SUNCORE HV50 SERIES

Rack-Mount High-Voltage Battery Energy Storage System (BESS)

System Activation and App User Manual
Version 0.3

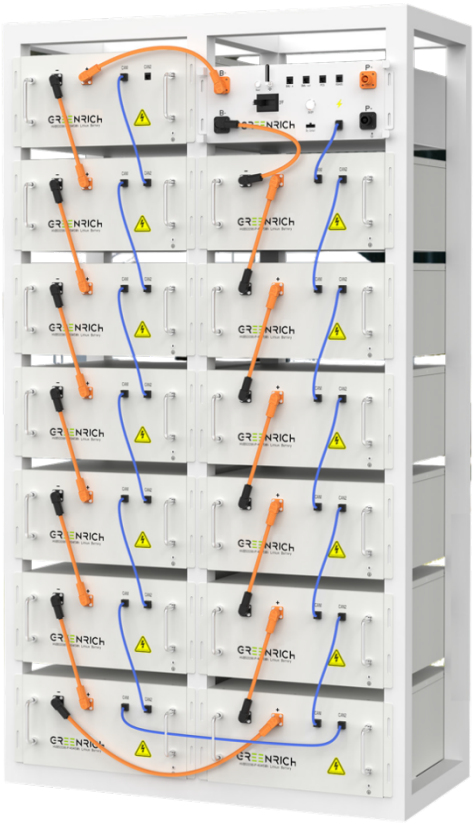


Figure 1SUNCORE HV50 Series Rack-Mount BESS

WARNING: Read and understand this manual before use. This is for monitoring / operation only. Installation, configuration, and service by qualified personnel. Refer to separate Installation Manual.

Table of Contents

Safety Warnings & Symbols

DANGER: HIGH VOLTAGE PRESENT (UP TO 1000V DC). RISK OF ELECTROCUTION, ARC FLASH, OR FIRE. Only qualified personnel may access internals.


Wear appropriate Personal Protective Equipment (PPE) when working with BESS.

Rack-Specific Warnings:

- Unit weight: e.g., 350kg (HV50-30). Secure rack to prevent tip-over.
- IP20: Indoor use only. Avoid dust/water.

General Rules:

- Never touch terminals during operation.
- Operating: Charge -10 - 55°C, Discharge -20 - 60°C; 5-95% RH.
- Emergency: Cut main breaker, call service.
- 10+ safety reminders placed throughout.

Product Overview

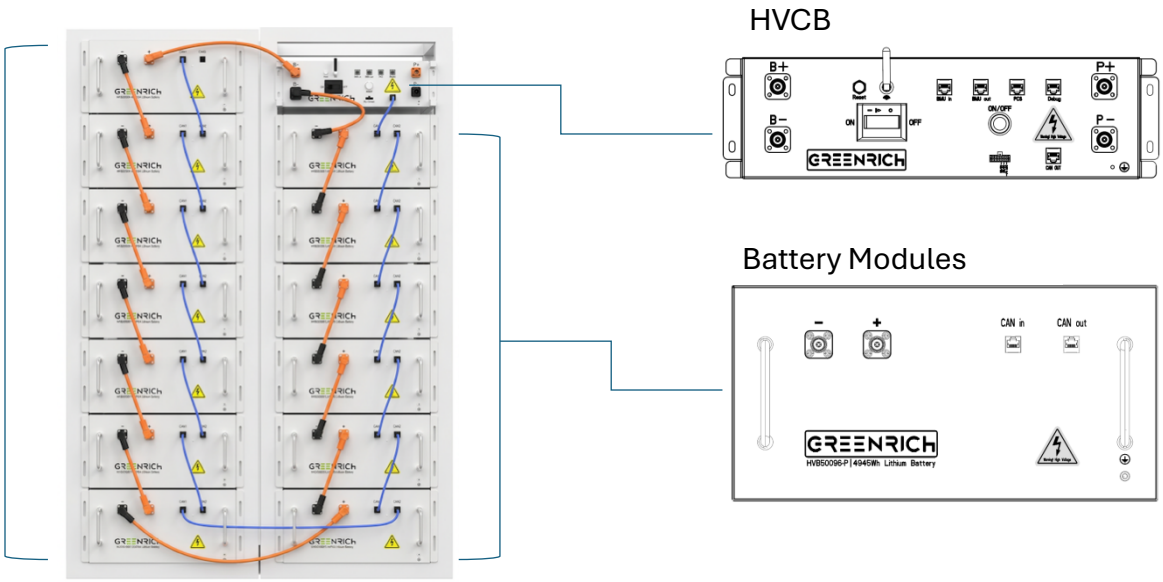
The SUNCORE HV50 Series is a rack-mount BESS for commercial/industrial backup/peak shaving. Scalable strings: High Voltage Control Box (HVCB) + up to 15 battery modules (5kWh each, per string. LiFePO4 cylindrical cells, natural air cooling.

