Battery Pairing

TrueState MONITOR

Pair a battery from the Pairing Command screen

Use the Pairing Command screen to scan for BLE batteries, select one device, and assign it to Slot 1 or Slot 2.



Pairing Command screen

Pair a battery

1. Tap **Scan** to refresh the list of nearby BLE batteries.
2. Tap one device row in the list. The selected row is highlighted.
3. Tap **Connect** under the slot you want to use for that battery.
4. Wait for the slot to finish **Connecting**, **Discovering**, and **Probing**. When pairing succeeds, the slot shows **Connected** and the battery becomes **Active**.

Important

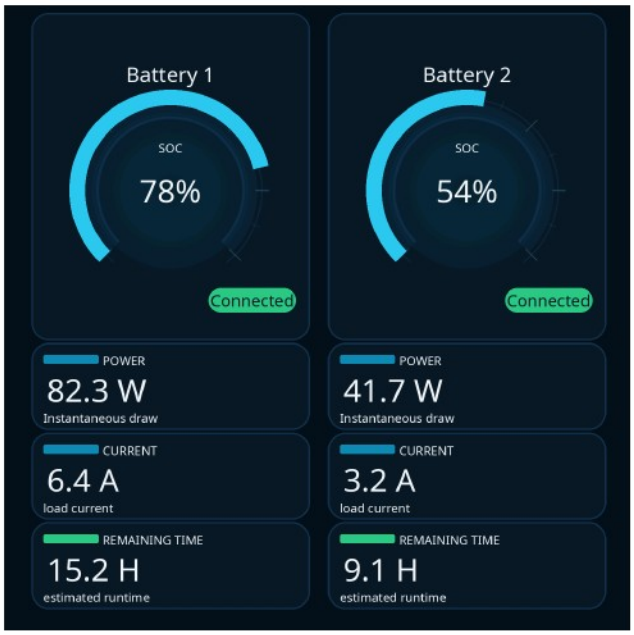
Each slot can store one battery. If a slot already contains a battery, clear it with **Forget** before pairing a different one. If no device row is selected, the unit cannot start the connection.

After Connection

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What you see when pairing is complete

After protocol validation, the battery starts sending live data. The main dashboard and the detail page both update automatically.



Main dashboard



Battery detail page

Main dashboard

Shows one panel per slot with SOC, a connection badge, power, current, and remaining time. A paired battery is displayed as soon as the slot becomes active.

Battery detail page

Shows expanded values such as cell voltage, pack voltage, temperature, remaining capacity, and average consumption.

Typical slot sequence during pairing

Empty → **Connecting** → **Discovering** → **Probing** → **Active**

The badge may show **Busy** while the slot moves through the intermediate steps.

Good to know

You can pair two batteries independently, one per slot. A successful connection is remembered by the slot until you remove it with **Forget**.

Forget, Replace, and Retry

TrueState MONITOR

Clear a slot, pair a new battery, and troubleshoot common cases



Forget on the Pairing Command screen

Forget a battery

- Open **Pairing Command** and find the slot that already contains the battery.
- Tap **Forget** on that slot.
- If the battery is still connected, the unit disconnects it first, then clears the saved battery from that slot.
- When the process is complete, the slot returns to an empty / offline state and is ready to pair again.

Replace with another battery

After **Forget**, tap **Scan**, select the new BLE device, and tap **Connect** on the same slot.

Good to know: Forget also removes the saved association for that slot.

Troubleshooting

1. **No device in the list**
   Make sure the battery is powered, nearby, and advertising over BLE. Then tap Scan again.

2. **Busy / Wait...**
   Wait for the current operation to finish. If the slot shows Cancel, stop that operation before trying again.

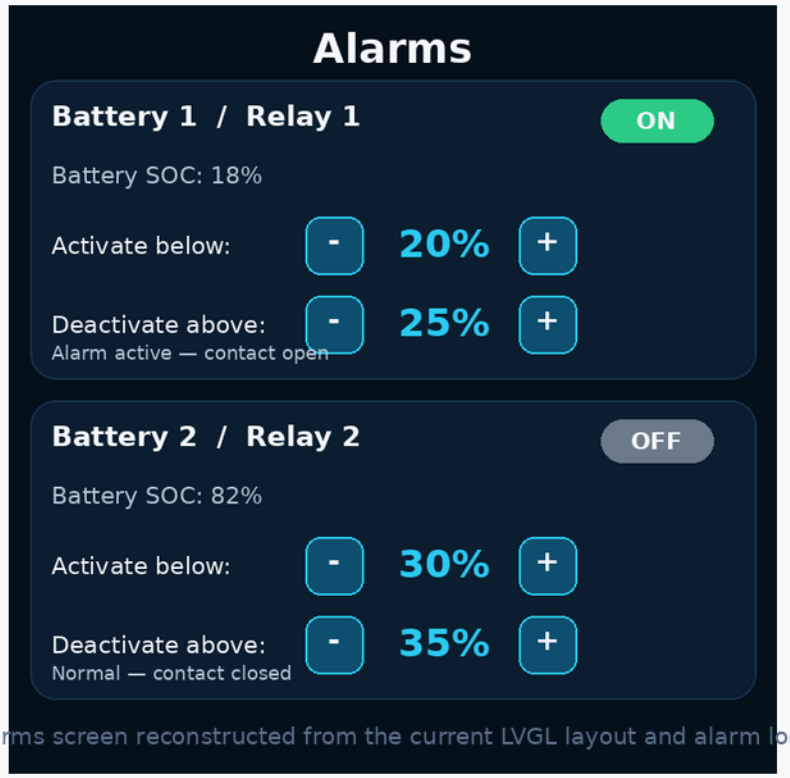
3. **Error or no live data yet**
   Give the slot a moment to complete discovery and protocol validation after the BLE link comes up.

