PowerHome Series User Manual

Document No: RD-SUN Series-Y-04

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SUN Series

Type	Parameter
Product Name	Inverter
Product Model	SUN Series
Prepared by	QC. Yan
Examined by	SP.Xie/YF.Cao
Approved by	-

Revision Records

Version	Date	Modify the content	Revised by
V1.0	September 6,2023	First revision	QC. Yan
V1.1	July 23 , 2024	Update parameters	XIE
V1.2	December 12, 2024	Update parameters (page36,37)	QC. Yan
V1.3	January 9, 2025	Update the content of the touch screen	QC. Yan
V1.4	April 25, 2025	Updated the content of page 51,52	QC. Yan
V1.5	August 21, 2025	Overall content update	QC. Yan
V1.6	September 2, 2025	Overall content update	QC. Yan

Catalogue

Preface

About this manual

This manual describes the installation, connection,use of LCD, commissioning and maintenance etc. of Inverter. Please first read the manual and related documents carefully before using the product and store it in a place where installation, operation and maintenance personnel can access it at any time. The illustration in this user manual is for reference only. This user manual is subject to change without prior notice. (Specific please in kind prevail.)

Target group

Inverter must be installed by professional electrical engineers who have obtained relevant qualifications.

Scope

This manual applies to the following inverters:

SUN 3000S-E/I SUN 3600S-E/I SUN 4000S-E/I SUN 4600S-E/I SUN 5000S-E/I

Safety instructions

The following safety instructions and general information are used within this user manual.

DANGER	Indicates an imminently hazardous situation which, if not correctly followed, will result in serious injury or death.
WARNING	Indicates a potentially hazardous situation which, if not correctly followed, will result in serious injury or death.
CAUTION	Indicates a potentially hazardous situation which, if not correctly followed, could result in moderate or minor injury.
NOTICE	Indicates a potentially hazardous situation which, if not correctly followed, could result in equipment failure to run, or property damage.
NOTE	Call attention to important information, best practices and tips: supplement additional safety instructions for your better use of the ESS inverter to reduce the waste of you resource.

1. Safety

Before using the Inverter, please read all instructions and cautionary markings on the unit and manual. Keep the instructions where you can take them easily.

Our Inverter strictly conforms to relevant safety regulations in design and testing. Local safety regulations must be followed during installation, operation, and maintenance. Incorrect operation work may cause injury or death to the operator or a third party and damage to the inverter and other properties belonging to the operator or a third party.

Symbols Use

Safety Symbol	Description
	Danger of high voltage and electric shock! Only qualified personnel may perform work on the inverter.
	Danger of high voltage. Residual voltage in the inverter need 5 mins to discharge, wait 5 mins before operation.
	Danger of hot surface
	Watch out for danger
	Environmental Protection Use Period
	Refer to the operating instructions
	Product should not be disposed as household waste.
	Grounding terminal

Safety Precaution

● Installation, maintenance and connection must be performed by qualified personnel, in compliance with local electrical standards, wiring rules and requirements of local power authorities and companies.

● It is forbidden to carry out installation, wiring and other operations with power on. Before installation,DC input and AC output of the inverter must be terminated at least 5 minutes before performing any installation or maintenance. For equipment that needs to be grounded, a protective ground wire must be installed first during installation. When dismantling the device, the protective earth must be removed last.

● The temperature of some parts of the inverter may exceed 60℃ during operation. To avoid being burnt.

● Ensure children are kept away from inverters.

● Don’t open the front cover of the inverter. Apart from performing work at the wiring terminal (as instructed in this manual), touching or changing components without authorization may cause injury to people, damage to inverters and annulment of the warranty.

● Appropriate measures must be taken to prevent damage to the inverter from static electricity, as it may cause harm to electronic components. Failure to do so could result in damage to the inverter and voiding of its warranty.

● Ensure the output voltage of the proposed PV array is lower than the maximum rated input voltage of the inverter; otherwise the inverter may be damaged and the warranty annulled.

● When exposed to sunlight, the PV array generates a dangerously high DC voltage. Please follow our instructions carefully to avoid any potential danger to life.

● PV modules should have an IEC61730 class A rating.

● If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

● Before maintenance, the inverter must be completely isolated. This involves switching off the PV switch, disconnecting the PV terminal, disconnecting the battery terminal, and disconnecting the AC terminal.

● Prohibit to insert or pull the AC and DC terminals when the inverter is running.

● Don't connect ESS inverter in the following ways：
BACKUP Port should not be connected to grid.
BACKUP Port should not be connected in parallel.
The single PV panel string should not be connected to two or more inverters.

● When a battery fault occurs, the temperature may higher than the burn threshold of touchable surface. Please do not touch it.

● Please do not short circuit battery terminals as it may cause fire.

● Before connecting or disconnecting battery terminals, please disconnect charging power, and make sure no-power at the power supply with multimeter.

● Please do not place any flammable items around the equipment. Please do not place the battery module in water or other liquids.

● Battery removal, alteration or sabotage is strictly prohibited, to prevent battery from leaking, overheat, on fire or explosion.

WARNING

There is a risk of injury when lifting or lowering the equipment.

The inverter and battery are very heavy. If the inverter or battery is lifted or dropped incorrectly during transportation or when attached to or removed from the wall, there is a risk of injury.

Lifting and transporting the inverter and battery must be done by two or more people.

WARNING

Storage

Store in a dry environment, avoid any form of liquid contact, the recommended temperature range is -20° C to +60° C.

Cool: Avoid direct sunlight and high temperature environment.

Ventilation: The storage area should be well ventilated.

Place it on a stable and non-vibrating surface, off the ground to avoid moisture or flooding.

Keep away from flammable and explosive items.

WARNING

transportation

It is recommended to use the original packaging box.

The inside of the carton should be filled with high-strength cushioning materials such as pearl cotton or customized foam. Make sure that the box is firmly fixed and cannot shake.

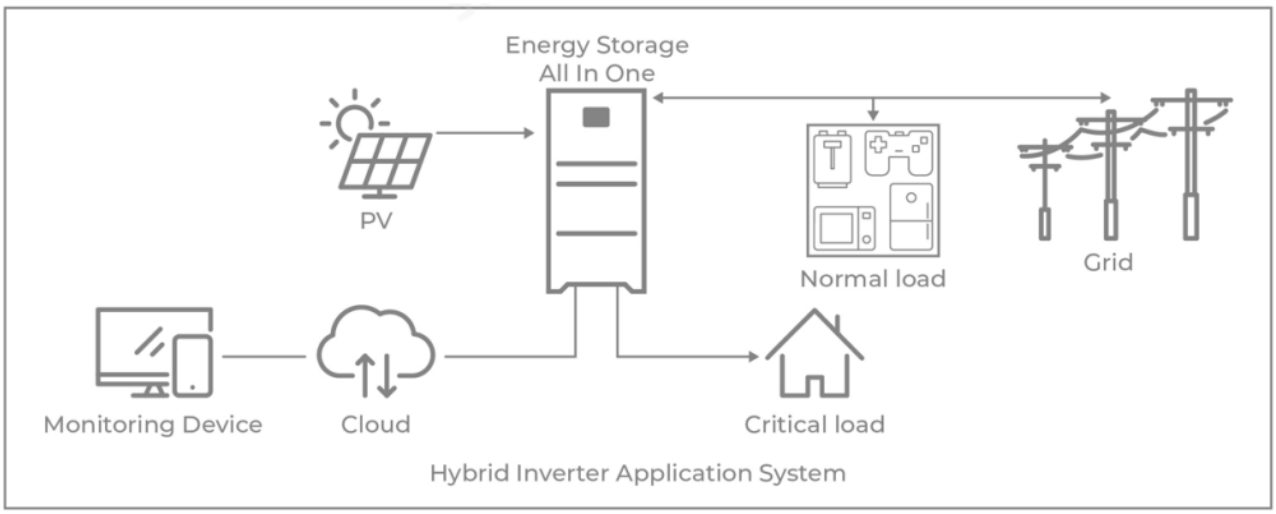
Try to handle it with care, avoid any falling, throwing, rolling, severe collision or vibration, and place it steadily.

2. Product Introduction

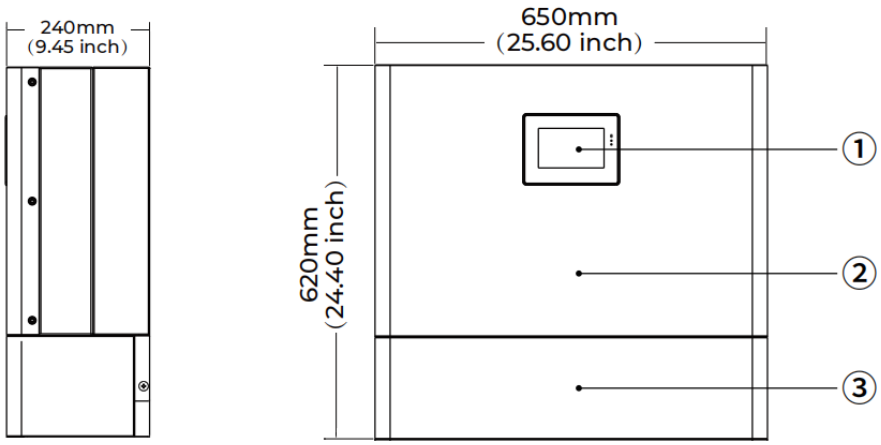
2.1 Overview

The inverter can be used to optimize self-consumption, store energy in the battery for future use, or feed into the public grid. The work mode depends on PV energy and user preferences.It can provide power for emergency use during the grid lost by using the energy from battery and inverter (generated from PV).

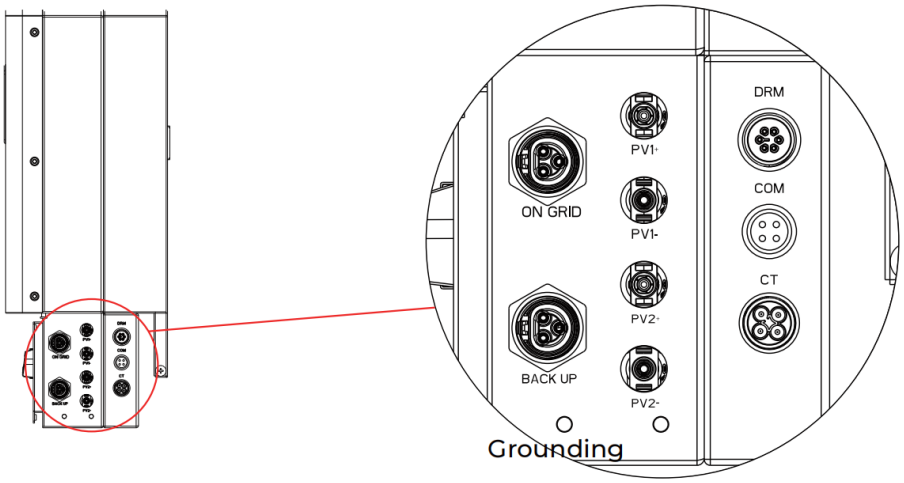
The inverter has not been tested to AS/NZS 4777.2:2020 for multiple inverter combinations and/or multiple phase inverter combinations.



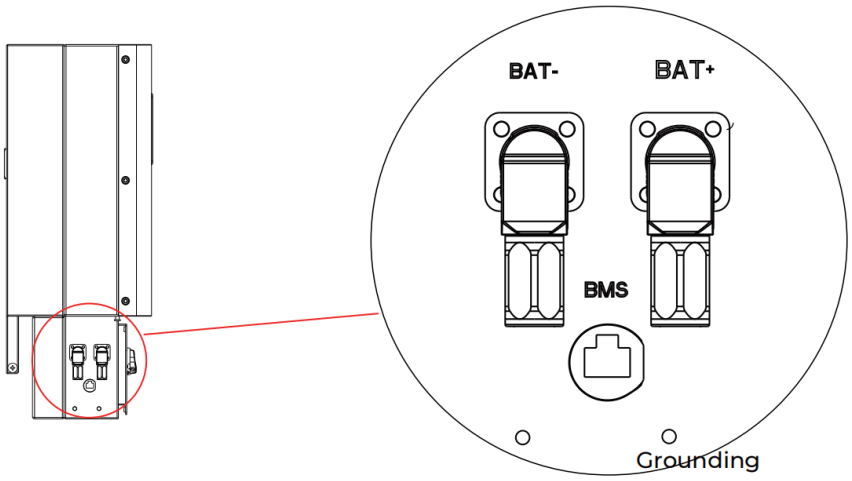
2.2 Product Size and product appearance



Item	Description
①	LCD
②	Hybrid inverter
③	Connection box

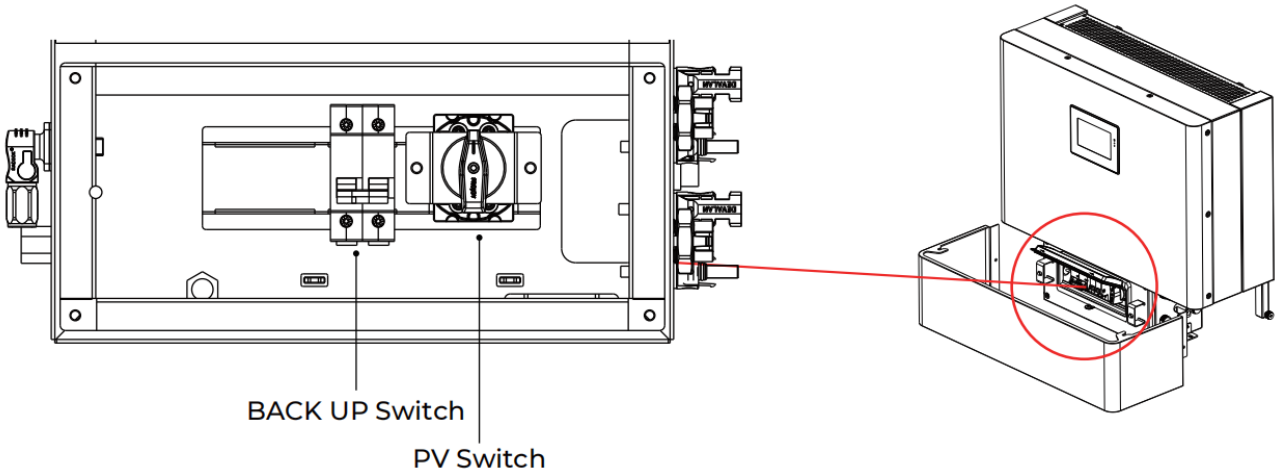


NO.	Object	Description
1	PV1, PV2	PV input
2	On GRID	Grid Connection
3	BACK UP	BACK UP Output
4	DRM	DRM Connection
5	COM	WIFI Connection
6	CT	CT Connection
7	Grounding	grounding port



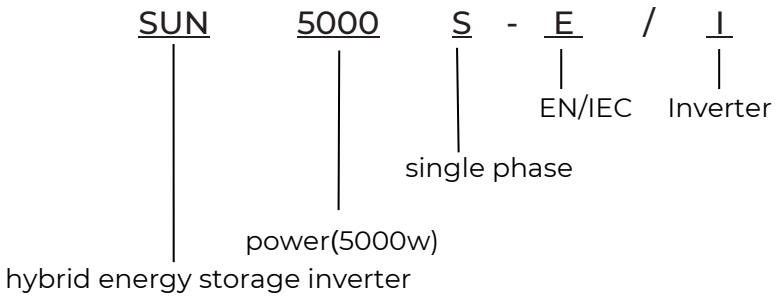
NO.	Object	Description
1	BAT+	Battery Connection
2	BAT-	Battery Connection
3	BMS	BAT BMS
4	Grounding	grounding port

Notice: A grounding port on the left and right sides of the inverter power distribution box. User can select one for grounding.



2.3 Model Definition

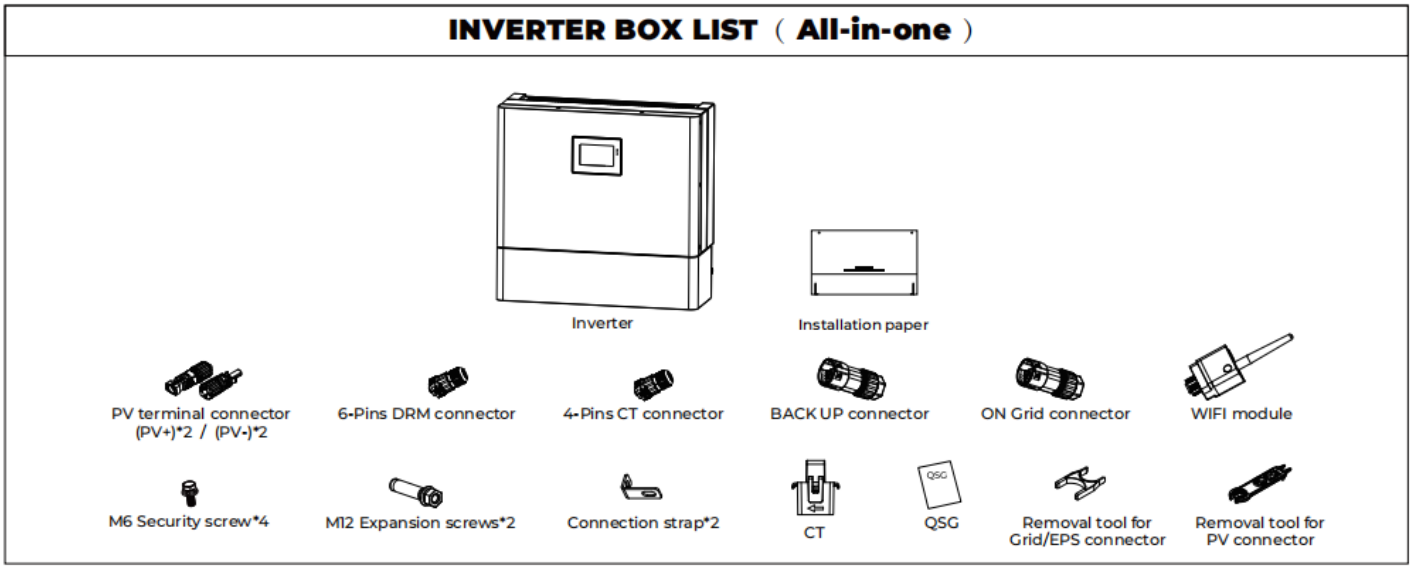
The letters in the product model have the specific information.(Take SUN 5000S-E/I as example.)



3. Installation

3.1 Packing List

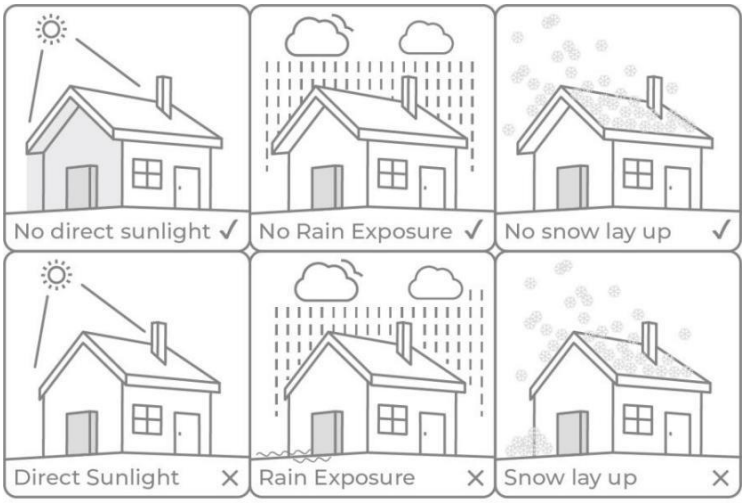
After unpacking, please check the following packing list carefully for any damage or missing parts. If any damage or missing parts occurs, contact the supplier for help.



3.2 Selecting the Mounting Location

3.2.1 Installation environment requirements

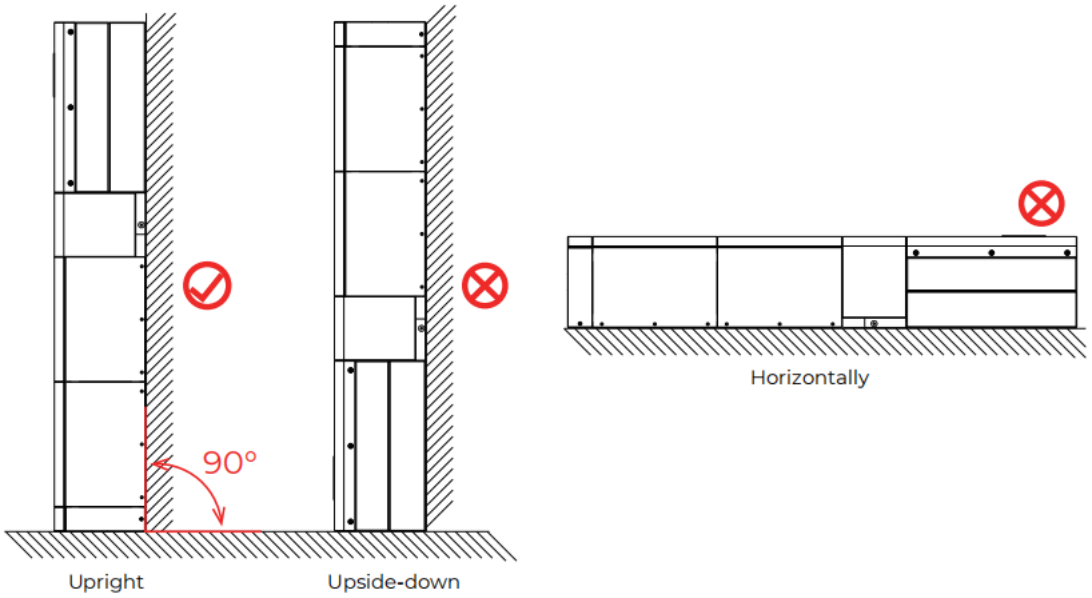
- The storage inverter protection class is IP65 and can be mounted indoors or outdoors.
- The mounting location must be inaccessible to unrelated personnel, as the enclosure and heat sinks are extremely hot during operation.
- Do not install the storage inverter in areas that contain highly flammable materials or gases.
- To ensure optimum operation and long service life, the ambient temperature must be below 50℃.
- The storage inverter must be mounted in a well ventilated environment to ensure good heat dissipation.
- To ensure long service life, the storage inverter must not be exposed to direct solar irradiation, rain, or snow. It is recommended that the inverter be mounted in a sheltered place.
- The carrier where the inverter is mounted must be fire-proof. Do not mount the inverter on flammable building materials.
- Do not install the inverter in a rest area since it will cause noise during operation.
- The installation height should be reasonable and make sure it is easy to operate and view the display.
- Product label and warning symbols shall be clear to read after installation.
- Please avoid direct sunlight, rain exposure, show lay up install.



3.2.2 Installation Angle Requirements

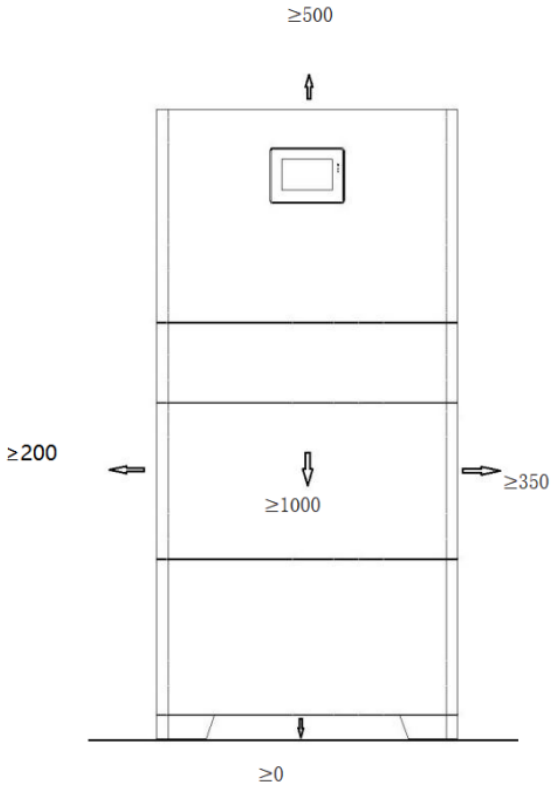
Recommended inverter installation angle: vertical.

Do not turn the inverter upside down, or install it horizontally.

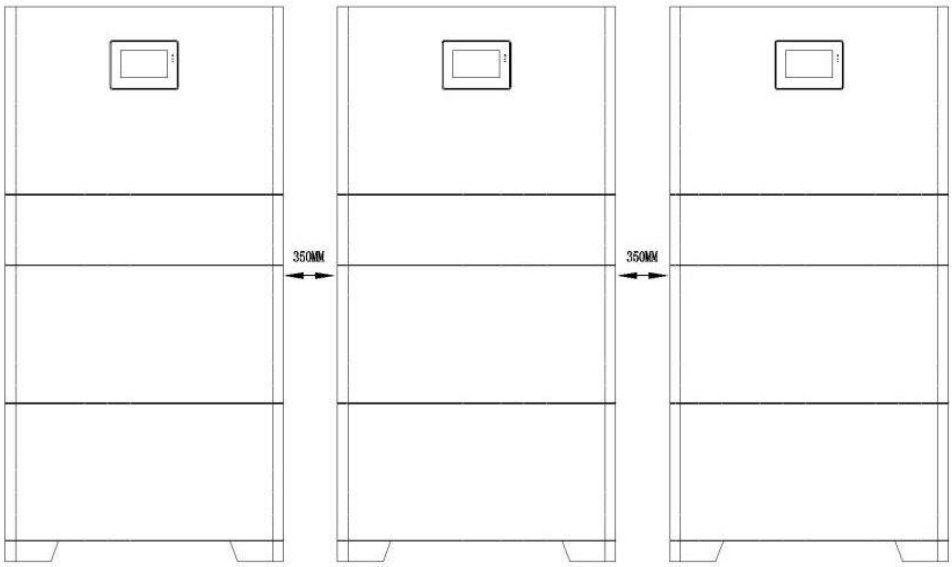


3.2.3 Installation Space Requirements

To ensure the Inverter normally and easy to operate, there are requirements on available spaces of the Inverter, eg. to keep enough clearance. Refer to the following figures.



Above: 500mm
Below: 0mm
Front: 1000mm
Left side:200mm
Right side: 350mm



3.3 Installation

1. Install the inverter

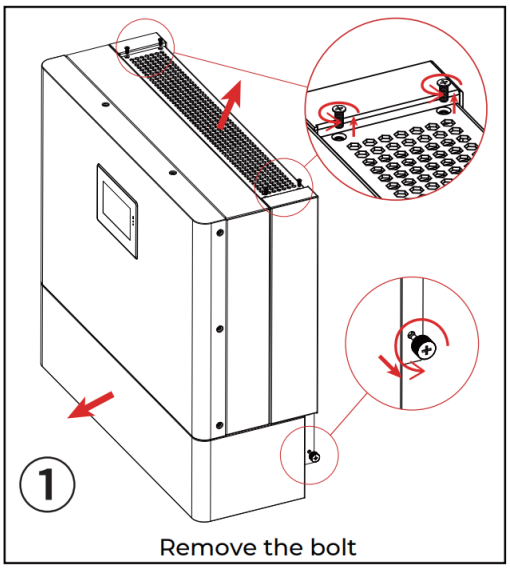
(1)Loosen the M4 loose bolt at both ends of the upper cover of the distribution box of the inverter and remove the inverter dust cover bolt (the removed bolt should be retained), and then remove the dust cover and protective cover.

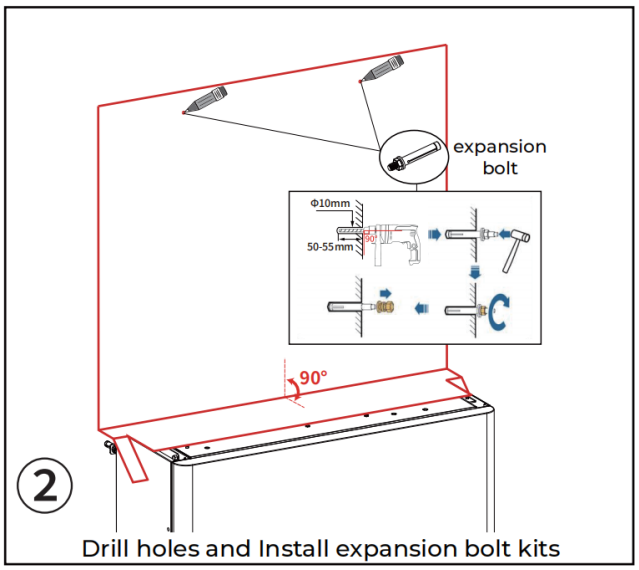
(2)Place the installation paper on the battery, mark the installation hole on the wall, drill a hole (diameter 10mm, depth 50-55mm) at the marked position, put the expansion bolt kit into the hole, and tighten the nut with a torque of 15N.m , then loosen the nut in the opposite direction, and remove the nut and washer.

