Lyra 2500 AC

Plug-in Energy Storage System

User Manual



Issue: 01
Date: 2026-03-13

About This Document

Overview

This document primarily introduces Lyra 2500 AC the balcony energy storage system (hereinafter referred to as "product", "device", or "energy storage") including product overview, applications, installation and debugging, maintenance, and technical data.

Target Audience

Intended Audience This document is intended for:

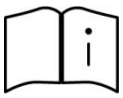
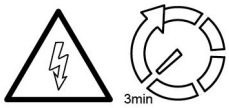
- Sales engineers
- Solution design engineers
- Service engineers
- End users

Safety Symbol Specification

The following symbols may appear in this article, and their meanings are as follows:

Attention Symbol	Description
DANGER	A high hazard level indicates that non-compliance or not taking preventative measures could result in death or serious injuries.
WARNING	Medium hazard level signifies that non-compliance or not taking preventative measures could lead to death or serious injuries.
CAUTION	A low hazard level represents the possibility of minor injuries if not compliant or preventive measures are not taken.
NOTICE	The presence of potential risks signifies that non-compliance or not taking precautions could lead to equipment damage or other unpredictable impacts.
NOTE	This expresses additional key information and does not involve alerts about equipment or personal safety.

Symbol Description

Symbol	Description
	Electrical hazard, do not touch.
	Pay attention to safety.
	High temperature hazard, do not touch.
	Read the user manual and all safety instructions carefully before installation, operation, and maintenance.
	Do not dispose of the device as household waste. Follow local electronic waste disposal regulations.
	The product is recyclable
	The device complies with the essential requirements of the relevant EU legislation.
	Wait at least 3 minutes after all voltage sources are disconnected before servicing.
	Indicates the position for connecting the protective earthing (PE) cable.

Change Record

Change history accumulates the description of each document update. The latest issue of the document contains all changes made in previous issues.

Issue: 01 (2026-03-13)

This issue is the first official release.

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1 Safety Use Instructions

Statement

Before using the device, you must read this manual, operate strictly according to the contents of the manual, and follow all safety precautions indicated on the device and within the manual.

Safety precautions in the manual serve as supplementary or highlight explanations. You also need to abide by relevant international, national, or regional standards and industry practices. Our company does not assume any liability resulting from violations of safety operation requirements, or contraventions to design, production, and device safety standards.

This device should be used in environments that meet the design specification requirements. Otherwise, any device failures, abnormal device functions, or part damages that may occur will not be covered by the device's warranty. Furthermore, we will not be held accountable for any personal injuries or property losses that could occur.

General Requirements

- Installation, operation, and maintenance must be performed according to the sequence in the manual. Do not modify, add to, or change the equipment arbitrarily, nor should you change the installation sequence on your own.
- It is strictly forbidden to manually alter, damage, or cover the marks and nameplates on the equipment. Replace any markings that have become faded from long-term use.
- Please use batteries within the prescribed temperature range. Charge is prohibited when the environmental temperature is below the lower limit of the operating temperature to avoid internal short circuits caused by low-temperature charge.
- Before unpacking the battery, check to ensure that the packaging is intact. Batteries with damaged packaging must not be used. If damaged, immediately inform the transporter and the manufacturer.
- Battery damage (falls, collisions, swelling or dents in the casing, etc.) may lead to the release of leakage or flammable gases. Do not use a damaged battery. When the battery shows signs of leakage or structural deformation, immediately contact the installer or a professional for removal and replacement. Do not store damaged batteries near other devices or combustible materials, and non-professionals should not approach the damaged battery.
- If the battery unintentionally gets wet, do not continue the installation and promptly move it to a safe isolation point for scrapping.

- If the battery will not be used for a long time, it should be stored and charged according to the battery requirements.
- It is prohibited to use equipment that does not comply with local laws, regulations, and standards for charge and discharge.
- When the battery fails, the surface temperature may become too high. Avoid touching it to prevent burns.
- Do not stand, lean, or sit on the equipment.
- Do not use the battery for the following purposes.
  - For medical devices directly related to human life.
  - For control equipment such as trains, elevators, etc., which may cause personal injury.
  - For computer systems of social and public importance.
  - At locations near medical devices.
  - For any equipment within the descriptions above.

Grounding

- The equipment’s grounding impedance should meet local electrical standards.
- The equipment should be permanently connected to protective ground. Before operating the device, check the electrical connections of the equipment to ensure reliable grounding.

Battery Safety

- Do not expose batteries to high-temperature environments or heat-emitting equipment, such as intense sunlight, fire sources, transformers, heaters, etc. Overheating a battery may lead to leaks, smoke, the emission of flammable gases, thermal runaway, fire, or explosion.
- It is strictly forbidden for batteries to be subjected to mechanical vibrations, falls, collisions, hard object punctures, and pressure impacts. Otherwise, it may cause battery damage or fires.
- Dismantling, modifying, or damaging the battery (such as inserting foreign objects, crushing with external forces, or immersing in water or other liquids) is strictly prohibited, to avoid leaks, smoke, the emission of flammable gases, thermal runaway, fire, or explosion.
- Battery electrolyte is toxic and volatile. In the event of electrolyte leakage or abnormal smell, avoid contact with the leaking liquid or gas. Non-professionals should keep their distance and immediately contact professionals. Professionals should be equipped with safety goggles, rubber gloves, gas masks, protective suits, etc., disconnect the equipment promptly, remove the leaking battery, and contact the technical engineers.
- A battery is a sealed system and will not release any gases under normal operation.
- However, under extremely misused circumstances such as fire, stabbing, squeezing, lightning strike, overcharge, or other situations that could potentially lead to thermal runaway, battery damage or abnormal chemical reactions within the battery could occur, resulting in electrolyte leakage or the generation of gases such as CO, H2. Ensure that flammable gas emissions are properly managed at the site to avoid causing combustion or corroding equipment.

Recycling and Disposal

- Please handle waste batteries according to local laws and regulations. Do not treat batteries as domestic waste. Improper battery disposal may result in environmental pollution or explosions.
- If the battery leaks or is damaged, please contact technical support or a battery recycling company for disposal.
- When the battery is end of life and unusable, please contact a battery recycling company for scrapping.
- Avoid exposing waste batteries to high temperatures or direct sunlight.
- Avoid exposing waste batteries to high humidity or corrosive environments.
- Faulty batteries are prohibited from being used for a second time. Contact a battery recycling company for disposal as soon as possible to prevent environmental pollution.

Storage

- Batteries should be stored indoors, where they are not exposed to direct sunlight or rain, in a well-ventilated and dry environment. The surrounding area should be kept clean and free from significant radiation, such as infrared rays, organic solvents or corrosive gases, and conductive metallic dust, and the storage should be far from heat sources and flames.
- Suppose a battery fault occurs (carbonization, leakage, expansion, water ingress, etc.).In that case, it must be promptly moved to a hazardous materials warehouse for isolated storage, at a distance of no less than 3 meters from any surrounding combustible materials, and be disposed of as quickly as possible.
- When storing batteries, they should be placed correctly according to the indications on the packaging box. It is strictly forbidden to place them upside down, sideways, or at an angle. When stacking, the arrangement should adhere to the requirements mentioned on the outer packaging.
- When storing batteries, please store them separately to avoid mixing with other equipment and prevent batteries from being stacked too high. When a large number of batteries are being stored on-site, it is recommended to have appropriate fire-fighting equipment on hand, such as fire sand and fire extinguishers.
- It is recommended to use the battery promptly. For batteries that are stored for a long time, please carry out regular recharging, otherwise, it may cause battery damage.
- The storage environment must meet local legal regulations and standard requirements.
- The environmental air should not contain corrosive or flammable gases.
- Storage environment requirements:
  - Ambient Temperature: -20°C to +55°C, recommended storage temperature: 20°C-30°C.
  - Relative Humidity: 10%RH-85%RH.
- When exceeding the storage period, it is required to undergo inspection and testing by professionals before use.
- During storage, it is necessary to keep relevant evidences that meet the product

storage requirements, such as temperature and humidity log data, storage environment photos, and inspection reports.

- When shipping batteries, follow the principle of first in, first out.
- Storage time should be calculated from the most recent charge time indicated on the battery's external packaging. After the charge, update the most recent charge time.

Transportation

- Prohibit rough handling during installation or removal as it may result in battery short circuit, damage (such as leakage or rupture), fire, or even explosion.
- During transport, the battery should be moved following its specified orientation. Arbitrary handling of the battery is prohibited.
- Before unpacking the battery, during storage and transportation, ensure the outer packaging box is intact and undamaged. Arrange it as indicated by the marks on the box, sternly disallowing inverting, putting it on its side, standing it up, or tilting. When stacking, follow the order given on the packaging to prevent any collisions or falls that could damage and ruin the battery.
- Batteries have obtained the certifications of the UN38.3 (UN38.3: section 38.3 of the sixth Revised Edition of the Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria) and SN/T 0370.2-2009 (Part 2: Performance Test of the Rules for the Inspection of Packaging for Exporting Dangerous Goods). This product belongs to class 9 dangerous goods.
- The transport service provider should be qualified to transport the corresponding equipment.
- Comply with the international transport rules for dangerous goods and meet the regulatory requirements of the transport regulatory authorities of the country of origin, route, and destination of the transport.
- Maritime transport must comply with the *International Maritime Dangerous Goods Code* (IMDG Code).
- Road transport must comply with the *Agreement Concerning the International Carriage of Dangerous Goods by Road* (ADR) or JT/T 617.
- Before transportation, it is essential to verify that the battery packaging is complete and undamaged and that there are no unusual smells, liquid leakage, smoke, or fire. If any of these conditions are present, transportation is prohibited.
- The box used for transportation must be sturdy. During loading, unloading, and transport, it should be handled gently and kept moisture-proof.
- When moving the battery, careful attention should be taken not to knock or drop it.
- Unless otherwise provided, hazardous materials cannot be mixed in the same vehicle or container with goods containing food, medicines, animal feed, or their additives.
- Unless otherwise specified, when hazardous goods are loaded with ordinary goods in the same vehicle or container, one of the following isolation methods should be adopted:
  - Using a barrier that is the same height as the package
  - Keeping a separation of at least 0.8m on all sides

- Before moving a faulty battery (carbonized, leaking, swollen, water ingress, etc.), the positive and negative terminals should be insulated. After packing, it should be rapidly placed in an insulated explosion-proof box, and a record should be kept on the outer box, including details such as the name of the site, address, time, and observed issues.
- Faulty batteries should be moved away from the site during transportation and avoid areas where flammable materials are stored, residential areas, or other places where people often gather, such as public transport vehicles or elevators.