4. **No valid protocol**
   The selected BLE device may not use a battery protocol supported by the firmware.

Alarm Relays

Set one SOC threshold pair for each battery slot relay

Use the Alarms page to control the two rear relays from battery SOC. Relay 1 follows Battery 1 / Slot 1, and Relay 2 follows Battery 2 / Slot 2.



Alarms screen reconstructed from the current LVGL layout and alarm logic

Using the alarm page

1. From Pairing Command, swipe left to open Alarms. Swipe left again to open Wi-Fi Update.
2. Relay 1 follows Battery 1 / Slot 1. Relay 2 follows Battery 2 / Slot 2.
3. Activate below sets the SOC level that turns the alarm ON for that relay.
4. Deactivate above sets the SOC level that clears the alarm after SOC rises again.

Important

On this page, ON means the alarm condition is active. With the current normally-open fail-safe relay logic, an active alarm opens the contact. Threshold changes apply immediately and are saved automatically after a short pause. If no valid SOC is available, the relay also goes to the alarm/open state.

Wi-Fi OTA Update

Connect the unit to Wi-Fi and start the firmware update

Open the Wi-Fi Update page, scan for nearby networks, select your access point, and start the OTA update from the unit.



Wi-Fi Update network list



Password screen for secured networks

Start the update

1. From Pairing Command, swipe left to Alarms, then swipe left again to Wi-Fi Update. From Main, you can also swipe right.
2. Tap Scan networks to refresh the list of available access points.
3. Tap your Wi-Fi network in the list. Networks marked with * require a password.
4. If a password screen opens, enter the password and tap Connect & Update.
5. For an open network, the update starts immediately after selection. For a secured network, the unit starts after the password is confirmed.

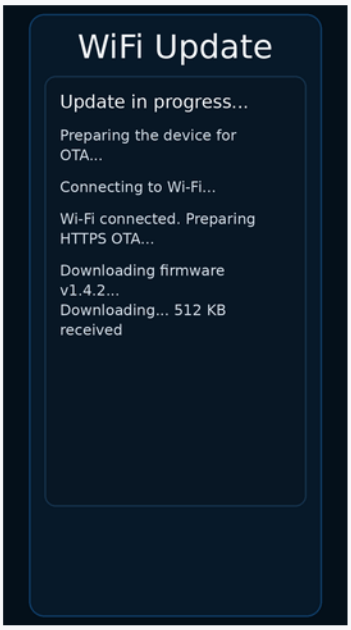
Important

Use a Wi-Fi network with internet access and keep the unit powered on during the update.

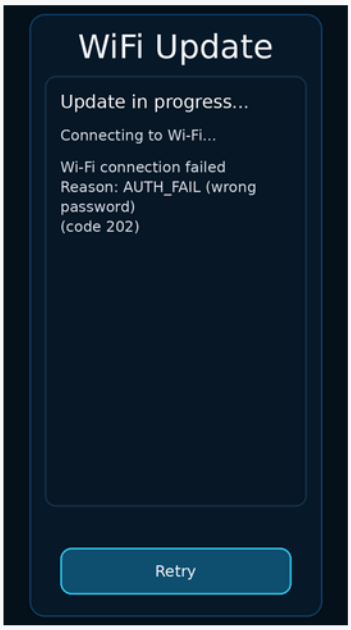
Update Progress and Retry

Understand the progress messages and recover from common Wi-Fi cases

After Connect & Update, the screen switches to the progress view. The text changes automatically as the connection and download advance.



Progress view during download



Failure example with Retry

Typical OTA sequence

Prepare ▶ Wi-Fi ▶ HTTPS OTA ▶ Download ▶ Reboot

A successful update ends with Update complete. Rebooting.... The device restarts automatically.

Do not power off

Do not remove power while the firmware is downloading or while the unit is rebooting into the new version.

If something fails

1. If Retry is visible, tap Retry to go back to the Wi-Fi scan page and start again.
2. If no network appears, tap Scan networks again and move closer to the router.
3. If authentication fails, re-enter the Wi-Fi password carefully.
4. When the update finishes successfully, the unit reboots automatically.

