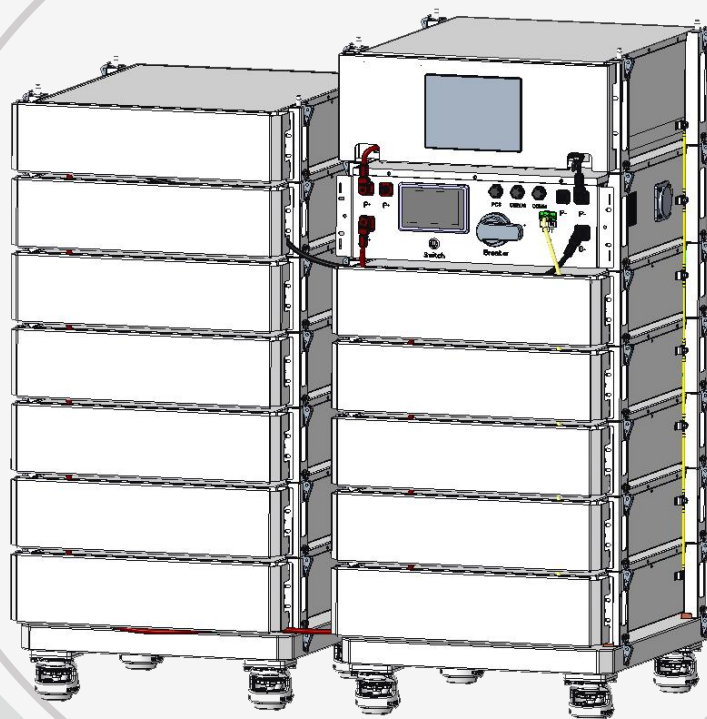




Users Manual

High-Voltage Stackable Battery System

ESS-GRID Dynio Series



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Version Record

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01 Safety Instructions

1.1 Safety Symbols

When installing, operating and maintaining the equipment, please read this manual first and follow all safety precautions marked on the equipment and in the manual. **To ensure that users can better use this product and protect personal and property safety, please read the following symbols carefully.**



DANGER: Indicates a potentially hazardous situation which, if not avoided, will result in death or serious injury.



WARNING: Indicates a situation with a moderately hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION: Indicates a situation with a low risk of hazard which, if not avoided, may result in moderate or minor injury.



Note: Emphasis and supplementation of content may also provide tips for optimal use of the product.

1.2 General Security



Note:

This equipment should be used in an environment that meets the design specifications. Otherwise, it may cause equipment failure. The resulting equipment malfunction or component damage, personal safety accidents, property losses, etc. are not within the scope of equipment quality assurance. Local laws, regulations and specifications should be followed when installing, operating and maintaining the equipment. The safety precautions in the manual are only used as a supplement to local laws, regulations and specifications. The company does not assume responsibility for any of the following situations.

1. The installation and use environment exceeds the requirements of relevant international, national and regional standards.
2. Operation not within the conditions of use described in this manual.

3. Unauthorized disassembly, modification of products or modification of software codes.
4. Failure to follow the operating instructions and safety warnings in the product and documentation.
5. Equipment damage caused by abnormal natural environment (force majeure, such as earthquake, fire, storm, flood, mudslide, etc.).
6. Damage caused by the customer's failure to comply with transportation and installation requirements.
7. Damage caused by storage conditions not meeting the requirements of product documentation.
8. Damage to the hardware or data of the device due to customer negligence, improper operation or intentional damage .
9. System damage caused by a third party or customer , including relocation and installation of the system that does not comply with the requirements of this manual, and damage caused by adjustments, changes or removal of identification marks that do not comply with the requirements of this manual.
10. Defects, failures or damages caused by acts, events, omissions or accidents beyond the reasonable control of the Seller, including power outages or electrical failures, theft, war, riots, civil unrest, terrorism, intentional or malicious damage, etc.

**Danger:**

The equipment has high voltage. Improper operation may cause electric shock or fire, resulting in death, serious personal injury or serious property loss. Please follow the operation sequence and safety precautions given in this manual and other related documents and operate in accordance with the regulations:

1. Please check whether the pre-installed cables are connected and tightened. Check whether the device is damaged, such as holes, dents, or other signs of possible internal damage. Check that the internal components of the device are not displaced. It is forbidden to change the structure and installation sequence of the device without authorization.
2. It is forbidden to use water to clean the electrical parts inside the equipment. If liquid is found to have entered the equipment, please press the emergency stop switch immediately and notify the on-site management personnel.
3. It is forbidden to install, connect, maintain and replace with power on. Before touching any conductor surface or terminal, measure the voltage at the contact point and confirm that the protective ground wire of the equipment or the part to be repaired is reliably grounded and there is no risk of electric shock.

4. Except for the personnel who operate the equipment, other personnel are not allowed to approach the equipment. Do not power on the equipment before the equipment is installed or confirmed by professionals. When powering on for the first time or operating the main circuit with power on, at least two personnel must be present on site.



Illustrate

1. The user's operating behaviors and operating tools during transportation, handling, installation, wiring and maintenance must comply with the laws, regulations and relevant standards of the country and region where the user is located.
2. It is prohibited to reverse engineer, decompile, disassemble, adapt, implant or perform other derivative operations on the device software. It is not allowed to study the internal implementation of the device, obtain the source code of the device software, steal intellectual property rights, etc. in any way, and it is not allowed to disclose the results of any device software performance test.

1.3 Electrical Safety

1.3.1 General Requirements



Illustrate:

1. All electrical connections must meet the electrical standards of the country/region.
2. You must obtain permission from the power department of the country/region before you can connect to the grid for power generation.
3. User-supplied cables must comply with local laws and regulations.
4. When performing high voltage operations, please use special insulating tools.



Danger: Before making electrical connections, make sure the device is not damaged, otherwise it may cause electric shock or fire.

1.3.2 Wiring Requirements

1. Please select cables that comply with local laws and regulations. Cables of the same type should be bundled together, and cables of different types should be laid separately. They should not be entangled or crossed.
2. The cables used in the high-voltage stacking machine must be firmly connected, well insulated, and meet the specifications. The cable conduit or wire hole must be protected to prevent the cables from being damaged by sharp edges, burrs, etc.

3. Using cables in high temperature environments may cause aging and damage of the insulation layer. The distance between the cables and the heating device or the periphery of the heat source area should be at least 30mm.

4. To ensure construction safety, all cables should be laid and installed above 0°C. When moving cables, especially when working in low temperature environments, they should be handled with care.



Danger: It is forbidden to install or remove the power cord while it is powered on. When the power cord core contacts the conductor, an arc or spark will be generated, which may cause fire or personal injury.

1.3.3 Grounding Requirements

1. When installing equipment that needs to be grounded, the protective ground wire must be installed first; when dismantling the equipment, the protective ground wire must be removed last.

2. It is prohibited to damage the grounding conductor.

3. It is prohibited to operate the equipment without installing a grounding conductor.

4. The equipment should be permanently connected to the protective ground. Before operating the equipment, check the electrical connection of the equipment to ensure that the equipment is reliably grounded.

1.3.4 Maintenance Requirements

1. Before connecting or removing cables, the protection switch of the corresponding circuit must be turned off.

2. Use a multimeter of the corresponding voltage level to check whether it is energized and ensure that the equipment is completely powered off.

3. If there is a charged object nearby, please use an insulating board or insulating tape to cover or wrap it.

4. Use the grounding wire to reliably connect the circuit to be inspected to the grounding circuit before performing operation and maintenance.



Illustrate:

1. Before connecting cables, make sure the cable labels are correct.

2. If the device has multiple inputs, all inputs of the device should be disconnected and the device can be operated only after it is completely powered off.

3. After the inspection is completed, remove the grounding wire between the inspection circuit and the grounding circuit.

1.4 Maintenance and Replacement

Please maintain the equipment only after you are familiar with and understand the contents of this manual and have appropriate tools and test equipment.:

1. Before performing maintenance work, please power off the device first, then follow the instructions on the delayed discharge label and wait for the corresponding time to ensure that the device is powered off before operating the device.
2. During the maintenance process, please try to avoid irrelevant personnel entering the maintenance site, and temporary warning signs or fences must be erected for isolation.
3. If the equipment fails, please contact your dealer in time.
4. The equipment can be powered on again only after the fault has been resolved. Otherwise, the fault may expand or the equipment may be damaged.
5. Unauthorized persons are not allowed to open the cover without authorization, otherwise there will be a risk of electric shock, and the resulting malfunction is not covered by the warranty.
6. Operators, maintenance personnel and professional technicians should receive adequate training on safe use and equipment maintenance, and should operate with adequate preventive measures and personal protective equipment.
7. When moving or rewiring is required, the power input must be cut off. After waiting for 5 minutes for the internal energy of the machine to be discharged, and after using a multimeter to confirm that there is no dangerous voltage on the DC bus and the parts to be repaired inside the machine, maintenance can be started.
8. Battery maintenance should be performed or supervised by personnel familiar with batteries and the necessary precautions.
9. When replacing batteries, please replace with battery modules of the same type.
10. After the maintenance operation is completed, check immediately to ensure that no tools or other parts are left in the equipment.
11. If the device is not used for a long time, the battery needs to be stored and recharged according to this manual.



Danger:

During the operation of the equipment, there is high voltage, which may cause electric shock, resulting in death, serious personal injury or serious property loss. Therefore, before performing any maintenance work, the equipment must be powered off and the safety precautions listed in this manual and other related documents must be strictly followed.

02 Product introduction

2.1 Product Overview

The battery system is composed of battery modules and a high-voltage control box, specifically designed for small commercial and residential energy storage systems. It features high-voltage DC input and output ports, enabling the storage and release of high-voltage DC electricity according to the requirements of photovoltaic energy storage.

