SBIOT360

Installation manual

Instructions for mounting, wiring and commissioning, intended for qualified electrical personnel. Read this manual in full before working on the product or any connected circuit.

DIN-rail IoT controller with local display

SUPPLY VOLTAGE	MODULAR WIDTH	INPUTS / OUTPUTS
12–24 V DC	3 DIN-rail modules	6 digital inputs · 3 relay outputs

DOCUMENT REVISION

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MANUFACTURER

ELBRO AG
Gewerbestrasse 14
8155 Niederhasli ZH
Switzerland

UID: CHE-107.927.973
www.elbro.com
info@elbro.com
sbiot.elbro.com

Warranty, returns and digital services

Product warranty

All ELBRO products, including switchButler devices, undergo quality control. If a malfunction occurs, contact the authorised dealer promptly.

The warranty is valid for two years from the date of purchase and covers only defects in materials or manufacture attributable to ELBRO AG.

The warranty applies only to products supplied by ELBRO AG. To the extent permitted by law, transport, removal and reinstallation costs, downtime and indirect or consequential losses are excluded.

The warranty does not apply in the event of:

- unauthorised modifications or repairs;
- installation, wiring, use or maintenance that does not comply with the requirements;
- failure to follow the instructions or technical limits of the product;
- damage caused by external factors, overvoltage, inadmissible environmental conditions or misuse.

To make a warranty claim, return the suitably packaged product to the authorised dealer together with proof of purchase and a complete description of the defect. Unless agreed otherwise in writing, carriage must be paid by the sender.

Mandatory statutory rights available to the customer remain unaffected.

Returns

Commercial returns are governed by the ELBRO General Terms and Conditions in force and the returns policy published on the company website. Agree the procedure with the dealer or ELBRO AG before dispatch.

Repairs may be carried out only by ELBRO AG or a party authorised by ELBRO AG. Defective products must be returned to the responsible dealer.

Every return must include:

- a complete description of the malfunction;
- proof of purchase where required for warranty service;
- the information needed to identify the product and hardware revision.

ELBRO AG may reject or return products that lack the required documentation and charge the resulting costs to the sender. Use the original packaging or equivalent packaging suitable for transport.

IoT platform and digital services

ELBRO AG guarantees continued operation of the Web Platform and the switchButler IoT backend services for five years, from 1 January 2026 through 31 December 2030. This scope includes device communication, installation configuration and supervision, event recording and the notification functions made available by the platform.

The guarantee concerns overall availability of the services during the stated period; it does not guarantee uninterrupted operation, a specific service level or delivery of every individual notification.

The services also depend on Internet connectivity, cloud infrastructure, telecommunications networks and external providers. Temporary interruptions, delays, limitations, spam filtering or non-delivery beyond the control of ELBRO AG may occur.

ELBRO AG may temporarily suspend the services for maintenance, updates, security or faults and will restore them within a reasonable period in view of the cause of the interruption.

After 31 December 2030, ELBRO AG may modify, limit or discontinue all or part of the services if the product line or service is no longer commercially sustainable, including because of insufficient demand. Suspension or discontinuation may also become necessary because of force majeure, regulatory obligations or technical impossibility that cannot reasonably be overcome.

Email notifications are an ancillary function and delivery depends on recipient systems and external providers. Platform notifications must not be used as the sole channel for alarms or safety-critical functions; provide independent systems where required.

The user must:

- comply with data-protection and electronic-communications law;
- verify email addresses and obtain all necessary consents;
- transmit only lawful content and refrain from abusive use of the service.

To the extent permitted by law, ELBRO AG, its affiliates, distributors and dealers are not liable for indirect or consequential loss arising from use or unavailability of the services.

Jurisdiction

The courts of Zurich, Switzerland, have exclusive jurisdiction over all disputes arising from or connected with the purchase, installation or use of ELBRO products and digital services. Mandatory jurisdictions prescribed by applicable law remain unaffected.

Document information

The information in this document describes the technical status of the product at the publication date. As part of ongoing technical development, ELBRO AG may modify the product, its specifications and this document without prior notice.

This document has been prepared with care but may contain errors, omissions or inaccuracies. Mandatory statutory obligations and liabilities remain unaffected.

Support and applicable conditions

When requesting technical support or reporting a non-conforming unit, provide ELBRO AG with the model, hardware revision, firmware version and device identifier. The contractual terms in force at the time of supply govern warranty, repair and return. Agree the procedure with support before shipping the product.

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01

Installation precautions

Observe the safety requirements to protect persons and prevent damage to the product or installation. Warning notices are classified according to the severity of the hazard.

Meaning of warning notices

DANGER indicates an imminent hazardous situation which, if not avoided, will result in death or serious injury.
WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
NOTICE identifies information required to install, operate or verify the product correctly without indicating a personal hazard.

DANGER

Hazardous voltage

Before touching terminals or wiring, disconnect all relevant supplies, secure them against reconnection and verify the absence of voltage. Never work on live circuits.

01.1 Qualified personnel

Installation, wiring, inspection, commissioning and maintenance are restricted to qualified electrical personnel. Their training and experience must enable them to identify risks and prevent hazards associated with the product and electrical installation.

01.2 Intended use

Use the controller only for the applications described in this manual and within the technical limits of the installed hardware revision. Transport, storage, mounting, commissioning, operation and maintenance must be performed correctly. The product has no safety function and does not replace the independent protective devices required for the installation. The product label and terminal diagram for the installed revision are authoritative for identification and connections.

01.3 Product-specific electrical safety

Observe the following requirements when installing or servicing the controller:

- Supply the controller only from an external Limited Power Source (LPS), protected against short circuits and compliant with the datasheet for the installed hardware revision.
- Before working on the terminals, disconnect the controller supply and isolate all load circuits separately, as relay contacts may remain live.
- Separate extra-low-voltage circuits from hazardous-voltage circuits. Connect circuits of the same voltage category to all three relays.
- Observe terminal assignments, polarity, contact ratings and environmental limits for the installed hardware revision.

