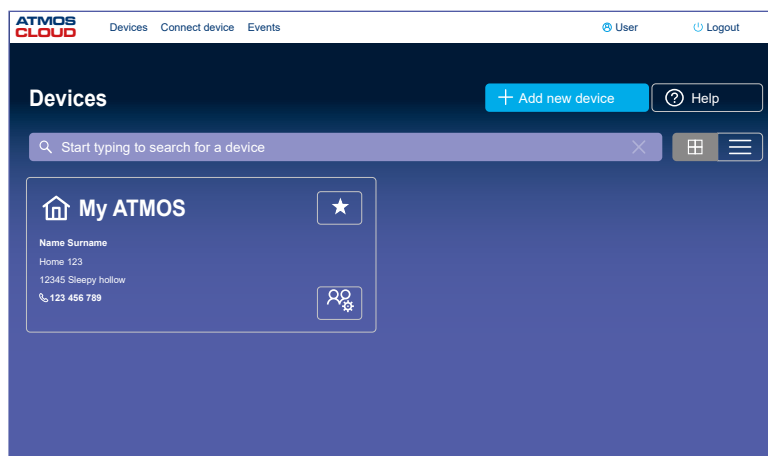
Generating the connecting key in WG1000 environment.

**ATMOS
WG1000**



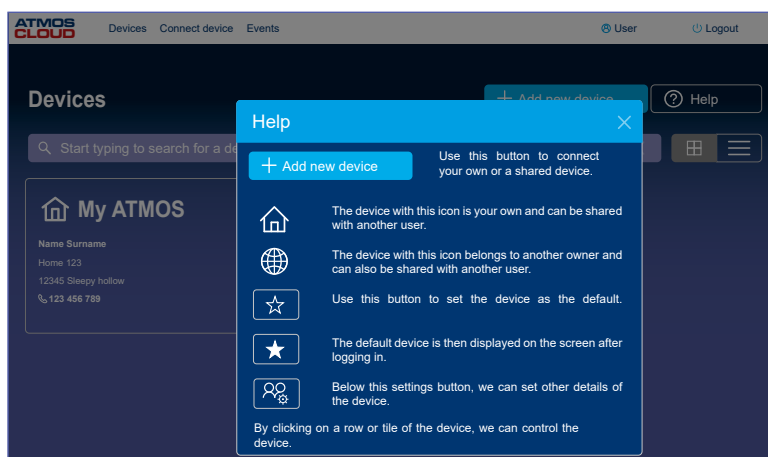
Your device on the Atmos Cloud

We link your Atmos Cloud account with the WG1000 gateway using the key that we generate in the gateway's working environment.
(ATMOS WG1000 > Gateway settings > Communication > Cloud).



Help and settings options

-  - This icon represents own device which can be shared with another user.
-  - A device with this icon belongs to another owner and can be shared with another user as well.
-  - By this button, the device is set as default.
-  - The default device, set that way, is displayed on the screen after log in.
-  - Under this settings button, we can set additional device details



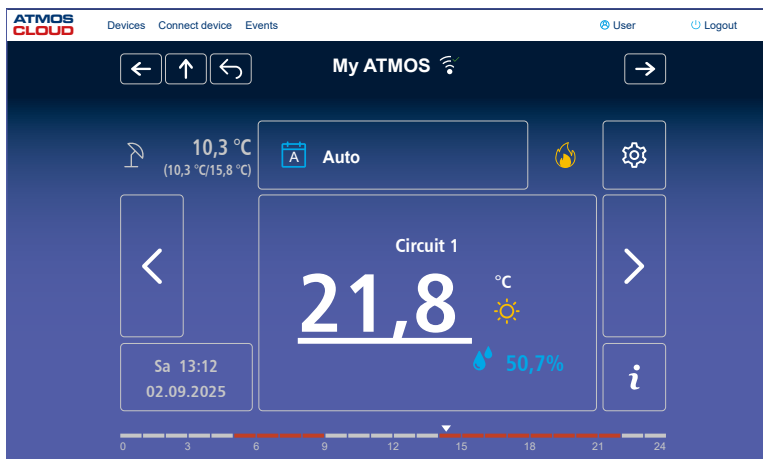


Home Screen of the Cloud and User's Device

The screen of user's **"Device"** to control the heating system in the connected ACD 03/04 control unit.

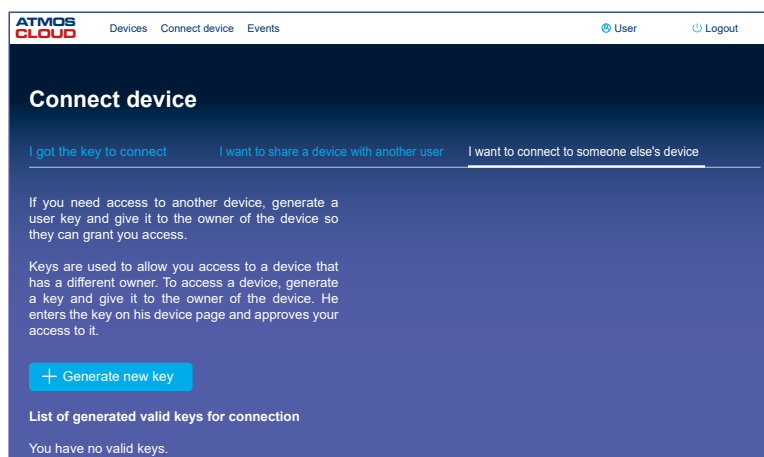
The ATMOS Cloud can manage the heating system similarly to the ARU30 and ARU30W room units (**see user's ACD 03/04 guide**).

If multiple devices are connected, we can switch among them using the navigation arrows at the top of the page, next to the name of the device.



Connecting to an outside device

On the Atmos Cloud and user's profile, we can generate and share a key to connect and access user's device with other users (e.g. family members, tenants, technicians, etc.). CloudAtmos/Connect device/I want to connect to someone else's device/Generate new key.



Sharing the device with another user

On the Atmos Cloud and the profile, there is the option to add another (outside) device from another user. That way, an access to the device of another owner can be obtained (e.g., for the administration or servicing).

Cloud Atmos/Connect device/I want to share a device with another user/Generate new key.

Connect device

[I got the key to connect](#) | [I want to share a device with another user](#) | [I want to connect to someone else's device](#)

If you want to share your device with another user, generate a device key and give it to them. The user uses it to connect to the device.

Find the device you want to share and generate a key for it.

Start typing to search for a device

Device name	Street	City	Zip code	
My ATMOS	Home 123	Sleepy hollow	12345	

List of generated valid keys for connection

You have no valid keys.

The generated key can be "Handed over to the user"; sent to an email address.

Connect device

[I got the key to connect](#) | [I want to share a device with another user](#) | [I want to connect to someone else's device](#)

If you want to share your device with another user, generate a device key and give it to them. The user uses it to connect to the device.

Find the device you want to share and generate a key for it.

Start typing to search for a device

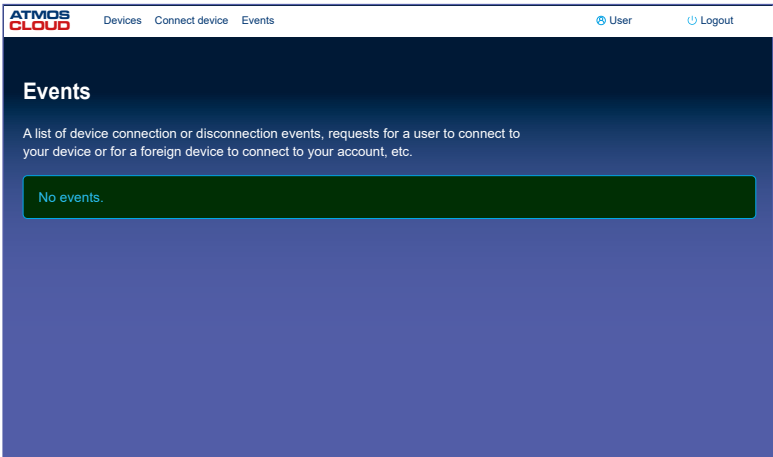
Device name	Street	City	Zip code	
My ATMOS	Home 123	Sleepy hollow	12345	

List of generated valid keys for connection

Key code	Device	Valid until	Pass to
XXXXXXXXXXXXXXXX	My ATMOS	11.11.2025	

Events on the ATMOS Cloud

The list of notifications, **events** and requests to connect or disconnect a device, requests to connect a user to an owned device or to connect an outside device to the owned account, etc.



User and system settings

Contact details - the tab allows you to manage personal details, which corresponds to items filled in when registering the account on the Atmos Cloud.

* fields marked with an asterisk are mandatory and must be filled in

System settings - the tab allows to manage system settings.

User name - can be used to change the user name, which was automatically generated from the personal details when registering an account on the Atmos Cloud (sent to the email address when the registration is completed).

Account code - can be used to identify accounts internally; the code is not recommended to change.

Language - can be used to set the language on the Atmos Cloud.

Color scheme - used to set the color scheme of the Atmos Cloud according to user's preferences.

Change password - used to set (change) user's password to log in to the Atmos Cloud.

Terms of use and personal data protection policies - processing data of users, cookies - consent of end customers of cloud.atmos.eu.

Security certificate for trustworthy connection to the WG1000 gateway - possibility to download the security CERTIFICATE (Atmos-Device-CA) for trusted **connection to the WG1000 gateway**. To open the web interface of the WG1000 gateway in the local network, the certificate has to be installed in the computer (browser) or the mobile phone. The browser does not display warning messages then.

The certificate is not required for the access via the Atmos Cloud.

Thanks to the clear look and extensive legends, ATMOS Cloud operations are very intuitive, and additional settings are not difficult at all.

9. WIRELESS NETWORK and the ATMOS DEVICE - ATBee

ATBee



Basic description of the ATBee wireless network for ATMOS devices

ATBee is a wireless communication technology running in the 2.4 GHz radio band. ATBee enables the connection of **wireless room units and wireless sensors (buttons)** with the **WG1000 wireless gateway** and the **ACD 03/04 controller**.

The **WG1000 wireless gateway** acts as a **connection** of the ATMOSNET wired network (RS 485) of the **ACD 03/04 controller** and the **ATBee wireless network** to communicate with wireless sensors (buttons), wireless room units and signal repeaters.

Since the **program version FW 2.00**, the equithermal **regulator ATMOS ACD 03/04** can be connected with the **ATMOS WG1000** wireless gateway.

For the activation and all the **settings** (including unit pairing), the **ACD 03/04** is used, the **menu Communication** (⚙️ → 📶 Hydraulics/Communication).

The menu allows to define up to **5 wireless rooms units**; ARUxxW

ARU5W - - wireless room unit (sensor)

ARU10W - wireless room unit with temperature correction

ARU30W - wireless room unit with touch screen

... up to **7 wireless sensors/buttons**

AFW - wireless outdoor temperature sensor

EFW20 - wireless temperature sensor (water) - KTF20 (-10 ÷ +120 °C)

EFW1000 - wireless solar temperature sensor - PT1000 (-25 ÷ +140 °C)

EFW button - wireless button (without the button)

...up to **6 signal repeaters**

AR12V - signal repeater - for external power supply/adaptor 12VDC

AR230V - signal repeater - for wall socket (230V/50Hz)

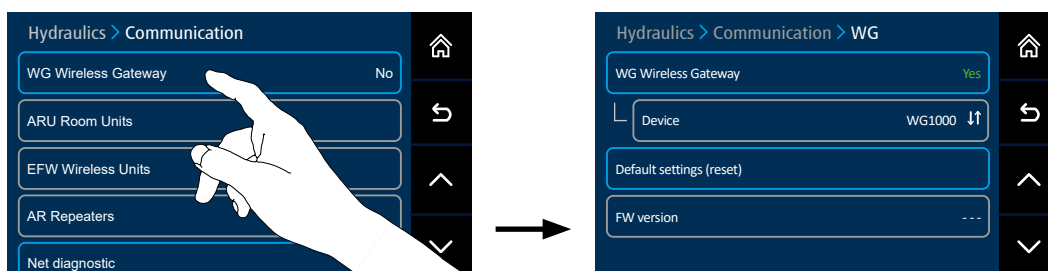


INFO - ATBee is a standalone wireless network that does not require a gateway being connected to the Internet for the operation.

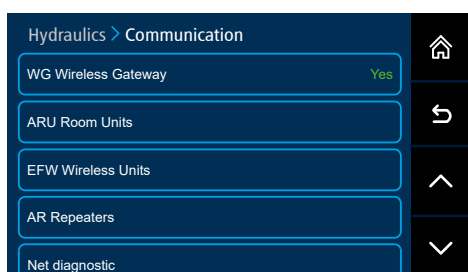
The wireless device can be used only if the WG1000 wireless gateway is connected and enabled (activated). Without the gateway, wireless sensors and units cannot be used.