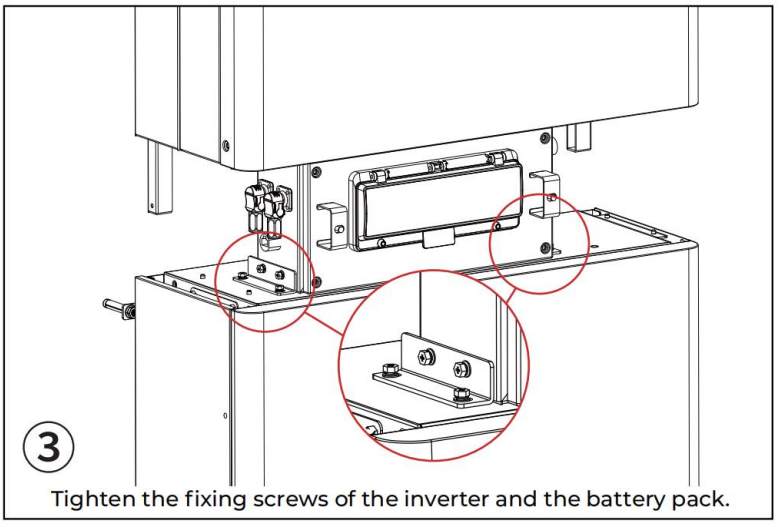
(3)Place the inverter on the battery pack,Tighten the fifixing screws of the inverter and the battery pack.（torque 6.5Nm）

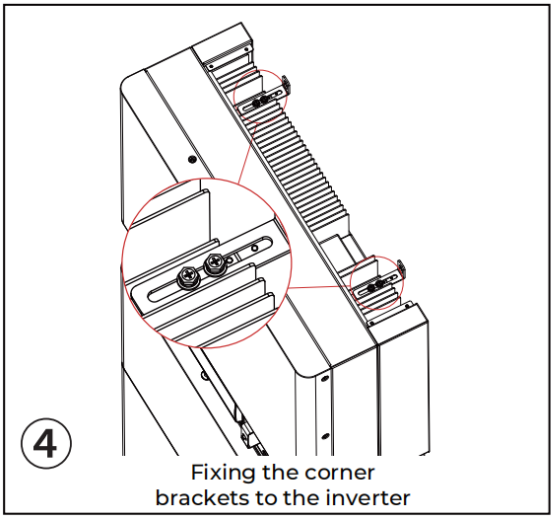
(4)Fixing the corner brackets to the inverter.（torque 6.5Nm）

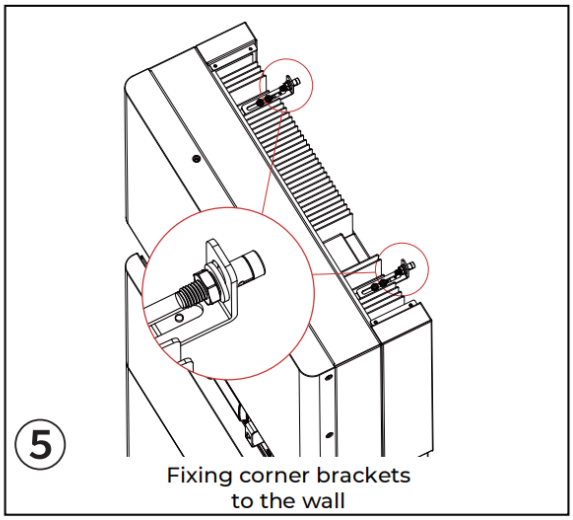
(5)Fixing corner brackets to the wall.（torque 6.5Nm）



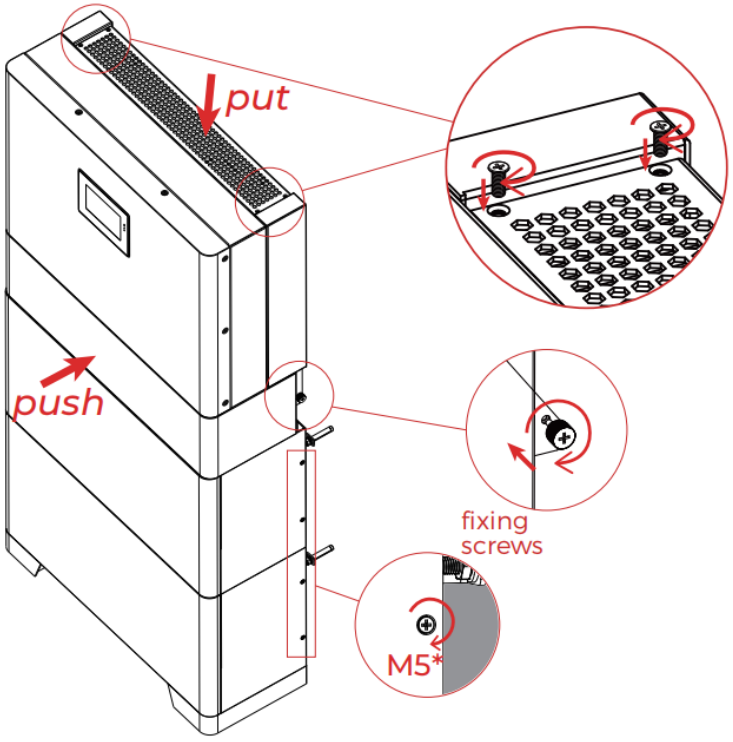








2. Fix the protective cover on the top and bottom of the inverter with bolts; fix the right panel of the battery pack with bolts.(after completing the all-in-one wiring)

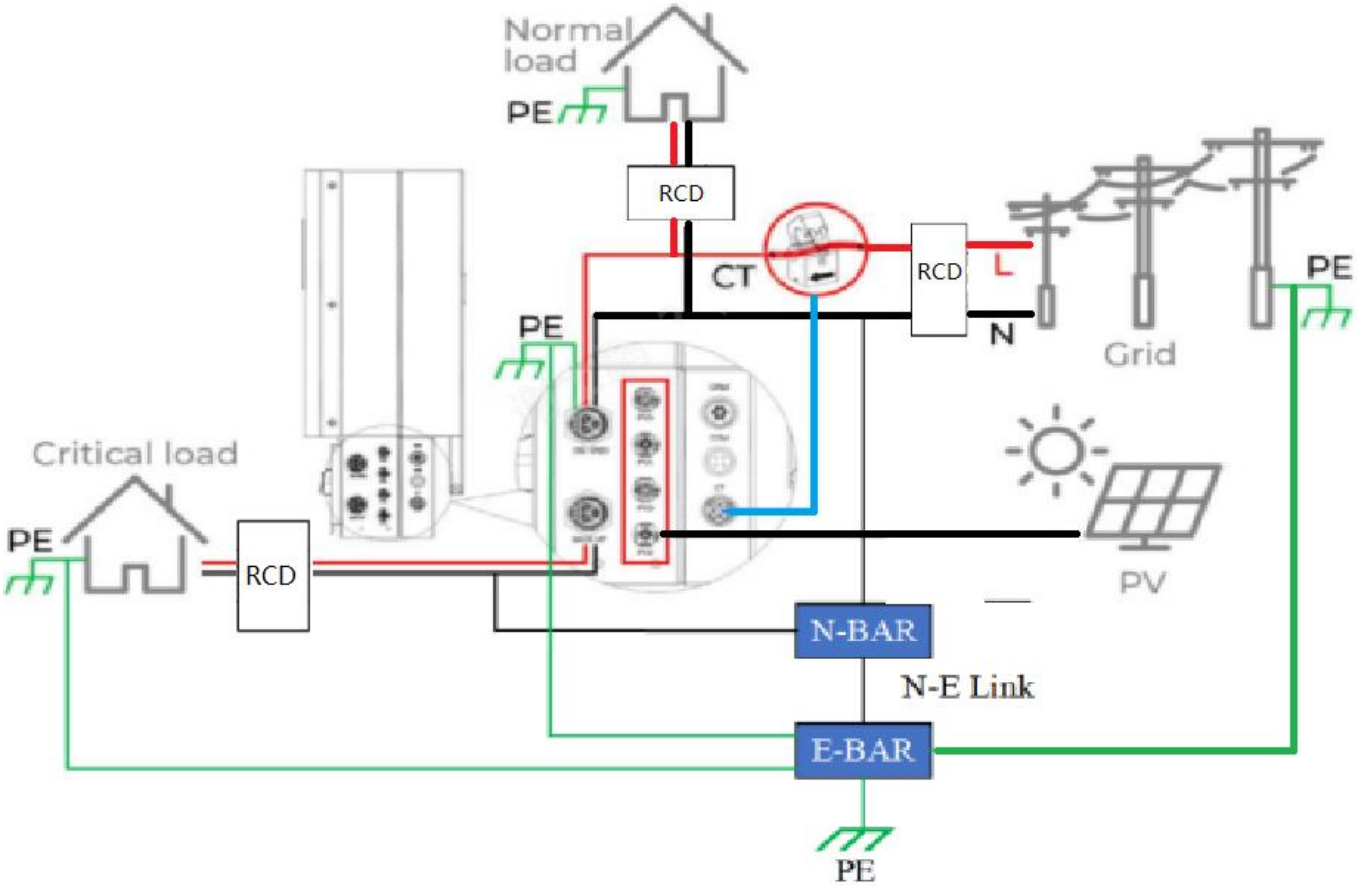


4. Electrical Connection

RCD Specifications requirements	
RCD Type	B
Action current	30mA
Rated continuous current	≥30Aa.c.
Rated voltage	L/N/PE≥230Va.c.

This chapter shows the details connection of Inverter. (Before wiring, please close the circuit breaker of the battery in sequence)

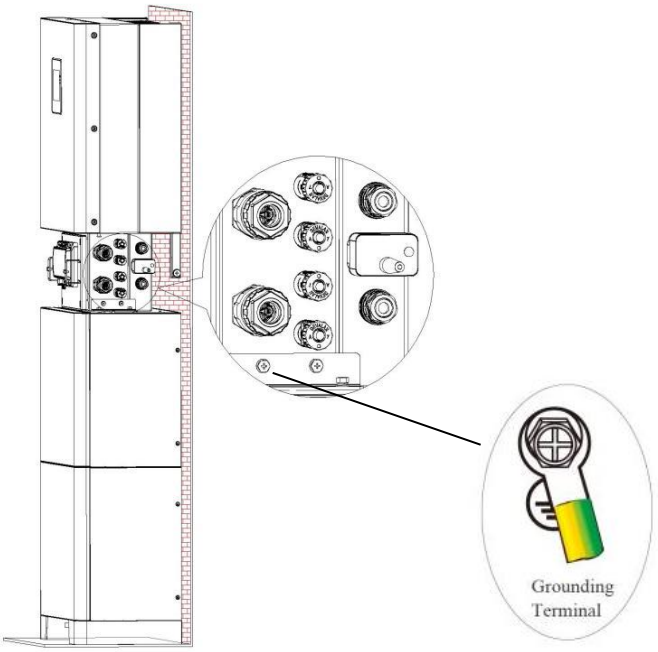
Inverter system connection diagram:



DANGER	Ensure that inverter and all cables to be installed are completely powered off during whole installation and connection. Otherwise, fatal injury can occur due to the high voltage caused from AC and DC cables.

4.1 Grounding

A protective earth (PE) terminal is equipped on the side of the inverter.use an M6 bolt to fix the system ground wire（6.5Nm torque）. Please be sure to connect this PE terminal to the PE bar for reliable grounding. AWG 10 or 12 yellow green lines are recommended.



The inverter must be grounded; otherwise, there may be electric shock risk.

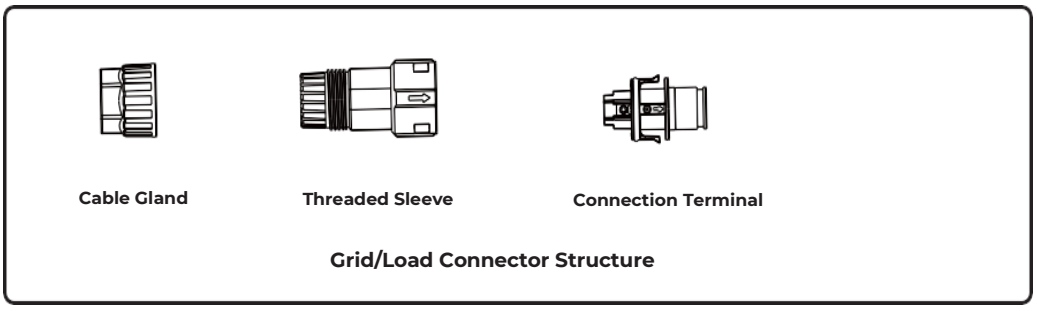
⚠ WARNING	If the positive pole or negative pole of the PV array is required to be grounded, then the inverter output (to AC grid) must be isolated by transformer in accordance with IEC62109-1, -2 standards.

4.2 Grid/Load Connection

Grid/Load connection please refer to below.

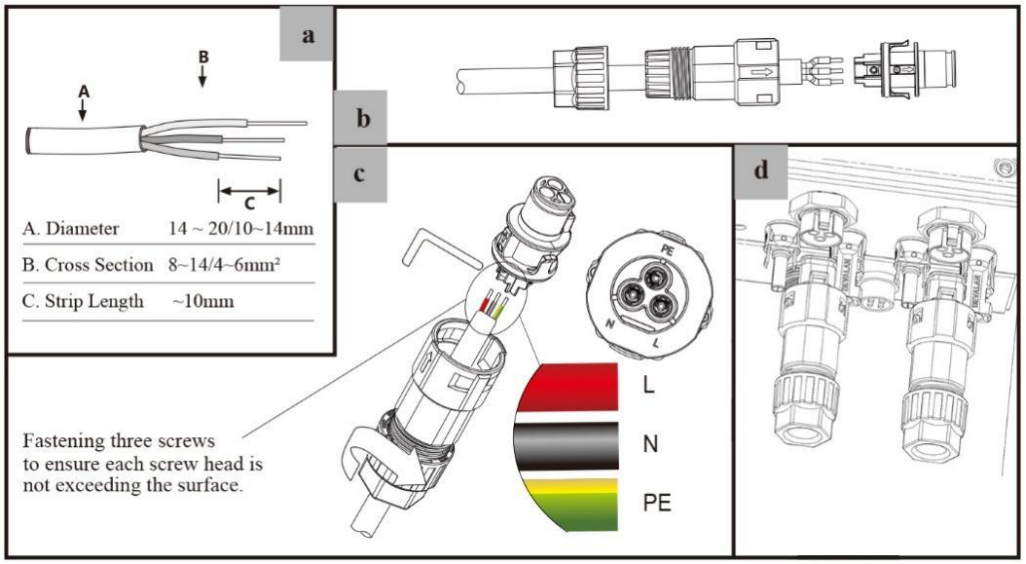
Step 1: Assemble and Connect the AC

a. Check the grid voltage and compare it with the permissive voltage range (Please refer to technical data).
b. Select suitable cables and cold-pressed terminals, remove the insulation layer of 15 mm at the end of the wire.
c. Unscrew the rotary nut from the threaded sleeve, the rotating nut and thread sleeve are then passed through the AC line.
d. Insert the crimp leads L, N and PE into the corresponding terminals, and tighten the screws with a hexagon wrench screwdriver(0.6±0.2Nm torque). Ensure all wires are securely in place in the screw terminals of the bushing insert.
e. Assemble plug housing, as shown in the image below， push the adapter and housing with your hand until you hear or feel a click.



Grid/Load Connector Structure

Screw for AC connector



This part in this manual only describes the connection on inverter side. If you need more detailed connection information about the battery side, please refer to the manual of the battery you are using.

4.3 PV Connection

PV connection please refer to below.

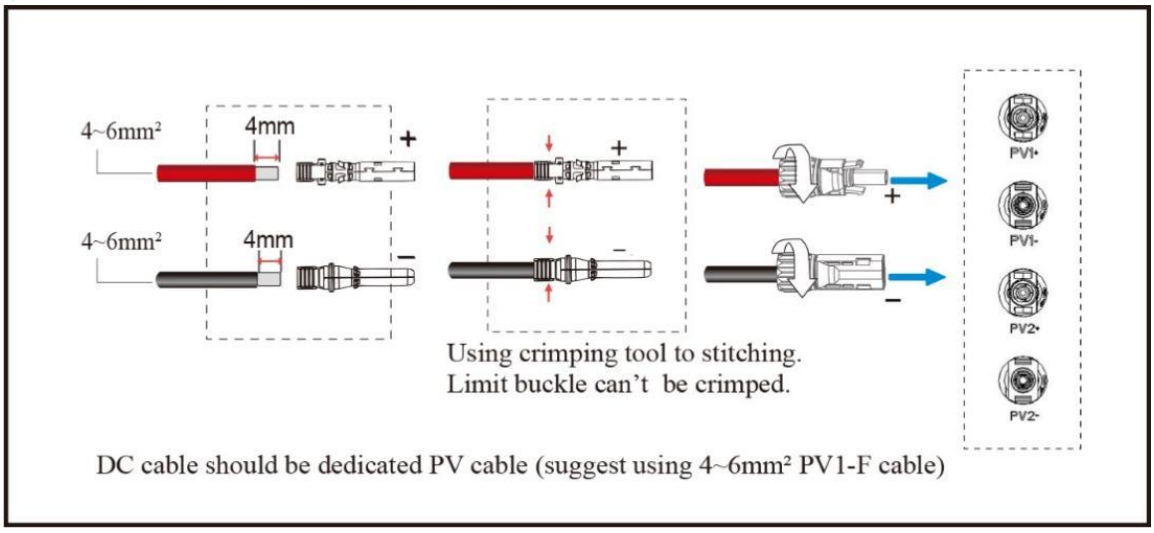
The hybrid inverter can be connected in parallel with 2 strings of photovoltaic modules, with a power of 4.6KW-7KW (the power depends on the inverter specifications). Select PV modules with excellent function and reliable quality. Open-circuit voltage of module arrays connected in series should be <Max. DC input voltage; operating voltage should be conformed to MPPT voltage range.

Connection Steps:

Step1. Checking PV module, ensure the PV+ and PV- ports of the PV string are correct.

Step2. Separate PV connector to ensure PV is in open circuit state.

Step3. Select suitable cables and cold-pressed terminals, remove the insulation layer of 4 mm at the end of the wire, and then press the cables and terminals connecting.



NOTICE:

Before connection the PV panels, make sure the plug connector have the correct polarity. Incorrect polarity could permanently damage the inverter.

PV array shouldn't be connected to the grounding conductor.

PV earth fault:

When the inverter is turned on, the PV insulation impedance to ground is detected. The detection circuit of the inverter calculates the impedance between PV+ and the earth and between PV- and the earth.When the impedance value is less than 19.3kΩ, the inverter ALARM light will light up in red, and the fault "Insulation earth impedance fault" can be read through the APP and the display . The inverter will shut down due to faultuntil it detects that the resistance of PV to ground is greater than 19.3kΩ. The inverter fault is cleared and it will start running normally.

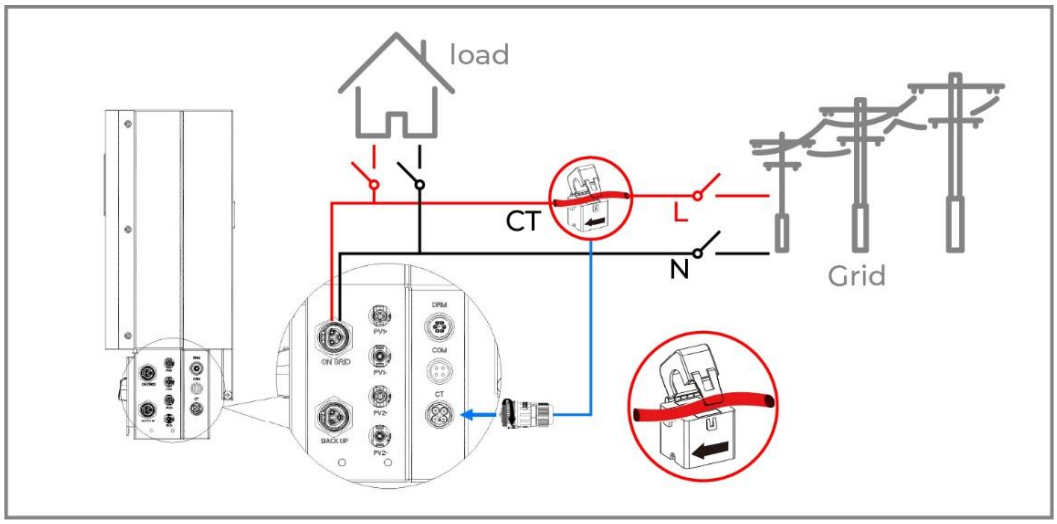
4.4 CT Connection

A)Before the transformer is connected to any equipment, please ensure that the circuit is power off to prevent clicking.

B)Connect the black and white line of CT output signal line to the "CT" end of the inverter.

C)The CT is stuck on the cable under test, and the location of the CT is referred to the system block diagram Basic features section.

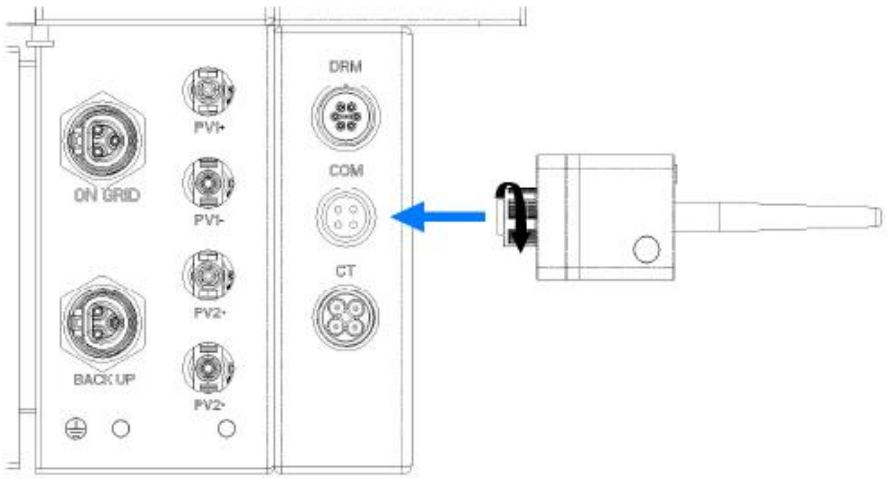
*Note: when the reading of the load power on the LCD is not correct, please reverse the CT arrow.



NOTE	The current direction from grid to inverter is defined as positive and current direction from inverter to grid is defined as negative.

4.5 WIFI Connection(optional)

Inverter provides a WIFI port which can collect data from inverter and transmit it to monitoring-website by WIFI.



Step1. Plug WIFI into "COM" port at the bottom of the inverter.

Step2. Build the connection between inverter and router.

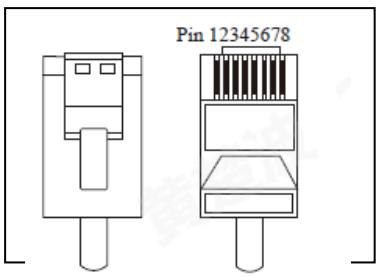
Step3. Create a user account online. (Please check the WIFI user manual for more details).

4.6 BMS Connection

BMS PIN Definition

Communication interface between inverter and battery is CAN with a RJ45 connector.

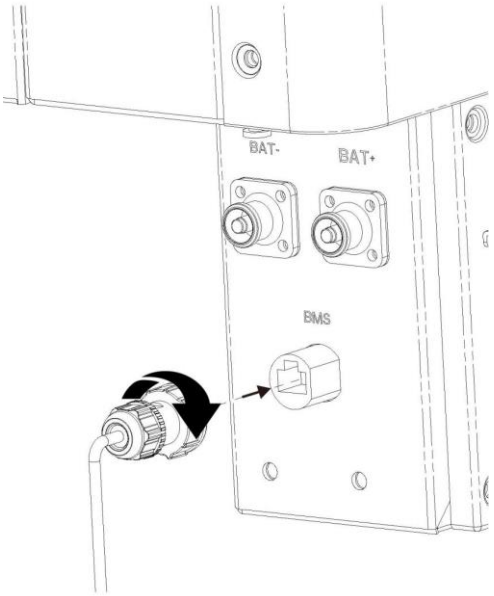
The wiring sequence of the crystal head conforms to the 568B standard: orange white, orange, green white, blue, blue white, green, brown white and brown.



PIN	1	2	3	4
Function Description	X	X	X	BMS-CANH
PIN	5	6	7	8
Function Description	BMS-CANL	X	X	X

This manual describes the cable sequence of the inverter. For details about the cable sequence of the battery, see the manual of the battery you used.

Refer to the following steps:

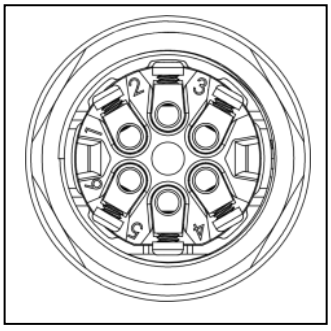


4.7 DRMs Connection

DRM is provided to support several demand response modes by emitting control signals as below.

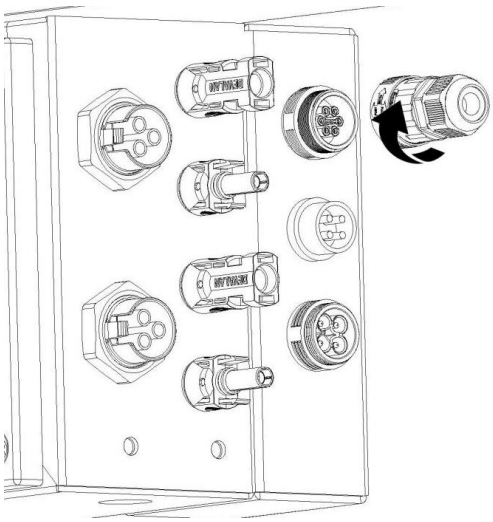
Note: Only PIN6(DRM0) is available now, and other PIN functions are being developed.

RJ45 Terminal Configuration of DRMs



PIN	1	2	3
Function Description	DRM1/5	DRM2/6	DRM3/7
PIN	4	5	6
Function Description	DRM4/8	REF GEN/0	COM LOAD/0

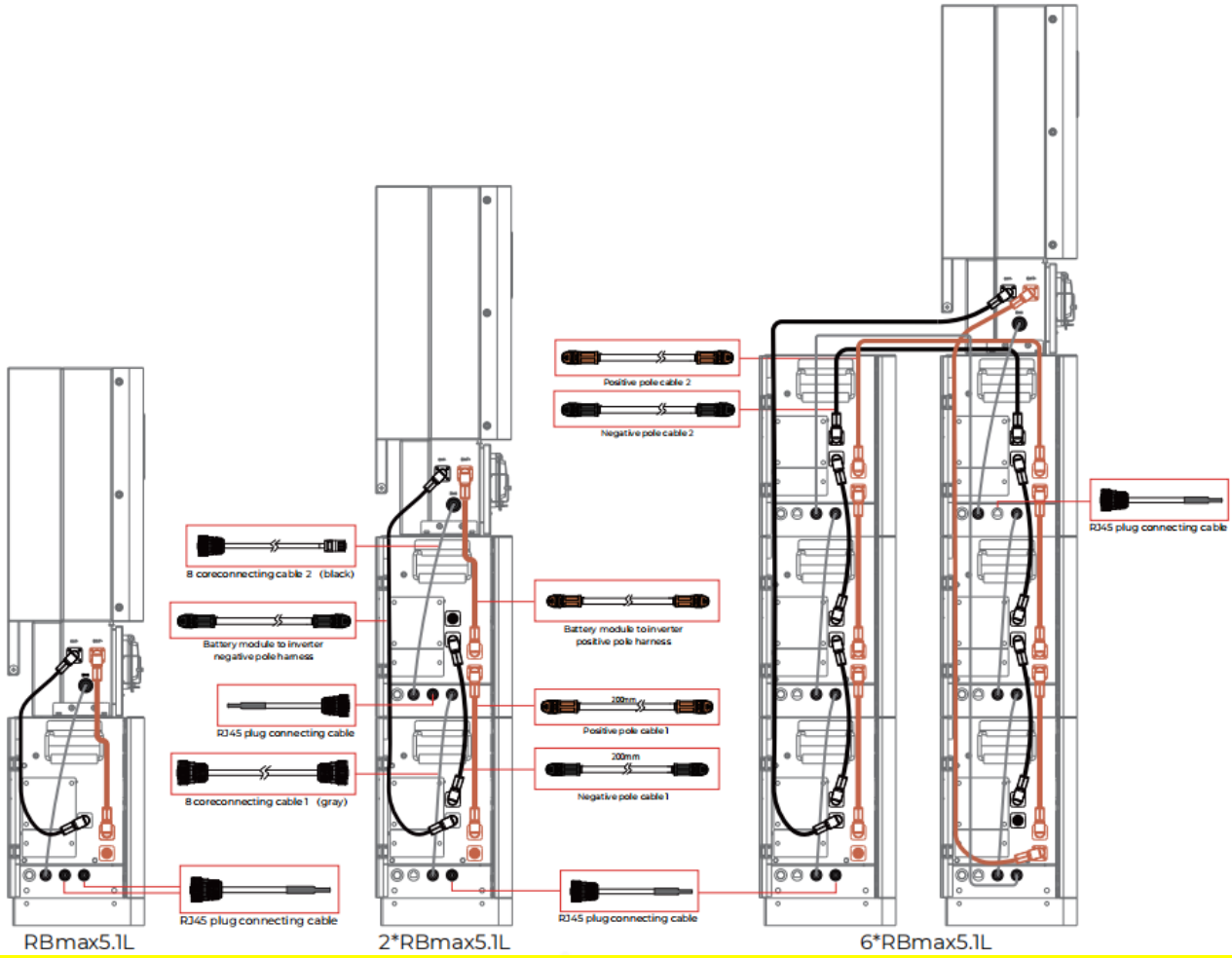
Refer to the following steps:



4.8 Battery Connection

The red is connected to the positive electrode of the battery pack and the inverter, and the black is connected to the negative electrode of the battery pack and the inverter.(No external DC switch or circuit breaker is required as there is a dedicated direct connection line.)

