



PT15KT-E/A User manual



contents

1.	Safety precautions.....	4
2.	System introduction	5
2.1	Mobile energy storage	5
2.2	System configuration scheme	5
2.3	System technical parameters.....	6
2.4	Hardware Panel introduction.....	7
3	System power on and off.....	10
3.1	Power ON & Discharging:	10
3.2	Power OFF:.....	10
3.3	Charging	11
4	Set operations on the EMS local page	11
4.1	Panel interface.....	11
4.2	Control interface	13
4.3	Alarm interface.....	14
4.4	Fault interface	14
4.5	Parallel interface	15
5	Web APP operation Settings	16
5.1	User Registration	16
5.2	Log In.....	17
5.3	Device Status.....	18
5.4	Add Device.....	19
5.5	PV Parameters.....	20
5.6	Battery parameters	20
5.7	Grid Parameters.....	20
5.8	Inverter Parameters	20
5.9	Load Parameters	21
5.10	Device Maintenance	21
5.11	Device Logs	21

1. Safety precautions

The mobile energy storage system should be away from heat sources and places that are easy to generate sparks, and avoid long-term direct sunlight and exposure;

Do not place the mobile energy storage system in a harsh environment such as damp, greasy, flammable and explosive, or a large amount of dust.

Power off the system before connecting to the external device;

The mains input and AC output are high voltage cables. Do not touch the cables.

Before installing and adjusting device cables, disconnect the safety or circuit breakers near the photovoltaic array, mains, and battery terminals.

When the mobile energy storage system is used independently, ensure that the mobile energy storage system device is the only input power supply for the load device. Do not use the mobile energy storage system device in parallel with other input AC power supplies to avoid damage.

At most two sets of the same type of mobile energy storage system with the same rated power are allowed to be parallel. When the EMS/APP screen does not display the parallel success, it is forbidden to use the mobile system equipment in parallel with other input AC power supplies to avoid damage.

Do not disassemble or replace the internal parts of the mobile energy storage system, such as inverters, battery packs, etc. Non-professionals do not open the door of the mobile energy storage system cabinet, which contains exposed AC and DC circuits to prevent electric shock accidents.

If the chemical inside the lithium-ion battery is leaked, do not touch or inhale it. If it touches the skin or eyes, clean it with plenty of water. If necessary, take medical measures.

Do not use metal objects, such as watches, necklaces, and bracelets, to avoid short circuit. In case of battery fire, use fire extinguishing equipment in the following recommended order: water or water mist, sand, fire blanket, dry powder fire extinguisher, carbon dioxide fire extinguisher.

If the battery is still charging after the normal charging time, stop charging. Overcharging may cause the battery to heat up, smoke out of shape, or burn.

In case of an external fire or other abnormal conditions, the energy storage system under normal operating conditions should immediately make an emergency stop, wait for the Start indicator to turn off, and then disconnect the circuit breaker. After removing the external load and input, the mobile energy storage system is quickly removed from the dangerous area by using a forklift.

When disassembling or replacing components of the mobile energy storage system authorized by our company, professionals should disconnect all external input power, output load, panel circuit breaker, and battery power, wait 5 minutes, and ensure that there are no live parts in the system, and then wear insulation gloves before performing operations.

2. System introduction

2.1 Mobile energy storage

ROYPOW PC15KT mobile energy storage system includes EMS smart screen, inverter, battery, DC/DC, IO module and related wiring harness, circuit breaker, lightning protection device, indicator light, operation switch, etc.

The mobile energy storage system can obtain energy from AC power supply, generator, or external solar photovoltaic panel, store the generated electricity in lithium battery, and then supply the energy to external load.

EMS smart screen: data display of control equipment, energy transmission management.

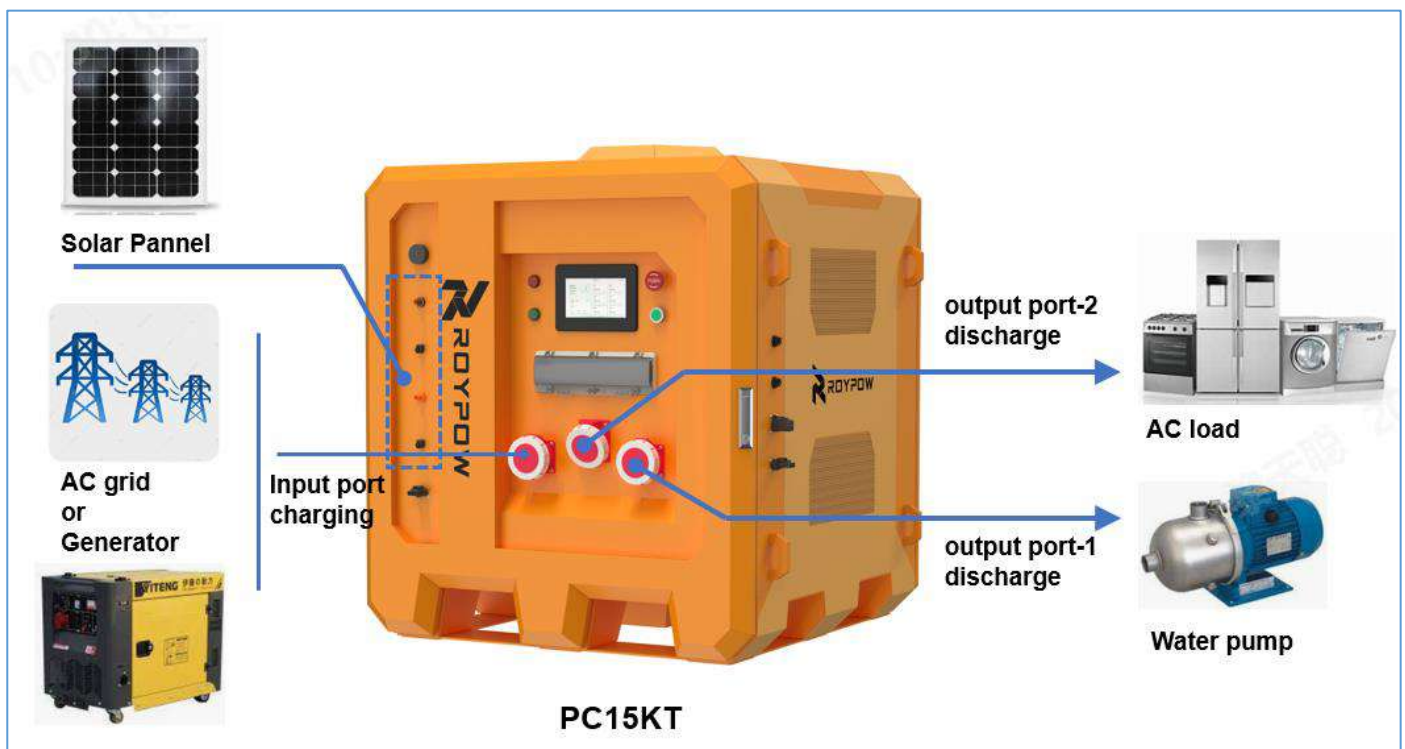
Hybrid inverter: AC/DC energy conversion device of the whole system.

Mains electricity: connected at the AC input end, it can supply power to the load and charge the battery at the same time. If the mains is not connected, the system can also operate normally. At this time, the load power supply is provided by the battery and photovoltaic module. If the photovoltaic panel is not connected, then only the battery can supply power to the load.

Battery: The role of the battery is to ensure the normal power consumption of the system load when the solar energy is insufficient, there is no mains or generator.

IO module: Provides operation and fault indicator light control signals, feedbacks emergency stop signals to EMS, and supports the control of fuel generator on and off.

2.2 System configuration scheme

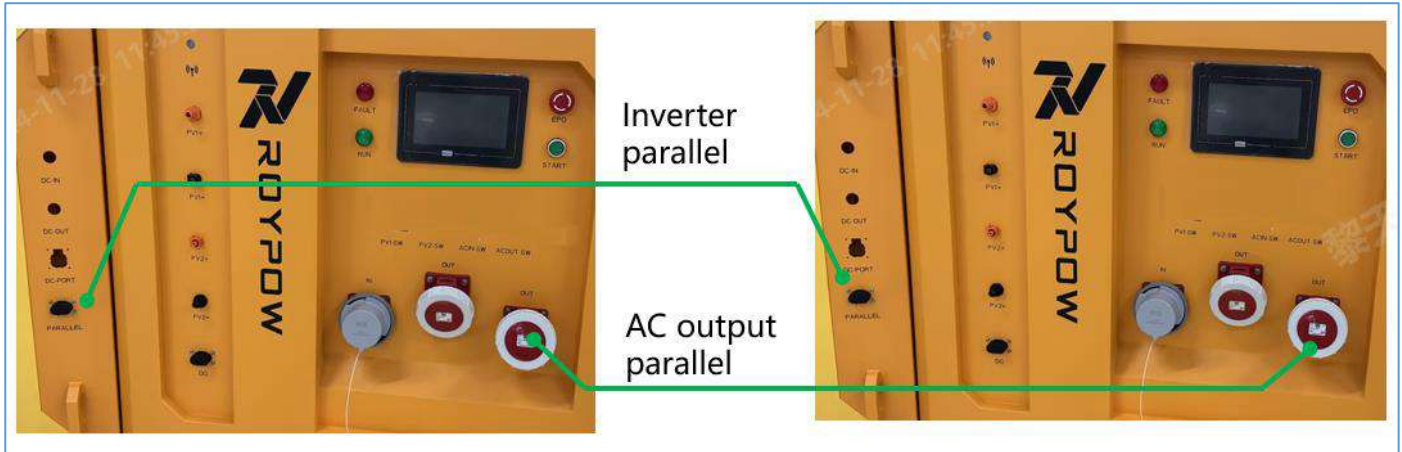


2.3 System technical parameters

Model		PC15KT-E/A
Output Characteristics	Rated Power	15KW (maximum 90KW , 6 units in parallel)
	Rated output voltage (V)	400V AC or 2 30VAC
	Output Current	3 x 21.8 A
	Apparent power (V)	22500 kVA
	AC grid frequency (Hz)	45Hz ~ 65Hz
	Three-phase four-wire	3 W + N
	Overload capacity	120% @10min / 200% @10S
System input characteristics	Input rated power	15KW
	Input rated voltage	380 V / 400 V 22.5A (three phase)
	Input rated voltage	220V / 230V 22A (single phase)
	THDI	≤3%
	Three-phase four-wire	3W + N
Battery Characteristics	Battery Type	Lithium iron phosphate/LFP4
	Do D	90%
	Battery capacity	30 kWh (Maximum 180 kWh/6 units in parallel)
	Voltage	550-950VDC
Solar panels	Maximum Power	3 0KW
	MPPT quantity	2 - 2
	Maximum input current	30A / 30A
	M PPT voltage range	160 – 950 VDC
	Starting voltage	180VDC
Additional Information	Protection level	IP 54
	Number of parallel	6 units
	Operating temperature	-20 °C ~ 50 °C
	Storage temperature	-40°C~+75°C
	Relative humidity	0 ~ 95% , no condensation
	altitude	4000 m, derated for altitudes above 4000 m
	Cooling method	Natural cooling
	communication	Supports 4G LTE

	size	1100 x 1100 x 1000 mm
	weight	450KG

Mobile energy storage system parallel (support Max 6 units parallel)