Basic overview of the procedure for commissioning of wireless devices in an ATBee network:

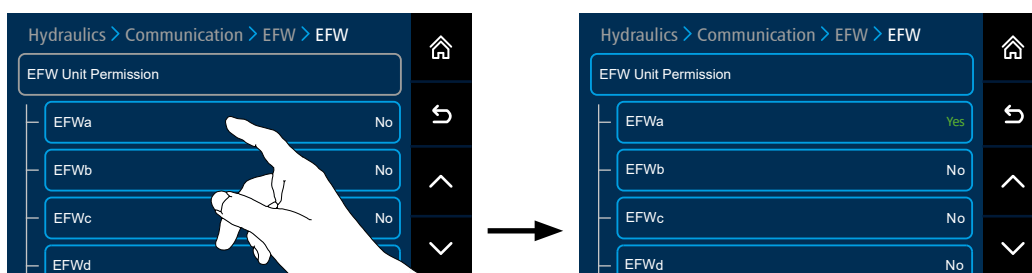
Switching on (Yes) the communication between the WG1000 wireless gateway and the ACD 03/04 controller



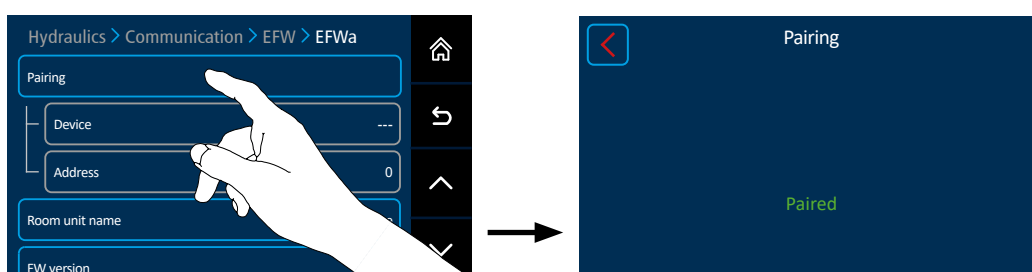
Activation, pairing and administration of wireless devices



Activation - by confirming the command **Yes**.



Pairing - is initiated on the ACD 03/04 controller → responding by the wireless device (the pairing procedure can also run in a reverse order).



Administration - allows additional settings (units naming, controlled circuits for room units, hotel mode, FW version reading

Hydraulics > Communication > ARU > ARUa

Address

XXXX

⌵

Controlled circuit

Circuit 1

↺

Hotel mode

No

⬆

Room unit name

ARUa

⬆

FW version

XXxxXX XXX.xx

⬇



INFO - Wireless devices connected via wireless communication (wireless) are **updated** from  environment of the WG1000 gateway (WiGa) using the FW (firmware) stored on the SD card in the WG1000 gateway (<https://wg1000/Gateway settings/Update>).



CAUTION - DETAILED INSTRUCTIONS AND PROCEDURES CAN BE FOUND IN USER’S GUIDE OF THE ATMOS ACD 03/04 CONTROLLER.

10. TECHNICAL PARAMETERS

General

Supply voltage	12 VDC (10 VDC ÷ 17 VDC)
Consumption	max 200 mA (peak at 12 VDC)
Power drain (average)	Max 2,04 W (by 12 VDC) active Ethernet: 0,76 W / active WiFi: 1,02 W / Ethernet + WiFi: 1,11 W
Degree of protection	IP 20
Class of protection against electric shock EN 60730-1	III
Terminal connector (external power supply)	ø5,5/ø2,1mm; positive in the middle
Connection terminals of the communication line / power supply	conductor of the cross section up to 1,5 mm ²
Communication bus	RS485 to connect external devices (ARU units, etc.)
Max. wire length for RS485 bus	200 m (total)
Radio band	WiFi - 2,4 Ghz (2412÷2484 MHz), 802.11 b/g/n (802.11n up to 150 Mbps) ATbee ((wireless sensor network) - 2,4 GHz (2400 ÷ 2483,5 MHz)
RF output power	10 dBm
Dimensions (WxHxD)	120 × 80 × 35 mm
Environment / Space	internal
Operating temperature / Ambient temperature	-20 ÷ +50 °C
Storage temperature	-20 ÷ +50 °C
Relative humidity	0 - 90 % relative humidity (non-condensing)

Installation recommendation

Kabely Data bus RS485		
Cross section	0.5 mm ²	0.28 mm ²
Maximum length/maximum supply current	200 m / max. 250 mA (twisted multi-pair wire)	100 m / max. 250 mA (twisted multi-pair wire)
The recommended cable type	J-Y(St)Y 2 x 2 x 0,8	(order code - S0659)
INFO - The shielded cable connected to PE of the ACD 03/04 controller should be used		

Types of temperature sensors for EFW20 and EFW1000 wireless sensors

PT1000 - designed to measure flue gas temperature and solar panel temperature
(measuring from -40 °C to 400 °C)

EFW1000 - VFF00-75P65 sensor (measuring from -20 °C to 140 °C)

EFW1000 - AGF3 sensor (measuring from 0 °C to 400 °C)

NTC20 kΩ - intended for other uses (-10 (-40) to 120 °C)

EFW20 - KTF20-65-5M-B sensor

Resistivity values of sensors

Resistivity of the NTC sensor: 20 kΩ - sensor for AF, WF, SF(2), VF, EKF, PF(2, 3), FPF, SLVF, KSPF(2)										
°C	kΩ		°C	kΩ		°C	kΩ		°C	kΩ
-20	220,60		0	70,20		20	25,34		70	3,100
-18	195,40		2	63,04		25	20,00		75	2,587
-16	173,50		4	56,69		30	15,88		80	2,168
-14	154,20		6	51,05		35	12,69		85	1,824
-12	137,30		8	46,03		40	10,21		90	1,542
-10	122,40		10	41,56		45	8,258		95	1,308
-8	109,20		12	37,55		50	6,718		100	1,114
-6	97,56		14	33,97		55	5,495			
-4	87,30		16	30,77		60	4,518			
-2	78,23	18	27,90	65	3,734					

Resistivity of the PT1000 sensor - AGF, KVLf(2)										
°C	Ω		°C	kΩ		°C	kΩ		°C	kΩ
0	1000,00		80	1308,93		140	1535,75		280	2048,76
10	1039,02		85	1327,99		150	1573,15		300	2120,19
20	1077,93		90	1347,02		160	1610,43		320	2191,15
25	1093,56		95	1366,03		170	1647,60		340	2261,66
30	1116,72		100	1385,00		180	1684,65		360	2331,69
40	1155,39		105	1403,95		190	1721,58		380	2401,27
50	1193,95		110	1422,86		200	1758,40		400	2470,38
60	1232,39		115	1441,75		220	1831,68		450	2641,12
70	1270,72		120	1460,61		240	1904,51		500	2811,00
75	1289,84		130	1498,24		260	1976,86			

Temperature measurement ranges

Name	Type	Function abbreviation	Sensor type	Measuring range
Outdoor sensor	AFW	AF, AF2	NTC20 kΩ	-40 °C ... 70 °C
Room temperature sensor	ARU5W	RS (room unit ARU5)	NTC20 kΩ	-30 °C ... 60 °C
Room temperature sensor	ARU10W ARU30W	room unit ARU10, ARU30	digital	-20 °C ... 50 °C
Humidity sensor (RH)	ARU10W ARU30W	room unit ARU10, ARU30	digital	0 ... 100 %
Water temperature sensor		WF, VF, RL, KRLF, SF, SFR, SFINT, PF(2, 3), FPF, SLVF, KSPF	NTC20 kΩ	-10 °C ... 120 °C
Solar panel sensor (flue gas)		KVLF(2), (AGF)	PT1000	-20 °C ... 140 °C (-40 °C ... 350 (400) °C)*
* The measuring range and the usage of the EFW1000 sensor depends on EFW1000 - sensor VFF00-75P65 (measures -20 °C to 140 °C) EFW1000 - sensor AGF3 (measures 0 °C to 400 °C)				

CHANGES IN ACD 03/ACD 04 CONTROL

1. SOFTWARE VERSION

This extended service manual can be used from the **program version (VERSION PRG)...**

For ATMOS ACD 03 and ATMOS ACD 04 controllers - **AC16D 2.00 (FW_2.00_2025xxxx.pck)**



The program version of the ACD 03/04 controller is displayed at the end of Information under the button  - System information.

Supplementing the ATMOS ACD 03/ACD 04 controller with the WG1000 wireless Wi-Fi gateway is the main modification.

Thanks to wireless connection of the gateway, the heating system can be controlled remotely via Internet (Atmos Cloud), and wireless sensors and room units and be used.



10. MENU: SETTINGS

In the menu Settings, a sub-item “Source control” was added

 **Source control** – allows to manage automatic sources - Toggle ↔, Block  or Allow 



Source control

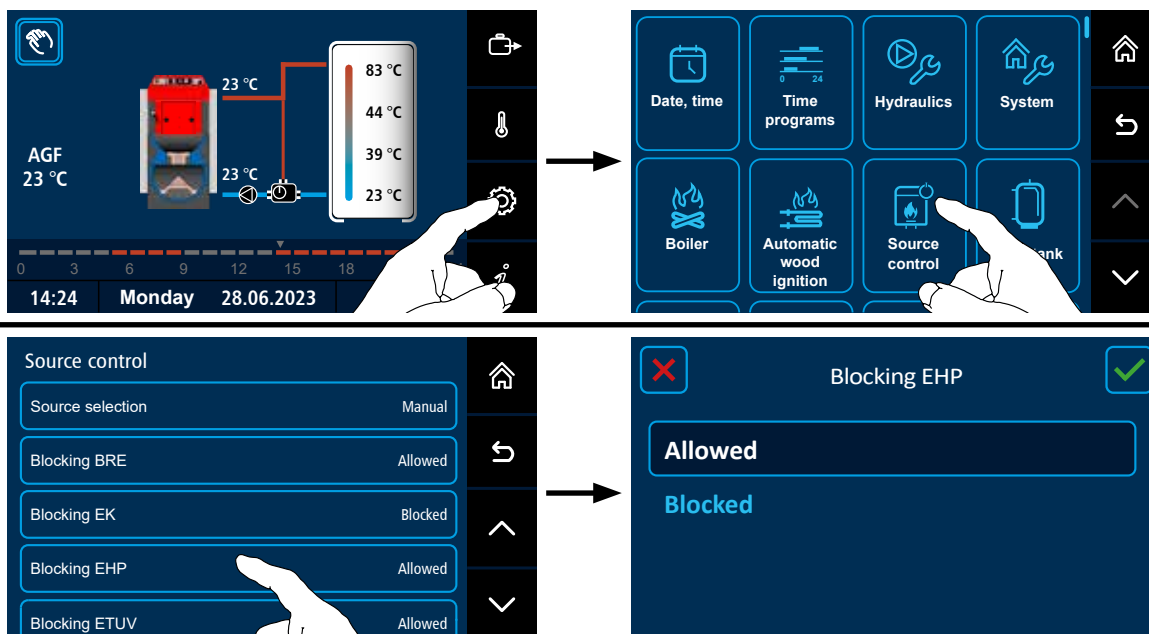
(Access level – the User)

To set, the button (the menu entry)  is used, clicking on the symbol Source control .

The menu item **Source control** is used to manage all the automatic resources and show their current status. This menu item allows to switch among the operating modes of combined boilers. Moreover, operation of sources can be Allowed or Denied (Blocked).

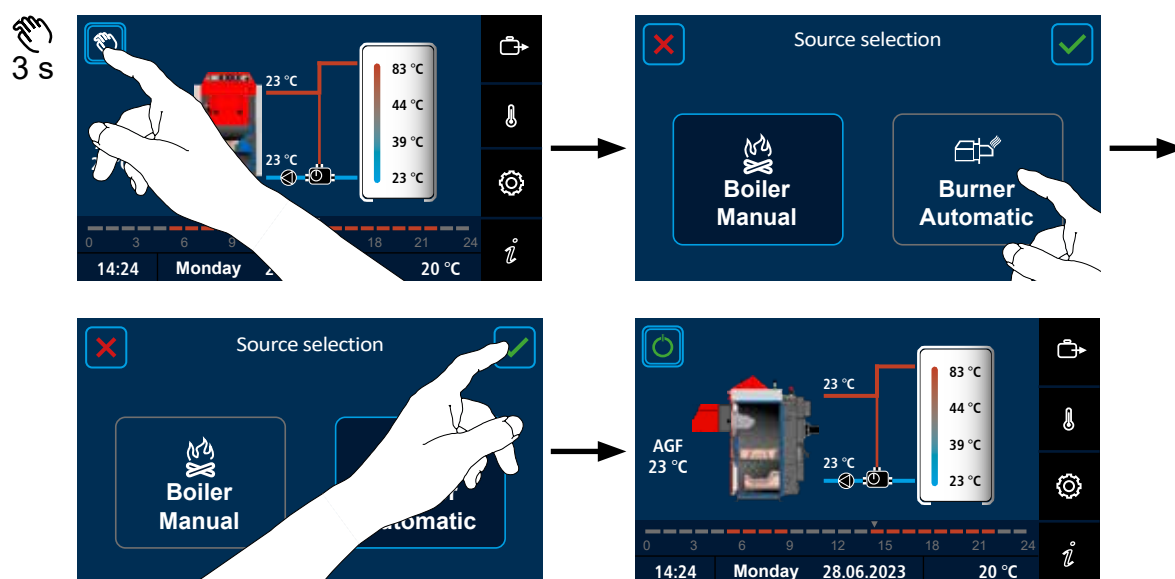
In case of parameters **Source selection**, **Blocking BRE** and **Blocking EK**, equivalent options of the home screen are substituted, where these functions are controlled by default.

Blocking  / **Allowing**  the EHP and ETUV operation is done from this menu exclusively.