Assemble plug housing, as shown in the image below, push the adapter and housing with your hand until you hear or feel a click.(Note: When connecting this line, please make sure the battery is off and there is no voltage output,otherwise the live connection will damage the inverter.)



Notice: External alarm and monitoring device should be equipped to the battery system for earth fault monitoring and earth leakage levels that indicate a fault.

⚠ WARNING	Polarity reverse will damage the inverter! Be careful of electric shock and chemical hazards!

5. System Operation

5.1 Inverter Working Mode

The inverter supports several different working modes.

5.1.1 SELF CONSUME Mode

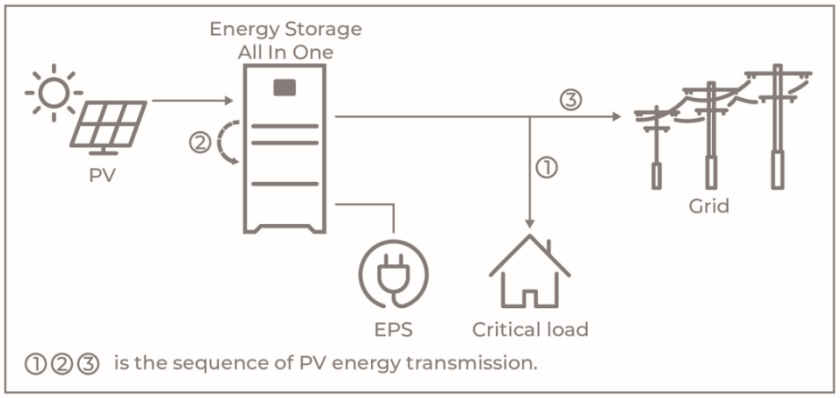
Go to the " work mode" menu, and select the " SELF CONSUME mode" working mode.

Under the Self Used mode, the priority of PV energy will be Load > Battery > Grid, that means the energy produced by PV gives priority to local loads, excess energy is used for charging the battery, and the remaining energy is fed into the grid.

This is the default mode to increase self-consumption rate. There are several situations of Self used working mode based on PV energy.

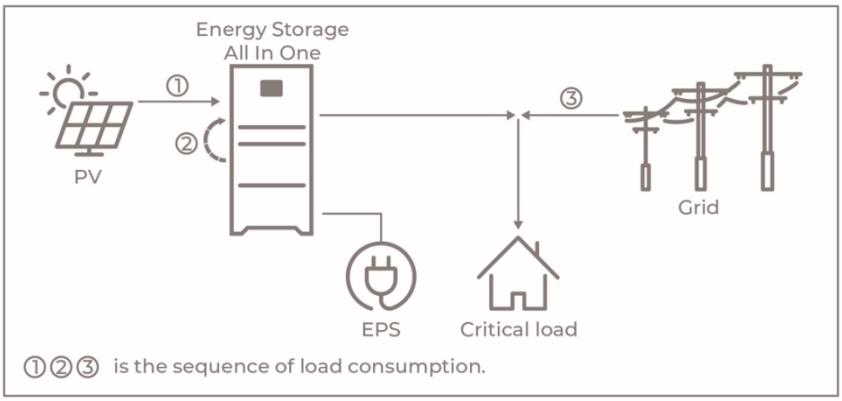
a) Wealthy PV Energy

When PV energy is wealthy, the PV energy will first consumed by loads, the excess energy will be used to charge the battery. then the remaining energy will be fed into the grid.



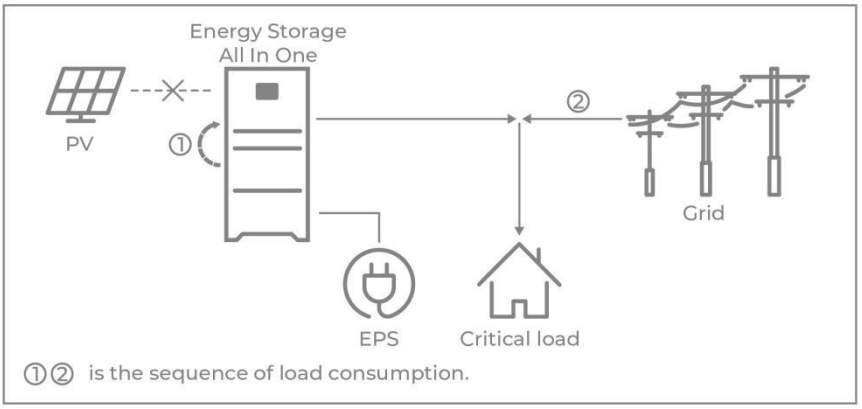
b) Limited PV power

When the PV energy is not enough to cover all the loads, all the PV energy will be used for load, and the insufficient part will be supported by battery. Then still insufficient parts will be supported by grid.



c) No PV Input

The inverter will first discharge the battery energy for home load consuming when no PV input(such as in the evening or some cloudy or rainy days). If the demand is not met then will consume the grid energy.



5.1.2 PEAK SHIFT Mode

Go to the " work mode" menu, and select the " PEAK SHIFT " working mode. Under this mode, you can control the charging and discharging of the inverter. You can set the following parameters based on your requirements:

Charging start time: 0 to 24 hours
Charging end time: 0 to 24 hours
Discharge start time: 0 to 24 hours
Discharge end time: 0 to 24 hours

This mode applies the area that has electricity price between peak and valley.

User can use off-peak electricity to charge the battery.

The charging and discharging time can be set flexibly.

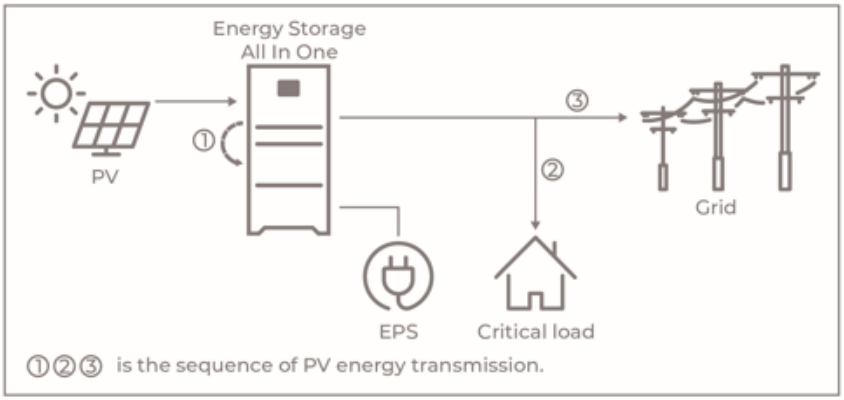
5.1.3 BAT PRIORITY

Go to the "Hybrid work mode" menu, and select the " BAT PRIORITY " working mode. Under this mode, the priority of PV energy will be Battery > Load > Grid.

PV solar energy gives priority to charging the battery, and the remainder is used for the load or connected to the grid. The battery will be discharged only when the mains power fails, so as to extend the service life of the battery as much as possible.

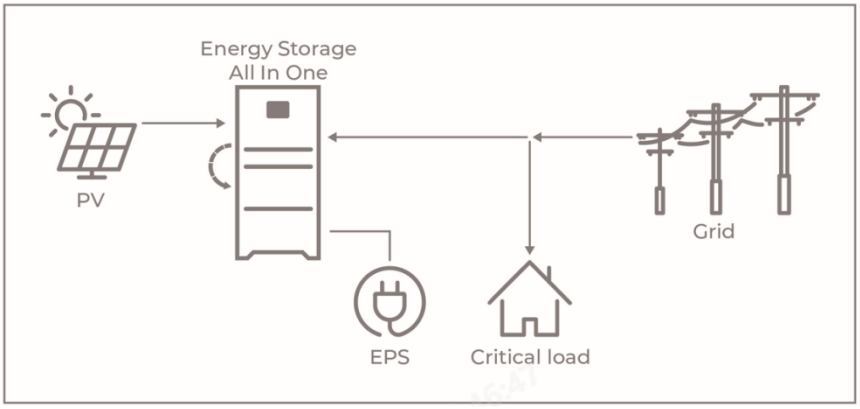
a) Wealthy PV power

When PV energy is wealthy, PV charges the battery first, then meets the load, and the rest is fed into the grid.



b) Limited PV power

When the PV energy is not enough to charge the battery, the grid energy will charge the battery as supplement. Meanwhile, the grid energy is consumed by loads.



5.1.4 Description of special circumstances

1) If the battery is connected to the system at the end, the energy storage inverter will be used as a common grid-connected inverter no matter what mode is set by the user (self-use, peak cutting and valley filling and charging priority).

2) If the mains power is cut off or not connected, no matter what mode is set by the user (self-use, peak cutting and valley filling or charging priority), the energy storage inverter is used as emergency power EPS, and the load is powered by the battery and PV of the energy storage transformer. PV solar energy gives priority to powering the load, and the remaining power is used to charge the battery. If the PV capacity is insufficient, the battery and PV jointly supply power to the load. Ensure that the EPS load power of the emergency power supply does not exceed 5kW.

5.2 Startup/Shutdown the System

5.2.1 Startup the System

Check and confirm the installation is secure and strong enough and that the system grounding is adequate. Then confirm the connections of AC, battery, PV etc. are correct. Confirm the parameters and configurations conform to relevant requirements.

AC Frequency 50/60Hz	PV Voltage 120~550V
Battery Voltage 40~60V	Grid AC Voltage 230V

Make sure all the above aspects are correct, then follow the procedure to start up the inverter:

1) press the power button of the battery pack that communicates with the inverter.
2) Turn on the battery pack breaker.
3) Power on the AC.
4) Turn on the PV switch of the inverter.
5) Turn on the BACK UP breaker of the inverter.

5.2.2 Shutdown the System

According to actual situation, if have to shut-down the running system, please follow below procedure:

1) Turn off the BACK UP breaker of the inverter.
2) Turn off the PV switch of the inverter.
3) Turn off AC power.
4) Turn off the battery pack breaker.
5) press the power button of the battery pack that communicates with the inverter.

If need to disconnect the inverter cables, please wait at least 5 minutes before touching these parts of inverter.

Note: Back up switch can turn off the backup power supply, allowing the power to be cut off during equipment maintenance to ensure operational safety.

6. Commissioning

It is necessary to make a complete commissioning of the inverter system. This will essentially protect the system from fire, electric shock or other damages or injuries.

6.1 Inspection

Before commissioning, the operator or installer (qualified personnel) must inspect the system carefully and make sure:

1)The system is firmly installed correctly following the contents and notifications of this manual, and there are enough spaces for operation, maintenance and ventilation.

2)All the terminals and cables are in good status without any damages.
3)No items are left on the inverter or within the required clearance section.
4)The PV, battery pack is working normally, and grid is normal.

6.2 Commissioning Procedure

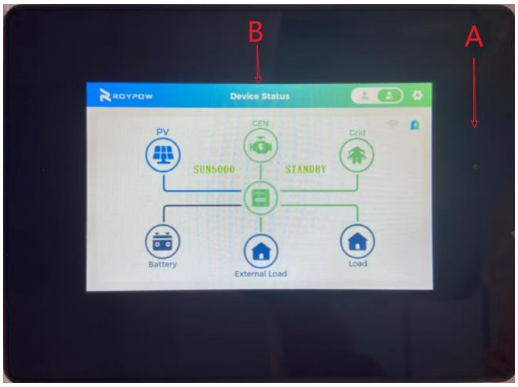
After the inspection and make sure status is right, then start the commissioning of the system.

1) Power on the system by referring to the Startup section 5.2.1.
2) Setting the parameters on the App according to user's requirement.
3) Finish commissioning.

7. LCD touch screen

The LCD touch screen is located on the front of the energy storage machine, at about eye level, making it easy for users to view data and perform related operations.

The touch screen is mainly composed of two parts as shown in the figure below: A: operating status indicator light, B: data display operation area.



7.1 Operation Status Indicator

LED	Description
Red LED	Alarm indicator light Normal: Off Alarm: Flashing
Green LED	Power indicator light: Lights green when powered on, turns off when not powered on

7.2 Control Panel

In order to facilitate the user's operation of the touch screen, this chapter is equipped with a large number of pictures. The values and other specific details in the pictures are for illustrative purposes only. Users should refer to the actual LCD display of the product received.

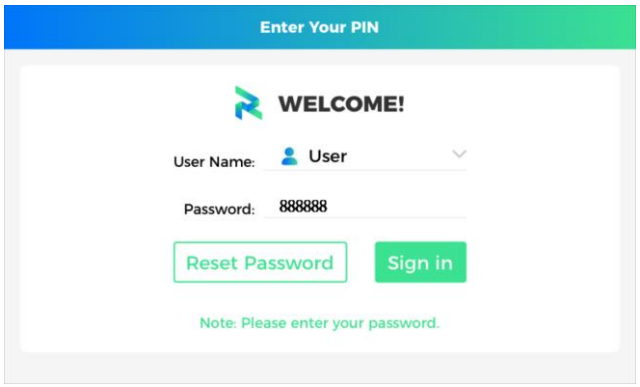
Access to both user and administrator interfaces requires a password.
User can view information about PV,grid,battery,inverter.User privileges to set the work mode,machine configuration.
Administrator can view information about PV, grid, battery, and inverter.Administrator privileges to set work mode,machine configuration,PV parameter,grid parameter,inverter parameter,other parameter.

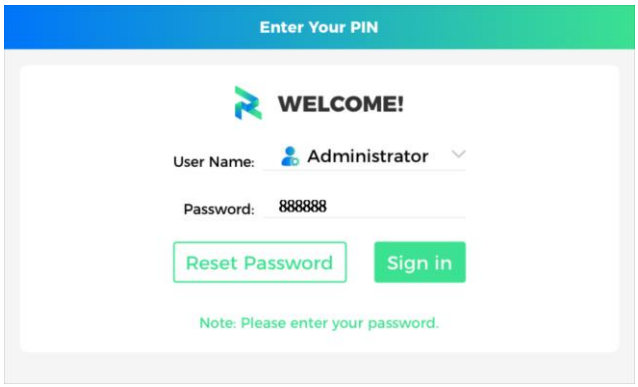
7.2.1 Startup Page

This interface will be displayed every time the power is turned on. After the startup process is completed, it will automatically jump to the login page.

7.2.2 User and Administrator Login Page

Login is divided into user privilege login and administrator privilege login.

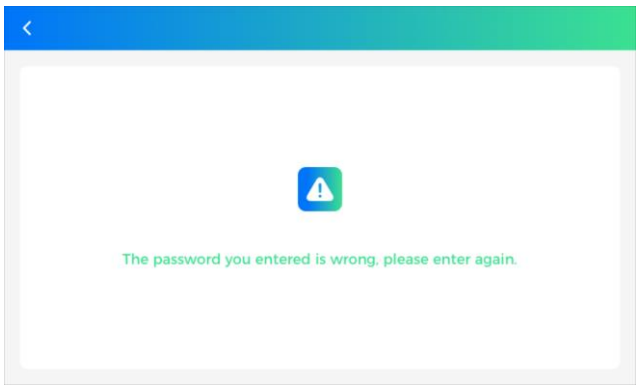




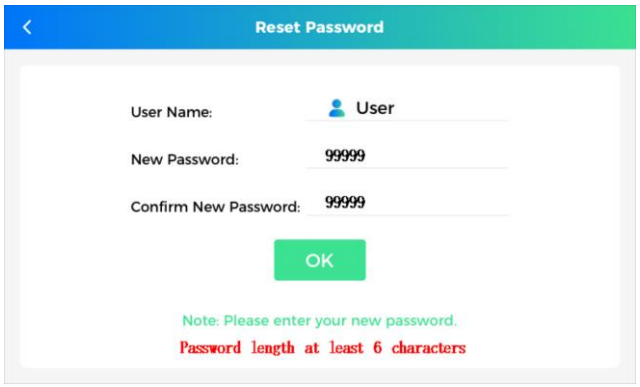
Click "﹀" to pop up the selectable options.

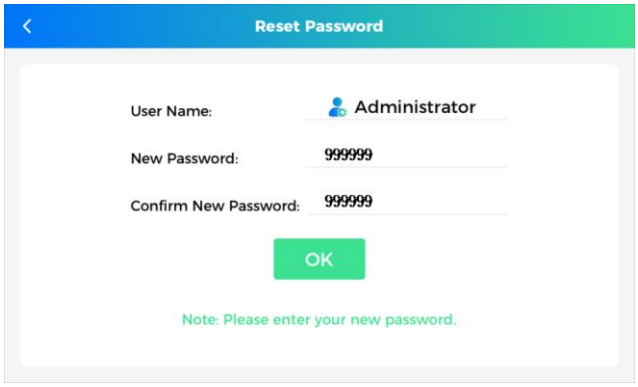
If the username and password are incorrectly entered on this interface, the interface will jump to the password error prompt interface; if the username and password are entered correctly, click Reset Password to jump to the password reset interface, and click Login to jump to the main interface. (The default password is 888888)

7.2.3 Password error page

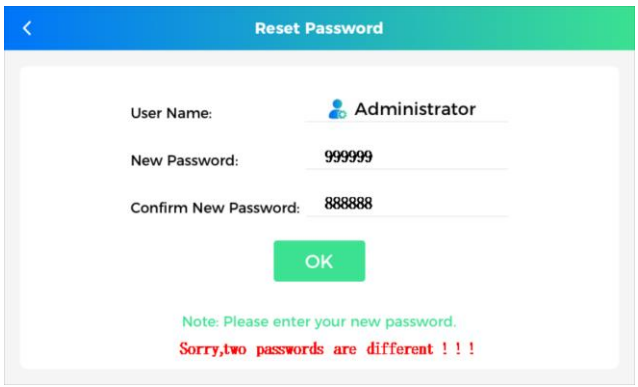


7.2.4 Reset Password Page



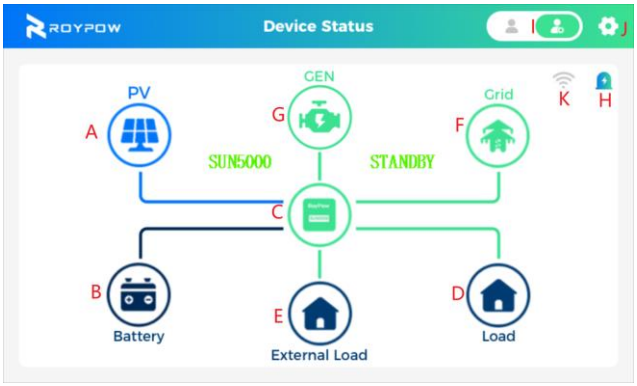


To modify the password on this interface, the password length must be greater than or equal to 6 characters, and the two passwords must be the same. Otherwise, a prompt will be reported at the bottom of the page.



7.2.5 Main Page

On the main page, the displayed information of user permissions and administrator permissions is the same, including the following A, B, C, D, E, F, G, H, I, J, and K module information. Only when you enter the settings page will the user and administrator displays be different.



The current status of each module of the machine is displayed through dynamic effects between modules A, B, C, D, E, F, and G. For the convenience of expression, the main page and module number mentioned in this chapter are the same as in this description. The description of each operation and entry of each level of submenu also starts from the main page.

No.	Description
A	Solar photovoltaic panel module, click the icon to view relevant photovoltaic data information
B	Battery module, click the icon to view relevant battery data information
C	Inverter module, click the icon to view inverter data information
D	Important household load, click the icon to view important load data information
E	External load, click the icon to view external load data information
F	Grid module, click the icon to view grid data information
G	Generator module, click the icon to view generator data information
H	Fault information, click to view current fault and historical fault information
I	Permission switching function, click to switch login permissions
J	Setting function, click to modify inverter working mode and other parameters, etc.
K	WiFi connection display icon

7.2.6 Backlight standby function

If there is no operation for more than 3 minutes, the touch screen backlight will automatically turn off. When the user touches the screen again, the LCD backlight lights up and displays the previously operated page.

7.3 Menu Overview

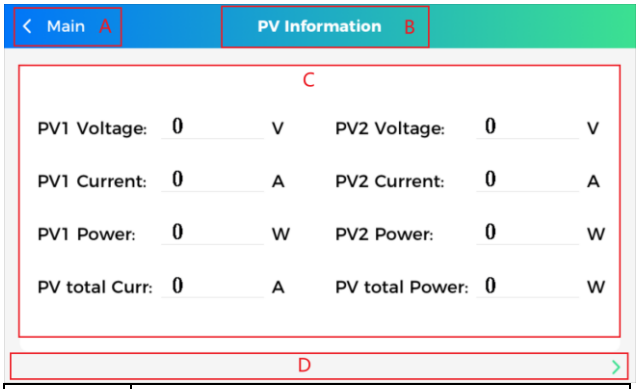
7.3.1 Total Menu Structure Overview

Users can operate directly on the LCD touch screen. For easy operation, 10 main buttons are set on the touch screen home page. The menu logic structure is shown in the following table:

Main menu page	First level submenu	Second level submenu
A：PV	Real-time data	
	PV side power statistics	
B: Battery	Real-time data	
	BMS request information	
C: Inverter	Real-time status	
	Firmware(Software) version number	
	Power statistics summary	
D: Important load	Real-time data and important load power consumption statistics	
E: External load	Real-time power and external load power consumption statistics	
F: Grid	Real-time data	
	Grid side power statistics	
	Revenue statistics	
	Regulatory parameter display	
G: Generator	Real-time data and generator power generation statistics	
H: Fault information	Current fault information	
	Historical fault information	
I: User login	Login account switch	
J: Settings (User permissions cannot be modified)	Working parameters	Working mode, PV input type, AC input type
		Charge and discharge time period setting
	Machine operation options	Date/time setting
		Buzzer enable switch
		Power on/off option
		Restore default parameter setting option
	Grid parameters	Grid parameter setting
		Electricity price setting
	Battery parameters	Battery parameter setting
	Inverter parameters	Inverter parameter setting

7.3.2 Submenu Page Layout

Except for the main page, all other pages follow the layout shown in this section.



serial number	Description
A	Return to the previous menu
B	Title bar
C	Data display or setting area
D	Flip left and right for different options in the same level menu

For the convenience of description, this chapter will use the menu name with double quotes to describe the corresponding menu operations. For example, the button 

, the corresponding description is "PV icon".

7.4 Operation information

The operation information contains various information related to the whole body, including:

7.4.1 Real-time data

PV: PV1 voltage, current, power, insulation resistance. PV2 voltage, current, power. total current and total power on the PV side.

Battery: Battery type, capacity, voltage, current, grid-connected discharge depth, off-grid discharge depth, power, grid stop charging SOC, charge current setting; BMS system SOC, temperature, voltage, current, requested charging voltage, requested charging current, requested discharge voltage, requested discharge current, total number of battery packs, number of online battery packs, battery SOH.

Load: voltage, current, active power, apparent power, load rate.

External load: active power.

Grid: voltage, current, active power, frequency, leakage current, power factor, reactive power.

Generator: voltage, current, active power, frequency, leakage current, power factor, reactive power.

Others: Inverter working mode, PV input type, grid-connected standard, machine status, DCDC status, inverter status, AC circuit temperature, DC circuit temperature, internal ambient temperature, bus voltage, inverter voltage, inverter current, ARM firmware version, DSP firmware version, Wifi firmware version, LCD firmware version, RS485 protocol version, SN code, Bluetooth name, etc.

7.4.2 Statistical information

Internal statistical data include the total power generation on the PV side on the year-month-day, the total power transmission to the grid side on the year-month-day, the total power taken from the grid side on the year-month-day, the total power consumption on the load side on the year-month-day, the total power consumption on the external load side on the year-month-day, the total power generation on the generator side on the year-month-day, and the total revenue on the year-month-day.

7.4.3 Fault information

Fault information includes current faults and historical faults.

7.5 Setting parameters

Machine setting parameters include:

7.5.1 Working parameters

Working mode, PV input type, AC input type, charging and discharging time period.

7.5.2 Machine operation parameters

Date/time, buzzer, logic switch, restore factory settings.

7.5.3 Machine parameter settings

Grid: CT ratio, grid reconnection time, overfrequency load reduction entry time, overfrequency load reduction slope and overfrequency load reduction enable, etc.;

Battery: battery type, battery on-grid and off-grid discharge depth DOD, mains charging stop SOC, battery wake-up time, lithium battery charging current setting parameters, etc.;

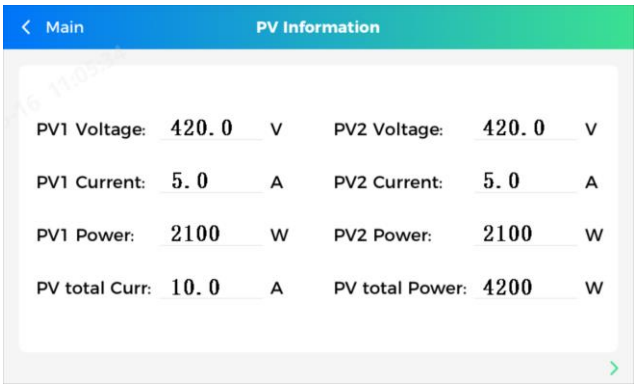
Inverter: power-on self-test time, output power percentage parameters, etc.;

7.6 View operation interface information

7.6.1 View PV side information

Click the "PV icon" on the main page to view real-time information.

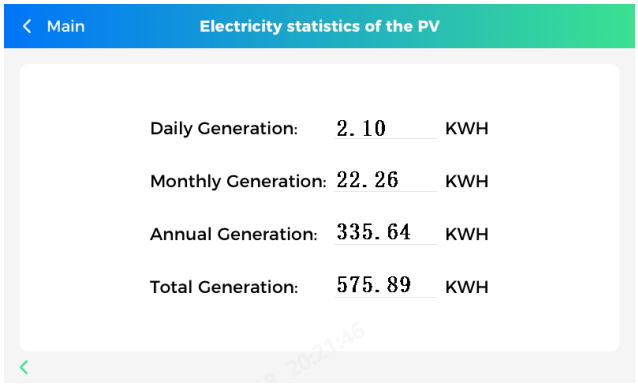
Interface: PV real-time data



PV real-time data interface display parameters:
PV1 Voltage: PV1 voltage
PV1 Current: PV1 current
PV1 Power: PV1 power
PV2 Voltage: PV2 voltage
PV2 Current: PV2 current
PV2 Power: PV2 power
PV total Curr: PV total current
PV total Power: PV total power

PV real-time data interface key operation:
Press "Main" to return to the main page.
Press the ">" button to jump to the PV power statistics interface.

Interface: PV power statistics

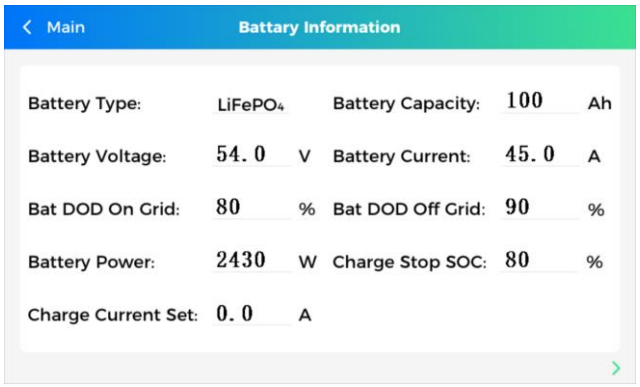


PV power statistics interface display parameters:
Daily Generation: PV daily power generation
Monthly Generation: PV monthly power generation
Annual Generation: PV annual power generation
Total Generation: PV total power generation.
PV power statistics interface button operation:
Press "Main" to return to the main page.
Press the "<" button to jump to the PV real-time data interface.

7.6.2 View battery side information

Click the "battery icon" on the main page to view the battery real-time information

Interface: Lithium battery real-time data



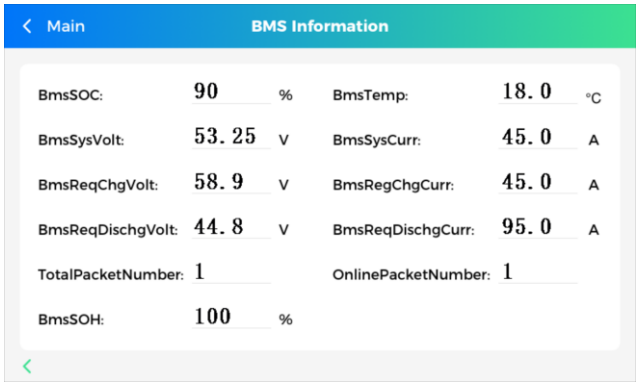
The real-time data interface of lithium battery displays parameters:
Battery Type: battery type
Battery Capacity: battery capacity
Battery Voltage: battery voltage
Battery Current: battery current
Bat DOD On Grid: grid-connected discharge depth
Bat DOD Off Grid: off-grid discharge depth
Battery Power: battery power
Charge Stop SOC: mains charging stop SOC
Charge Current Set: charging current setting

Note: Battery current + indicates charging, - indicates discharging.

