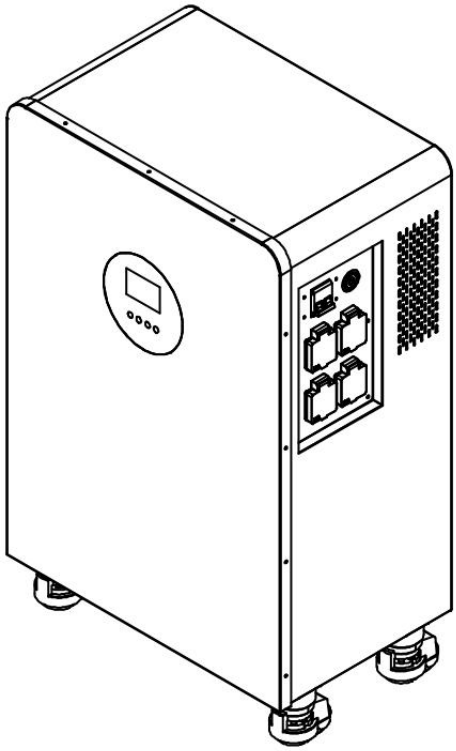
Integrated Home Energy Storage

Model NO.: ES6200-16000Wh

Product Instruction Manual

Please read the instructions carefully before use and follow the instructions



CEA Electric Co., Ltd

TQF-6248SMH

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Ⅰ. Product Use and Function Introduction

- **Product name:** Integrated Home Energy Storage
- **Model/Specification:** ES6200-16000Wh
- **Application and function introduction:** The product can transform the LiFePO4 DC to AC pure sine wave by an inverter, applicable for household energy storage. It can charge devices with corresponding power requirements, such as fridges, electric hammers, induction cookers, rice makers, fans, washing machines, TVs, and air conditioners. This storage system can be charged by PV and mains simultaneously and supports UPS function. The AC output is equipped with overload and short-circuit protectors. Also, the entire product has protective functions such as output overload, short circuits, and over temperature.

