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User Manual

ability to control by voice commands with
Amazon Alexa and Google Home

gatebox v2 DOOR AND GATE CONTROLLER - GARAGE, SLIDING AND DOUBLE-LEAF

control with µWiFi technology from any place in the World

SAFETY RULES

Connect according to the diagram shown in the manual. Incorrect connection may be dangerous and may result in damage to the controller and loss of warranty.

DANGER! Risk of electric shock (even when the device is turned off); voltage may be present on the outputs. All installation work must ALWAYS be performed with the power supply disconnected.

Connecting the device to a power supply that does not meet the quality requirements specified in standards EN 50081-1, EN 50082-1, UL508, EN 60950 will result in the loss of warranty.

Use safety systems in accordance with the PN-EN 13241 standard, which specifies safety and operational requirements for gates and barriers.

1 INSTALLATION - BASICS

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

- Before starting the installation of the controller, disconnect the power in the circuit. Remember that all installation work must be performed with the power supply turned off (switching off the circuit breaker of the power supply circuit or unplugging the power supply from the electrical socket).
- The controller should be installed in a location protected from accidental damage, e.g., mounted on a fence post or inside the enclosure of the controlled device. Keep in mind that metal elements (wires, parts of the enclosure) negatively affect the device's range and, consequently, user comfort. It is recommended to mount the device in a stable, immobile position, with the antenna oriented vertically. When installing the device outside dry indoor spaces, special attention should be paid to ensuring tight seals around the rubber cable glands.
- Review the diagram before starting the installation of the controller. Pay special attention to the connector markings. Begin by connecting the power supply wires +12V/+24V (red or black with a white dashed line) and the ground wire (black).
- Connect the outputs that control the drive control unit. Depending on your control unit, you may need to connect one or two outputs. Output O1 of the controller is intended for operation in open / stop / close mode. Output O2 is an auxiliary output, used in drive control units that require a stop circuit closure during motor operation, or it can serve as an additional function, e.g., for a "gate," if the drive control unit supports such functionality. The polarity of the controller outputs does not matter, as the outputs are potential-free, SSR type.
- **Pay attention to the maximum current rating of the outputs – the control current must not exceed 100 mA per output. Overloading an output will trigger the built-in polymer fuse!**
- To receive feedback from the controller indicating the drive position in "Open" / "Intermediate Position" / "Closed," connect limit switches (e.g., reed switches or inductive sensors) according to the general diagram. The input pairs IN1A/IN1B and IN2A/IN2B are voltage inputs with no specific polarity, galvanically isolated from the rest of the controller, and operate completely independently of the OUT1/OUT2 output pairs.
- The meaning of the limit states detected on the IN1/IN2 inputs (i.e., which of the IN1 or IN2 inputs signals the closed position and which signals the open position) can be swapped in the controller settings menu, under the "Swap Inputs" option.

Advanced information

Advanced information for installers regarding the inputs, for cases when connecting a drive control unit for which a wiring diagram is not available.

For some gate control units, it is possible to use signals from the original electromechanical sensors of the control unit to detect limit states with the controller, connected in parallel or series. The allowable voltage range for each input pair is 12–24 V AC/DC.

In the case of a parallel connection, the IN1A/IN1B input should be connected in parallel with the existing gate closed sensor (usually labeled FCC, SWC, FC), while the IN2A/IN2B input should be connected in parallel with the existing gate open sensor (usually labeled FCO, SWO, FA). The polarity of the input connections does not matter. In a parallel connection, the gate control unit's measurement current is divided between the existing factory sensor circuit and the controller's measurement circuit, which in some control units with low-power measurement outputs may cause improper operation, manifesting as a failure to respond when reaching the limit position. Exercise caution during testing to avoid damaging the gate mechanism.