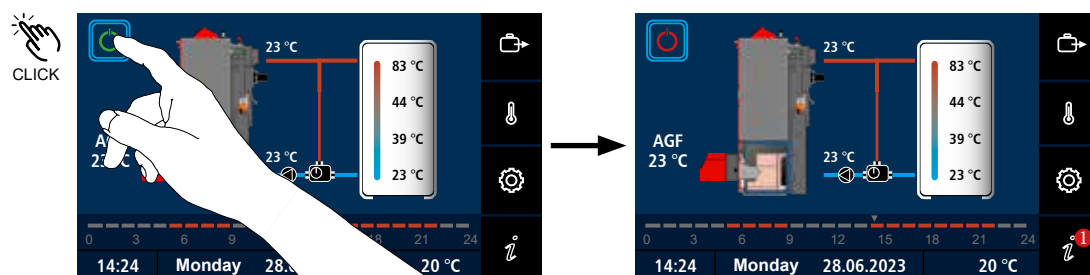


An example of the control of sources from the home screens:

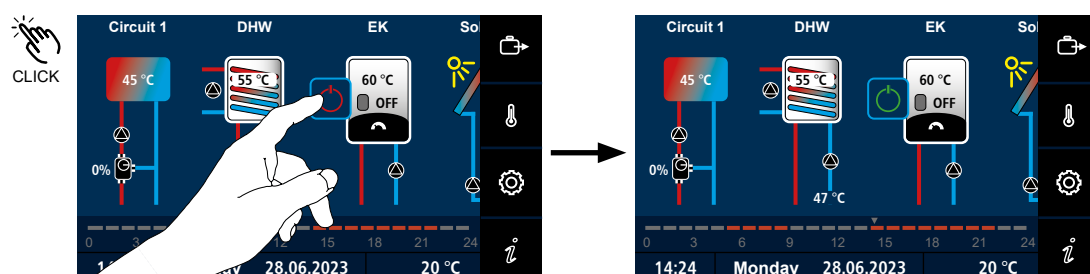
Source selection - switching from the "Manual" operation to the "Automatic" operation of a combined source

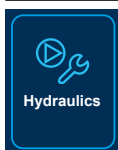


Blocking BRE - blocking (disabling)  / enabling  the burner operation



Blocking EK - Enabling  / blocking (disabling)  external boiler operation

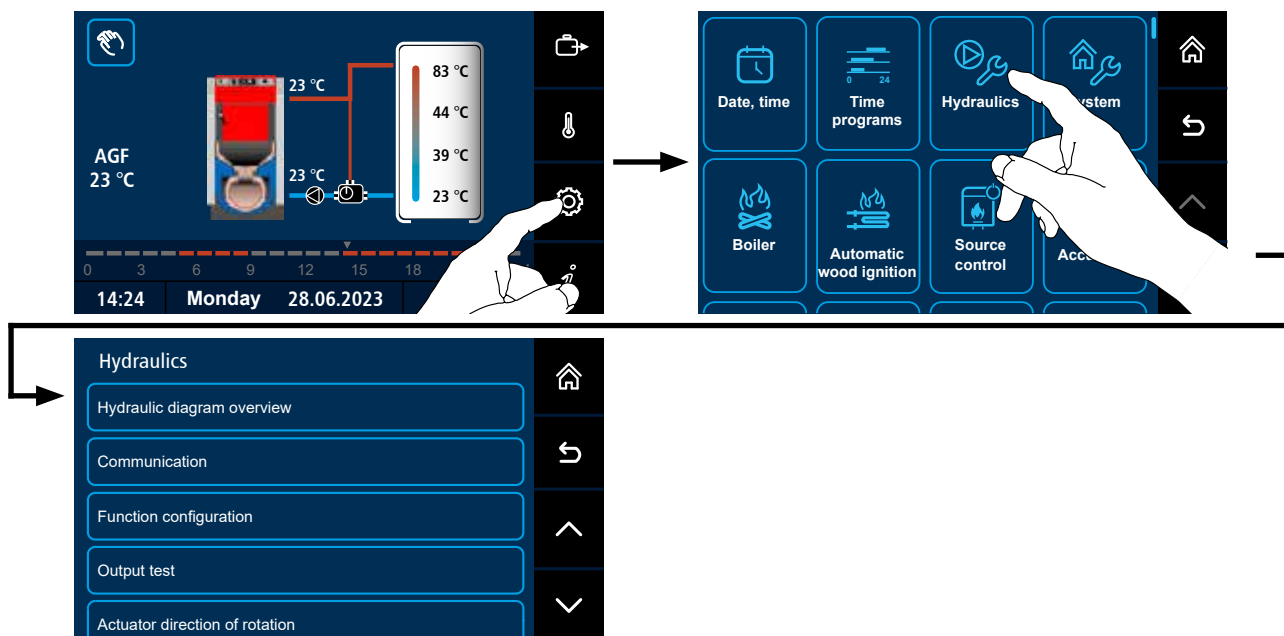




Hydraulics

(Access level – the Service engineer)

To set, the button (the menu entry) is used, clicking on the Hydraulics .



Menu - Communication:

Hydraulics/Communication

(Access level – the User - nothing / the Service engineer - everything)

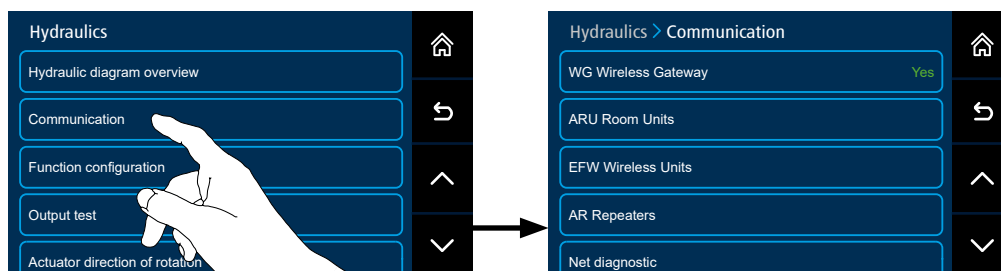
The menu **Communication** is used to pair and set up separate devices connected to the ACD 03/04 control unit (both wired and wireless).

The menu item allows pairing and setting of ARU10 and ARU30 standard room units (wired versions).

Since the program version FW 2.00, the menu item: **Communication** allows to connect the equithermal regulator ATMOS ACD 03/04 and the ATMOS WG1000 wireless gateway. That way, the ACD 03/04 is connected with the ATBee wireless network for the communication with ATMOS AFW, EFW20, EFW1000, EFW-button wireless sensors and ATMOS ARU5W, ARU10W, ARU30W wireless room units. **Wireless sensors** allow to expand the range of sensors by other 7 EFW sensors (buttons) with the full use of functions. Next, up to 5 **ARUxx(W) room units** and up to 6 **AR signal repeaters** can be defined.

By connecting the WG1000 gateway to a computer network via Ethernet or Wi-Fi, ATMOS ACD 03/04 controllers can be directly controlled via the ATMOS WG1000 gateway or via the ATMOS cloud on the Internet.

We perform the settings under the button  (entering the menu), where we click the symbol  **Hydraulics** and then **Communication**.

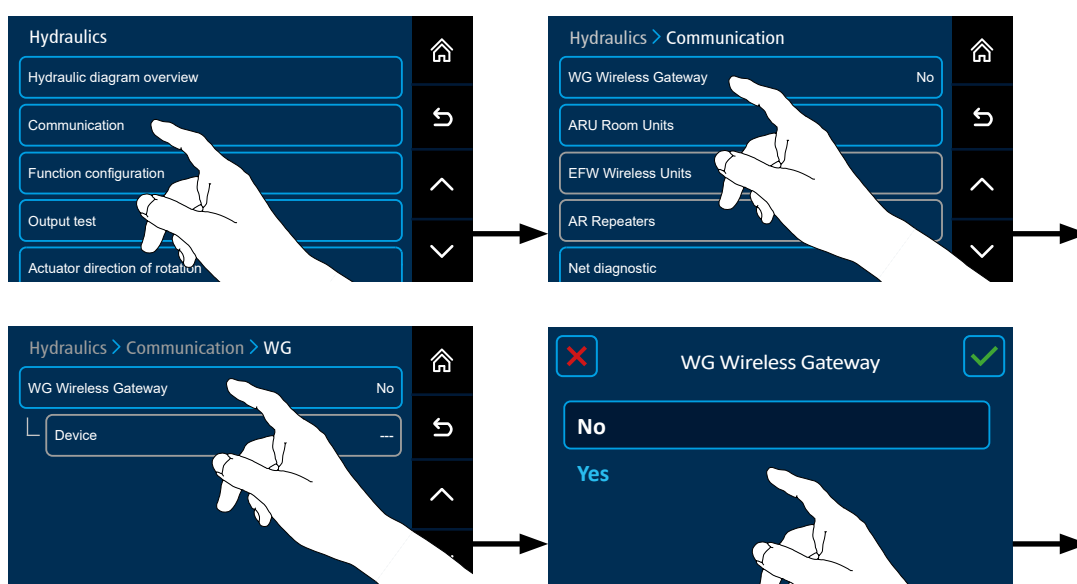


  Hydraulics/Communication

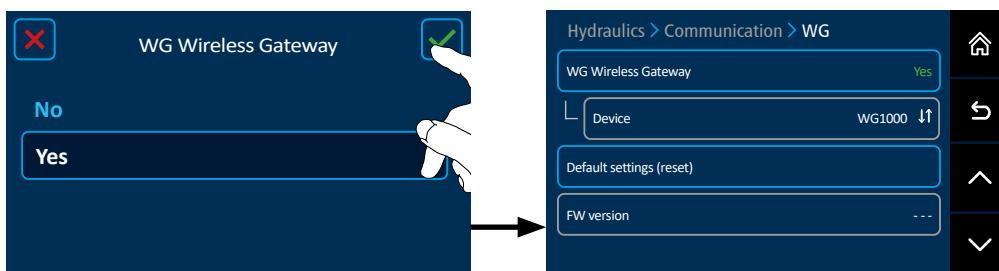
The sub-menu **WG wireless gateway** - the gateway activation and settings:



The parameter **WG wireless gateway** is used to **switch on (Yes)** / **switch off (No)** the communication of the WG1000 wireless Wi-Fi gateway with the ACD 03/04 controller.



CHANGES IN ACD 03/ACD 04 CONTROL



WG wireless gateway – switched on or switched off communication of the WG1000 wireless gateway is displayed **Yes/No**.

The gateway requires to have the ATMOSNET data communication (RS 485) linked with the ACD 03/04 controller, using a communication line (A/B).

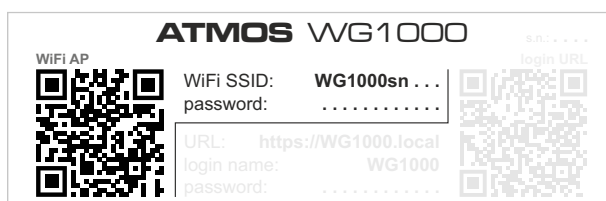
Device - displays enabled (activated) communication of the WG1000 ↓↑ gateway via the ATMOSNET data line

Default settings (reset) – allow to perform the reset (default) in the WG1000 wireless gateway at the custom SSID (network name), at the gateway password, and at login items of gateway environment on HTML pages of the gateway.

Default settings are given **on the label attached to the gateway**.

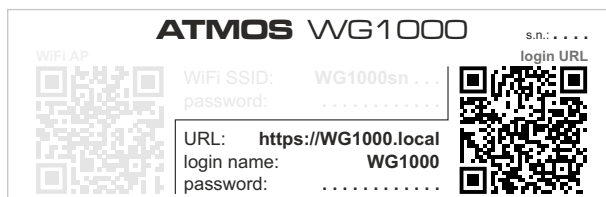
Wi-Fi and Ethernet - can reset and return the default settings when the name (SSID) and the password of the Wi-Fi network of the WG1000 gateway.

We make the configuration change by selecting the relevant line and confirming it. ☒.



User settings - can reset and return the default settings of the user name and the password for logging in to the WG1000 gateway environment.

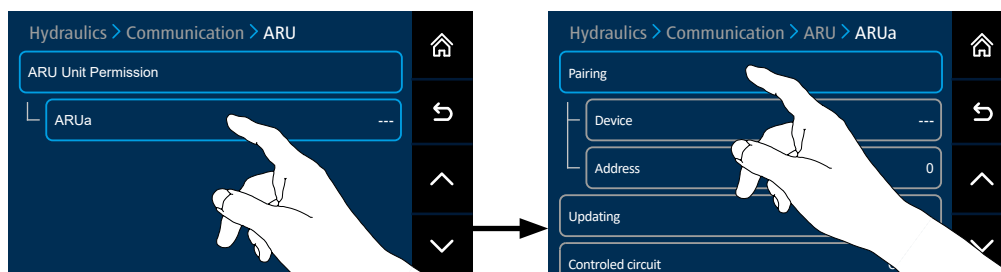
We make the configuration change by selecting the relevant line and confirming it ☒.



FW version – the **firmware** version is displayed for a connected gateway (with established communication). Otherwise, - - - is displayed instead of the firmware version.

Hydraulics/Communication

The sub-menu **ARU room units** - activation, pairing and administration:



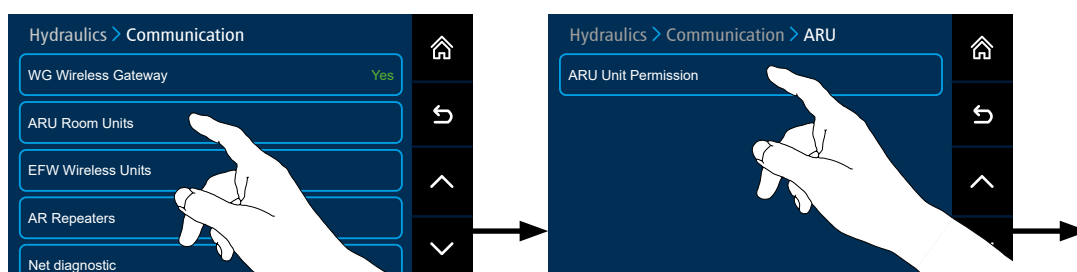
ARU room units - the button allows to enter the screen with an overview of enabled (activated) ARU room units. There is a possibility to enter the screen for the administration or the screen for enabling other room units.