2 Product Introduction

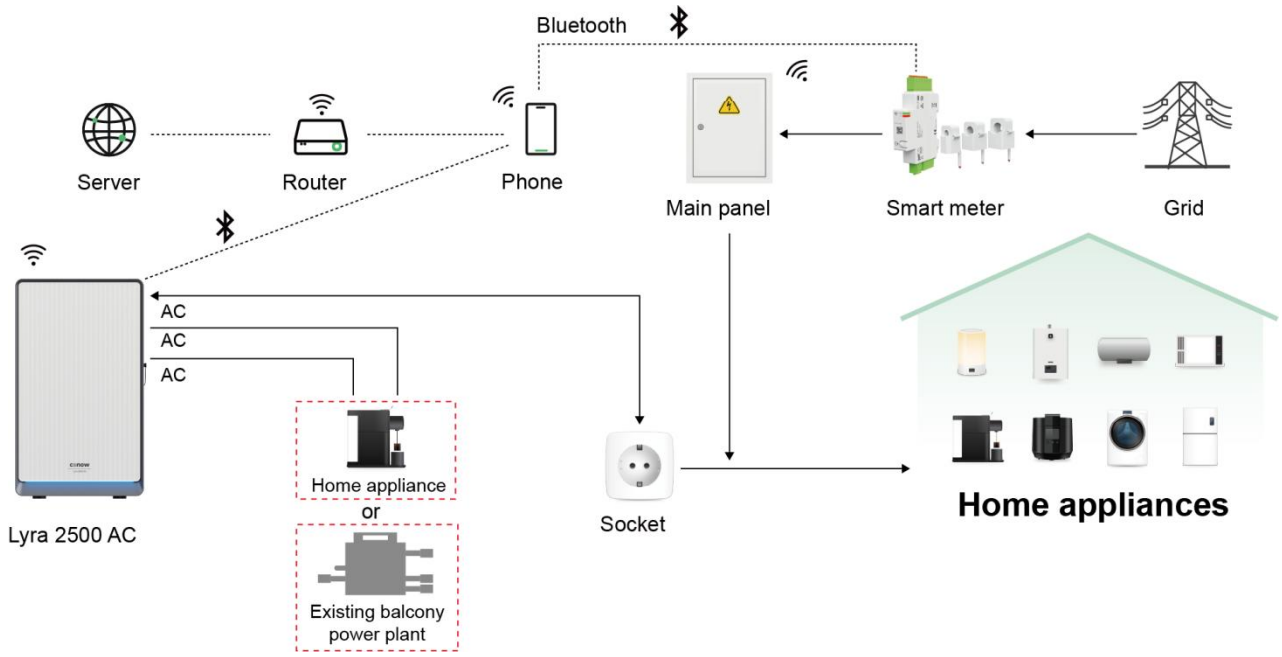
2.1 System Introduction

Overview

The Lyra 2500 AC combines an all-in-one design that allows for easy integration into various spaces, adapting to your specific energy needs. It supports dynamic electricity pricing and real-time power management, while its AC-input charging enables reliable grid-based backup or peak-shaving operation. It's powered by AI-driven insights that optimize charging schedules, predict maintenance needs, and enable imbalance-market trading.

System Network

Figure 2-1 Network diagram



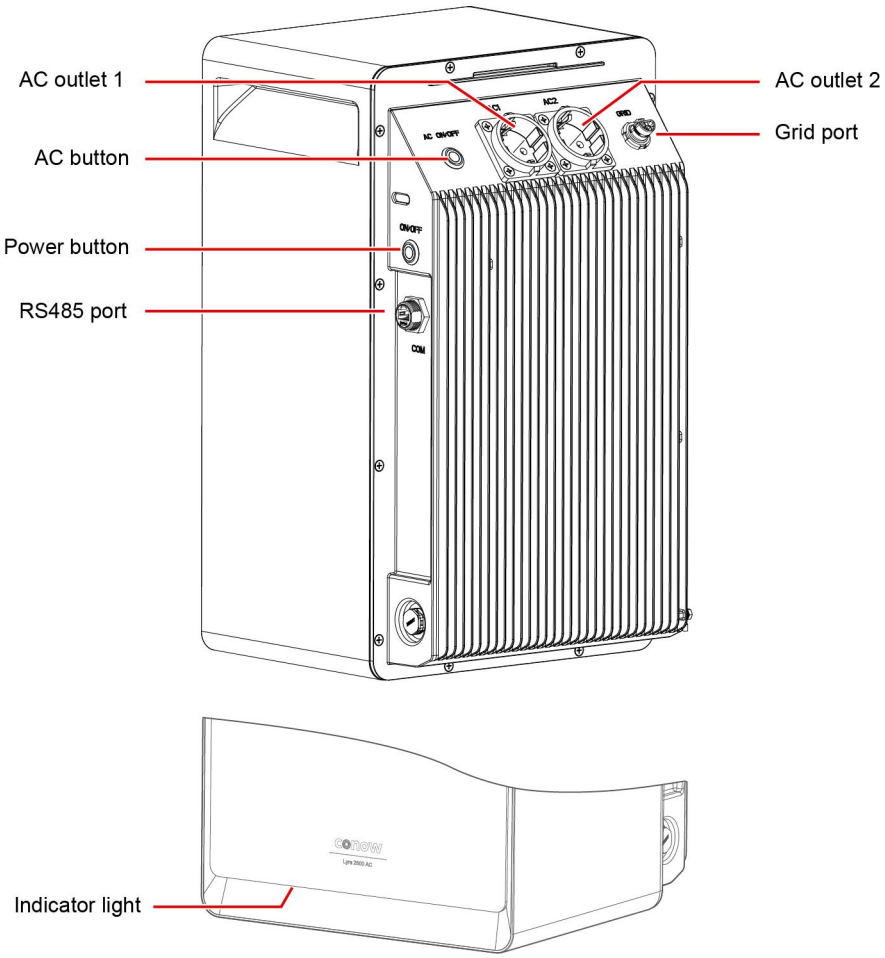
- This AC port can either back up power for home appliances or act as an input for connecting an existing balcony power plant.
- The system supports parallel operation of two Lyra 2500 AC units. A single device has a maximum output power of 1500W, while two devices operating in parallel have a maximum output power of 2400W.
- When two devices are used together, the total maximum output power is 2400W, and the system will automatically adjust the output power of the device based on the

power of the connected loads.

Note: The total power consumption of all AC output ports on both devices must not exceed 2400W.

2.2 Interface Introduction

Figure 2-2 Lyra 2500 AC



LED Display

Figure 2-3 LED display



Table 2-1 Indication Light Description

Color	Status	Description
Blue	On	Device powering on
Blue	Flashing	The device is charging.
Blue	On 	The device is discharging, and the battery level is below 30%.
	On 	The device is discharging, and the battery level is between 30% and 80%.
	On 	The device is discharging, and the battery level is above 80%.
Blue	Flowing lights	The device is undergoing OTA firmware update
Orange	Flashing	The device failure

Button Controls

Power button:

- Power On: Press the button for 1 second until the indicator light turns on.
- Power Off: Press the button for 2-5 seconds and release. The indicator light will turn off.
- Network Configuration: Press and hold the button for 5~10 seconds until the indicator light flashes. Once the network configuration is done, the light will stay on.

AC switch button:

- Enable/disable bypass port.

Note:

- After the device is powered on, the indicator lights will turn on by default when a person is within approximately 2 meters of the device. Once the person walks away, the lights will turn off after about 30 seconds.
- When the device is in an under-voltage or low state of charge (SoC) condition, pressing the power button will temporarily illuminate the indicator lights. If no further action is taken, the lights will automatically turn off after 20 seconds.

2.3 Technical Specifications

Table 2- 2 Technical specifications

Model	CME06-2BM250	CME06-2BM250-07	CME06-2BM250-08
Battery			
Capacity	2560Wh		
Voltage Range	21.6 V - 28.8 V		
Rated Voltage/capacity	25.6 V/100 Ah		
Rated Power(Single device)	1500W		
Charge Current	Max. 70A DC		
Discharge Current	Max. 70A DC		
Standard Charge Current	50A		
Standard Discharge Current	50A		
Standard Charge Voltage	28.8V		
Upper limit Charging Voltage	28.8V		
End-of-discharge Voltage	21.6V		
Life Cycle (Times)	> 6000 (25°C)		
Battery Type	LiFePO4		
On-grid Terminal (AC)			
On-grid Output Power	1500 W	799 W	800 W
On-grid Input Power	Max.1500 W		
AC Nominal Output Voltage	230VAC		
AC Frequency	50 Hz		
AC Nominal Input/Output Voltage	L+N+PE 220V/230V AC		
Max. Input Current	10 A		
Max. Output Current	6.6 A	3.5 A	3.5 A
Total Harmonic Distortion	Typ. < 3%, Max. < 5%		
Power Factor	0.8 lagging - 0.8 leading		
Off-Grid Terminal (AC)			
Rated Output Power	Single-unit: 1500 W; Parallel-unit: 2400 W		
AC Output Current	Max. 10.5 A		
Rated AC Output Current	6.6 A		
AC Nominal Output Voltage	230VAC		
AC Frequency	50 Hz		
Backup Output Peak	3000 W		
EPS Switching Time	≤10 ms		
Environmental and Mechanical			
Communication	2.4G Wi-Fi & Bluetooth, RS485		
Storage Temperature Range	-20°C to +55°C (recommend: 10°C to 35°C)		
Charge Temperature Range	0°C to +50°C		