01.4 No safety function

The controller, digital inputs, relays, Wi-Fi connection and platform are not functional-safety components. Implement emergency stop, temperature limiting, fire or flood protection and every other safety function with independent devices suitable for the application.

01.5 Checks before commissioning

Before energising the installation, check controller retention, compliance of the wiring with the terminal diagram, supply voltage and polarity, isolation of load circuits and effectiveness of protective devices. After power-up, test every input and relay individually before enabling automatic operation.

01.6 Modifications and work on the product

Do not modify the controller, terminals or internal circuits and do not carry out unauthorised repairs. Do not commission a damaged or deformed device, or one showing abnormal behaviour. Disconnect all supplies, mark it as unavailable for use and contact technical support.

01.7 Electrical enclosure and DIN-rail mounting

Mount the IP20 controller on a 35 mm DIN rail compliant with EN 60715. Install it in a closed electrical enclosure or housing with a degree of protection suitable for the environment.

- Protect the installation against moisture, conductive dust, corrosive substances and flammable gases or vapours.
- Avoid direct sunlight, heat sources, rapid temperature changes and strong electromagnetic fields.
- Observe the dimensions, operating temperature and clearances specified for the installed revision.
- To mount, engage the upper enclosure profile with the rail and press the lower section until the DIN clip locks completely. Confirm secure retention.
- To remove, isolate every supply and disconnect the conductors. Release the lower DIN clip, pull the lower section away from the rail and lift the device. Do not pull on the terminals.

01.8 Power supply

Use only an external Limited Power Source (LPS), protected against short circuits and compliant with the datasheet for the installed hardware revision.

- Observe the polarity and maximum current draw specified for the installed hardware revision.
- Power-supply cables must not exceed 2.9 m.
- Separate extra-low-voltage wiring from hazardous-voltage circuits in accordance with the installation rules.

01.9 Digital inputs

Connect the six programmable digital inputs I1–I6 only as specified in the terminal diagram for the installed hardware revision. The controller has no analogue inputs.

- Use only the GND terminal dedicated to the digital inputs; do not substitute the negative supply terminal.
- Apply only voltages and signal types permitted by the electrical data for the installed hardware revision.
- Input cables must not exceed 2.9 m. Use shielded cables in strong electromagnetic fields.

01.10 Relay outputs

Each relay output provides an SPDT changeover contact: COM (common), NO (normally open) and NC (normally closed). For each circuit, use either the COM–NO or COM–NC contact pair according to the required state while the relay is deactivated. Always follow the terminal diagram; never derive terminal order from a photograph.

- Size and protect each load circuit according to the ratings of the installed hardware revision. Do not rely on relay state to ensure installation safety during power-up, restart, firmware update or restoration of power; provide a safe state that is independent of the controller.
- For hazardous-voltage loads, switch only the phase conductor and use the same voltage category on adjacent relays.
- Use an external contactor or interface relay where rated current, inrush current or required isolation exceeds the product limits.

01.11 Heating and thermostatic control

The controller is not a certified safety thermostat and does not replace a compliant thermostat, temperature limiter or any other mandatory protective device.

- Install the independent thermostat or limiter required by the installation design.
- Define a safe relay state for loss of sensor data, loss of connectivity and controller restart.
- A BTH1 reading remains valid for 5 minutes and the last value is retained for a further 25 minutes. After 30 minutes without a valid reading, the sensor becomes unavailable and the associated thermostat applies its configured fail-safe state.
- The low-battery alarm activates at 15% or below and resets at 25% or above. If the battery is removed, the BTH1 stops transmitting; after 30 minutes without valid data, the sensor becomes unavailable.
- Before operation, have qualified personnel verify the complete circuit and configured fail-safe state.

01.12 Wi-Fi and remote connectivity

The controller communicates with switchButler IoT over 2.4 GHz Wi-Fi. Radio characteristics and conformity documentation depend on the model and hardware revision.

- Remote connectivity is an operational function and must not be used as the sole safety measure.
- Without Internet or platform access, local behaviour depends on the applied device configuration and firmware revision.
- A metal enclosure attenuates the radio signal. Before commissioning, verify Wi-Fi stability with the enclosure closed and under actual operating conditions.
- Position the device so that metal screening, power conductors and interference sources do not impair radio communication.

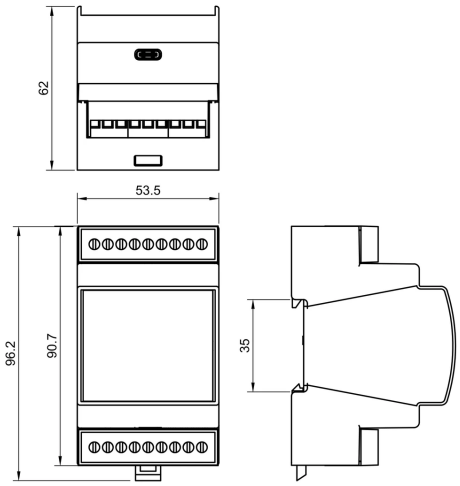
02

Installation

WARNING — Before wiring

Isolate all relevant power sources, secure them against reconnection and verify the absence of voltage before working on the terminals.