In a series connection, one of the wires of the existing gate closed sensor (usually labeled FCC, SWC, FC) must be cut and the wire ends connected to the IN1A/IN1B input. Similarly, one of the wires of the existing gate open sensor (usually labeled FCO, SWO, FA) must be cut and the wire ends connected to the IN2A/IN2B input. The polarity of the input connections does not matter. In a series connection, in some control units with low-power measurement outputs, the voltage drop at the controller may be insufficient to detect the limit position, resulting in the incorrect gate position being displayed in the wBox app.

In the advanced settings of the controller, described later in the manual, the limit switch detection algorithm can be changed depending on the type of current flowing through the inputs. In "Method 1," a limit state is detected if a DC or AC current flows between IN1A and IN1B, while no current flows between IN2A and IN2B. Conversely, the opposite state is detected when no current flows between IN1A and IN1B, and current flows between IN2A and IN2B. In "Method 2," a limit state is detected if only DC current flows between IN1A and IN1B, while no DC current flows between IN2A and IN2B, or if AC current flows there. Conversely, the opposite state is detected when no DC current flows between IN1A and IN1B, and DC current flows between IN2A and IN2B. Any other current flow configuration is interpreted as the drive being in the intermediate position.

In some gate control units, typical electromechanical limit switches are not present. However, these control units have outputs that signal the attainment of a limit position (without distinguishing whether it is the closed or open position) and an auxiliary output that can be configured to indicate the closed position. An example of such a control unit is the Somfy Control Box 3S RTS, with the corresponding wiring diagram shown in the figure. In the advanced settings of the controller, described later in the manual, the limit switch detection algorithm should be set to "Method 3," and in the gate control unit, the auxiliary output should be configured as the "gate open indicator." In "Method 3," the "Intermediate Position" is detected if no current flows through the IN1A/IN1B input (current flow through IN2A/IN2B is ignored). The "Open" position is detected when DC or AC current flows through both inputs IN1A/IN1B and IN2A/IN2B. The "Closed" position is detected when DC or AC current flows through IN1A/IN1B, while no current flows through IN2A/IN2B.

The gate state detected by the controller, depending on the selected limit switch detection method, is shown in the table below:

	OPENED		CLOSED	
	IN1A/IN1B	IN2A/IN2B	IN1A/IN1B	IN2A/IN2B
METHOD 1	DC or AC	0	0	DC or AC
METHOD 2	DC	0 or AC	0 or AC	DC
METHOD 3	DC or AC	DC or AC	DC or AC	0

DC - direct current flow,
AC - alternating current flow,
0 - no DC and/or AC current flow.

- After ensuring that the device has been connected according to the diagram and that there are no metal elements near the controller that could accidentally short the contacts, power on the device by supplying voltage (switching on the circuit breaker of the power supply circuit or plugging the power supply into the electrical socket).

2 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.
- Using a smartphone or tablet, connect to the device's wireless network. To do this, go to the Wi-Fi settings on your smartphone or tablet, find the network named "gateBox_v2-xxxxxxxxxx" (where xxxxxxxxxx is the device's serial number), and connect to this network.
- Turn on the wBox application. You will see your device on the main screen. In order to add it to your application account, select "Add device to account". If you are the installer and do not want to assign the device to your account, select "Use only once".
- Go to Settings (the "Settings" icon in the top-right corner of the screen), navigate to the "Gate Settings" section, and select the appropriate option in the "Gate Type" field. Then, depending on your control unit, choose the function of the second (auxiliary) output. After saving the settings, return to the main panel by tapping the arrow in the top-left corner. Test the controller by tapping the gate/door icon – the control unit should activate the drive movement.
- In the "Gate Settings" section, in the "MJPEG Stream Address (URL)" field, you can enter the URL of the IP camera monitoring the drive.