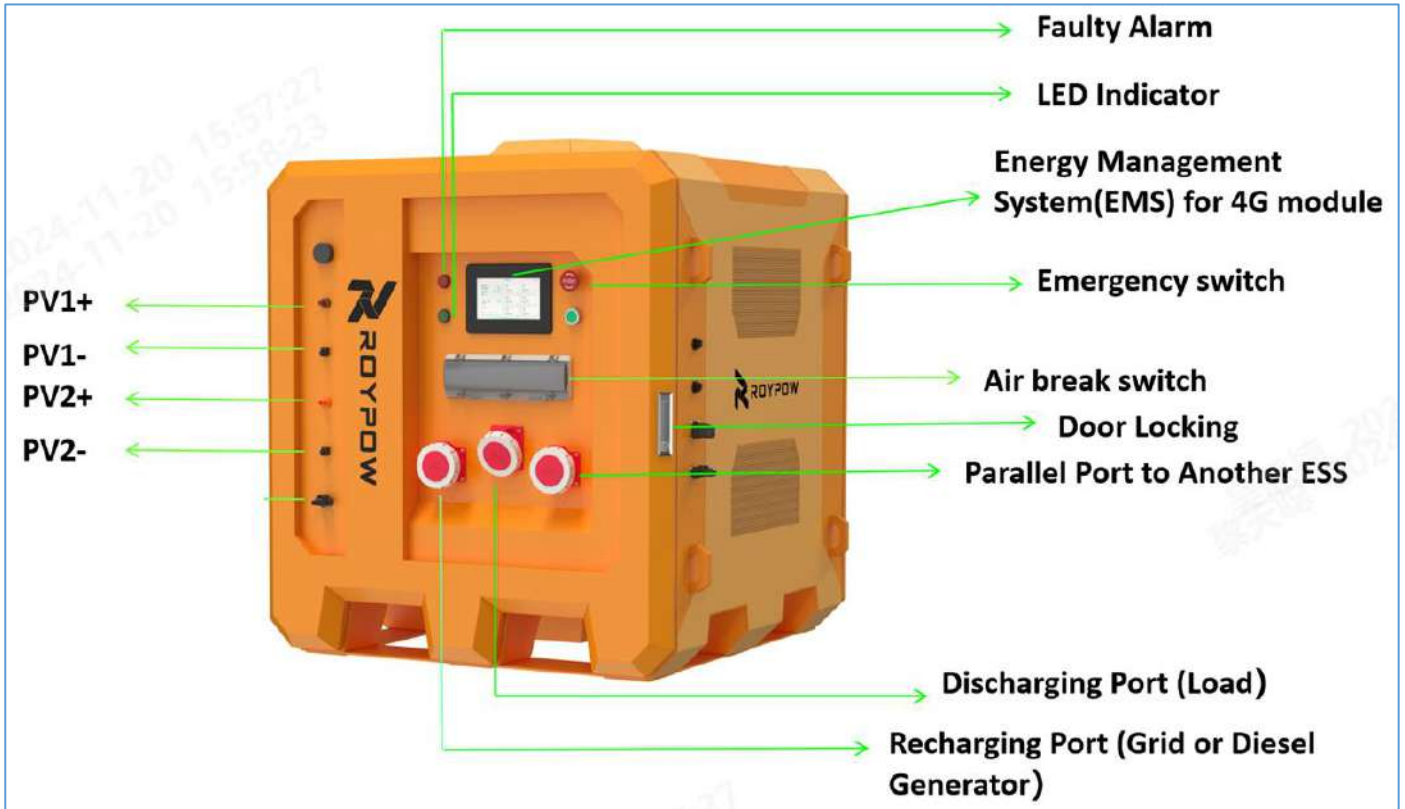


The system is configured using the dedicated parallel wiring harness shown above. Any OUTPUT outlet of the remaining two systems can output 30000VA rated power

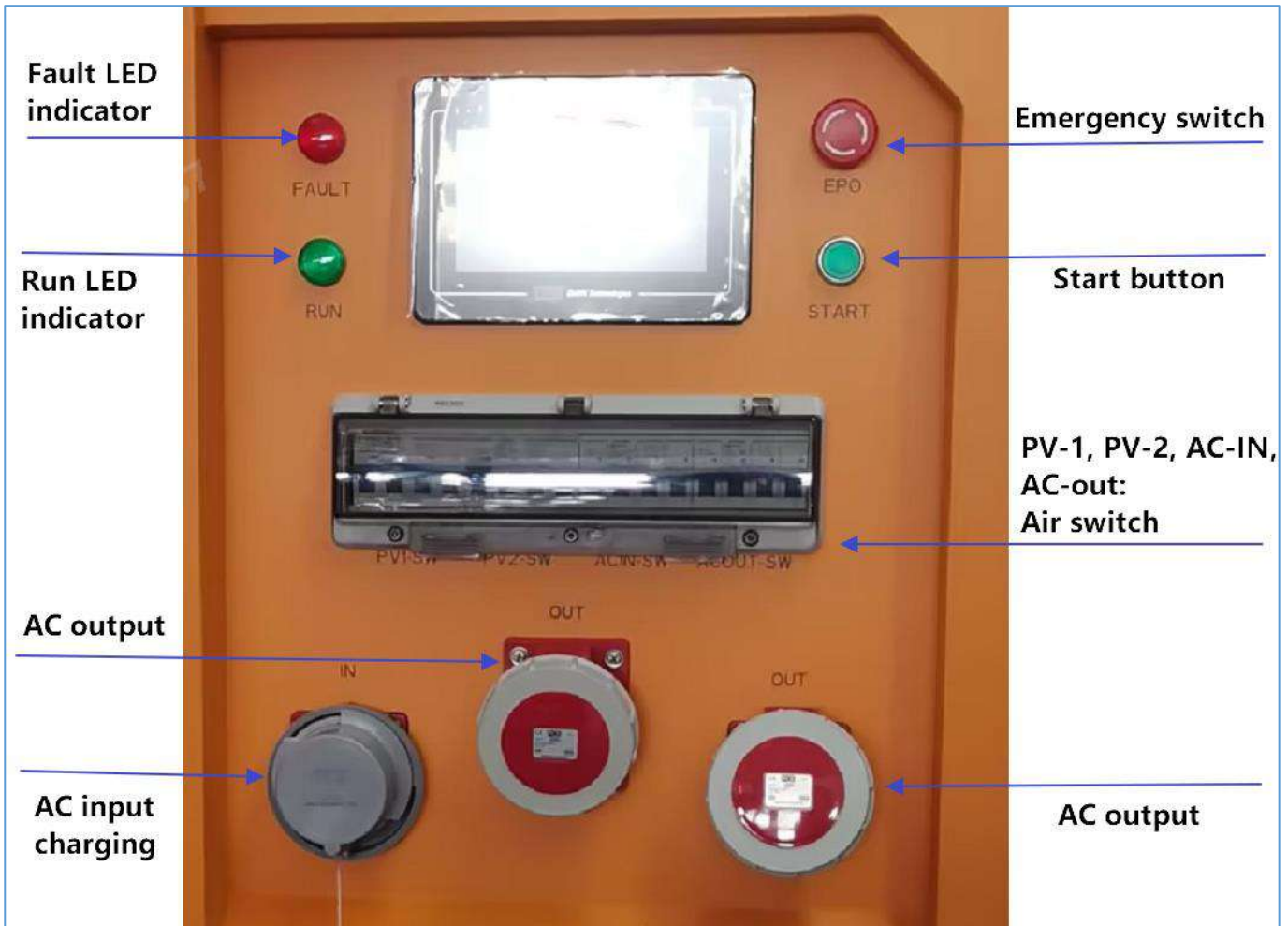
 attention

After connecting cables to the system, ensure that the cables are correctly connected before powering on the system.

