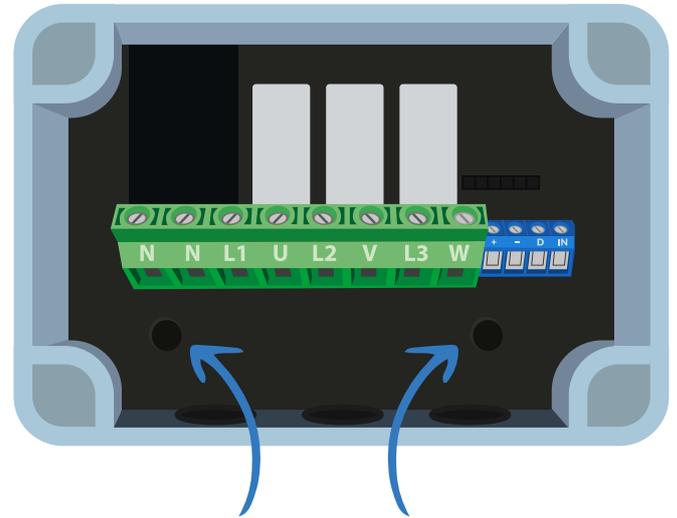


# User Manual



## SAFETY RULES

-  Do not connect the device to loads exceeding the permitted values.
-  Connect only in accordance with the diagram presented in the manual. Improper connections may be dangerous, it can damage the controller, and loss of the warranty.
-  **DANGER!** Risk of electric shock! Even with the device turned off, the outputs may be live. All assembly work should be ALWAYS performed with the disconnected power circuit.
-  The installation of the device to a power mains that does not meet the quality requirements defined by PN-EN 50160, will result in the loss of the warranty.
-  **CAUTION!** The device is designed to operate in an electric network of nominal 230V phase voltage and 400V phase-to-phase voltage. Take special care during installation!
-  The controller has been designed to work only with heating devices. The heaters must have independent thermal protection.
-  To ensure protection against electric shock, the protective terminal of I class heating devices must always be connected to the protective earth (PE) terminal in the TN-S network or to the neutral-protective (PEN) terminal in the TN-C network. At the installation of electrical devices, special attention must be paid to the protection against electric shock described in PN-HD 60364-4-41.
-  Protect the power circuit with overcurrent protection.
-  Connection of the controller must be carried out only by persons with the corresponding electrician license.
-  The controller must not be installed inside the sauna room.



mounting holes

along the entire length of each core is not damaged. Proper installation should provide protection against accidental contact with or short-circuiting of any conductive elements, as this may result in electric shock or damage to the device.

- Read the diagram and then proceed to install the controller. Remove the four screws securing the front panel of the controller, and then, holding both sides of the panel, gently pull it towards you. In the case of a controller with a pin socket, pulling out the panel will disconnect it. In the case of a controller with a cable, be careful not to tear out the sockets connecting the front panel to the back of the controller. To make it easier to connect the power cables, detach the front panel by pressing the lever located on the cable socket. Pay special attention to the markings of the controller connectors. Start by connecting the power cables - phase L1 (brown), L2 (black) and L3 (grey) and neutral N (blue). In the case of a single-phase power supply, connect the phase wire (brown) to the L1 connector or the bridged connectors L1, L2 and L3 and the neutral wire N (blue).
- Connect the furnace (heaters) - In the case of a single-phase furnace or the case of contactor control, connect the wires to the U and N connectors. In the case of a three-phase furnace (heaters in the "star" electrical system), connect the wires to the U, V, W and N connectors. Remember to connect the PE protective conductor (yellow-green).
- Connect the external temperature probe to the blue connector in the order of colors (from the left): red, black and yellow or brown, white and green.
- The controller allows you to connect an optional door opening sensor, which will turn off the heaters when the sauna door is open. A non-parametric NO reed switch is required, which is connected to the blue connector between the second and fourth pin (from the left). The reed switch is not included in the set, it must be purchased separately - we suggest using Blebox reedSwitch.
- For temperature measurement, use the digital "blebox tempProbe," which should be installed inside the sauna room in accordance with the furnace manufacturer's recommendations. The probe cable should be routed in a smooth conduit outside the sauna chamber, which makes replacement easier if necessary.
- If the furnace manufacturer has not specified the exact location for installing the temperature probe, it is recommended to mount it approximately 15 cm from the ceiling and 30 - 50 cm from the edge of the furnace. The probe should not be placed near ventilation elements such as grilles, doors, or windows, as this may lead to incorrect temperature readings.