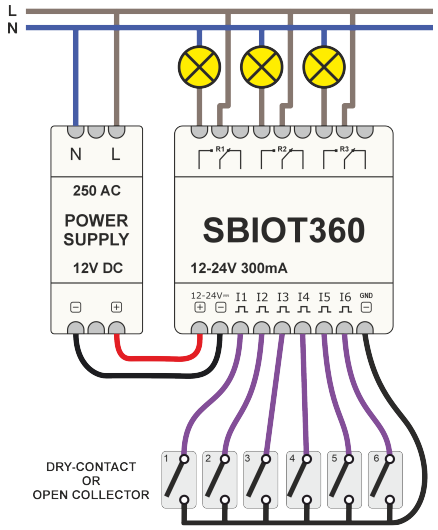
02.1 Mechanical dimensions



Dimensioned drawing

- Maximum envelope: 53.5 × 96.2 × 62 mm (W × H × D).
- Body height: 90.7 mm.
- Vertical mounting on a 35 mm DIN rail; keep the terminals accessible for wiring, inspection and maintenance.

02.2 Electrical connections



Functional connection diagram

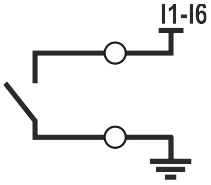
- External DC supply and three loads controlled by relays R1–R3.
- Inputs I1–I6 for dry contacts or compatible electrical signals.

02.3 Relay outputs and load limits

Total current limit for the relay outputs

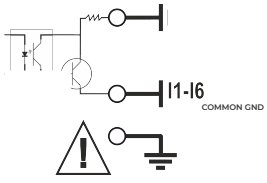
Each relay contact is rated for a maximum of 5 A at 30 V DC or 10 A at 250 V AC, subject to the conditions specified for the relevant hardware revision. The sum of the currents flowing simultaneously through the closed contacts of the three relays must not exceed 10 A for the device as a whole. For loads with high inrush current, inductive or capacitive characteristics, or values above the permitted limits, use suitably rated external contactors or interface relays.

02.4 Digital inputs



Dry contact — sink mode

- The contact connects the selected input I1–I6 to the dedicated GND reference.



Voltage signal — source mode

- The PLC or field output applies a DC signal referenced to the common GND dedicated to the inputs.
- Maximum applicable voltage: 30 V DC.

03

Commissioning

Commissioning covers Wi-Fi connectivity setup, controller assignment to an installation in the Web Platform, input and output parameterisation, and functional verification of the connected circuits.

03.1 Preliminary operations

Complete the following checks before beginning network setup or device association.

- Verify the product model, hardware revision, power supply, terminal markings and protective devices.
- Have access to a 2.4 GHz Wi-Fi network and its credentials; for WPS, use only the network prepared for switchButler IoT.
- Have a Web Platform account for qualified personnel and open https://sbiot.elbro.com. This access is intended for installers, maintenance personnel and installation administrators.

03.2 Applications, users and accounts

The Web Platform, SBIOT Setup App and switchButler IoT App provide distinct functions and use separate accounts.

Web Platform

For installers, maintenance personnel and installation administrators. At https://sbiot.elbro.com it provides configuration, supervision and invitation management.

SBIOT Setup App

For qualified personnel on site. It transfers Wi-Fi credentials to the controller over Bluetooth; it does not provide access to the installation.

switchButler IoT App

For end users. It shows only the installations, commands and notifications assigned to the corresponding account.

The Web Platform account and the switchButler IoT App account remain separate even when they use the same email address. Their credentials are not interchangeable.

03.3 Select the Wi-Fi setup method

FIG. 1 Language

Select the language used by the local interface before choosing a network setup path.

FIG. 2 Wi-Fi method

Choose either Bluetooth or WPS. The next two screens are alternative procedures, so follow only the selected path.

Wi-Fi setup over Bluetooth

WEB PLATFORM

This is the standard route when Chrome or Edge is available on a Windows or macOS computer equipped with Bluetooth LE. Open https://sbiot.elbro.com, sign in to the Web Platform, select Add device and allow the browser to use Bluetooth.

WI-FI SETUP WITH SBIOT SETUP APP

SBIOT Setup App provides local setup from a compatible smartphone or tablet. It is not required when BLE setup is available in the Web Platform.

Download SBIOT Setup App

Download on the App Store

GET IT ON Google Play

Choose the required Wi-Fi setup method. Credentials are transferred only through the guided procedure; no internal communication parameters need to be entered.

03.4 Bluetooth setup

FIG. 3 **Bluetooth**

For the Bluetooth path, keep the controller nearby and use the displayed identifier to continue the guided scan in the Web Platform; do not also perform the WPS path.

- On the display, select the language and choose Bluetooth as the Wi-Fi setup method.
- Open https://sbiot.elbro.com, sign in with the Web Platform account, open the relevant installation and select Add device.
- Choose Bluetooth, allow browser access and select the switchButler controller shown nearby.
- Select the 2.4 GHz Wi-Fi network, enter its password and confirm. Keep the computer or mobile device close until the display confirms the connection.

03.5 WPS setup

FIG. 4 **WPS**

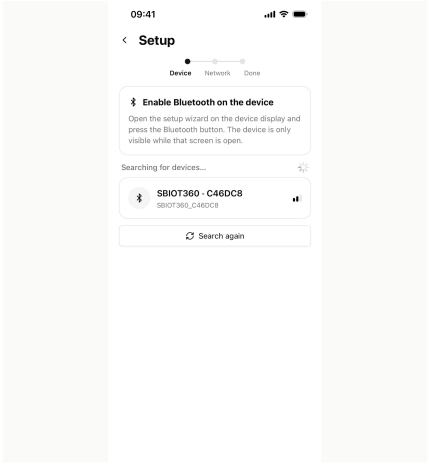
As an alternative to Bluetooth, use a Wi-Fi network whose SSID has the form SB-IoT-... with at least one character after the hyphen, and whose password contains 8–63 characters. While this screen is active, press the WPS button on the prepared access point.