Side Button Functions

Use the upper side button for display backlight control and factory reset

The current firmware uses the upper side button shown below. A short press toggles the display backlight, and holding the button for 10 seconds performs a factory reset and reboot.



Upper side button used by current firmware

Button actions

1. Short press: toggle the display backlight. This works like screen on / screen off.
2. Hold 10 seconds: factory reset. The device erases stored settings and reboots automatically.
3. If an OTA update is running, the 10-second reset action is ignored to protect the update process.

Important

Factory reset clears the saved battery assignments, saved alarm thresholds, and other settings stored in memory.

What the manual calls the button action

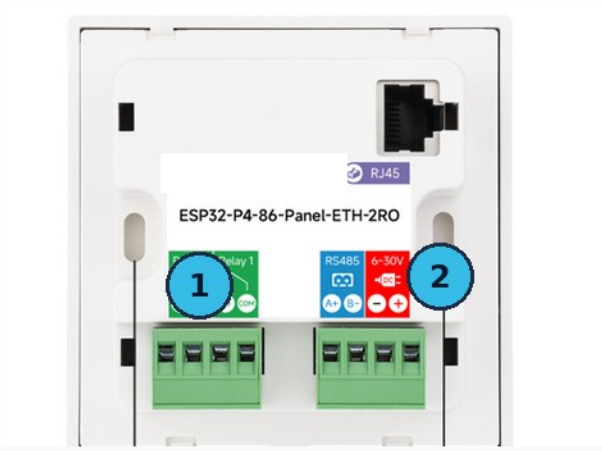
For clarity, this manual uses the terms short press and hold 10 seconds. The current code does not show a separate 1-second timed action; it detects a normal press/release for backlight toggle and a 10-second hold for factory reset.

Short press	Hold 10 s	OTA running
Backlight toggle	Factory reset + reboot	Long press ignored

Rear Terminals and Wiring

Connect relay outputs and 6–30 VDC power on the rear terminal blocks

The rear of the device provides two relay outputs and a separate 6–30 VDC power input. The first relay follows Battery 1 / Slot 1, and the second relay follows Battery 2 / Slot 2.



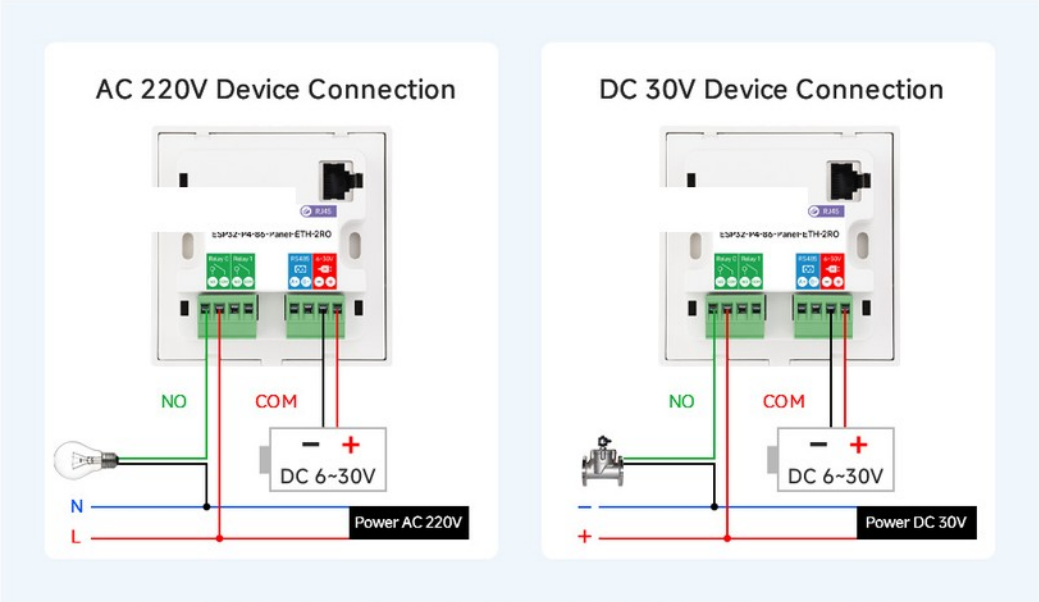
Rear terminal blocks

Terminal guide

1. Left green relay block: board labels Relay 0 NO / COM and Relay 1 NO / COM. In this manual, these are the first and second relay outputs.

2. Right power block: 6–30 VDC input on the - / + terminals. The blue RS485 A / B terminals are separate and are not required for basic relay wiring.

3. Mapping in current firmware: first relay follows Battery 1 / Slot 1. Second relay follows Battery 2 / Slot 2.



Example wiring for AC 220V and DC 30V loads using NO + COM

Important

Current fail-safe logic keeps the NO contact closed in normal operation. On alarm, on loss of valid SOC, or on power loss, the contact opens.