Key Specifications (HV50-30):

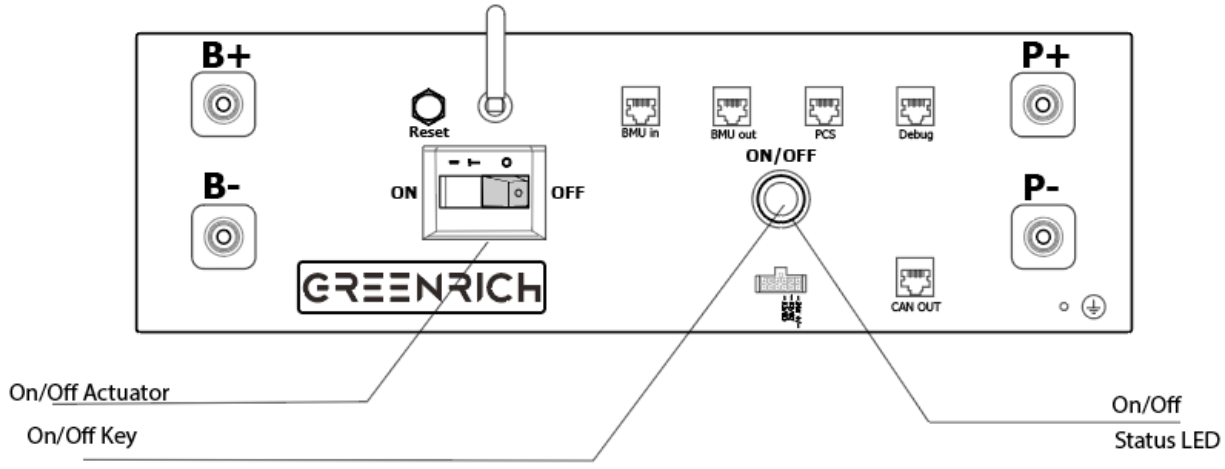
Parameter	Value
Rated Voltage	307.2V
Capacity	29.67kWh
Charge Current	80A
Discharge Current	120A
Max Parallel	10 (296.7kWh)
Dimensions (WxDxH)	540x550x1695mm
Weight	~350kg
IP Rating	IP20
Cycles	6000 ***@25℃，80% DOD***

HV50-60: 614.4V, 59.35kWh (12 modules).
Note: HV80 uses 8kWh modules (HVB50156-P).