Lithium battery real-time data interface key operation:

Press "Main" to return to the main page.
Press the ">" button to jump to the BMS upload data interface.

Interface: BMS real-time data



BMS real-time data interface display parameters:

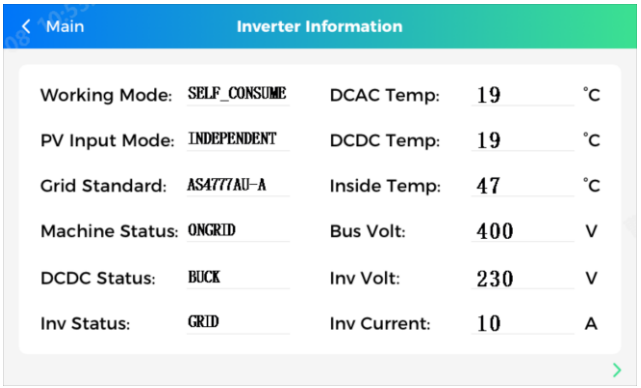
BmsSOC: remaining power percentage uploaded by BMS
BmsTemp: temperature uploaded by BMS
BmsSysVolt: system voltage uploaded by BMS
BmsSysCurr: system current uploaded by BMS
BmsReqChgVolt: requested charging voltage uploaded by BMS
BmsReqChgCurr: requested charging current uploaded by BMS
BmsReqDischgVolt: requested discharge voltage uploaded by BMS
BmsReqDischgCurr: requested discharge current uploaded by BMS
TotalPacketNumber: total number of battery packs uploaded by BMS
OnlinePacketNumber: number of online battery packs uploaded by BMS
BmsSOH: battery health uploaded by BMS

BMS real-time data interface button operation:

Press "Main" to return to the main page.
Press the "<" button to jump to the battery real-time data interface.

7.6.3 View inverter information

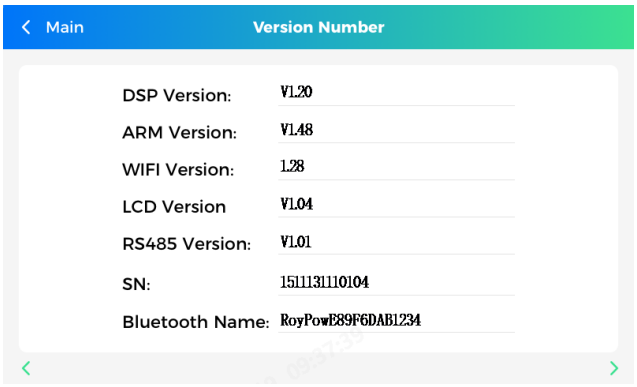
Click the "INV icon" on the main page to view the real-time information of the inverter
Interface: Current status of the inverter



The inverter current status interface displays parameters:
Working Mode: working mode (SELF CONSUME, PEAK SHIFT, BAT PRIORITY)
PV Input Mode: PV input mode (INDEPENDENT, PARALLEL, CV)
Grid Standard: grid regulation standard(such as AS4777NZ (New Zealand) , AS4777AU (AS4777AU-A, AS4777AU-B, AS4777AU-C). Regulations and regions are set during production. Administrators can also modify them. users without permissions cannot change them. The currently set region can be viewed on this page.)
Machine Status: machine status (POWER ON, START, STANDBY, ONGRID, INVERTER, LINE CHG, PV CHG, LINE MODE, FAULT)
DCDC Status: DCDC status (WAIT, SOFT, BUCK, BOOST)
Inv Status: inverter status (WAIT, INV, GRID)
DCAC Temp: DCAC thermistor temperature
DCDC Temp: DCDC thermistor temperature
Inside Temp: internal ambient temperature
Bus Volt: bus voltage
Inv Volt: inverter voltage
Inv Current: inverter current

Inverter current status interface button operation:
Press "Main" to return to the main page.
Press ">" to jump to the inverter software version number information interface.

Interface: Inverter firmware(software) version information



Inverter firmware(software) version interface display parameters:

DSP Version: DSP firmware version number
ARM Version: ARM firmware version number
WIFI Version: WIFI firmware version number
LCD Version: LCD version number
RS485 Version: RS485 communication software version number
SN: Machine serial number
Bluetooth Name: Bluetooth name

Inverter firmware(software)version interface button operation:

Press "Main" to return to the main page.
Press "<" to jump to the inverter current status interface.
Press ">" to jump to the power statistics summary interface of each module.

Interface: Power statistics summary of each module

The electricity statistics summary interface of each module displays parameters:
PV Generated electricity:
Daily: The electricity delivered by PV on the day
Monthly: The electricity delivered by PV on the month
Annual: The electricity delivered by PV on the year
Total: The total electricity delivered by PV

Sell the remaining electricity to the grid:
Daily: The electricity delivered by the energy storage machine to the grid on the day
Monthly: The electricity delivered by the energy storage machine to the grid on the month
Annual: The electricity delivered by the energy storage machine to the grid on the year
Total: The total electricity delivered by the energy storage machine to the grid

Get the electricity from the grid:
Daily: The electricity delivered by the grid to the energy storage machine on the day

Monthly: The electricity delivered by the grid to the energy storage machine on the month
Annual: The electricity delivered by the grid to the energy storage machine on the year

Total: The total electricity delivered by the grid to the energy storage machine

Consumption of load:
Daily: The electricity consumed by the load on the day
Monthly: The electricity consumed by the load on the month
Annual: The electricity consumed by the load on the year
Total: The total electricity consumed by the load

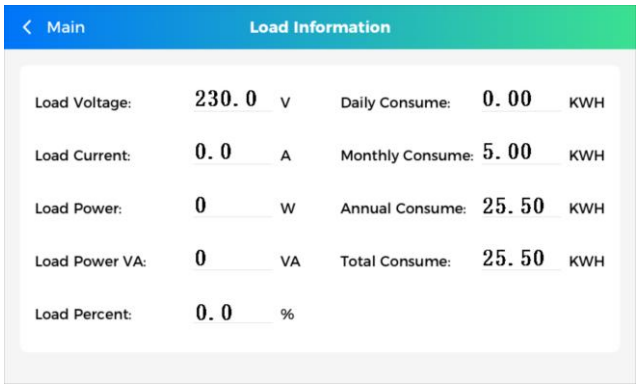
Consumption of external load:
Daily: The amount of electricity consumed by the external load on the day
Monthly: The amount of electricity consumed by the external load on the month
Annual: The amount of electricity consumed by the external load on the year
Total: The total amount of electricity consumed by the external load

GEN Generated electricity:
Daily: The amount of electricity delivered by the generator on the day
Monthly: The amount of electricity delivered by the generator on the month
Annual: The amount of electricity delivered by the generator on the year
Total: The total amount of electricity delivered by the generator

Key operation of the electricity statistics summary interface of each module:
Press "Main" to return to the main page.
Press "<" to jump to the inverter software version information interface.

7.6.4 View important load side information

Click the "important load icon" on the main page to view real-time information
Interface: Real-time data of important loads



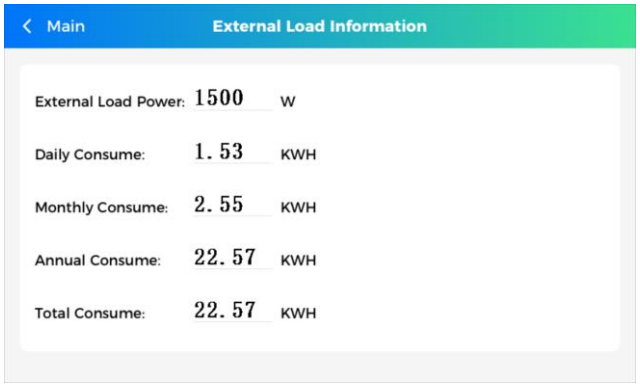
Important load real-time interface display parameters:
Load Voltage: load voltage
Load Current: load current
Load Power: load active power
Load Power VA: load apparent power
Load Percent: load percentage
Daily Consume: daily power consumption
Monthly Consume: monthly power consumption
Annual Consume: annual power consumption
Total Consume: total power consumption

Important load real-time interface button operation:
Press "Main" to return to the main page.

7.6.5 View external load side information

Click the "external load icon" on the main page to view real-time information

Interface: External load real-time data

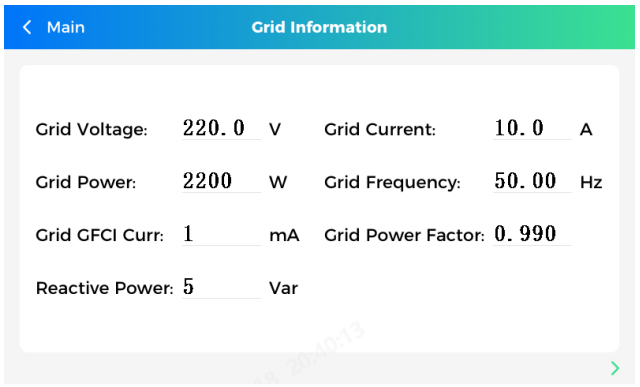


The external load real-time interface displays the following parameters:
External Load Power: External load active power
Daily Consume: Daily power consumption
Monthly Consume: Monthly power consumption
Annual Consume: Annual power consumption
Total Consume: Total power consumption

External load real-time interface button operation:
Press “Main” to return to the main page.

7.6.6 View grid information

Click the "grid icon" on the main page to view real-time information.
Interface: Real-time grid data



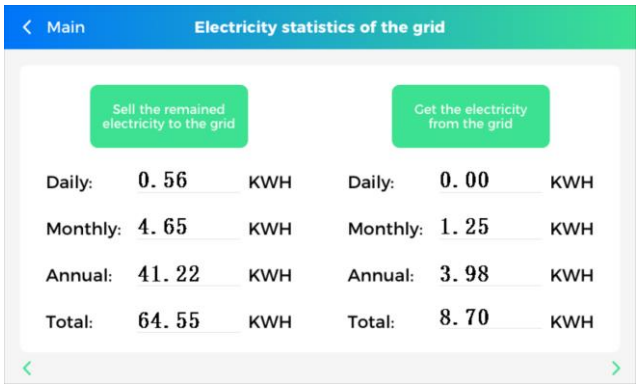
Grid real-time data interface displays parameters:
Grid Voltage: Grid voltage
Grid Current: Grid current
Grid Power: Grid active power
Grid Frequency: Grid frequency
Grid GFCI Curr: Grid leakage current
Grid Power Factor: Grid power factor
Reactive Power: Grid reactive power

Note: Grid active power is +, which means that the remaining power is delivered to the grid. Grid active power is -, which means that the grid delivers power to the inverter.

Grid real-time data interface button operation:

Press "Main" to return to the main page.
Press the ">" button to jump to the grid power statistics interface.

Interface: Grid power statistics

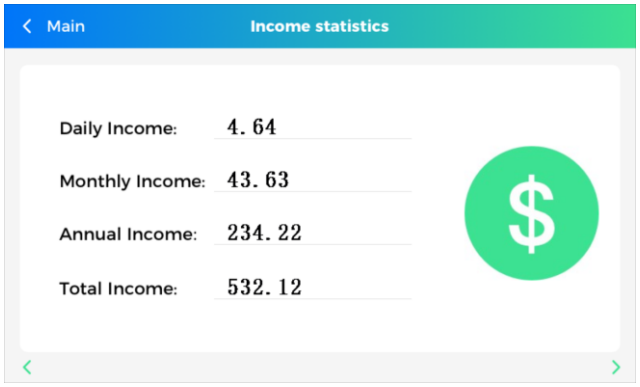


Parameters displayed on the real-time data interface of the power grid:
Sell the remaining electricity to the grid:
Daily: The amount of electricity delivered by the energy storage machine to the grid on that day
Monthly: The amount of electricity delivered by the energy storage machine to the grid on that month
Annual: The amount of electricity delivered by the energy storage machine to the grid on that year
Total: The total amount of electricity delivered by the energy storage machine to the grid

Get the electricity from the grid:
Daily: The amount of electricity delivered by the grid to the energy storage machine on that day
Monthly: The amount of electricity delivered by the grid to the energy storage machine on that month
Annual: The amount of electricity delivered by the grid to the energy storage machine on that year
Total: The total amount of electricity delivered by the grid to the energy storage machine

Key operation on the real-time data interface of the power grid:
Press "Main" to return to the main page.
Press the "<" button to jump to the real-time data interface of the power grid.
Press the ">" button to jump to the revenue statistics interface.

Interface: Revenue statistics



Income statistics interface display parameters:
Daily Income: Income of the day
Monthly Income: Income of the month
Annual Income: Income of the year
Total Income: Total income

Income statistics interface button operation:
Press "Main" to return to the main page.
Press the "<" button to jump to the grid power statistics interface.

7.6.7 View generator side information

Click the "generator icon" on the main page to view real-time information.
Interface: Generator real-time data

Generator real-time data interface displays parameters:

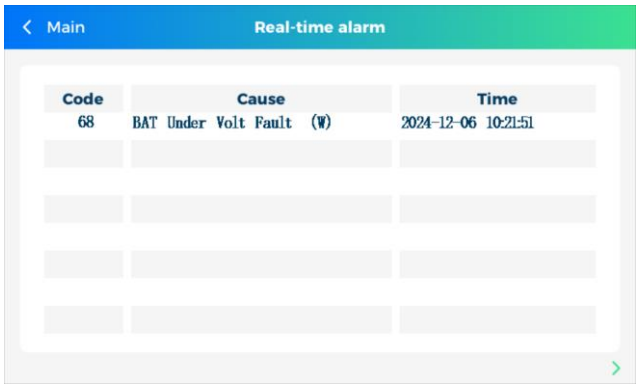
GEN Voltage: Generator voltage
GEN Current: Generator current
GEN Power: Generator active power
GEN Freq: Generator frequency
GEN RP: Generator reactive power
GEN PF: Generator power factor
Daily Generation: Generator daily power generation
Monthly Generation: Generator monthly power generation
Annual Generation: Generator annual power generation
Total Generation: Generator total power generation.

Generator real-time data interface key operation:
Press "Main" to return to the main page.

7.6.8 View fault information

Click the "indicator icon" in the upper right corner of the main page to view fault information

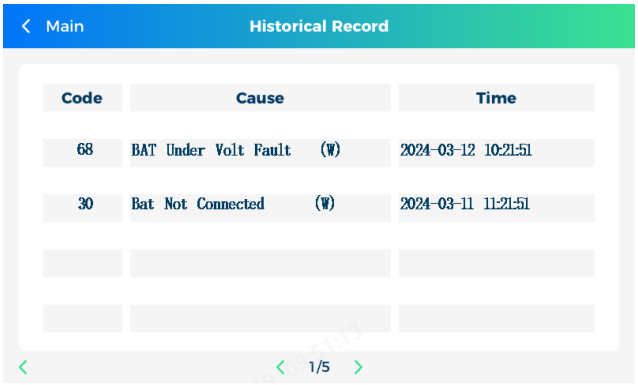
Interface: Current machine fault



The current fault interface of the machine displays parameters:

Code: fault code
Cause: fault cause
Time: fault time
Key operation of the current fault interface of the machine:
Press "Main" to return to the main page.
Press ">" to jump to the machine history fault interface.

Interface: Machine history fault



The machine history fault interface displays parameters:

Code: fault code
Cause: fault cause
Time: fault time

Key operation of the machine history fault interface:

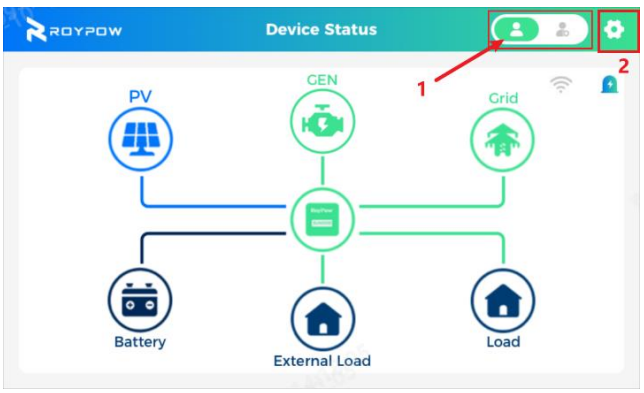
Click the "<" and ">" in the middle to display fault information on different pages.
Press "Main" to return to the main page.
Press "<" to jump to the machine current fault interface.
Note: A maximum of 20 items can be displayed, and a maximum of 4 fault information can be displayed per page;

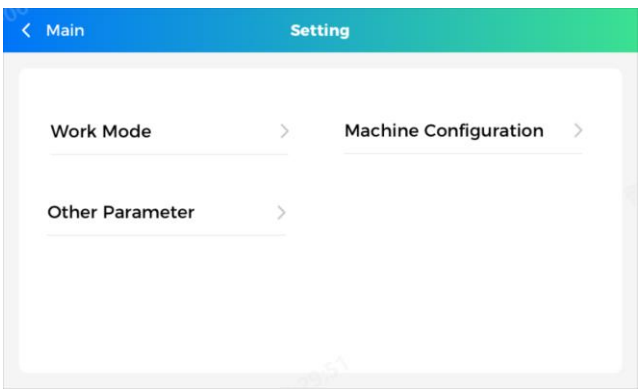
7.7 User permissions to set machine parameters

After logging in with user account and password(as described in Section 7.2.2), click the settings button in the upper-right corner to access the user settings page. User settings are divided into “Work Mode” and “Machine Configuration.”

Note: The description in Section 7.7 are user-configurable settings.

Interface: Machine parameter setting options





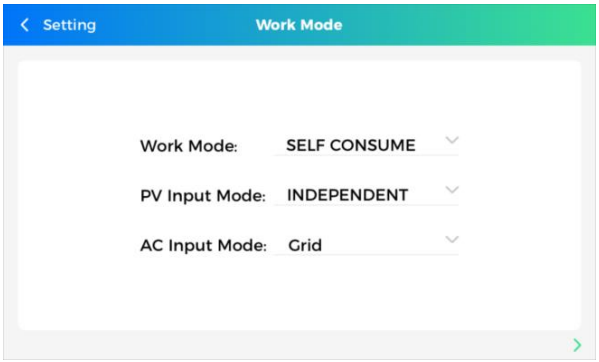
The machine parameter setting option interface displays parameters:

Work Mode: working mode
Machine Configuration: machine configuration

Key operation of the machine parameter setting option interface:
Click the corresponding text to jump to the selected submenu;
Click "main" to return to the main page.

7.7.1 Setting up the working mode

On the main page, click the "Setting" button, then click the "Work Mode" button
Interface: machine working mode, PV input type and AC input type

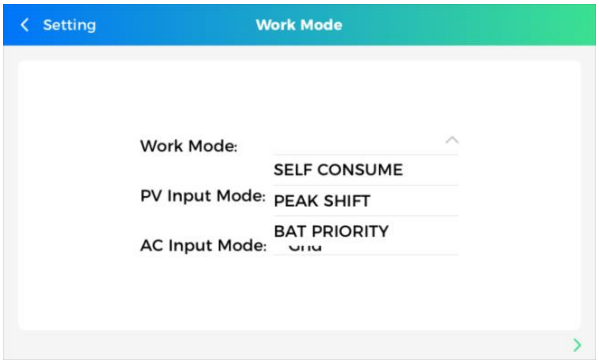


This page sets the working mode, PV input type and AC input type of the all-in-one machine.

Click "﹀" to pop up the selectable options.
Click "<" to return to the machine parameter option interface.
Click ">" to jump to the peak shift and valley filling time period setting interface.

Note: The peak shift and valley filling mode requires the corresponding charging and discharging time period to be set.

Interface: Working mode options



This page is the working mode options of the integrated machine.

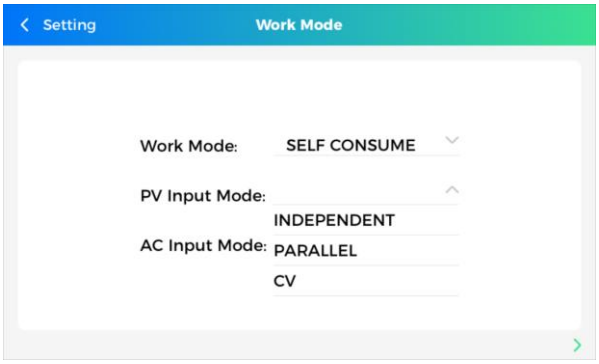
SELF CONSUME: Self-generation and self-use

PEAK SHIFT: Peak shaving and valley filling

BAT PRIORITY: Battery charging priority

Note: At this time, the "Setting" and ">" buttons are invalid. Click one of the options and the "Setting" and ">" buttons will be restored.

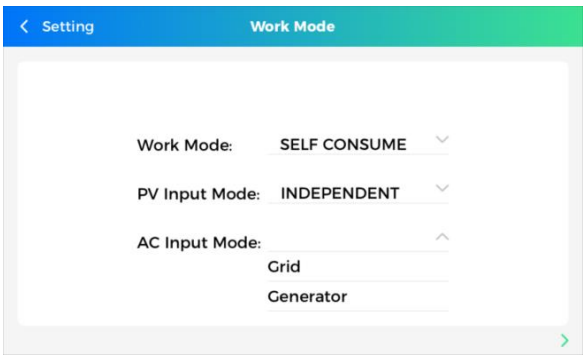
Interface: PV input type options



This page is the PV input type option of the integrated machine
INDEPEDENT: Independent
PARALLEL: Parallel
CV: Constant voltage

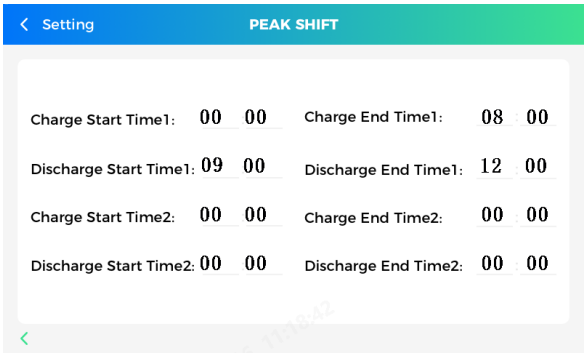
Note: At this time, the "Setting" and ">" buttons are invalid. After clicking one of the options, the "Setting" and ">" buttons are restored.

Interface: AC input type option



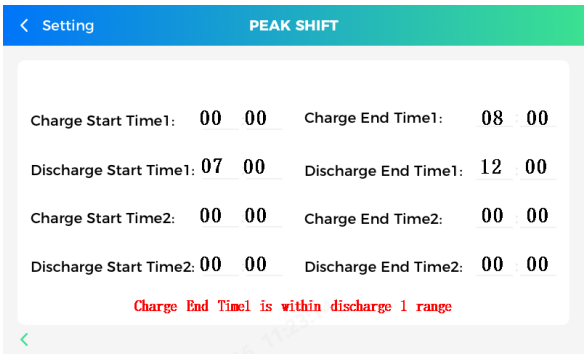
This page is the AC input type option of the all-in-one machine
Grid: Grid
Generator: Generator
Note: At this time, the "Setting" and ">" buttons are invalid. After clicking one of the options, the "Setting" and ">" buttons are restored.

Interface: Peak shaving and valley filling time period settings



This page is for the time period setting of the peak-shaving and valley-filling mode of the all-in-one machine. Click the number to pop up the keyboard to set the time point.
Click "Setting" to return to the machine parameter option interface.
Click "<" to jump to the machine working mode option interface.
Note: After the user selects the peak-shaving and valley-filling mode, the time point needs to be set on this page (range 00:00~23:59).

Interface: Peak shaving and valley filling time period settings conflict



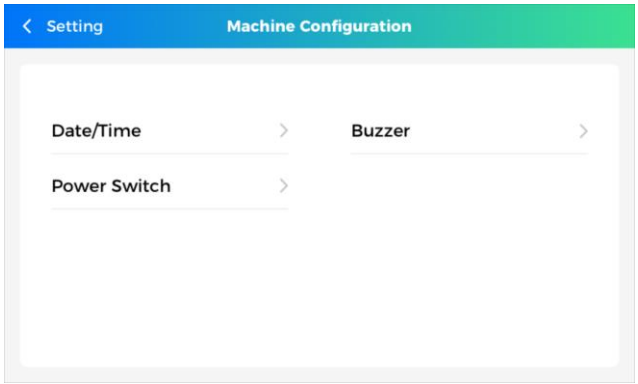
When the time period settings conflict, there will be a red font below to remind you of the charge and discharge time conflict;
Conflict reasons:
① In the same charge/discharge time period, the start time is greater than the end time.
For example, 1. Charge Start Time1 is 12:00, Charge End Time1 is 11:00, conflict;
2. Charge Start Time2 is 12:00, Charge End Time2 is 11:00, conflict.
3. Discharge Start Time1 is 12:00, Discharge End Time1 is 11:00, conflict;
4. Discharge Start Time2 is 12:00, Discharge End Time2 is 11:00, conflict...

② Two charging/discharging time periods overlap each other
For example, 1. Charge Start Time1 is 12:00, Charge End Time1 is 15:00,
Charge Start Time2 is 13:00, Charge End Time2 is 14:00, conflict
2. Charge Start Time2 is 12:00, Charge End Time2 is 15:00,
Charge Start Time1 is 13:00, Charge End Time1 is 14:00, conflict
3. Charge Start Time1 is 12:00, Charge End Time1 is 15:00,
Charge Start Time2 is 13:00, Charge End Time2 is 14:00, conflict is 16:00, conflict
4. Charge Start Time1 is 12:00, Charge End Time1 is 15:00,
Charge Start Time2 is 11:00, Charge End Time2 is 13:00, conflict.....

③ Charge time period and discharge time period conflict
For example, 1. Charge Start Time1 is 11:00, Charge End Time1 is 16:00,
Dscharge Start Time1 is 10:00, Discharge End Time1 is 13:00, conflict....

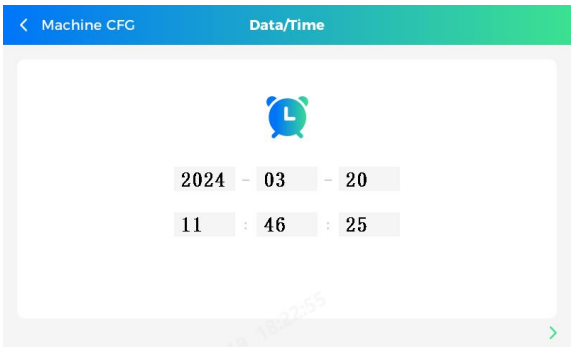
7.7.2 Set the machine operation options

On the main page, click the "Setting" button, then click the "Machine Configuration" button
Interface: Machine operation options



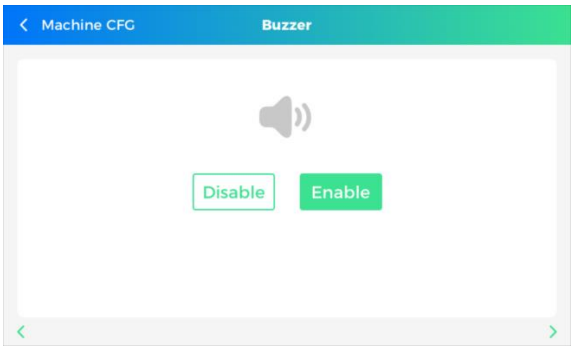
This interface has 4 options: Date/Time, Buzzer Switch, Logic Switch, Restore Default Parameters.
Click the corresponding text to jump to the selected submenu;
Click "Setting" to return to the machine parameter option interface.

Interface: Machine Date/Time Settings



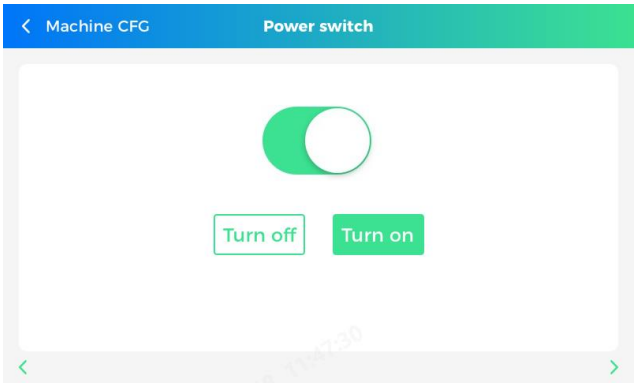
This page displays the current date and time.
Click the number to pop up the keyboard to modify.
Click "Machine CFG" to return to the previous menu.
Click the ">" page to jump to the buzzer setting interface.

Interface: Buzzer setting



This page is for setting the buzzer.
Click "Disable" to disable the buzzer.
Click "Enable" to enable the buzzer.
Click "Machine CFG" to return to the upper menu.
Click "<" to jump to the machine date/time setting page.
Click ">" to jump to the machine power on/off setting interface.

Interface: Machine power on/off



This page is used to control the machine's power on and off.
Click "Turn off" to turn the machine off.
Click "Turn on" to turn the machine on.
Click "Machine CFG" to return to the upper menu.