The menu allows to define up to 5 ARUxx(W) room units.

ARU5W - wireless room unit (a sensor)

ARU10 (W)- wired / wireless room unit with temperature correction

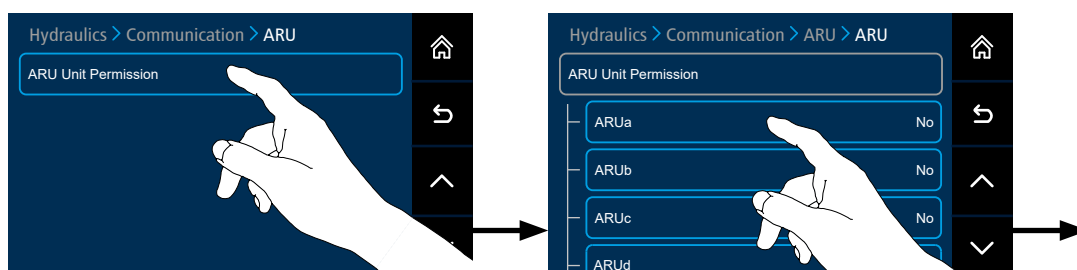
ARU30 (W)- wired / wireless room unit with touch screen

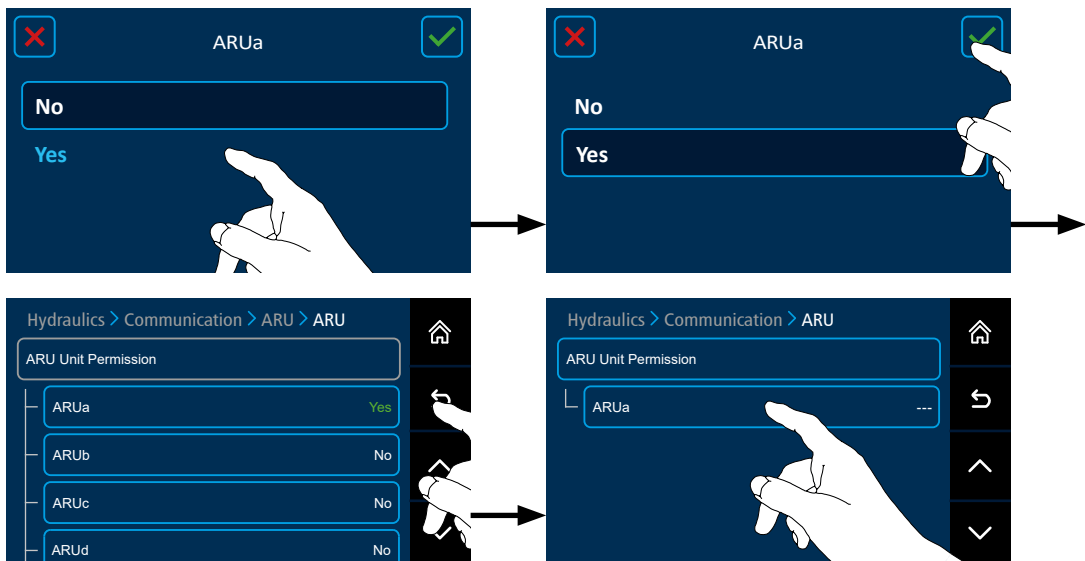


Enabling ARU units – the screen with the possibility to **add (activate) rooms units**, and with an **overview of already activated rooms units** (an administration available).

Adding (activating) ARU rooms units

Activation or deactivation is done by confirming the command **Yes / No**.

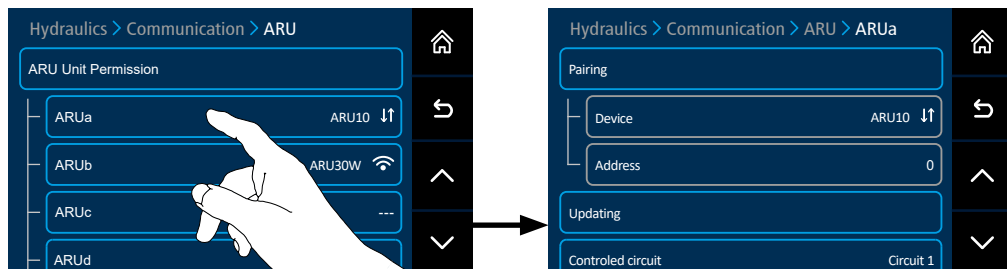




Overview of activated / paired rooms units

In the list of activated room units, we click on the relevant room unit to be **Paired** (Unpaired) or **other settings** being performed.

For a paired unit, the firmware can be updated, the assigned circuit can be set, the hotel mode can be activated, the room unit can be named and the firmware version can be shown.



ARUa (b, c, d, e) – displays activated room units and allows the screen access for **Pairing** and settings.

For a paired room unit, the type and the connection method (communication) are displayed. For a wired communication (bus) ↓↑ and for a wireless one 📶. If the unit is not paired, --- is displayed instead of the type and the communication method.

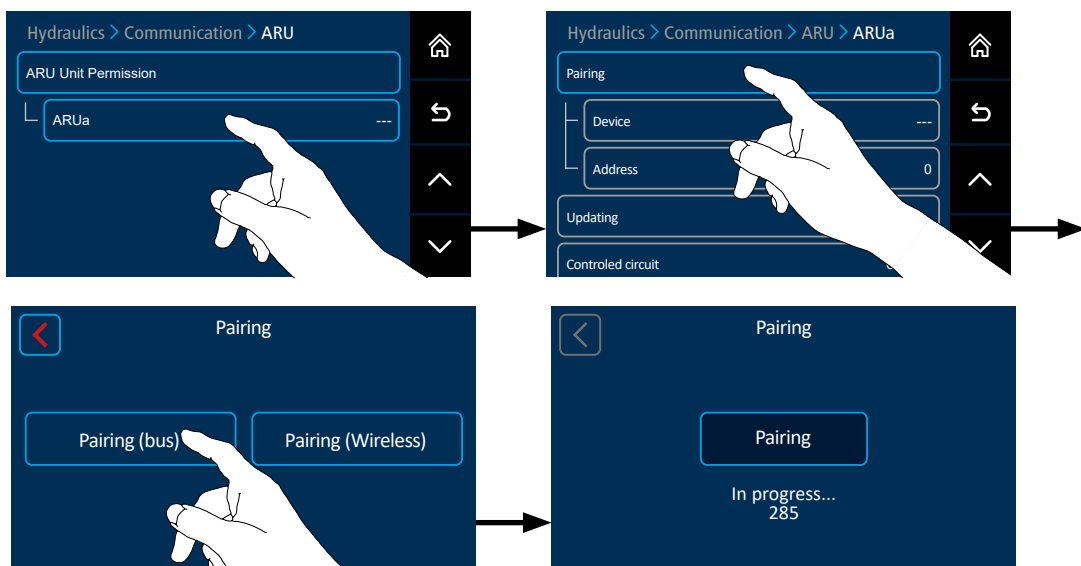
Pairing of rooms units

Room units can be only **paired** using the **pairing button**. Depending on the type and connection of the room unit, the way of **Pairing** is selected:

Pairing (bus) - room units are connected with the **ACD 03/04 controller** via the ATMOSNET data line using a cable.

Pairing (wireless) - room units (ARU5W, ARU10W and ARU30W) are connected with the **WG1000 Wi-Fi gateway** using a wireless link.

The **Pairing** button (bus/wireless) is clicked on the ACD 03/04 controller and the room unit or the device being paired is approached. The pairing has to be finished in **300 s** (5 minutes).



INFO - The pairing process can be interrupted by pressing the button **Pairing** during the countdown.



INFO - Pairing can also be done in the **opposite way**, by first activating it (starting the **pairing process**) on the room unit and then confirming (accepting) the pairing in the ACD 03/04 controller using the **Pairing** (bus)/(wireless) button.

Example of pairing procedure:

- 1) The pairing is initiated on ACD 03/04 → an answer is sent to the ARU room unit
- 2) the pairing is initiated on the ARU room unit → an answer is sent to ACD 03/04

Confirmation of pairing – on the ARU5W room unit, wake the unit with a short press of the **pairing button**, then hold the **pairing button** for more than **3 seconds** to start pairing.



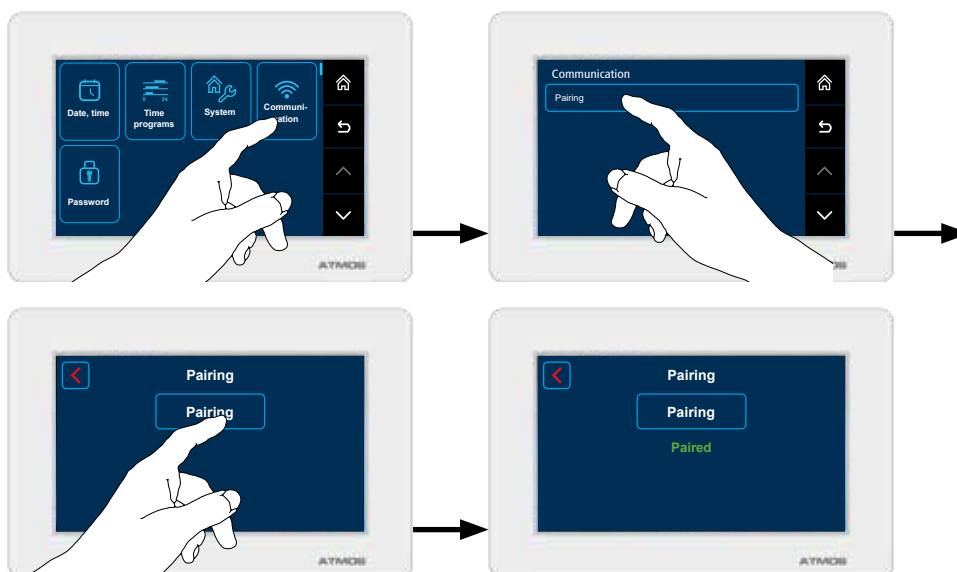
- **Pairing of the ARU5W room unit** with the ACD 03/04 controller is **confirmed** by the red LED (next to the pairing button) lighting up for 5 seconds – **see the manual for the corresponding room unit.**

Confirmation of pairing - on the ARU10 and ARU10W room units, wake the unit with a short press of the button with the **Hand** symbol  then hold the button  for more than **3 seconds** to start pairing.



- **Pairing of the ARU10 and ARU10W room units** with the ACD 03/04 controller is **confirmed** by all 4 LEDs lighting up for 3 seconds and by a change in LED signalling showing the current operating mode – **see the manual for the corresponding room unit.**

Confirmation of pairing - on the ARU30 and ARU30W room units, enter the menu  →  **Communication** and click the **Pairing** button.



- **Pairing of ARU30 and ARU30W room units** with the ACD 03/04 controller is confirmed by **Paired** on the screen of the room unit. Then, **all information** is displayed **on the home screen** (room temperature, circuit name, time axis, operating mode, outdoor temperature, etc.) and the current communication method is shown on the display ↓↑ or 📶.



CAUTION - If the ARU30 and ARU30W room unit is not paired, the room temperature, the circuit name, the time axis, the operating mode, the outdoor temperature, etc., are not shown on the display.



INFO - Pairing of room units may only be done by a trained service engineer who is logged in to the controller and to the room units in the corresponding **permission level** (⚙️→🔒 Settings/Password/Authorization)!



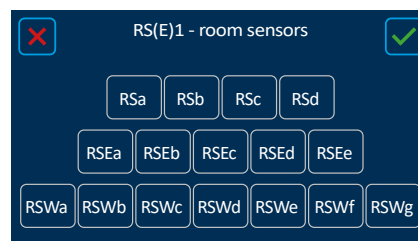
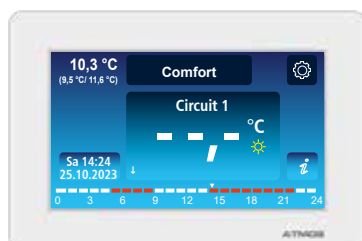
CAUTION - If the **current room temperature** is not **displayed** on the ARU30 room unit, then the sensor of the selected room unit is not assigned to the given heating circuit.

The assignment is made in menu ⚙️→🔧 Hydraulics/Function configuration/Heating circuit x function/RS(E)x - room sensors - **RSa (b, c), RSEa (b, c, d, e) and RSWa (b, c, d, e, f, g)**.

The **RSa (b, c)** button - **only** for the **ARU5** room unit (sensor)

The **RSEa (b, c, d, e)** button - for the room unit (an external room temperature sensor) connected by **wire** via the ATMOSNET communication line - **ARU10, ARU30, ARU10W and ARU30W**.

The **RSWa (b, c, d, e, f, g)** button - for wireless room unit (an external room temperature sensor) **ARU5W, ARU10W and ARU30W**.





CAUTION In case of the program (software) update in the ACD 03/04 controller, the room units have to be always updated as well (because of the compatibility reasons).