## 1 INSTALLATION - BASICS

The connection diagrams can be found at the end of the manual

- The connection diagram can be found at the end of the manual
- Disconnect the supply before installing the controller. Remember that any mounting works should be carried out when the mains voltage is disconnected.
- The controller should be installed in a location protected from adverse environmental conditions. **The device must not be installed inside the sauna chamber.** The controller is equipped with prefabricated mounting holes that allow it to be fixed in place. Drilling your own holes may damage the device and void the warranty. The location of the mounting holes is marked on the installation diagram. The controller can be mounted either on the surface or flush-mounted. It should be installed in a way that allows easy removal. Keep in mind that metal elements (wires, pipes, building structures) negatively affect the device's range and thus the comfort of use.
- The controller and electrical cables must be securely fixed to the wall. Due to the device's operating voltage, it is necessary for the connecting cables to be routed through rubber grommets, and the cut of the cable's outer insulation must be located inside the controller housing, at least 1 cm from the grommet. When connecting the wire cores, make sure that the insulation



The final decision regarding the location of the temperature probe is made by the installer, technician, or sauna manufacturer. It is not recommended to excessively extend the original probe cable or run it in parallel with power supply cables for other electrical devices, as induced interference may cause the probe or the controller to malfunction.

- Depending on the version of the saunaBox controller, connect the front panel using a cable or the included pin strip. Holding both sides of the controller front panel, carefully and gently place it onto the controller housing. In the case of the controller version with a pin strip, pay attention to the correct insertion of the pin strip into the connector. Be careful not to move the dowel strip during panel installation. Gently tighten the four screws securing the front panel, trying not to use too much force so as not to damage the housing.
- After making sure that the device has been connected following the diagram, turn on the device by switching on the power supply - the middle LED from the "on/off" button will light up on the front panel.

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## FIRST START

- Download the **free wBox application**. If you have an Android mobile device, you will find the application in the Play Store. For iOS devices the application is in the App Store.
- By using your mobile phone or tablet, connect it to the device wireless network. To do this, enter to your smartphone or tablet settings, then go to setting of the WiFi network and find the network name "saunaBox-xxxxxxxx" where xxxxxxxxxx is the serial number of the device. Connect to this network.
- Turn on the wBox application. A device will appear at the top of the screen. To add it to the application, click on "+" on the right side of the name. To pre-configure the controller, click on the default device name.
- Test the work of the controller by moving the ON / OFF button to the ON position or triple clicking the middle button of the keyboard panel - the controller will illuminate the panel and the LEDs of the temperature adjustment buttons will light up. In the ON position it is possible to adjust the desired temperature: in the application, move the temperature control scroll bar upwards or on the front panel keep pressed the button which increases the temperature. When the desired temperature exceed current temperature the controller will turn on the relays and heating will start. Observe the readings of measured temperature: the readings should increase at the same time as the room heats up and the panel backlight should change color.
- The control screen has a "Turn on for time" button that start the temperature controller for a specified period of time, in the range of 10 seconds - 24 hours with a resolution of 1 second. After starting 'for time' the control screen shows the counter of the remaining operating time. The maximum value of the "Turn on for time" time setting is limited by the setting of the superior automatic switch-off function of the controller, described later in this manual.

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## ACCESS POINT AND WIFI NETWORK SETTINGS

- Once you turn on the controller for the first time, you can proceed to its further configuration. Being connected to the WiFi network emitted by the device, in the control panel of the wBox application select the device, then go to "Settings" (icon at the top-right corner of the screen).
- You can also configure the network settings using a web browser. After connecting to the controller's wireless network, turn on the browser and go to [www.blebox.eu](http://www.blebox.eu)
- You can change the name of the device that is displayed in the wBox application. In addition, you can change the name and password of its generated WiFi network. Remember that changing the network name or password will disconnect the device immediately after you click the "Save" button, so re-connect to the device using the newly assigned network name and password.
- You can add the controller to your home WiFi network to control it through this home network or from anywhere in the World. To do this, in the "Connect" settings section, select a network name from the list and press "Connect". If is required, enter the WiFi network password. During the connection of the controller to your home network, the phone / tablet may be disconnected from the network. In this case, you will need to reconnect your phone / tablet to the controller network.
- Please remember that in order to control the device outside the local WiFi network, from anyplace in the World by using the wBox application, the option "Remote access enabled" in the controller settings must be set to "Yes".