String Topology – One HVCB (High Voltage Control Box) + Battery Modules



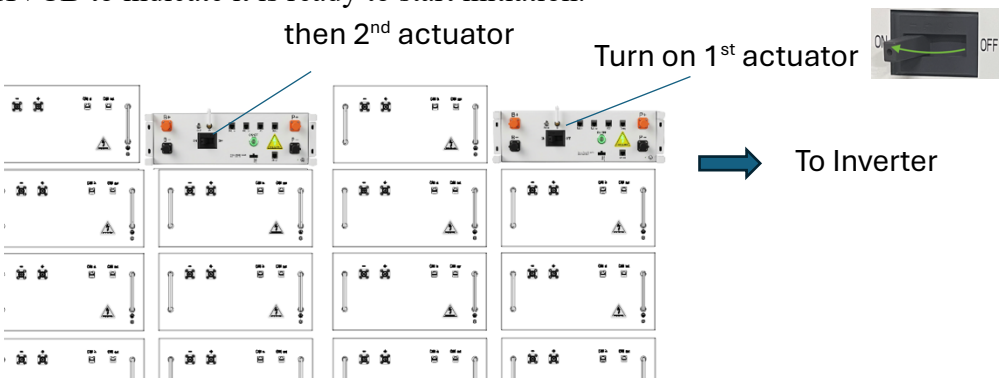
HVCB Buttons and LEDs



System Startup

1. Turn Actuator On in sequences

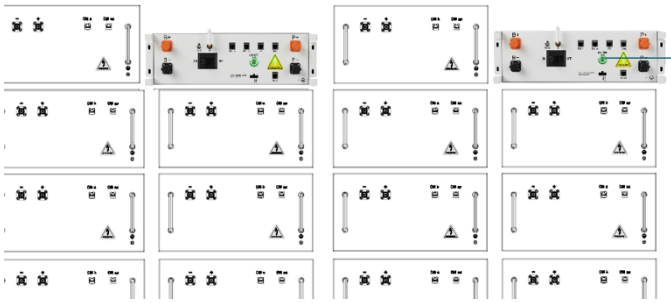
Note: For system consist of more than one string. turn on HVCB actuator **in sequence** starting from HVCB connect the inverter, On/Off LED will flash on each HVCB to indicate it is ready to start initiation.



Not turn on HVCB in sequence may result in detection error.

2. Start initiation

   Press and hold only the **first HVCB (nearest inverter)** on/off button to start system initiation. Status LED will flash red → **yellow** → green (initiation)



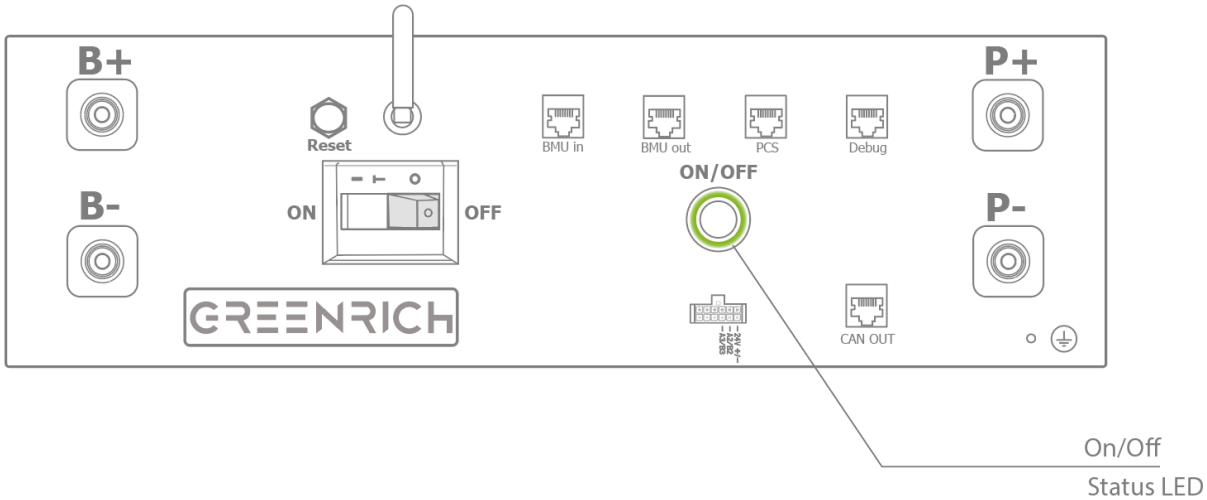
Press and hold On/Off button of 1st HVCB until green light steady

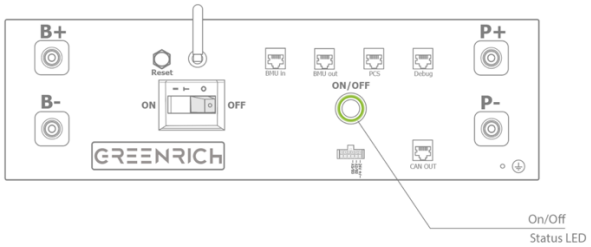
3. When finished initiation, all On/Off LED will go steady Steady green (>10% SOC) = Ready.

DANGER: Wait for self-test complete. Do not touch during startup—risk of shock/burn.

Shutdown: Reverse sequence (last HVCB first), then actuator OFF.