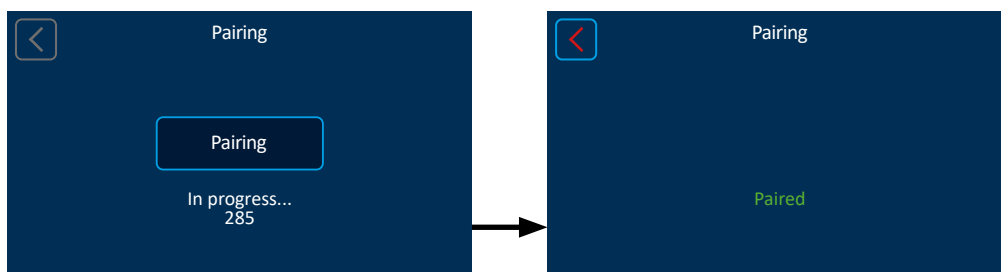
Updating all paired devices (room units) via wired communication (bus) ↓↑ can also be done using the **Mass update**. See ⚙️→🔗 Parameter P32^{System} Mass update (from FW version 1.06).

The Mass update is suitable if more room units is updated at the same time (even with the ACD 03/04 controller). If only a single unit is necessary to be updated, we can use the update in the menu ⚙️→🔗 Hydraulics/Communication/ARU Room Units/ARUa (b, c, d, e)/Updating (to save time).



INFO - Without updating the software on all the devices (to the correct and compatible software), incorrect text display and non-display of the measured temperatures on the ARU30 and ARU30W room units may occur.

Successful **Pairing of the ACD 03/04 controller** with room units is **confirmed by the “Paired” text** (by ending the countdown before the expiration).

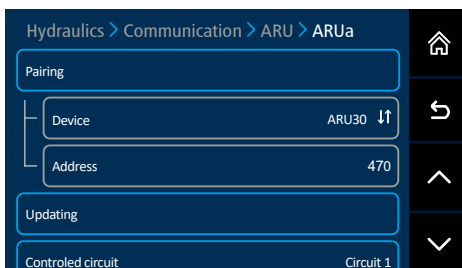


INFO - The process of **pairing can be interrupted** on ACD 03/04 (⚙️→🔗 Hydraulics/Communication) by new clicking the Pairing button (the countdown disappears).

Device and Address - these two items are **automatically filled in** after a successful **Pairing**

Device - the device type and the communication method are displayed. For a wired communication (bus) ↓↑ and for a wireless communication 📶.

Address - this is the serial (manufacturing) number of the room unit (device), which can be found inside the room unit (device), e.g. 0009.





CAUTION - The ARU5 wired room unit (sensor) is not paired using this pairing process, but is connected as a classic temperature sensor on one from Vlx variable inputs.

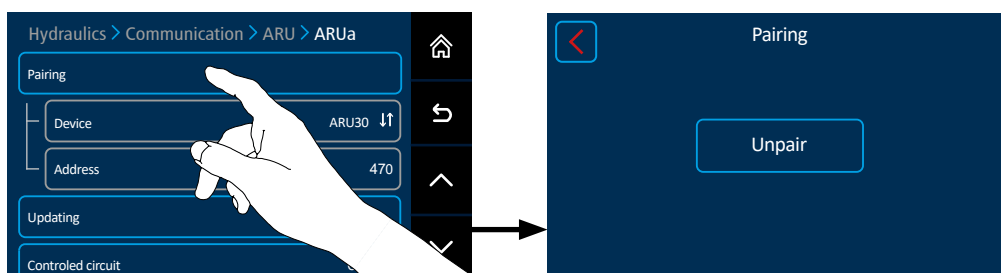


WARNING - The pairing is forbidden to be initialized on more than one room unit.



INFO - If the **Paired room unit is requested to be deactivated**, the unit has to be **unpaired** first.

Then, the device can be removed (deactivated) ⚙️ → 🗑️ Hydraulics/Communication/ARU Room Units/ARU Unit Permission/ARUx enabled by confirming command **No** ☒.



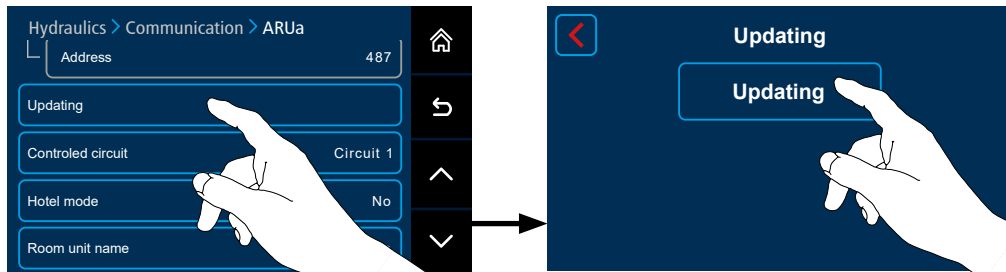
Update – the button is used to update the program in a room unit connected by wire (bus) using ⬇️⬆️ SW program stored on the SD card in the ACD 03/04 controller.

Room units connected via wireless communication 📶 are **updated** from Wi-Fi environment of the WG1000 gateway using the SW stored on the SD card in the WG1000 gateway (<https://wg1000/Gateway settings/Update>).



CAUTION - The software (firmware) saved on the SD card in the ACD 03/04 controller and on the SD card in the WG1000 gateway must be of the same version to avoid mutual incompatibilities.

The update should be performed by a **service engineer in necessary cases** (new SW version, malfunctions, etc.)



INFO - Updating all paired devices (room units) via wired communication (bus) $\updownarrow$ can also be done by **Mass update**. See $\rightarrow$ Parameter P32^{System} Mass update (ofrom FW version 1.06).



INFO - For the ARU10 room unit, the update takes 30 seconds. On the room unit, the update is indicated by simultaneous flashing of the 1st and the 2nd LED, or the 3rd and the 4th LED.

For the ARU30 room unit, the update takes longer, and depends on the length of wires.

The update time of **wireless units** depends on several factors those can affect the signal strength, and thus the speed of data transfer.

The update of ARU30W room units takes 30 to 40 minutes, and the update of sensors about 8 minutes. If connected via AR signal repeaters, the update may take even longer.

Controlled circuit – see the standard user's guide for ACD 03/04 controllers

Hotel mode – see the standard user's guide for ACD 03/04 controllers

Unit name – see the standard user's guide for ACD 03/04 controllers

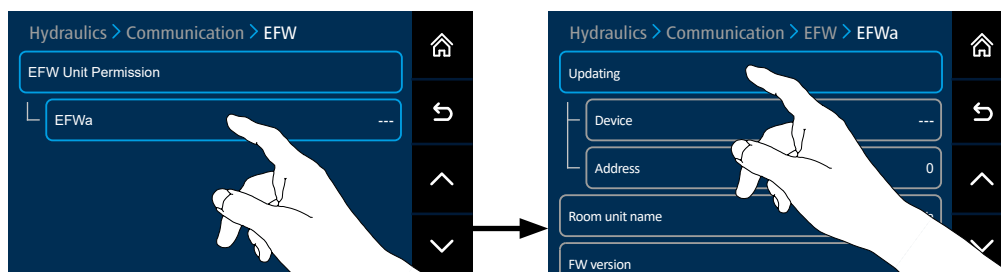
FW version – the tile shows the current program (firmware) version of the connected room unit.



INFO - If the FW version is not shown, the software of the controller and the device may be incompatible.

Hydraulics/Communication

The sub-menu **EFW wireless units (sensors)** - activation, pairing and administration:



EFW wireless units - the button allows to enter the screen with an overview of enabled (activated) EFW wireless units. There is a possibility to enter the screen for the administration or the screen for enabling other wireless units.

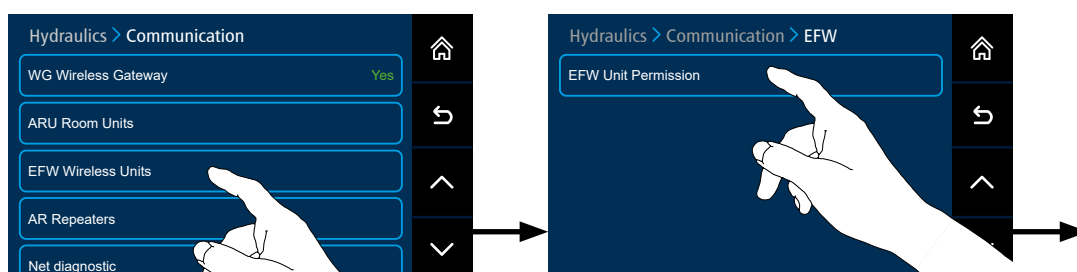
The menu allows to define up to 7 wireless sensors / buttons.

AFW - wireless outdoor temperature sensor

EFW20 - wireless temperature sensor (water) - KTF20 (-10 ÷ +120 °C)

EFW1000 - wireless solar temperature sensor - PT1000 (-25 ÷ +140 °C)

EFW button - wireless button (without the button)



INFO - The “EFW wireless units” tile is functional only if the WG1000 wireless gateway is enabled (activated), without which wireless sensors and devices cannot be used.

Example of assignment logic of wireless temperature sensing:

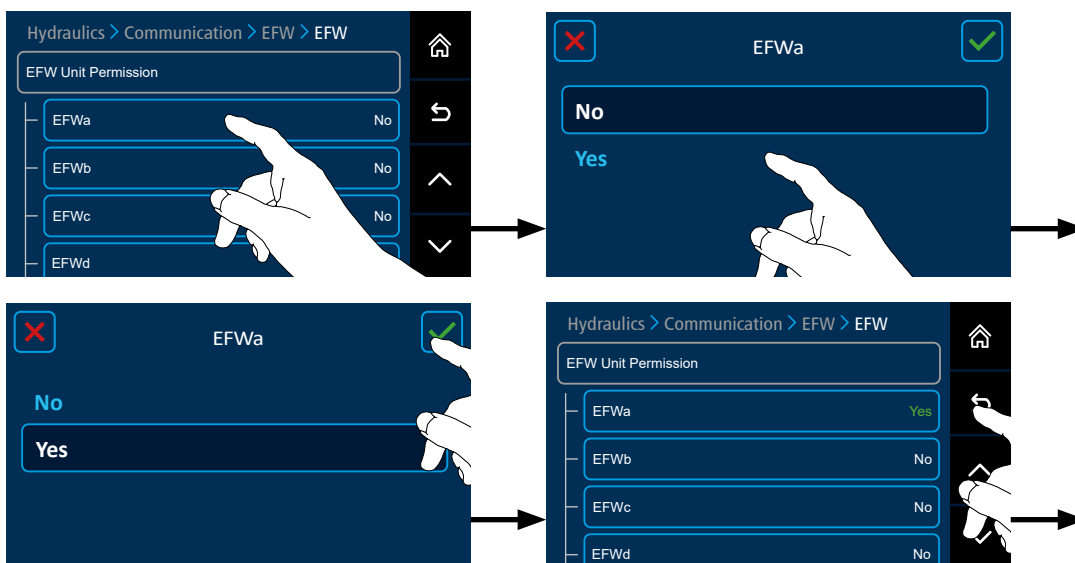
Request example - the temperature of the PF2 storage tank is measured by a wireless sensor

- 1 - **device selection** → EFW20 wireless sensor
- 2 - **sensor activation in ACD 03/04** →  Hydraulics/Communication/EFW Wireless Units/EFW Unit Permission/EFWa (b, c, d, e, f, g) by confirming the command Yes .
- 3 - **pairing the wireless sensor and the ACD 03/04** →  Communication/Updating ↔ confirm pairing on wireless sensor
- 4 - **activation function "PF2 - tank additional sensor"** →  Function configuration/Accumulation tank/PF2 - tank additional sensor
- 5 - **assigning the sensor to funct** →  Function configuration/Accumulation tank/PF2 - tank additional sensor/EFW

Enabling EFW units – the screen allowing to **add (activate) wireless units (sensors, buttons)**, to show **an overview of already activated wireless units** and to manage them.

Adding (activating) EFW wireless units

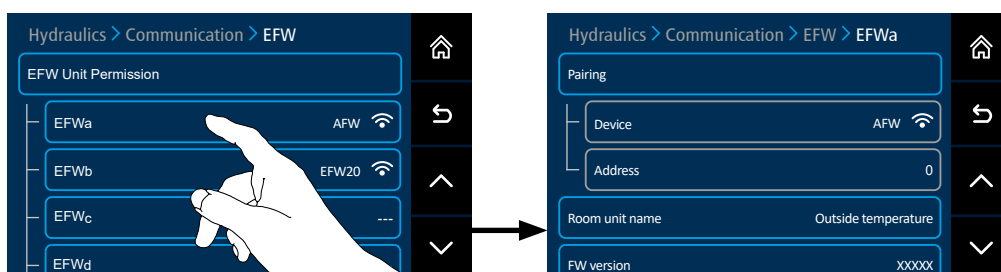
Activation or deactivation is done by confirming the command **Yes/No**.



Overview of activated / paired wireless units

In the list of activated wireless units, we click on the relevant wireless unit to be **Paired** (Unpaired) or **other settings** being performed.

The paired wireless unit can be arbitrarily **named**, and the **FW** (firmware) **version** is displayed.



EFWa (b, c, d, e, f, g) – displays activated wireless units and allows the screen access for **Pairing** and settings.

For a paired wireless unit, the type and the connection method (communication) are displayed - wireless .