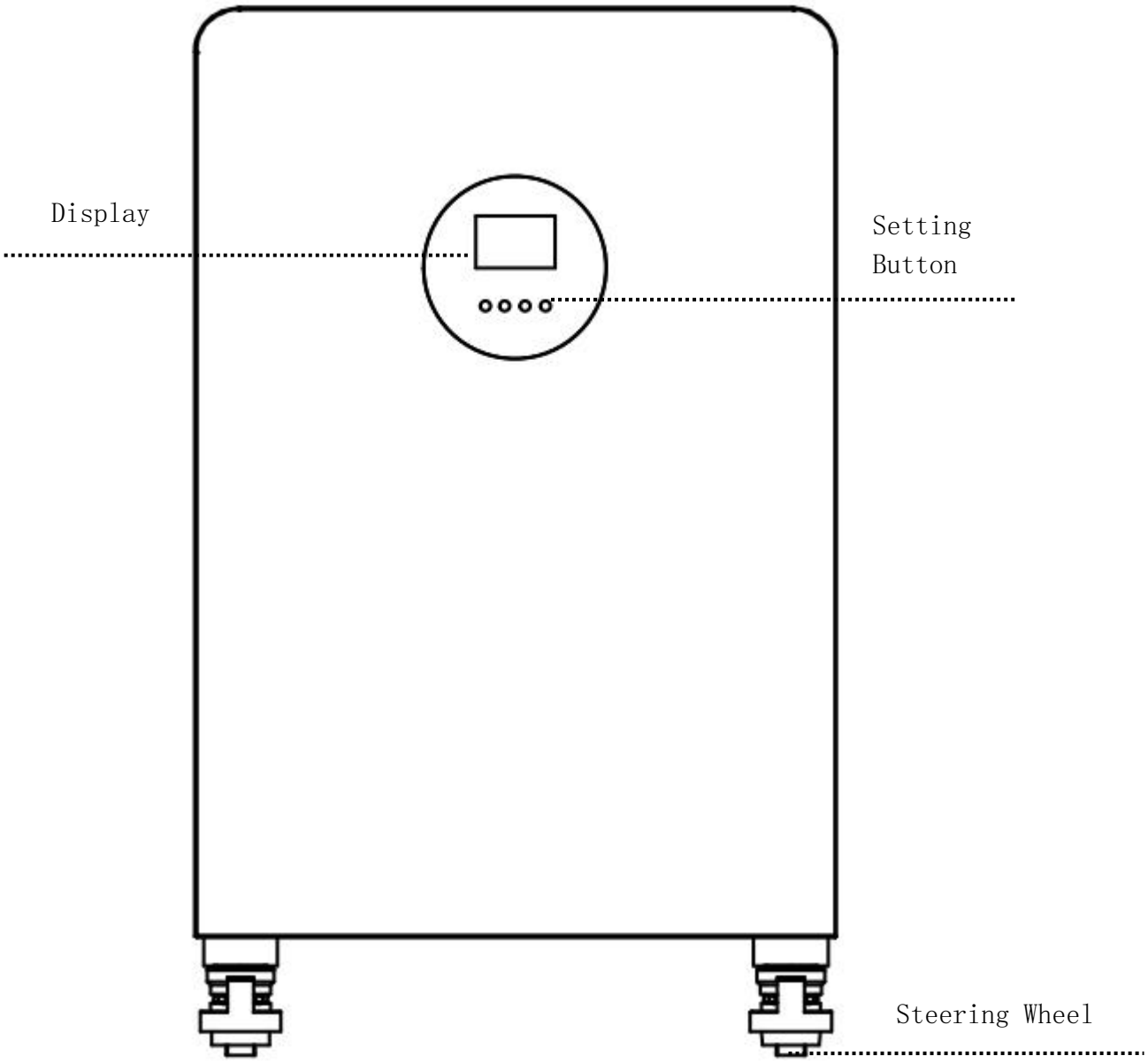
II. Product Introduction

1. Product Main Structure Composition

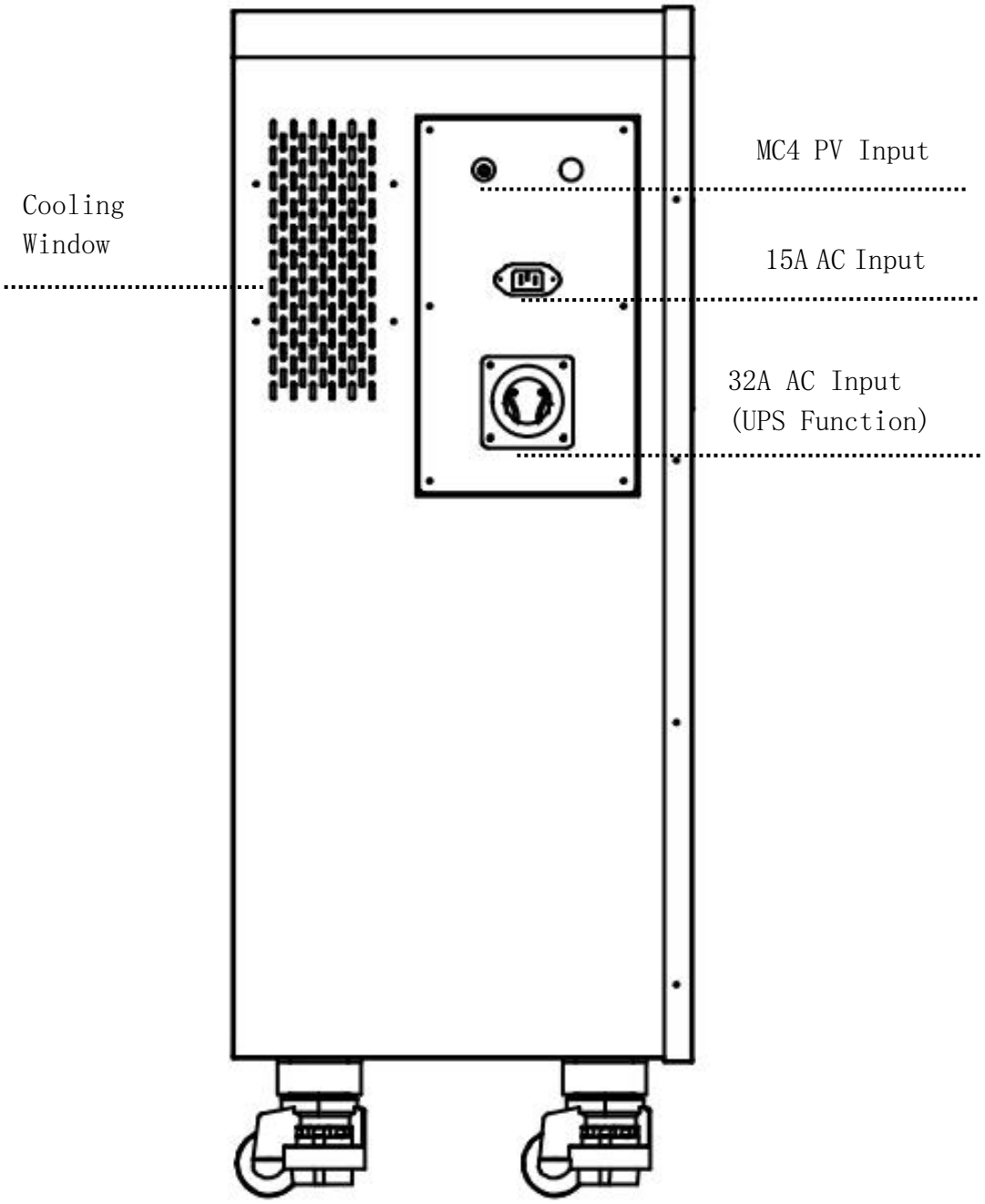
The integrated home energy storage is mainly composed of a metal shell, a PV-Inverter all-in-one machine, a LiFePO4 battery, and other main accessories.