- Select WPS on the display. The connection attempt starts automatically when the WPS screen opens.
- Start WPS on the prepared access point within its permitted time window and wait for the controller to confirm the connection.
- If the attempt fails, use Retry on the controller and restart WPS on the access point.
- Continue in the Web Platform only after the controller shows that the network connection is ready.

For WPS, the SSID must have the form SB-IoT-... with at least one character after the hyphen, and the password must contain 8–63 characters. The real six-digit association code changes every 45–75 seconds: always use the value currently visible on the display.

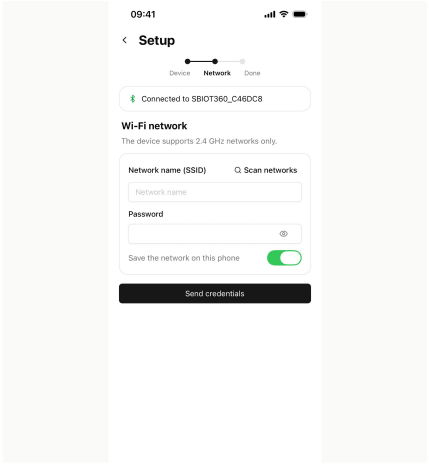
Wi-Fi setup with SBIOT Setup App

APP 01 **Find the controller**



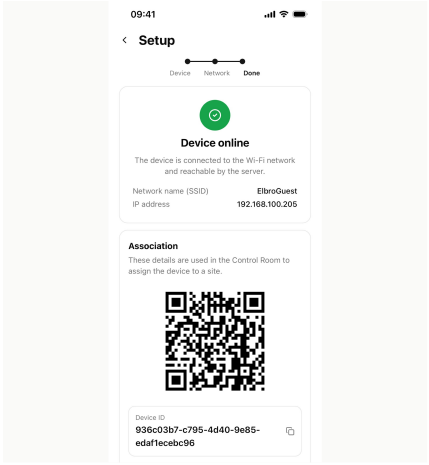
With the Bluetooth screen active on the display, SBIOT Setup App detects nearby controllers. Select the unit whose identifier matches the one shown on the display.

APP 02 **Wi-Fi credentials**



Select or enter the SSID of the 2.4 GHz network, enter the password and send the credentials. Save the network on the phone only when permitted by the applicable operating rules.

APP 03 **Device online**

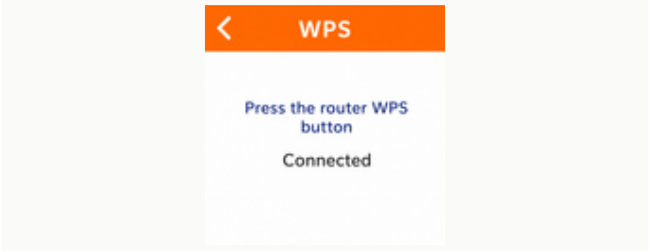


The confirmation indicates that the device is connected to Wi-Fi and reachable by the server. Use the QR code and device ID to complete association in the Web Platform; the values shown are examples.

03.6 Installation association and configuration

Complete assignment and configuration in the Web Platform with the account reserved for qualified personnel. The controller is assigned to the installation; end users receive access later through an invitation.

FIG. 5 **WPS connected**



This is a transitional confirmation and requires no action. The controller automatically continues with the server connection.

FIG. 6 **Associate the device**

In the Web Platform, select Add device and scan the QR code, or enter the device ID and the current six-digit code manually. Scroll the display if the complete device ID is not visible.

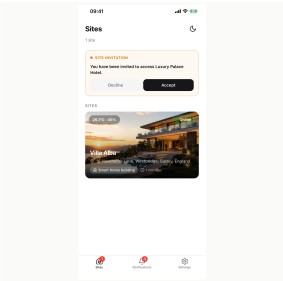
1. Open https://sbiot.elbro.com, sign in to the Web Platform and create the installation if it does not already exist.
2. In the installation, select Add device, scan the QR code or enter the device ID and current six-digit code, then assign a clear name and physical location.
3. Verify that the controller is online, then name relays and inputs according to the connected circuits.
4. Configure input electrical modes and delays, relay operating modes, events, recipients and authorised actions.
5. Create the access profiles intended for end users; each profile defines the available commands and notifications.
6. Apply the configuration and wait until the controller reports the updated revision before testing.

03.7 End-user access

The switchButler IoT App is intended for end users and uses an account that is separate from the Web Platform account.

1. In the Web Platform, the installation administrator selects an access profile and invites the user by email address.
2. The user installs the switchButler IoT App and registers or signs in with the invited email address.
3. The user accepts the invitation in the app. Access to the installation is created only after acceptance.
4. Verify with the user that only the assigned installations, commands and notifications are visible.

Installation invitation



To accept the invitation, the user signs in to the app with the email address specified by the installation administrator.

switchButler IoT App

Download on the App Store

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03.8 Functional verification and handover

Test the complete installation under controlled conditions before handover.

- Operate every input and verify its normal, alarm and restored states in the Web Platform.
- Verify behaviour after sensor loss, temporary network loss, power interruption and controller restart where applicable.
- Test every relay only after confirming the connected load and the required de-energised state.
- Record the final configuration, installation location and authorised users, then hand over only the functions intended for the operator.

These screen images are based on photographs of the real device, and the interface is shown in English. The QR code and six-digit code in the association image are non-operational demonstration values.

04

Operating principle

The controller receives signals from the installation, controls the relay outputs and communicates with the Web Platform. Wiring defines the circuits connected to each channel; configuration defines input logic and relay operating mode.

04.1 System elements

The operating chain comprises field signals, the controller, the platform and the App.

- **FIELD SIGNALS:** Inputs I1–I6 receive compatible signals from dry contacts, switches, relays and PLC outputs. Associated BTH1 sensors transmit temperature, relative humidity and battery level over Bluetooth LE.
- **CONTROLLER:** Reads inputs, applies configured logic and delays, controls relays R1–R3, displays local status and communicates over Wi-Fi.
- **WEB PLATFORM:** Stores the authoritative configuration: names, operating modes, delays, setpoints, permissions, events, notifications and Links. Every change creates a new revision and becomes operational only after the controller has received and applied it.
- **SWITCHBUTLER IOT APP:** Displays states and exposes authorised controls. Each user receives only the notifications assigned to their profile.

04.2 From signal to action

A change in the state of an input is processed in the following order:

1. A contact or field output changes the electrical state of an input.
2. The controller interprets the signal according to the mode assigned to that channel.
3. Alarm activation or return to the normal state is confirmed only if the new state remains stable for the configured delay.
4. The controller sends the confirmed change and the applied configuration revision to the platform.
5. The platform records the event and performs the configured actions: it sends the configured push notifications and e-mails and runs any Links.
6. Where an action requires an output, the platform sends a command; the controller then reports the resulting relay state.

04.3 Configuration and synchronisation

The configuration stored on the platform is the authoritative operating configuration for the device.

- The controller retains the last applied revision locally and executes the local functions defined by that revision.
- A change is active only after the device confirms that it has been applied.
- The display presents authorised states and commands; it does not independently change the authoritative configuration.
- A factory reset clears local controller data but does not remove the platform association. After reconnection, the controller receives the authoritative configuration again.

04.4 Operation without connectivity

Local functions defined by the last applied configuration continue within the limits of the installed firmware. The thermostat continues locally with its associated BTH1, including hysteresis, frost protection and the configured fail-safe state.

- Remote commands, notifications, remote history and Links require platform communication and remain unavailable during an interruption.
- During the interruption, the controller temporarily stores events in a local queue and assigns each one a unique identifier. After the connection is restored, it sends each event once and resynchronises the configuration revisions. Only then can the platform send the configured notifications to authorised users.
- Loss and restoration of controller power generate technical events. Input voltage and backup-supercapacitor voltage are diagnostic values; they do not provide a safety function or guarantee any operating time without a power supply.
- No local or remote controller function replaces the independent safety devices required for the installation.

04.5 Digital inputs I1–I6

Each input can be disabled or set for one of two signal types: a dry contact that connects the input to the dedicated GND terminal (sink mode), or a compatible DC voltage supplied by a PLC or another field device (source mode). For either type, choose whether the presence or absence of the signal represents an alarm.

- **DRY CONTACT, ALARM ON CLOSING:** The input becomes active when the contact closes the circuit to GND.
- **DRY CONTACT, ALARM ON OPENING:** The input becomes active when the previously closed field circuit opens, which also allows an interruption in the field wiring to be detected.
- **VOLTAGE SIGNAL, ALARM WHEN VOLTAGE IS PRESENT:** The input becomes active when the PLC or field device applies a compatible DC voltage referenced to the common GND dedicated to the inputs. Do not exceed 30 V DC.
- **VOLTAGE SIGNAL, ALARM WHEN VOLTAGE IS ABSENT:** The input becomes active when the DC voltage normally present on the channel is lost.
- **CONFIRMATION DELAYS:** Activation delay is the time the alarm condition must remain present before the alarm starts. Restore delay is the time the normal condition must remain present before the alarm clears. Each delay can be set from 0 to 60 seconds to ignore contact bounce and brief signal changes.

04.6 Relay outputs R1–R3

The applied configuration assigns each output one of the three operating modes described below.

- **SWITCH:** The relay coil remains energised (ON) or de-energised (OFF) until another authorised command, an automatic rule called a Link or an operating condition changes it. Whether the connected equipment is powered still depends on COM–NO or COM–NC wiring.
- **PULSE:** The relay coil is energised for the configured period from 1 to 10 seconds, then de-energised automatically. The duration is fixed by the configuration and cannot be changed while the command is executing.
- **THERMOSTAT:** The relay coil is controlled by the temperature measured by an associated BTH1. The setpoint is the target temperature. The configuration specifies whether the coil is energised when the temperature falls below the setpoint or rises above it. It also defines the hysteresis—the difference between the activation and deactivation thresholds that prevents frequent switching—the adjustment limits, frost protection and the fail-safe state for sensor loss. The available options are Force relay ON, Force relay OFF and Keep current state.
- In Thermostat mode, direct ON/OFF control is unavailable. An authorised user may change SET within the configured limits and choose heating or protected-off mode, which stops normal heating while keeping the configured frost protection active. After 30 minutes without a valid BTH1 measurement, the thermostat applies its configured fail-safe state.

04.7 Events, notifications and Links

An event records what happened at an input. A notification informs authorised users. A Link uses an input change to control an output automatically. These functions require a platform connection; their configuration is described in the platform manual.

- When an input enters the alarm state or returns to normal, the platform records the state change. If configured, it sends a push notification, an e-mail or both. Separate messages can be used for activation, return to normal and reminders.
- If the alarm condition remains present, the platform can resend notifications at a configurable interval from 1 minute to 24 hours. Each event is assigned a level: information, warning, alarm or critical. The rule can also be limited to defined time periods.
- Notifications are sent only to users who have been granted the relevant permission.
- A Link can turn an output ON while the alarm is active and OFF when it clears, or apply the opposite logic. When the alarm starts, it can also toggle the output once, from ON to OFF or from OFF to ON, or produce one pulse.
- One input may control several outputs, but an output may belong to only one active Link. Only outputs configured as Switch or Pulse can be used; a Thermostat output cannot be controlled by a Link.

05

Display interface

The display shows controller status and provides the authorised local controls. Operating settings are defined in the Web Platform and then sent to the controller.