If the unit is not paired, --- is displayed instead of the type and the communication method

Pairing wireless units (EFW sensors)

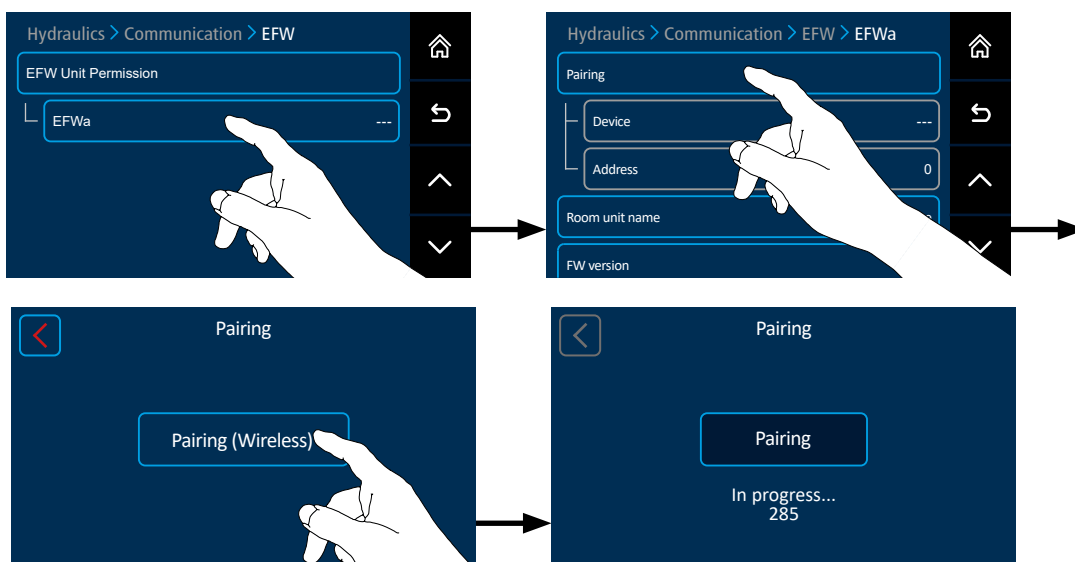
EFW wireless units can only be **paired** using the **pairing button**.

Pairing (wireless) - wireless connection of wireless units (devices) (AFW, EFW20, EFW1000 and EFW button) with the WG1000 Wi-Fi gateway.

Pairing procedure:

- 1 - Pairing on ACD 03/04 is initiated
- ↓
- 2 - The EFW wireless device is responded

On the ACD 03/04 controller, the **Pairing (wireless)** button is clicked and confirmed on the selected wireless unit to be paired. The pairing should be finished in **300 s (5 minutes)**.



Pairing can also be done in the **opposite way**, by first activating it (starting the **pairing process**) on the room unit and then confirming (accepting) the pairing in the ACD 03/04 controller using the **Pairing** (bus)/(wireless) button (⚙️ → 🔌 Hydraulics/Communication/EFW Wireless Units/EFWx/Pairing).

,3



CAUTION - The pairing is forbidden to be initialized on more than one room unit.

Pairing confirmation - on AFW, EFW20, EFW1000 wireless units and the EFW button, the **pairing button** is shortly pressed. The unit is wake up, and the **pairing is initialized** by holding the **pairing button** for **3 seconds** or more.

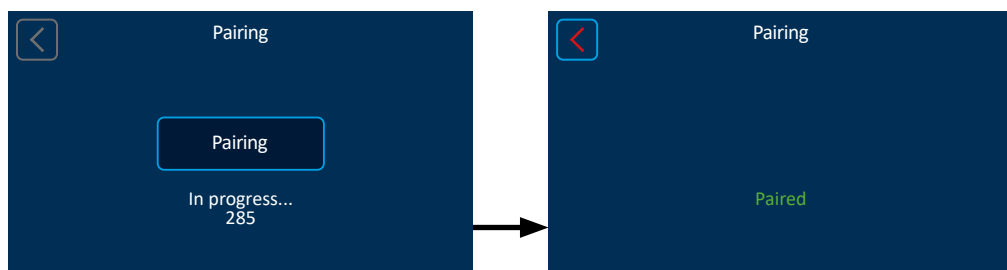


- **Pairing the EFW wireless unit** with the ACD 03/04 controller is **confirmed** by turning on the red indicator LED (near the pairing button) for 5 seconds - **see the wireless unit user's guide**.



CAUTION - In case of the program (software) update in the ACD 03/04 controller, all the connected devices have to be always updated as well (because of the compatibility reasons)

Successful **Pairing of the ACD 03/04 controller** with wireless units is **confirmed by the "Paired" text** (by ending the countdown before the expiration).

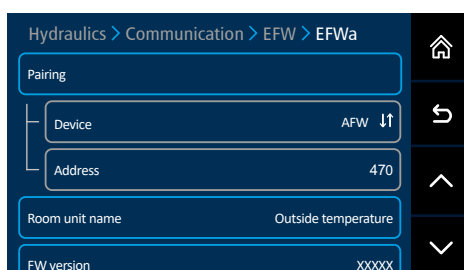


INFO - The process of **pairing** can be **interrupted** on ACD 03/04 (⚙️→🔊🔊 Hydraulics/Communication) by new clicking the **Pairing** button (the countdown disappears).

Device and Address - these two items are **automatically filled in** after a successful **Pairing**.

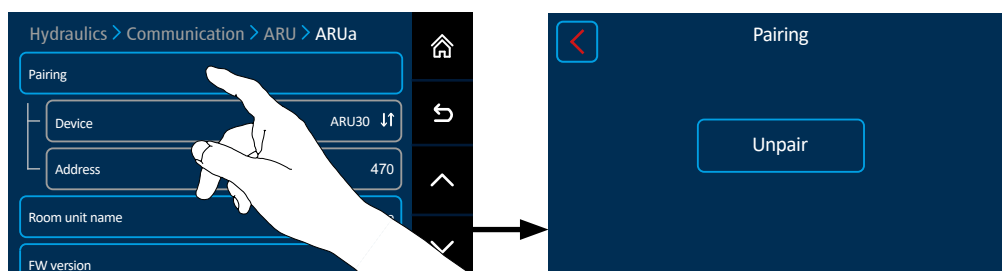
Device - the device type and the communication method are displayed. For wireless communication .

Address - this is the serial (manufacturing) number of the room unit (device), which can be found inside the room unit (device), e.g. 470.



INFO - If the **Paired wireless unit (sensor)** is requested to be **deactivated**, the unit has to be **unpaired** first.

Then, the device can be removed (deactivated)  →  Hydraulics/Communication/EFW Wireless Units/EFW Unit Permission/EFWx enabled by confirming command **No** .

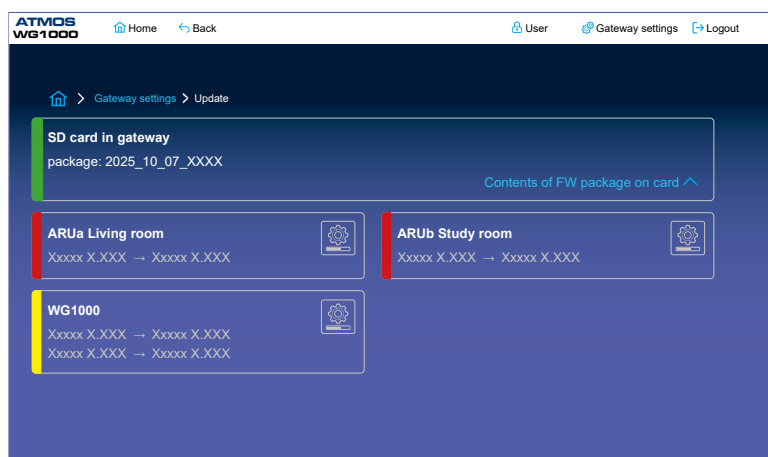




INFO - Wireless devices connected via wireless communication (wireless)  are **updated** from the environment of the WG1000 Wi-Fi gateway using the FW (firmware) stored on the SD card in the WG1000 gateway (<https://wg1000/Gateway settings/Update>).

A device to be updated is marked with a yellow stripe on the left stating "old FW → new FW". A button  to perform update is displayed.

First, all the wireless devices have to be updated. Then, **the WG1000 gateway is updated at the end.**



CAUTION - the firmware saved on the SD card of the ACD 03/04 controller a on the SD card of the WG1000 gateway must be of the same version to avoid mutual incompatibilities.

Unit name - the button allows to customize the name of the wireless unit. Name of the wireless unit is then displayed in the ARU30 / ARU30W room unit and and in the ACD 03/04 controller in Information  (the group - External sensors).

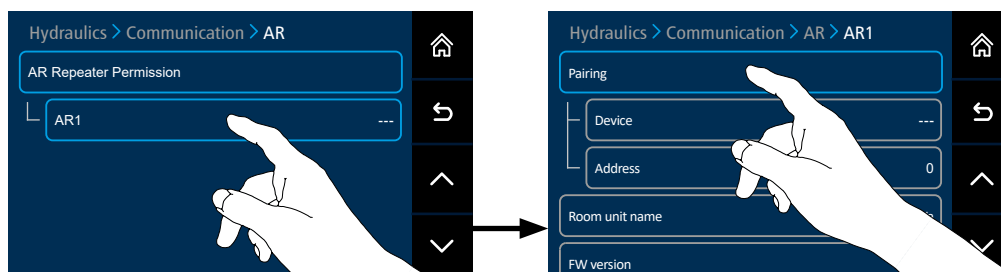
FW version - the tile shows the current program (firmware) version of the connected wireless unit.



INFO - If the FW version is not shown, the software of the controller, the WG1000 gateway and the device may be incompatible.

⚙️ → 📶 Hydraulics/Communication

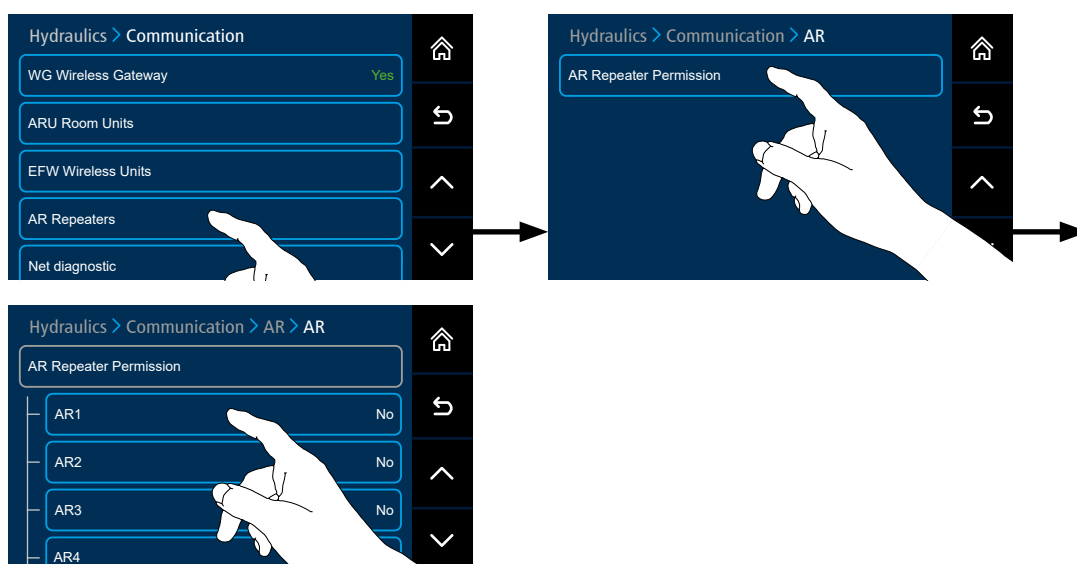
The sub-menu **AR repeaters** - activation, pairing and administration:



AR repeaters - the button allows to enter the screen with an overview of enabled (activated) signal repeaters for wireless ATMOS devices. There is a possibility to enter the screen for the administration or the screen for enabling other AR repeaters. The menu allows to define up to 6 signal repeaters.

AR12V - signal repeater - for external power supply/adapter 12VDC

AR230V - signal repeater - for wall socket (230V/50Hz)

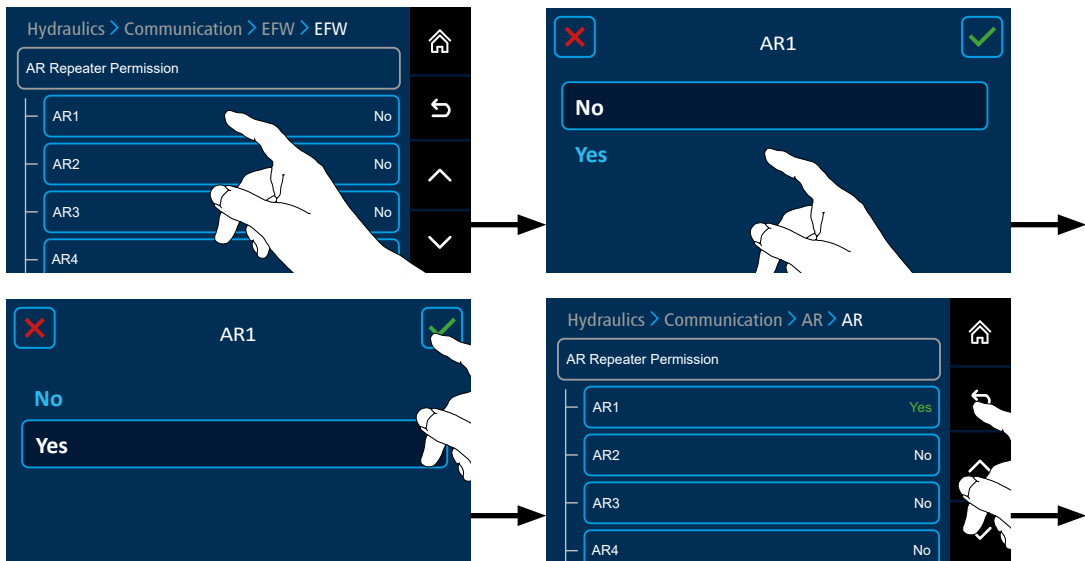


INFO - The tile is operational only if the WG1000 wireless gateway is enabled (activated), otherwise the wireless devices cannot be used.