  If you need to change the controller's advanced settings, click the "Show Advanced" button. Additional options will expand.
- In the "Gate Output Type" field, you can change the behavior of the output between normally open (NO – the output does not conduct in its resting state) and normally closed (NC – the contact pair is closed in its resting state and opens when the control button is pressed). It is also possible to adjust the pulse duration on the output from 0.1 s to 15 s for a single press of the control button. The "Swap Outputs" option allows you to correct the order of the wire pairs without physically reconnecting them, for example, if the gate control wire was connected to output O2 instead of O1.
- Return to the main panel by tapping the arrow in the top-left corner. If the drive position sensor circuit has been connected, test the gate operation by tapping the gate/door icon – the control unit should activate the drive. Pay attention to the blue outline of the icon. If the drive is in the intermediate position, the icon outline will be half blue and half gray. The extreme "Open" position is indicated by a gray outline, while the "Closed" position is indicated by a blue outline.
- If you need to change the controller's advanced settings related to the inputs, go back to the controller settings, navigate to the "Gate Settings" section, and then click the "Show Advanced" button. Additional options will expand. You can change the limit switch detection method for the inputs IN1/IN2 if the controller does not detect the drive position despite correct wiring. If the drive position is detected incorrectly—for example, the drive is physically in the closed position but the visualization shows it as open—this means the IN1/IN2 input pairs have been swapped. In this case, enable the "Swap Inputs (IN1, IN2)" option.

3 WIFI CONNECTION AND SERVICE CONNECTION (AP) SETTINGS

QUICK INSTALLATION GUIDE
first configuration of the BleBox controller

Scan the QR code or click the link below
to access the quick installation guide.

https://blebox.eu/start

- Go to the WiFi network settings ("Settings" icon in the top right corner of the screen, "Connection" section), where you can connect the device to the home WiFi network to be able to control the device via it or from anywhere in the world. To do this, select the network name from the list of available networks and press "Connect". If required, enter your WiFi password. When connecting the device to the home network, the phone / tablet may disconnect from the device's network.
- 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
- After reconnecting the phone to the controller's WiFi network, check the "WiFi Client status" and "Remote access status" fields. The controller is equipped with a network connection supervision system which in case of problems with connection to the WiFi or the Internet will report the problem and its possible causes. If the network is working properly both fields will be set to "Connected".
- In order to communicate with the device from outside the local WiFi network, from anywhere in the world, via the wBox application, the device automatically connects to the BleBox cloud system service by default. The remote access system is fully encrypted and secure, the data are transmitted by European servers from reputable companies. It is possible to disable the remote access service - after clicking the "Configure" button, toogle the switch next to the "Remote access" option. Disabling the "Remote access" option will disable the controller from being used outside the local network. It will also disable access to historical data (including charts), push notifications on smartphones and integrations with external systems (e.g. Google Home, Amazon Alexa). We recommend keeping this function enabled (this is the default setting).
- Enabling the "Event log" option will cause the device to record events (e.g. about sent notifications set in the "Actions" section) in the BleBox cloud system. This allows the history of the events to be viewed later also when the controller is offline.
- After completing the WiFi network configuration, you can disconnect from the device network and connect the phone / tablet directly to your home WiFi network. Control from the wBox application will work in the same way as when the phone / tablet is connected to the device's network. If as a user you leave the local network, eg leaving your home or enclosing mobile data, the wBox application will signal this status as "Remote mode". In this case, you will have access to the device data, but for security reasons settings options will not be available.
- In the "Service connection (AP)" section, you can change the name and give the password of the WiFi network emitted by the device. Remember that changing the network name or password can cause disconnection with the device immediately after clicking the "Save" button, so you should reconnect to the WiFi network.
- It is also possible to completely disable the access point emitted by the device. To do this move the "Access point" slider to the off position and confirm the selection with the "Save" button.
- Attention! If the controller does not have a stable connection to the WiFi network ("WiFi client status": "Connected", without any error warnings), restarting the access point will not be possible - in this situation, the only solution is to reset the controller to the factory settings. Disabling the access point is recommended only after the complete driver configuration and making sure that the entire system is working properly.

4 ACCESS MANAGEMENT

- Return to the controller settings. In the "Access Management" section, you can additionally create accounts for drive users. This provides extra protection for access to the controller. After creating the accounts, adding the controller to the wBox application and controlling the drive will only be possible after entering the correct login and password.