LED Indicators





Indication	State
Flash red → yellow → green	System ready to initialize
Steady green	Normal operation, SOC displayed
Red flash	Fault — refer to HV_ESS app for code

System initiated: Display SOC

SOC Display (Steady):

SOC	LED Pattern
15% < SOC	Steady Red
15% <= SOC < 25%	Steady Yellow
25% <= SOC <=100%	Steady Green

Charging:

SOC	Pattern	Flash Rate
15%< SOC	Red Flash2	Flash2 (0.5s on/0.5s off)
15% <= SOC < 25%	Yellow Flash2	Flash2 (0.5s on/0.5s off)
25% < SOC <= 95%	Green Flash2	Flash2 (0.5s on/0.5s off)
95% < SOC <= 10%	Green steady	-

Fault: Red **Flash3 (0.5s on/1.5s off)** when the discharge relay is disconnected.

Mobile App

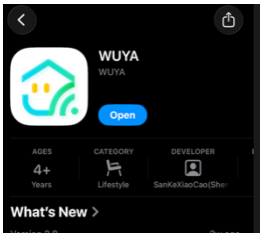
Monitor remotely via smartphone/tablet. View-only: SOC, energy flow, alarms, history.

Supported: Android (Google Play), iOS (App Store).

Figure 3 iOS (App Store)

Figure 2 Android (Google Play)