- Once you've finished configuring the WiFi network, you can disconnect your phone/tablet from the controller network and connect your mobile device directly to your home WiFi network. The control from the wBox application will work the same way as when the phone / tablet is connected to the controller network. If the user leaves the local network, for example, leaving home or using the mobile data, the wBox application will signal this state as "Remote mode". In this case, the devices can be controlled, but for security reasons settings are not available.

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## DEVICE SETTINGS

- Go to the device settings (the "Settings" icon in the top right corner of the screen). In the "Name and icon" section you can change the name of the device under which it is displayed in the wBox application. In the "Device settings" section it is possible to turn off the LED diode built into the device.
- In the "Minimum temperature" and "Maximum temperature" fields you can change the operating range of the temperature controller (default value: 60 - 120°C). Limiting the width of the adjustment range makes it easier to precisely set the temperature using the setting slider and the buttons on the keyboard panel.
- The "Middle button mode" option allows you to select how to turn on the controller from the front panel. We recommend using a triple tap which will make it more difficult to accidentally turn on the temperature controller. Turning off the controller is done in both cases with a single tap. Default value: triple tap.
- The automatic switch-off function gives the possibility to automatically switch off the heater after a specified time from switching on - this is a superior function to the "Turn on on time". This is a protection option against leaving the sauna switched on when we forget to manually turn it off. The time can be set in the range of 10min - 24h with a resolution of 10min. It's strongly recommend to set the value for several hours. Default value: 6h.
- If a door opening sensor is installed this option allows the temperature controller to automatically pause when an open door is detected. During this time, the front panel flashes yellow and a relevant message appears in the application. After closing the door, the controller returns to normal operation. This is a safeguard against eg. remote activation of the sauna with an open door, additionally saves energy. This option is disabled by default.

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## NOTIFICATIONS

- The controller allows you to display a system notification on a phone with the wBox application installed on the particular trigger, e.g. when device disconnect from cloud service.
- Notifications only work when the controller has a stable Internet access and the "Remote access" option is enabled (default setting).
- In order for the notification to be displayed on the phone it is necessary to allow the controller to display notifications. Go to the main menu of the wBox application, to the "Notifications" tab. Then go to the settings (the "Settings" icon in the upper right corner of the screen). Find the device on the list and select types of available notifications or cloud service notifications. Confirm the change of preferences with the "Save" button in the upper right corner of the screen.
- If notifications are not displayed despite their configuration check in the phone system settings (Android / iOS) whether the wBox application is authorized to display system notifications.

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## TIME AND LOCATION OF THE DEVICE

- Go to settings, to the "Time and location" section. In the "Device time" tab, select your region and location from the list, confirming the changes with the "Save" button. The device will synchronize its time with the NTP time server (if the controller is in a WiFi network with Internet access) or will download the time from the phone / tablet. Since the controller does not have a clock backup battery, the clock resets itself when the power is disconnected. Hence, it is recommended that the controller is always connected to a WiFi network with internet access so that it can automatically synchronize its clock. This is especially important in controllers that have the function of working with the schedule.
- You can specify the location of the controller using your smartphone or tablet. In the "Device location" tab click the "Set location" button. The application will ask whether to share the location - allow. The approximate coordinates of your location should appear in the "Coordinates" box. If the "Set location" button is not visible, it means that the location is not shared.



button flashes red with "Error" or the "Coordinates" field has not changed the value from "Not set" to numerical data there has been a failure in retrieving the location. You should then make sure that the phone / tablet has a GPS module and that the wBox application has access rights to download the location in the phone settings. Setting the location is especially important in controllers that have the function of working with the schedule, in which the schedule is based on sunrise and sunset.