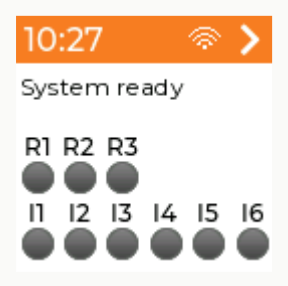
- A relay control appears on the display only when it has been enabled on the platform.
- The display can find and add up to three BTH1 sensors. Deleting or replacing a sensor is performed on the platform and is restricted to the installation administrator.
- When a setpoint is changed on the display, the controller sends the request to the platform. The new value becomes active only after acceptance and subsequent configuration synchronisation.

About the illustrations

The screens in this manual are shown in English. Text and names on the installed device may differ according to the selected language and the installation configuration. The values shown in the images are examples.

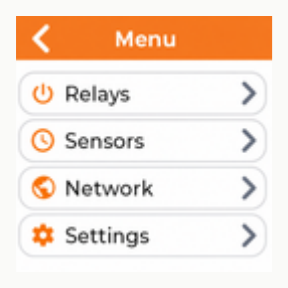
05.1 Home screen and main menu

The home screen summarises controller status. Tap the arrow to open the menu and select the function you need.



Home status

The screen shows the time, Wi-Fi signal level, controller messages, relay states R1–R3 and input states I1–I6. Tap the arrow in the upper-right corner to open the main menu.



Main menu

Relays opens the output status and authorised controls; Sensors shows BTH1 readings and discovery; Network reports local connectivity; Settings contains interface options, diagnostics and maintenance actions.

Navigation map

Relays
Relay outputs R1–R3

Sensors
BTH1 sensors

Network
Wi-Fi and platform connection

Settings
Display, diagnostics and maintenance

05.2 Reading the status indicators

The home screen shows the status detected at that moment. To assess its effect on the installation, compare each indication with the wiring and the settings for the relevant input or relay.

R1–R3

Red means that the relay coil is energised; grey means that it is de-energised. The electrical state of the load depends on whether it is wired through COM–NO or COM–NC, so the colour alone does not prove that the load is powered.

I1–I6

Red means that the input is active; grey means that it is inactive. The colour shows the electrical signal detected at that moment. An alarm is confirmed only after the delay configured for the input.

Wi-Fi

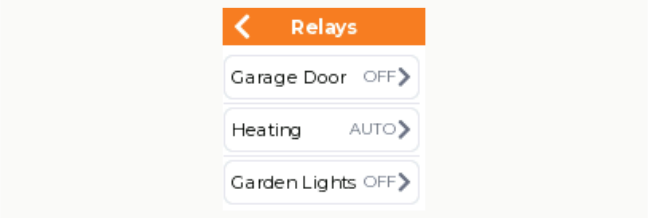
The filled Wi-Fi bars indicate the local radio signal level: more bars mean stronger reception. They do not, on their own, confirm access to the Internet or to switchButler IoT.

Messages

The message bar shows controller information, warnings and errors. Read the complete message and correct the indicated cause before using the affected function again.

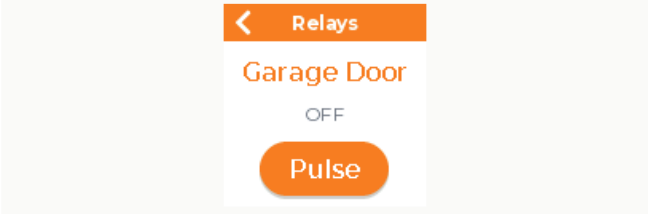
05.3 Controlling the relay outputs

A relay is an electrical switch controlled by the controller. Open Relays to view outputs R1–R3. If local control is enabled, tap the required output to open its controls. Before operating it, confirm which equipment is connected.



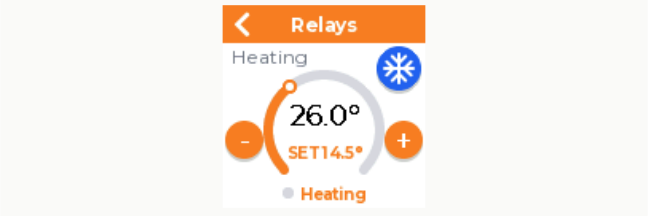
Relay list

Each output uses the name assigned on the platform. ON means that the relay coil is energised; OFF means that it is de-energised. AUTO means that the output is controlled automatically as a thermostat. The effect on the load depends on COM–NO or COM–NC wiring.



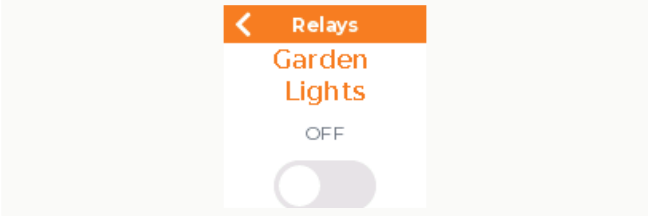
Pulse command

A pulse command energises the relay coil for the configured duration and then de-energises it automatically. Verify the pulse time and the behaviour of the connected equipment during commissioning.



Thermostat mode

The target temperature, or setpoint, is shown as SET. The –/+ buttons change it only when local adjustment has been authorised on the platform. The requested value appears immediately but becomes active only after the platform accepts it and sends the updated settings back to the controller. Tap the snowflake to stop normal heating while keeping the configured frost protection active. This function does not replace an independent safety thermostat.



Switch command

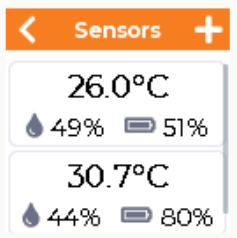
The switch command keeps the requested output state until another authorised command, rule or operating condition changes it. During handover, compare the displayed state with the actual load.

05.4 Adding and checking a BTH1 sensor

BTH1 is the optional Bluetooth sensor for the controller. It measures temperature and relative humidity and reports its battery level. Open Sensors to view associated sensors or add a new one. A maximum of three BTH1 sensors can be associated.

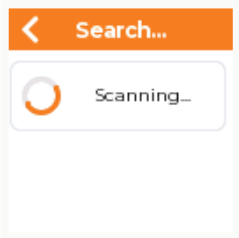
BTH1: optional sensor

Bluetooth temperature and relative-humidity sensor. Illustrative image; follow the instructions and markings supplied with the product. Maximum three sensors per controller.



Sensor list

Each card shows the latest temperature, relative humidity and battery level received from the sensor. If the values stop updating, check the battery and radio range. After 30 minutes without a valid reading, the sensor becomes unavailable and every thermostat using it applies its configured fail-safe state.



Sensor discovery

Tap + to find powered BTH1 sensors nearby. Finding and adding a sensor are performed on the display; deleting and replacing are performed on the platform.

Add a BTH1 from the display

1. Confirm that fewer than three sensors are associated and that the BTH1 is powered and ready in accordance with its instructions; then place it within radio range of the controller.
2. Open Sensors from the main menu.
3. Tap +. The Search screen opens; Scanning indicates that a Bluetooth LE scan is in progress.
4. When the results appear, identify the intended BTH1, tap it to add it and wait for the operation to finish without switching off either device.
5. Confirm that the sensor appears in the list and reports temperature, relative humidity and battery level.

After association, the controller automatically reports the new sensor to the platform. If the sensor later stops transmitting, it remains associated and is not deleted automatically.

Delete or replace from the platform

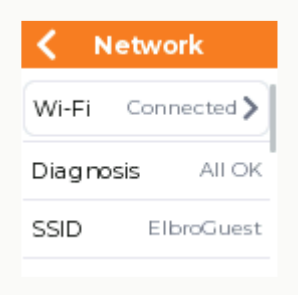
Only the installation administrator can perform these operations on the platform. They cannot be performed from the display.

1. Open the installation, select Devices and then the relevant controller.
2. Locate the BTH1 and choose Delete or Replace.
3. Review the list of rules and thermostats that use the sensor.
4. For Delete, confirm the sensor ID. Replace requires an active BTH1 that is already associated with the same controller and is transmitting a valid measurement. The total remains limited to three sensors: a temporary fourth BTH1 cannot be added at full capacity.
5. Confirm the operation. The platform sets dependent configurations to a safe state and waits for acknowledgements from the affected devices. Keep the controller and any dependent actuators online until the status shows Operation completed.

Delete permanently removes the sensor association, measurements, events, notifications and configuration references; only an anonymised technical record remains. Replace transfers rules and thermostats to the new sensor, disables the previous sensor and retains its historical measurements and the record linking it to the replacement.

05.5 Checking the Wi-Fi connection

Open Network to check whether the device is connected to the intended Wi-Fi network. The page shows the local connection status and the network name, identified as the SSID.



Wi-Fi overview

Connected indicates that the device is linked to the Wi-Fi router or access point. By itself, it does not confirm that the Internet or the platform can be reached. The SSID shown in the image is only an example.

If the device is not online

Check the Wi-Fi connection and communication with the platform separately. Do not use a factory reset as the first troubleshooting step: it would erase the local settings without resolving a network fault.

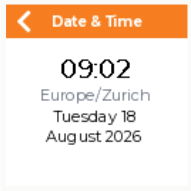
1. Check that the status is Connected and that the SSID matches the intended network.
2. Scroll down and check Signal under actual operating conditions, with the electrical enclosure closed. MAC is the hardware address of the network interface; IP, Gateway, DNS 1 and DNS 2 are useful information for the network technician.
3. Read the Diagnosis row: All OK confirms that Wi-Fi, Internet access and the server connection are available at that moment.
4. No WiFi, Network not found or Wrong password indicate a problem with the local network or its credentials. Repeat BLE setup from the Web Platform in Chrome or Edge on a Bluetooth-equipped Windows or macOS computer, or use SBIOT Setup App.
5. No Internet means that the Wi-Fi connection is established but the Internet cannot be reached. The messages Server not connected and Server blocked indicate that the platform connection cannot be established; also verify that the network permits outbound connections to sbiot.elbro.com on port 8883.
6. To change the stored Wi-Fi password or connect to another network, open Wi-Fi on the display, select Forget Wi-Fi and confirm the disconnection. Then select Configure Wi-Fi and repeat BLE setup from the Web Platform in Chrome or Edge on a Bluetooth-equipped Windows or macOS computer, or use SBIOT Setup App.
7. After correcting the problem, wait for All OK and verify in the Web Platform that the device is online.

05.6 Settings and maintenance

Open Settings to adjust the display, read diagnostic information or perform maintenance operations. Before restarting or restoring the controller, place the connected installation in a safe state.

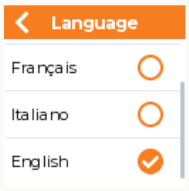
General settings

This menu groups the date and time display, interface language, screen brightness and touch-feedback sound volume.



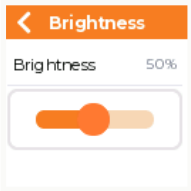
Date & Time

Check that the displayed clock, date and time zone match the installation because they provide context for local status and event timing. The values shown are examples.



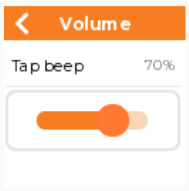
Language

Select the display language. The manual images are in English, so the labels shown on the device may differ.



Brightness

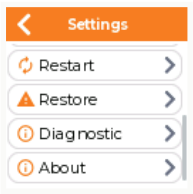
Adjust the display brightness for the installation environment while keeping status information clearly readable. The percentage shown is an example.