Caution! After creating user accounts, controlling the drive using actions and integrations such as Google Home and Amazon Alexa will be unavailable.

- To add a new user, in the "Access Management" section, press the "Add" button, then in the new window fill in the "Username" and "Password" fields and press the "Save" button. If at least one user account is added, the controller will require login each time it is added to the wBox application. Only after successful login will it be possible to control the drive.

5 ACTIONS

- The controller allows sending control commands to other BleBox devices via WiFi using the local API. An action is triggered by a specific type of event, e.g. "Gate action" or "Not closed for." This makes it possible to create practical automation scenarios, such as automatically turning on the garage lighting when the gate is opened. **Proper operation of the action requires correctly functioning limit switches connected to the gateBox controller, which ensure accurate indication of the gate status (open, closed, or intermediate - partially open - position).**
- When adding an action in the "When" tab, select as the "Trigger type," for example, "Gate action," "Not closed for," or "Unexpected action." If you select "Gate action," specify the appropriate event that should trigger the action (reaching full open or closed position, or leaving the fully open or closed position). For the "Not closed for" trigger, a field for specifying the time will be displayed.
- In the "Execute" tab select "Control other device" as "Result", confirm. Click on the "Select device" icon. The device will search the network for compatible devices and display them in a list. Choose the device you want to control. If the device is not listed you must use the general API control method described below or update the firmware in target device. **Caution! All controllers must be in the same local network, and the "wireless client isolation" option in the AP/router must be disabled.**
- Then in the "Call API" field enter the API command that the driver will call.
- The most popular API control commands /s/ for switchBox and shutterBox are presented below:

  Turning on the driveway light via switchBox: 1

  Turning off the driveway light via switchBox: 0

  Turning on the home lighting via wLightBox v3: ffffffffff

  Turning off the home lighting via wLightBox v3: 0000000000
- The action is triggered once when the configured trigger condition is met. If the "Not closed for" trigger type is selected, it is possible to set the action to be executed cyclically.
- If the device was not on the found list or you want to control another device in the network, select "Call URL" as "Action type".
- In the "URL" field, enter the API command preceded by the http protocol prefix and the IP address of the controller you want to operate. The IP address can be found in the settings of the given device. **Caution! All controllers must be in the same local network, and the "wireless client isolation" option in the AP/router must be disabled.**
- The most popular API commands for switchBox and wLightBox v3 are presented below. It was assumed that the IP address of the device which will be controlled is: 192.168.1.123

  Caution! In the router settings (DHCP), a static IP address must be assigned to the controller.

  Turning on the driveway light via switchBox: http://192.168.1.123/s/1

  Turning off the driveway light via switchBox: http://192.168.1.123/s/0

  Turning on the home lighting via wLightBox v3: http://192.168.1.123/s/ffffffffff

  Turning off the home lighting via wLightBox v3: http://192.168.1.123/s/0000000000
- In the "Summary" tab name the action, check its correctness and confirm the entry with the "Save" button.
- A detailed description of control options and integrations examples for other controllers using the local open API can be found on our website, https://blebox.eu, in the FAQ section. The full technical API documentation for BleBox Devices is available at: https://technical.blebox.eu
- The added action will be displayed on the list. By expanding its details it is possible to preview the status of its last execution.

6 NOTIFICATIONS

- The controller allows system notifications to be displayed on a phone with the wBox application installed, triggered by a specific type of event, e.g. "Gate action" or "Not closed for."
- Notifications only work when the controller has a stable Internet access and the "Remote access" option is enabled (default setting).
- Notifications are added similarly to "Actions" - fill in the form fields and in the "Execute" tab select "Notification" as "Result". Confirm with the "Save" button.
- Additionally, it is possible to create "Custom Notifications" that allow you to define your own notification text.
- Examples of custom notification text:

  - Gate open
  - Gate closed
  - Gate open for more than 5 minutes
  - Gate closing
  - Gate opening
- For a notification to appear on your phone, you need to allow notifications from the selected BleBox device. This can be done in two ways:

  1. Go to the controller settings, select the "Notifications" tab, and enable the "Action notifications" option.

  2. On the wBox app home screen (open the menu by tapping the "three lines" icon in the upper left corner), then select "Notifications." Go to the notification settings, find the controller in the device list, and from the drop-down menu next to it, select "Action notifications.