2.2 Product appearance

ESS-GRID Dynio Series:

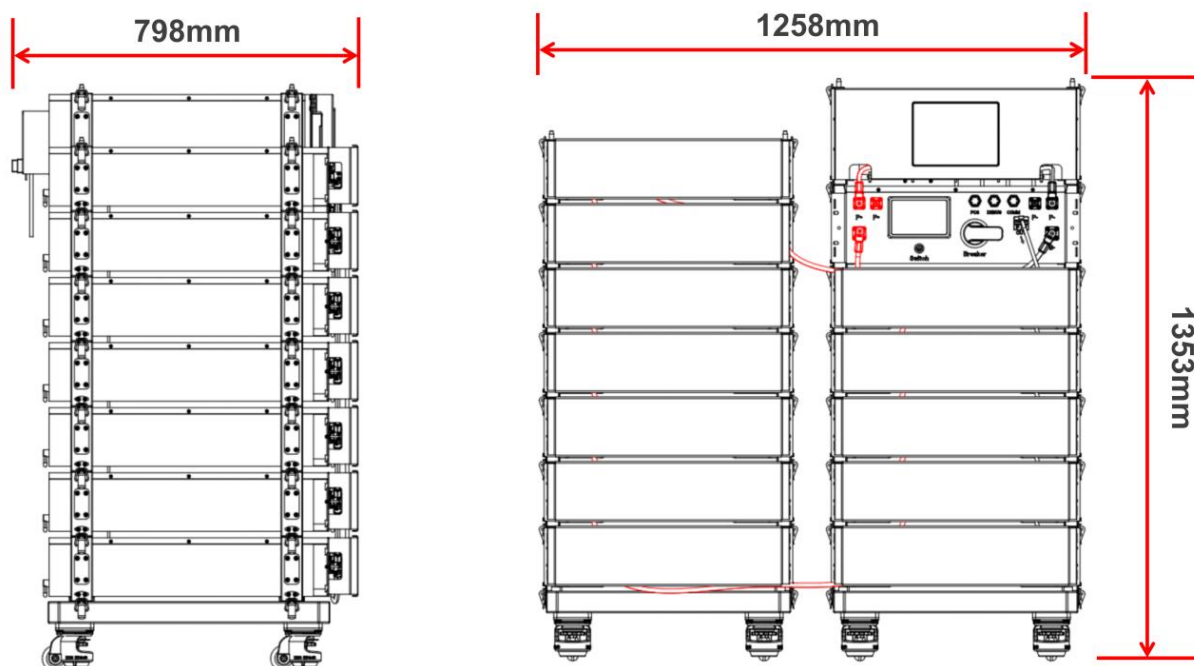


Figure2.3



Note: The configurations vary for different projects. The actual situation shall be subject to the delivery.

2.3 Product parameters

ESS-GRID Dynio Series Technical Parameter List

Series Name	ESS-GRID Dynio Series
Battery Side Parameters	
Battery Type	LiFePO ₄ (LFP)
Cell Capacity	135Ah
Configuration	1P216S
Rated Energy	93.3kWh
Rated Charge/Discharge Power	1/3P
Maximum Charge /Discharge Current	135A
Rated Voltage	691.2V
Operating Voltage Range	604.8V~777.6V
PCS Side Parameters	
Rated Power	50kW
Maximum DC Current	110A
DC Operating Voltage Range	600V~1000V (3W+PE) / 680V~1000V (3W+N+PE)
DC Full-Load Operating Voltage Range	625V~950V (3W+PE) / 680V~950V (3W+N+PE)
Rated AC Voltage	400Vac, 3W+N+PE / 3W+PE
Rated AC Current	72A
Rated AC Frequency	50/60Hz (±5Hz)
Power Factor	-1 Lead ~ +1 Lag

Overload Capacity (150% for 10s) 110% continuous operation; 120% for 1 minute

General Parameters	
Operating Humidity	10%RH~90%RH
Operating Temperature	Charge:0~55°C; Discharge:-20~55°C
Storage Temperature	0°C~
Altitude	2000m (90%/80% reduction for 3000/4000 meters respectively)
Cooling Method	Intelligent Forced Air Cooling
Noise	<70dB
Fire Protection	Pack-Level Fire Protection (Optional)
Communication	EMS:RS485 Battey: CAN/RS485
Isolation Method	Non-Isolated
Ingress Protection	IP20
Dimensions (W*D*H)	1258*798*1353(±10mm)
Weight (kg)	997.9 (±3%)

Table2.3



Explanation:

It is not recommended to allow the battery to operate continuously at its maximum charging and discharging current; the rated capacity of 135Ah is valid under "25°C" conditions; the current and power of charging and discharging will change according to temperature and the state of charge of the battery.

2.4 Product Details

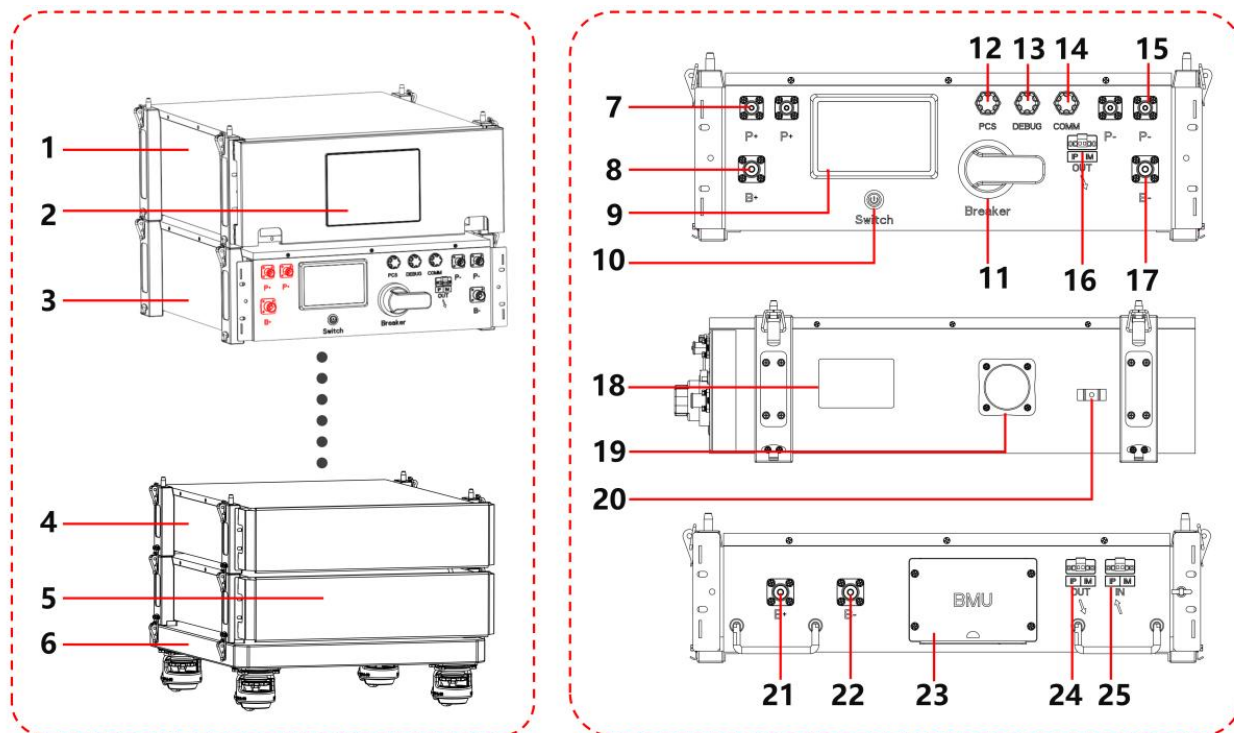


Figure 2.4

Battery Component Description Table

Serial number	Part Name	Illustrate
1	PCS Module	50kW PCS Module
2	HMI Display	Human-Machine Interface
3	Battery control box	Control battery system operation
4	Battery Module	57.6V 135Ah
5	Battery protection cover	/
6	Battery base	Base with wheels for easy battery position adjustment
7	Control box positive socket	Connect the external positive DC cable to the positive pole of the inverter
8	Control box positive terminal	Connect the positive terminal of the battery box
9	Display	Display battery status information

10	Power button	Control the low voltage circuit "on/off" in the battery system
11	DC circuit breaker	Control the on/off of the battery high voltage circuit
12	PCS Communication Port	Communication connection between battery and inverter
13	Debug Port	Used to communicate with the computer to monitor and upgrade the battery
14	Parallel Communications Port	Communication connection between HVS batteries
15	Control box negative socket	Connect external negative DC cable, which can be connected to the negative pole of the inverter
16	Control box internal communication port	Communication port between BMU and BCU in battery system
17	Control box negative terminal	Connect the negative terminal of the battery box
18	Battery nameplate	That is, the "battery ID card"
19	4G&Wifi Antenna	/
20	Protective ground terminal	Connect the battery system protective grounding cable
21	Battery box positive terminal interface	Connect the positive pole of the control box or the negative pole of the upper battery box
22	Battery box negative terminal interface	Connect the negative pole of the control box or the positive pole of the lower battery box
23	BMU	Battery Management System Slave Control
24	Battery box communication output port	Output of BMU in battery system
25	Battery box communication input port	Input of BMU in battery system