Volume

This setting changes the sound emitted when the display is touched. It does not change event rules configured on the platform or notification delivery; the percentage shown is an example.

05.6 Settings and maintenance — continued

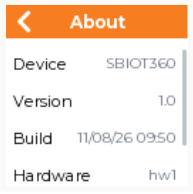


System settings

Restart reboots the controller; Restore erases its local settings; Diagnostic shows values used for troubleshooting; About identifies the installed model and version.

Diagnostic

Vinput is the controller supply voltage, Vbkp is the backup-supercapacitor voltage and Temp is the internal temperature. These service values are useful to qualified personnel: they are not safety measurements and do not guarantee any operating time without a power supply.

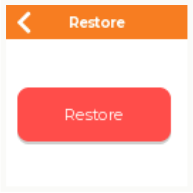


Device information

Record Device, Version, Build, Hardware and Serial before requesting support. The values pictured are examples and may differ from the installed controller.

Restart

Tapping Restart starts the reboot immediately without erasing settings. Local controls and platform communication are unavailable during the operation. When the Home screen returns, check that Network > Diagnosis shows All OK, confirm on the platform that the device is online, and verify the expected input and relay states.



Restore

Restore asks for confirmation, then performs a factory reset: it erases the selected language, Wi-Fi credentials and other local settings from the controller and restarts it. It does not remove the device from the installation registered on the platform. After the reset, select the language again, configure Wi-Fi and wait for the controller to receive the installation settings from the platform.

06

Firmware update

While connected to the Internet, the device automatically updates when ELBRO authorises distribution of a new firmware version. No periodic firmware maintenance is required while the device remains connected to the network.

The display indicates that an update is in progress. Do not disconnect the power supply until the restart has completed.

> If one or more relay outputs are active when the device restarts, their SPDT contacts may return briefly to the rest position before the previous state is restored. If the installation cannot tolerate this short changeover, install a suitably rated off-delay electronic contactor between the relay output and the load.

07

Technical data

Before installation, verify that the values in the table match the product label and the documentation for the installed hardware revision.

NOMINAL SUPPLY VOLTAGE 12–24 V DC	EXTENDED SUPPLY-VOLTAGE RANGE 9–30 V DC
STANDBY CURRENT AT 12 V DC ≤100 mA (≤1.2 W)	MAXIMUM CURRENT DRAW AT 12 V DC, DEPENDING ON HARDWARE REVISION 300–500 mA (3.6–6 W)
RELAY OUTPUTS 3 potential-free changeover contacts (SPDT; COM / NO / NC)	CONTACT RATING PER RELAY 5 A at 30 V DC · 10 A at 250 V AC
TOTAL SWITCHED CURRENT ≤10 A across all three relays	DIGITAL INPUTS 6
MAXIMUM VOLTAGE APPLIED TO DIGITAL INPUTS 30 V DC	DIGITAL INPUT MODES Dry contact to GND (sink) or DC voltage signal (source)
ANALOGUE INPUTS None	CONNECTIVITY Wi-Fi 2.4 GHz + Bluetooth LE
DISPLAY 1.44-inch TFT touchscreen	MOUNTING 35 mm DIN rail compliant with EN 60715
WIDTH 3 DIN modules	DIMENSIONS (W × H × D) 53.5 × 90.7 × 62 mm
MAXIMUM OVERALL HEIGHT 96.2 mm	WEIGHT 152 g
ENCLOSURE MATERIAL Self-extinguishing PC/ABS, UL 94 V-0	DIN-RAIL HOOK PPO
ENCLOSURE COLOUR Grey RAL 7035	PROTECTION RATING IP20 (EN 60529)
OPERATING TEMPERATURE –5 … +45 °C	STORAGE AND TRANSPORT TEMPERATURE –10 … +50 °C
TERMINALS Screw terminals · conductors up to 2.5 mm²	OPTIONAL SENSOR BTH1 (temperature and relative humidity) · maximum 3

08

Conformity, maintenance and disposal

- CE marking
- WEEE symbol

MARKING CE	RADIO EQUIPMENT (RED) Directive 2014/53/EU
HEALTH & ELECTRICAL SAFETY RED 2014/53/EU · Art. 3(1)(a)	ELECTROMAGNETIC COMPATIBILITY (EMC) RED 2014/53/EU · Art. 3(1)(b)
HAZARDOUS SUBSTANCES (ROHS 3) Directive (EU) 2015/863	ELECTRONIC WASTE (WEEE) Directive 2012/19/EU
CHEMICALS (REACH) Regulation (EC) 1907/2006	RADIO CYBERSECURITY (RED DA) Reg. (EU) 2022/30 · EN 18031:2024

These references are a summary. The EU Declaration of Conformity for the specific hardware revision provides the complete list of applicable directives and standards.

The information on the product label and terminal diagram for the installed revision takes precedence over this summary.

08.1 Maintenance

The controller has no internal parts that require maintenance. During scheduled servicing of the electrical enclosure, qualified personnel must:

- Disconnect all supplies and verify the absence of voltage.
- Check that the controller is firmly secured to the DIN rail, then inspect the terminals, wiring, protective devices and enclosure.
- Remove dust with a dry, non-abrasive cloth. Do not use liquids, solvents or compressed air.
- Replace the controller if it is damaged or deformed, has deteriorated terminals or operates abnormally.
- Do not open the enclosure or carry out unauthorised repairs or modifications.

08.2 Decommissioning and disposal

Before removing the device, place the connected installation in a safe state. Disconnect all supplies, verify the absence of voltage and isolate every connected circuit separately. Do not place the device in household or municipal waste; send it through the collection and recycling route required for waste electrical and electronic equipment.

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