  In both cases, you can also enable other types of notifications. Confirm the changes by pressing 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.

7 VOICE ASSISTANTS

- The controller can work with the Google Home and Amazon Alexa voice assistant systems. **Proper operation of the action requires correctly functioning limit switches connected to the gateBox controller, which ensure accurate indication of the gate status (open, closed, or intermediate - partially open - position).**
- Additionally, the "Remote Access" option must be enabled, and no user accounts may be created in the "Access Management" section (the controller must not be additionally secured). A detailed description of configuring the controllers with individual assistants can be found in the relevant manuals available on the blebox.eu website.

8 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 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.

TECHNICAL SPECIFICATIONS

supply voltage	12 - 24V AC / DC
energy consumption	< 1W
mean current consumption	30mA @ 12V
maximum current consumption	200mA @ 12V
number of outputs	2
type of outputs	SSR - dry contact, pulse
maximum switching voltage	24V AC / DC
maximum load	100mA
galvanic isolation	yes
number of inputs	2
type of inputs	voltage, logic
input voltage range	3.3 - 24V AC / DC
input polarization	n/a - autodetection
galvanic isolation	yes, opto - isolation

dimensions	50 x 36 x 18 mm
protection level	IP 20 according to PN-EN 60529
housing	made of polyurethane composition not containing halogens, self-extinguishing for thermal class B (130 °C)
mounting method	component adhesive (tape) or in housing
controller operating temperature	from -20°C to +50°C
status LEDs	LED indicators for input/output state and device status
API	open https://technical.blebox.eu/
communication standard	µWiFi, compatible with WiFi, 802.11g
antenna connector	lack, integrated antenna
transmission type	bi-directional, encrypted
radio frequency	2.4 GHz
mode	direct connection (as Access Point), Wi-Fi connection via a stan- dard 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, Windows, macOS (ARM processors labeled M1 or newer)

ADDITIONAL INFORMATION

FIRMWARE UPDATE

To update the controller software, connect it to your home Wi-Fi network (see the “Wi-Fi Connection Settings” section) with Internet access. Then go to the settings, open the “Details, Update and Help” section, and click the “Check for update” button. If a newer version is available, the button label will change to “Download new software.” After clicking it, wait about 1 minute without closing the interface or performing any other actions. The device will download the latest software and then restart. The device identifier as well as the hardware and software versions can be found in the device details.

HELP

The latest versions of the manual, additional informations and materials about products are available on our website: blebox.eu

General questions: info@blebox.eu Service and technical support: 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:
http://blebox.eu/start/reset

The controller reconfiguration manual is available at:
http://blebox.eu/start

Warning! Restoring factory settings resets the controller configuration but does not unlink it from the user accounts it is assigned to. If the owner (the first user who added the device to their account) removes the controller, it is removed from all other users as well.

To remove the controller from your account in the wBox app: open the main menu, go to “Manage devices”, select the controller, and click “Remove device.” Alternatively, sign in to portal.blebox.eu, go to “Devices,” select the controller, open “Actions” (top right), and click “Remove device.” If you are not the owner, this removes the controller only from your account.