Table 2.5

2.5 A schematic diagram

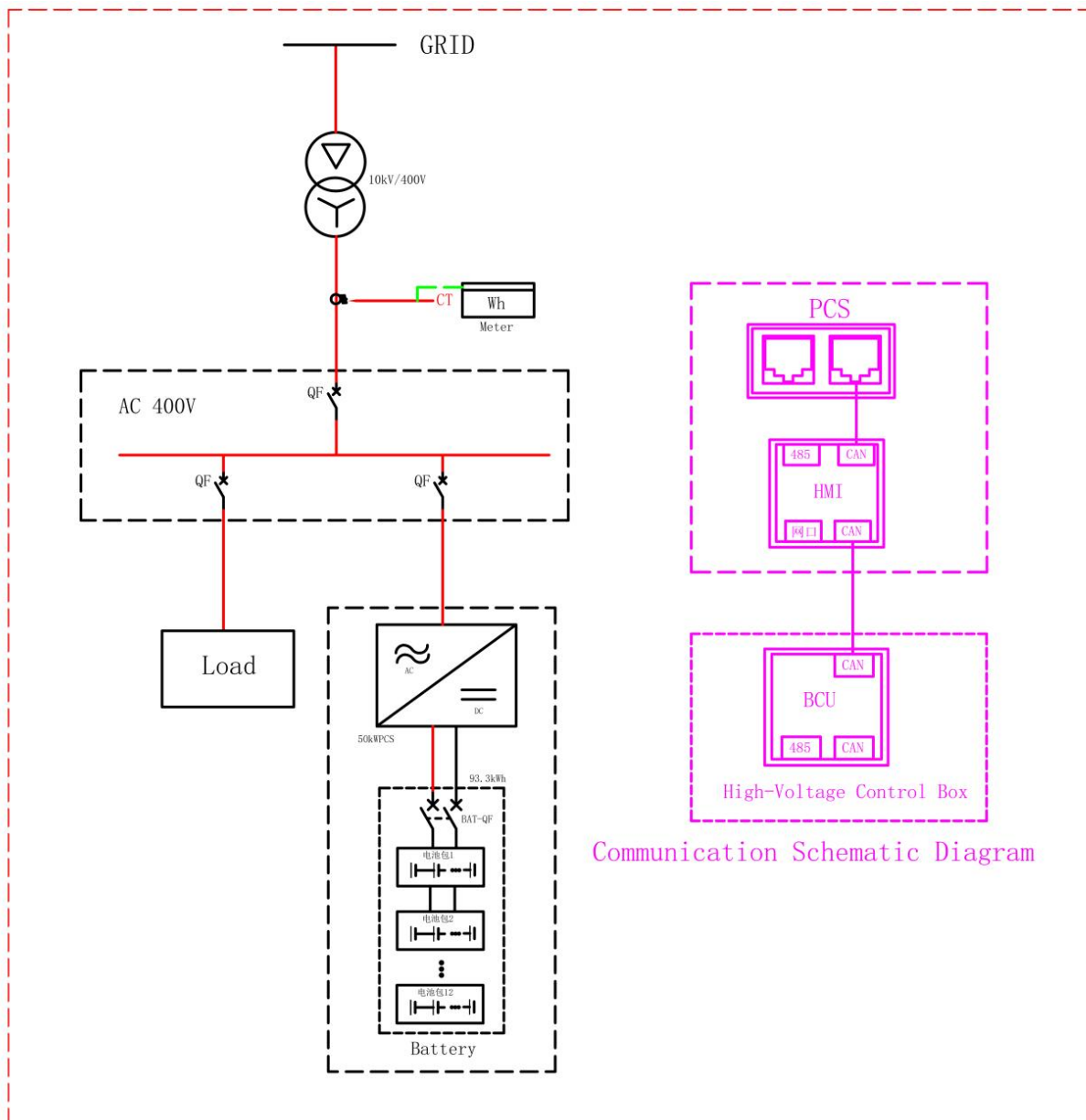


Figure 2.5



Explanation: The above picture shows the indoor system solution with pure grid connection. Different projects have different configurations and the wiring is slightly different. The actual configuration will be based on the delivery.

2.6 PCS energy storage converter power module

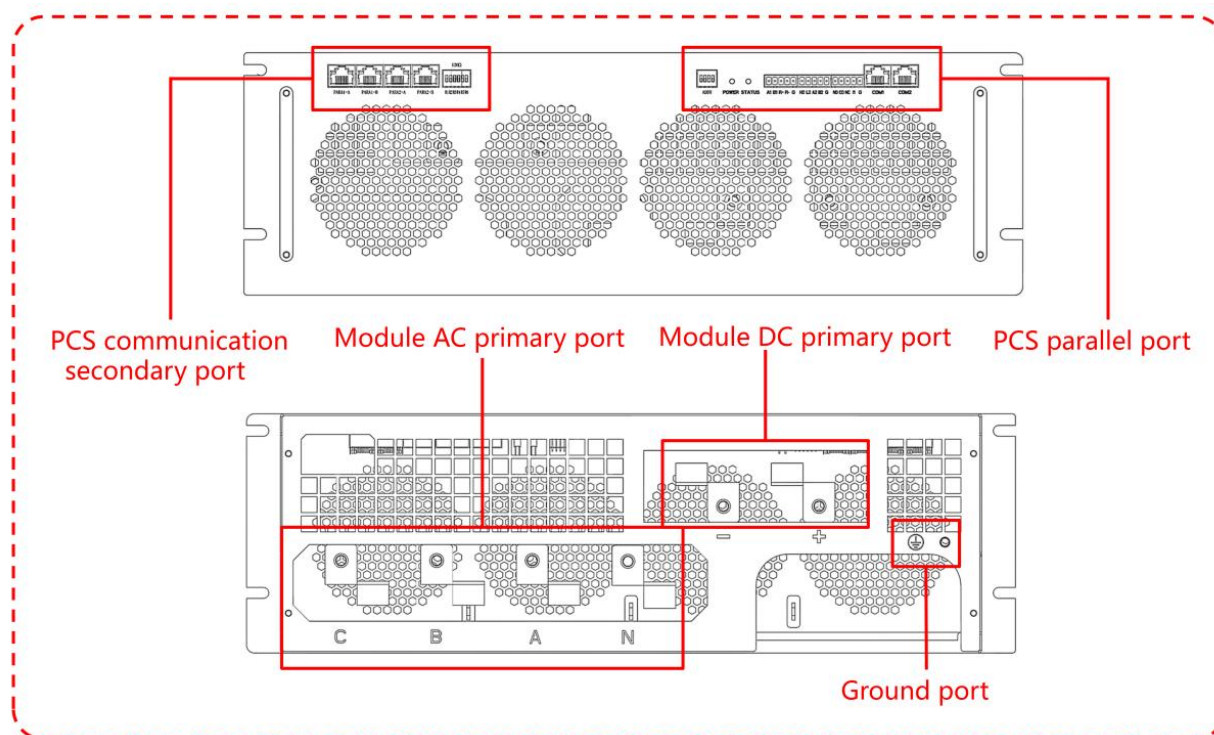


Figure2.6



Explanation: The phase sequence of the power grid must not be confused during connection. It must be connected according to the phase sequence on the AC side of the module. Otherwise, the module will experience an AC phase sequence error fault. When using the three-wire system, the ABC three wires of the power grid should be connected to the ABC terminals of the module, and the N wire should be left floating.

2.7 Local management system

The microgrid management system (Lotus-ESS) is an intelligent energy management system independently developed by our company. It is specifically designed for microgrid systems and is applicable to various capacity energy storage stations and photovoltaic-storage-charging integrated stations.

This system integrates functions such as human-machine interface (HMI), port control and communication, system parameter setting, and operation strategies, enabling comprehensive monitoring and management of the energy storage system.

Product Model	Lotus - ESS
Power Input	DC 12V
Output Control	3 isolated output switching signals
Input Control	6 isolated input switching signals
Serial Communication	2 isolated RS232 ports, 4 isolated RS485 ports

Fieldbus	2 CAN bus interfaces
Ethernet Port	1 10/100M Ethernet port (RJ45)
Expanded Storage	1 USB port, 1 SD card slot
Audio Alarm	1 controllable buzzer
Program	1 running indicator light, 1 status indicator light,
Characterization	1 alarm indicator light
Abnormality	1 hardware watchdog timer
Characterization	
Real-Time Clock	1 set of RTC real-time clock

Table 2.7

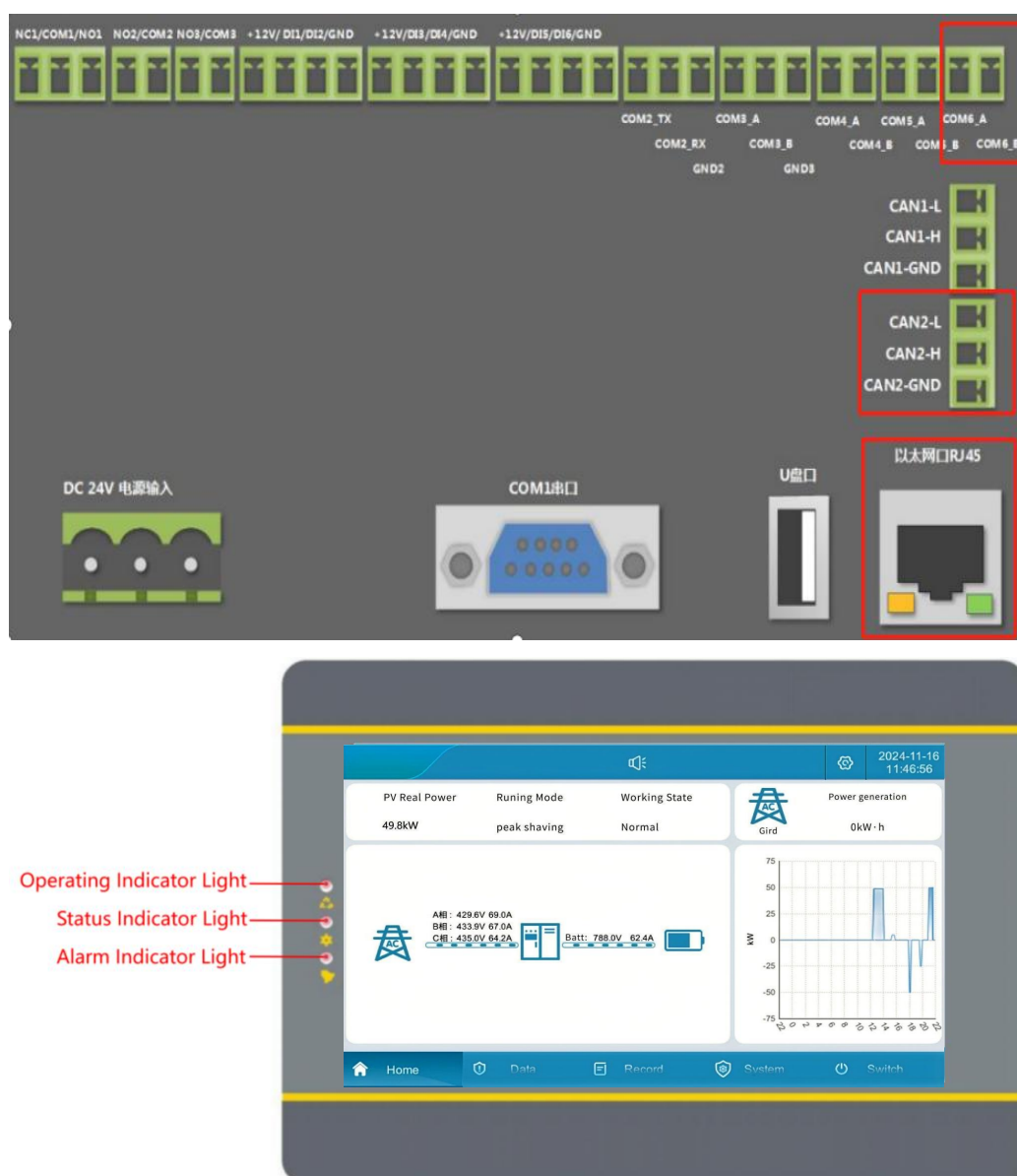


Figure 2.7-HMI

2.8 Configuration List

In conclusion, the configuration list is as follows:

Item	Parameter	Unit	Number
Battery PACK	135Ah-1P18S	set	12
Battery base	System integration	set	2
High-voltage control cabinet	System integration	set	1
PCS module	50kW	set	1
auxiliary material	Connection cables, communication harnesses, etc.	set	1
management system	Lotus-ESS	set	1

Table 2.7

03 Run and Operation

3.1 Human-Machine Interface

After the system is powered on, the LCD touch screen enters the startup interface. After 30 seconds, the startup interface disappears, and the system enters the "Home" interface. As shown in Figure 5.1, the home interface displays real-time system information such as power, voltage, current, power generation, operating mode, and working status.