Model	**CME06-2BM250**	**CME06-2BM250-07**	**CME06-2BM250-08**
Discharge Temperature Range	-20°C to +55°C		
Operating Humidity	≤85%RH (non-condensation)		
Storage Humidity	10% - 85%RH (non-condensation)		
Enclosure Rating	IP65		
Cooling Mode	Natural convection		
Dimensions (W × H × D)	260±2 mm x 445±2 mm x 250±2 mm		
Weight	27.7±0.5 kg		
Noise	≤ 38dB		
Maximum Altitude Rating	≤ 2000 m		
Warranty	10 years		
Self-consumption (bypass off)	11.5 W		
Pollution Degree	PD III		
Topology Type	Isolation		
Efficiency			
Max. Output Efficiency	94.8%		
Battery Charge Efficiency	94.8%		
Protection			
Protective Class	Class I		
Over Voltage Category	AC.OVC III, DC.OVC II		
Inverter Topology	Isolated		
Overvoltage Protection	Yes		
Undervoltage Protection	Yes		
Over-frequency Protection	Yes		
Underfrequency Protection	Yes		
Short Circuit Protection	Yes		
Reverse Connection Protection	Yes		
Over Temperature Protection	Yes		
Anti-Islanding Protection	Yes		
Safety certification			
IEC62109-1, IEC61000-6-1/-3, IEC61000-3-2/-3, IEC62619, EN 50549-1/-10, NEN EN50549-1+BWB R0037940 Netcode, ETSI EN300328, ETSI EN301489-1/17, OVE-directive R25:2020-3 TOR Erzeuger Type A, VDE 4105, VDE 0124, NF50549-10, UN 38.3, C10/11, CEI 0-21, IEC61000-4, IEC 62920			
Device Services, the device has enabled the following services, which are used for device initialization and functions during normal operation. TCP: Used for AP network configuration and LAN (Local Area Network) communication. UDP: Used for broadcast basic information between device and app. BLE Service GATT Service: Used for network configuration.			

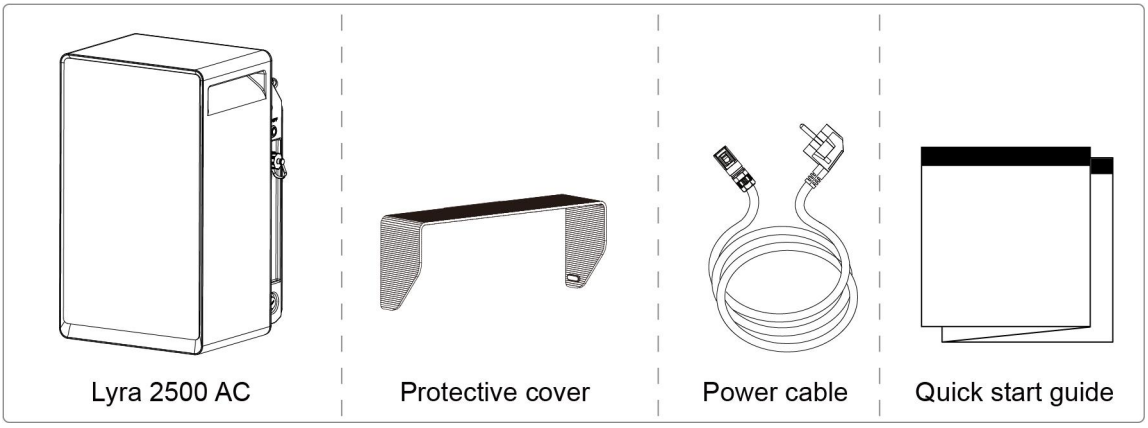
3 Product Installation

3.1 Unboxing and Inspection

Before opening the box, please check the outer packaging for visible damage, such as deformation, broken holes, or other signs of possible internal damage, and check the product model number. If there are any packaging abnormalities or product model discrepancies, do not open the box and contact the product distributor promptly.

After unpacking the equipment, check that the product matches the bill of materials and that there is no visible external damage or missing materials. If any material is missing or there is any damage, please do not use it and contact the product distributor promptly.

Figure 3-1 Packing list



3.2 Installation Environment Requirements

The installation and use of the device must comply with local laws and regulations as well as the provisions for lithium battery products in relevant international, national, and regional standards.

The device should not be installed in enclosed, non-ventilated areas where there are no proper fire safety measures or where it is hard for fire personnel to reach.

Do not place flammable or explosive items near the device.

The location of the device should avoid direct sunlight, rain, and snow accumulation.

The installation location of the device should avoid water accumulation and should be away from water sources like faucets, drain pipes, sprinklers, etc. to prevent water seepage.

The height of the device installation should be convenient for operation and maintenance, ensure that device indicator lights and all labels are easy to see.

3.3 Install the Lyra 2500 AC

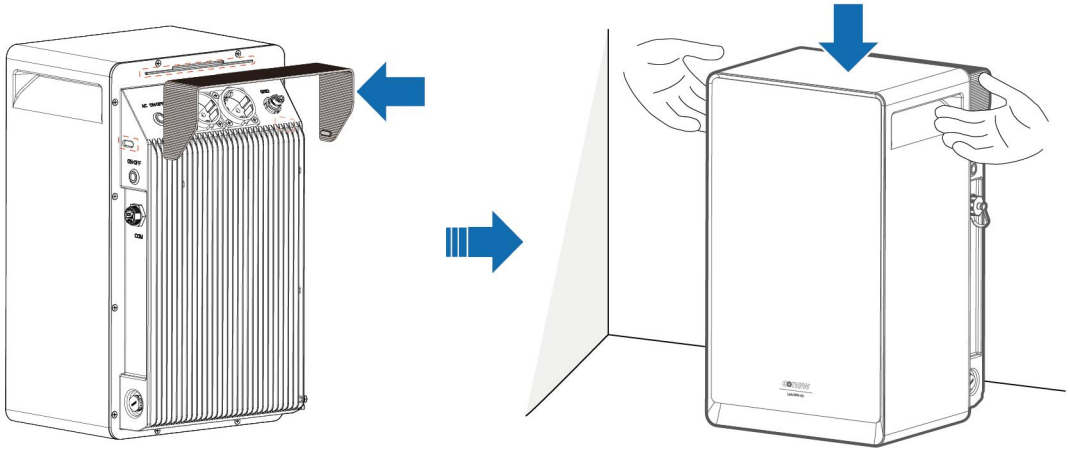
DANGER

- Before installing the energy storage system, please make sure the battery module is turned off. Installing the battery module while it is powered is not allowed as it could lead to the risk of electric shock.

Step 1 Install the protective cover.

Step 2 Place the main battery in an appropriate location.

Figure 3-2 Installing the Lyra 2500 AC



4 Product Wiring

WARNING

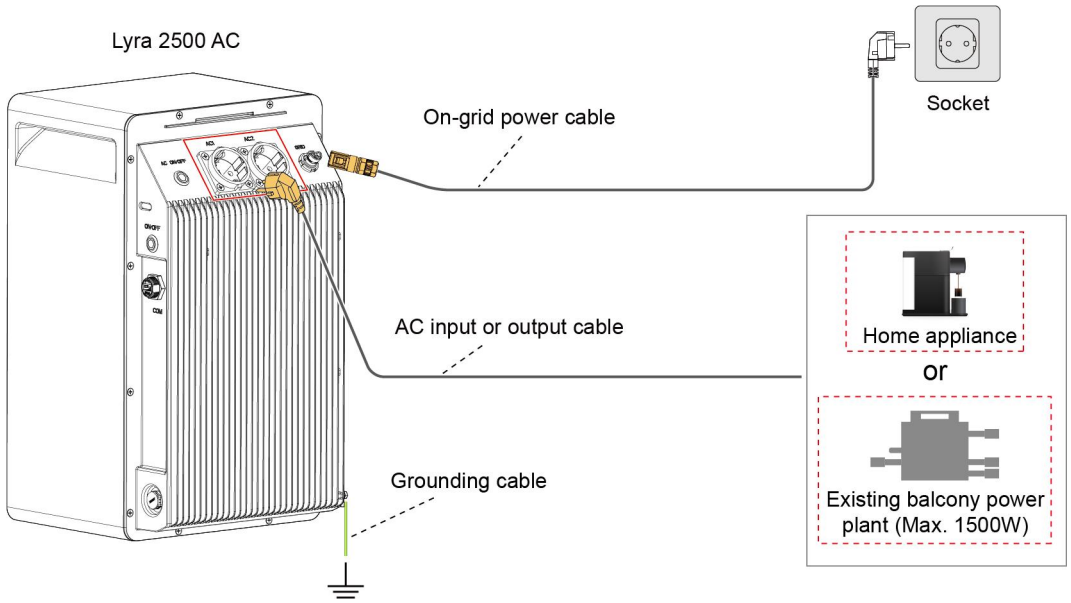
- Before installing the cables, ensure that the batter is powered off.

Step 1 Install the protective grounding cable.

Step 2 Install the grid-tied power cable.

Step 3 Install the AC output or input cable.

Figure 4-1 Installing the cables



NOTE

- This AC port can either back up power for home appliances or act as an input for connecting an existing balcony power plant.

Step 4 (Optional) Install the parallel cable.