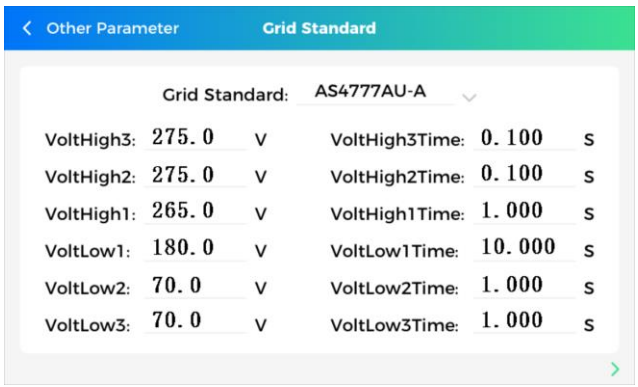
Click "<" to jump to the buzzer setting interface.

7.7.3 Grid Standard Information

This page displays the over voltage and under voltage protection thresholds and protection times for the grid, grid overfrequency/underfrequency protection thresholds and time settings information, overfrequency/underfrequency derating settings information, power quality response modes information.

These parameters are configured by administrators and manufacturers according to the statutory requirements of the installation region. Unauthorized users may only view power quality response mode settings and grid protection settings in read-only mode for verification purposes (unauthorized users cannot modify these settings).

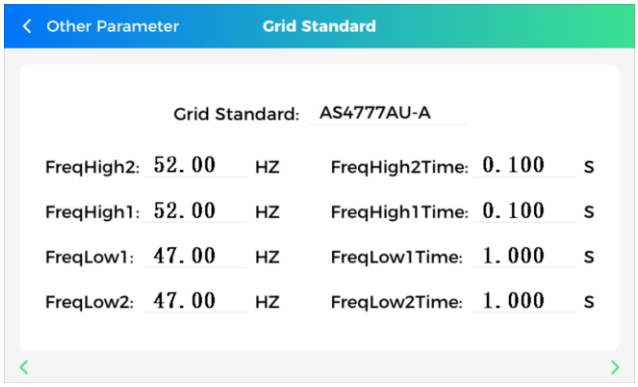
Interface: grid overvoltage/undervoltage protection thresholds and protection times information



This page displays the over voltage and under voltage protection thresholds and protection times for the grid. Three-level over voltage and under voltage protection.

Click "Other Parameter" to return to the upper menu.
Click ">" to jump to the page of information about the frequency protection threshold and protection time.

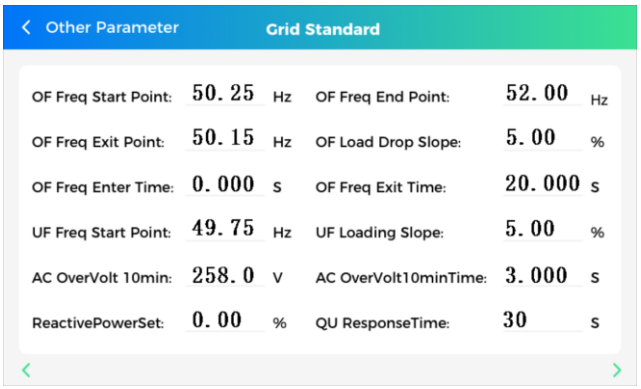
Interface: grid overfrequency/underfrequency protection thresholds and protection times information



This page displays the inverter's Level 2 over frequency and under frequency protection thresholds and protection time parameters.

Click "Other Parameter" to return to the upper menu.
Click "<" to jump to the page of information about the voltage protection threshold and protection time.
Click ">" to jump to the page of information about the over frequency and under frequency power derating.

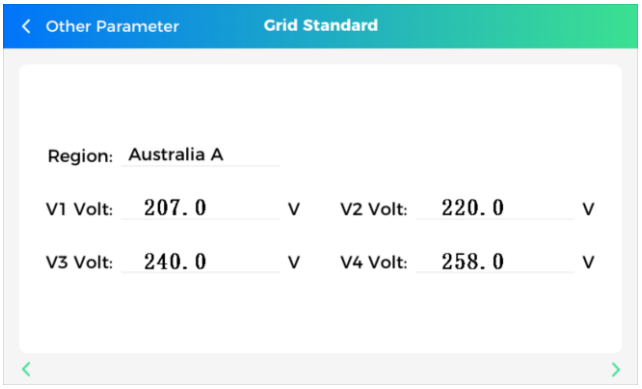
Interface: Overfrequency/underfrequency derating functions information



This page displays the inverter's start frequency point, end frequency point, exit frequency point for overfrequency/underfrequency power reduction function; threshold and protection duration for 10-minute AC overvoltage; and other relevant information.

Click "Other Parameter" to return to the upper menu.
Click "<" to jump to the page of information about the frequency protection threshold and protection time.
Click ">" to jump to the page of information about the Australia regional settings and QU curve voltage configuration.

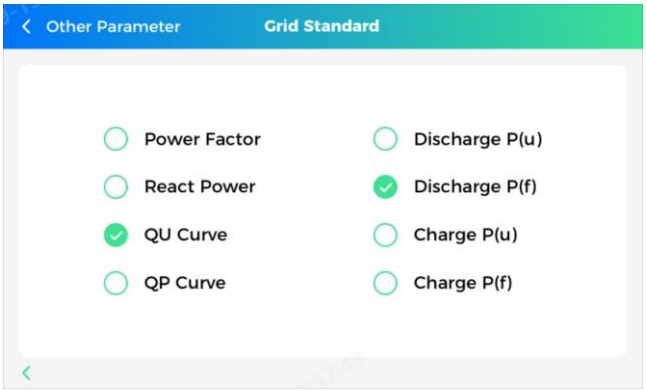
Interface: Australian regulation voltage active QU curve parameter setting



This page displays the inverter's information about the Australia regional settings and QU curve voltage configuration.

Click "Other Parameter" to return to the upper menu.
Click "<" to jump to the page of information about the over frequency and under frequency power de-rating.
Click ">" to jump to the page of information about the power quality response modes.

Interface: PU function/ QU function/Power Factor/Reactive Power enabled Information



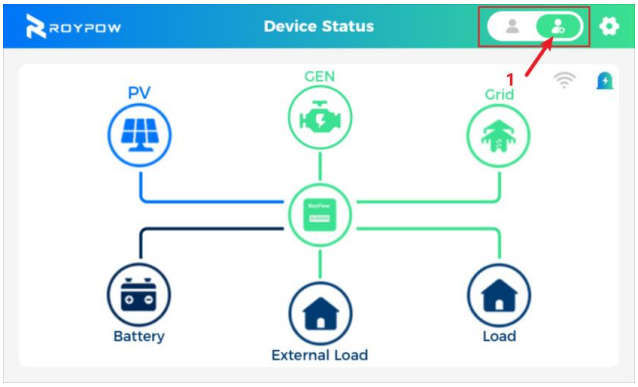
This page displays the inverter's power quality response modes information.

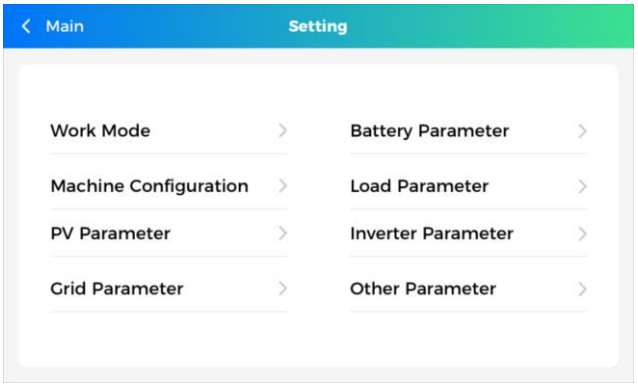
Click "Other Parameter" to return to the upper menu.
Click "<" to jump to the page of information about the Australia regional settings and QU curve voltage configuration.

7.8 Administrator privileges to set machine parameters

1. Log in using the administrator account and password (as described in Section 7.2.2), or click the button (1. User/Administrator Permission Switch) to access the administrator login interface.
2. Administrator passwords are set independently from user passwords. Only administrators know and maintain the administrator password.
3. Click the settings button in the upper-right corner to access the administrator settings page.
The inverter settings described in Section 7.8 are visible and configurable only by administrators. if the user wants to configure these settings, they must request a password from the administrator.

Interface: Machine parameter setting options

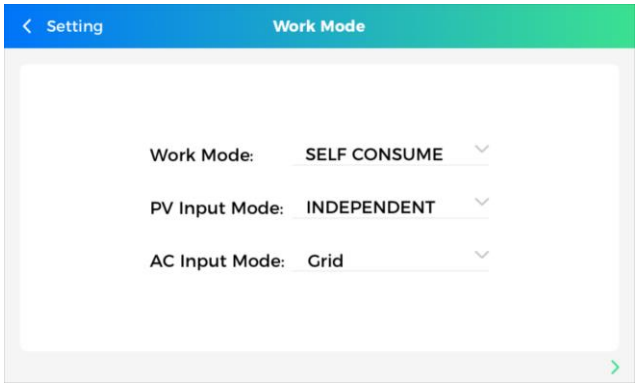




The machine parameter setting option interface displays the following parameters:
Work Mode: working mode
Machine Configuration: machine configuration
PV Parameter: PV parameter setting
Grid Parameter: grid parameter setting
Battery Parameter: battery parameter setting
Load Parameter: load parameter setting
Inverter Parameter: inverter parameter setting
Other Parameter: other parameter setting
Key operation of the machine parameter setting option interface:
Click the corresponding text to jump to the selected submenu;
Click "main" to return to the main page.

7.8.1 Set the working mode

On the administrator's home page, click the "Setting" button, then click the "Work Mode" button
Interface: machine working mode, PV input type and AC input type

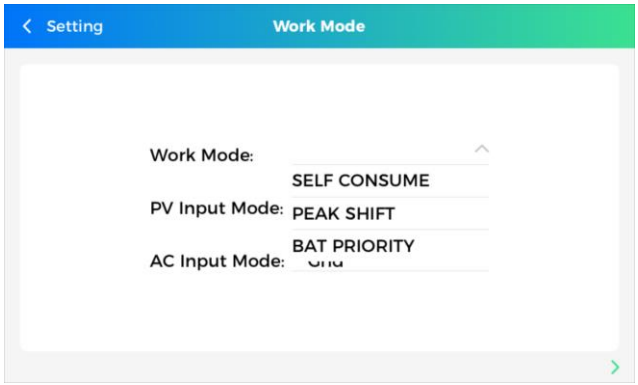


This page sets the working mode, PV input type and AC input type of the all-in-one machine.
Click "﹀" to pop up the selectable options.
Click "<" to return to the machine parameter option interface.
Click ">" to jump to the peak shaving and valley filling time period setting interface.

Note: The peak shaving and valley filling mode requires setting the corresponding charging and dis-

charging time period.

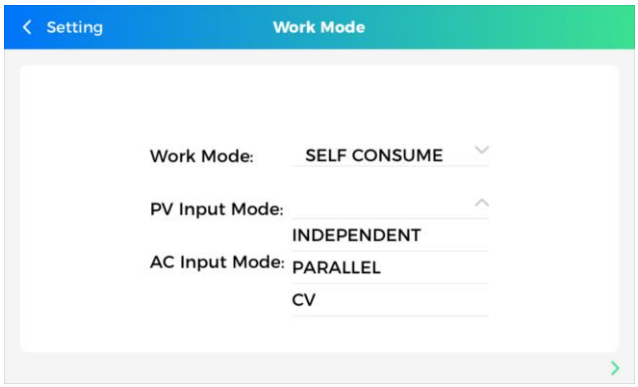
Interface: Work Mode Options



This page is the working mode options of the integrated machine.
SELF CONSUME: Self-generation and self-use
PEAK SHIFT: Peak shaving and valley filling
BAT PRIORITY: Battery charging priority

Note: At this time, the "Setting" and ">" buttons are invalid. Click one of the options and the "Setting" and ">" buttons will be restored.

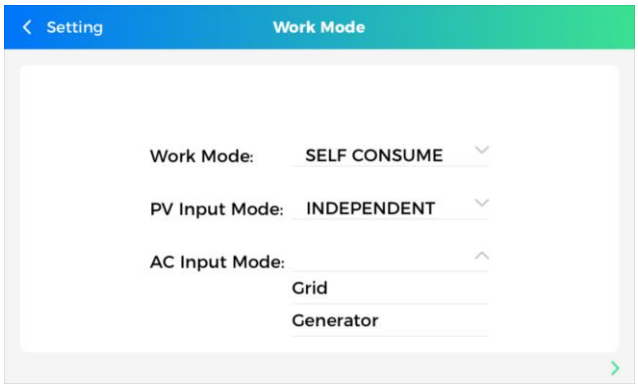
Interface: PV input type options



This page is the PV input type option of the integrated machine
INDEPEDENT: Independent
PARALLEL: Parallel
CV: Constant voltage

Note: At this time, the "Setting" and ">" buttons are invalid. After clicking one of the options, the "Setting" and ">" buttons are restored.

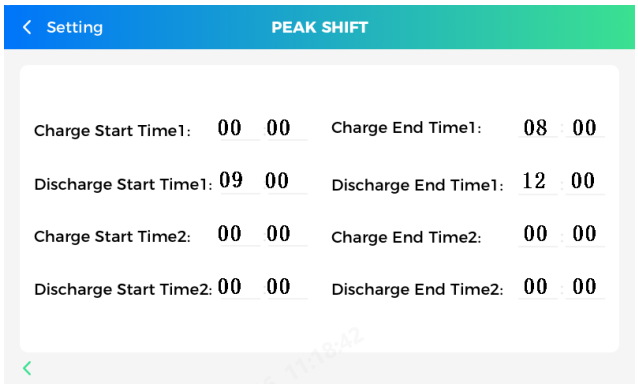
Interface: AC input type option



This page is the AC input type option of the integrated machine
Grid: Grid
Generator: Generator

Note: At this time, the "Setting" and ">" buttons are invalid. After clicking one of the options, the "Setting" and ">" buttons are restored.

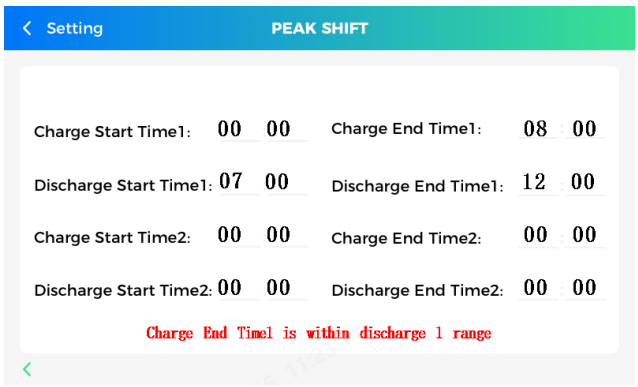
Interface: Peak shaving and valley filling time period settings



This page is for the time period setting of the peak shaving and valley filling mode of the all-in-one machine. Click the number to pop up the keyboard to set the time point.
Click "Setting" to return to the machine parameter option interface.
Click "<" to jump to the machine working mode option interface.

Note: After the user selects the peak shaving and valley filling mode, the time point needs to be set on this page (range 00:00~23:59).

Interface: Peak shaving and valley filling time period setting conflict



When the time period settings conflict, there will be a red font below to remind you of the charge and discharge time conflict;
Conflict reasons:
① In the same charge/discharge time period, the start time is greater than the end time.
For example, 1. Charge Start Time1 is 12:00, Charge End Time1 is 11:00, conflict;

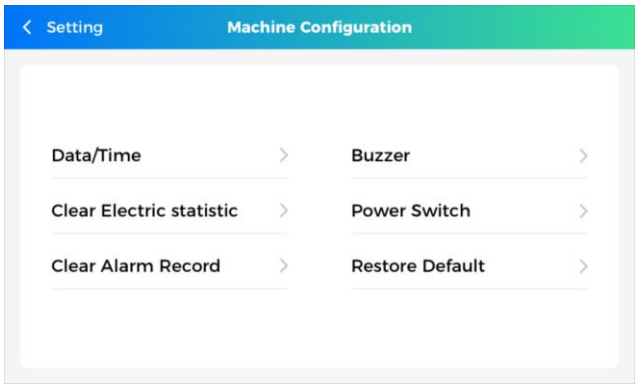
2. Charge Start Time2 is 12:00, Charge End Time2 is 11:00, conflict.
3. Discharge Start Time1 is 12:00, Discharge End Time1 is 11:00, conflict;
4. Discharge Start Time2 is 12:00, Discharge End Time2 is 11:00, conflict...

② Two charging/discharging time periods overlap each other
For example, 1. Charge Start Time1 is 12:00, Charge End Time1 is 15:00,
Charge Start Time2 is 13:00, Charge End Time2 is 14:00, conflict
2. Charge Start Time2 is 12:00, Charge End Time2 is 15:00,
Charge Start Time1 is 13:00, Charge End Time1 is 14:00, conflict
3. Charge Start Time1 is 12:00, Charge End Time1 is 15:00,
Charge Start Time2 is 13:00, Charge End Time2 is 14:00, conflict is 16:00, conflict
4. Charge Start Time1 is 12:00, Charge End Time1 is 15:00,
Charge Start Time2 is 11:00, Charge End Time2 is 13:00, conflict.....

③ Charge time period and discharge time period conflict
For example, 1. Charge Start Time1 is 11:00, Charge End Time1 is 16:00,
Dscharge Start Time1 is 10:00, Discharge End Time1 is 13:00, conflict....

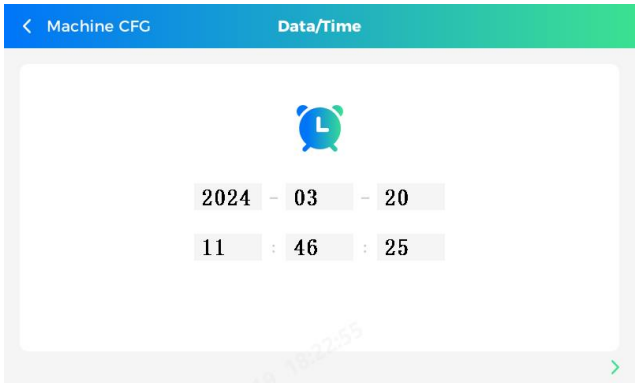
7.8.2 Set machine operation options

On the administrator's home page, click the "Setting" button, then click the "Machine Configuration" button. Interface: Machine operation options



This interface has 6 options: date/time, clear power, clear fault records, buzzer switch, logic switch, restore default parameters.
Click the corresponding text to jump to the selected submenu;
Click "Setting" to return to the machine parameter option interface.

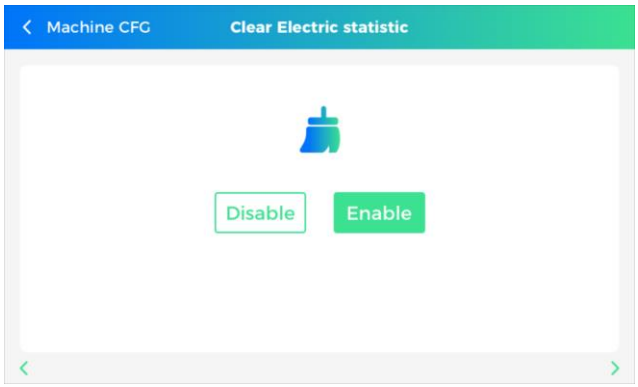
Interface: Machine date/time setting



This page displays the current date and time
Click the number to pop up the keyboard to modify
Click "Machine CFG" to return to the previous menu.

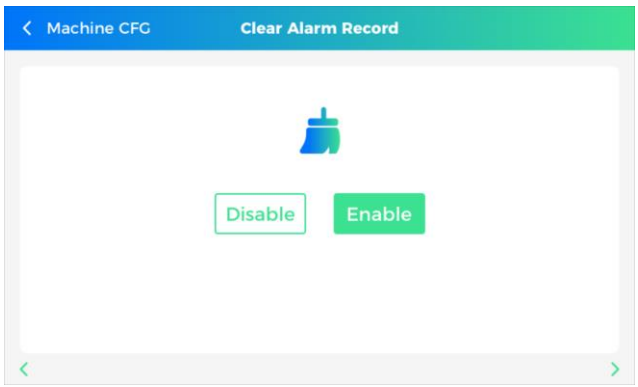
Click the ">" page to jump to the buzzer setting interface.

Interface: Power statistics clear setting



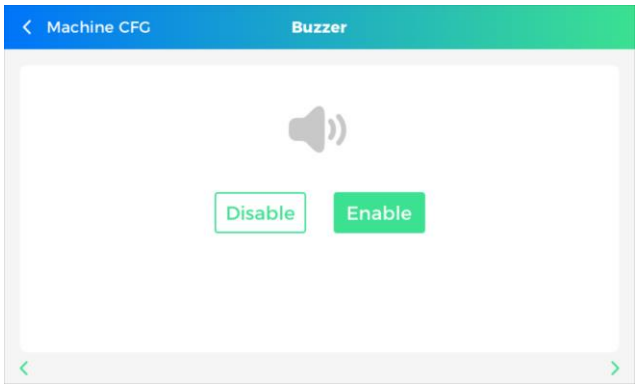
This page is for clearing power statistics settings.
Click "Disable" to disable the clearing power statistics function.
Click "Enable" to enable the clearing power statistics function.
Click "Machine CFG" to return to the previous menu.
Click "<" to jump to the machine date/time settings.
Click ">" to jump to the setting clear fault record interface.

Interface: Fault record clearing settings



This page is for fault record clearing settings.
Click "Disable" to disable the fault record clearing function.
Click "Enable" to enable the fault record clearing function.
Click "Machine CFG" to return to the upper menu.
Click "<" to jump to the clear power statistics setting interface.
Click ">" to jump to the buzzer setting interface.

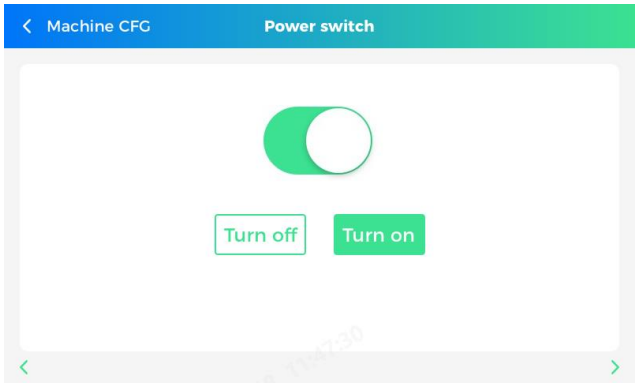
Interface: Buzzer settings



This page is for setting the buzzer.

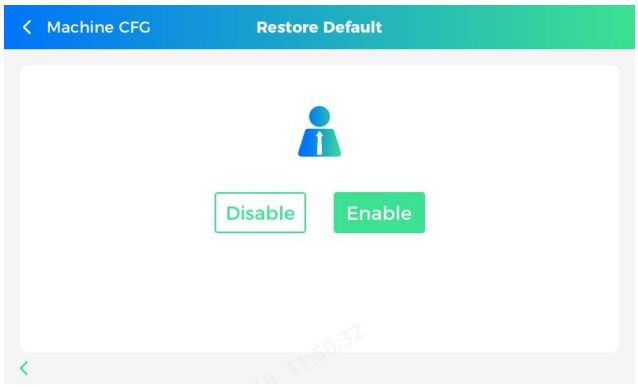
Click "Disable" to disable the buzzer.
Click "Enable" to enable the buzzer.
Click "Machine CFG" to return to the upper menu.
Click "<" to jump to the fault record clearing setting interface.
Click ">" to jump to the machine power on/off setting interface.

Interface: Machine power on/off



This page is used to control the machine's power on and off.
Click "Turn off" to turn the machine off.
Click "Turn on" to turn the machine on.
Click "Machine CFG" to return to the upper menu.
Click "<" to jump to the buzzer setting interface.
Click ">" to jump to the default parameter restore interface.

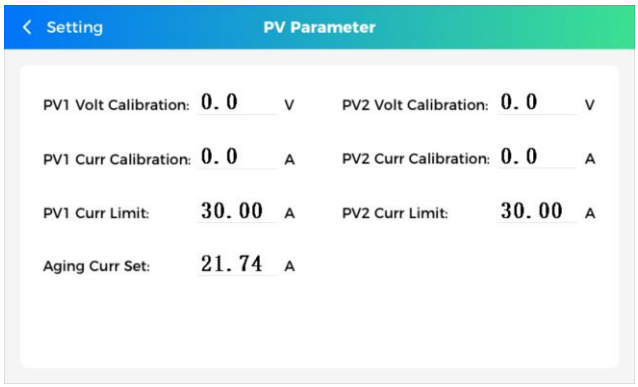
Interface: Restore machine default parameters



This page is to restore the machine default parameters.
Click "Disable" to not restore the factory settings.
Click "Enable" to restore the factory settings.
Click "Machine CFG" to return to the upper menu.
Click "<" to jump to the machine power on/off setting interface.

7.8.3 PV parameter setting

Interface: PV parameter setting



PV parameter setting interface displays parameters:
PV1 Volt Calibration: PV1 voltage calibration (range 100.0~910.0V)
PV1 Curr Calibration: PV1 current calibration (range 0.1~50.0A)

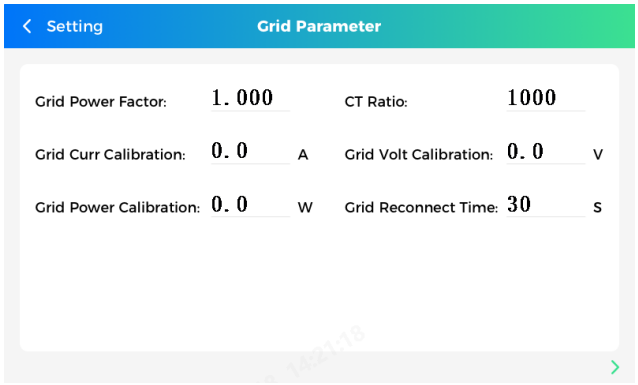
PV2 Volt Calibration: PV2 voltage calibration (range 100.0~910.0V)
PV2 Curr Calibration: PV2 current calibration (range 0.1~50.0A)
PV1 Curr Limit: PV1 aging current setting upper limit (range 0.0~30.0A)
PV2 Curr Limit: PV1 aging current setting upper limit (range 0.0~30.0A)
Aging Curr Set: Aging current setting (range 0.0~30.0A)

Note: The calibration parameter setting requires the corresponding equipment to be running, and calibration can only be performed when a value is detected.

PV parameter setting interface key operation:
Press "Setting" to return to the machine parameter option interface.

7.8.4 Grid parameter settings

Interface: Grid parameter settings

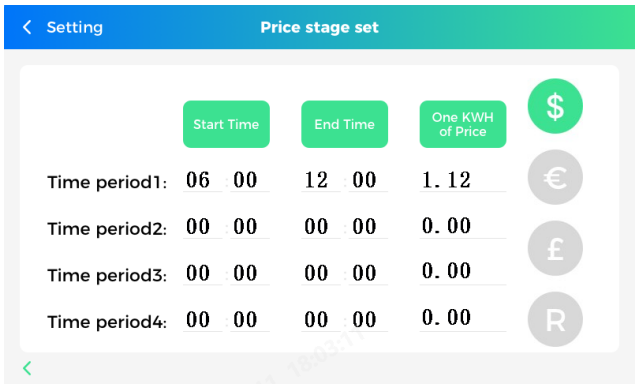


The grid parameter setting interface displays parameters:
Grid Power Factor: Grid power factor (range 0.700~1.000 -0.700 ~ -1.000)
CT Ratio: CT ratio (range 100~10000)
Grid Volt Calibration: Grid voltage calibration (range 170.0~300.0V)
Grid Curr Calibration: Grid current calibration (range 0.1~50.0A)
Grid Power Calibration: Grid power calibration (range 1~7000W)
Grid Reconnect Time: Grid reconnection time (range 20~900S)

Note: The calibration parameter setting requires the corresponding equipment to be running, and calibration can only be performed after the value is detected.

Key operation of the grid parameter setting interface:
Press "Setting" to return to the machine parameter option interface.
Click ">" to jump to the electricity price setting interface.

Interface: Electricity price settings



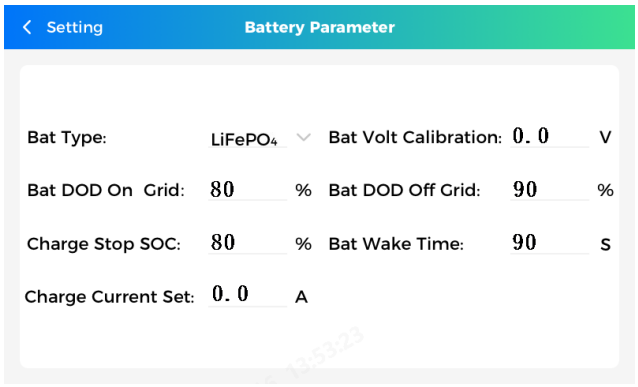
The electricity price setting interface displays parameters:
Time period 1: Time period 1 electricity price setting
Time period 2: Time period 2 electricity price setting

Time period 3: Time period 3 electricity price setting
Time period 4: Time period 4 electricity price setting

Key operation of the electricity price setting interface:
Press "Setting" to return to the machine parameter option interface.
Click "<" to jump to the grid parameter setting interface.
Note: Click the unit icon to set the electricity price unit.