Enabling AR repeaters – screen allowing to **add (activate) AR signal repeaters** signal AR, to show an **overview already activated repeaters** and to manage them.

Adding (activating) AR signal repeaters

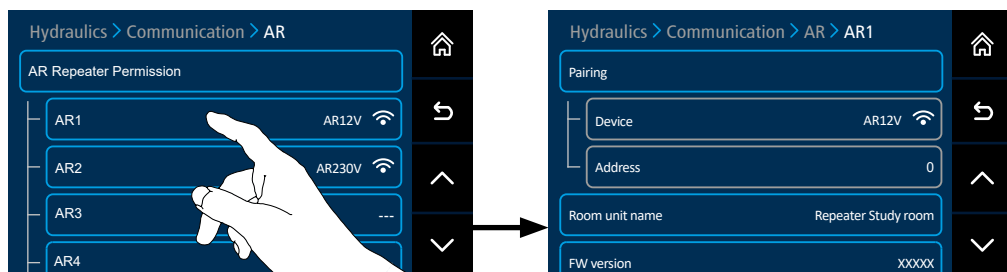
Activation or deactivation is done by confirming the command **Yes/No**.



An overview of activated / paired AR signal repeaters

In the list of activated signal repeaters, we click on the relevant signal repeater to be **Paired** (Unpaired) or **other settings** being performed.

The paired signal repeater can be arbitrarily **named**, and the **FW** (firmware) **version** is displayed.



AR1 (2, 3, 4, 5, 6) – displays activated signal repeaters and allows the screen access for **Pairing** and settings.

For paired signal repeaters, the type and connection method (communication) are displayed - wireless .

If the repeater is not paired --- is displayed instead of the type and the communication method.

Pairing signal repeaters

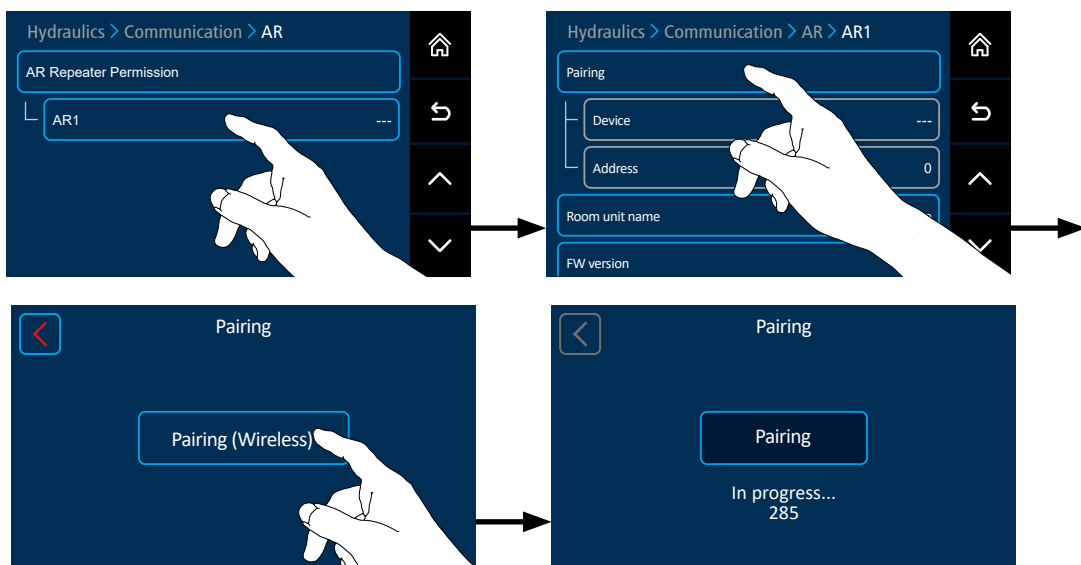
AR signal repeaters can only be **paired** using the **button "Pairing"**.

Pairing (wireless) - wireless connection of signal repeaters (devices) (AR12V and AR230V) with the WG1000 Wi-Fi gateway.

Pairing procedure:

- 1 - Pairing on ACD 03/04 is initiated
- ↓
- 2 - The AR signal repeater is responded

On the ACD 03/04 controller, the **Pairing (wireless)** button is clicked and confirmed on the selected signal repeater to be paired. The pairing should be finished in **300 s (5 minutes)**.



INFO - For pairing, an **opposite procedure** can be used as well. First, the pairing (**pairing process**) is activated on the AR repeater, and then confirmed (accepted) by the ACD 03/04 controller using the **Pairing** (bus/wireless) button (⚙️→🔌 Hydraulics/Communication/AR Repeaters/AR Repeater Permission/ARx/Pairing).



CAUTION - The pairing is forbidden to be initialized on more than one device.

Pairing confirmation - by holding the pairing button  on the AR12V and AR230V signal repeaters for more than 3 seconds.

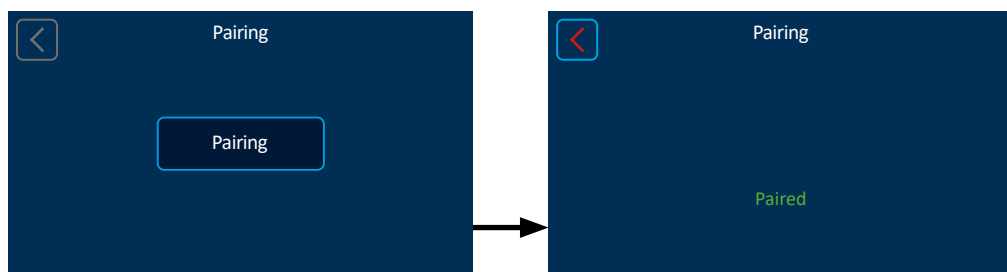


- pairing AR signal repeater with the ACD 03/04 controller is **confirmed** by lighting up the green indicator LED (near the pairing button) - see **signal repeater user's guide**.



CAUTION - In case of the program (software) update in the ACD 03/04 controller, all the connected devices have to be always updated as well (because of the compatibility reasons).

Successful **Pairing of the ACD 03/04 controller** with signal repeaters is **confirmed by the "Paired" text** (by ending the countdown before the expiration).

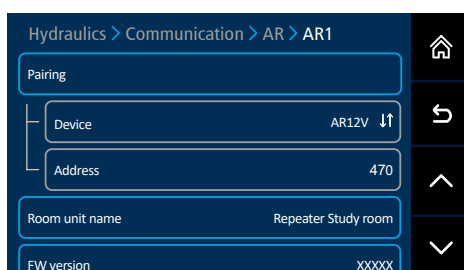


INFO - The process of pairing **can be interrupted** on ACD 03/04 (⚙️→🔧 Hydraulics/Communication) by new clicking the **Pairing** button (the countdown disappears).

Device and Address - these two items are **automatically filled in** after a successful **Pairing**.

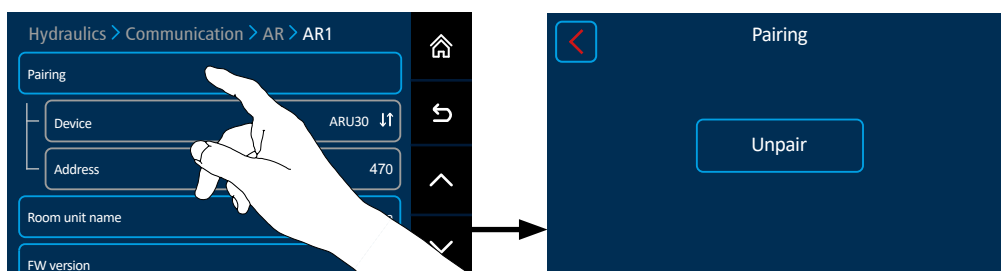
Device - the device type and the communication method are displayed. For wireless communication .

Address - this is the serial (manufacturing) number of the room unit (device), which can be found inside the room unit (device), e. g. 470.



INFO - If the **Paired signal repeater** is requested to be deactivated, the unit has to be **unpaired** first.

Then, the device can be removed (deactivated)   Hydronics/Communication/AR Repeaters/AR Repeater Permission/ARx confirming by command **No** .



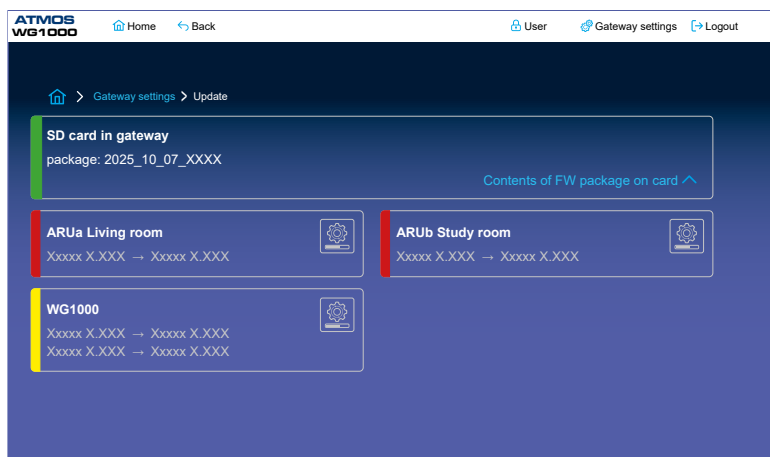


INFO - Wireless devices connected via wireless communication (wireless)  are updated from the Wi-Fi of the WG1000 gateway using the FW (firmware) stored on the SD card in the WG1000 gateway (<https://wg1000.local> → Gateway settings > Update).

A device to be updated is marked with a yellow stripe on the left stating "old FW → new FW".

A button to perform  the update is displayed.

First, all the wireless devices have to be updated. Then, **the WG1000 gateway is updated at the end.**



CAUTION - the firmware saved on the SD card of the ACD 03/04 controller and on the SD card of the WG1000 gateway must be of the same version to avoid mutual incompatibilities.

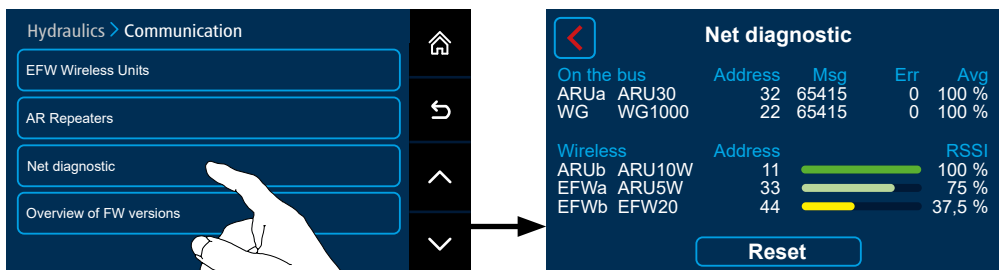
Unit name - the button allows to customize the name of the signal repeater. Name of the signal repeater is then displayed in the ARU30 / ARU30W room unit and in the ACD 03/04 controller in Information  (the group - External sensors).

FW version – the tile shows the current program (firmware) version of the connected wireless unit.



INFO - If the FW version is not shown, the software of the controller, the WG1000 gateway and the device may be incompatible.

Sub-menu **Network diagnostics:**



Networks diagnostics – control tool for communication quality.

All the activated room units, their types and addresses are displayed. The "ERR" column displays the number of errors (communication interruptions) per total number of communication packets from the "Total" column.

On the bus - the number of errors should be minimal if wired devices/units (ATMOSNET communication line) and the functional communication are properly connected.

If a higher number of errors (5 or more) is displayed after the several-day operation, the communication problem has to be solved (potentially, an error in communication interference, communication line connection, cable type, line shielding, influence of the magnetic field of near power conductors, etc.).

Wireless - for wireless devices/units (wireless network of the WG1000 gateway - ATBee) and the functional communication, we can see the signal strength of separate connected devices in Network Diagnostics. Accordingly, we can propose optimal positions of devices or the use of signal repeaters.

Levels of signal strengths in network diagnostics			
Description	Level	Signal strength - RSSI	
very strong	8		100 %
very strong	7		87,5 %
very strong	6		75 %
strong	5		62,5 %
good	4		50 %
weak	3		37,5 %
very weak	2		25 %
very weak	1		12,5 %
no connection	0		0 %



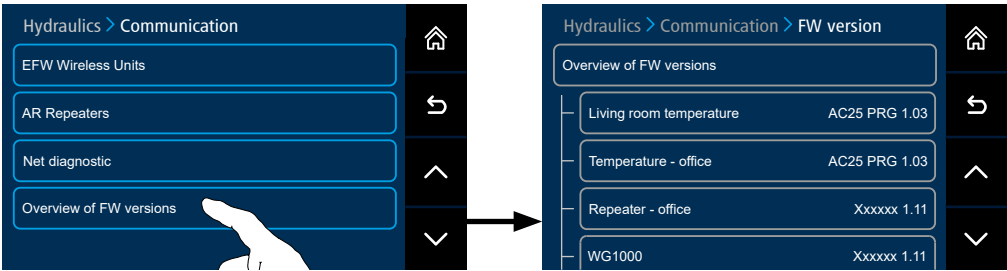
INFO - The number of errors Err (counter) can be whenever reset using the "Reset" button. The number of errors automatically decreases with the number of data packets sent. This means that random errors are automatically deleted over time.



INFO - The AR12V or AR230V signal repeater is suitable to be used if the signal strength of a wireless device drops below 38 % on average.