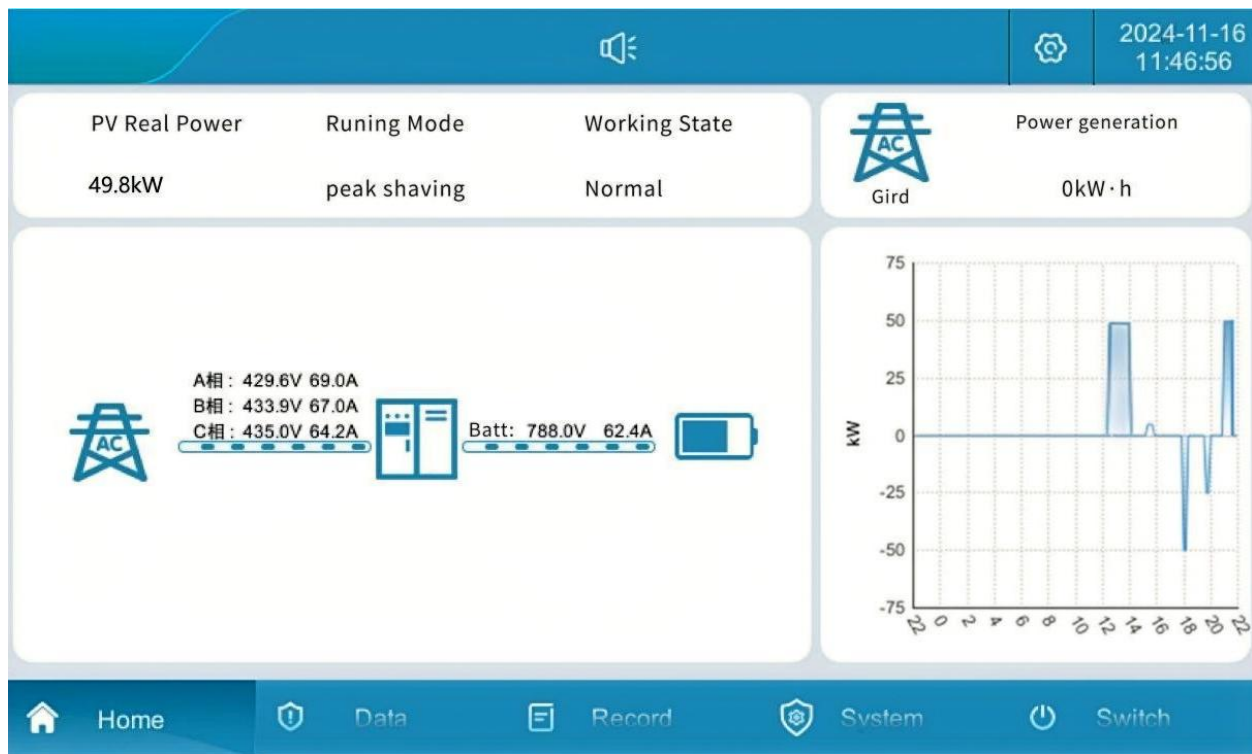


Figure 3.1 Home Page

Expanded items of each menu:

HMI Display and Control Integrated Screen Menu List

NO.	Menu Name	Menu Items	Parameter Functions
1	Home	No item	Displays the system's operating status and the daily charge-discharge curve graph

2	Data	Real-time Data	Displays all analog data of the converter
		Real-time Status	Displays the operating status and switch status of the converter
		Battery Data	Battery Data Display and Battery On/Off Settings
2	Data	Environmental Monitoring	Environmental Monitoring Display and Air Conditioner Parameter Settings
		Real-time Alarms	Current System Alarm Information
		Historical Alarms	Display Historical Alarm Records
3	Records	Operation Logs	Display Operation Logs
		Data Reports	Export Historical Records
4	System	System Information	Display System Information
		Operating Mode	System Operating Mode Settings
		Parameter Settings	Converter and Battery Parameter Settings
		Manufacturer Settings	Device Manufacturer Settings
		System Upgrade	System Software Upgrade
		Communication Settings	Configure Communication Settings
5	Switch	System Switches	System Power On/Off
6	HMI	Indicator Lights	① The first one from top to bottom is the power light:
	Indicator	on the Left Side	The green light blinks when the HMI touch screen is

	Light	of HMI	powered normally.
			② The second one from top to bottom is the status light: The green light is off when the system has a fault; the green light stays on when the system is fault-free.
6	HMI Indicator Light	Indicator Lights on the Left Side of HMI	③ The third one from top to bottom is the fault light: The red light blinks when the system has a fault (blinking frequency: once per second); the red light is off when the system is fault-free.
			① When the system is on standby and there is a fault, the system light is red.
7	System Light	Status Indication	② When the system is running and there is no fault, the system light is green. ③ When the system is running and there is a fault, the system light is yellow. ④ When the system is on standby and there is no fault, the system light is off.

Table 3.1

3.2 Power – On and Power – Off Operations

1. System startup: First, check the power-on status of the entire machine.
2. The screen startup takes approximately 30 seconds.
3. Set the converter parameters in the "System" -> "Parameter Settings" interface, and select the required operating mode in the "System" -> "Operating Mode" interface, including grid-connected mode, manual control mode, peak shaving and valley filling mode,

and backup mode.

4. Enable all modules on the "Switch" page of the HMI integrated screen (some modules can also be turned on as needed), click "System Start", and the normal startup time is about 30 seconds, as shown in Figure 3.2-1.

5. Converter shutdown: When the converter is running, click "Converter Shutdown", as shown in Figure 3.2-2.

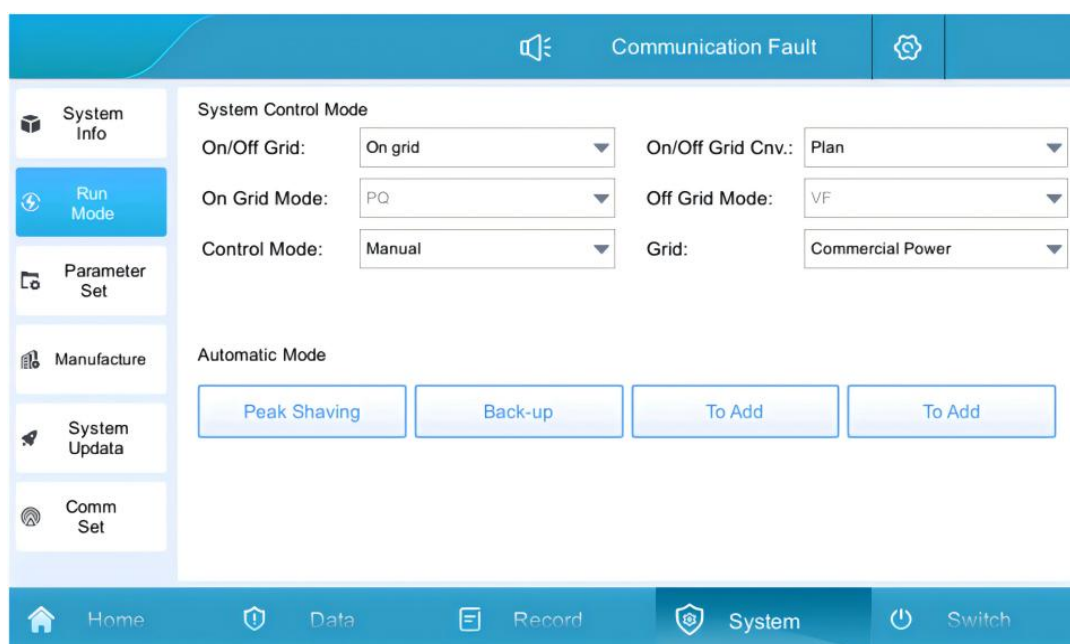


Figure 3.2-1 Operating Mode Interface

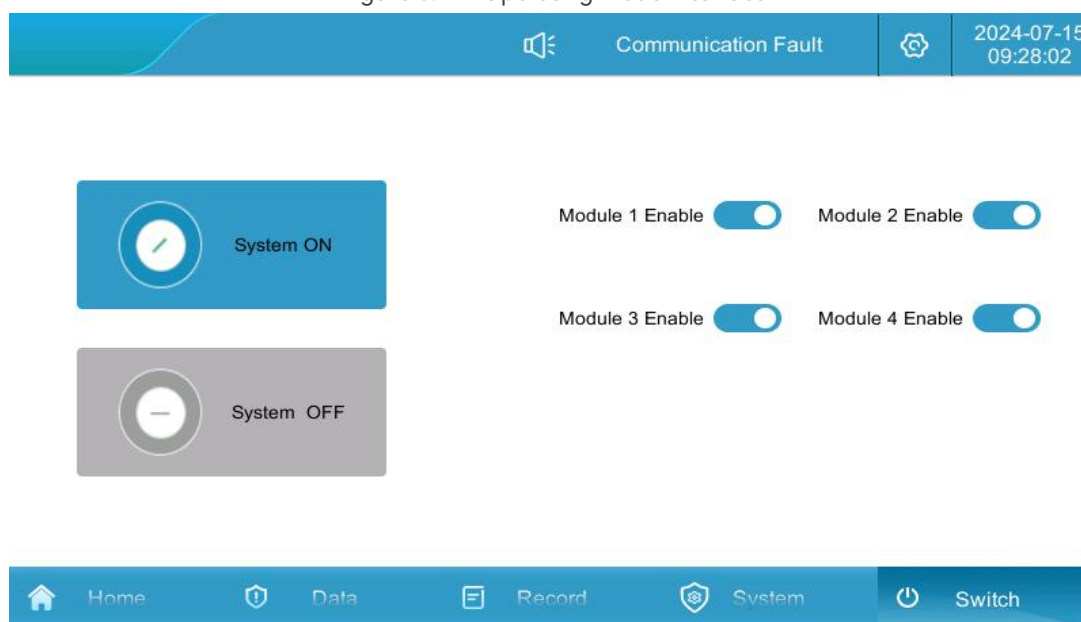


Figure 3.2-2 Power On/Off Interface

3.3 Communication Settings

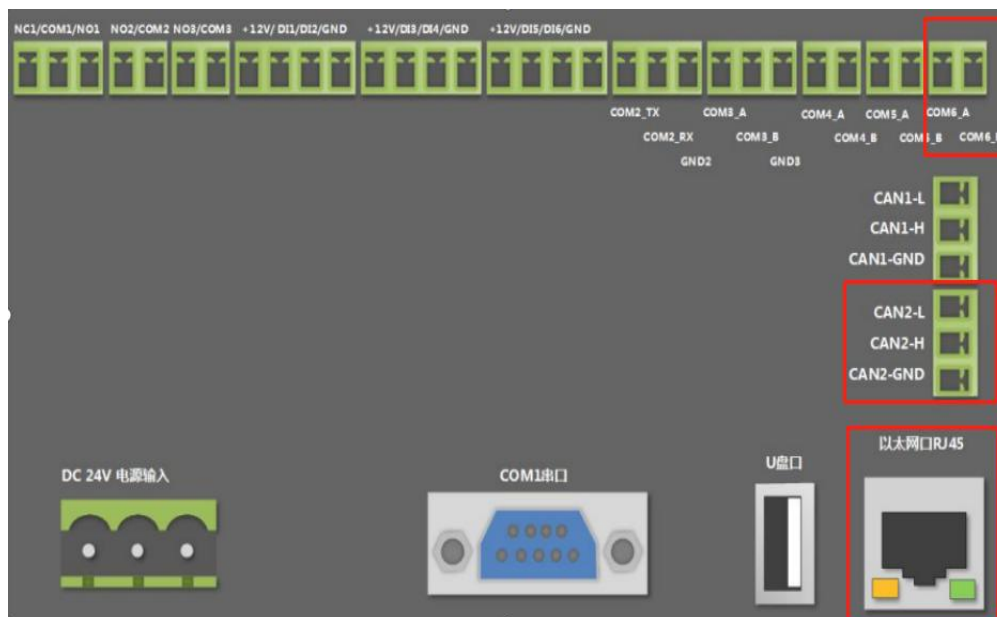


Figure 3.3-1 Communication Check



Illustration:

Communication settings refer to the configuration of communication protocols between the HMI integrated screen and the battery BMS, as well as between the LCD touch screen and the EMS background.

1. Check that the battery BMS communication cable is connected to the CAN2_H and CAN2_L terminals on the back of the touch screen.
2. Check that the background EMS communication cable is connected to the COM6_A and COM6_B terminals on the back of the touch screen or to the network port.
3. Click "System" -> "Communication Settings" on the HMI integrated screen to enter the communication settings interface.
4. Battery BMS communication settings: Set the CAN baud rate to 250k bps.
5. Background EMS communication settings 1: If RS485 communication is adopted, set the local address corresponding to the communication panel to 1. If multiple energy storage systems are connected to the background, the slave addresses must not be duplicated.

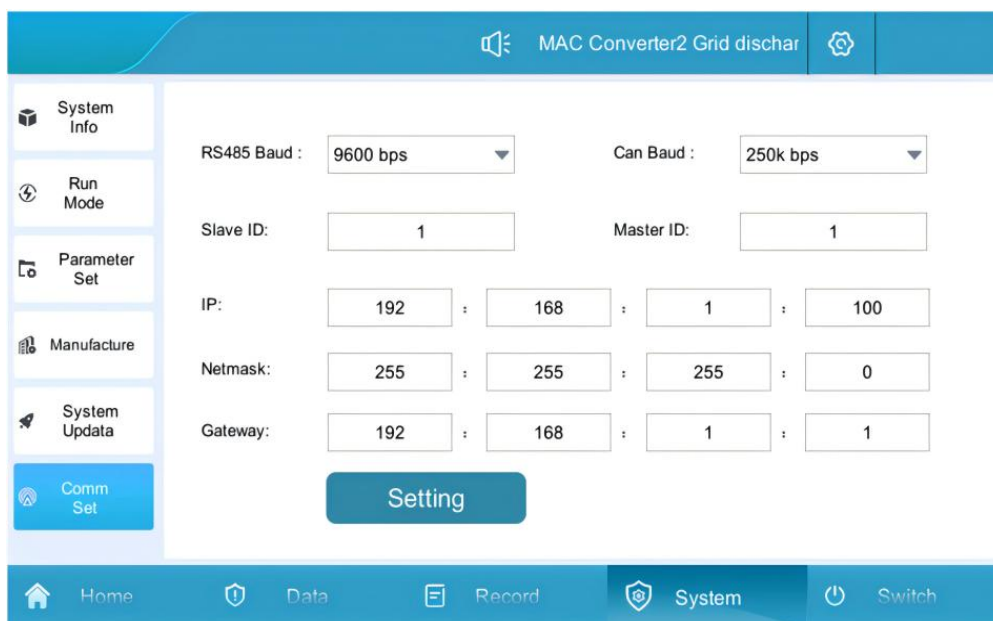


Figure 3.3-2 Communication Settings Interface

6. Background EMS communication settings 2: If Ethernet communication is adopted, the energy storage system itself acts as a server. The default host address is set to 192.168.1.100, and the local address corresponding to the communication panel is set to 1. The server port is 502. If multiple energy storage systems are connected to the background, their IP addresses must not be duplicated. After modifying the IP address, click the setting button to configure the IP address.

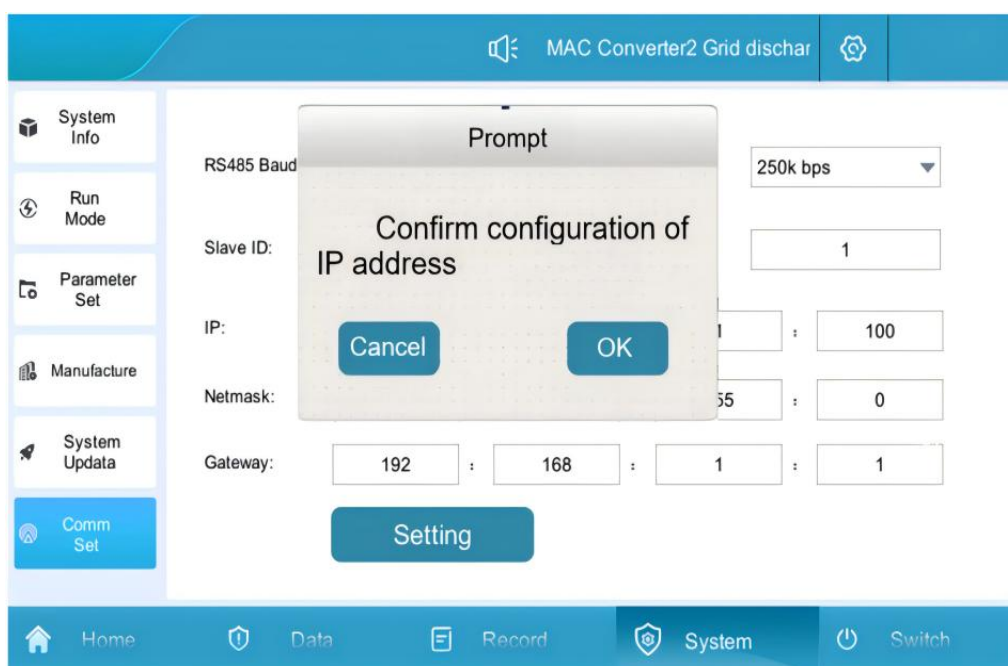


Figure 5.3-3 Address Configuration Interface

3.4 Setting of Operating Modes

3.4.1 Introduction to Operating Modes

The operating modes of the energy storage converter are divided into the following three types:

1. **Grid-connected Manual Mode:** In this mode, the energy storage system operates in grid-connected mode, but start-up and shutdown require manual operation by the user via the LCD touch screen. Users can adjust the active power, reactive power, and power factor of charging and discharging in the "Parameter Settings".
2. **Grid-connected Automatic Mode:** Suitable for peak-shaving and valley-filling scenarios, the system automatically operates in grid-connected mode according to the preset charging and discharging power. In backup mode applications, when the battery is charged to the preset SOC, the mains power stops charging.



Figure 3.4.1-1

3. In grid-connected mode, the anti-reverse power flow function can be set to disabled or enabled. When set to enabled, the energy storage system will not feed power back to the

grid; when set to disabled, the energy of the energy storage system can flow into the grid.

The setting interface is located in the system path: "System" -> "Parameter Set" -> "Advanced Settings (password 888888)" -> "MSTS Para." -> "anti-reflux", as shown in the figure below:

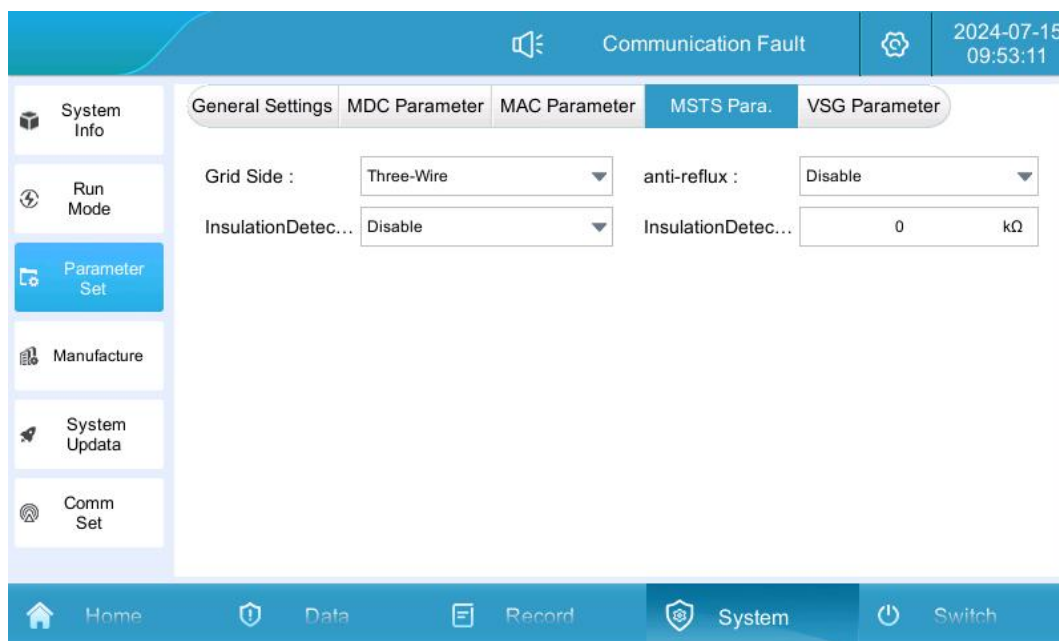


Figure 3.4.1-2 Anti-reverse Power Flow Setting Interface

3.4.2 Grid-connected Manual Mode

1. Click "System" -> "Run Mode" to enter the page shown in Figure 3.4.2-1.

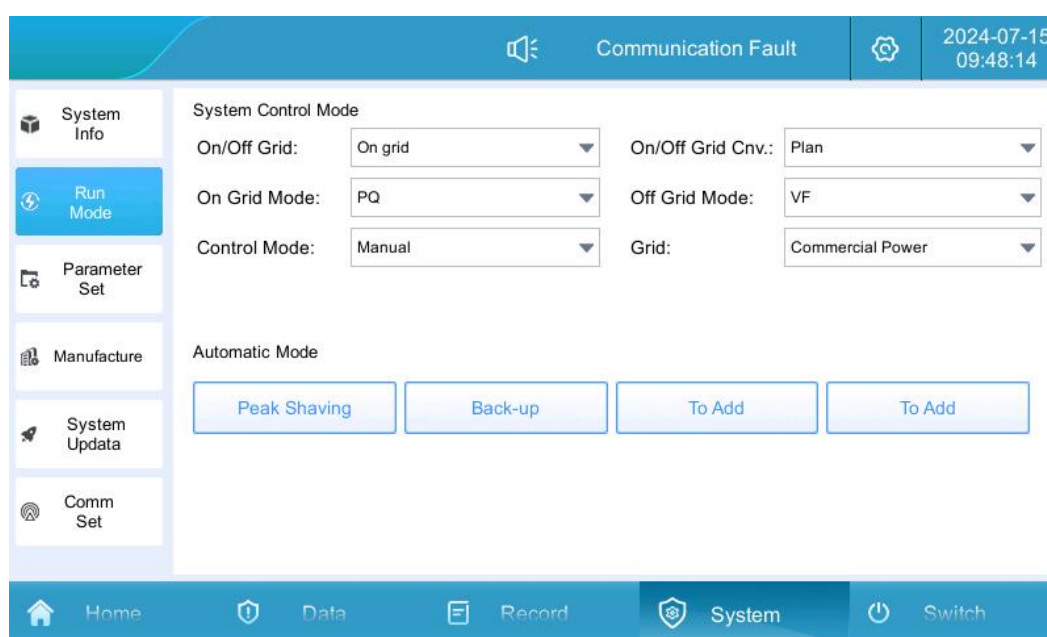


Figure 3.4.2-1 Grid-connected Manual Mode Settings

2. Set the Control Mode to "Manual ". On the "Parameter Set" page, set the corresponding Active power, Power Factor, and Reactive Power. The device will operate according to the set values (positive values indicate discharging, negative values indicate charging). The power setting interface is shown in Figure 3.4.2-2.

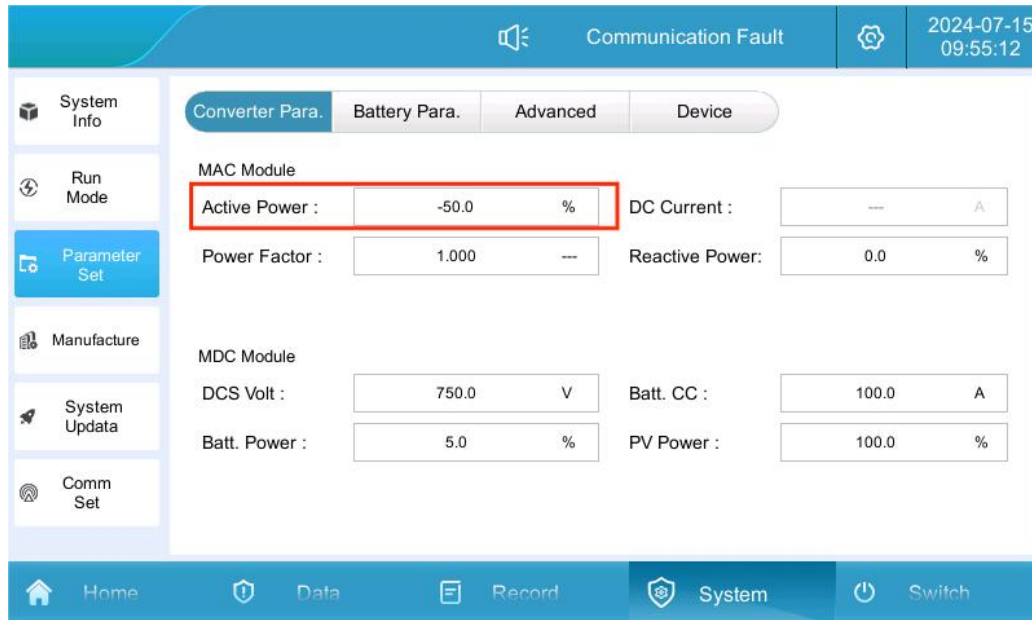


Figure 3.4.2-2 Power Setting Interface

3. Navigate to the "Switches" page and "Enable" the power modules as needed (it is recommended to enable all modules). Finally, click "System ON" to confirm.

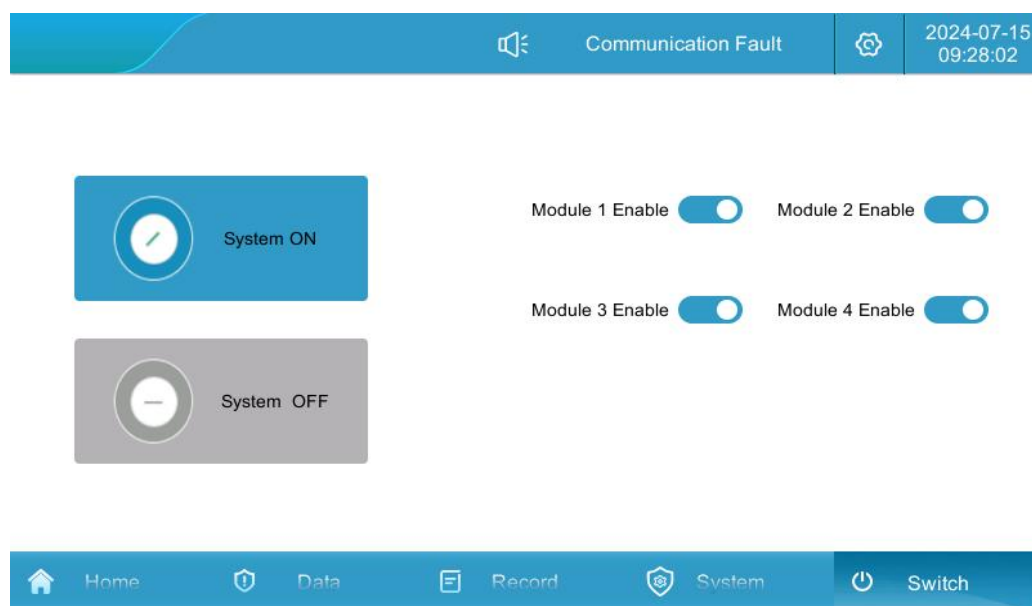


Figure 3.4.2-3 Power On/Off Interface

3.4.3 Grid-connected Automatic Mode

Peak-shaving and valley-filling mode:

1. Click "System" -> "Run Mode", then click the "Peak shaving" button to enter the setting page;

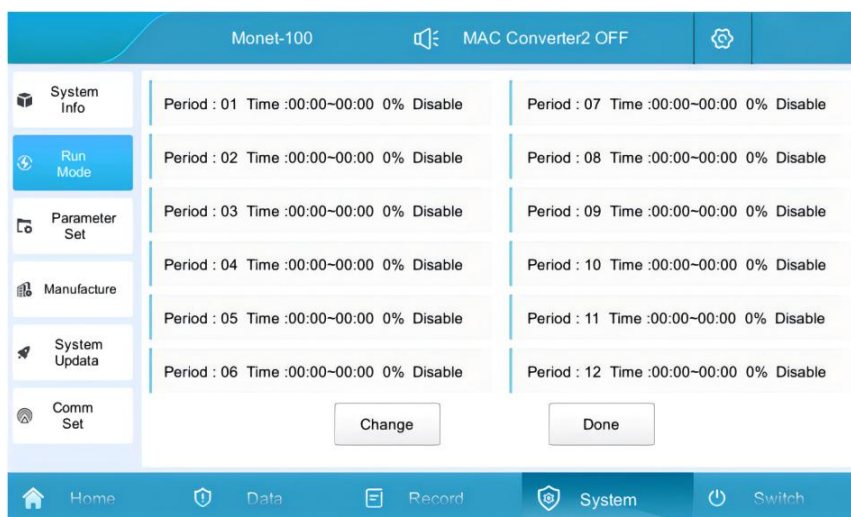


Figure 3.4.3-1 Peak-shaving and Valley-filling Operation Setting Interface

2. Click "Change" to set the peak-shaving and valley-filling operation time periods and power: set the start and end time, charging/discharging power and whether to enable it in period 1; click the next item to enter period 2 settings, save and exit after completing all period settings.

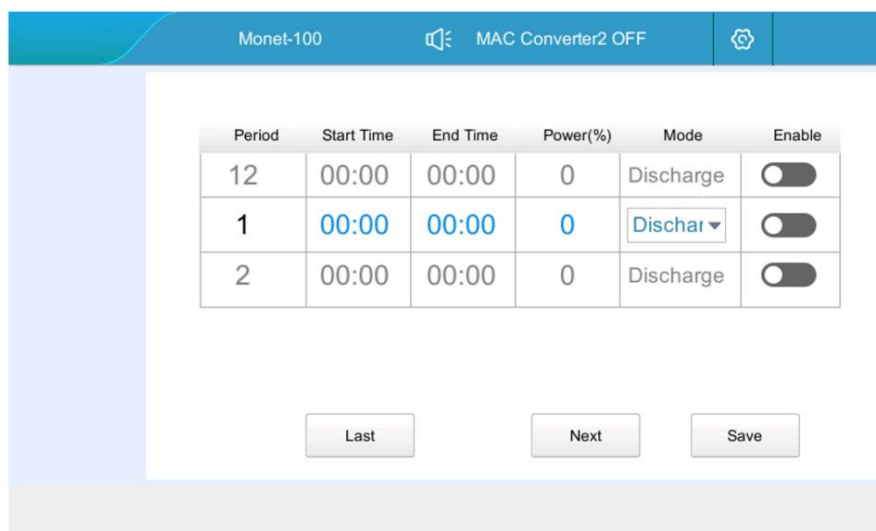


Figure 3.4.3-2 Peak-shaving and Valley-filling Charging/Discharging Time Setting Interface

3. Automatically jump to the following interface and click the "Done" button;

Period	Time	Power	Status
Period : 01	Time :00:00~05:00	25kW	Enable
Period : 02	Time :07:00~11:00	30kW	Enable
Period : 03	Time :11:00~13:00	40kW	Enable
Period : 04	Time :13:00~15:00	50kW	Enable
Period : 05	Time :00:00~00:00	0kW	Disable
Period : 06	Time :00:00~00:00	0kW	Disable
Period : 07	Time :00:00~00:00	0kW	Disable
Period : 08	Time :00:00~00:00	0kW	Disable
Period : 09	Time :00:00~00:00	0kW	Disable
Period : 10	Time :00:00~00:00	0kW	Disable
Period : 11	Time :00:00~00:00	0kW	Disable
Period : 12	Time :00:00~00:00	0kW	Disable

Figure 3.4.3-3 Peak-shaving and Valley-filling Charging/Discharging Setting Interface

4. Change the option in "Control Mode" to "Peak shaving";

System Control Mode
On/Off Grid: On grid
On Grid Mode: PQ
Control Mode: Peak Shaving
Automatic Mode: Peak Shaving

Figure 3.4.3-4 Peak-shaving and Valley-filling Control Mode

5. It is now in automatic mode: Pause, click "Switch" -> "System Start" to complete the local automatic control mode settings.

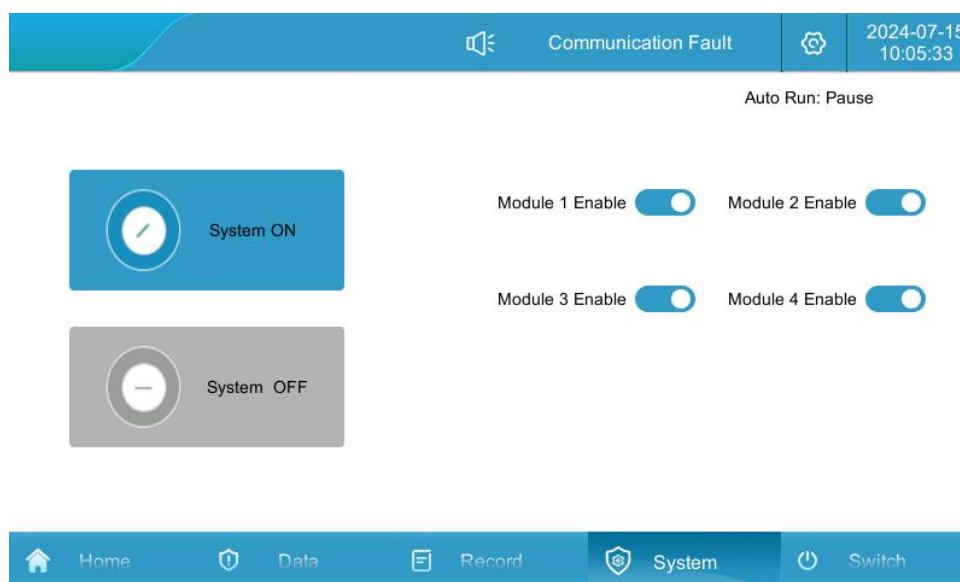


Figure 3.4.3-5 Local Control Operation Mode Activation

3.4.4 Battery Parameter Settings

1. Click "System" -> "Parameter Set" to enter the current page;
2. Customers can set the upper and lower limits of SOC according to their own needs;
3. It is recommended that the lower limit of SOC should not be set lower than 5%.



Caution:

The battery parameters have been set before the system leaves the factory, and it is not recommended to modify them by yourself.

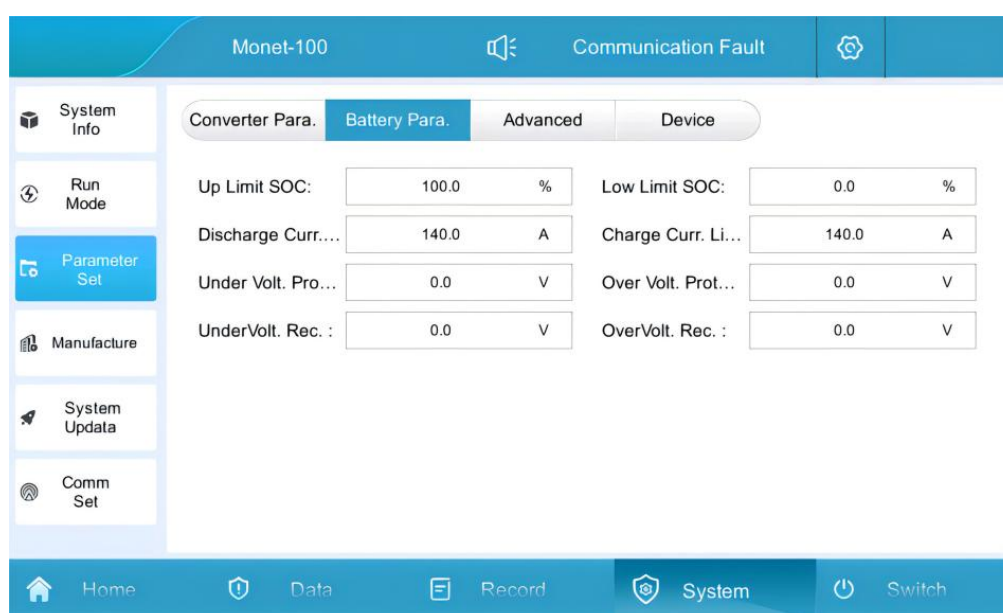


Figure 3.4.4 Battery Charging and Discharging Settings Interface

3.4.5 Data Viewing and Exporting

1. Click "Record" -> "Data Report" to enter the current page.
2. View the daily, monthly, annual and total charge-discharge capacity.
3. Insert a USB flash drive, wait for the USB drive to connect, click "Export Data", and wait for the export to complete.

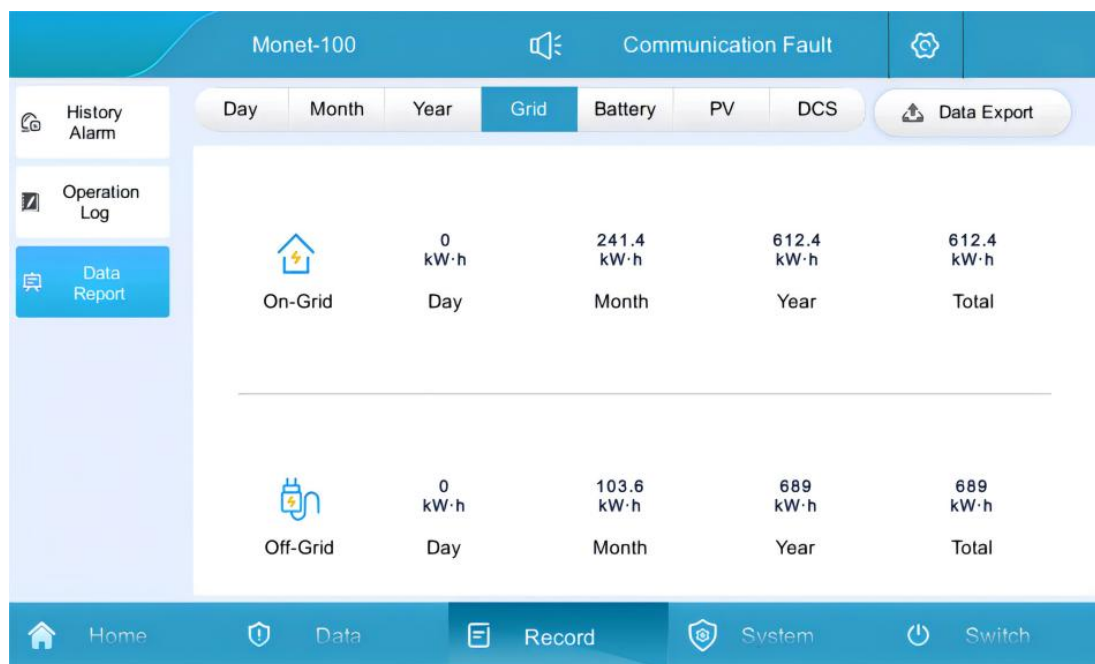


Figure 3.4.6-1 Data Report Interface

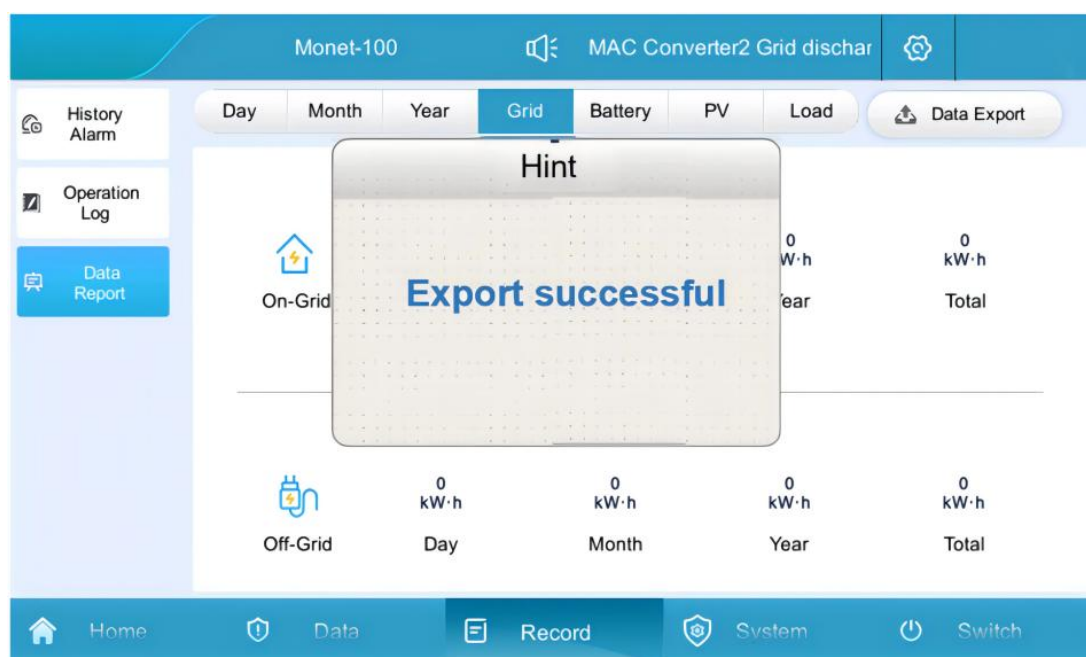


Figure 3.4.6-2 Data Export Interface

3.4.6 Software Upgrade

Software upgrade includes three types of software upgrades: integrated screen software, power module DSP software, and power module ARM software. Before the upgrade, turn off the system on the "Switch" page of the touch screen, that is, the software must be upgraded when the system is not running.

1. First, prepare a USB flash drive and a computer. Create a new folder in the USB flash drive and name it "UPDATE" to store the programming files.



Figure 3.4.6-1 Creating an Upgrade Software Folder

2. Copy the DSP, LCD, and ARM firmware required for the system upgrade to the UPDATE folder.

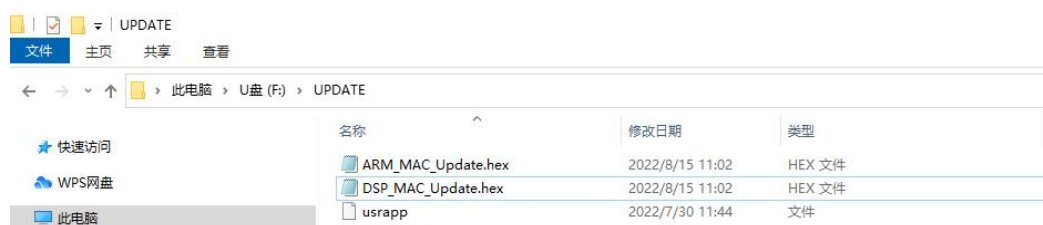


Figure 3.4.6-2 Storing Upgrade Software

3. Click "System" -> "System Updata", enter the password "888888" to enter the upgrade page;

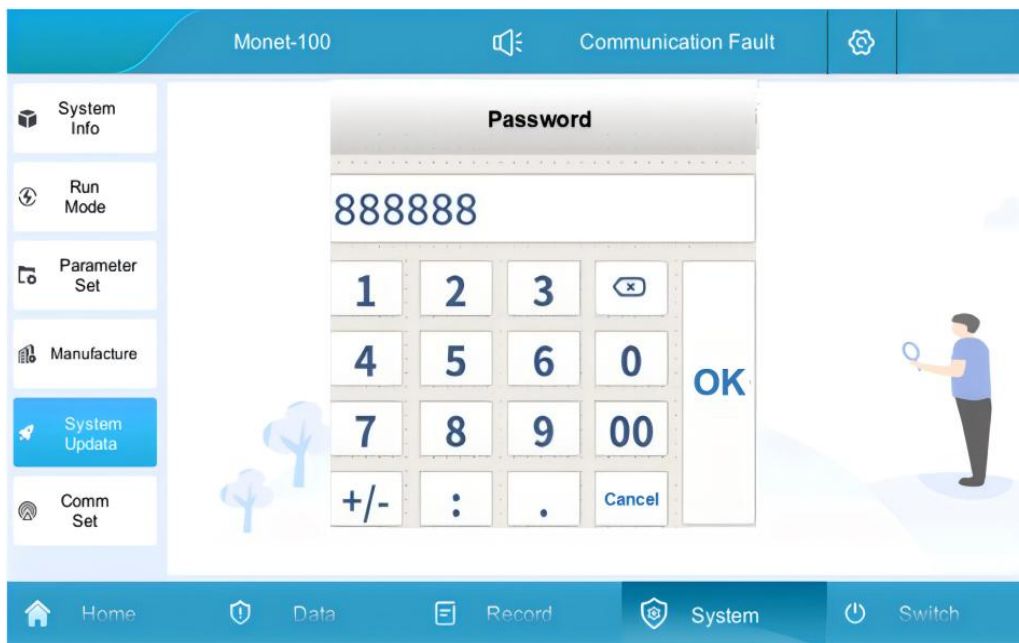


Figure 3.4.6-3 Password Verification

4. Insert the USB flash drive into the back of the LCD integrated screen. The interface will show that the USB drive is connected and the upgrade files are detected;
5. To upgrade the integrated screen software, click "LCD Upgrade" and wait for about 15 seconds, after which there will be a prompt indicating a successful upgrade;

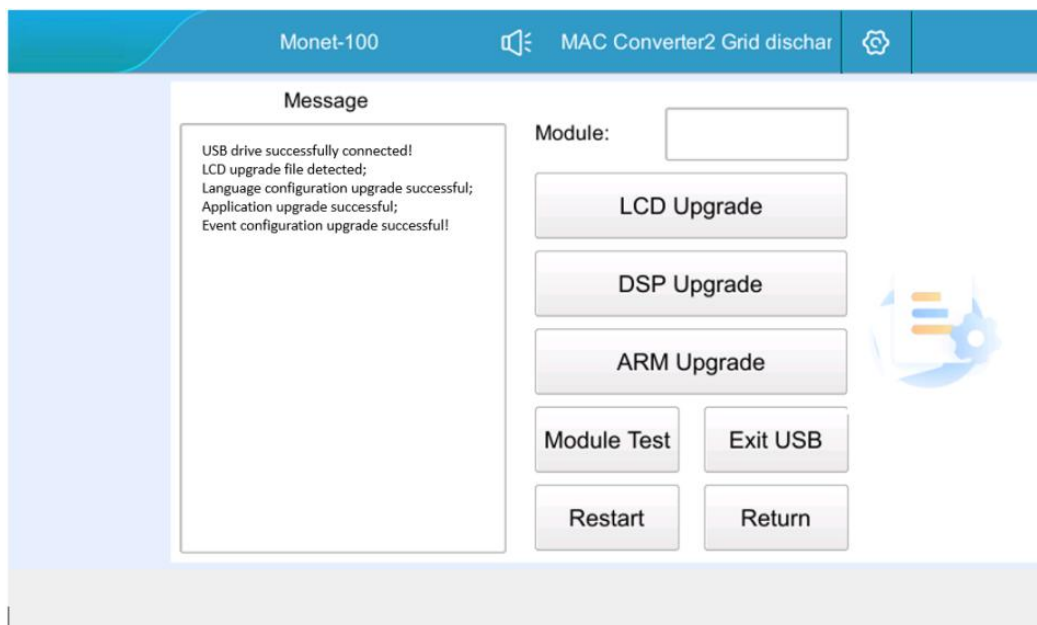


Figure 3.4.6-4 Software Upgrade and Restart Interface

6. After the software upgrade of the LCD integrated screen is completed, click the

"Restart" button for the version update to take effect. Customers can click "Restart" after completing the upgrades of DSP and ARM according to the actual situation.

7. For the upgrade of the power module DSP/ARM, select the module to be upgraded in the module box on the "System Upgrade" interface.

8. Click "DSP/ARM Upgrade" and wait for about 5 minutes, after which a prompt indicating a successful upgrade will appear. The system upgrade is then completed.

**Illustration:**

When the system has multiple modules, it is recommended to start upgrading from Module 1 first. After completing the upgrade of Module 1, proceed to upgrade Module 2, and continue this process until all modules have been upgraded.

**Caution:**

1. The upgrade may take some time, so please set aside sufficient time to ensure that the upgrade process is not interrupted.
2. Choose a time when the system usage rate is low to carry out the upgrade, so as to reduce interference with daily work.

04 Warranty Service

4.1 Warranty period

In case of correct use of the product, the warranty period agreed in the commercial contract shall prevail.

4.2 Warranty scope

During the warranty period, if the product is caused by quality problems, our company will repair or replace the product for free. Customers should reserve a reasonable response time for our company's repair, and the replaced product will be handled by our company. Customers need to show relevant proof of purchase of the product and ensure that the product trademark is clearly visible, otherwise our company has the right to not provide warranty guarantee.

4.3Disclaimer

In the following situations, our company has the right not to provide quality assurance, but can still provide paid maintenance services.

1. The warranty period has expired;
2. Failure to provide relevant proof of product purchase;
3. Damage caused during transportation, loading and unloading;
4. Damage caused by improper installation, modification or dismantling by unauthorized personnel;
5. Damage caused by operation under abnormal conditions or environment;
6. Machine failure or damage caused by using non-Naton parts or software;
7. Failures caused by force majeure such as fire, earthquake, flood, etc.

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