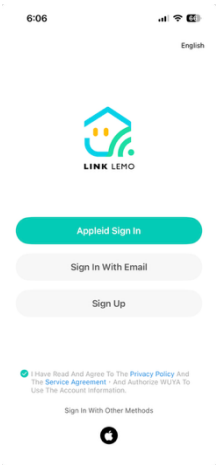
Step 1: Download/Install

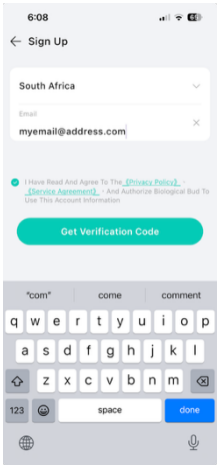


1. Open store, search "Wuya" or scan QR.
2. Install.

Step 2: Sign Up/In

1. Launch app.
2. Sign up (email/phone) or sign in.



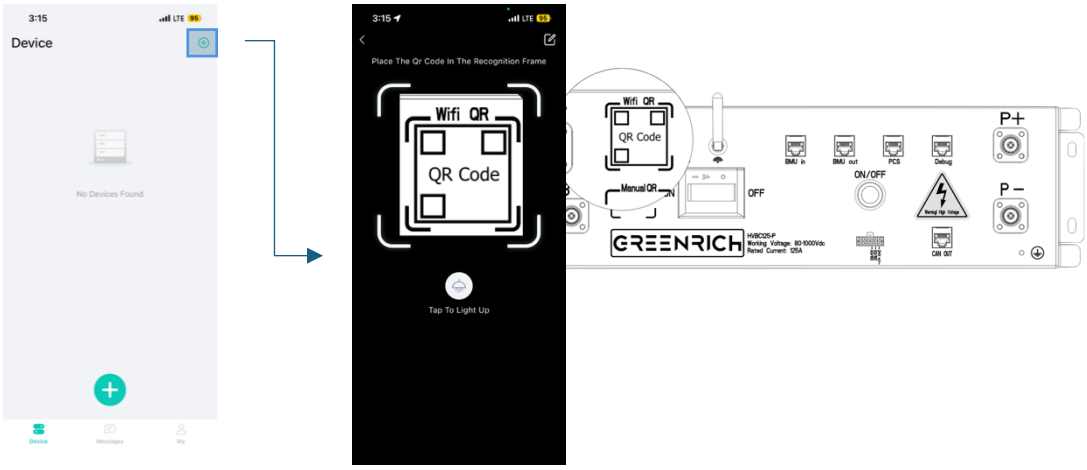


Step 3: Add Device

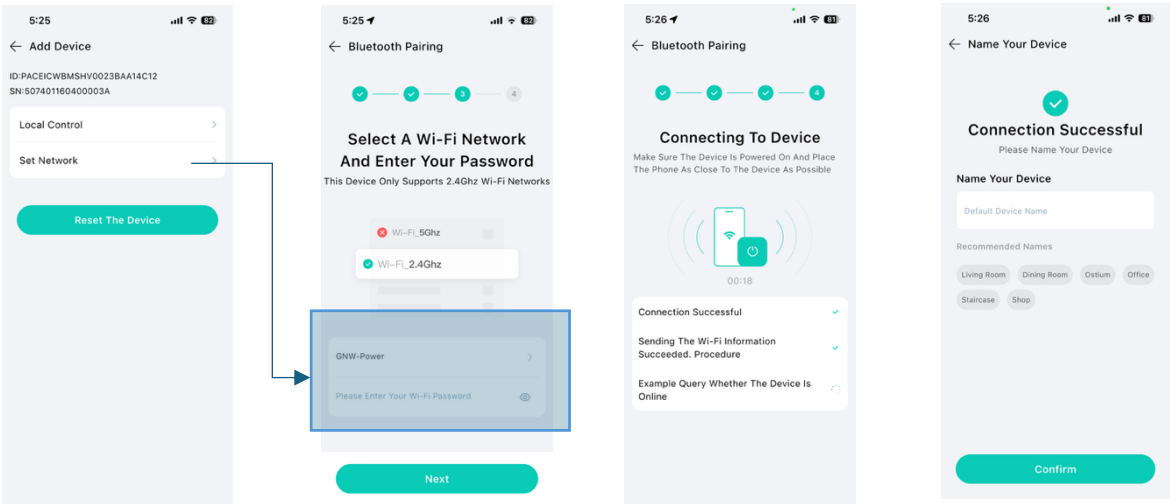
1. Go to Device List.

Note: Enable Bluetooth for Wuya app, grant permissions if required.

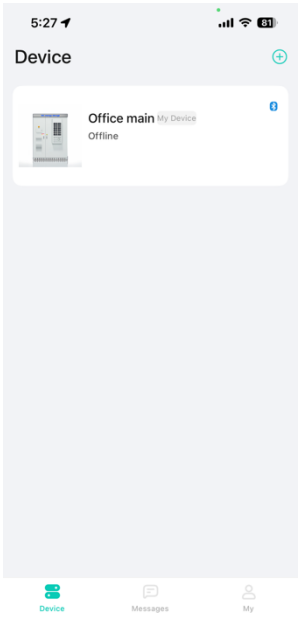
2. Scan Wifi QR code on HVCB to pair.

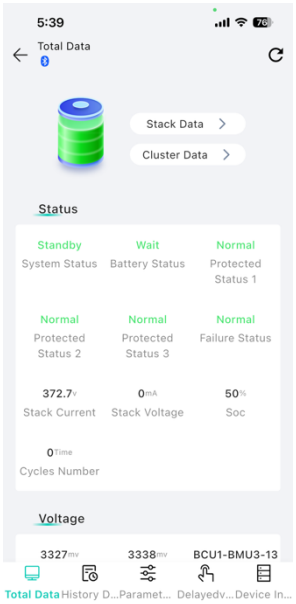


3. Choose:
    - **Set Network:** for remote monitor through Wi-Fi. Set Network → Enter SSID/password → Connect (~1min). Name device (e.g., "Rack 1").
    - **Local Control:** Bluetooth only for on-site.



Step 4: Dashboard
Tap device: View battery status, graphs, alarms.





Monitoring Operation

- **Daily:** Check LEDs (green=normal). App: SOC graphs, current/voltage, runtime.
- Normal: Steady green, fans quiet.
- Alarms: Red flash → Check app → Report.
- Notifications: App push for issues.

Key Metrics (App/LED): SOC, temp, alarms.

Appendix

Glossary:

- **SOC**: State of Charge (%).
- **HVCB**: High Voltage Control Box.
- **LOTO**: Lockout/Tagout.
- **PPE**: Personal Protective Equipment.

Compliance: IP20, LiFePO4 standards (details in Install Manual).

Revision History:

Version	Date	Changes
0.1	2026-04-28	Initial
0.2	2026-05-06	1. System start > Start initiation, LED flash color changed 2. Key specification > Cycle change to 6000 ***@25℃，80% DOD***