⚙️→🔗 Hydraulics/Communication

Sub-menu **FW versions overview:**



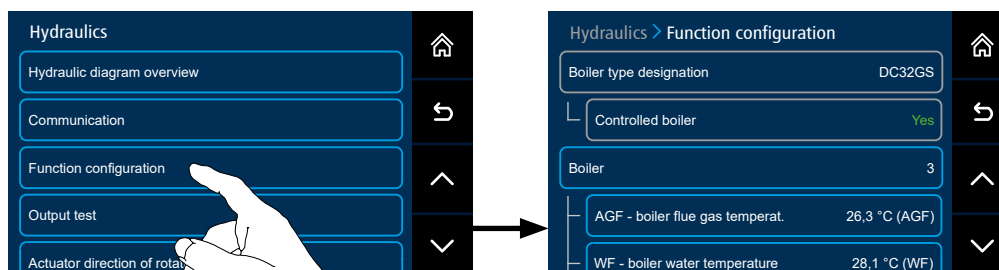
FW versions overview – the button allows to enter the screen with an overview of connected and paired devices (room units, sensors, repeaters, the WG1000 wireless gateway) and their current software versions (FW - firmware).

Menu - Function configuration:

⚙️ → ⚙️ Hydraulics/Function configuration

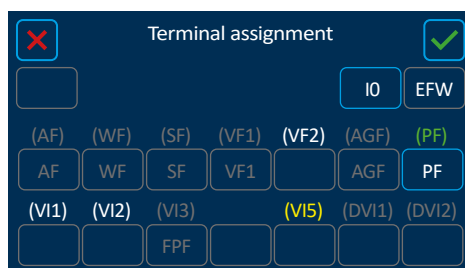
(Access level – the User - nothing / the Service engineer - everything)

The connection of **ATMOS ACD 03/04** controller with the **ATMOS WG1000** Wi-Fi gateway allows to expand and use up to 7 additional wireless EFW sensors / potential-free buttons (EFW-buttons).

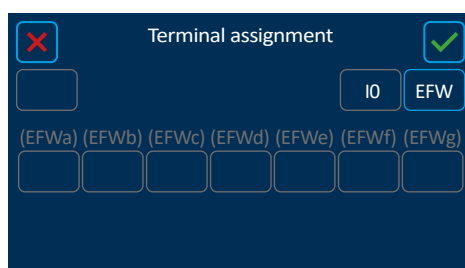


Assignment of terminals - inputs – the screen for assigning input terminals offers to select between terminals of wired sensors **IO** and terminals of b EFWx **EFW**.

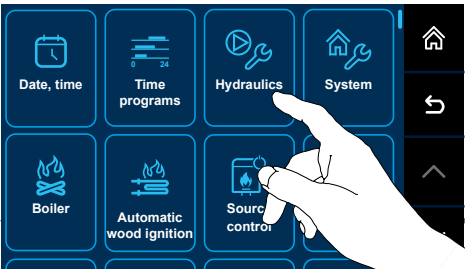
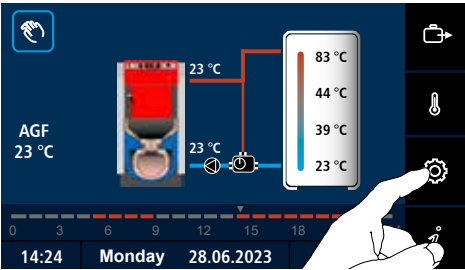
Terminals of wired sensors - IO

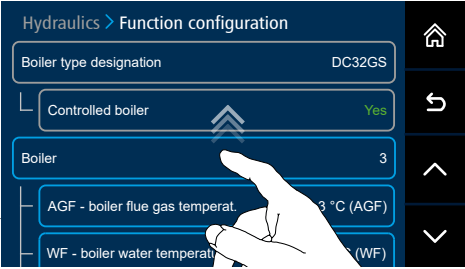
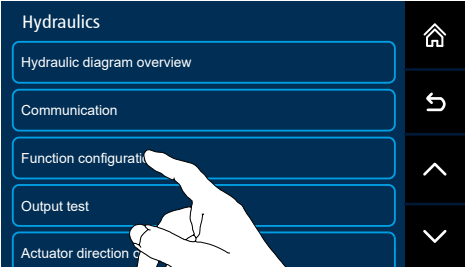


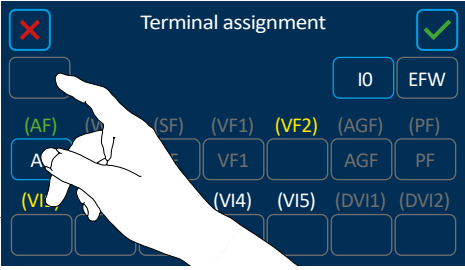
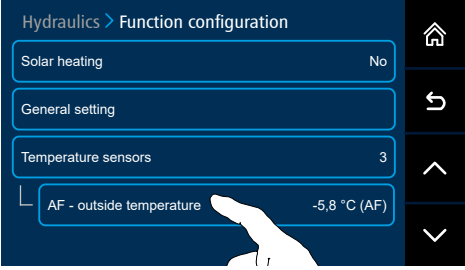
Terminals of wireless sensors - EFW

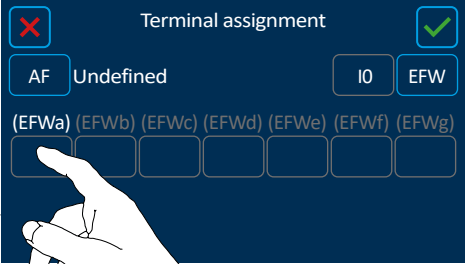
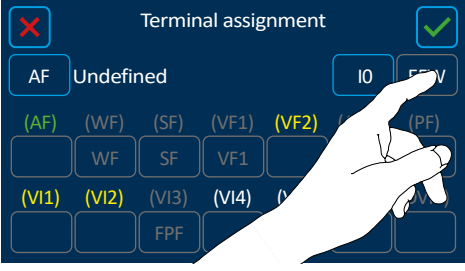


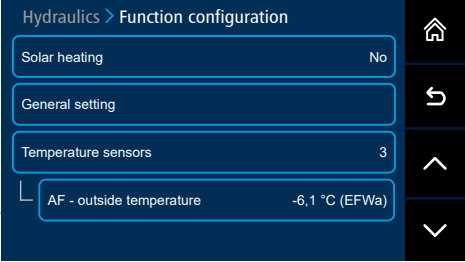
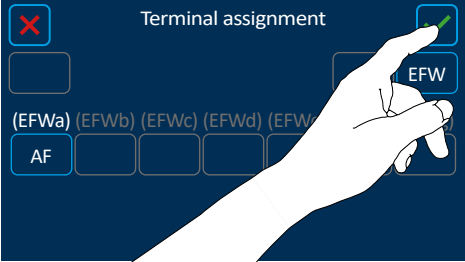
Example of assigning the AFW wireless outdoor sensor; changing from AF (AF) to AFW (EFWx):











CHANGES IN ACD 03/ACD 04 CONTROL

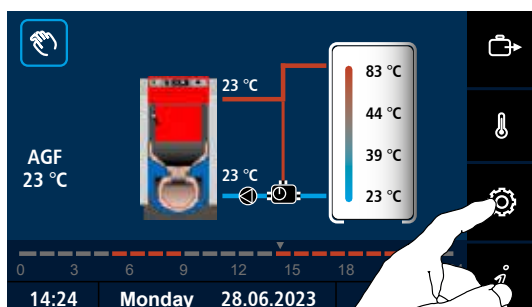


System

(Access level – the Service engineer)

We perform the settings under the button (entering the menu), where we click the System symbol .

The System menu is used to set general parameters of the entire heating system.



Parameters:

- **Parameter P31^{System} – Program update**
- **Parameter P32^{System} – Mass update**

From FW2.10 (AC16D PRG 2.10) program version, we can update all the ATMOS devices from a single complete package; from FW-pck 2.10 (FW_2.10_2025xxxx.pck).

The SD card in the controller (and the WG1000 gateway) contains only this one file. Each updated device selects the appropriate data for the update from this package.

The last update to be performed in the standard way (see the user's guide for the ACD 03/04 controller) is from the version 2.00 to the version FW 2.10 (AC16D PRG 2.10).

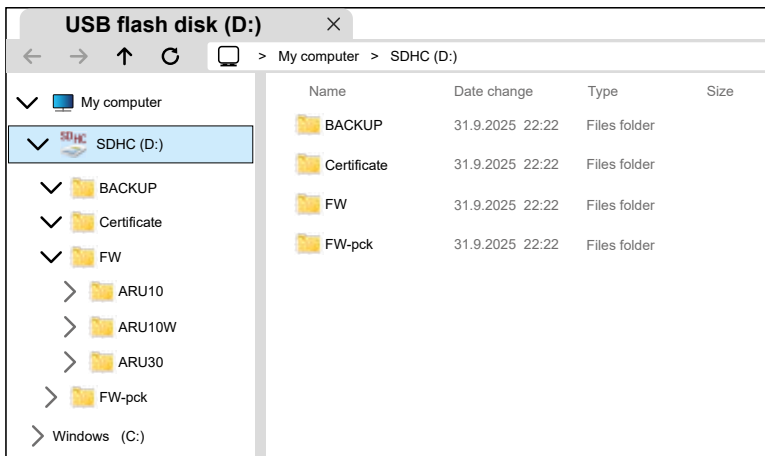
For the update **on the versions 2.00 and 2.10**, the ACD 03/04 controller has an own file in the FW folder (AC16D PRG 2.xx). For the ARU10(W) and ARU30 room units, it's similar - see the file structure on the SD card.



INFO - Before starting the update, the SD card must be inserted into the ACD 03/04 controller, and a directory named FW must be created in the root directory. In FW, only a single firmware file AC16D PRG 2.00 (2.10) can be located. This file is automatically loaded after pressing the "Install" button.

For room units, the files are saved in ARU10 and ARU30 sub-folders.

File structure on the SD card - till the FW 2.00 (2.10) version



BACKUP - the folder, which is automatically created after the backup, contains the generated file with the system settings backup

(→ Parameter P30_{System} – Back up / System Recovery)

FW - the folder contains FW (firmware) for the ACD 03/04 controller up to the version 2.00

ARU10 - the sub-folder contains FW (firmware) for the ARU10 room unit (AC25_PRG 2.00 (2.10))

ARU10W - the sub-folder contains FW (firmware) for the ARU10W wireless unit (AC24_PRG 2.00 (2.10))

ARU30 - the sub-folder contains FW (firmware) for the ARU30 room unit (AC22 PRG 2.00 (2.10))

AC16D PRG 2.00 - the file contains FW (firmware) for the ACD 03/04 controller itself (AC16D PRG 2.00 (2.10))

FW-pck - the folder contains a file with the **complete package of FW** (firmware -FW_2.10_2025xxxx.pck) to be used for updating all the ATMOS devices with a single file.

For the ACD 03/04 controller, the package can be used for the standard update to FW 2.10 (AC16D PRG 2.10).

Certificate - the folder with the security CERTIFICATE (Atmos-Device-CA). The folder is not needed to update the ACD 03/04 controller (is included due to the compatibility of the SD content with the card for the WG1000 wireless gateway).



CAUTION - The structure of folders and files on the SD card has to be always maintained. Then, the ACD 03/04 controller can correctly identify and install the program (software).



INFO - The old firmware (the program being replaced) can be moved to another folder (e.g. "OLD").



CAUTION - After inserting the SD card, the **controller has to be always restarted** to load and update all the displayed information.

The SD card can only be removed after the controller is turned off



INFO - When updating from an older FW version, e.g., 1.03 (AC16D PRG 1.03), the update to the latest version is recommend to be done in successive steps through the versions 1.04, 1.05, 1.061, 2.00.

If any version is skipped, the update may not work properly due to the incompatibility of the LDR loader.



INFO - the **ACD 03/04 controller** can be updated to **the version 2.00 (2.10)** using the FW (firmware) located **on the SD card in the WG1000 gateway**.

The SD card can be **removed from the WG1000 wireless gateway**, can be **insert to the ACD 03/04 controller** and the controller can be **updated** to the new FW version 2.00 (2.10).

Example of the update procedure using data from the SD card of the WG1000 gateway

If the ACD 03/04 controller is needed to be updated, for example, from the version FW 1.061 to the “wireless” version FW 2.00 (2.10), following steps are sufficient:

- 1 - The SD card is removed from the WG1000 Wi-Fi gateway, a copy of the card is created in a computer, and the card is inserted back to the gateway.
- 2 - The ACD 03/04 controller is turned off and the SD card is removed from the controller
- 3 - Contents of the SD card of the controller is deleted, and the contents of the SD card of the WG1000 gateway is saved there (with the FW folder and FW-pck).



INFO - The FW to be saved to the SD card of the controller can be obtained in other ways as well. On the Atmos website (www.atmos.eu) in the "Downloads" section or from the Atmos technical support support@atmos.eu.

- 4 - The SD card is inserted back into the ACD 03/04 controller, and the controller is turned on
- 5 - A backup of the ACD 03/04 controller settings is created in the System menu -  →  Parameter P30^{System} – Back up / System Recovery)
- 6 - The Mass update is used, see the System menu -  →  Parameter P32^{System} – Mass update. First, room units are updated, and finally the ACD 03/04 controller is updated to the version FW 2.00 (2.10).



INFO - The version FW 2.00 is sufficient for the use of the WG1000 wireless gateway. Nevertheless, the update to the version FW 2.10 can complete the transition to the single-file package firmware, which can run on all ATMOS devices.

Other information about updates are available in the standard user's guide for the ACD 03/04 controllers