2.4 Hardware Panel introduction



Hardware Switch image





Door Lock



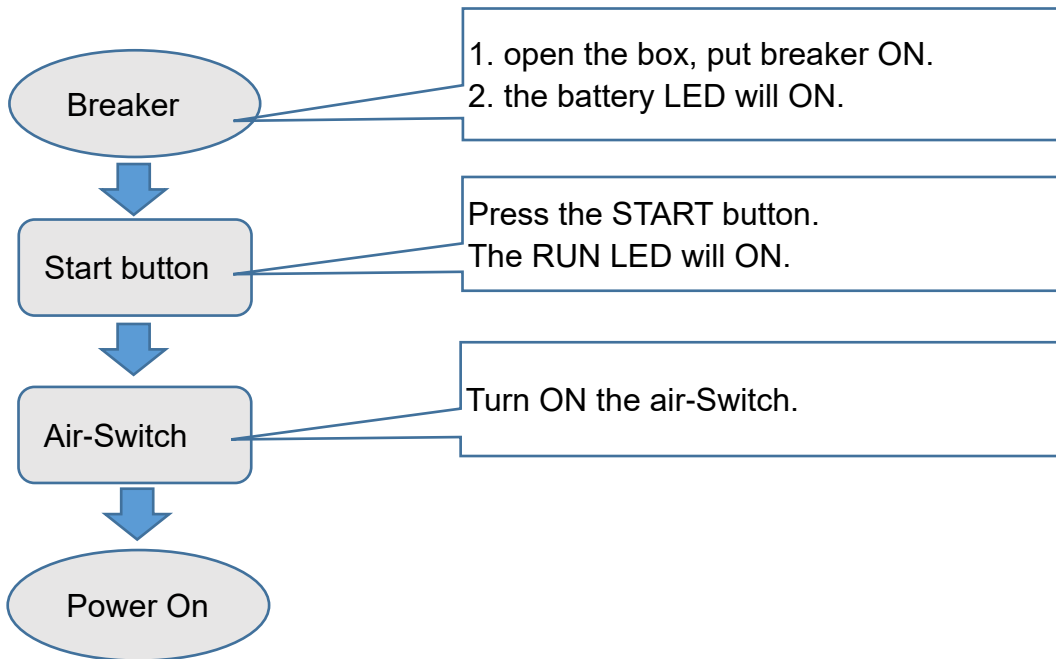
Breaker

Battery LED

Battery Fault LED

3 System power on and off

3.1 Power ON & Discharging:

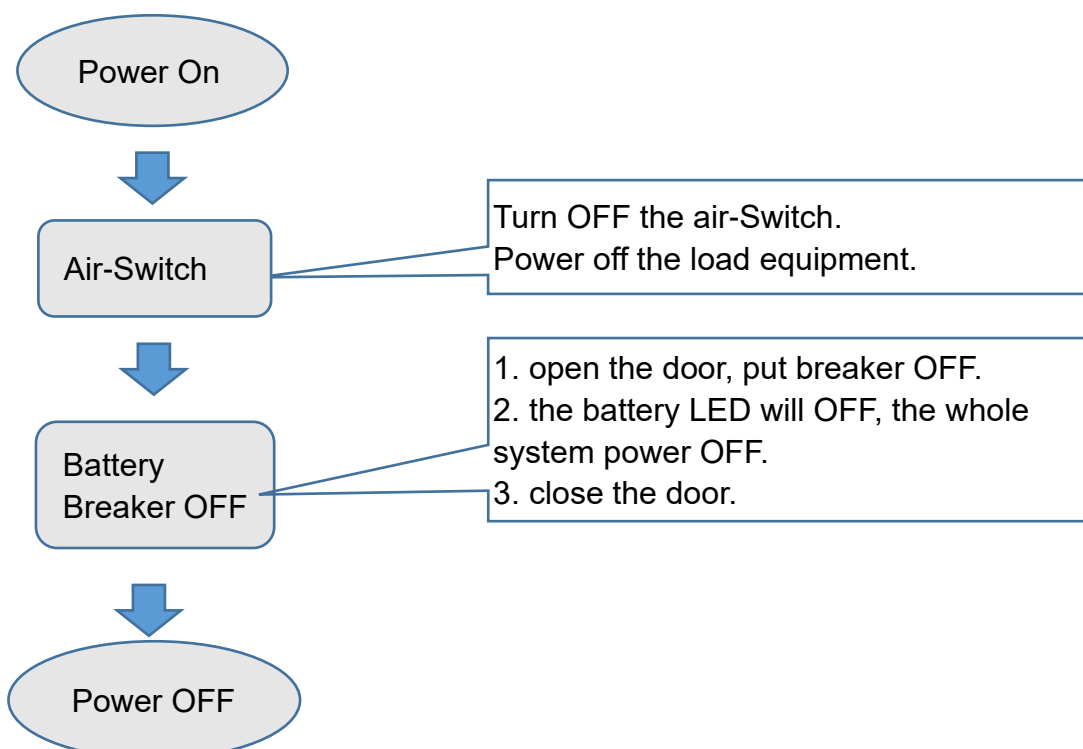


1, open the PC15KT door, put the breaker on, user can see the battery capacity LED will turn ON. Which display battery power. (This operates for turn on battery.)

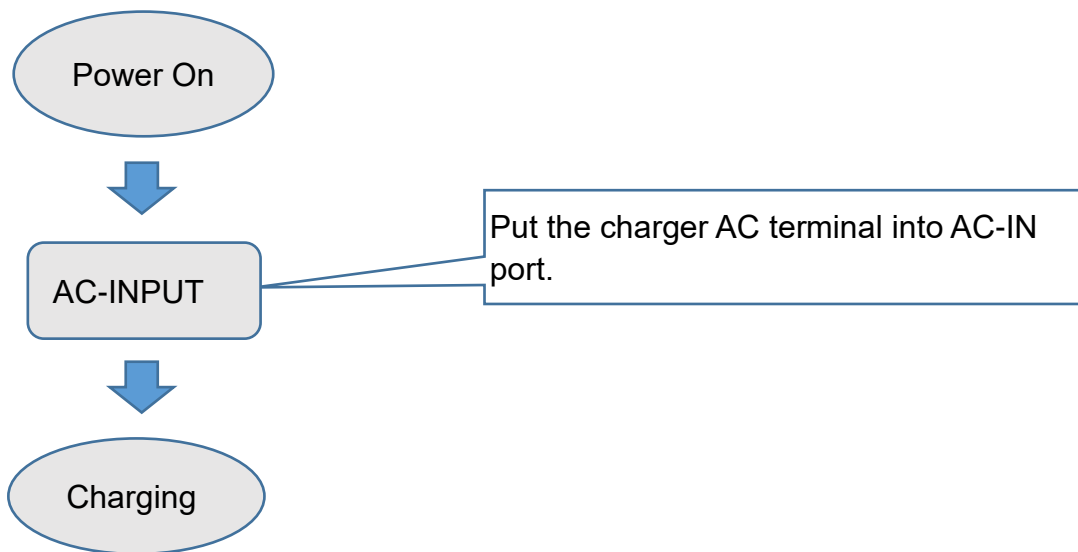
2, close the door, press START button, and then the RUN LED indicator will ON. (This operates for turn on inverter.)

3, turn on the Air-Switch, so AC-output interface can output power for load equipment.

3.2 Power OFF:



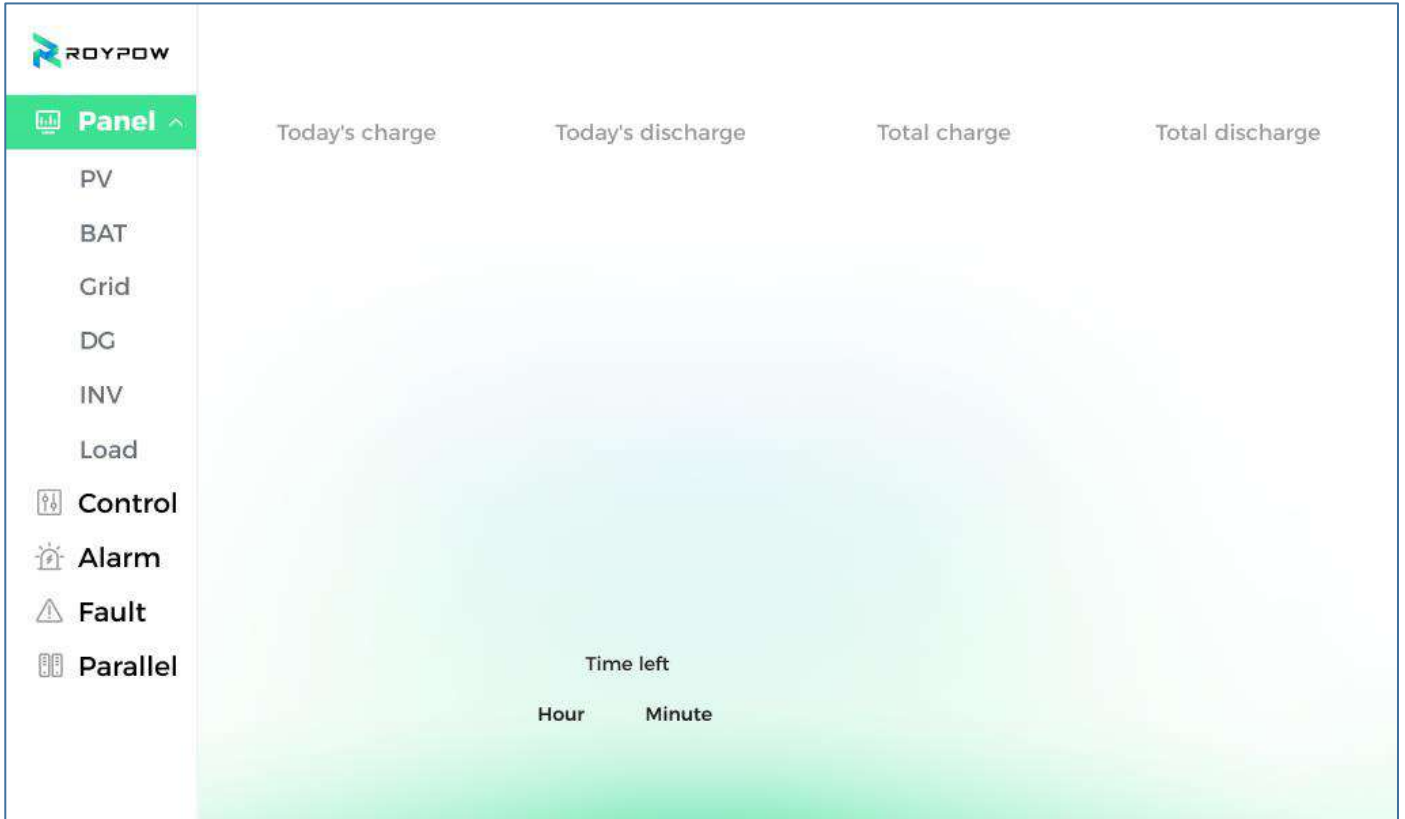
3.3 Charging



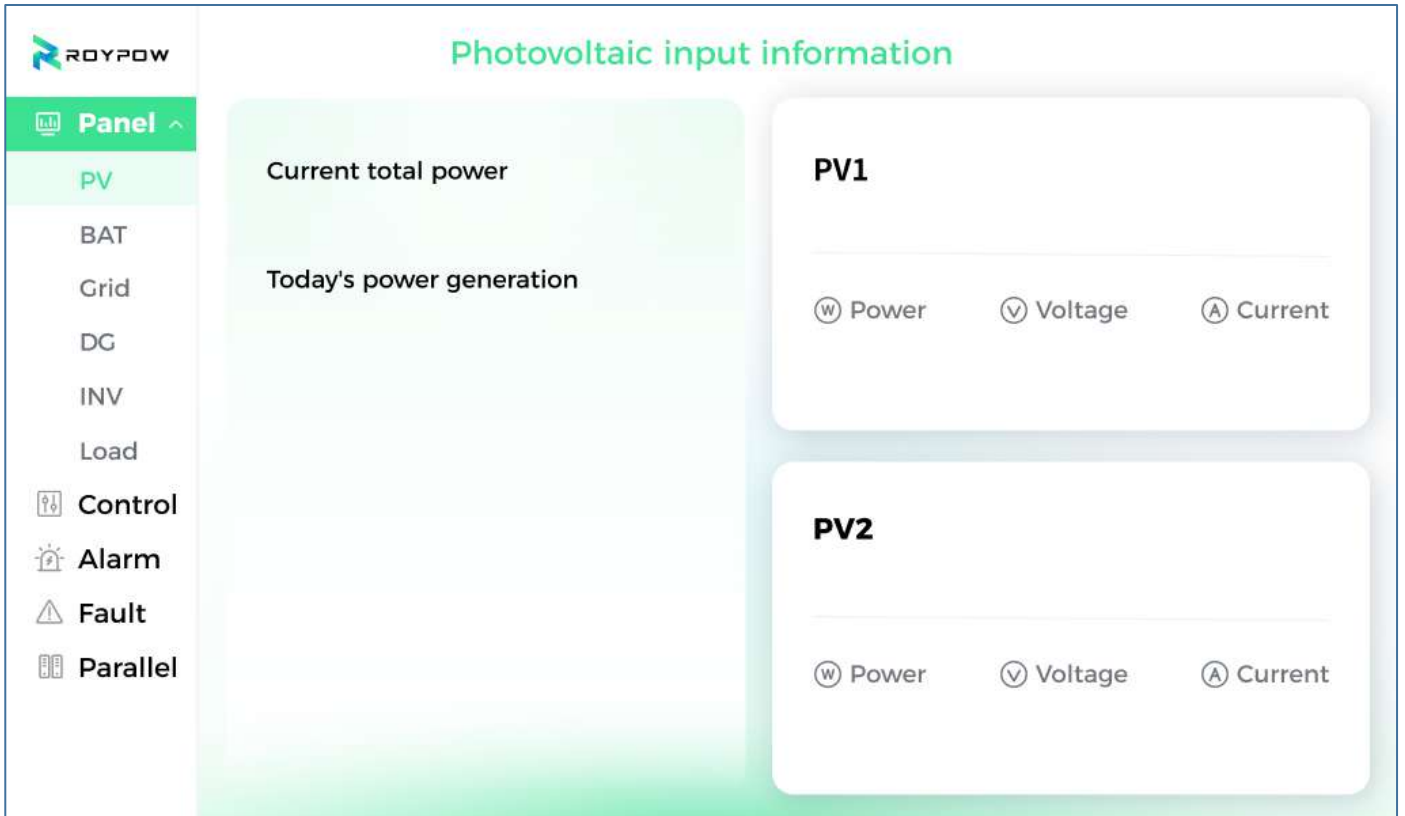
- 1, power on the PC15KT equipment.
- 2, put the charger AC terminal into the AC-IN port.
- 3, charging the PC15KT equipment.

4 Set operations on the EMS local page

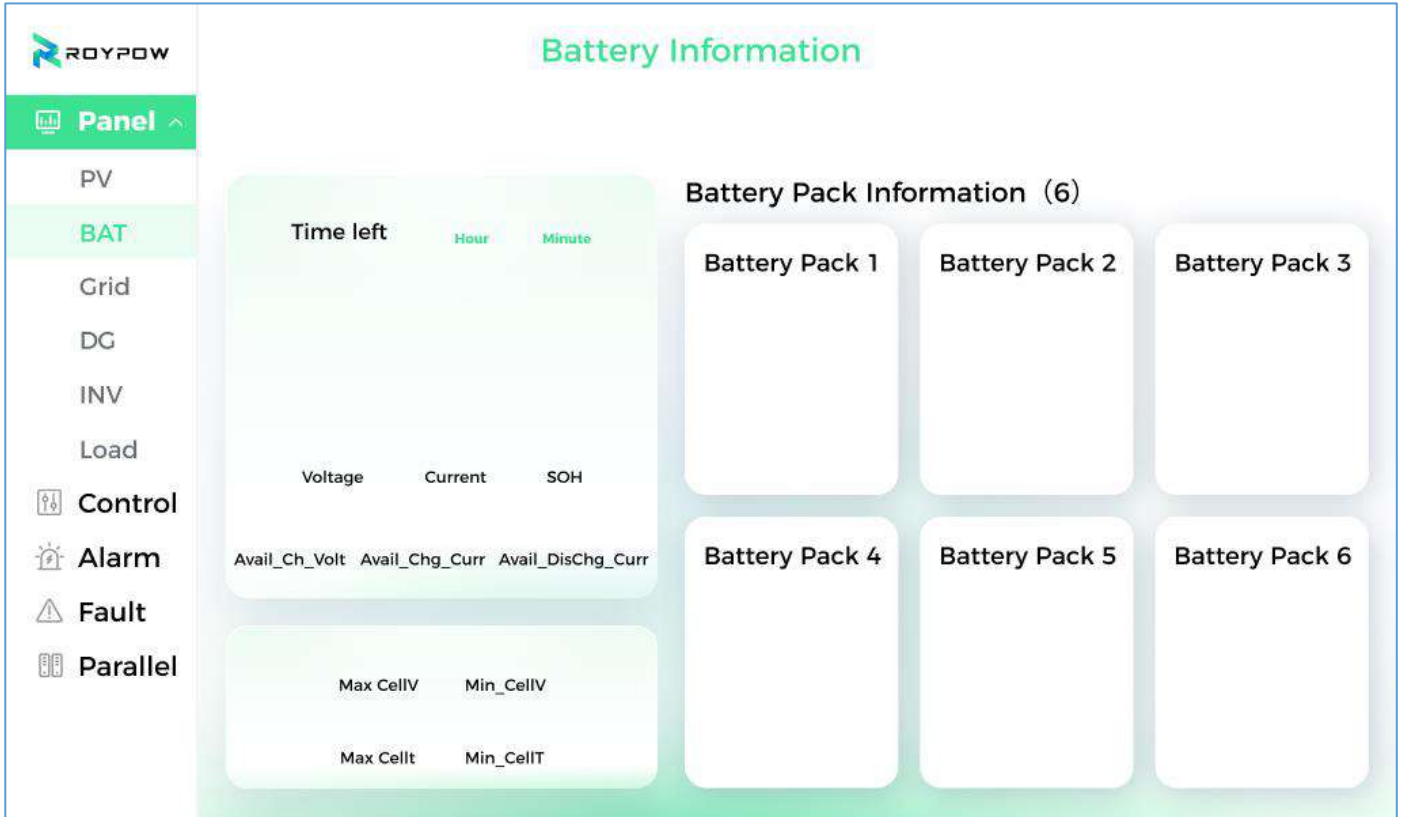
4.1 Panel interface



PV interface:



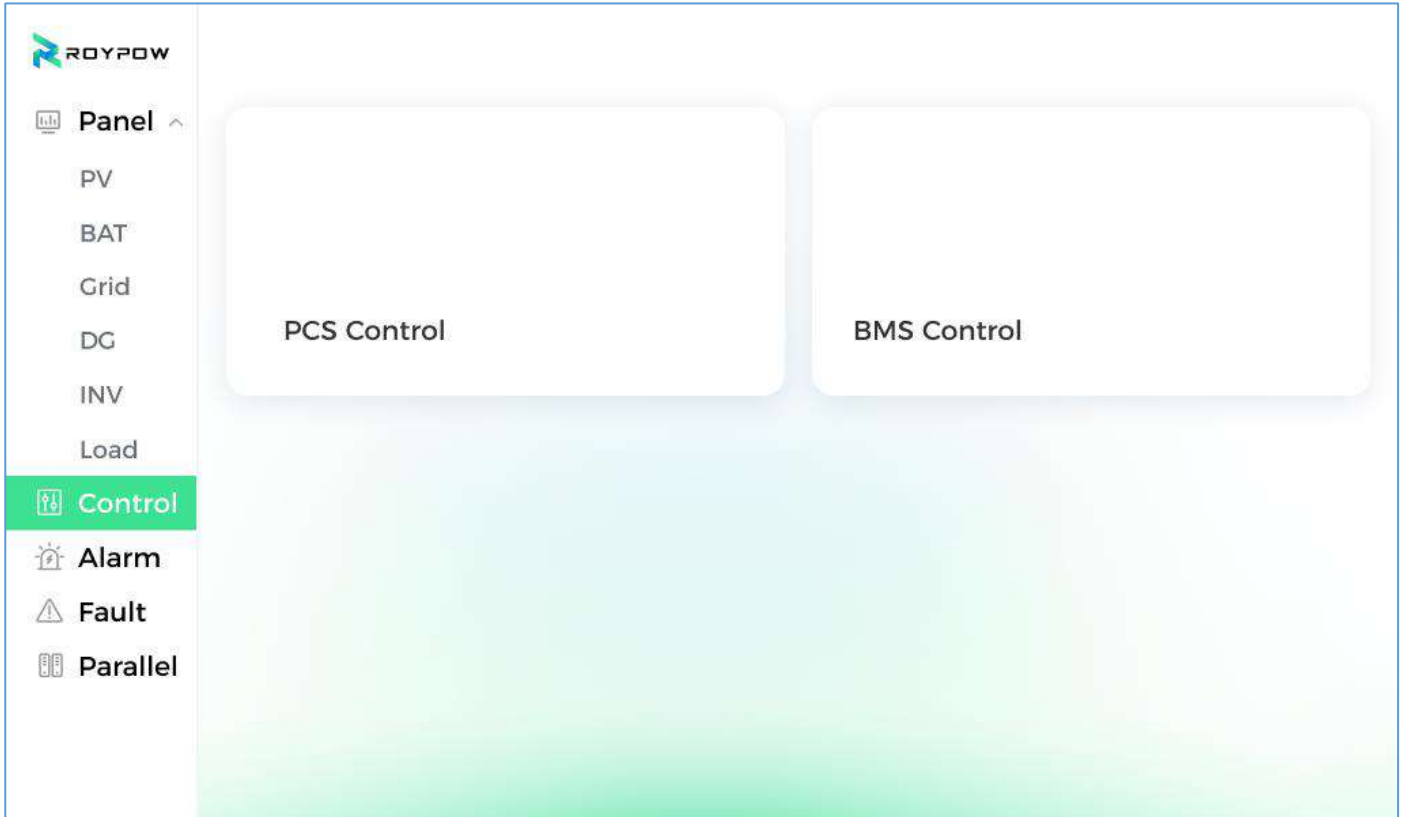
Battery interface:



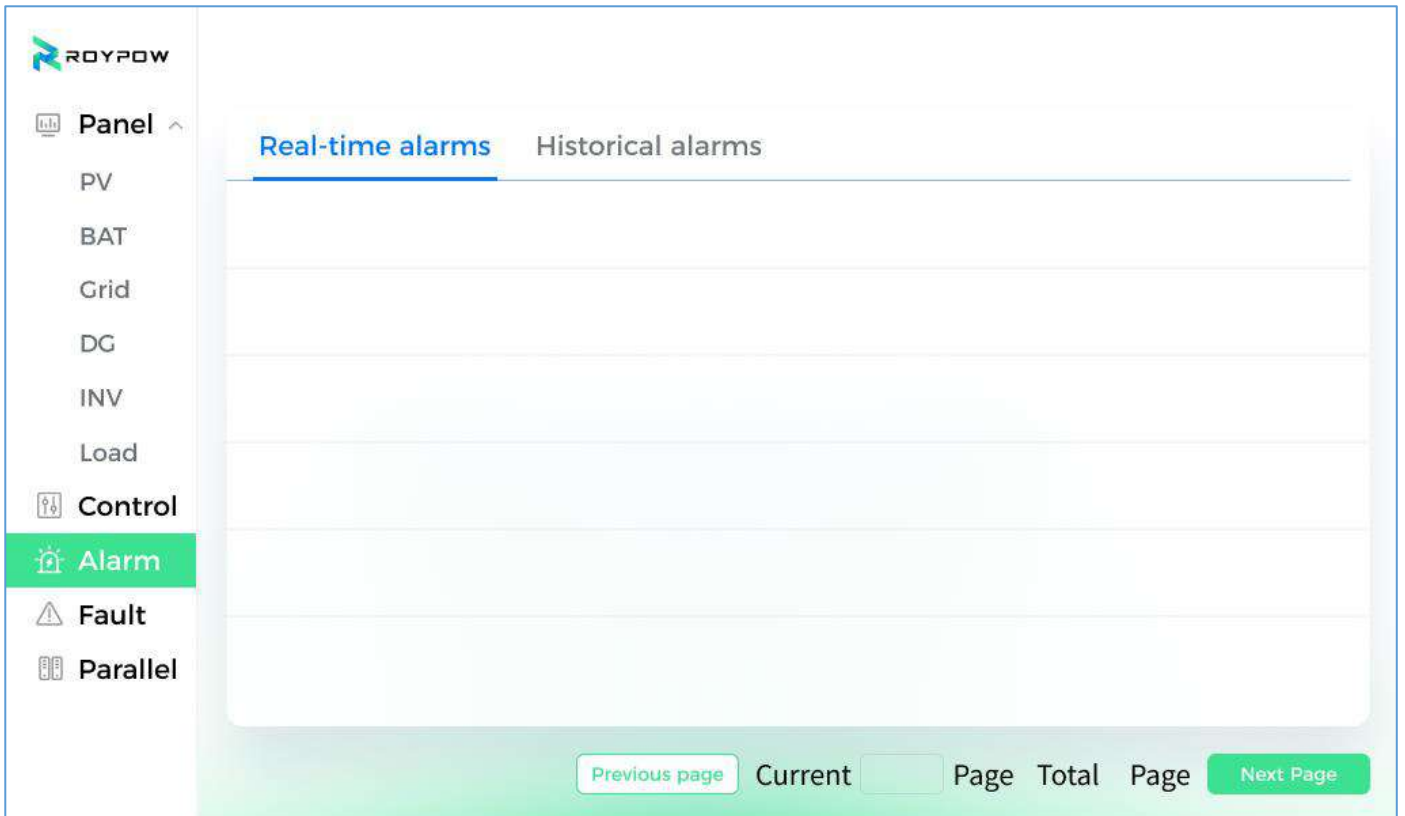
As shown in the figure, the monitoring page is divided into three parts: the important system information, system SOC, system status (charging, discharge, standby, power) and the working mode. The lower left shows the system diagram, and you can view the detailed data by clicking on the corresponding device.

The right side displays the system-related equipment and the status information. System overview displays system power (remaining power / total installed capacity), cumulative charge, discharge and system accumulated revenue. The equipment status shows the operation status of BMS, PCS, EMS and other systems and equipment in the system, and the system status shows whether the communication status is abnormal and the alarm status.

4.2 Control interface

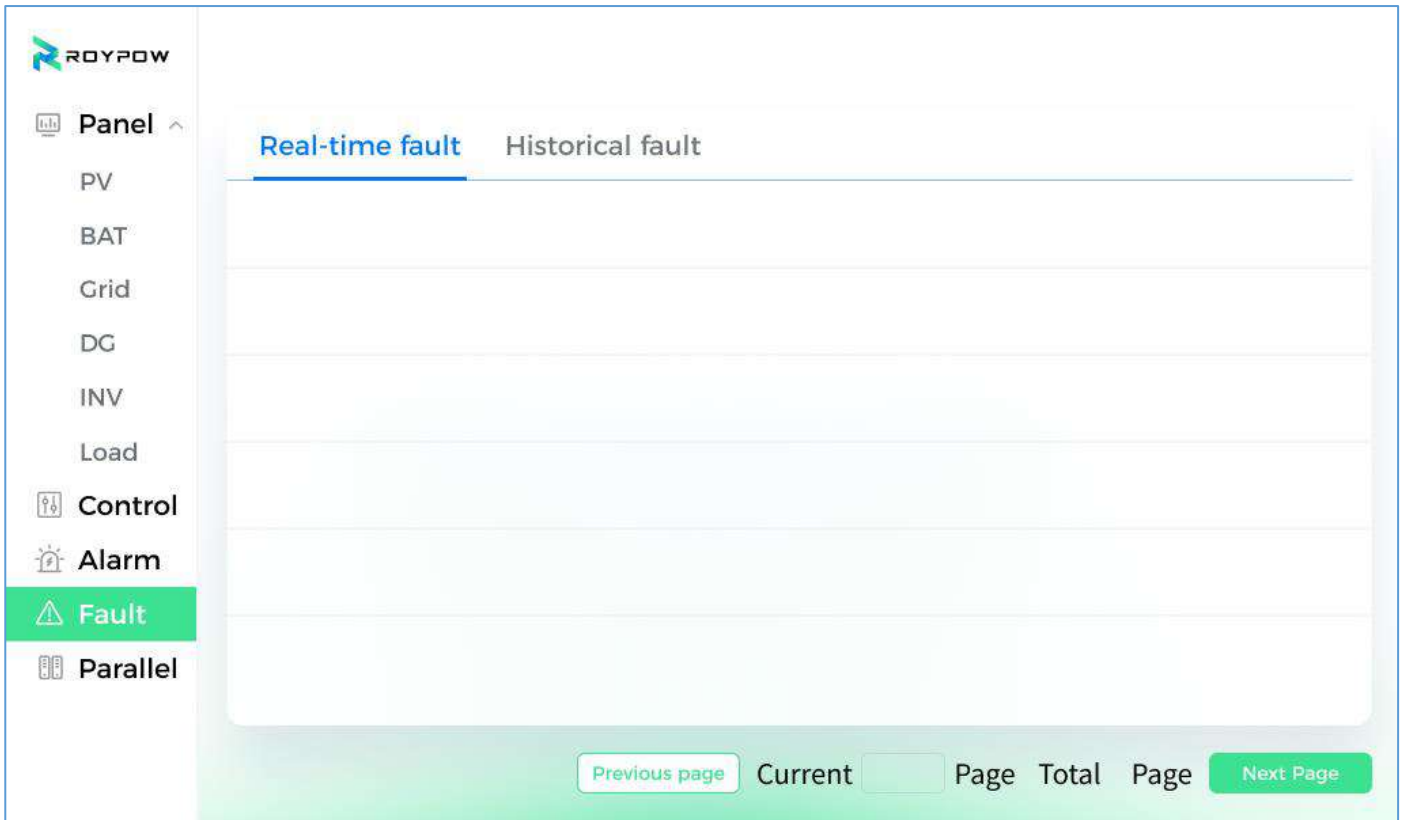


4.3 Alarm interface



The alarm page displays the system alarm information, including the serial number, alarm level, status, and occurrence time. You can click alarm for details and processing.

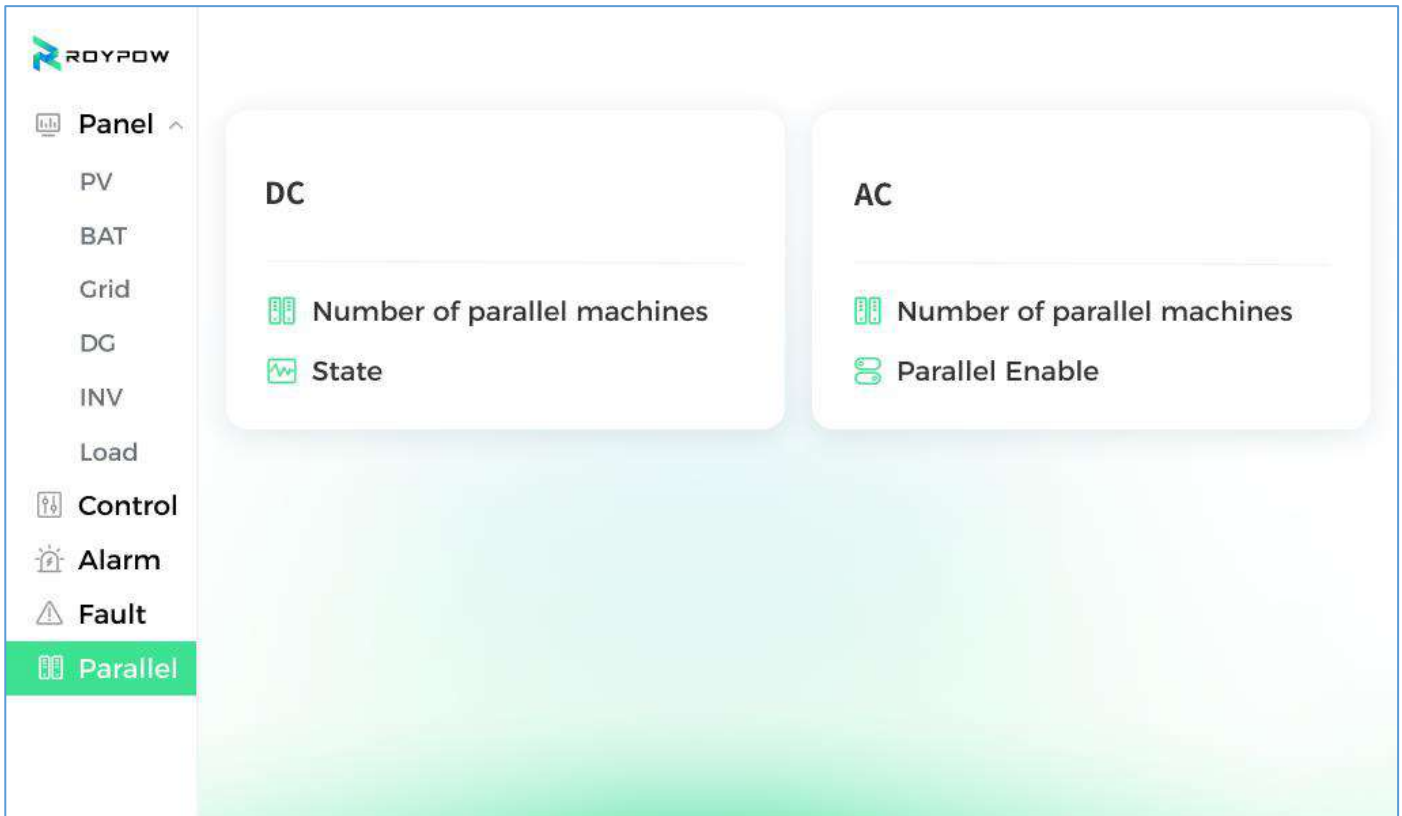
4.4 Fault interface



The curve function can view the charge and discharge power curve of the energy storage cabinet, change the battery soc curve, and view the historical situation through the date switch.

4.5 Parallel interface

Operation coAntrol, can realize the PCS switch machine, BMS shutdown and other operations. The system can control the startup or shutdown control of PCS, and can realize the shutdown



5 Web APP operation Settings

Function Overview

The App can monitor the operation status of home energy storage in real time, understand the detailed operation data of the equipment, and can also remotely control and adjust, including the control and adjustment of inverters, batteries and other equipment, which can help users manage and operate the home energy storage power generation system efficiently and conveniently.

Note:For the purposes of this document, "Device" and "Machine" refer to inverters.

(I) Device Status: Get a comprehensive view of your device's operational status and detailed data.

1. The app offers an overview of your device, providing real-time insights into its performance, energy production, consumption, energy flow diagrams, as well as real-time and statistical data.

(II) Device Details: Monitor your device's real-time operation and perform various device-related actions, including editing, deletion, and upgrades.

- 1、 In the app, users can modify station information and device details.
- 2、 Users can also access real-time, in-depth parameter information and historical logs for their devices.
- 3、 Users can monitor device operation in real-time, adjust parameters, and change device names.
- 4、 Users can monitor device operational status, manage devices, check alarms, and perform mobile operations.

(III) Personal Center: You can configure personal information, device network settings, message preferences, and access additional usage assistance.

(IV) Users can download and install it on both the (IOS) App Store and (Android) Google Play by searching for RoyPow.



iOS download



Android download

Note: To ensure this app's functionality and security, we may need to request certain permissions from your device's operating system while it's in use. These permissions are solely for the app to work correctly, and rest assured, we do not gather or share your personal information with external parties.

5.1 User Registration

Users can register by email on both APP and Web (<https://cloud.roypowtech.com/#/dashboard/screen>) platforms. Enter the information prompted when registering, and click the register button to register your account.

Email Registration: Click the **desktop icon** -> Click "**Register**" on the login page (as shown in Fig. 2.1.1)-> **Country** ->**Enter your email** -> **Enter the verification code** -> **Set your password** -> **Confirm your password** -> **Review the terms of service and check the box** -> Click "**Register**", as shown in Fig. 2.1.2.

Note:When selecting a country node, select the node in the current country or a node in a nearby country to avoid

registration failures.

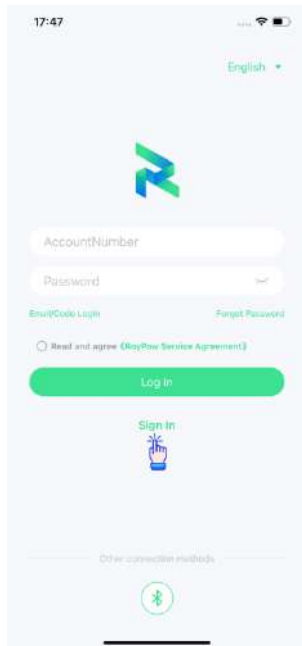


Fig. 2.1.1 Log In

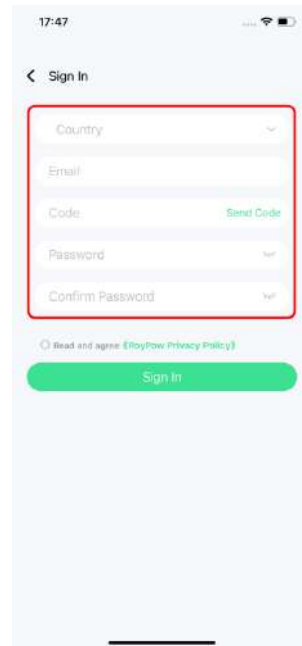


Fig. 2.1.2 User Registration

5.2 Log In

After registration, you can log in. If you don't have an account, please sign up before logging in.

Password Login: Click the **desktop icon** -> **Enter your username** (which is your email) -> **Enter your password** -> **Login**, as shown in Fig. 2.2.1.

Login with authentication code: Click the **desktop icon** -> **Email/Verification Code Login** (Fig. 2.2.2) -> Email address (Fig. 2.2.3, Email) -> **Send verification code** -> **Enter the verification code** -> **Login**.

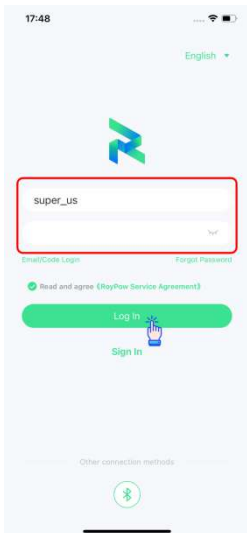


Fig. 2.2.1 Account login

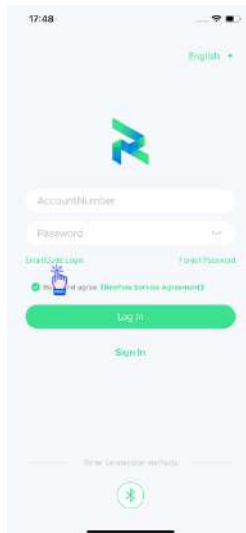


Fig. 2.2.2 Authentication code

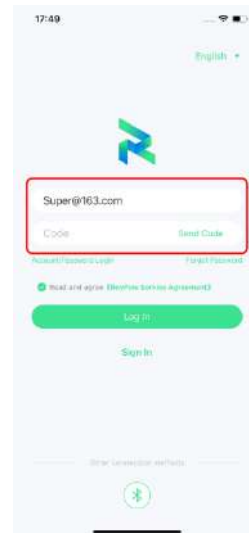


Fig. 2.2.3 Authentication code

After you've successfully registered and logged in for the first time, you'll automatically be redirected to the page where you can add a new power station. Here, you'll need to enter the necessary information for your power station (see Fig. 2.3.1: Add Power Station). Once you've completed the power station setup, you will be guided to the section for adding inverters (see Fig. 2.3.2: Add Inverter). Simply follow the prompts to enter the required inverter details and click "**Add**". To enable online monitoring of the newly added inverter, you will need to configure its network settings on both the APP and web platforms. If you create a power station but forget to add an inverter before closing the

application, the APP will remind you to add an inverter when you log in next time.

Note: Keep in mind that to access monitoring data, your user account must have **At least one power station and one inverter with network connection successfully**. On the APP platform, you have the option to scan the machine's QR code. This feature automatically fetches machine information from the server and fills in the details for you. You can then make any necessary adjustments.

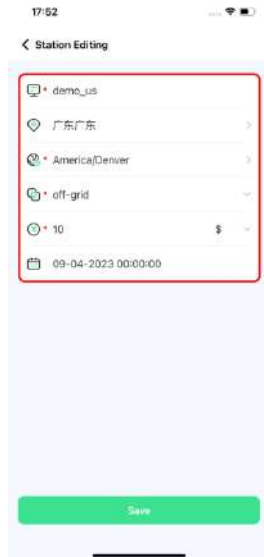


Figure 2.3.1: Add Power Station

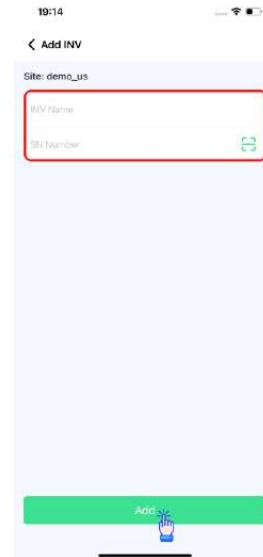


Figure 2.3.2: Add Inverter

5.3 Device Status

After a successful login, you'll be taken directly to the **"State"** page. If you have multiple inverters, it will show detailed information for one of the online inverters by default. as shown in Fig. 3.1.

Detailed Information Includes:

1. Adding devices (in Area 1 of Fig. 3.1).
2. Operating modes (in Area 2 of Fig. 3.1).
3. Device selection (in Area 3 of Fig. 3.1).
4. Real-time energy status: This shows the energy status including PV, battery, grid, load, inverter, along with the device's online status (in Area 4 of Fig. 3.1).
5. Device data: Real-time data, statistical data, and device information (in Area 5 of Fig. 3.1). For details on each area, please refer to the following subsection.



Fig. 3.1 Device Status

5.4 Add Device

On the "State" page, click the "+" icon in the upper right corner, and follow the prompts to enter the information of the inverter you want to add. Click "Add" to add the new inverter. As shown in Fig. 3.1.1.

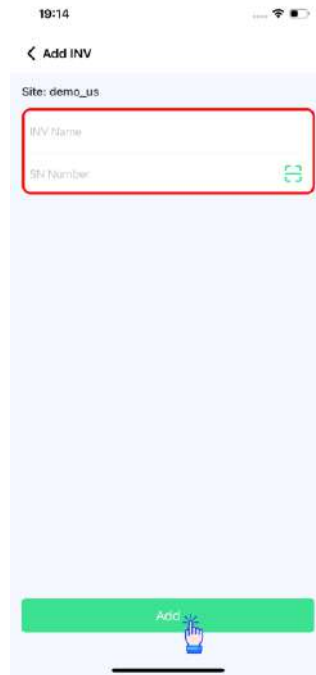


Fig. 3.1.1 Add Inverter

5.5 PV Parameters

In the "**Parameters**" section, click "**PV**" to access to parameters such as PV input voltage, PV input current, PV input power, and more for PV1 and PV2, as well as overall PV input parameters like total power and total current. Additionally, you can view parameters related to insulation impedance and generated energy. The interface is shown in Fig. 4.8.

5.6 Battery parameters

Click "**BAT**" in the "**Parameters**" section to access information about the device's battery, including battery type, voltage, current, power, capacity, temperature, SOC, battery health, alarms, protection, BMS voltage, BMS current, charging voltage request, charging current request, discharging voltage request, discharging current request, total number of battery packs, online battery packs, grid discharging depth, and off-grid discharging depth, among others. The interface is shown in Fig. 4.9.

5.7 Grid Parameters

Within the "**Parameters**" section, click "**GRID**" to access to information on I1 voltage, I2 voltage, I1 current, I2 current, I1 power, I2 power, I1 frequency, I2 frequency , and more. The interface is shown in Fig. 4.10.

5.8 Inverter Parameters

Click "**INV**" in the "**Parameters**" section to access parameters related to bus voltage, inverter voltage, inverter current, inverter power, inverter temperature, DCDC temperature, ambient temperature, inverter frequency, operating mode, DCAC temperature, PV connection mode, inverter status, grid standards, machine status, and more. The interface is shown in Fig. 4.11.



Fig. 4.10 Grid Parameters



Fig. 4.11 Inverter Parameters

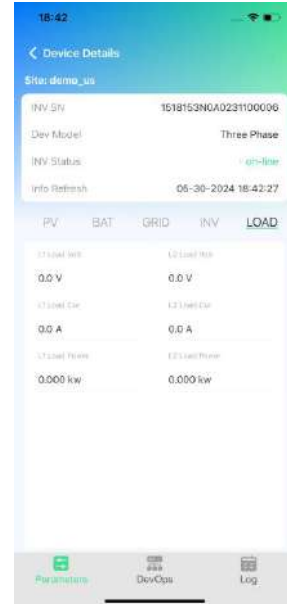


Fig. 4.12 Load Parameters

5.9 Load Parameters

In the "Parameters" section, click "LOAD" to view parameters such as I1 voltage, I2 voltage, I1 current, I2 current, I1 power, I2 power. The interface is shown in Fig. 4.12.

5.10 Device Maintenance

On the "Device Details" interface of the device, is shown in Fig. 4.13.

Click "DevOps" to jump to the maintenance settings page. This page can set settings such as device switch, battery wake-up, clear historical warning records, clear electrical statistics, factory reset, PV connection mode, data time, etc. The interface is shown in Figure 4.14.

Note: Remote operation does not involve software upgrades.

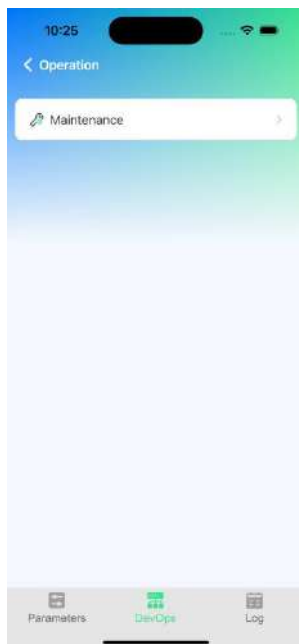


Fig.4.13 Device Maintenance

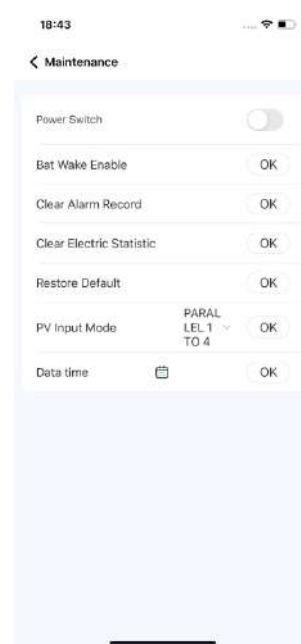


Fig.4.14 Maintenance

5.11 Device Logs

In the "Device Details" interface, click "Log" to view every log entry for the device, organized by date. Log content includes: the device's SN code, alarm level, alarm cause, and the specific time of the alarm. You can select a date to

view the device's logs. as shown in Fig. 4.15.



Fig. 4.15 Device's Log

In the device **Log** screen, click one of the device log modules to jump to the alarm detail page. The interface is shown in Figure 4.16.



Fig. 4.16 Alarm summary

6 . Common fault problems and solutions

Inverter fault description:

Code	Alarm Information	Suggestions
A0	Grid over voltage	1. If the alarm occurs occasionally, possibly the power grid voltage is abnormal temporarily, and no action is required. 2. If the alarm occurs repeatedly, contact the local power station. After receiving approval of the local power bureau, revise the electrical protection parameter settings on the inverter through the App. 3. If the alarm persists for a long time, check whether the AC circuit breaker /AC terminals is disconnected, or if the grid has a power outage.
A1	Grid under voltage	
A3	Grid over frequency	
A4	Grid under frequency	
A2	Grid absent	Wait till power is restored.
B0	PV over voltage	Check whether the maximum input voltage of a single PV string exceeds the MPPT working voltage. If yes, modify the number of PV module connection strings.
B1	PV insulation abnormal	1. Check the insulation resistance against the ground for the PV strings. If a short circuit has occurred, rectify the fault. 2. If the insulation resistance against the ground is less than the default value in a rainy environment, set insulation resistance protection on the App.
B2	Leakage current abnormal	1. If the alarm occurs occasionally, the inverter can be automatically recovered to the normal operating status after the fault is rectified. 2. If the alarm occurs repeatedly, contact your dealer for technical support.
B4	PV under voltage	1. If the alarm occurs occasionally, possibly the external circuits are abnormal accidentally. The inverter automatically recovers to the normal operating status after the fault is rectified. 2. If the alarm occurs repeatedly or last a long time, check whether the insulation resistance against the ground of PV strings is too low.
C0	Internal power supply abnormal	1. If the alarm occurs occasionally, the inverter can be automatically restored, and no action is required. 2. If the alarm occurs repeatedly, please contact the customer service.


C2	Inverter over dc-bias current	<ol style="list-style-type: none"> 1. If the alarm occurs occasionally, possibly the power grid voltage is abnormal temporarily, and no action is required. 2. If the alarm occurs repeatedly, and the inverter fails to generate power, contact the customer service.
C3	Inverter relay abnormal	<ol style="list-style-type: none"> 1. If the alarm occurs occasionally, possibly the power grid voltage is abnormal temporarily, and no action is required. 2. If the alarm occurs repeatedly, pls. refer to the suggestions or measures of Grid over voltage. If the inverter fails to generate power, contact the customer service center. If there is no abnormality on the grid side, the machine fault can be determined. (If you open the cover and find traces of damage to the relay, it can be concluded that the machine is faulty.) And pls. contact the customer service.
CN	Remote off	<ol style="list-style-type: none"> 1. Local manual shutdown is performed in APP. 2. The monitor executed the remote shutdown instruction. 3. Remove the communication module and confirm whether the alarm disappears. If yes, replace the communication module. Otherwise, please contact the customer service.
C5	Inverter over temperature	<ol style="list-style-type: none"> 1. If the alarm occurs occasionally, the inverter can be automatically recovered. No action is required. 2. If the alarm occurs repeatedly, please check whether the installation site has direct sunlight, bad ventilation, or high ambient temperature (such as installed on the parapet). Yet, if the ambient temperature is lower than 45° C and the heat dissipation and ventilation is good, please contact customer service.
C6	GFCI abnormal	<ol style="list-style-type: none"> 1. If the alarm occurs occasionally, it could have been an occasional exception to the external wiring. The inverter can be automatically recovered. No action is required. 2. If it occurs repeatedly or cannot be recovered for a long time, please contact customer service.
B7	PV string reverse	Check and modify the positive and negative polarity of the input string.
C8	Fan abnormal	<ol style="list-style-type: none"> 1. If the alarm occurs occasionally, please restart the inverter. 2. If it occurs repeatedly or cannot be recovered for a long time, check whether the external fan is blocked by other objects. Otherwise, Please contact customer service.
C9	Unbalance Dc-link voltage	<ol style="list-style-type: none"> 1. If the alarm occurs occasionally, the inverter can be automatically recovered. No action is required.
CA	Dc-link over voltage	<ol style="list-style-type: none"> 2. If the alarm occurs repeatedly, the inverter cannot work properly. Please contact customer service.

CB	Internal communication error	<ol style="list-style-type: none"> 1. If the alarm occurs occasionally, the inverter can be automatically recovered and no action is required. 2. If the alarm occurs repeatedly, the inverter cannot work properly. Pls. contact the customer service center.
CC	Software incompatibility	<ol style="list-style-type: none"> 1. If the alarm occurs occasionally, the inverter can be automatically recovered and no action is required. 2. If the alarm occurs repeatedly, the inverter cannot work properly. Pls. contact the customer service center.
CD	Internal storage error	<ol style="list-style-type: none"> 1. If the alarm occurs occasionally, the inverter can be automatically recovered and no action is required. 2. If the alarm occurs repeatedly, the inverter cannot work properly. Pls. contact the customer service center.
CE	Data inconsistency	<ol style="list-style-type: none"> 1. If the alarm occurs occasionally, the inverter can be automatically recovered and no action is required. 2. If the alarm occurs repeatedly, the inverter cannot work properly. Pls. contact the customer service center.
CF	Inverter abnormal	<ol style="list-style-type: none"> 1. If the alarm occurs occasionally, the inverter can be automatically recovered and no action is required. 2. If the alarm occurs repeatedly, the inverter cannot work properly. Pls. contact the customer service center.
CG	Boost abnormal	<ol style="list-style-type: none"> 1. If the alarm occurs occasionally, the inverter can be automatically recovered and no action is required. 2. If the alarm occurs repeatedly, the inverter cannot work properly. Pls. contact the customer service center.
CJ	Meter lost	<ol style="list-style-type: none"> 1. Check the meter parameter Settings 2. Local APP checks that the communication address of the inverter is consistent with that of the electricity meter 3. The communication line is connected incorrectly or in bad contact 4. electricity meter failure. 5. Exclude the above, if the alarm continues to occur, please contact the customer service center.

D2	Battery over voltage	<ol style="list-style-type: none"> 1. If the alarm occurs occasionally, the inverter can be automatically recovered and no action is required. 2. Check whether the battery overvoltage protection value is improperly set. 3. The battery is abnormal. 4. If exclude the above, the alarm continues to occur, please contact customer service.
D3	Battery under voltage	<ol style="list-style-type: none"> 1. If the alarm occurs occasionally, the inverter can be automatically recovered and no action is required. 2. Check the communication line connection between BMS and inverter (lithium battery). 3. The battery is empty or the battery voltage is lower than the SOC cut-off voltage. 4. The battery undervoltage protection value is improperly set. 5. The battery is abnormal. 6. If exclude the above, the alarm continues to occur, please contact the customer service center.
D4	Battery discharger over current	<ol style="list-style-type: none"> 1. Check whether the battery parameters are correctly set. 2. The battery is undervoltage. 3. Check whether a separate battery is loaded and the discharge current exceeds the battery specifications. 4. The battery is abnormal. 5. If exclude the above, and the alarm continues to occur, please contact customer service.
D5	Battery over temperature	<ol style="list-style-type: none"> 1. If the alarm occurs repeatedly, please check whether the installation site is in direct sunlight and whether the ambient temperature is too high (such as in a closed room).
D6	Battery under temperature	<ol style="list-style-type: none"> 2. If the battery is abnormal, replace it with a new one. 3. If exclude the above, and the alarm continues to occur, please contact the customer service center.
D7	BACKUP output voltage abnormal	<ol style="list-style-type: none"> 1. Check whether the BACKUP voltage and frequency Settings are within the specified range. 2. Check whether the BACKUP port is overloaded. 3. When not connected to the power grid, check whether BACKUP output is normal. 4. If exclude the above, and the alarm continues to occur, please contact customer service.
D8	Communication error (Inverter-BMS)	<ol style="list-style-type: none"> 1. Check whether the battery is disconnected. 2. Check whether the battery is well connected with the inverter. 3. Confirm that the battery is compatible with the inverter. It is recommended to use CAN communication. 4. Check whether the communication cable or port between the battery and the inverter is faulty. 5. If exclude the above, and the alarm continues to occur, please contact the customer service center.

D9	Internal communication loss (E-M)	<ol style="list-style-type: none"> 1. Check whether the communication cables between EPS, electricity meter and inverter are well connected and whether the wiring is correct 2. Check whether the communication distance is within the specified range 3. Disconnect the external communication and restart the electricity meter and inverter. 4. If exclude the above, and the alarm continues to occur, please contact the customer service center.
DA	Internal communication loss (M-D)	<ol style="list-style-type: none"> 1. If the alarm occurs occasionally, the inverter can be automatically recovered and no action is required. 2. If the alarm occurs repeatedly, please check: <ol style="list-style-type: none"> 1) Check whether the MC4 terminal on the PV side is securely connected. 2) Check whether the voltage at the PV side is open circuit, short circuit or ground to ground, etc. If exclude the above, and the alarm continues to occur, please contact the customer service center.
CU	Dcdc abnormal	<ol style="list-style-type: none"> 1. If the alarm occurs occasionally, the inverter can be automatically recovered and no action is required. 2. If the alarm occurs repeatedly, please check: <ol style="list-style-type: none"> 1) Check whether the MC4 terminal on the PV side is securely connected. 2) Check whether the voltage at the PV side is open circuit, short circuit or ground to ground, etc. If exclude the above, and the alarm continues to occur, please contact the customer service center.
CP	BACKUP over dc-bias voltage	<ol style="list-style-type: none"> 1. If the alarm occurs occasionally, the inverter can be automatically recovered and no action is required. 2. If the alarm occurs repeatedly, the inverter cannot work properly. Pls. contact the customer service center.
DB	BACKUP short circuit	<ol style="list-style-type: none"> 1. Check whether the live line and null line of BACKUP output are short-circuited. 2. If it is confirmed that the output is not short-circuited or an alarm, please contact customer service to report for repair (after the troubleshooting of alarm problems, BACKUP switch needs to be manually turned on during normal use).
DC	BACKUP over load	<ol style="list-style-type: none"> 1. Disconnect the BACKUP load and check whether the alarm is lifted 2. If the load is disconnected but the alarm still exists, please contact the customer service. (After the alarm is lifted, the BACKUP switch needs to be manually turned on for normal use.)

7. System maintenance

 **warning:** During maintenance, ensure that all the power supplies of the device are disconnected and all the capacitor power is discharged before performing corresponding checks or operations.

Store batteries in a dry, well-ventilated environment away from water, heat, and other metal objects.

Too high or too low storage environment temperature will affect the self-discharge rate of the battery and accelerate the natural aging of the battery. If the batteries are to be stored within one month, the recommended storage temperature is -20 ° C to 45 ° C. If the batteries are to be stored within one year, the recommended storage temperature is 0 to 35 ° C.

If the battery is not used for a long time, it is recommended to store the battery in good condition and keep the battery in a half-charged state (50% SOC);

If the battery is left idle for a long time in the case of serious power shortage, it will cause



irreversible damage to the battery cell and shorten the service life of the battery.

Check all exposed wires are not due to sun, friction with other objects around, dry rot, insects or rodents damage caused by insulation damage, check cables and plugs are damaged, and insulation protection is good, need to repair or replace wires if necessary;

Verify that the indication and display are consistent with the operation of the equipment, please note any fault or error display and take corrective action if necessary;

Check all terminals for signs of corrosion, insulation damage, high temperature, or burning/discoloration, and tighten terminal screws;

Check for dirt, nesting insects and corrosion and clean up as required;

If the lightning arrester has failed, replace the failed lightning arrester in time to prevent lightning damage to the equipment or other equipment of the user;

Check whether the front panel of the photovoltaic module is scratched or broken;

When the photovoltaic module is working, there can be no influencing factors that block the photovoltaic module, such as: other components, component system support, birds stay, a lot of dust, soil or plants, which will lead to a significant reduction in the output power car, it is recommended that at any time, the surface of the component can not be blocked;

To reduce potential electrical or thermal shock, it is recommended to clean the components in the morning or late afternoon.

The frequency of cleaning depends on the speed of dirt accumulation. Under normal circumstances, the rain will clean the surface of the component, which can reduce the frequency of cleaning, in order to prevent damage to the component and the surface of the front board is scratched, please do not use electric or pressure cleaning machine, it is recommended to use wet sponge containing water or soft cloth to wipe the surface of the component, it is forbidden to use detergent containing alkali and acid to clean the component.

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