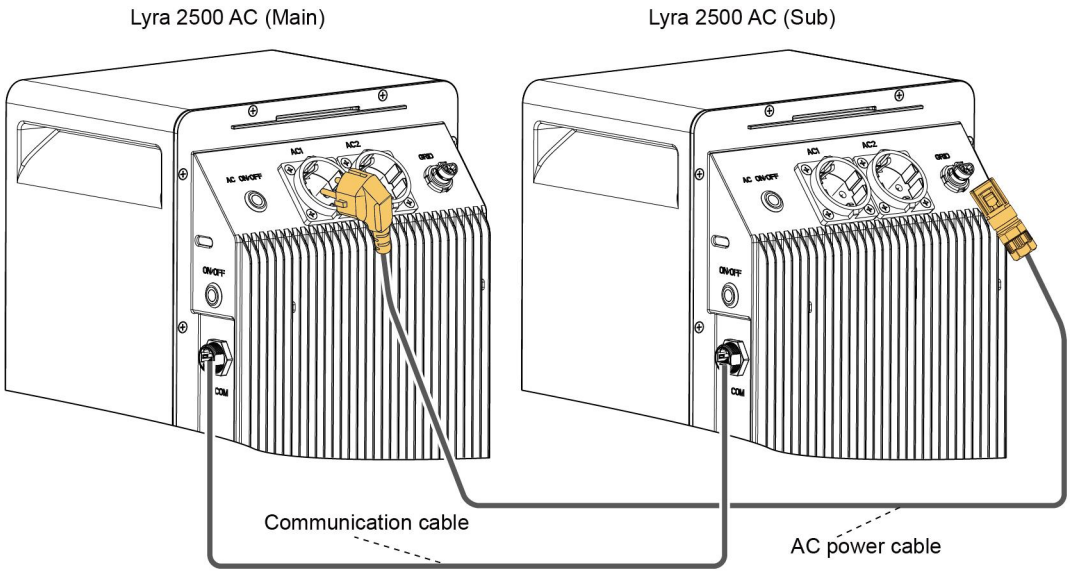
NOTE

- When two devices are used together, the total maximum output power is 2400W, and the system will automatically adjust the output power of the device based on the power of the connected loads.

Note: The total power consumption of all AC output ports on both devices must not

exceed 2400W.

Figure 4-2 Installing the parallel cables



5 Product Network Configuration

5.1 Download the CONOW ECO App

- Scan the QR code or search for **CONOW ECO** in the Google Play Store or Apple App Store. After downloading, please register and log in to the App.
- Scan the QR code on the device to download the App.

CONOW ECO

NOTE

- If you have already downloaded the **SmartLife** or **Tuya** App, you may use your existing App directly, as its operation is identical to that of **CONOW ECO**.

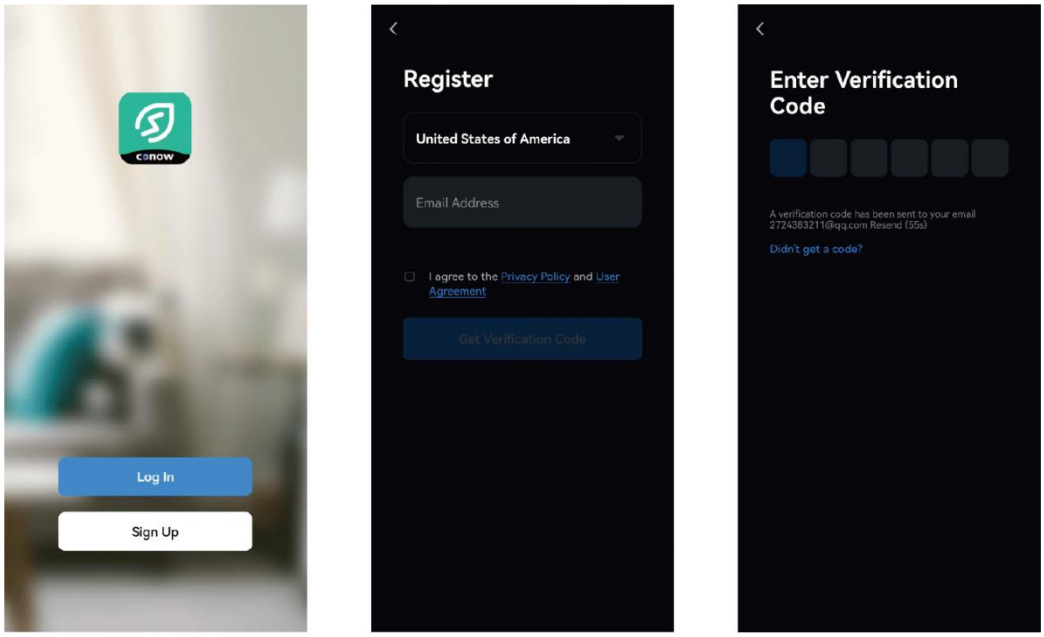
5.2 Log in / Sign up

Sign Up

Step 1 Tap the Sign Up button, choose your country/region, enter your email/mobile number, and tick the box to accept the Privacy Policy and User Agreement.

Step 2 Then tap “Get Verification Code”, fill in the verification code you received, your account will be created.

Figure 5-1 Sign up

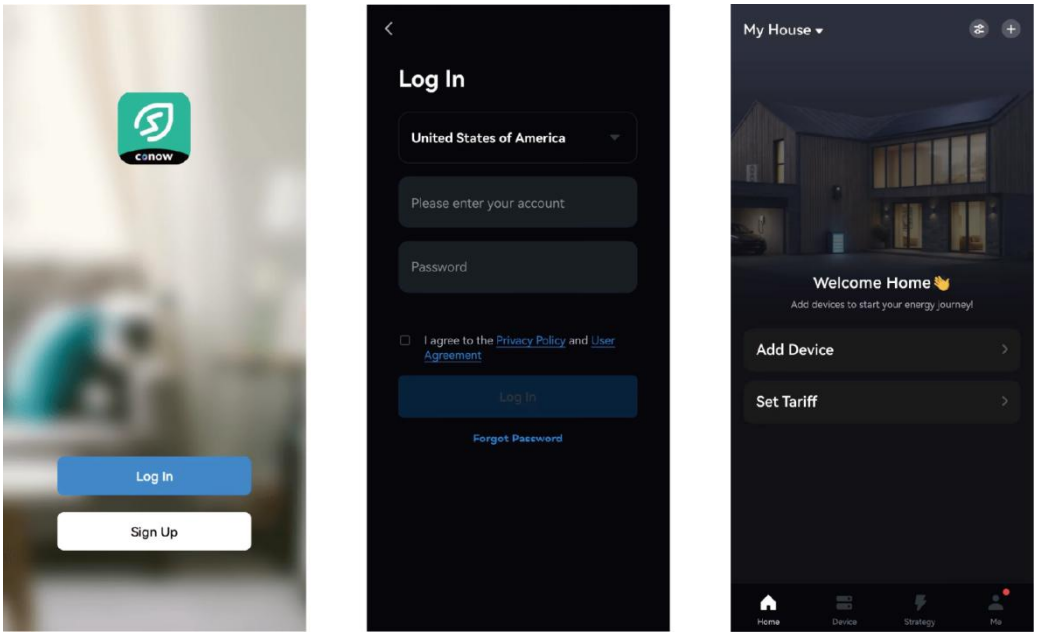


Log In

Step 1 Tap "Log In", enter your password, accept the Privacy Policy, and confirm to complete login.

Step 2 Tap the “Log In” button, the App guide map will be prompted if it’ s your first login.

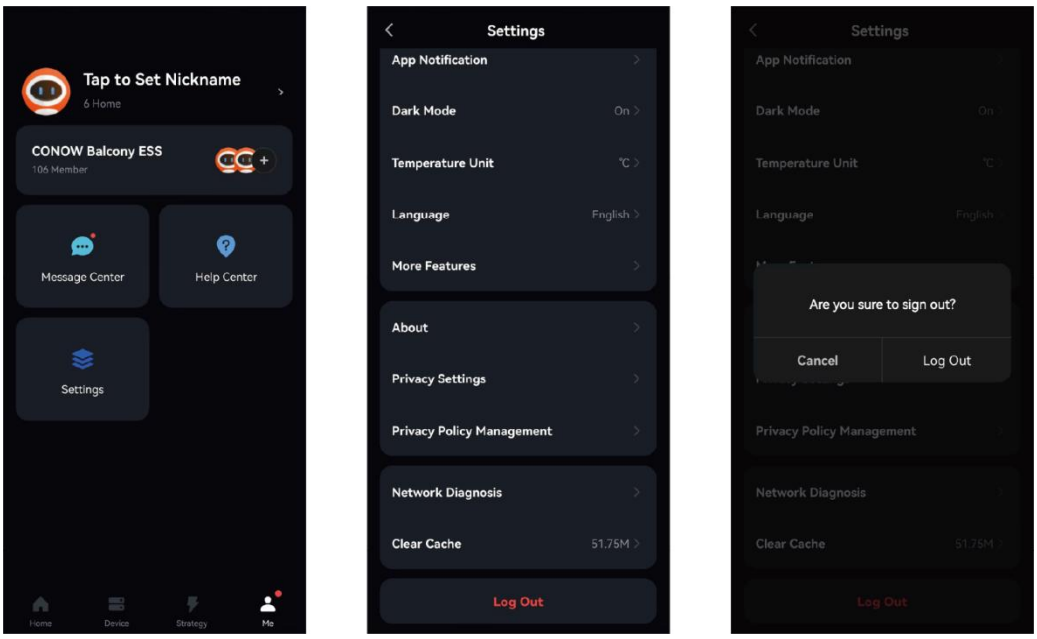
Figure 5-2 Log In



App Logout

Step 1 Go to “My” → Settings, tap “Sign out”, then confirm when prompted.

Figure 5-3 Logout



5.3 Device Proximity Connection via Bluetooth (Without Wi-Fi)

Step 1 Press the power button to turn on the device (the button indicator light is on).

Step 2 Press the AC switch button for 1 second to enable the bypass function (the button indicator light is on).