7.8.5 Battery parameter settings

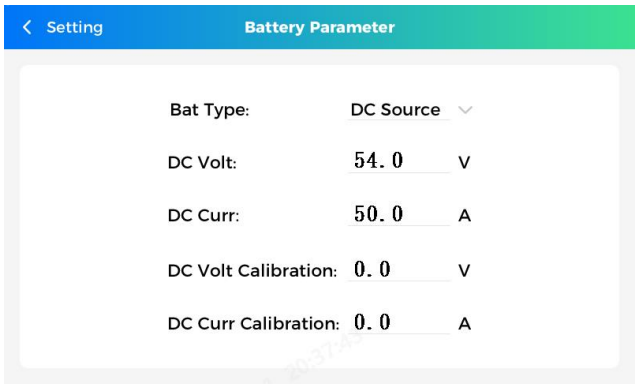
Interface: Lithium battery parameter settings



The parameters displayed on the lithium battery parameter setting interface are as follows:
Bat Type: Battery type (click "﹀" to pop up the battery type options)
Bat Volt Calibration: Battery voltage calibration (range 10.0~100.0V)
Bat DOD On Grid: Battery grid-connected discharge depth (range 1~100%)
Bat DOD Off Grid: Battery off-grid discharge depth (range 1~100%)
Charge Stop SOC: Mains charging stop SOC (range 1~100%)
Bat Wake Time: Battery wake-up time (range 0~120S)
Charge Current Set: Charging current setting (range 0.0~100.0A) (need to be used with the lithium battery charging current enable bit)

Key operation on the lithium battery parameter setting interface:
Press "Setting" to return to the machine parameter option interface.

Interface: DC source parameter setting

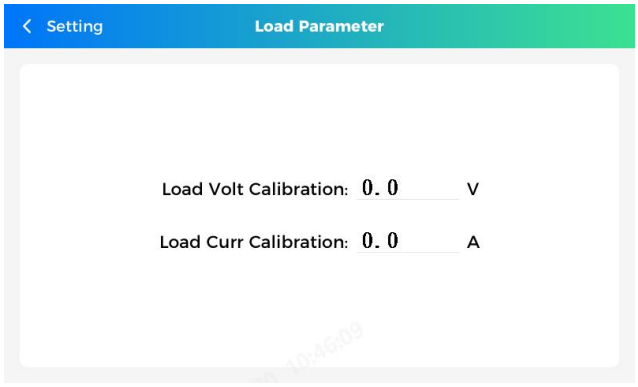


The DC source parameter setting interface displays the following parameters:
Bat Type: Battery type
DC Volt: DC source voltage (range 30.0~60.0V)
DC Curr: DC source current (range -100.0~100.0A)
DC Volt Calibration: DC source voltage calibration (range 10.0~100.0V)
DC Curr Calibration: DC source current calibration (range 0.1~100.0A)
Note: The calibration parameter setting requires the corresponding device to be running and calibration can only be performed after the value is detected.

Key operation of the DC source parameter setting interface:
Press "Setting" to return to the machine parameter option interface.

7.8.6 Load parameter setting

Interface: Load parameter setting



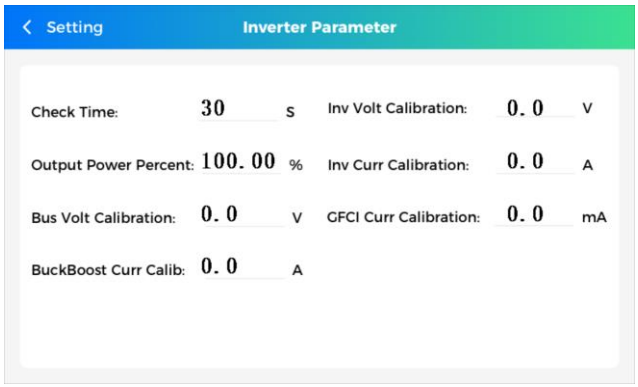
The load parameter setting interface displays parameters:
Load Volt Calibration: Load voltage calibration (range 100.0~310.0V)
Load Curr Calibration: Load current calibration (range 1.0~33.0A)

Note: The calibration parameter setting requires the corresponding equipment to be running and calibration can only be performed after the value is detected.

Key operation of the load parameter setting interface:
Press "Setting" to return to the machine parameter option interface.

7.8.7 Inverter parameter settings

Interface: Inverter parameter settings



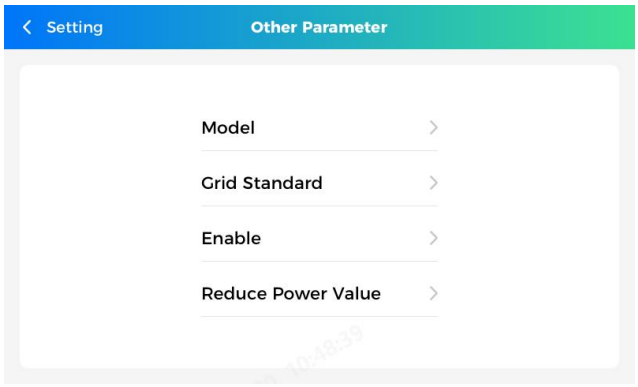
Inverter parameter setting interface displays parameters:
Check Time: self-check time (range 20~900S)
Output Power Percent: output power percentage (range 0.00~100.00%)
Inv Volt Calibration: inverter voltage calibration (range 180.0~500.0V)
Inv Curr Calibration: inverter current calibration (range 0.1~50.0A)
BusVolt Calibration: bus voltage calibration (range 180.0~500.0V)
GFCI Curr Calibration: GFCI current calibration (range 1~1000mA)
BuckBoost Curr Calibration: BuckBoost current calibration (range 0.1~50.0A)

Note: The calibration parameter setting requires the corresponding device to be running and the calibration can only be performed after the value is detected.

Inverter parameter setting interface key operation:
Press "Setting" to return to the machine parameter option page.

7.8.8 Other parameter settings

Interface: Other parameter options

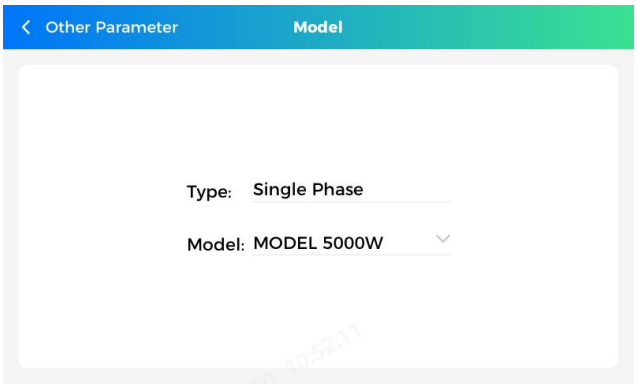


Other parameter options interface display parameters:
Model: Model setting
Grid Standard: Grid standard setting
Enable: Function enable setting
Reduce Power Value: Power reduction setting

Other parameter options interface button operation:
Press "Setting" to return to the machine parameter options interface.

Model settings

Interface: Model settings

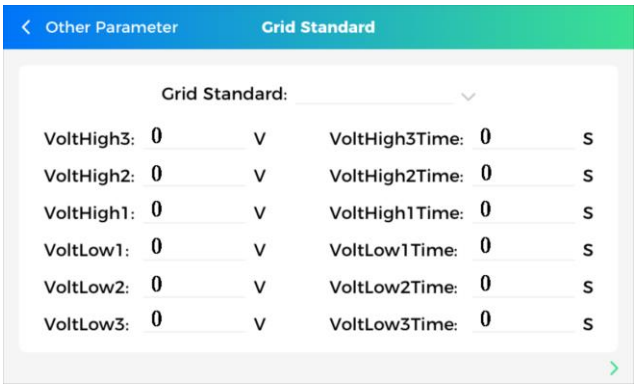


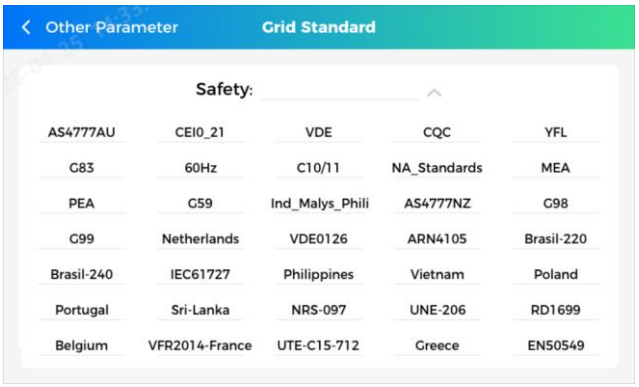
The model setting interface displays parameters:
Type: Type
Model: Model

Key operation of the model setting interface:
Press "Other Parameter" to return to the other parameter option interface.

7.8.9 Grid Standard

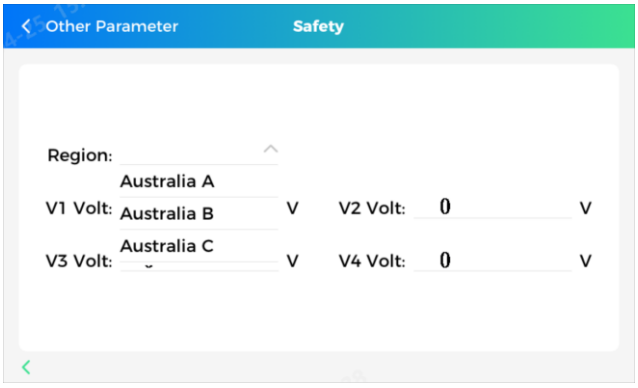
Interface: Grid Standard settings
Click "﹀" to pop up the options for grid standard type. This is the page where administrators can configure Australian electricity grid regulations. Log in using the administrator ID and password.



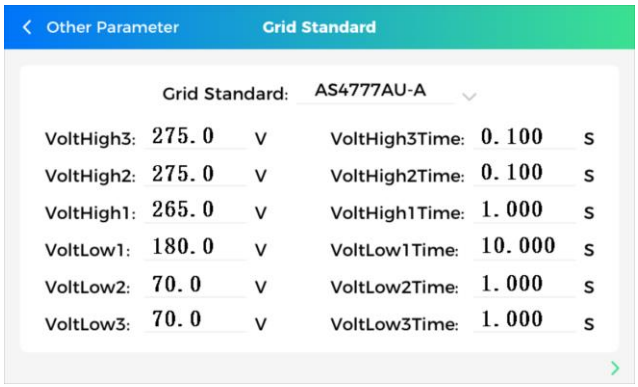


AS4777NZ (New Zealand) ,AS4777AU (AS4777AU-A,AS4777AU-B,AS4777AU-C) ,For example, if you select AS4777AU, the interface will jump to the region options, where you can select AS4777AU-A,AS4777AU-B,AS4777AU-C. As shown below:

Interface: Region optionss



Interface: grid overvoltage/undervoltage protection thresholds and protection times settings

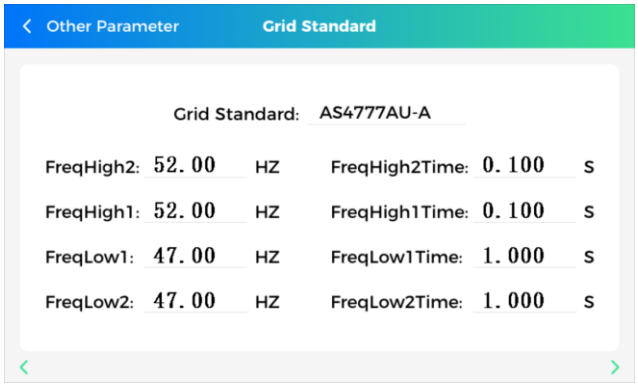


The regulatory voltage protection parameter setting interface displays the following parameters:
Grid Standard: Grid-connected regulation selection
VoltHigh1: Voltage protection upper limit level 1 voltage (range 220.0~330.0V)
VoltHigh1Time: Voltage protection upper limit level 1 trip time (range 0.000~32766.000S)
VoltHigh2: Voltage protection upper limit level 2 voltage (range 220.0~330.0V)
VoltHigh2Time: Voltage protection upper limit level 2 trip time (range 0.000~32766.000S)
VoltHigh3: Voltage protection upper limit level 3 voltage (range 220.0~330.0V)
VoltHigh3Time: Voltage protection upper limit level 3 trip time (range 0.000~32766.000S)
VoltLow1: Voltage protection lower limit level 1 voltage (range 10.0~260.0 =V)
VoltLow1Time: Voltage protection lower limit level 1 trip time (range 0.000~32766.000S)
VoltLow2: Voltage protection lower limit level 2 voltage (range 10.0~260.0V)
VoltLow2Time: Voltage protection lower limit level 2 trip time (range 0.000~32766.000S)
VoltLow3: Voltage protection lower limit level 3 voltage (range 10.0~260.0V)
VoltLow3Time: Voltage protection lower limit level 3 trip time (range 0.000~32766.000S)

Note: Voltage protection upper limit level 3 ⩾ Voltage protection upper limit level 2 ⩾ Voltage protection upper limit level 1 ⩾ Voltage protection lower limit level 1 ⩾ Voltage protection lower limit level 2 ⩾ Voltage protection lower limit level 3

Key operation of the regulatory voltage protection parameter setting interface:
Press "Other Parameter" to return to the other parameter option interface.
Click the ">" page to jump to the regulatory frequency protection parameter setting interface.

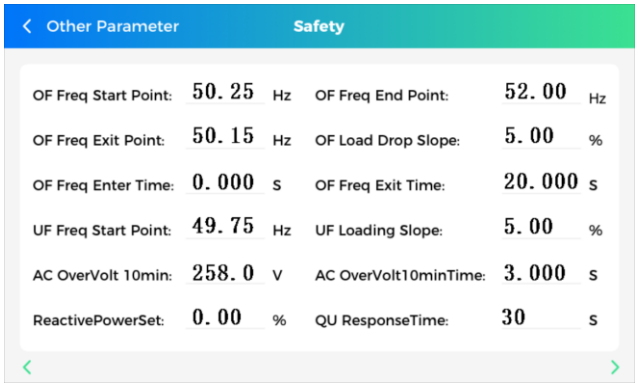
Interface: grid overfrequency/underfrequency protection thresholds and protection times setting



The regulatory frequency protection parameter setting interface displays the following parameters:
FreqHigh1: frequency protection upper limit first-level frequency (range 45.00~65.00Hz)
FreqHigh1Time: frequency protection upper limit first-level trip time (range 0.000~32766.000S)
FreqHigh2: frequency protection upper limit second-level voltage frequency (range 45.00~65.00 Hz)
FreqHigh2Time: frequency protection upper limit second-level trip time (range 0.000~32766.000S)
FreqLow1: frequency protection lower limit first-level frequency (range 45.00~65.00 Hz)
FreqLow1Time: frequency protection lower limit first-level trip time (range 0.000~32766.000S)
FreqLow2: frequency protection lower limit second-level frequency (range 45.00~65.00 Hz)
FreqLow2Time: Frequency protection lower limit level 2 trip time (range 0.000~32766.000S)
Note: Frequency protection upper limit level 2 ⩾ frequency protection upper limit level 1 ⩾ frequency protection lower limit level 1 ⩾ frequency protection lower limit level 2

Key operation of the regulatory frequency protection parameter setting interface:
Press "Other Parameter" to return to the other parameter option interface.
Click "<" to jump to the regulatory voltage protection parameter setting interface.
Click ">" to jump to the regulatory other parameter setting interface.

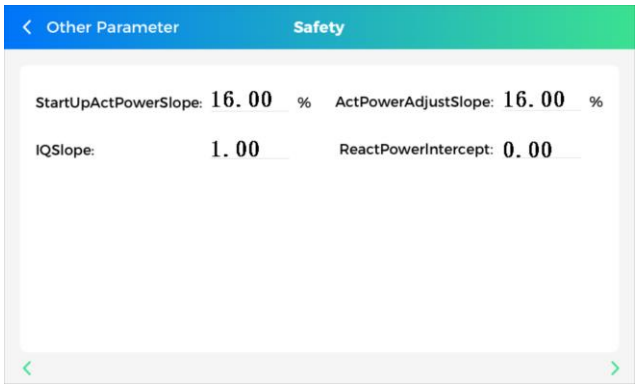
Interface: Overfrequency/underfrequency derating functions settings



Other parameters of the regulation setting interface display parameters:
OF Freq Start Point: Overfrequency load reduction frequency start point (range 45.00~65.00 HZ)
OF Freq End Point: Overfrequency load reduction frequency end point (range 45.00~65.00 HZ)
OF Freq Exit Point: Overfrequency load reduction recovery frequency point (range 45.00~65.00 HZ)
OF Freq Dorp Slope: Overfrequency load reduction slope (range 0.00~100.00%)
OF Freq Enter Time: Overfrequency load reduction enters the load reduction curve delay time (range 0.000~1310.680S)
OF Freq Exit Time: Overfrequency load reduction recovery frequency waiting time (range 0.000~1310.680S)
UF Freq Start Point: Underfrequency loading frequency start point (range 45.00~65.00HZ)
UF Freq Dorp Slope: Underfrequency loading slope (range 0.00~100.00%)
AC OverVolt 10min: AC overvoltage 10-minute voltage (range 200.0~290.0V)
AC OverVolt10minTime: AC overvoltage 10-minute time (range 0.020~600.000S)
ReactivePowerSet: Set reactive power percentage (-100.00%~100.00%)
QU ResponseTime: QU response time (range 3~60S)

Key operation of the regulatory other parameter setting interface:
Press "Other Parameter" to return to the other parameter option interface.
Click "<" to jump to the regulatory frequency protection parameter setting interface.
Click ">" to jump to the regulatory other parameter setting interface.

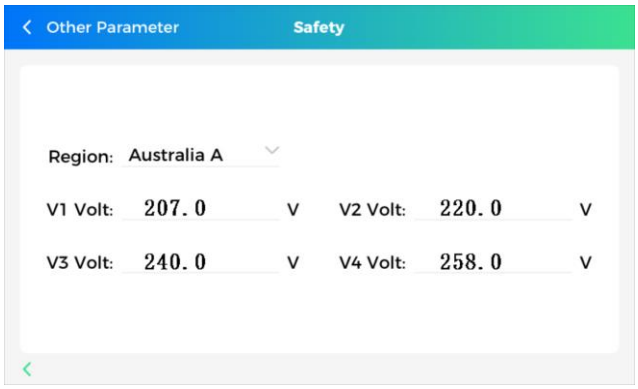
Interface: Regulatory other parameter setting



StartUpActPowerSlope: Startup active power slope
ActPowerAdjustSlope: Active power adjustment slope
IQSlope: IQ curve slope
ReactPowerIntercept: Reactive power curve intercept

Other parameter setting interface key operation:
Press "Other Parameter" to return to other parameter option interface.
Click "<" to jump to the other parameter setting interface.
Click ">" to jump to the other parameter setting interface.

Interface: Australian regulation voltage active QU curve parameter setting

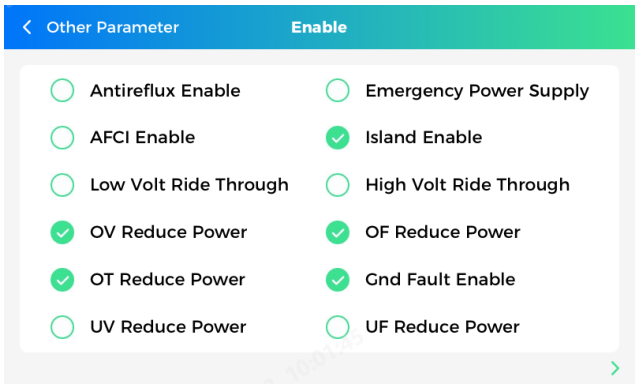


The parameters displayed in the Australian regulations voltage active QU curve parameter setting interface are as follows:
Region: Australian regulations region selection (Australia A, Australia B, Australia C)
V1 Volt: Voltage point V1 of the active PU curve (range 190.0~210.0V)
V2 Volt: Voltage point V2 of the active PU curve (range 216.0~230.0V)
V3 Volt: Voltage point V3 of the active PU curve (range 235.0~255.0V)
V4 Volt: Voltage point V4 of the active PU curve (range 244.0~265.0V)

Key operation of the Australian regulations voltage active QU curve parameter setting interface:
Press "Other Parameter" to return to the other parameter option interface.
Click "<" to jump to the regulation other parameter setting interface.

Function enable setting

Interface: Function enable setting 1



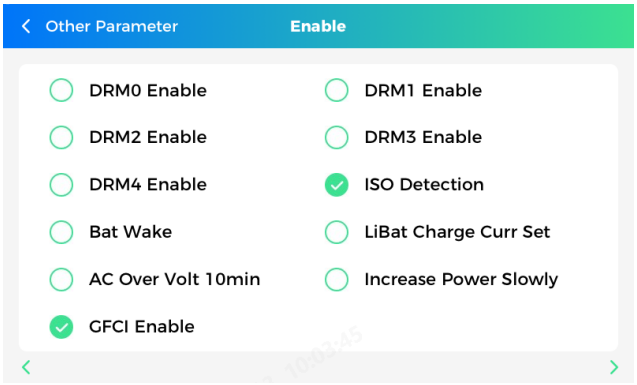
Function Enable Setting 1 interface displays parameters:
Antireflux Enable: Anti-reflow Enable
Emergency Power Supply: Emergency Power Supply
AFCI Enable: Arc Detection
Island Enable: Island Protection
Low Volt Ride Through: Low Volt Ride Through
High Volt Ride Through: High Volt Ride Through
OV Reduce Power: Overvoltage Derating
OF Reduce Power: Overfrequency Derating
OT Reduce Power: Overtemperature Derating
Gnd Fault Enable: Ground Fault
UV Reduce Power: Undervoltage Derating
UF Reduce Power: Underfrequency Derating.

Note: Only one of the island protection and low voltage ride through can be set at the same time.

Key operation of Function Enable Setting 1 interface:
Press "Other Parameter" to return to other parameter options page.

Click ">" page to jump to Function Enable Setting 2 interface.

Interface: Function Enable Setting 2

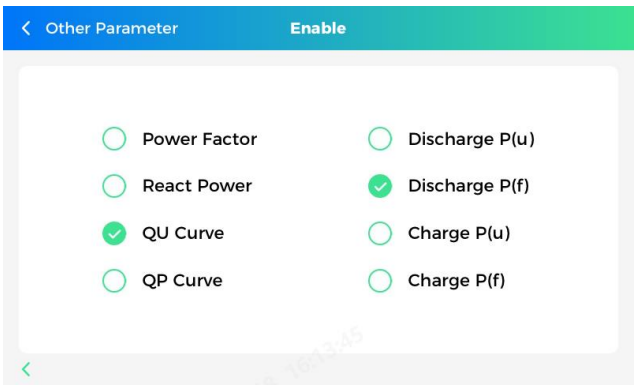


Function Enable Setting 2 interface display parameters:
DRM0 Enable: DRM0 Enable
DRM1 Enable: DRM1 Enable
DRM2 Enable: DRM2 Enable
DRM3 Enable: DRM3 Enable
DRM4 Enable: DRM4 Enable
ISO Detection: Insulation impedance detection
Bat Wake: Battery wake-up
LiBat Charge Curr Set: Lithium battery charging current enable setting
AC Over Volt 10min: AC overvoltage 10 minutes
Increase Power Slowly: Power increase slowly

GFCI Enable: Leakage current detection

Function Enable Setting 2 interface button operation:
Press "Other Parameter" to return to other parameter options page.
Click "<" to jump to the Function Enable Setting 1 interface.
Click ">" to jump to the Function Enable Setting 3 interface.

Interface: Function enable setting interface 3



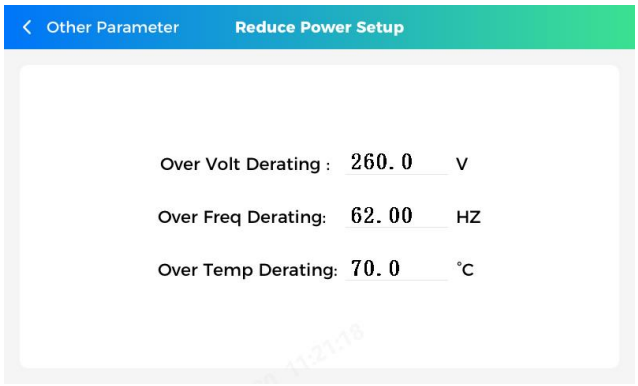
The interface display parameters:
Power Factor: Fixed Power Factor Mode Enable
React Power: Fixed Reactive Power Mode Enable
QU Curve: QU Curve Mode Enable
QP Curve: QP Curve Mode Enable
Discharge P(u): Discharge P(u) Mode Enable

Discharge P(f): Discharge P(f) Mode Enable
Charge P(u): Charge P(u) Mode Enable
Charge P(f): Charge P(f) Mode Enable

Function Enable Setting 3 interface button operation:
Press "Other Parameter" to return to other parameter options page.
Click "<" to jump to Function Enable Setting 2 interface.

Derating settings

Interface: Derating settings interface



The interface display parameters:
Over Volt Derating: Over voltage derating point (range 230.0~295.0V)
Over Freq Derating: Over frequency derating point (range 50.00~65.00Hz)
Over Temp Derating: Over temperature derating point (range 0.1~100.0℃)

The interface button operation:
Press "Other Parameter" to return to other parameter options page.

8. Over-frequency and under-frequency protection and reconnection parameters

Region	Parameter		
Australia A	Protection value F>	52	Hz
	Protection value F<	47	Hz
	Connect Frequency Upper	50.15	Hz
	Connect Frequency Lower	47.5	Hz
	Protection time F>	0.1	Hz
	Protection time F<	1	Hz
Australia B	Protection value F>	52	Hz
	Protection value F<	47	Hz
	Connect Frequency Upper	50.15	Hz
	Connect Frequency Lower	47.5	Hz
	Protection time F>	0.1	Hz
	Protection time F<	1	Hz
Australia C	Protection value F>	55	Hz
	Protection value F<	45	Hz
	Connect Frequency Upper	50.5	Hz
	Connect Frequency Lower	47.5	Hz
	Protection time F>	0.1	Hz
	Protection time F<	5	Hz
New Zealand	Protection value F>	55	Hz
	Protection value F<	45	Hz
	Connect Frequency Upper	50.15	Hz

	Connect Frequency Lower	47.5	Hz
	Protection time F>	0.1	Hz
	Protection time F<	1	Hz

8.1 Country code setting

The grid connection standard is set through the country code setting item on the APP. Please set the corresponding country or regulation, refer to the table below. If the customer does not set it, the EU grid regulation EN50549-1:2019 is used by default.

Note: This host computer is managed by administrators and is not shared with users. Inverter settings are configured at the manufacturer's factory according to the regulatory requirements of the user's location.