2. Panel Function Description

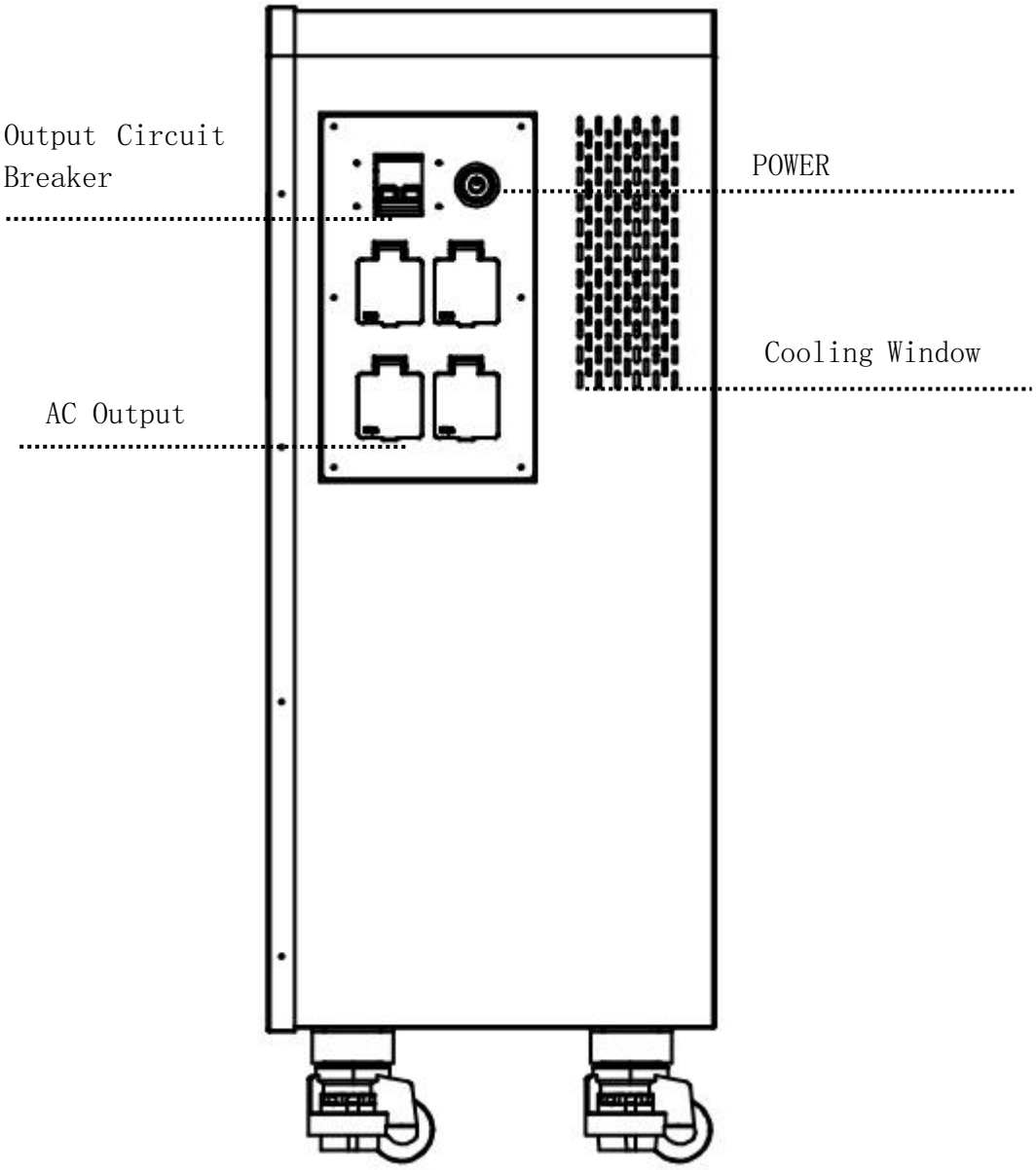
2.1 Front Pane



2.2 Left Panel

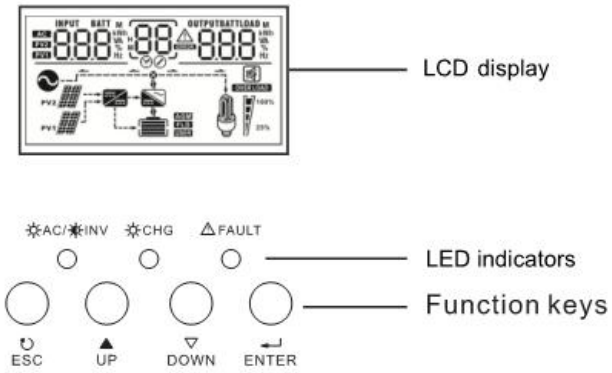


2.3 Right Panel



3. Display Interface Description

3.1 Operation and Panel



LED Indicator

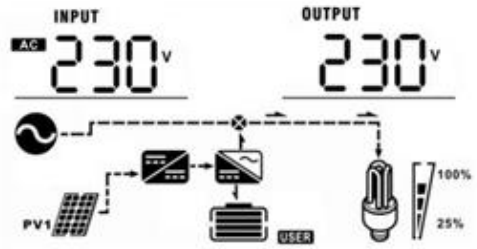
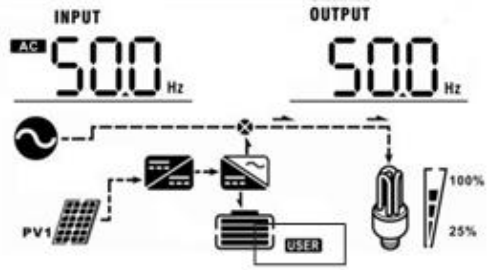
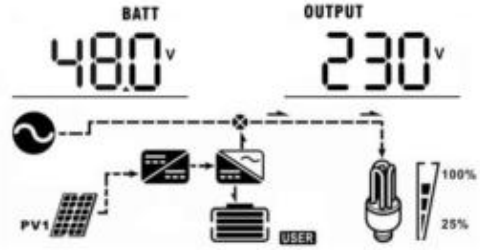
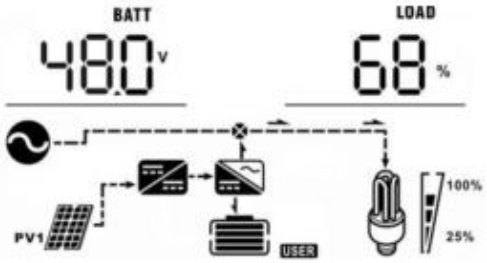
LED Indicator			Messages
AC / INV	Green	Solid On	Output is powered by utility in Line mode.
		Flashing	Output is powered by battery or PV in battery mode.
CHG	Green	Solid On	Battery is fully charged.
		Flashing	Battery is charging.
⚠ FAULT	Red	Solid On	Fault occurs in the inverter.
		Flashing	Warning condition occurs in the inverter.

Function Keys

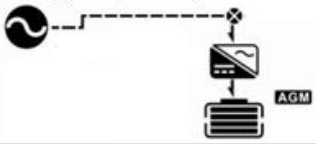
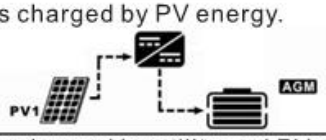
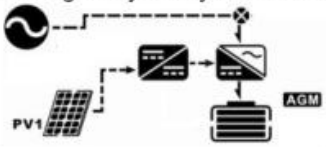
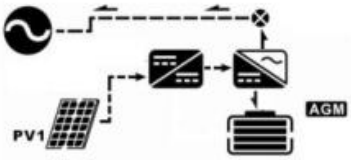
Function Key	Description
ESC	To exit setting mode
UP	To go to previous selection
DOWN	To go to next selection
ENTER	To confirm the selection in setting mode or enter setting mode