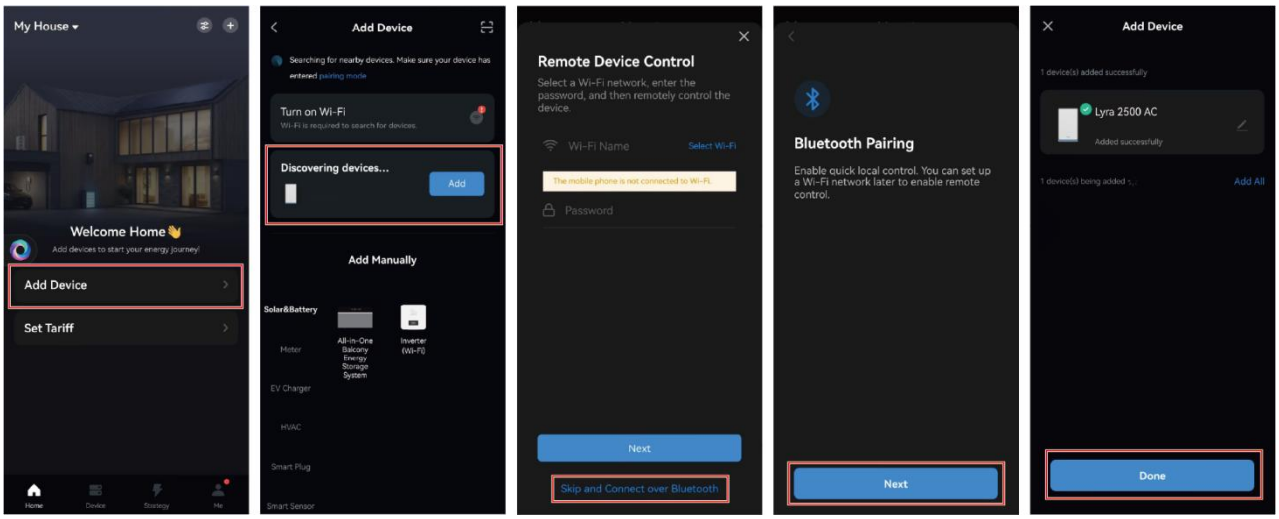
Step 3 Check the LED display to confirm the device is in pairing mode (the power button indicator light is flashing).

Step 4 Open the App and click “Add” to add a device.

NOTICE

- When connecting the device via Bluetooth only, the system supports local charge and discharge management only. All cloud-based functions will be unavailable.

Figure 5-4 Device proximity connection via Bluetooth



5.4 Device Network Configuration (Bluetooth & Wi-Fi)

Step 1 Press the power button to turn on the device (the button indicator light is on).

Step 2 Press the AC switch button for 1 second to enable the bypass function (the button indicator light is on).

Step 3 Check the LED display to confirm the device is in pairing mode (the power button indicator light is flashing).

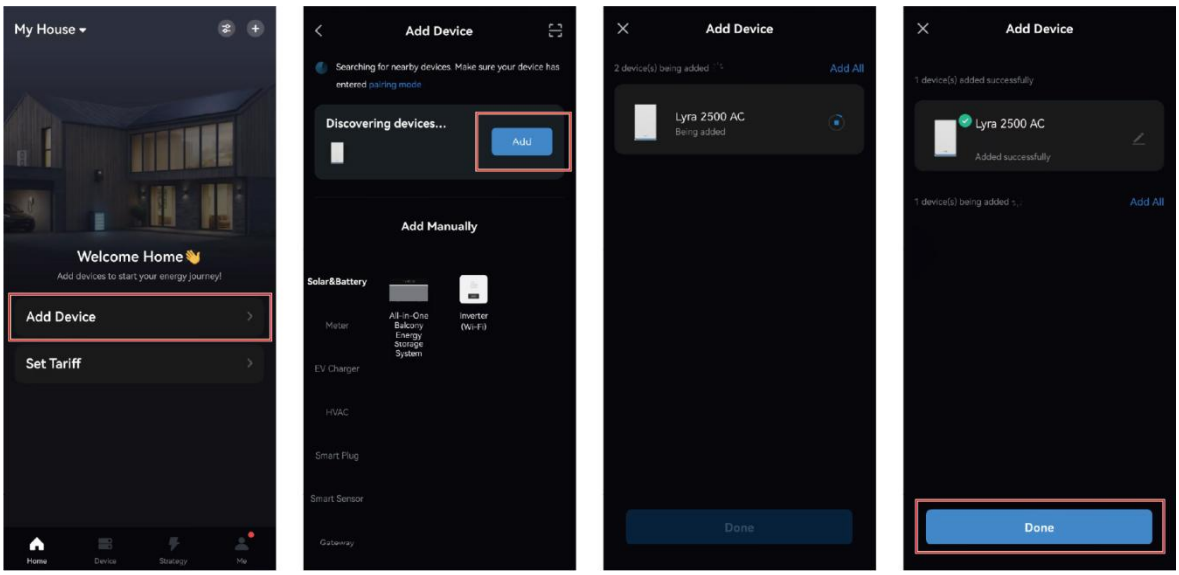
Step 4 Press and hold the reset button on the smart meter for 5 seconds. The indicator light will begin to flash, indicating that the smart meter has entered network connection mode. (if a smart meter is purchased)

Step 5 Open the App and click “Add” to add a device.

NOTICE

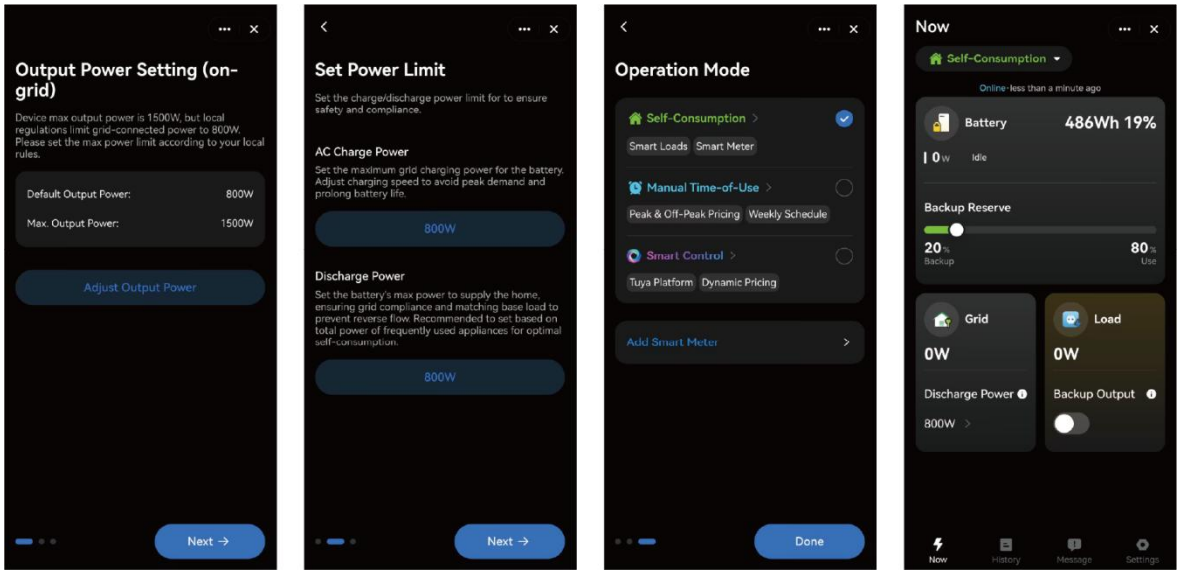
- When adding a device, you need to enable Bluetooth and Wi-Fi on your phone, and the Wi-Fi must be 2.4 GHz.
- Use the same method to add a smart meter.
- When you have multiple smart devices in pairing mode, you can search for and add them all simultaneously in the App. The example below shows the process for adding a single device.

Figure 5-5 Adding device



Step 6 Follow the prompts to complete the initial setup based on your actual usage.

Figure 6 Complete the setup wizard

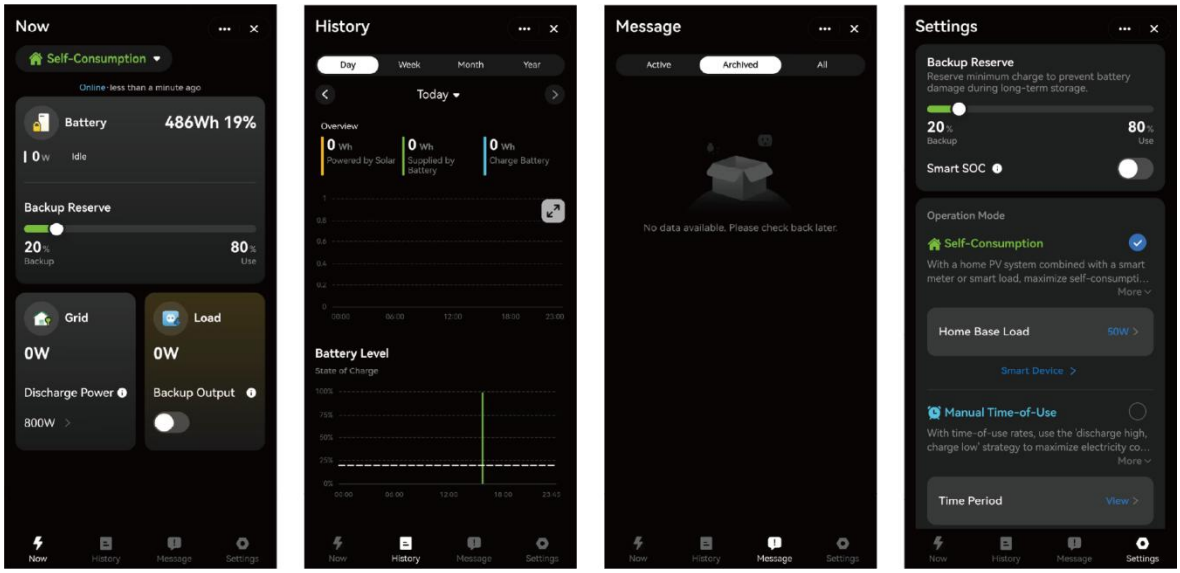


Step 7 Access the device page to view information and configure functional parameters based on your actual requirements.

NOTE

- The devices shown below are examples only. Refer to your actual devices.

Figure 5-7 Device page



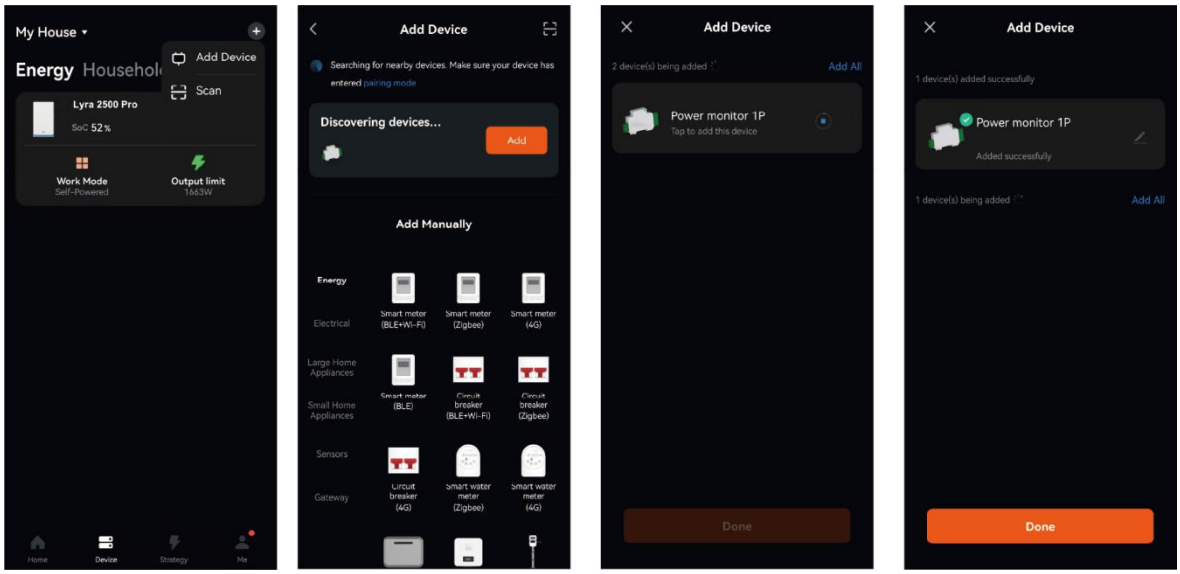
5.5 (Optional) Adding Other Devices

Navigate to the Device page in the App, then tap the “+” icon located in the upper right corner and select “Add Device”. Before proceeding, make sure your smart device is in network configuration mode.

NOTE

- The devices shown below are examples only. Refer to your actual devices.

Figure 5-8 Added Devices



5.6 Introduction to Function Settings

Function Introduction

Figure 5-9 Setting page

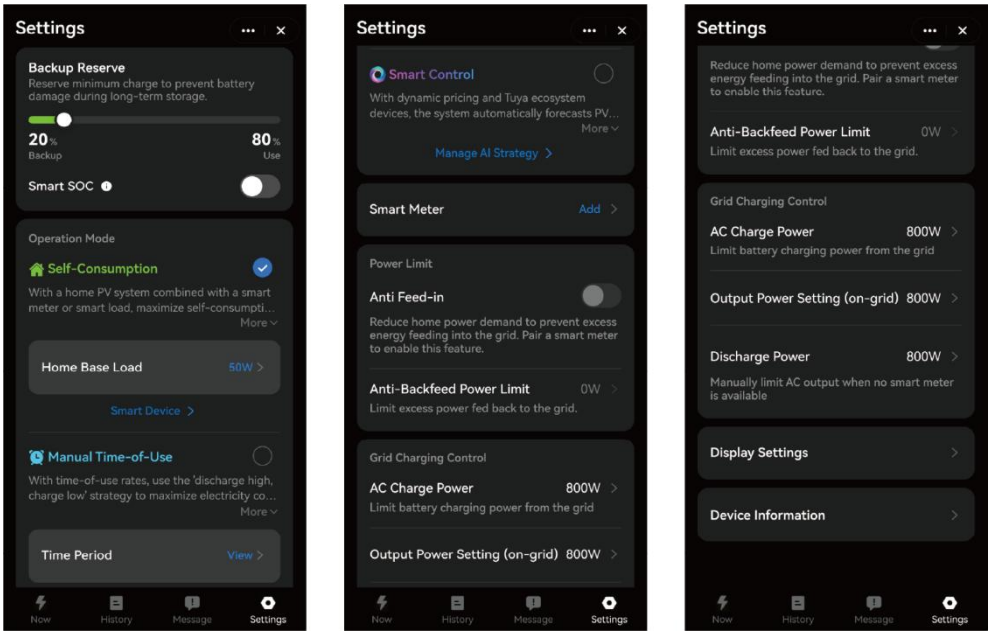


Table 5-1 Function Settings

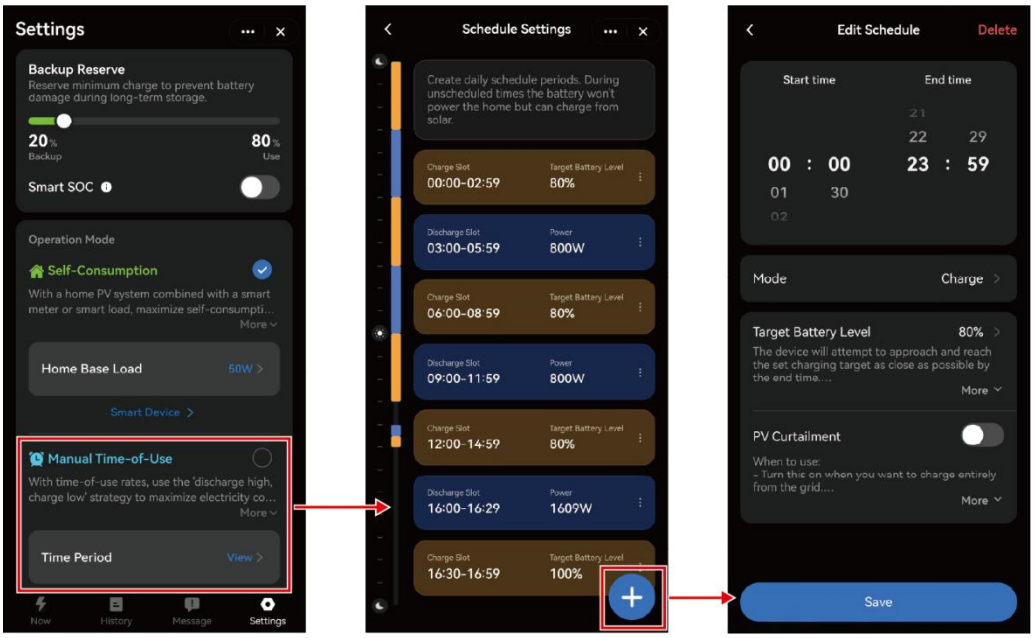
Function	Description
Backup Reserve	• Set a minimum charge level to prevent battery damage during storage. • **Smart SOC:** Intelligently recommends backup power SOC based on seasonal patterns, weather forecasts, and electricity usage habits.
Self Consumption	With a home PV system combined with a smart meter or smart load, maximize

	self-consumption and reduce grid electricity purchases.
Manual ToU	With time-of-use rates, use the 'discharge high, charge low strategy to maximize electricity cost savings.
Smart Control	With dynamic pricing and Tuya ecosystem devices, the system automatically forecasts PV generation and real-time home consumption to optimize your energy plan based on price fluctuations.
Smart Meter	Connect the smart meter to the Lyra 2500 Pro.
Power Limit	Set Anti Feed-In and Anti Backfeed power limit.
Display Settings	Based on actual usage habits, configure the LED display to energy-saving mode, always-on mode, or manual control mode. The display power type can also be set.
Grid Charging Control	• **AC Charging Limit:** Set the charging power from the grid to the battery. • **Max. Output Power Limit:** Max. power of grid-tied output from the device. • **Export Power Limit:** Flexibly set the grid-tied output power of the device.

Manual ToU

Manual setting of battery charging/discharging times and target battery level values.

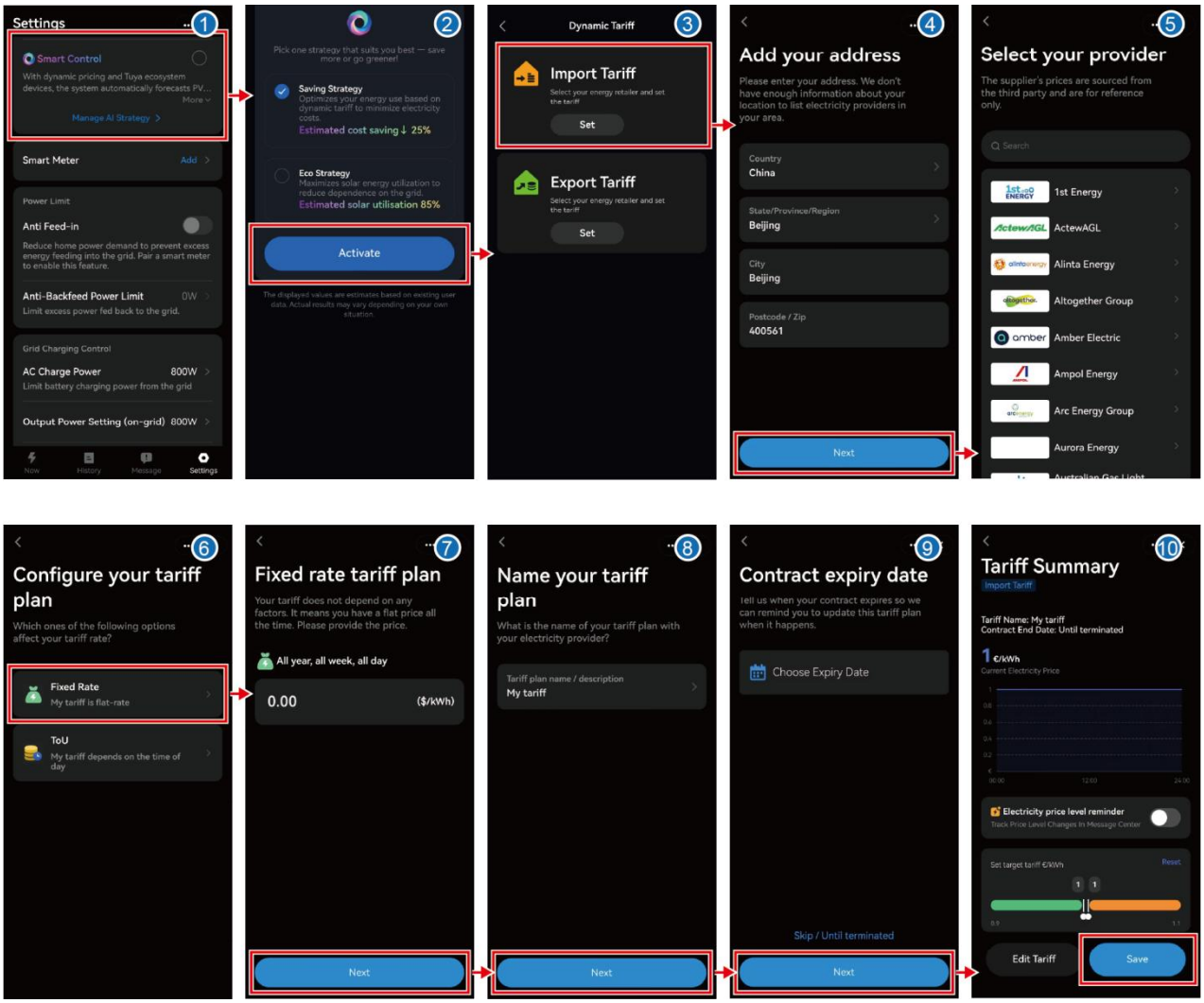
Figure 5-10 Manual ToU settings



Smart Control

Let HEMS to create a smart schedule that considers your tariff, solar forecast, and electricity usage patterns.

Figure 5-11 Smart Control settings

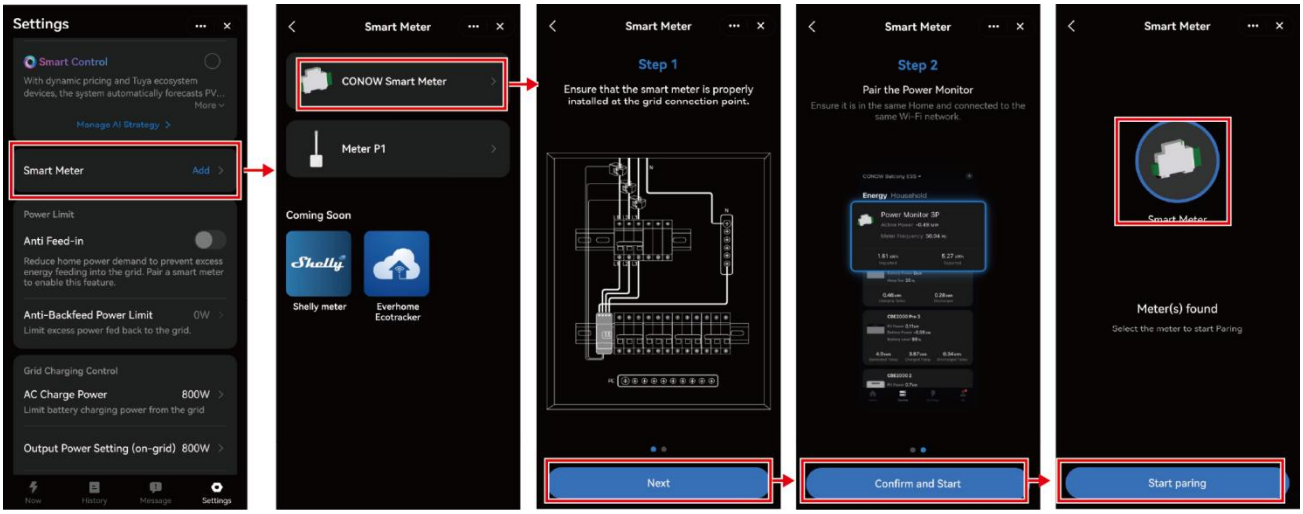


Anti Feed-in Function

NOTICE

- After connecting the smart meter, the anti feed-in function will be automatically enabled.
- You need to first add the smart meter in the app, and then go to the device's advanced settings page to add the smart meter.

Figure 5-12 Enable anti feed-in function



6 Product Maintenance

6.1 Alarm Handling

The following alarm information is at a critical level and requires immediate attention. Non-critical alarm information will automatically recover when the corresponding conditions are met.

Alarm Code	Fault Name	Cause	Solution Measures
0104	Pack Undervoltage	Battery pack total voltage is below the lower limit	Charge the battery immediately. If charging fails, contact support.
0109	Charge Overcurrent Level 1	Charging current exceeds the Level 1 threshold	Try restarting and observe if it recovers. If not, contact support.
0110	Charge Overcurrent Level 2	Charging current severely exceeds the limit	Try restarting and observe if it recovers. If not, contact support.
0111	Discharge Overcurrent Protection	Discharge current exceeded the threshold and was protected	Try restarting and observe if it recovers. If not, contact support.
0112	Discharge Overcurrent Level 2 Protection	Discharge current severely exceeded the limit and forced protection was triggered	Try restarting and observe if it recovers. If not, contact support.
0116	Short-Circuit Protection	Short circuit detected on the DC side and protection activated	Power off immediately and check wiring/load. Restart to test. If not recovered, contact support.
0117	NTC Failure	Temperature sensor error (open/short)	Try restarting and observe if it recovers. If not, contact support.
0118	Cell Failure	A cell failed or is disconnected	Stop using the device and contact support promptly.
0119	AFE Failure	Front-end sampling circuit failure	Power down and contact support for diagnostics.
0120	Charge MOS Failure	Abnormal switching of charge MOS	Stop charging immediately and contact support.
0121	Discharge MOS Failure	Abnormal switching of discharge MOS	Disconnect the load and contact support.
0123	Heater Film Short	Heating circuit shorted	Power off immediately, stop using,

Alarm Code	Fault Name	Cause	Solution Measures
	Circuit		and contact support.
0124	Current Sensor Fault	Abnormal current measurement	Try restarting and observe if it recovers. If not, contact support.
2002	Main-Expansion Communication Error	Communication abnormal between main and expansion controllers	Try restarting and observe if it recovers. If not, contact support.
2003	Inverter Communication Error	Communication interruption or abnormality between the main control and the inverter.	Stop using the device and contact support promptly.
2004	Inverter Failure	Inverter function abnormal or unable to start/output	Stop using the device and contact support promptly.
2005	Meter Lost	Unable to communicate with smart meter	Please check the smart meter and try to reconnect it.
2006	Abnormal Temperature Difference Protection	Abnormal temperature difference detected in the system.	Please check the installation environment and temperature sensors, and ensure the device is operating within the recommended temperature range.
2007	Wi-Fi Connection Fault	Unable to connect to the Wi-Fi network.	Please check the Wi-Fi signal, router settings and password, then try to reconnect.
2008	Grid Disconnected	Grid Disconnected	Please connect to the grid and wait for recovery.
3001	Inverter Output Overvoltage	Device output voltage out of normal range	Please check the parameter settings and observe. If the abnormality persists, please contact after-sales service.
3002	Inverter Output Undervoltage	Device output voltage below specified limits	Please reduce the number of connected appliances and recharge the device, then observe. If the abnormality persists, please contact after-sales service.
3003	Inverter Instantaneous Overcurrent	Instantaneous current value exceeds normal range	Please disconnect appliances connected to the off-grid port and wait for the system to recover. If the abnormality persists, please contact after-sales service.
3004	Excessive DC Component In Output Current	The output terminal is connected to a considerable number of half-wave rectified loads (e.g., certain dimmable	Please reduce the use of such appliances and observe; if the abnormality persists, please contact after-sales service.

Alarm Code	Fault Name	Cause	Solution Measures
		lights, legacy appliances).	
3005	Inverter Output Overcurrent	Equipment output current exceeds normal limits.	Please avoid simultaneously operating multiple high-power appliances and observe the system.
3006	Inverter Output Overcurrent (Hardware Protection)	Device hardware detected overcurrent at output.	Please reduce the number of connected electrical appliances and observe. If the anomaly persists, please contact customer support.
3007	Output Short Circuit	Short circuit at device output port	Please immediately disconnect power, then inspect and remove any faulty appliances or circuits. Reconnect power once normal conditions are restored. If the abnormality persists, please contact after-sales service.
3008	Output Overload (105%)	The total power of connected appliances exceeds 105% of the rated power and persists for more than 10 seconds.	Please reduce the connected electrical appliances to bring the total power below the rated power; disconnect AC, and the system will resume operation after power cycling.
3009	Output Overload (120%)	The total power of connected appliances exceeds 120% of the rated power and persists for more than 1.5 seconds.	Please reduce the connected electrical appliances to bring the total power below the rated power; disconnect AC, and the system will resume operation after power cycling.
3010	Output Overload (200%)	The total power of connected appliances exceeds 200% of the rated power and persists for more than 300 milliseconds.	Please reduce the connected electrical appliances to bring the total power below the rated power; disconnect AC, and the system will resume operation after power cycling.
3011	Device Temperature Too High	Device heat sink temperature exceeds normal range	Please relocate the device to a cool, well-ventilated area and remove any surrounding obstructions. If the anomaly persists, please contact after-sales support.
3012	Temperature Sensor Fault	Internal temperature sensor sampling anomaly	If the abnormality persists, please contact after-sales service.
3017	Instantaneous Grid Overvoltage	Instantaneous grid voltage exceeds permissible range	Please wait for the grid to recover or switch to off-grid mode; if the abnormality persists, please contact

Alarm Code	Fault Name	Cause	Solution Measures
			the power company or after-sales service.
3018	Grid Overvoltage	Grid voltage exceeds permissible upper limit	Please wait for the grid to recover or switch to off-grid mode; if the abnormality persists, please contact the power company or after-sales service.
3019	Grid Overvoltage (Level 2)	Grid voltage exceeds permissible upper limit	Please wait for the grid to recover or switch to off-grid mode; if the abnormality persists, please contact the power company or after-sales service.
3020	Grid Undervoltage	Grid voltage below permissible lower limit	Please appropriately reduce household electricity consumption and wait for the grid to resume operation. If the abnormality persists, please contact the power company or after-sales service.
3021	Grid Under-voltage (Level 2)	Grid voltage below permissible lower limit	Please appropriately reduce household electricity consumption and wait for the grid to resume operation. If the abnormality persists, please contact the power company or after-sales service.
3022	Instantaneous Grid Undervoltage	Instantaneous grid voltage is below the permissible range	Please appropriately reduce household electricity consumption and wait for the grid to resume operation. If the abnormality persists, please contact the power company or after-sales service.
3023	Grid Over-frequency	Grid frequency exceeds permissible upper limit	Please wait for the grid to normalize. If this issue occurs frequently, please contact your power utility or after-sales service.
3024	Grid Over-frequency (Level 2)	Grid frequency exceeds permissible upper limit	Please wait for the grid to normalize. If this issue occurs frequently, please contact your power utility or after-sales service.
3025	Grid Underfrequency	Grid frequency below allowable limit	Please wait for the grid to normalize. If this issue occurs frequently, please contact your power utility or after-sales service.
3026	Grid	Grid frequency below	Please wait for the grid to

Alarm Code	Fault Name	Cause	Solution Measures
	Underfrequency (Level 2)	allowable limit	normalize. If this issue occurs frequently, please contact your power utility or after-sales service.
3027	Power Grid Anomaly	Abnormal grid voltage or current waveform	Please wait for the grid to recover or switch to off-grid mode; if the abnormality persists, please contact the power company or after-sales service.
3028	Grid Phase-lock Anomaly	The device is unable to properly track the grid phase and frequency.	Please wait for the grid to recover or switch to off-grid mode; if the abnormality persists, please contact the power company or after-sales service.
3029	Relay Sticking	The internal relay of the device is unable to operate correctly.	Restart after disconnection. If the abnormality persists, please contact after-sales service.
3030	Grid Disconnection Protection	Grid Disconnected	Please confirm if the grid power supply is normal; the device will automatically reconnect to the grid after power is restored.
3031	Grid Overload	The actual output current on the AC grid-tied side continuously exceeds the rated grid-tied current threshold at the grid terminal.	Please reduce the number of connected appliances and observe. If the abnormality persists, please contact the power company or after-sales service.
3033	Insulation Fault Detected	The insulation impedance of the equipment's AC/DC terminals is continuously below the safety threshold.	If the abnormality persists, please contact after-sales service.
3034	Residual Current Protection	Equipment-to-ground leakage current exceeds safety threshold.	If the abnormality persists, please contact after-sales service.
3036	Busbar Overvoltage	Internal busbar voltage of the device exceeds the upper limit	Please power off and restart the device, and wait for it to recover. If the abnormality persists, please contact after-sales service.
3037	Busbar Overvoltage (Level 2)	Internal busbar voltage of the device exceeds the upper limit	Please power off and restart the device, and wait for it to recover. If the abnormality persists, please contact after-sales service.
3038	DC Bus Undervoltage	Internal busbar voltage of the equipment is below the	Please power off and restart the device, and wait for it to recover. If

Alarm Code	Fault Name	Cause	Solution Measures
		upper limit.	the abnormality persists, please contact after-sales service.
3039	Busbar Undervoltage (Level 2)	Internal busbar voltage of the equipment is below the upper limit.	Please power off and restart the device, and wait for it to recover. If the abnormality persists, please contact after-sales service.
3041	Main Power Supply Undervoltage	Main power supply under-voltage	Please cycle the power. If the abnormality persists, please contact technical support.
3044	Communication Fault	Internal device communication fault	Wait for the device to automatically recover; if the abnormality persists, please contact after-sales service.
3046	Fan Fault	Cooling Fan Fault	After powering off and restarting, please wait for the device to automatically recover. If the abnormality persists, please contact technical support.
3061	Battery Overvoltage	Battery voltage exceeds upper limit	Please wait for automatic recovery; if the abnormality persists, please contact after-sales service.
3062	Battery Overvoltage (Level 2)	Battery voltage exceeds upper limit	Please wait for automatic recovery; if the abnormality persists, please contact after-sales service.
3063	Radiator Over-temperature	Device heat sink temperature exceeds normal range	Please relocate the device to a cool, well-ventilated area and remove any surrounding obstructions. If the temperature continues to rise, power off the unit and restart it once the temperature has normalized.
3064	Radiator Temperature Sampling Fault	Internal temperature sensor sampling anomaly	If the abnormality persists, please contact after-sales service.

6.2 Warranty Exclusions

We do not accept any warranty claims for damages arising from the following reasons:

1. You cannot provide a valid purchase certificate.
2. Damage resulting from major natural disasters (e.g., earthquakes, tsunamis, typhoons, floods) or significant social events (e.g., war, riots, government intervention).
3. Damage caused by accidental incidents or improper usage.
4. Issues arising from incorrect installation, deployment, testing, configuration, or

operation contrary to the instructions provided in the user manual.

5. Damage resulting from destroying the anti-tamper sticker or disassembling/modifying the product.
6. Products purchased from unauthorized distributors or retailers.
7. Products that have not been charged and discharged for more than six months will not be covered under warranty.

6.3 Routine Maintenance

Maintenance Requirements

To ensure that the balcony energy storage system can operate stably for a long time, it is recommended that it be routinely maintained as described in this section.

Inspection contents	Inspection method	Maintenance interval
System cleaning	Clean the battery modules and PV panel surfaces regularly to remove dust or dirt.	Once every six months to once a year
Product appearance	• Observe whether there is any damage or deformation in the product's appearance. • Observe the product for abnormal noise during operation. • Check whether the parameters of the product are set correctly when the system is running.	1 time every 6 months
Electrical connection	• Check whether the cable connection is detached or loose. • Check the cables for damage. • Check whether the interface terminals and waterproof cover are loose or detached.	Half a year after the first adjustment, and once every six months to one year thereafter.
Grounding reliability	Check whether the grounding cable is reliably grounded.	Half a year after the first adjustment, and once every six months to one year thereafter.

7 Emergency Handling

If an accident (including but not limited to the following) occurs on the site, ensure the safety of onsite personnel first and contact the Company's service engineers.

Battery Falling or Strong Impact

DANGER

If a battery is dropped or violently impacted during installation, it may become faulty and must not be used. Using a faulty battery will cause safety risks such as cell leakage and electric shock.

- If a battery has obvious damage or abnormal odor, smoke, or fire occurs, evacuate the personnel immediately, call emergency services, and contact the professionals. The professionals shall use fire extinguishing facilities to extinguish the fire under safety protection.
- If the appearance is not deformed or damaged, and there is no obvious abnormal odor, smoke, or fire, contact the professionals to transfer the battery to an open and safe place, or contact a recycling company for disposal.

Flood

- Power off the system if it is safe to do so.
- If any part of the batteries is submerged in water, do not touch the batteries to avoid electric shock.
- Do not use batteries that have been soaked in water. Contact a battery recycling company for disposal.

Smoke or Fire

DANGER

- In case of smoke or fire, if there is a large amount of smoke in the battery storage room, do not open the door to prevent explosion risks and toxic gas inhalation.
- If a lithium battery catches fire, flammable and toxic gases will be released. Therefore, during the extinguishing process, all firefighters must wear a full set of protective suits, including flame retardant/fireproof clothing, air-purifying respirator or breathing apparatus, firefighter helmet and mask, and insulated shoes.
- A lithium battery fire may last for several hours. After it is extinguished, the fire may

be reignited by the heat generated from residual ingredients due to internal cell damage. After an open flame is extinguished, continue spraying water to cool the batteries. Wait until the battery temperature drops to room temperature±10°C and monitor for 24 hours to ensure that there is no sign of temperature rise before removing the batteries. Move the removed batteries to a safe place (an open and safe outdoor place is recommended), and then place the batteries in the fire sandbox or salt water.

If an ESS emits smoke or catches fire, household members should not dispose of the ESS by themselves. Follow the processes in the flowchart below.

The detailed description is as follows:

1) If batteries emit smoke or catch fires, notify all household members to evacuate immediately.
2) After evacuating to a safe outdoor area (20 m away is recommended), call the fire department immediately. While waiting for the fire rescue, contact the installer and technical support.
3) Firefighters arrive at the site and extinguish the fire.
4) After the fire is extinguished, set up a warning sign to isolate the area and spray water to reduce the battery temperature to room temperature±10°C. (You can use an infrared thermometer or thermal imager.)
5) Observe the batteries for 24 hours and ensure that there is no sign of temperature rise before removing the batteries. (Only professionals are allowed to remove the batteries.)
6) After removing the batteries, move them to a safe place (an open and safe outdoor place is recommended), and place them in the fire sandbox or salt water. These operations must be performed by professionals who must take insulation measures, such as wearing insulated gloves, insulated shoes, and personal protective equipment (PPE).
7) After the battery fire is extinguished, if there is no potential risk onsite, the battery must be handled and recycled by professionals in accordance with local laws and regulations.

Battery Leakage

⚠ DANGER

- The leaked electrolyte is a colorless viscous liquid that may evaporate rapidly and is flammable, turning into white salt residues. The electrolyte has a pungent smell and is corrosive, irritating to eyes and skin. Avoid contact with it.
- When handling chemical leakage incidents, professional maintenance personnel and firefighters must wear necessary protective equipment such as air-purifying respirators and other PPE.

For household members, if battery leakage occurs, you are advised to follow the following steps:

1) Set the power button to OFF.
2) Indoor installation scenario: Indoor personnel should quickly evacuate, open the doors, windows, and ventilation devices of the room, and turn off indoor fire sources during the evacuation. Outdoor installation scenario: Notify outdoor personnel to stay away from the site and set up a warning sign to isolate the area.
3) After evacuating to a safe area, notify professional maintenance personnel or firefighters to handle the emergency.

Avoid contact with electrolytes or released gases. In the case of contact, take the following measures:

- Inhalation: Evacuate from contaminated areas, get fresh air immediately, and seek immediate medical attention.
- Eye contact: Immediately wash your eyes with water for at least 15 minutes, do not rub your eyes, and seek immediate medical attention.
- Skin contact: Wash the affected areas immediately with soap and water and seek immediate medical attention.
- Intake: Seek immediate medical attention.

Conclusion and Follow-Up Procedure

- After a battery fire is extinguished and there is no potential risk onsite, professionals handle and recycle the batteries after wearing insulated gloves, insulated shoes, and other PPE in accordance with local laws and regulations. After an accident occurs, the manufacturer can identify the damage to the device and replace the device according to the corresponding procedure to restore the ESS.
- After a battery fire is extinguished, the fire-extinguishing water may pollute the surrounding soil and water source. In this case, notify the related environmental protection department for evaluation and handling.