NO	COUNTRY/REGION	GRID CODE	Power Quality Setting
1	Australia	AS/NZS 4777.2:2020+Amd 1:2021+Amd 2:2024	Australia A Australia B Australia C
2	New Zealand	AS/NZS 4777.2:2020+Amd 1:2021+Amd 2:2024	/

P(f) Curve Configuration Instructions

Region	Parameter
Australia A	Freq-Watt Enable: 1 — 0:Forbid; 1:Enable; Freq-Watt Curve Types: 2 — 0:Activate; 1:Deactivate Two Point; 2:Deactivate Three Point; 3:Active Without Energy Store; 4:Deactive Without Energy Store; Over Freq Start Point: 50.25 Hz — Set Range: 50.1 to 50.5Hz Over Freq Mid Point: 50.75 Hz — Set Range: 50.5 to 52.0Hz Over Freq End Point: 52 Hz — Set Range: 51.0 to 53.0Hz Over Freq Recover Point: 50.15 Hz Over Freq Recover Time: 1 s Under Freq Start Point: 49.75 Hz — Set Range: 49.5 to 49.9Hz Under Freq Mid Point: 49 Hz — Set Range: 48.0 to 49.5Hz Under Freq End Point: 48 Hz — Set Range: 47.0 to 49.0Hz Under Freq Recover Point: 49.85 Hz Under Freq Recover Time: 1 s **Australian A setting in software**
Australia B	Freq-Watt Enable: 1 — 0:Forbid; 1:Enable; Freq-Watt Curve Types: 2 — 0:Activate; 1:Deactivate Two Point; 2:Deactivate Three Point; 3:Active Without Energy Store; 4:Deactive Without Energy Store; Over Freq Start Point: 50.15 Hz — Set Range: 50.1 to 50.5Hz Over Freq Mid Point: 50.75 Hz — Set Range: 50.5 to 52.0Hz Over Freq End Point: 52 Hz — Set Range: 51.0 to 53.0Hz Over Freq Recover Point: 50.05 Hz Over Freq Recover Time: 1 s Under Freq Start Point: 49.85 Hz — Set Range: 49.5 to 49.9Hz Under Freq Mid Point: 49 Hz — Set Range: 48.0 to 49.5Hz Under Freq End Point: 48 Hz — Set Range: 47.0 to 49.0Hz Under Freq Recover Point: 49.95 Hz Under Freq Recover Time: 1 s **Australian B setting in software**

Australia C

Freq-Watt Enable	1		0:Forbid; 1:Enable;
Freq-Watt Curve Types	2		0:Activate; 1:Deactivate Two Point; 2:Deactivate Three Point; 3:Active Without Energy Store; 4:Deactive Without Energy Store;
Over Freq Start Point	50.5	Hz	Set Range: 50.1 to 50.5Hz
Over Freq Mid Point	51.75	Hz	Set Range: 50.5 to 52.0Hz
Over Freq End Point	53	Hz	Set Range: 51.0 to 53.0Hz
Over Freq Recover Point	50.45	Hz	
Over Freq Recover Time	1	s	
Under Freq Start Point	49.5	Hz	Set Range: 49.5 to 49.9Hz
Under Freq Mid Point	48.25	Hz	Set Range: 48.0 to 49.5Hz
Under Freq End Point	47	Hz	Set Range: 47.0 to 49.0Hz
Under Freq Recover Point	49.55	Hz	
Under Freq Recover Time	1	s	

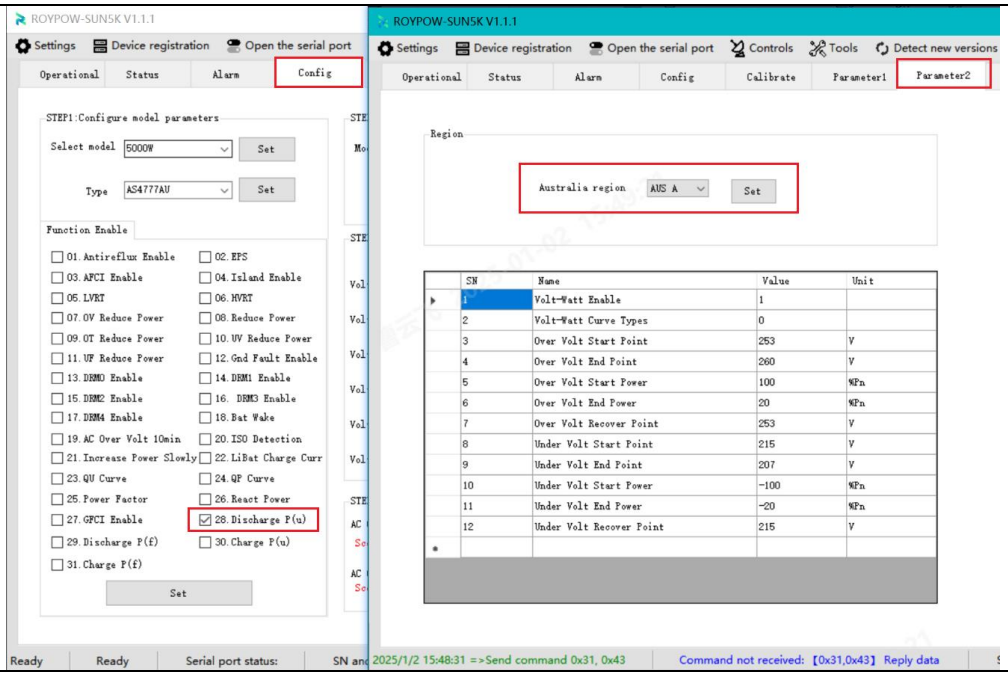
Australian C setting in software

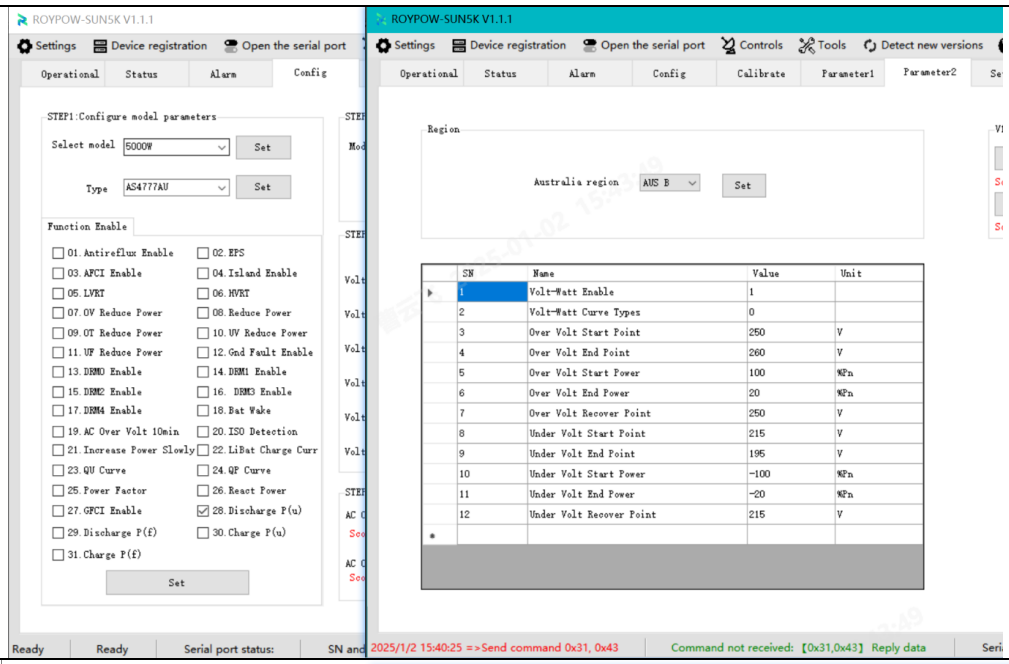
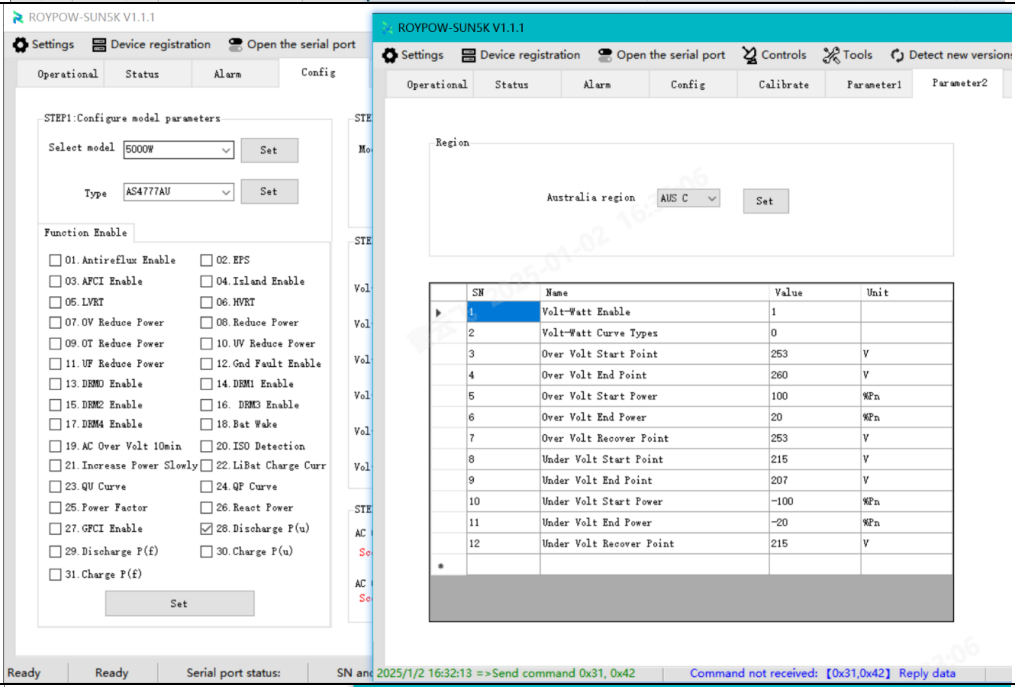
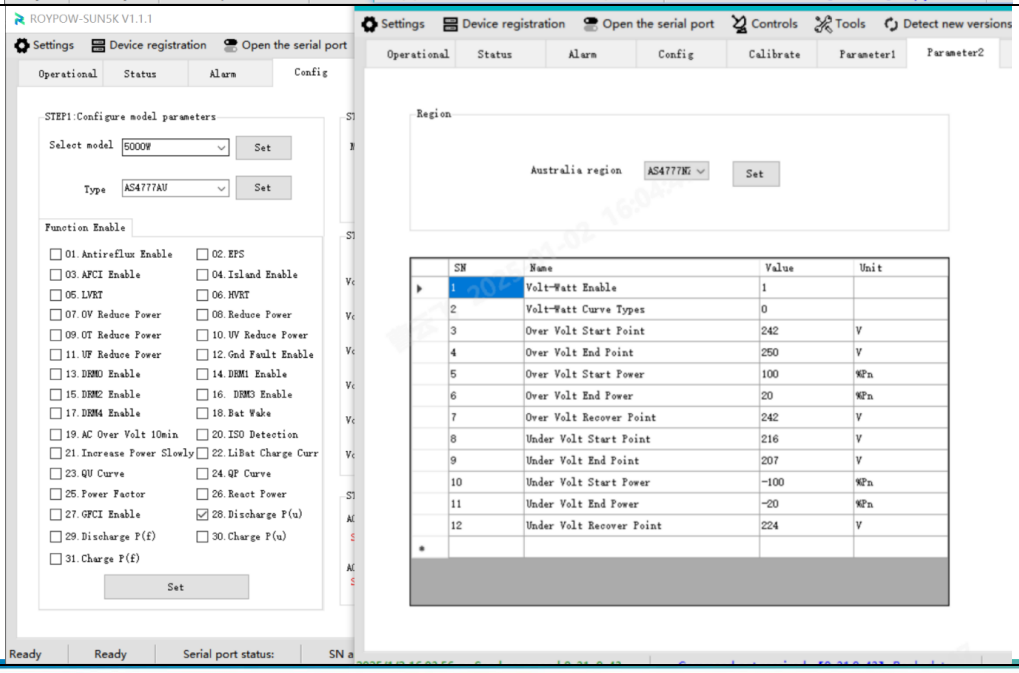
New Zealand

Freq-Watt Enable	1		0:Forbid; 1:Enable;
Freq-Watt Curve Types	2		0:Activate; 1:Deactivate Two Point; 2:Deactivate Three Point; 3:Active Without Energy Store; 4:Deactive Without Energy Store;
Over Freq Start Point	50.2	Hz	Set Range: 50.1 to 50.5Hz
Over Freq Mid Point	51	Hz	Set Range: 50.5 to 52.0Hz
Over Freq End Point	52	Hz	Set Range: 51.0 to 53.0Hz
Over Freq Recover Point	50.1	Hz	
Over Freq Recover Time	1	s	
Under Freq Start Point	49.8	Hz	Set Range: 49.5 to 49.9Hz
Under Freq Mid Point	49	Hz	Set Range: 48.0 to 49.5Hz
Under Freq End Point	48	Hz	Set Range: 47.0 to 49.0Hz
Under Freq Recover Point	49.9	Hz	
Under Freq Recover Time	1	s	

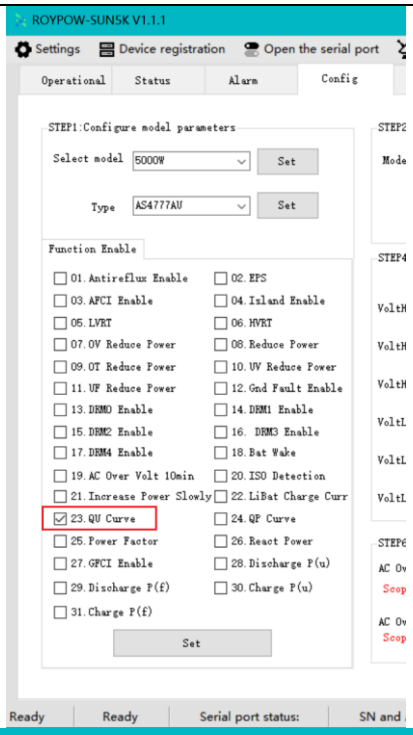
New Zealand setting in software

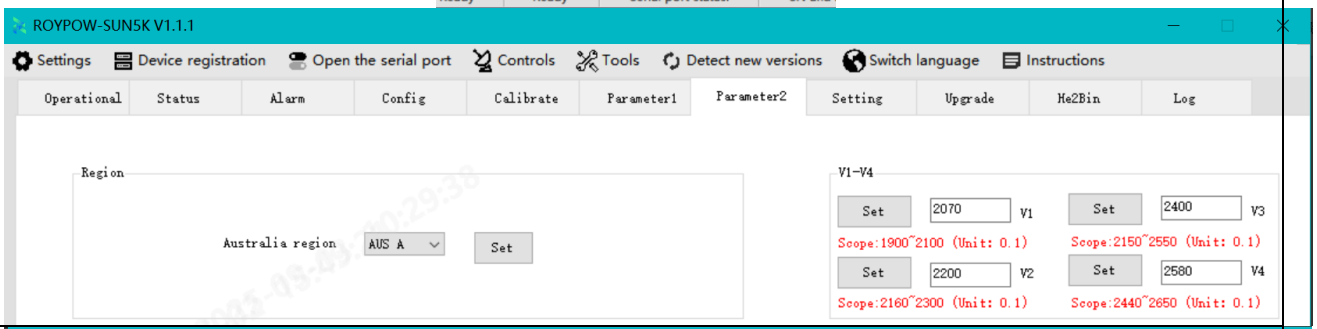
P(U) Curve Configuration Instructions

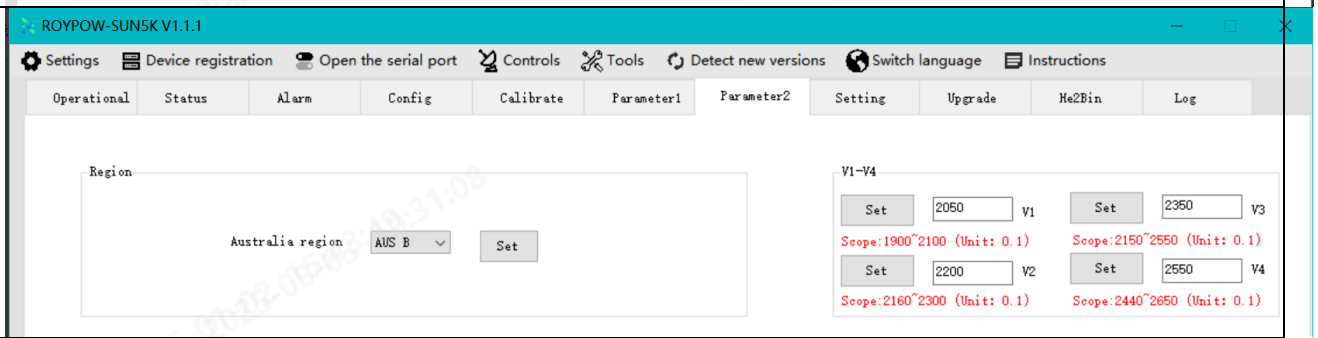
Region	Parameter
Australia A	

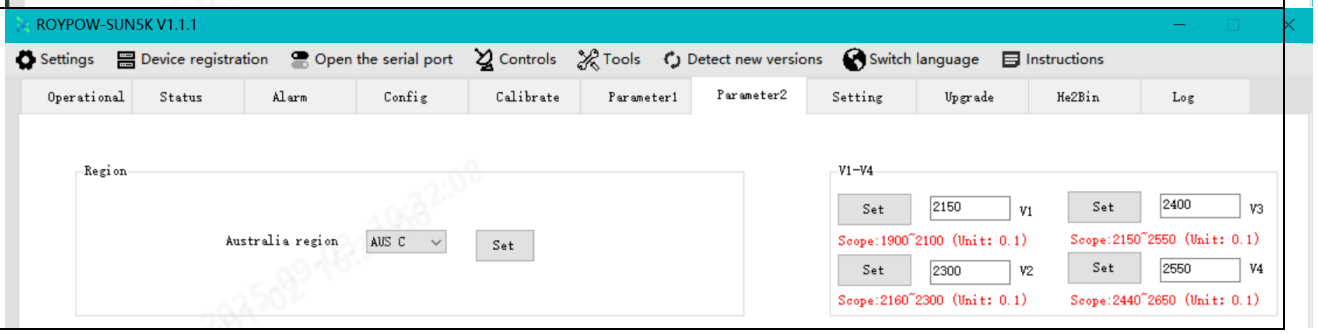
Australia B		
Australia C		
New Zealand		

In the Config menu, select the 28th function enable box. Then, in Parameter2, choose the region (Australia A, Australia B, Australia C, New Zealand). Click the Set button to activate the P(U) function.

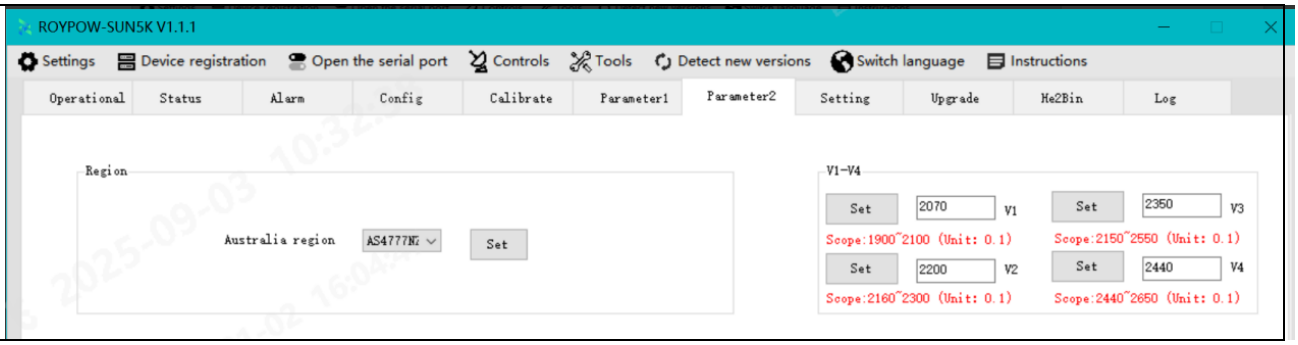
<table>
<tr><th colspan="2">Q(U) Curve Configuration Instructions</th></tr>
<tr><th>Region</th><th>Parameter</th></tr>
<tr><td>Australia A</td><td>




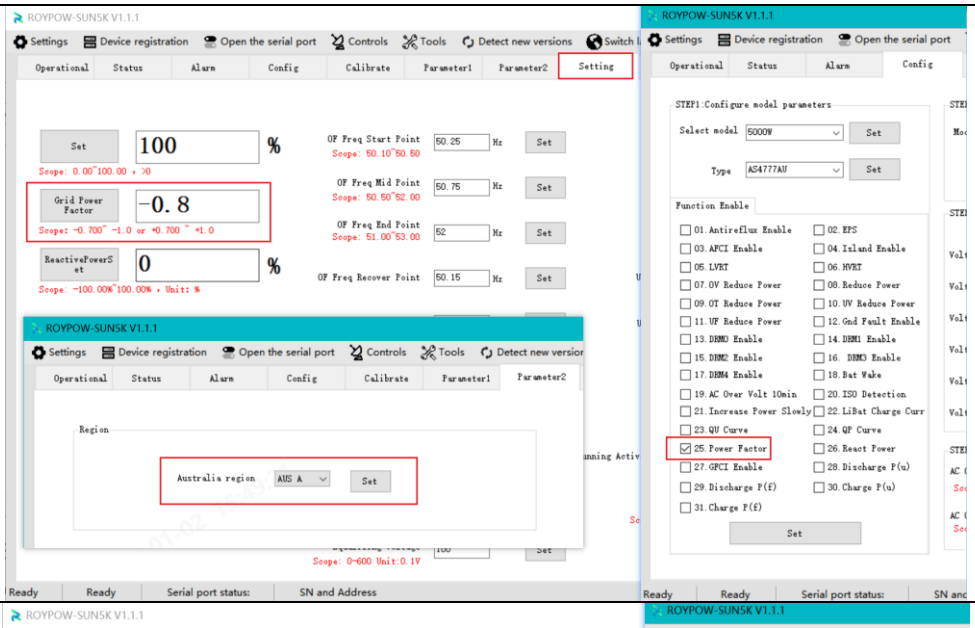
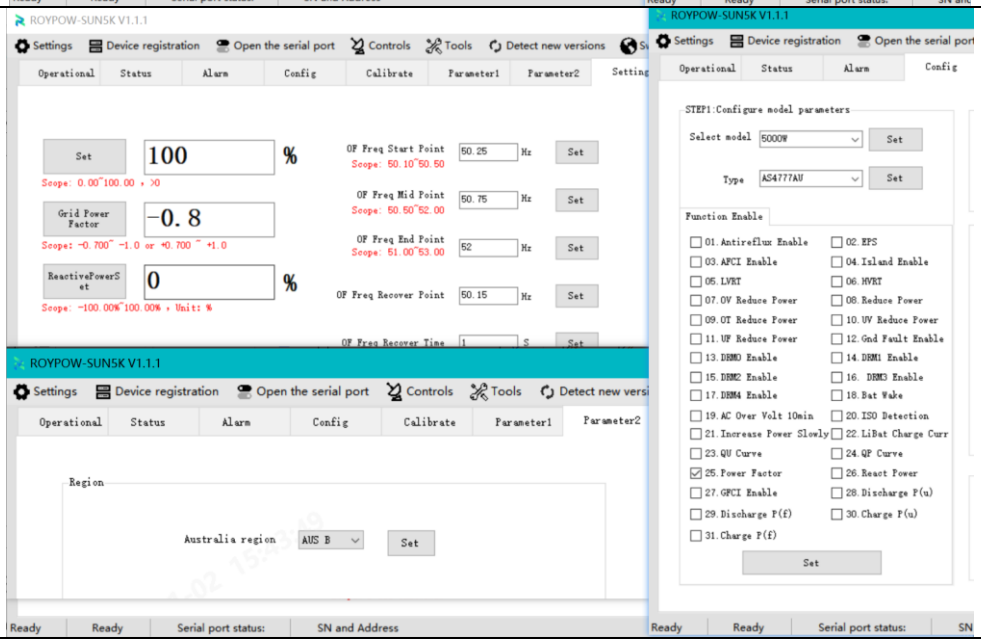
</td></tr>
<tr><td>Australia B</td><td>


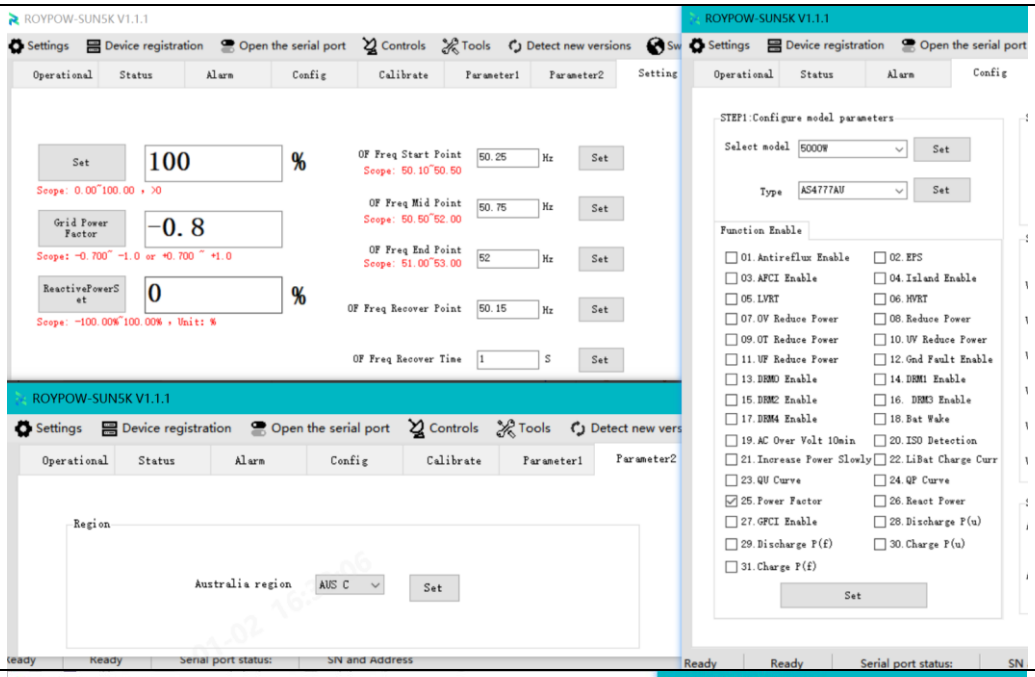
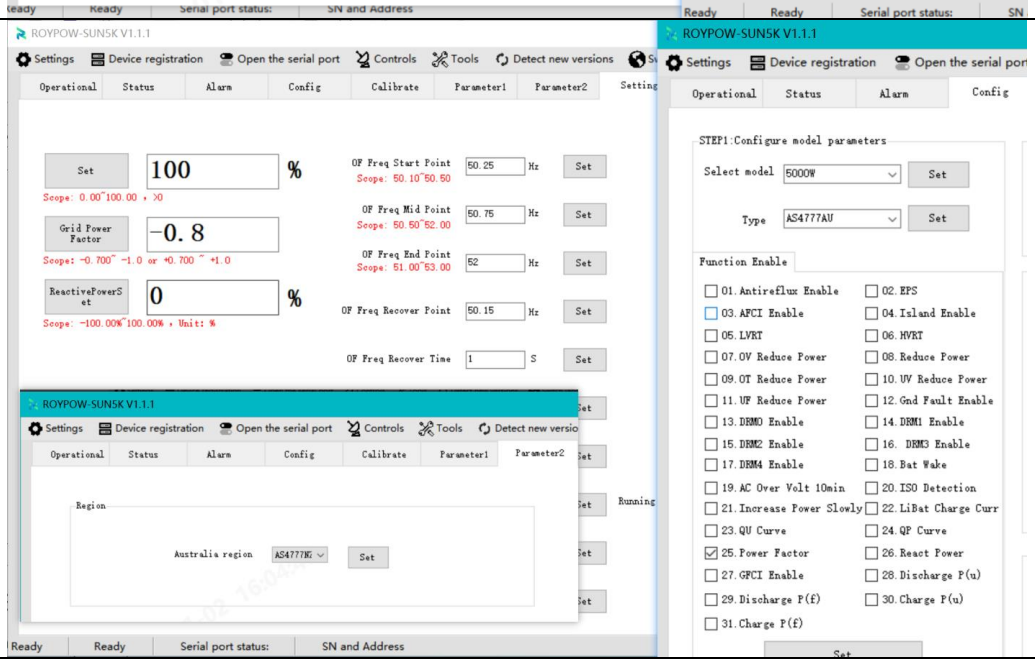
</td></tr>
<tr><td>Australia C</td><td>


</td></tr>
</table>

New Zealand	

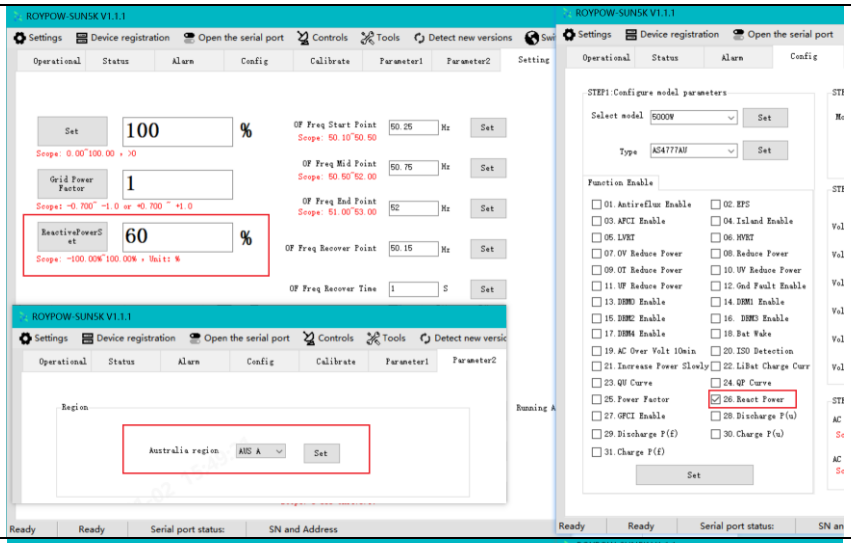
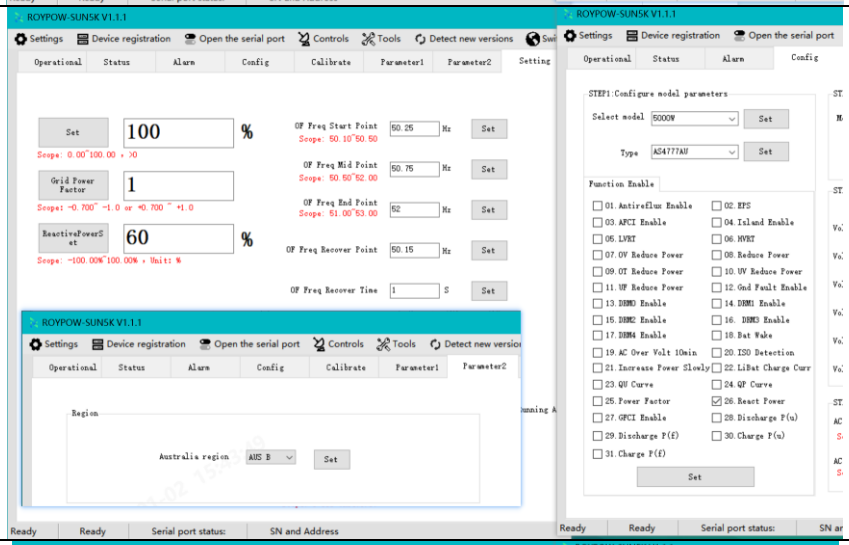
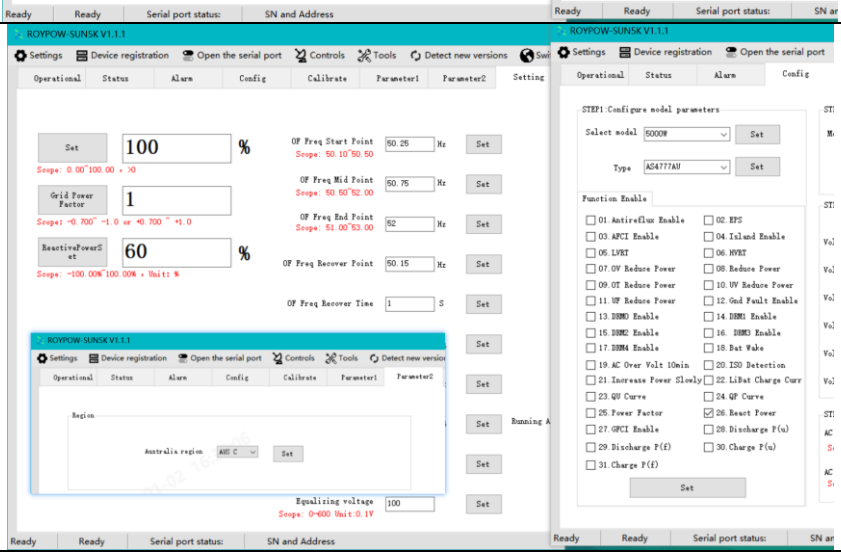
In the Config menu, select the 23rd function enable box (QU Curve). Then, in Parameter2, choose the region (Australia A, Australia B, Australia C, New Zealand). Click the Set button to activate the Q(U) function.

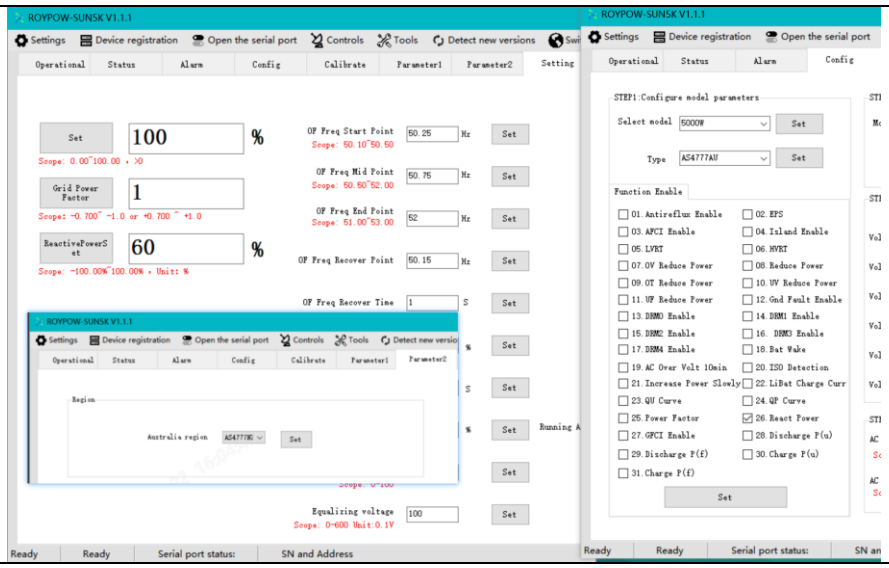
Power Factor **mode**	
Region	**Parameter**
Australia A	
Australia B	

Australia C	
New Zealand	

In the Config menu, select the 25th option (Power Factor) in the Function Enable box. Then, set the Grid Power Factor in the Setting menu. Click the button to activate Power Factor mode.

Fixed reactive power mode	
Region	**Parameter**

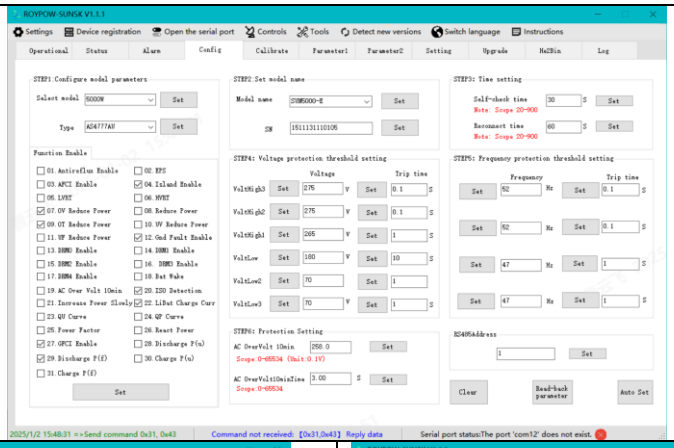
Australia A		
Australia B		
Australia C		

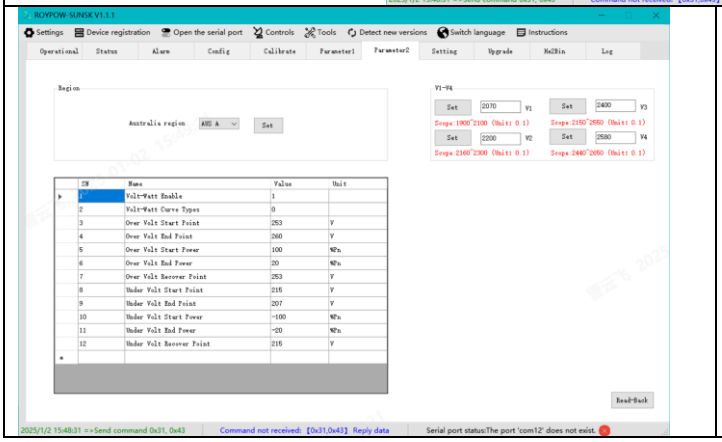
New Zealand	

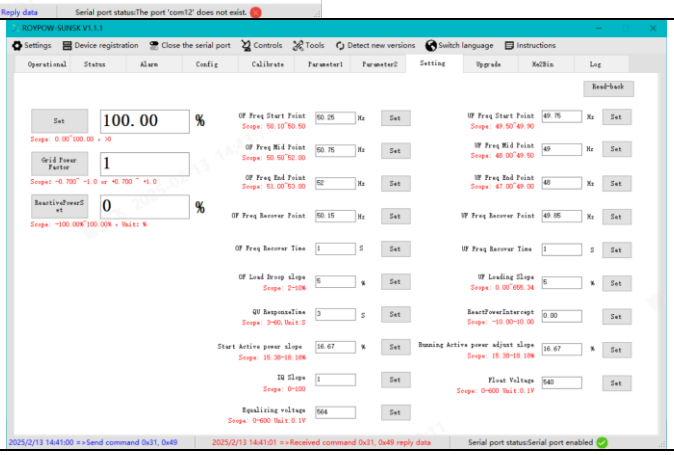
In the Config menu, select the 26th option (Reactive Power) in the Function Enable box. Then, in the Setting menu, configure ReactivePowerSet and click the button to activate Fixed Reactive Power mode.

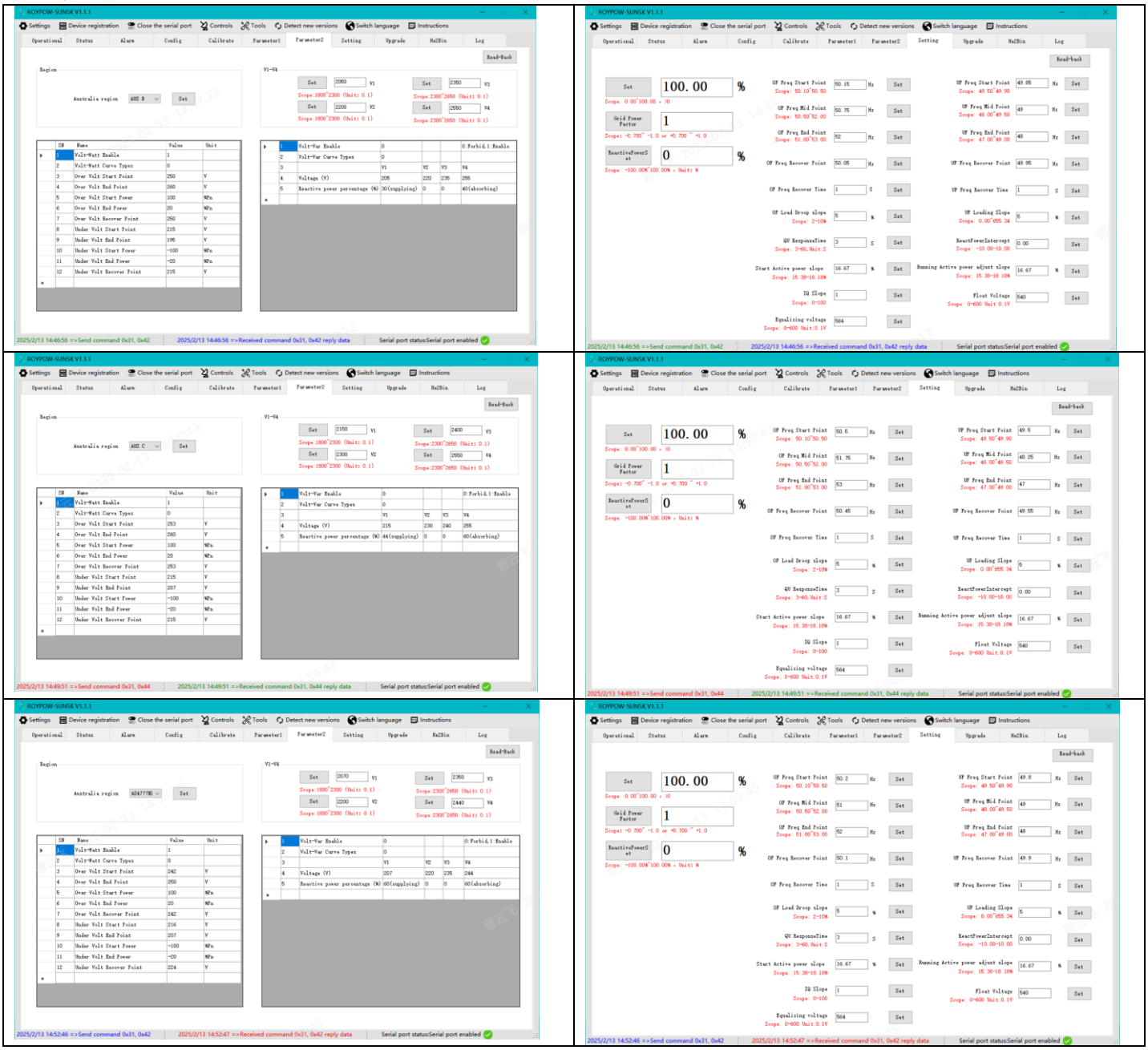
8.2 Special parameters setting

Special parameters include relevant parameters for grid protection settings and power quality response mode settings.









9. Fault error table

Fault code	Fault level	Fault information	Fault/Alarm	Handling method
1	Fault	BMS overvoltage protection	BMS Over Volt (F)	Discharge a battery, if the fault remains, contact the after-sales service
2	Fault	BMS undervoltage protection	BMS Under Volt (F)	Charge the battery, if the fault remains, contact the after-sales service
3	Fault	BMS overtemperature protection	BMS Over Temp (F)	Turn off the battery and let it cool, if the fault remains, contact the after-sales service
4	Fault	BMS low temperature protection	BMS Under Temp (F)	Increase ambient temperature, if the fault remains, contact the after-sales service
5	Fault	BMS discharge overcurrent protection	BMS Dischg OverCurr (F)	Restart the battery, if the fault remains, contact the after-sales service

6	Fault	BMS charge overcurrent protection	BMS Chg OverCurr (F)	Restart the battery, if the fault remains, contact the after-sales service
7	Fault	BMS system error protection	BMS System Error (F)	Restart the battery, if the fault remains, contact the after-sales service
8	Alarm	BMS overvoltage warning	BMS Over Volt (W)	Discharge a battery
9	Alarm	BMS undervoltage warning	BMS Under Volt (W)	Charge the battery
10	Alarm	BMS overtemperature warning	BMS Over Temp (W)	Let the battery cool
11	Alarm	BMS low temperature warning	BMS Under Temp (W)	Increase ambient temperature
12	Alarm	BMS discharge overcurrent warning	BMS Dischg OverCurr (W)	Lower discharge current
13	Alarm	BMS charge overcurrent warning	BMS Chg OverCurr (W)	Lower charge current
14	Alarm	BMS internal communication failure warning	BMS InnerComm Lose (W)	Check the battery communication cable
15		Reserve		
16	Alarm	CAN communication lost	CAN Comm Lose (W)	Check the battery communication cable, if the fault remains, contact the after-sales service
17	Fault	BMS host failure	BMS Host Failure (F)	Restart the battery, if the fault remains, contact the after-sales service
18	Fault	BMS slave 1 failure	BMS Slave 1 Fault (F)	Restart the battery, if the fault remains, contact the after-sales service
19	Fault	BMS slave 2 failure	BMS Slave 2 Fault (F)	Restart the battery, if the fault remains, contact the after-sales service
20	Fault	BMS slave 3 failure	BMS Slave 3 Fault (F)	Restart the battery, if the fault remains, contact the after-sales service
21	Fault	BMS slave 4 failure	BMS Slave 4 Fault (F)	Restart the battery, if the fault remains, contact the after-sales service
22	Fault	BMS slave 5 failure	BMS Slave 5 Fault (F)	Restart the battery, if the fault remains, contact the after-sales service
23	Fault	BMS slave 6 failure	BMS Slave 6 Fault (F)	Restart the battery, if the fault remains, contact the after-sales service
24	Fault	BMS slave7 failure	BMS Slave 7 Fault (F)	Restart the battery, if the fault remains, contact the after-sales service
25	Fault	BMS short circuit failure	BMS Short-circuit (F)	Restart the battery, if the fault remains, contact the after-sales service
26	Fault	BMS SOH too low failure	BMS SOH Low Fault (F)	Restart the battery, if the fault remains, contact the after-sales service
27	Fault	BMS aerosol detection disconnected	BMS Aerosol disconnect (F)	Restart the battery, if the fault remains, contact the after-sales service
28	Fault	BMS charging MOS failure	BMS Charging MOS Fail (F)	Restart the battery, if the fault remains, contact the after-sales service
29	Fault	BMS discharging MOS failure	BMS Discharg MOS Fail (F)	Restart the battery, if the fault remains, contact the after-sales service
30	Fault	Battery not connected	Bat Not Connected (F)	Check the cables between the battery and the inverter
31	Fault	Bus low voltage failure	Bus Under Volt Fault (F)	Restart the inverter, if the fault remains, contact the after-sales service
32	Fault	Bus high voltage failure	Bus Over Volt Fault (F)	Restart the inverter, if the fault remains, contact the after-sales service

33	Fault	Bus short circuit failure	Bus Short Circuit (F)	Restart the inverter, if the fault remains, contact the after-sales service
34	Fault	Emergency power failure	Emergency Power Fail (F)	Restart the inverter, if the fault remains, contact the after-sales service
35	Fault	Inverter voltage low voltage failure	Inv Low Volt Fault (F)	Restart the inverter, if the fault remains, contact the after-sales service
36	Fault	nverter voltage high voltage failure	Inv High Volt Fault (F)	Restart the inverter, if the fault remains, contact the after-sales service
37	Fault	Inverter output voltage short circuit	Inv Output Volt Short (F)	Restart the inverter, if the fault remains, contact the after-sales service
38	Fault	Inverter soft start timeout	Inv Soft-start TimeOut (F)	Restart the inverter, if the fault remains, contact the after-sales service
39	Fault	Grid soft start timeout	Grid Softstart TimeOut (F)	Restart the inverter, if the fault remains, contact the after-sales service
40	Fault	AC input overcurrent fault	AC Input Over Curr (F)	Restart the inverter, if the fault remains, contact the after-sales service
41	Fault	Battery DCDC temperature fault	DCDC Temp Fault (F)	Stop the machine, wait for it to cool down and turn it on again, if the fault remains, contact the after-sales service
42	Fault	Inverter DCAC temperature fault	Inv Temp Fault (F)	Stop the machine, wait for it to cool down and turn it on again, if the fault remains, contact the after-sales service
43	Fault	NTC fault	NTC Fault (F)	Stop the machine, wait for it to cool down and turn it on again, if the fault remains, contact the after-sales service
44	Fault	PV insulation impedance low	PV InsulatImpedance-Low (F)	Restart the inverter, if the fault remains, contact the after-sales service
45	Fault	Grid relay disconnected	Grid Relay Open (F)	Restart the inverter, if the fault remains, contact the after-sales service
46	Fault	Grid relay 1 stuck	Grid Relay1 Short (F)	Restart the inverter, if the fault remains, contact the after-sales service
47	Fault	Grid relay 2stuck	Grid Relay2 Short (F)	Restart the inverter, if the fault remains, contact the after-sales service
48	Fault	GFCI sensor failure	GFCI Sensor Fail (F)	Restart the inverter, if the fault remains, contact the after-sales service
49	Fault	Current sensor failure	Curr Sensor Fail (F)	Restart the inverter, if the fault remains, contact the after-sales service
50	Fault	Voltage sensor failure	Volt Sensor Fail (F)	Restart the inverter, if the fault remains, contact the after-sales service
51	Fault	Battery overvoltage fault	Bat Over Volt Fault (F)	Restart the inverter, if the fault remains, contact the after-sales service
52	Fault	Inverter overcurrent fault	Inv Over Curr Fault (F)	Restart the inverter, if the fault remains, contact the after-sales service
53	Fault	Grid frequency fault	Grid Frequency Fault (F)	Restart the inverter, if the fault remains, contact the after-sales service
54	Fault	Island protection	Island Protection (F)	Restart the inverter, if the fault remains, contact the after-sales service
55	Fault	Grid voltage fault	Grid Volt Fault (F)	Restart the inverter, if the fault remains, contact the after-sales service
56	Fault	Internal communication fault	Inter Comm Fail (F)	Restart the inverter, if the fault remains, contact the after-sales service

57	Fault	Consistency fault	Consistency Fault (F)	Restart the inverter, if the fault remains, contact the after-sales service
58	Fault	Leakage current overcurrent	GFCI Over Curr Fault (F)	Restart the inverter, if the fault remains, contact the after-sales service
59	Fault	PV overvoltage	PV Over Volt Fault (F)	Reduce the number of PV modules in series. Restart the inverter, if the fault remains, contact the after-sales service
60	Fault	Battery short circuit	Bat Short Circuit (F)	Check the battery power cable connection. Restart the inverter, if the fault remains, contact the after-sales service
61	Fault	Fan start failure	Fan Startup Fault (F)	Restart the inverter, if the fault remains, contact the after-sales service
62	Fault	Bus soft start timeout	Bus Soft-start Timeout (F)	Restart the inverter, if the fault remains, contact the after-sales service
63	Fault	Secondary bus soft start timeout	Hbus Softstart Timeout (F)	Restart the inverter, if the fault remains, contact the after-sales service
64	Fault	Battery relay failure	BAT Relay Fault (F)	Restart the inverter, if the fault remains, contact the after-sales service
65	Fault	Battery overcurrent failure	BAT Over Curr Fault (F)	Restart the inverter, if the fault remains, contact the after-sales service
66	Fault	Secondary bus voltage failure	Second Bus Volt Fault (F)	Restart the inverter, if the fault remains, contact the after-sales service
67	Fault	Bus boost failure	Bus boost Fault (F)	Restart the inverter, if the fault remains, contact the after-sales service
68	Fault	Battery low voltage failure	BAT Under Volt Fault (F)	Detecting battery voltage. Restart the inverter, if the fault remains, contact the after-sales service
69	Fault	Inverter overload failure	Inv Overload Fault (F)	Too much load. Lighten the load. Restart the inverter, if the fault remains, contact the after-sales service
70	Fault	Bypass overload failure	Bypass Overload Fault (F)	Too much load. Lighten the load
71	Fault	Internal ambient temperature overtemperature failure	Inside OverTemp (F)	Stop the machine, wait for it to cool down and turn it on again, if the fault remains, contact the after-sales service
72	Fault	10-minute AC overvoltage	10 Min AC Over Volt (F)	Restart the inverter, if the fault remains, contact the after-sales service

10. Maintenance

Before maintaining and commissioning inverter and its peripheral distribution unit, switch off all the charged terminals of the inverter and wait at least 10 minutes after the inverter is powered off.

10.1 Routine Maintenance

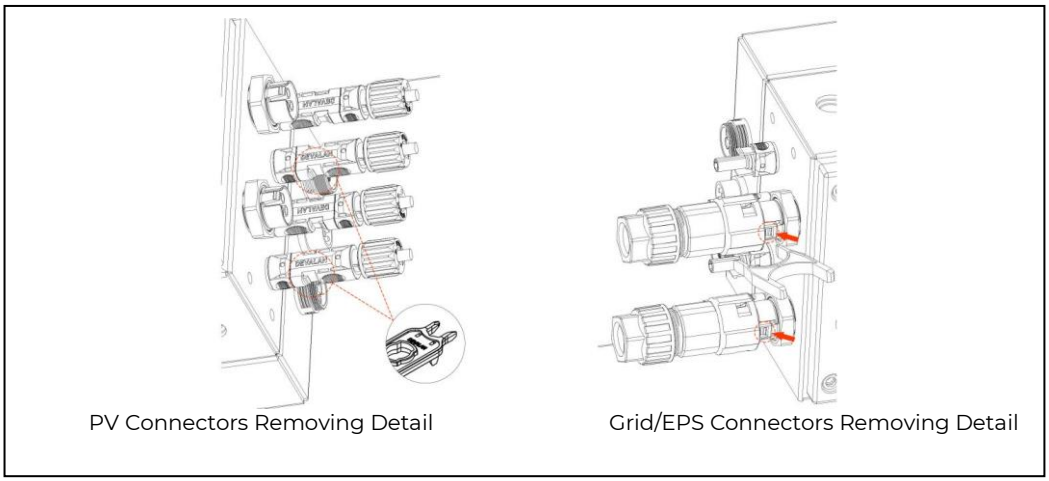
Items	Check Content	Maintain Content	Maintenance Interval
Inverter output status	Statistically maintain the status of electrical yield, and remotely monitor its abnormal status.	N/A	Weekly

PV inverter cleaning	Check periodically that the heat sink is free from dust and blockage.	Clean periodically the heat sink.	Yearly
PV inverter running status	Check that the inverter is not damaged or deformed. Check for normal sound emitted during inverter operation. Check and ensure that all inverter communications is running well.	If there is any abnormal phenomenon, replace the relevant parts.	Monthly
PV inverter electrical connections	Check that all AC, DC and communication cables are securely connected; Check that PGND cables are securely connected; Check that all cables are intact and free from aging.	If there is any abnormal phenomenon, replace the cable or re-connect it.	Semiannually

10.2 Removing the Inverter

Before removing DC input connector, double check DC input switch is turned to OFF to avoid inverter damage and personal injury.

Perform the following procedures to remove the inverter:
Step 1. Disconnect all cables from the inverter, including communications cables, DC input power cables, AC output power cables and PGND cable, as shown below.



PV Connectors Removing Detail

Grid/EPS Connectors Removing Detail

Step 2. Remove the inverter from the mounting bracket.
Step 3. Remove the mounting bracket.

NOTE: To remove the PV/Grid/EPS connectors, insert the removal tool into the bayonet according to the position indicated in the drawing, press inward, and then take out the connector outward.

11. Technical Specification

Model	SUN3000S-E/I	SUN3600S-E/I	SUN4000S-E/I	SUN4600S-E/I	SUN5000S-E/I
PV input rating					
Maximum PV voltage [VDC]	580 V d.c.				
Rated voltage [VDC]	400 V d.c.				
MPPT voltage range [VDC]	120 ~ 550 V d.c.				

MPPT voltage range (full load) [VDC]	180~ 550 V d.c		200~ 550 V d.c.		
Maximum input current [ADC]	13.5 A d.c./13.5 A d.c.				
Isc PV [ADC]	16 A d.c./16 A d.c.				
MPPT tracker number	2				
Maximum inverter backfeed current to array [ADC]	0A d.c.				
Maximum input power [W or kW]	4.6 KW	4.6 KW	6 KW	6 kW	7 kW
Battery input/output rating					
Battery type	Lithium-ion				
Maximum voltage [VDC]	60V d.c.				
Battery rated voltage [VDC]	48 V d.c.				
Battery voltage range [VDC]	40~60 V d.c				
Maximum charge power [W or kW]	3 kW	3.6 kW	4 kW	4.6 kW	5 kW
Maximum discharge power [W or kW]	3 kW	3.6kW	4kW	4.6kW	5kW
Maximum charge current [ADC]	62.5 A d.c.	75 A d.c.	83.3 A d.c.	95.8 A d.c.	100 A d.c.
Maximum discharge current [ADC]	62.5 A d.c.	75 A d.c.	83.3 A d.c.	95.8 A d.c.	100 A d.c.
Grid input rating					
Rated input voltage [VAC]	230 V a.c., L/N/PE				
Rated input frequency [Hz]	50/60 Hz				
Maximum continuous input current from grid to battery [AAC]	13.6 A a.c.	16 A a.c.	18.2 A a.c.	20.9 A a.c.	22 A a.c.
Maximum continuous input current [AAC]	30 A a.c.	30 A a.c.	30 A a.c.	30 A a.c.	30 A a.c.
Maximum continuous input power from grid to battery [W or kW]	3 kW	3.6 kW	4 kW	4.6 kW	5 kW
Maximum continuous input active power [W or kW]	6.2kW	7kW	7kW	7kW	7kW
Maximum continuous input apparent power [VA or kVA]	6.2KVA	7KVA	7KVA	7KVA	7KVA
Gird output rating					
Rated output voltage [VAC]	230 V a.c., L/N/PE				
Rated output frequency [Hz]	50/60 Hz				
Rated output current [AAC]	13.0 A a.c.	15.7A a.c.	17.4A a.c.	20 A a.c.	21.7 A a.c.
Maximum continuous output current [AAC]	13.6 A a.c.	16 A a.c.	18.2 A a.c.	20.9 A a.c.	22 A a.c.
Maximum output active power [W or kW]	3 kW	3.6 kW	4 kW	4.6 kW	5 kW
Maximum output apparent power [VA or kVA]	3 kVA	3.6 kVA	4 kVA	4.6 kVA	5 kVA
Maximum output fault current of AC port	10uS@46.1A a.c	10uS@54.2A a.c	10uS@61.7A a.c	10uS@70.9A a.c	10uS@74.6A a.c
Power factor range	-0.8 ~ +0.8				
Back up output rating					
Rated output voltage [VAC]	230 V a.c., L/N/PE				
Rated output frequency [Hz]	50/60 Hz				
Power factor range	-0.8 ~ +0.8				
Rated output current [AAC]	13 A a.c.	15.7 A a.c.	17.4 A a.c.	20 A a.c.	21.7A a.c.
Maximum output current [AAC]	13 A a.c.	15.7 A a.c.	17.4 A a.c.	20 A a.c.	21.7 A a.c.
Rated output power [W or kW]	3 kVA	3.6 kVA	4 kVA	4.6 kVA	5 kVA

Maximum output power [W or kW]	3 kVA	3.6 kVA	4 kVA	4.6 kVA	5 kVA
Maximum output power without PV input [W or kW]	3 kVA	3.6 kVA	4 kVA	4.6 kVA	5 kVA
Maximum output fault current of backup port	200ms@334A a.c				
Backup terminal parameters					
THDV (@Linear Load)	< 3%				
Back-up Switch Time	< 20ms (Typical 10ms)				
Overload Capacity	105%＜Load≤125%, 10min. 125%＜Load≤150%, 1min. 150%<Load Rate, 10S				
Efficency					
Max. Efficiency（BAT to AC）	93.8%				
Max. Efficiency (PV to BAT)	94.5%				
Max. Efficiency（PV to AC）	97.0%				
Euro. Efficiency	96.2%				
Max. MPPT Efficency	99.9%				
Protection					
DC Switch	Yes				
GFCI	Yes				
Anti-islanding Protection	Yes				
DC Reverse-polarity Protection	Yes				
Output Over/Under Voltage Protec-tion	Yes				
Output Over Current Protection	Yes				
AC Short Circuit Protection	Yes				
Insulation Resistor Detection	Yes				
Active anti-islanding method	Reactive power perturbation method				
DC/AC Surge Protection	Type Ⅲ / Type Ⅲ				
General parameter					
Ingress protection rating	IP65				
Operation temperature range [°C]	-25 °C ~ 60 °C				
Full power temperature range [°C]	-25 °C ~ 45 °C				
Storage temperature range [°C]	-25 °C ~ 60 °C				
Relative humidity [%RH]	0~95%				
Protect class	Class I				
Overvoltage Catrgory	Ⅱ (PV,BAT) / Ⅲ (Grid ， Load)				
DVC	PV,AC	DVC-C			
	BAT,COM,WIFI	DVC-A			
AC port and backup port surge current	1ms@10A a.c				
Altitude	Up to 3000 m				
Pollution degree	PD3(Outdoor), PD2(Indoor)				

Inverter topology	Non-isolation
PV Connection	MC4/H4
DC Switch	Integated
Dimensions (WxDxH, mm)	650 x 240 x 620
Net Weight (kg)	35
Night Self Consumption (W)	<10
Cooling	Natural
Noise（dB)	<35
Display	WiFi + APP / LCD
Communication	RS485/CAN/WiFi
Production	Made in China

THANKS!

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