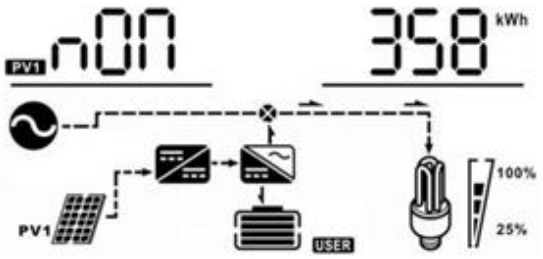
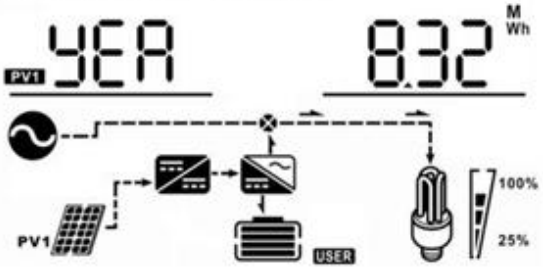
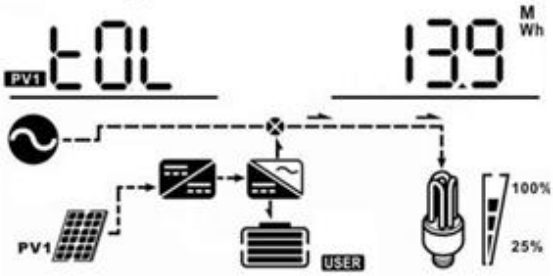
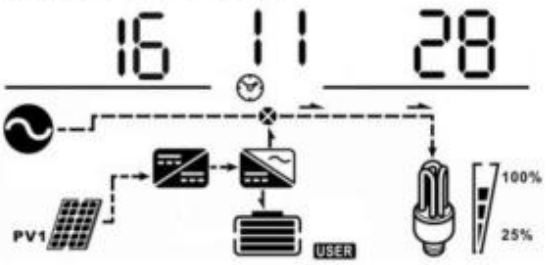
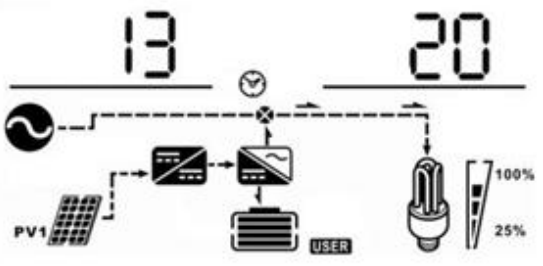
3.2 Display Setting

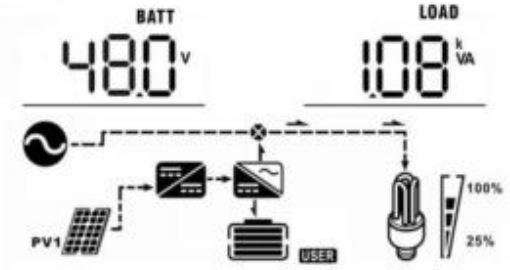
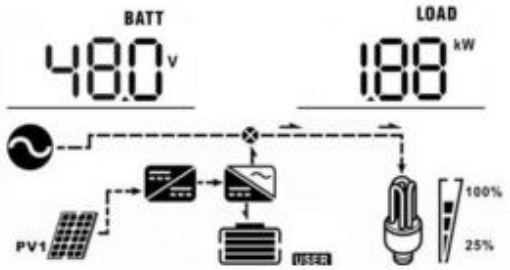
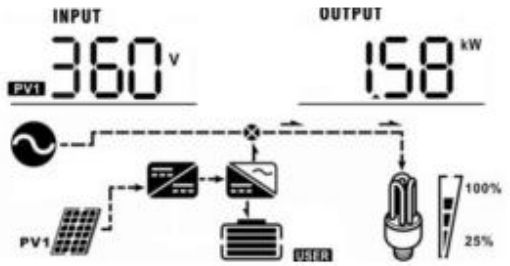
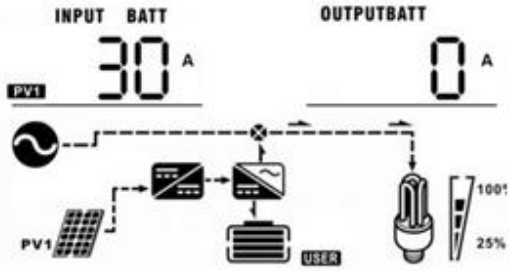
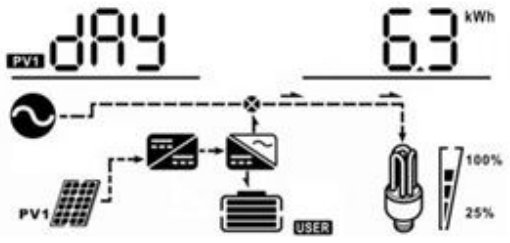
The LCD display information will be switched in turns by pressing "UP" or "DOWN" key. The selectable information is switched as below order: input voltage, input frequency, PV voltage, charging current, battery voltage, output voltage, output frequency, load percentage, load in Watt, load in VA, load in Watt, DC discharging current, main board firmware version and SCC firmware version.

Select item	LCD display
Input voltage and output voltage (Default Display Screen)	Input Voltage=230V, output voltage=230V 
Input frequency and output frequency	Input frequency=50.0Hz, output frequency=50.0Hz 
Battery voltage and output voltage	Battery Voltage=48.0V,output voltage=230V 
Battery voltage and load percentage	Battery Voltage=48.0V,load percentage 68% 

Icon	Function
Input source information	
AC	Indicates the AC input
PV1	Indicates the 1st PV panel input
PV2	Indicates the 2nd PV panel input
Left digital display information	
	Indicate input voltage, input frequency, battery voltage, V1 voltage, PV2 voltage, charger current
Middle digital display information	
	Indicates the setting programs.
	Indicates the warning and fault codes. Warning: Flashing  with warning code Fault: display  with fault code
Right digital display information	
	Indicate the output voltage, output frequency, load percent, load VA, load W, PV1 charger power, PV2 charger power, DC discharging current.
Battery information	
	Indicates battery level by 0-24%,25-49%,50-74% and 75-100% and charging status.
AGM FLD USER	Indicates the battery type: AGM, Flooded or User-defined battery.
Load information	
OVER LOAD	Indicates overload.
	Indicates the load level by 0-24%,25-50%,50-74%,and 75-100%.
	0%~25% / 25%~50% / 50%~75% / 75%~100%
	
Mode operation information	
	Indicates unit connects to the mains.
	Indicates unit connects to the 1st PV panel
	Indicates the solar charger is working
	Indicates the DC/AC inverter circuit is working.
Mute operation	
	Indicates unit alarm is disabled.

Operating mode	Behaviors	LCD display
Standby mode Note: *Standby mode: The inverter is not turned on yet but at this time, the inverter can charge battery without AC output. *Power swing mode: If enabled, the output of inverter will be off when connected load is pretty low or not detected.	No output power, solar or utility charger available	Battery is charged by utility. 
		Battery is charged by PV energy. 
		Battery is charged by utility and PV energy. 
		Battery is charged by PV energy and feed PV energy grid. 
		No charging. 
Line mode	Output power from utility. Charger available	Utility charges battery and provides power to load. 
		Utility and battery power provide power to load. 

PV energy generated this month	This month energy = 358kWh. 
PV energy generated this year	This year energy = 8.32MWh 
PV energy generated totally	Total energy = 13.9MWh 
Real date	Real date Nov 28, 2016. 
Real time	Real time 13: 20. 

Battery voltage and load in VA	Battery Voltage=48.0V, load in VA=1.08kVA 
Battery voltage and load in Watt	Battery Voltage=48.0V, load in Watt=1.88kW 
PV1 voltage and PV1 charger power	PV1 Voltage=360V, charging power=1.58kW 
Charger current and DC discharging current	Charging current=30A, discharging current=0A 
PV energy generated today	Today energy = 6.3kWh 

III. Technical parameters

Item		Parameter
Rated Power		6.2KW
Peak Power		12.4KW
Battery Parameters		LiFePO4 51.2V 314AH
Grid Connection		No
UPS		10ms
Product Size		556*1198*353mm
Product Weight		154KG
Ambient Temperature Range		-10-40℃ Relative humidity: ≤80% Altitude≤2000 Meters
Transport and Storage Environment		Temperature: -15-55℃ Relative humidity: ≤93% (no condensation) Atmospheric pressure: 70kPa～106kPa
Input	PV Charging	60-500V 27A Support MPPT 8.5KW in maximum MC4 Port
	Mains Charging	220-240V 50HZ Max2200W
AC Output		230V 50Hz 6200W
Charging Time	PV Charging	About 4H（8500W）
	Mains Charging	About 8H（2200W）

Support PV charging while discharging, and mains charging while discharging.

IV. Operation and Usage

1. Steps for the First Start of Product:

1. Turn on AC circuit breakers;

2. Check whether there is any visible damage to the appearance of the storage, and whether the output interfaces are loose or damaged (If abnormal conditions occur, stop using)

3. Place the device in a well-ventilated area, ensuring thorough ventilation on both cooling window sides;

4. Press the “POWER” button on the front panel, and if the green light comes on, it indicates that the startup has been successful. Observe the screen to see whether the battery is fully charged. When the battery level is below 30%, it is recommended to fully charge it before use.

2. Charging Steps:

2.1 AC charging: First, confirm whether the mains grid voltage and frequency are within the range of the mains charging input parameters of this product. Turn on the power, plug one end of the AC charging cable

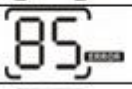
into the accessory into the 15A charging socket on the left panel. Then, check the CHG indicator under the display (flashing indicates charging, always-on indicates fully charged). Also, plugging into the 32A charging socket is needed when the product is charging and discharging at the same time.

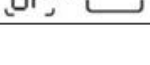
2.2 Solar photovoltaic charging: Please check the photovoltaic input voltage range before charging. After confirming that the positive and negative poles of the input interface correspond correctly to the positive and negative poles on the product socket, insert the input interface into the photovoltaic charging socket at the bottom left corner of the power station. Then, turn on the POWER switch and check the CHG indicator under the display (flashing indicates charging, always-on indicates fully charged).

3. AC Output On-load Usage:

Before use, please check that the power range and voltage range of the on-load electrical equipment match the output parameters of the station. Check whether the breakers are all open. Insert the power plug of the loaded product into the output socket at the front of the station. Turn on the POWER. Then the load shall work normally.

V、Fault Code Comparison Table

Fault Code	Fault Event	Icon on
60	Power feedback protection	
71	Firmware version inconsistent	
72	Current sharing fault	
80	CAN fault	
81	Host loss	
82	Synchronization loss	
83	Battery voltage detected different	
84	AC input voltage and frequency detected different	
85	AC output current unbalance	
86	AC output mode setting is different	

Alarm Code	Alarm Event	Audible Alarm	Icon flashing
01	Fan is locked when inverter is on.	Beep three times every second	
02	Over temperature	None	
03	Batery is over-charged	Beep once every second	
04	Low battery	Beep once every second	
07	Overload	Beep once every 0.5 second	
10	Output power derating	Beep twice every 3 seconds	
15	PV energy is low.	Beep twice every 3 seconds	
16	High AC input (>280VAC) during BUS soft start	None	
E9	Battery equalization	None	
bP	Battery is not connected	None	

Code	Description
60 ⚠	If battery status is not allowed to charge and discharge after the communication between the inverter and battery is successful, it will show code 60 to stop charging and discharging battery.
61 ⚠	Communication lost • After battery is connected, communication signal is not detected for 1 minutes, buzzer will beep. • Communication lost occurs after the inverter and battery is connected successfully, buzzer beeps immediately.
69 ⚠	If battery status is not allowed to charge after the communication between the inverter and battery is successful, it will show code 69 to stop charging battery.
70 ⚠	If battery status must to charge after the communication between the inverter and battery is successful, it will show code 70 to charge battery.
71 ⚠	If battery status is not allowed to discharge after the communication between the inverter and battery is successful, it will show code 71 to stop discharge battery.

Fault Code	Fault Event	Icon on
01	Fan is locked when inverter is off.	
02	Over temperature or NTC is not connected well.	
03	Battery voltage is too high.	
04	Battery voltage is too low.	
05	Output short circuited or over temperature is detected by internal converter components.	
06	Output voltage is too high.	
07	Over load time out.	
08	Bus voltage is too high	
09	Bus soft start failed	
51	Over currents or urge	
52	Bus voltage is too low	
53	Inverter soft start failed	
55	Over DC voltage in AC output	
57	Current sensor failed	
58	Output voltage is too low	
59	PV voltage is over limitation	

Ⅵ、Product Maintenance

6.1 Newly purchased products should be fully charged before use;

6.2 Regularly remove dust and dirt from the cooling window;

6.3 In the case of long-term storage for more than three months, not less than 50% of the power storage shall be maintained, and the power should be off;

6.4 If stored for more than 6 months, to extend the service life of the battery, please charge and discharge the product 1-2 times before storage (no less than 50% of the power storage shall be maintained, and the power should be off);

Ⅶ、Common Troubleshooting

7.1 Unable to Perform Mains Charging:

A、If the mains input voltage range and frequency exceed the parameter range of the power station, it cannot be charged.