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## SCHEDULE

- The controller has the ability to work according to a given schedule.
- Adding schedule entries can be performed by clicking the "Add item" button in the "Schedule" section of settings. You can select the days in which the task will be performed, the type of entry (at a specific time, or relative to sunrise / sunset - only having a correctly set location) and set the parameters of the task. The set tasks will be visible as a list, individual entries can be edited, deleted or temporary disabled.

### TECHNICAL SPECIFICATIONS

power supply	1x230V (single phase) or 3x230V (three phase)
controller energy consumption	< 1W (standby) < 2W (power on)
measurement range	from -55°C to 125°C
measurement accuracy	± 0,5°C in the range of -10°C to 85°C
the ability to control the temperature in the range	from -50°C to 120°C
maximum load	3 x 16A
maximum power	AC1 (resistive, power factor: 0.95): 3x (16A @ 230V AC) = 3x 3680W = ~ 11kW
inputs type	digital temperature probe, open door sensor (shorten to ground)
number of outputs	3
type of outputs	relay
galvanic isolation	no
signaling on the housing	colorful, illuminated front panel informing about the set temperature, current temperature, failure

controller signaling	blinking blue diagnostic diode (option to switch off in the controller settings)
additional functions	timer, safety timer, open door detection
type of probe	single wired waterproof probe, cable length 5m
number of buttons	3
buttons type	capacitive (touch sensor), illuminated, integrated
mounting method	integrated in the front panel
housing	surface junction box, controller covered with a polyurethane composition not containing halogens, self-extinguishing for thermal class B (130 °C)
dimensions	129 x 89 x 57 mm (width x height x Length)
controller operating temperature	IP44
API	open <a href="https://technical.blebox.eu/">https://technical.blebox.eu/</a>
communication standard	µWiFi, compatible with WiFi, 802.11g
transmission type	bi-directional, encrypted
radio frequency	2.4 GHz
mode	direct connection (as Access Point), Wi-Fi connection via a standard router, connection with access from any location in the world (requires only access to the Internet)
encryption	WPA2-PSK and authenticated encryption with associated data (AEAD)
compatible devices and systems	Apple iPhone, Apple iPad, iPad Mini, Android, computers and mobile devices supporting HTML5
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## INFORMATION ADDITIONAL

### SOFTWARE UPDATE

In order to update the software in the controller it must be connected to the home WiFi network (see "WiFi connection settings" section) which is connected to the Internet. Go to settings, to the "Details, update and help" section and click the "Check for update" button. If an update is available the button changes to "Download new software". After clicking it, wait about 1 minute without closing the interface or taking any other actions. The device will download the latest software and then reboot. You can read the device ID, hardware and software versions in the device details.

### HELP

The latest versions of the manual, additional informations and materials about products are available on our website: [blebox.eu](http://blebox.eu)

General questions: [info@blebox.eu](mailto:info@blebox.eu)  
Service and technical support: [support@blebox.eu](mailto:support@blebox.eu)

Before contacting our service, if it is possible, prepare the "Service key" of the given controller available in its settings, in the "Details, update and help" tab. By clicking the icon, the key will be copied to the phone's clipboard. Prepare also the "Installation key" of the wBox application, available in the main application menu, in the "Settings" tab.

Factory reset manual is available at: [blebox.eu/start/reset](http://blebox.eu/start/reset)

Attention! Factory reset does not remove the controller from the user account assigned to it. The device must be independently removed from the account - select "Manage devices" from the main menu of the wBox application, then select the device and click the "Remove device" button. Alternatively, you can log into the portal.blebox.eu system, go to the "Devices" tab, choose the device and select "Remove device" from the top-right "Actions" menu.

for more information visit our website

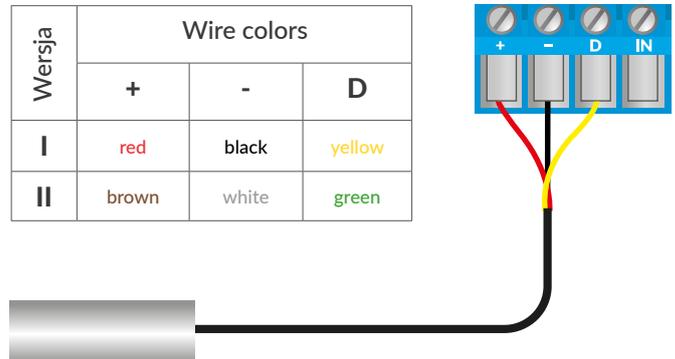
[www.blebox.eu](http://www.blebox.eu)

or send us an email to: [info@blebox.eu](mailto:info@blebox.eu)  
support is available at [support@blebox.eu](mailto:support@blebox.eu)