for more information visit our website

www.blebox.eu

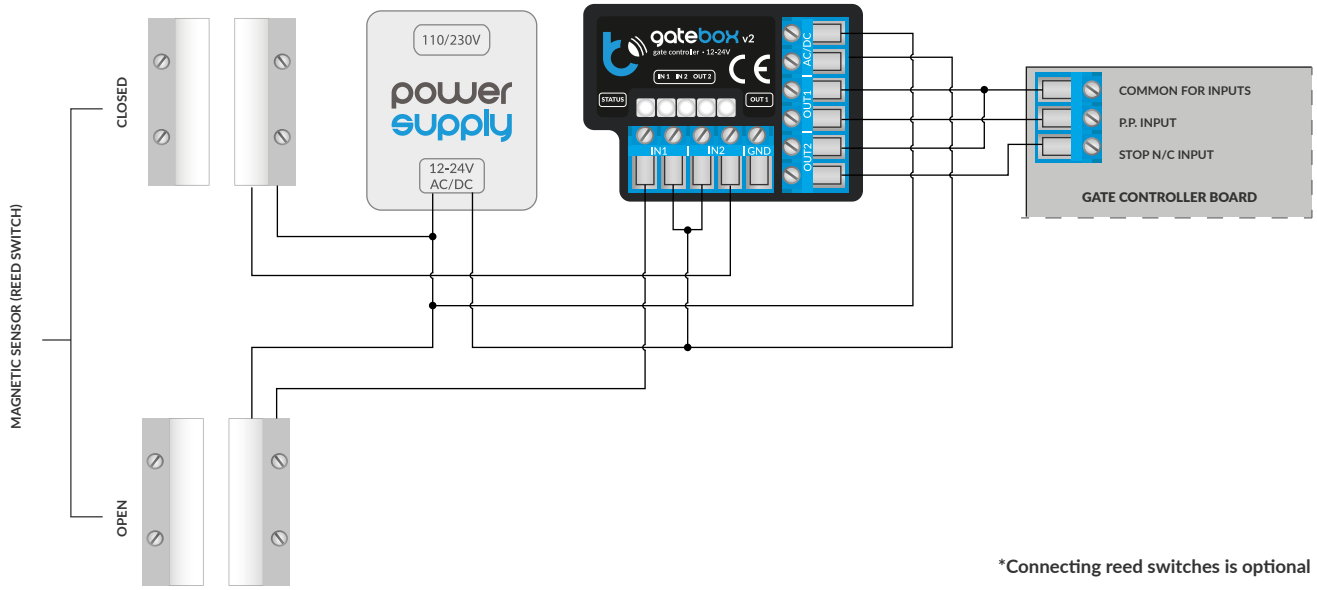
or send us an email to: info@blebox.eu

support is available at support@blebox.eu

made in Europe

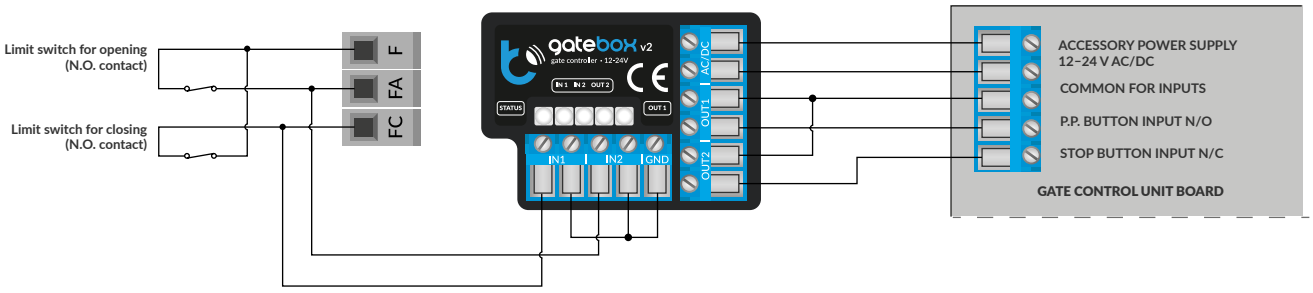
Connection diagrams

1. General connection diagram



*Connecting reed switches is optional

2. Wiring diagram using built-in gate sensors



3. Wiring diagram for connection to a control unit with an output indicating the end position reached and an auxiliary output for closed-position signaling, based on the Somfy Control Box 3S RTS

3. Somfy controller parameters: P15 set to 1,

gateBox v2 limit switch detection method: set to 3