B、Power should be ON;

C、Check whether the charging cable is broken or an open circuit;

D、Confirm whether the product has not been charged for over 6 months, as this may cause damage to some battery cells, resulting in power loss and being unable to charge;

7.2 Unable to Perform Photovoltaic Charging

A、Check whether the voltage range and current of the photovoltaic panel are within the parameter range of the power station;

B、Make sure to use it in sufficient light;

C、Before PV charging, the POWER switch should be turned on so that the power station can be charged under the startup status;

D、Check whether the positive and negative poles of the photovoltaic panel connection line correspond to those on the product socket, and the plug and socket should match;

E、Confirm whether the product has not been charged for over 6 months, as this may cause damage to some battery cells, resulting in power loss and being unable to charge.

7.3 Unable to Perform AC Load:

A、The circuit breakers at the side door of the product should all be turned on;

B、Confirm whether the power of the load appliance is within the normal load range of the power station.

7.4 After turning on the main power switch of the power station, the product cannot start normally, and the display screen doesn’t work:

In this case, it should be considered that the product battery may be out of power, the internal reverse controller cannot be started, and the battery enters a state of power loss sleep. You can first access the mains to charge the product and activate it. When the battery is fully charged, it can be used.

7.5 Why does the output shut off when the battery power is 10%?

A. The product is set to turn off the output when the battery power is ≤10%. This is to protect the battery cell from over-discharge. When this situation occurs, the POWER should be off immediately and the battery should be charged within 48 hours.

Ⅷ、Warnings and Precautions

8.1 Different electrical appliances have different voltage standards. Before use, please carefully check whether the rated voltage range of the product is consistent with the voltage range of the portable power station; otherwise, it may lead to dangerous situations;

8.2 When the battery power is ≤10%, the POWER should be off immediately, and the battery should be charged within 48 hours. If not, the system will be in the standby and consumption mode, resulting in over-discharging and battery loss, and will be unable to charge.

8.3 The product should be kept away from fire, high-temperature environments, and humid and rainy environments during use and storage; otherwise, it may lead to dangerous situations;

8.4 This product has a built-in high-voltage power supply, and non-professionals should not disassemble it by themselves;

8.5 Do not discard the product at the end of its service life. Recycle the product according to local laws and regulations;

8.6 This product should be protected from rain, water immersion, and violent vibration during transportation;

8.7 It cannot be used at an altitude exceeding 2000m;

8.8 The product is AC output. Please do not insert your hands or hand-held metal conductors into the AC socket;

8.9 Do not drop, squeeze, or collide with the product, so as not to subject the product to external pressure, which may cause a short circuit of the internal circuit of the product and damage to the battery;

8.10 At the end of use, the power should be off immediately to avoid standby power consumption, which could damage battery cells and render them unable to charge and discharge;

8.11 Please select solar panels according to the electrical parameters specified by the manufacturer. If the voltage is above these parameters, it may damage the product;

8.12 When the product is charged by mains, discharging through AC output, and applying UPS function (the mains input must be connected to 32A socket), it cannot be connected to 15A input, otherwise, safety hazards will be caused;

8.13 This product and its accessories may contain some small parts. Please keep the product and its accessories out of the reach of children. Children may accidentally damage the product and its accessories, or swallow small parts, causing suffocation or other dangers. Children or people with intellectual disbilities need to use this product accompanied by their guardians;

8.14 Do not use the product during thunderstorms. This may cause product failure or electric shock;

8.15 If the product accidentally falls into the water during use, place it in a safe, open area and do not turn it on again;

8.16 When transporting products, be careful about safety.

8.17 The product should be placed in a well-ventilated and heat-dissipating area;

8.18 Please use the charging cable, and photovoltaic charging interface provided with the product to charge; otherwise there will be security risks;

8.19 All parameters were settled before leaving the factory. Do not modify any parameters without authorization, otherwise the equipment cannot work normally;

8.20 If any fault occurs during the use of the product, it should be stopped immediately, and can be used only after the troubleshooting is complete; otherwise it will cause damage to the product;

8.21 The screen should be protected from collision during the application and delivery.

8.22 All input and output socket covers shall be closed after use;

8.23 Do not touch any of the socket connections on the product with your hands or metal devices while the device is on. Otherwise, there will be a safety hazard resulting in life safety;

IX、Product packing list

9.1 Integrated Home Energy Storage*1

9.2 product manual*1

9.3 32A AC Charger*1

9.4 15A Charging Cable*1

Production Address: No.6, Yingyang Road, Yingquan District, Fuyang City, Anhui Province, China

Phone: 0558-6569987

Postcode: 236000

Date of manufacture: Please refer to the package.

Service life: 3 years

The date of compilation of the manual: 2025.11.25