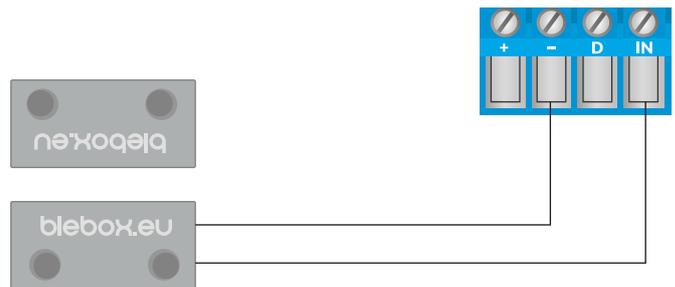
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## Connection diagrams

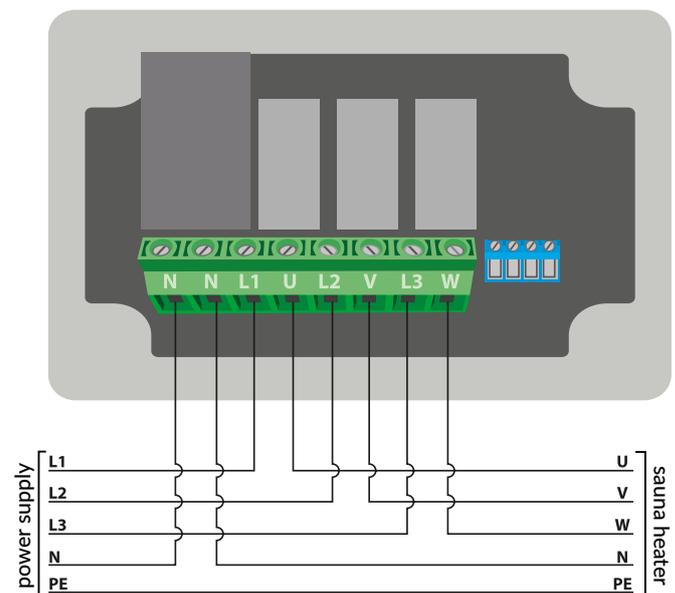
### 1. Temperature sensor wiring diagram:



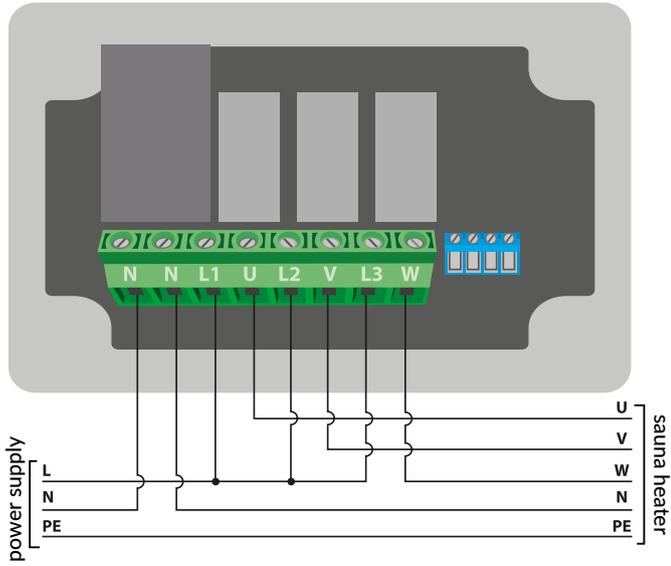
### 2. Connection of a door contact sensor (reed switch) for open door detection (optional):



### 3. General wiring diagram of a sauna heater:



4. Single-phase power supply, three-phase heater in a star (wye) configuration:



5. Single-phase power supply, single-phase heater:

