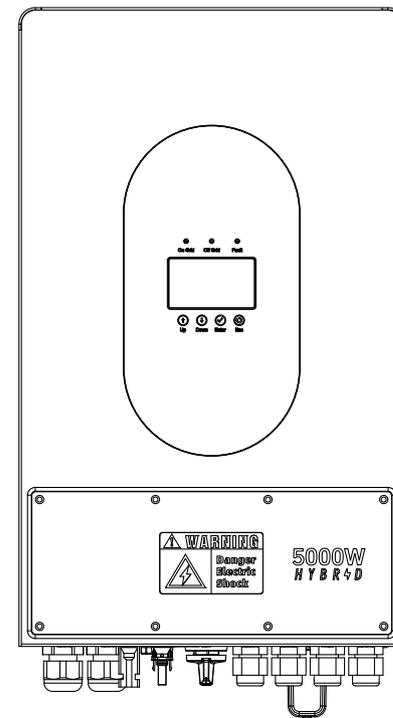


USER MANUAL

Hybrid Inverter

GH 3600TL/4600TL/5000TL



Preface

Thank you for choosing GH series hybrid inverter (hereinafter referred to as GH inverter). This user manual provides a detailed description of GH series about product features, structural features, functions, installation, parameter setting, troubleshooting, debugging and routine maintenance. Always read safety precautions carefully before use and place them in places convenient for maintenance.

Technical Support

Read carefully and strictly follow all safety precautions in this manual before installing, wiring, operating and repairing the inverter. Make sure that all warning signs on the inverter are clear. Replace or add ambiguous or missing warning tags.

If you have any problems, or any unclear points, or have any problem during installation, wiring or operation, please contact your dealer or installation company, or through our designated contact channels, please consult the relevant information in this manual, or contact their sales representative or service personnel.

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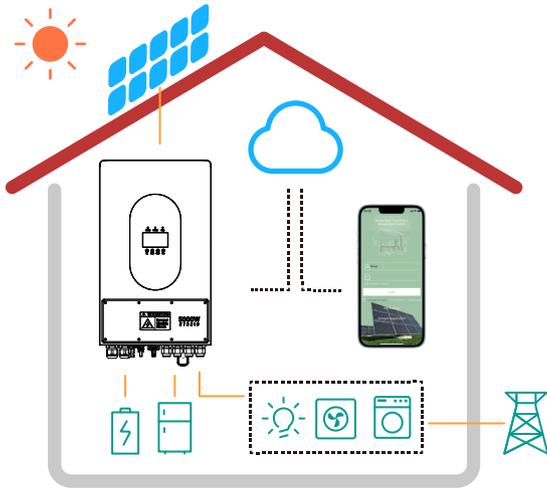
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1. Brief Introduction

The GH series of products, also known as hybrid or two-way photovoltaic inverters, are suitable for solar energy systems involving photovoltaic, battery, load and grid systems to achieve energy management.

The electricity generated by the photovoltaic system is used for self-consumption, the excess electricity is used for battery charging, and the surplus electricity is output to the grid.



When the photovoltaic power does not meet its own consumption, the battery will discharge to support the load operation. If the battery power is insufficient, the system will obtain electricity from the grid to support the load.

Note: This introduction describes the general performance of a GH system. The operation mode can be operated on the APP according to the system configuration.

2. Safety Warning

The GH series pv inverters strictly comply with the relevant product design and test safety rules. During installation, operation, or repair, read all the instructions, or user manual. Any improper operation may result in personal or property damage.

2.1 Symbol Description

Symbol	Symbolic Name	Symbolic Meaning
	Take care!	Failure to comply with the warnings contained in this manual may result in injury.
	Risk of high-voltage electric shock!	This inverter has a high voltage in operation. All operations for the inverter must be conducted by well-trained professional electrical personnel.

	Danger for hot surface!	The shell temperature is high when the inverter is working.
	This side is facing up!	Packaging must be transported, handled and stored with arrows always pointing above.
	No more than six identical packages are stacked with each other	Over stacked quantities may result cause product damage.
	The product should not be treated as household waste	Handle the equipment according to the local laws and regulations, or send it back to the equipment manufacturer.
	Earthing identification	Connect the inverter with the grounding row to achieve the purpose of grounding protection.
	Refer to the operating instructions	Read this manual before installing the inverter.
	Keep dry!	Packaging / product must be protected from excessive moisture and must be stored with a cover. Product moisture exposure can cause product damage.
	Risk of residual voltage in the inverter!	The inverter can not be touched or operated for at least 5 minutes after being closed or completely disconnected to prevent electric shock or other damage.

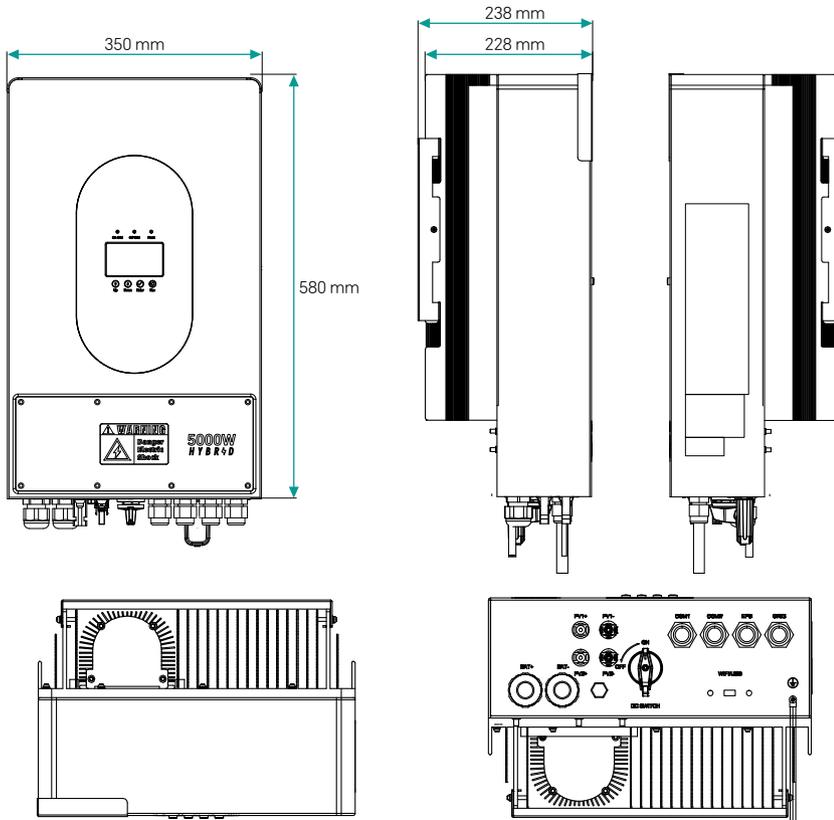
2.2 Important Precautions

- All installation and operation of the inverter must be carried out by professional electricians and comply with the standards, wiring rules or requirements of the local power grid department or company.
- Before any wiring or electrical operation of the inverter, all DC and AC power supplies must be disconnected for at least 5 minutes to ensure that the inverter is completely isolated and protected against electric shock.
- The surface temperature of the inverter may exceed 60 degrees Celsius, so please make sure it is cooling before touching and that the children do not touch the inverter.
- Do not open the inverter cover or replace any parts, otherwise the inverter warranty commitment is invalid.
- The use and operation of the inverter must be conducted in accordance with the instructions in this user manual, otherwise the protection design may be invalid, and the warranty of the inverter is invalid.

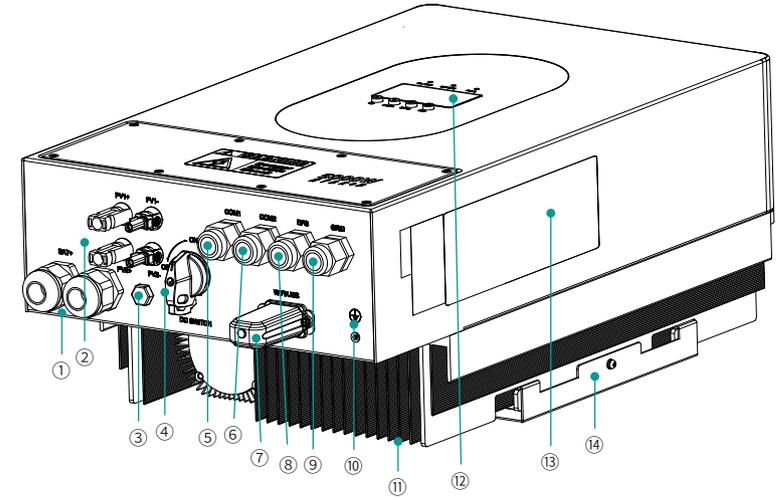
- Appropriate methods must be taken to prevent the inverter from static electricity damage, any damage caused by static electricity Invalid warranty.
- The PV negative (PV-) is not grounded as the default design.
- The total open circuit voltage of the pv group string or array is lower than the maximum rated DC input voltage of the inverter. Damage caused by photovoltaic overvoltage is not covered by the warranty.

3. Product Overview

3.1 Product Appearance

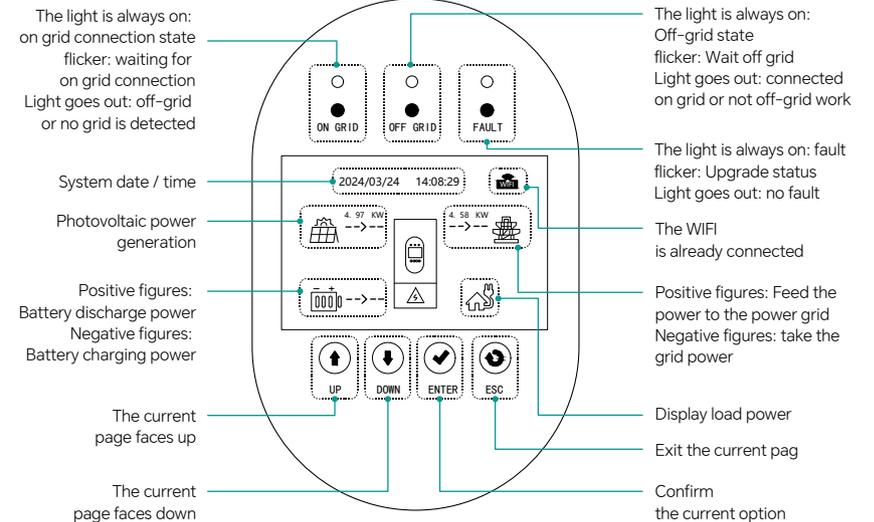


3.2 Interface Description



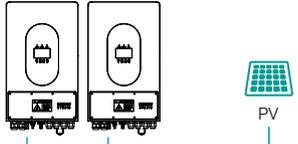
- | | | | |
|-------------------------------|-----------------------------|------------------------------|----------------|
| ① Battery input | ② PV input * 2 circuits | ③ Pressure relief valve | ④ PV DC switch |
| ⑤ Communication port 1 | ⑥ Communication port 2 | ⑦ WiFi Dongle data collector | |
| ⑧ EPS/Critical load interface | ⑨ Grid interface | ⑩ Case ground | ⑪ Radiator |
| ⑫ Operation display panel | ⑬ Equipment nameplate label | ⑭ Wall hanging bracket | |

3.3 Display The Panel Description



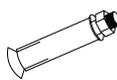
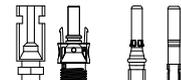
4. Installation Instructions

4.1 Installation Situation Is Not Allowed

	
The power grid cannot be connected to the load port	The grid-connected side or the load side cannot be connected to the generator
	
A single group of PV cannot be connected to two or more inverters simultaneously	Cannot be combined with an incompatible battery

4.2 Packing list

Open the package and remove the product, please check the accessories first. The packing list is shown as below.

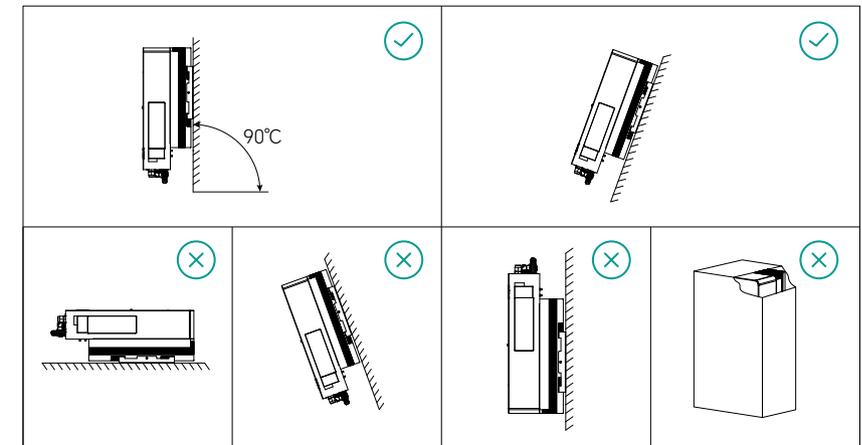
			
Inverter 1	User Manual 1	Expansion screw M6 * 70 stainless steel outer hex 4	CT x1
			
CT single row plug 2P connector x 1	PV connector wire end x2, PV connector metal core x2	The Battery O-type connector is 8mm 2	WiFi Dongle Digital collector

4.3 Installation location Selection

In order to facilitate the protection and maintenance of the inverter, the installation position of the inverter must be carefully selected according to the following rules:

Rule 1: the inverter should be installed on a solid surface, the surface is suitable for the direction of the inverter, and can support the weight of the inverter.

Rule 2: The inverter should be installed vertically or with a tilt Angle not exceeding 15°.



Rule 3: The ambient temperature must be lower than 60 degrees Celsius.

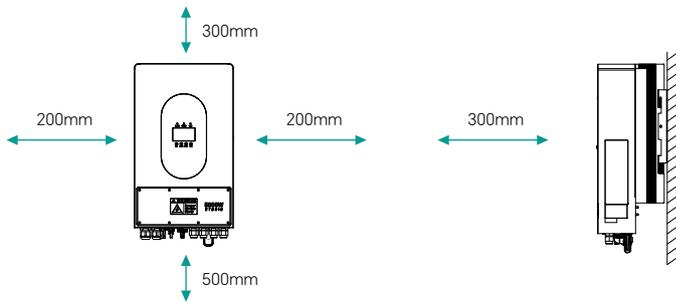
Rule 4: In order to extend the service life of the inverter, avoid the inverter directly affected by the sun, rain and snow, choose the installation site with shelter as far as possible.



Rule 5: The installation height preferably levels the display with the eye for the display panel operation.

Rule 6: After installation, the product labels should be clean and clean.

Rule 7: When installing the inverter, enough space should be reserved around it. The specific size is as shown in the following figure:



Can not be installed near flammable, explosive or strong electromagnetic equipment.

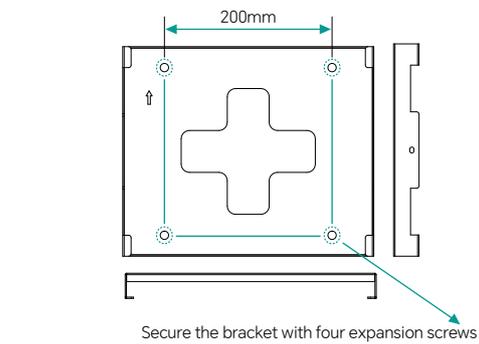
4.4 Installation

Step 1:

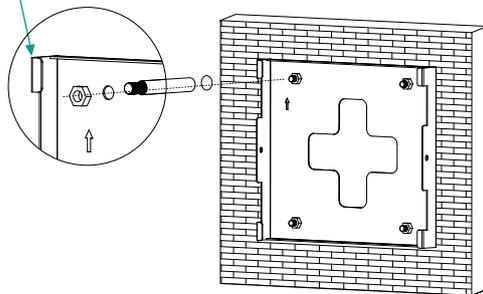
① Use the mounting bracket as the base plate to open two holes in the correct position (diameter 8mm, depth 60mm).

② Attach the mounting bracket to the wall using the expansion screws in the accessory.

Note: The bearing capacity of the wall must be higher than 24 KG, otherwise the inverter may fall off.

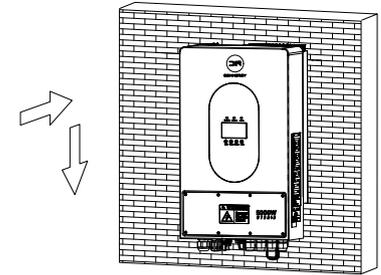


Hook On The Upside



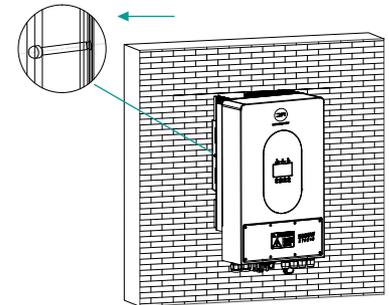
Step 2:

Lift the inverter a little higher than the bracket. Weight should be considered during this process to keep the balance of the inverter. Hang the inverter on the bracket through a hook on the bracket.



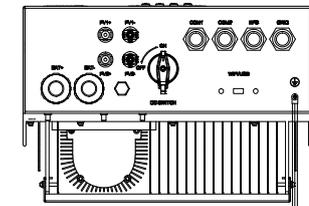
Step 3:

After confirming that the inverter is firmly fixed, insert the two M4 safety screws on the left and right sides into the lock in turn to prevent the inverter from falling off from the bracket.



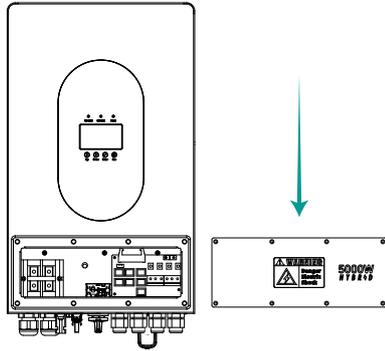
Step 4:

The ground cable shall be connected to the ground position on the side.



5. Electrical Connection

Use the screwdriver screw to remove the lower terminal protection cover.



5.1 PV Connection

Before connecting the PV cluster to the inverter, confirm the following requirements:

- ① The total short circuit current of PV group shall not exceed the maximum DC current of the inverter 15A
- ② The maximum input voltage of each string of PV string shall not be higher than 500V, otherwise there is a risk of electric shock and fire
- ③ The minimum insulation impedance of PV string shall not be less than 18.33 kΩ
- ④ PV group string does not support grounding, no transformer design
- ⑤ Use the DC plug in the attachment
- ⑥ The polarity on the PV group string and the inverter can not be connected back, otherwise it may cause damage to the inverter.

<p>Step 1:</p> <ol style="list-style-type: none"> ① Use the DC terminal and connector in the attachment. ② PV cables shall be of standard, 2.5 to 4 mm² cables. 	
<p>Step 2:</p> <ol style="list-style-type: none"> ① The PV cable must be tightly fixed in the connector ② For the Amphenol connector, the limit buckle cannot be pressed. 	
<p>Step 3:</p> <p>Note: the connector will have a noticeable noise.</p>	

Step 4:
Insert the PV-IN cable according to the polarity on the inverter terminal board, supporting two PV access.

Pv input connection

5.2 Battery Connection

- ① Pay attention to avoid electric shock and chemical hazards
- ② Make sure that there is an external DC switch (150A) connected to the battery.
- ③ Before connecting the battery to the inverter, ensure that the battery switch is off and the nominal voltage of the battery reaches the technical parameters of the GH series products, ensuring that the inverter is completely isolated from the photovoltaic and AC power supply.
- ④ Suitable for lithium battery (pack) whose capacity should be greater than 100ah or equal. Battery cable requirements are as follows:

	<table border="1"> <thead> <tr> <th>Grade</th> <th>Definition</th> <th>Length</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>external diameter of cable</td> <td>10~12mm²</td> </tr> <tr> <td>B</td> <td>cross-sectional area</td> <td>15~25mm²</td> </tr> <tr> <td>C</td> <td>Naked cable length</td> <td>10mm</td> </tr> </tbody> </table>	Grade	Definition	Length	A	external diameter of cable	10~12mm ²	B	cross-sectional area	15~25mm ²	C	Naked cable length	10mm
Grade	Definition	Length											
A	external diameter of cable	10~12mm ²											
B	cross-sectional area	15~25mm ²											
C	Naked cable length	10mm											

<p>Step 1:</p> <p>Use battery O-type terminals.</p>	
<p>Step 2:</p> <ol style="list-style-type: none"> ① Pass the battery power cord through the battery cover and lock it tightly. ② Battery polarity (+ / -) not irreversible. 	
<p>Step 3:</p> <ol style="list-style-type: none"> ① Connect the BMS CAN communication cable. ② CAN communication protocol default large energy protocol, optional Pylon protocol. 	

Suitable for lead-acid storage batteries

Lead-acid batteries and other similar batteries with old technology require a suitable and precise design, installation and maintenance to work more efficiently.

For lead-acid battery packs, the inconsistency between the battery packs may lead to overcharging or overdischarge of the battery pack, which may lead to damage to the battery pack and shorten the life of the battery pack.

The AEP series of inverters do not have a temperature compensation function, so the customer needs to set the battery according to the actual operating temperature of the battery.

When setting lead-acid battery parameters on the APP, strictly following the battery specifications and the actual operating conditions of the battery (such as working temperature and battery life), an inappropriate setting will lead to higher SOC deviation, shorter battery life and battery damage.

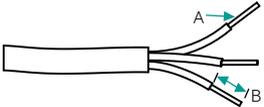
The SOC calculation value for lead-acid batteries may not be very accurate due to the differences between battery packs, battery aging, and other characteristics of lead-acid batteries.

We shall not be responsible for any damage caused by the battery exceeding the warranty time or the battery quality problems.

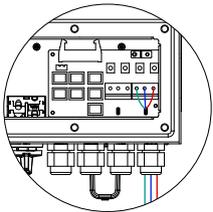
Neng will retain the right of final interpretation.

5.3 Power Grid Connection

- ① Make sure the inverter is completely disconnected from any DC or AC power supply before connecting the AC cable.
- ② An external AC switch (32A) is required to separate from the grid if necessary. The requirements for AC switch are as follows:

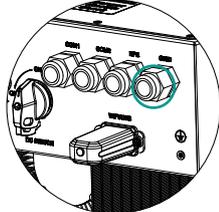
	Grade	Definition	Length
	A	The conductor cross section	5mm ²
	B	Naked cable length	8mm

Step 1:
Pass the AC line through the terminal cap and tighten the PE / N / L correspondence on the GRID connector.



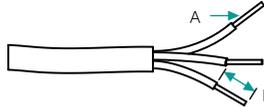
Output the connection terminal

Step 2:
Tighten the terminal cap.

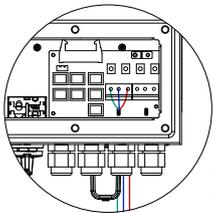


5.4 EPS Connection

- ① An external AC switch (> 32A) is required to disconnect the load connection if necessary.
- ② If only an electrical short circuit occurs on the load side, the absence of an AC circuit breaker on the load side will cause damage to the inverter. And the load side function cannot be turned off under the grid connection condition.
- ③ The maximum output power of EPS is 4500w(GH5000TL and GH4600TL) and 3600W (GH3600TL). If the load is continuously greater than 4500w or 3600W, the inverter will stop output.
- ④ The output power of the EPS depends on the battery capacity.
- ⑤ Cannot connect to mains to prevent machine damage due to wiring error!

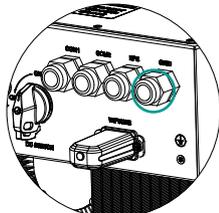
	Grade	Definition	Length
	A	The conductor cross section	5mm ²
	B	Naked cable length	8mm

Step 1:
Pass the AC line through the terminal cap and tighten the PE / N / L correspondence on the EPS connector.



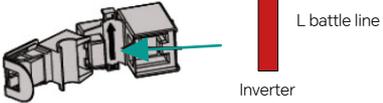
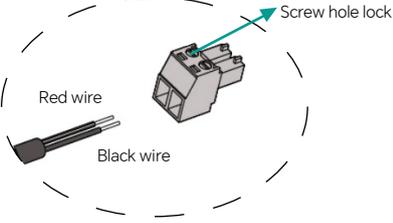
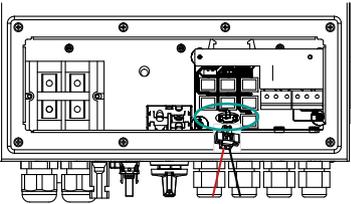
Output the connection terminal

Step 2:
Tighten the terminal cap.

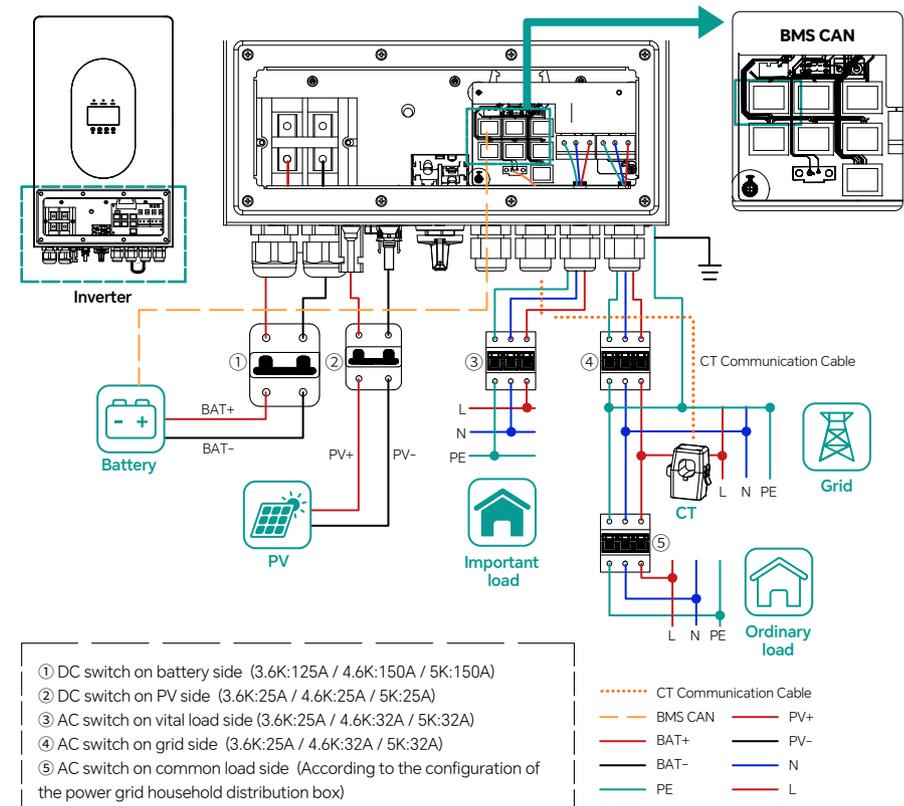
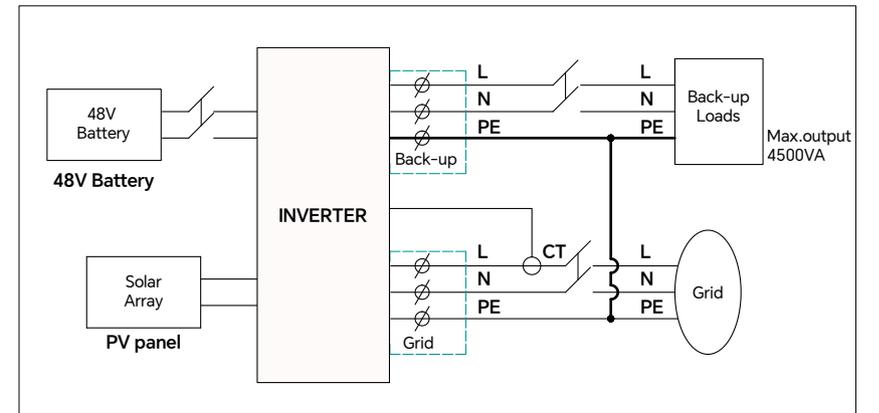


5.5 Use Instructions For CT

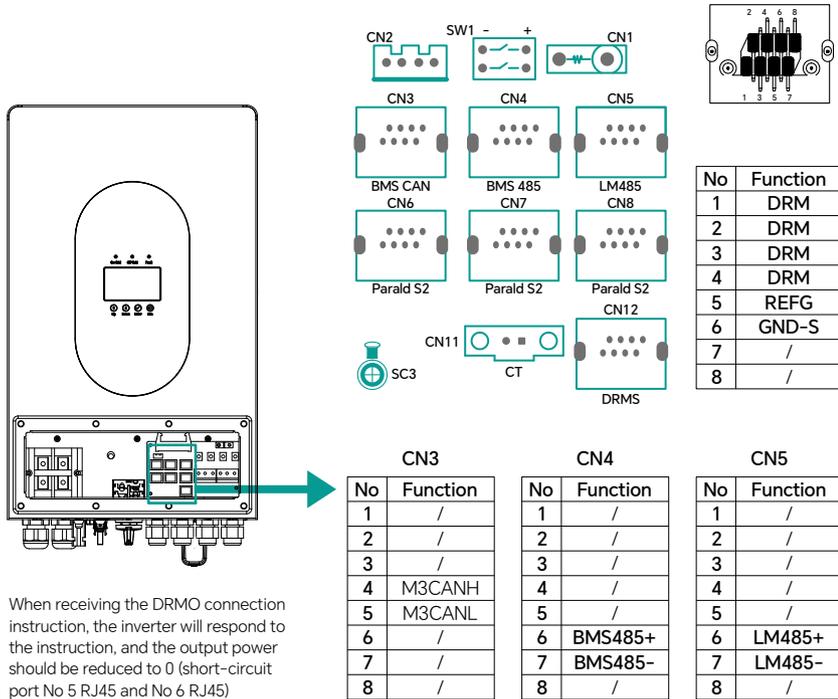
- ① In the system, a CT (current sensor) or electricity meter must be installed to monitor the power of the house and set the status of the inverter (charging or discharging).
- ② The CT current sensor or meter must be installed at the mains input. In this case, the inverter can monitor all the power consumption in the home. According to the sensors, the inverter will control the power delivered to the grid to balance the level of household power consumption.

<p>Step 1: open CT.</p>	
<p>Step 2: Clip the CT in the main grid side L cable, with the arrow pointing to the grid side.</p>	<p>Note: The CT internal arrow is facing towards the power grid</p> 
<p>Step 3: straining CT.</p>	
<p>Step 4: Connect the communication line on the other side of the CT to the 2P connector (left, red and right, black), and plug it into the CT communication port of the inverter</p>	 <p>The CT communication port connection</p> 

5.6 Block Diagram Of Tthe System Connection



5.7 Description Of The Communication Port



When receiving the DRMO connection instruction, the inverter will respond to the instruction, and the output power should be reduced to 0 (short-circuit port No 5 RJ45 and No 6 RJ45)

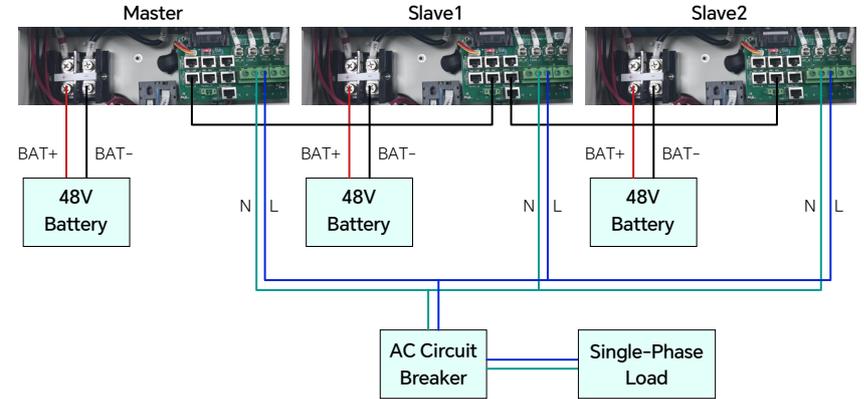
6. Introduction To The Function Of Parallel Inverter

The operation shall be operated by our monitoring server (please contact your dealer)

6.1 Single Phase Inverter

- Each inverter needs to be connected to the energy storage battery separately. Do not connect one battery to multiple inverters.
- From EPS emergency power supply, fire line (L) fire line (L), zero line (N) zero line (N), remember not to mistake.

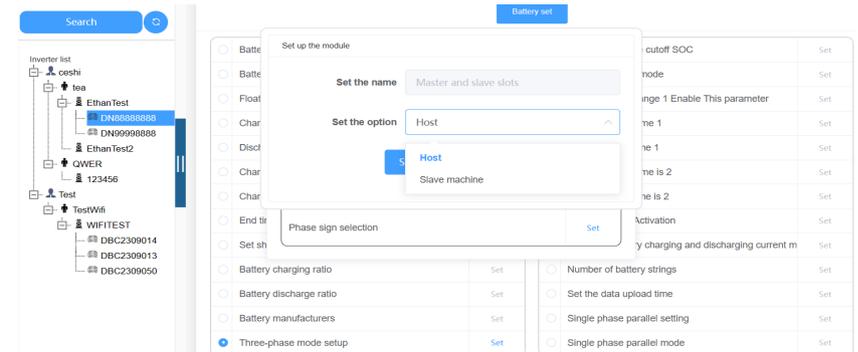
6.1.1 Schematic Diagram Of The Electrical Connection

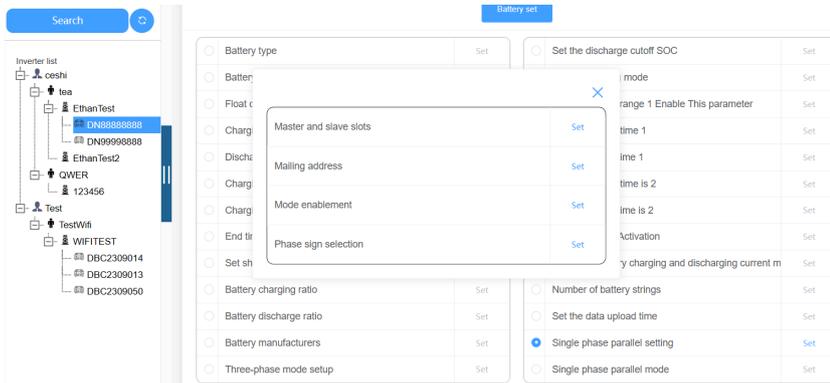


6.1.2 Parallel Inverters Setting

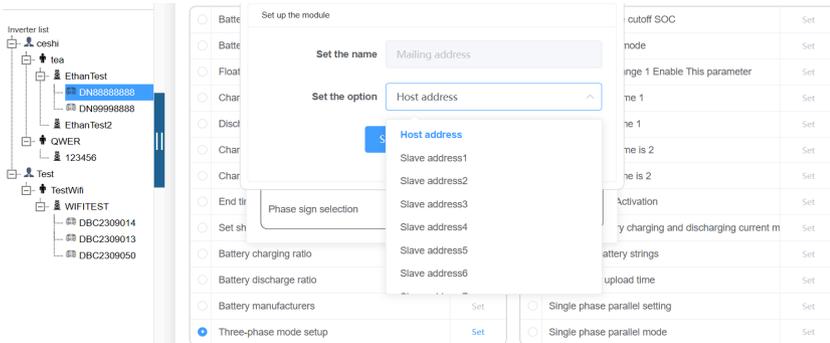
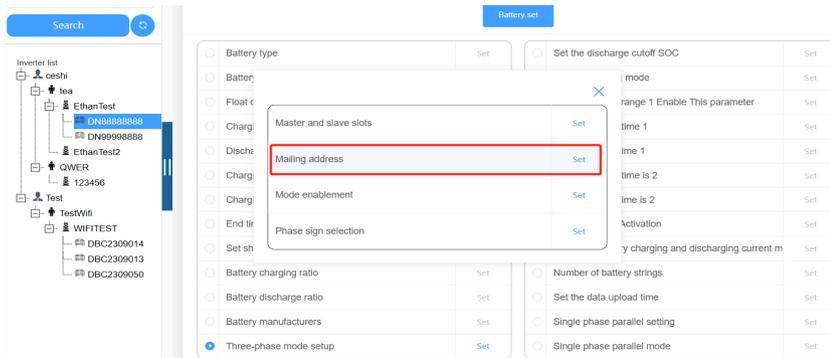
After completing the wiring of the power line and the communication line, it is necessary to set the master and slave machine, enable the parallel machine, and set the communication address and phase number. The setting method is as follows (use the monitoring service to set, and open the LCD screen and APP setting).

- Set up main and slave (there is only one host in a system, the rest are slave, refer to the figure below).

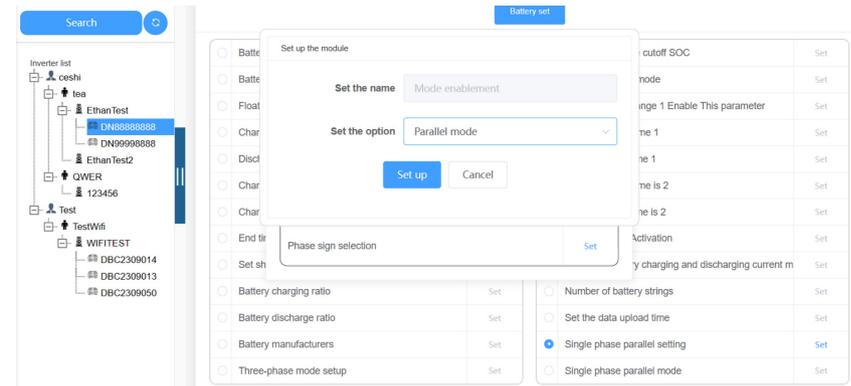
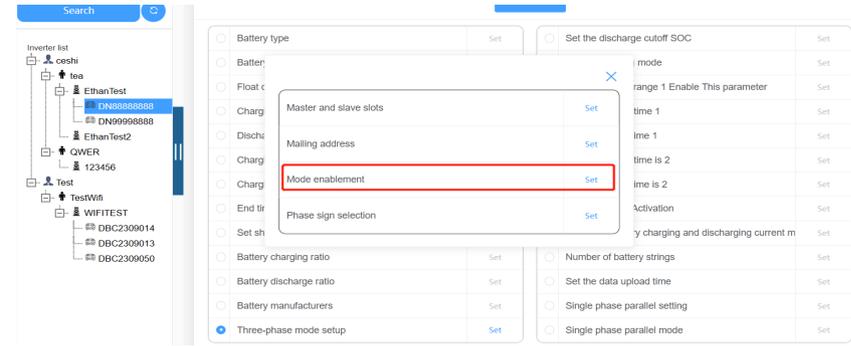




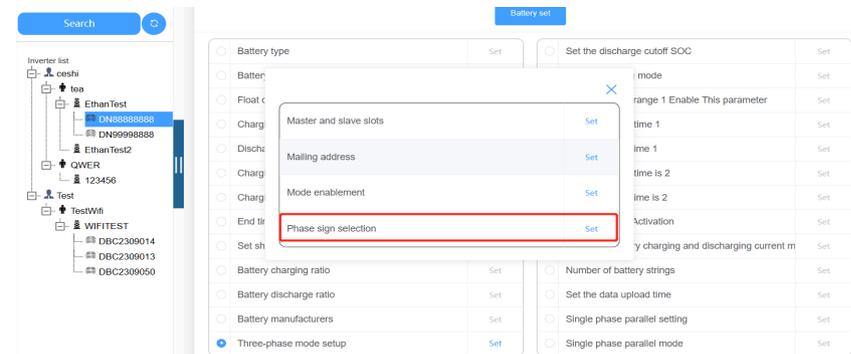
② Set the communication address, host set the host address, slave set the slave address 1, slave address 2, and so on (as shown below)

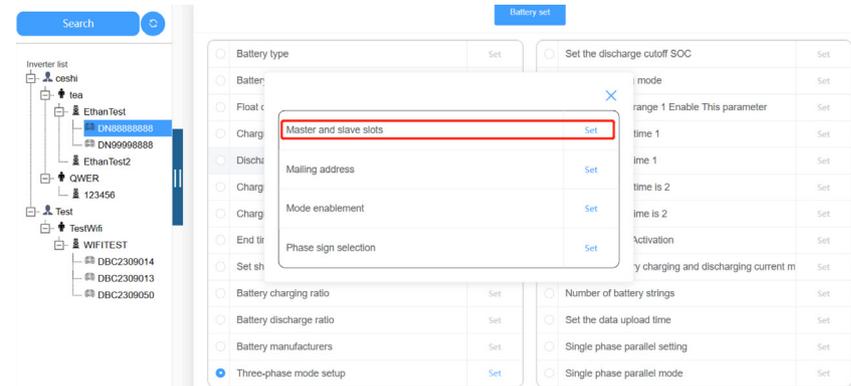
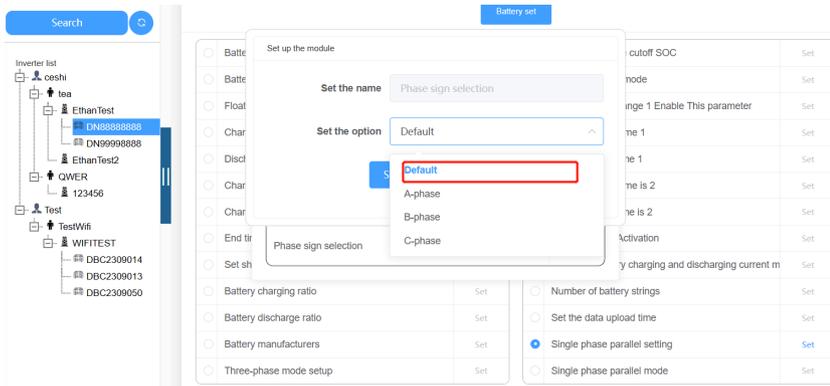


③ Set the parallel function



④ Phase number selection: Select the default value in parallel mode

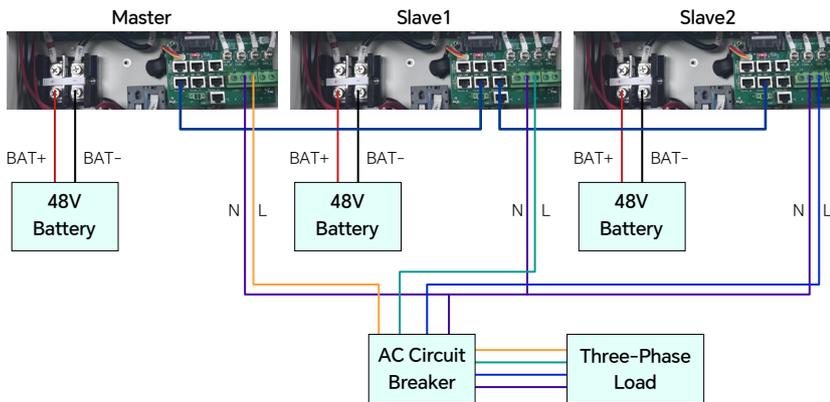




6.2 Three-Phases Parallel Inverters

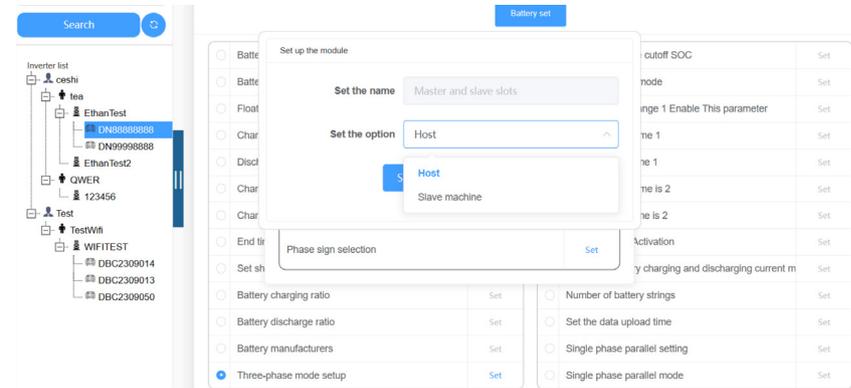
Note: Each inverter needs to be connected to a separate energy storage battery. Do not connect one battery to multiple inverters.

6.2.1 Schematic Diagram Of The Electrical Connection

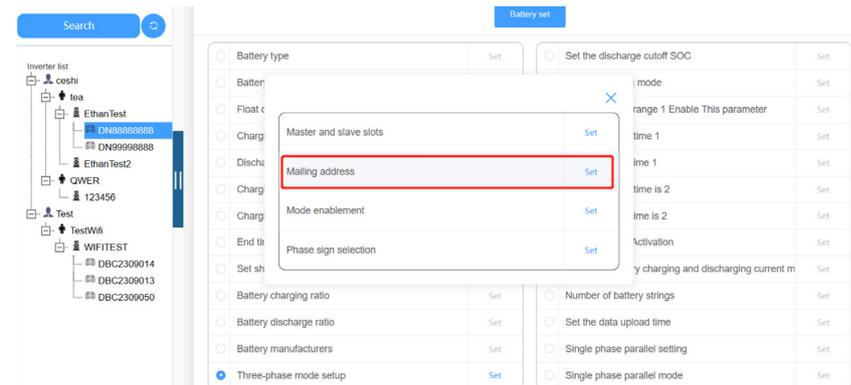


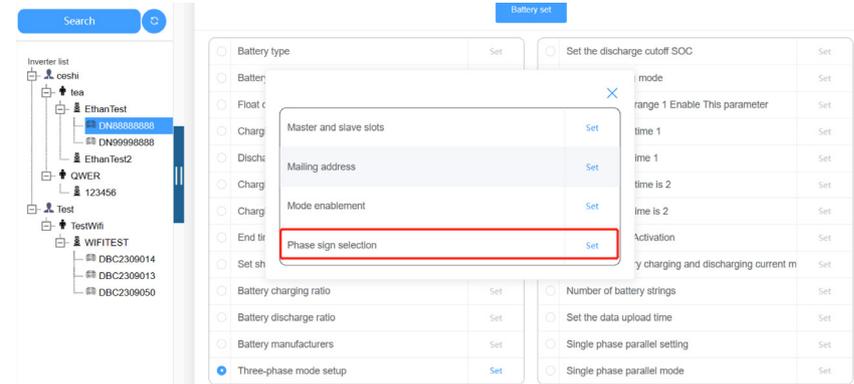
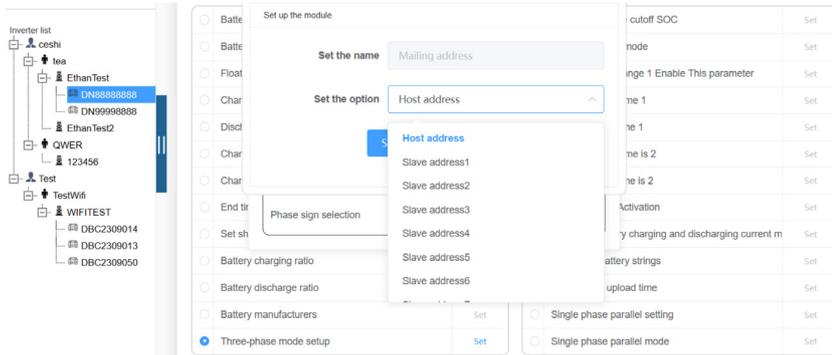
After the connection between the power cable and the communication cable, it is necessary to set the main and slave, enable the three-phases function, set the mailing address and phase sequence. The setting method is as follows (using the monitoring server setting).

① Set master and slave (only one host in one system and the rest are slave):

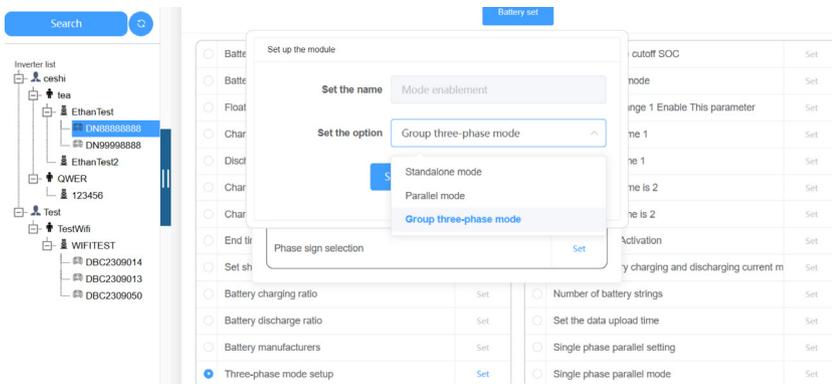
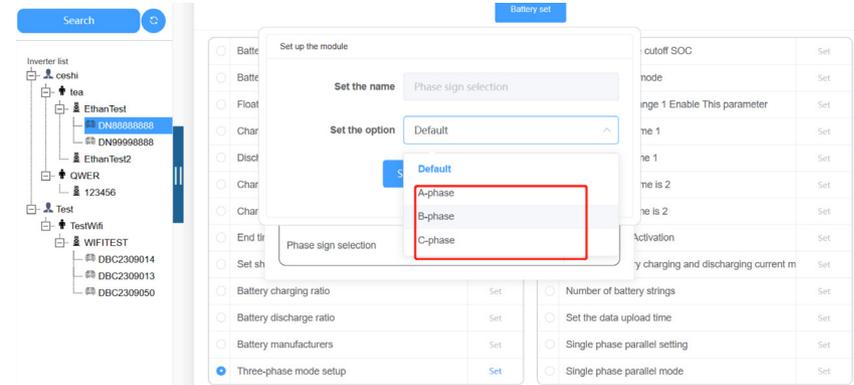
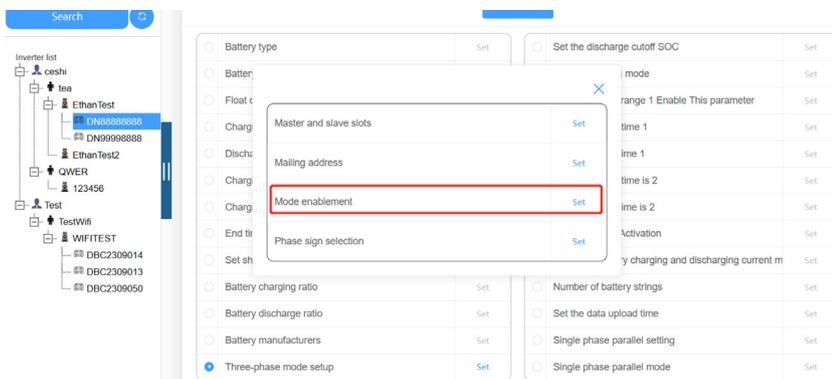


② Set the communication address, the host sets the host address, set the slave address 1, the slave address 2



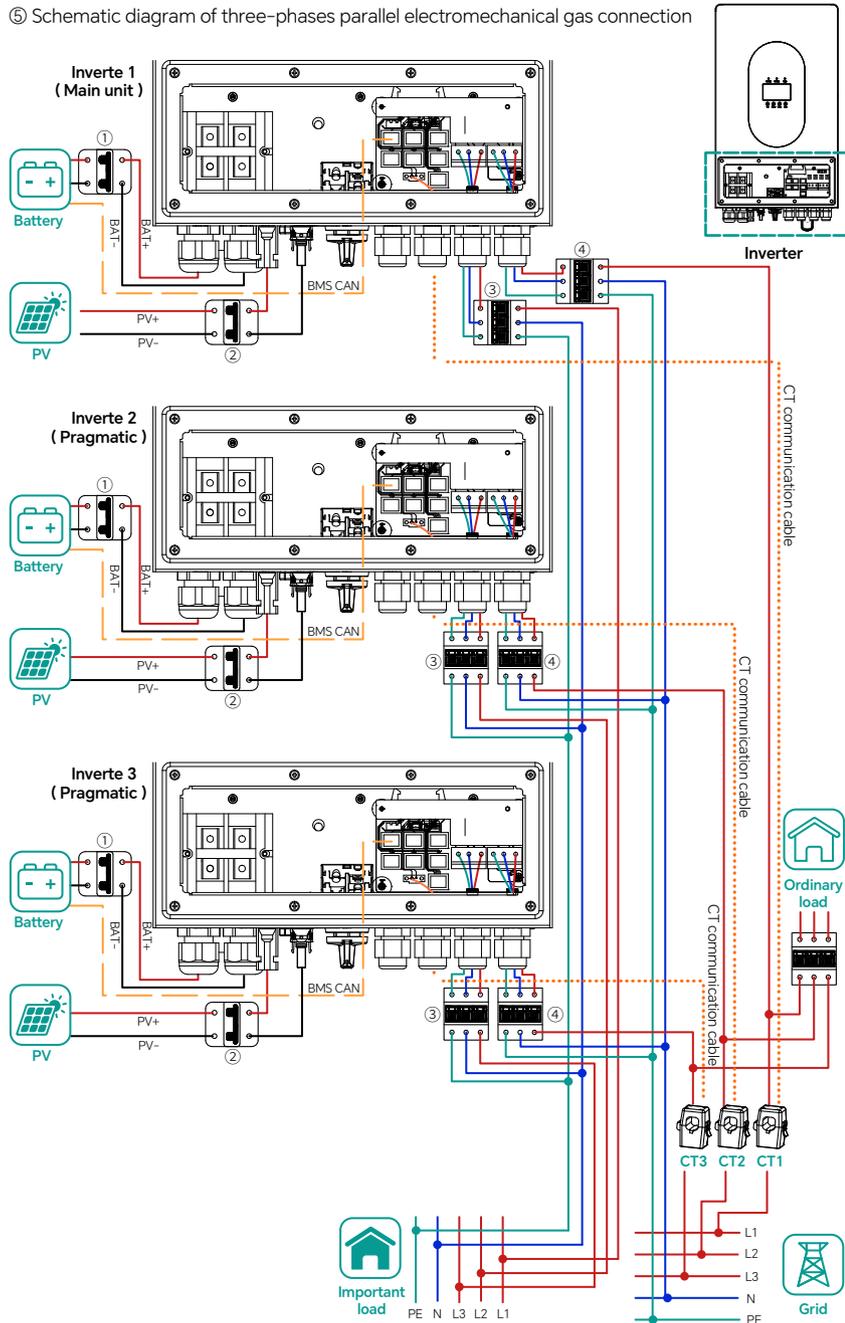


③ Enables the group three-phase function



④ Phase number setting: host set to phase A, slave 1 to phase B and slave 2 to phase C

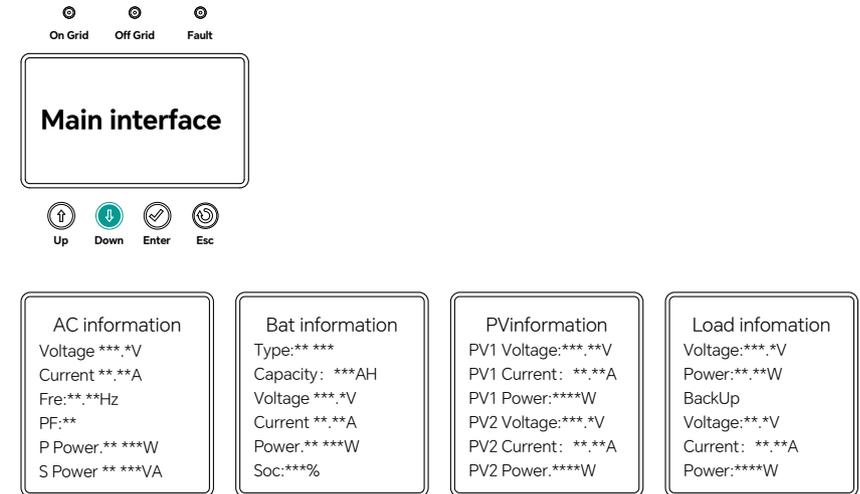
⑤ Schematic diagram of three-phases parallel electromechanical gas connection



7. Features Menu Introduction

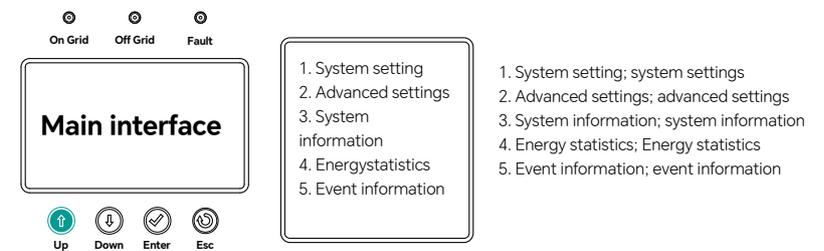
7.1 Operation Parameters

On the main interface, press "Down" to enter the grid, battery, photovoltaic and load information screens.



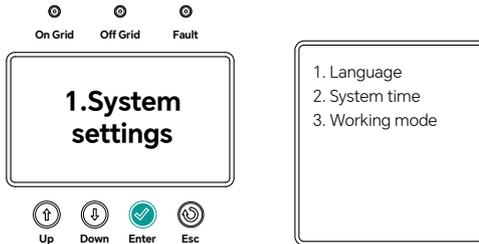
7.2 Main Menu Interface

Press the "up" key in the main interface Main interface to enter the main menu interface. There are the following 5 options in the main menu.

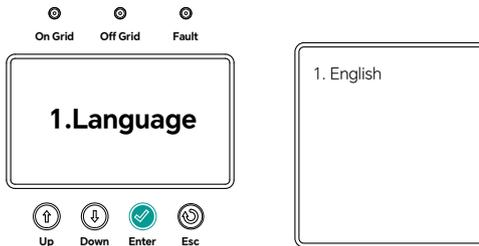


7.2.1 System settings

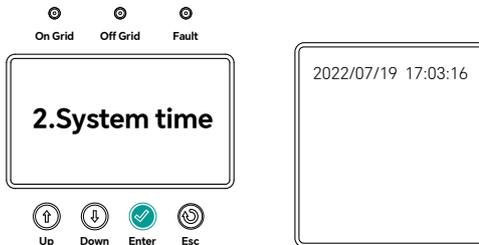
In the system setup, press Enter to enter the submenu interface. The submenu screen displays the following three options:



1. Language settings Currently the options support English only

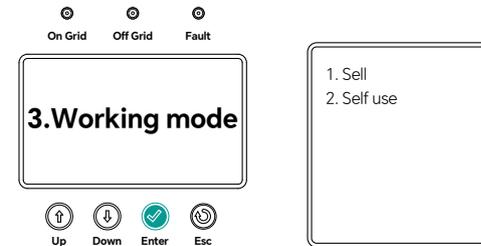


2. System time setting Can set or calibrate the system current time



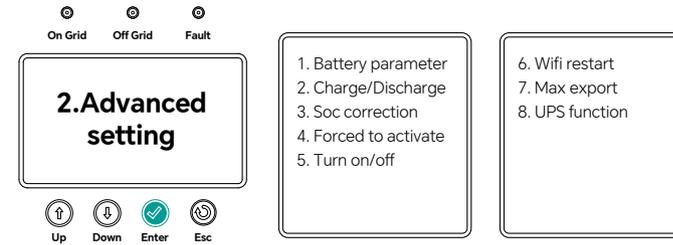
3. Working mode setting

- ① Selling power mode: Energy storage batteries and photovoltaic power generation can be fed to the grid within a set time
- ② Self-self-use mode: On the premise of meeting the load demand, the excess energy charges the battery.

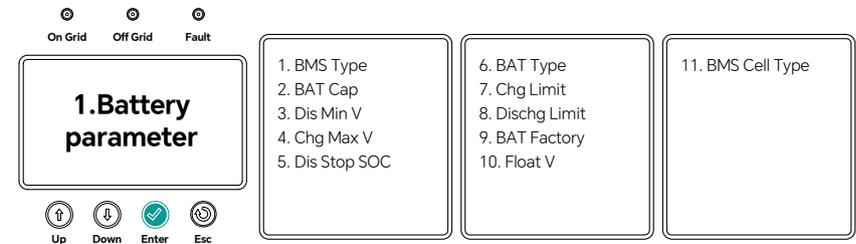


7.2.2 Advanced Settings

In "Advanced Settings", press "Enter" to enter the submenu interface. The submenu interface provides the following eight options, displayed in two pages.



1. Battery parameter settings. The sub-menu interface has 11 options. It is shown in three pages



- ① BMS Type: Battery charge and discharge maximum current mode (0: default 1: battery control charge maximum charge current; 2: battery control charge and discharge current maximum)
- ② BAT Cap Setting: This parameter is used to set the capacity of the battery, AH (it is only set in lead-acid battery mode).
- ③ Dis Min V: This parameter is used to set the minimum discharge cut-off voltage
- ④ Chg Max V Setting: This parameter is used to set the maximum charge turn-off voltage
- ⑤ Dis Stop SOC Setting: This parameter is used to set the stop discharge SOC of the battery.
- ⑥ BAT Type: Set the battery type (0: lead-acid battery; 1: lithium battery).

- ⑦ Chg Limit: Set the maximum charge rate of the battery.
- ⑧ DisChg Limit: Set the maximum discharge rate of the battery.
- ⑨ BAT Factory: BMS protocol selection, which is used to set the battery communication protocol for the inverter(0: CAN 1: CAN).
- ⑩ Float V Setting. This parameter is used to set the floating charging voltage of the battery.
- ⑪ BMS cell type: set the number of battery cells (0: custom; 1:16 string; 2:15 string, the default is 16 string)

2. Set the charging and discharge time at Charge / Discharge Can be set: 1 charging time, 2 discharge time.

On Grid Off Grid Fault

2.Charge/Discharge

Up Down Enter Esc

DC Chg Enable
Start :xxxx End:xx:xx
DC DisChg Enable
Start1:xx End1:xx:xx
Start2 :xx:xx End2:xx:xx

3. SOC calibration It can be used for the SOC calibration of lithium-ion batteries, which will be charged and discharged once. This feature requires higher permissions to turn on.

On Grid Off Grid Fault

3.Soc correction

Up Down Enter Esc

1. Enable
2. Disable

4. Forced battery activation Lithium battery forced activation Can be used to awaken lithium batteries into dormancy, PV voltage> 155V effective

On Grid Off Grid Fault

4.Forced to activate

Up Down Enter Esc

1. Enable
2. Disable

5. Switch on and off the inverter on / off inverter.

On Grid Off Grid Fault

5.Turn on/off

Up Down Enter Esc

1. On
2. Off

6. Restart WiFi Restart the WiFi

On Grid Off Grid Fault

6.Wifi restart

Up Down Enter Esc

1. Enable
2. Disable

7. Set the maximum power of the power grid port

On Grid Off Grid Fault

7.Max export

Up Down Enter Esc

Max Export
Value0-6000W

Set Value

8. UPS function, which is off by default

On Grid Off Grid Fault

8.UPS function

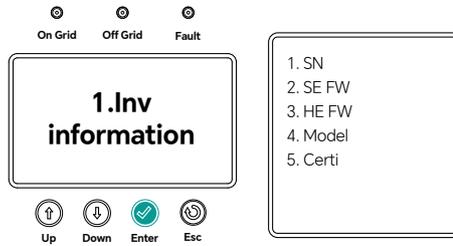
Up Down Enter Esc

1. Enable
2. Disable

7.2.3 System Information

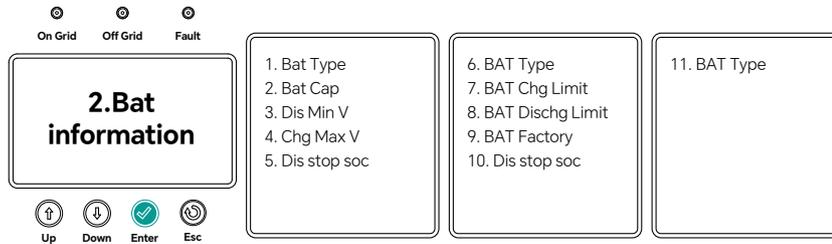
In the system information setting bar, press Enter to enter the submenu interface. Show the following three options;

1. INV Information inverter information

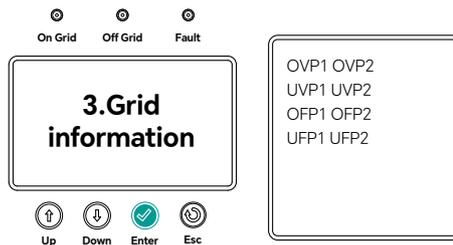


2. Battery information Battery information

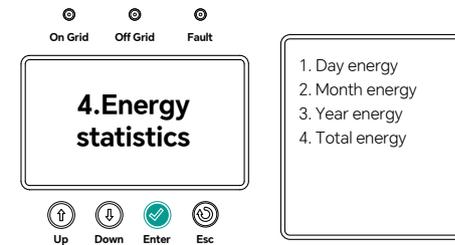
This part is displayed in three screens. Press the "Down" ↓ or "Up" ↑ key to switch to the screen. Mainly used to display the battery-related parameters.



3. Grid Information Power grid information



In the Enter ✓ submenu interface, the following four options are displayed



Daily Energy Production: This page is used to display the daily energy production in numerical values and bar charts.

remarks:

PV Exp- --Photovoltaic output energy

AC Exp- --AC output energy

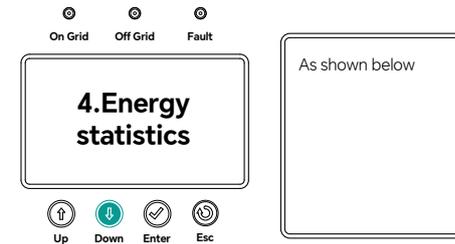
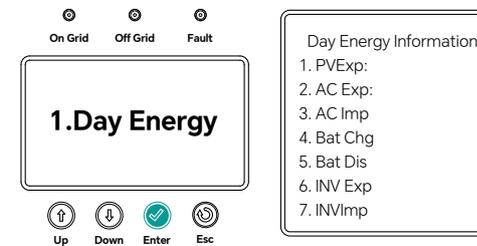
AC Imp- --AC input energy

Bat Chg- --Battery charging energy

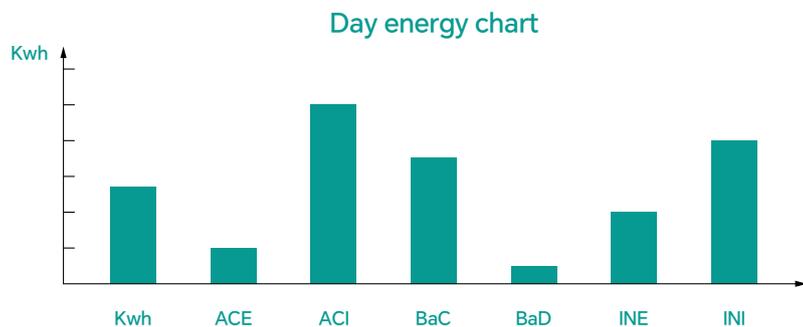
Bat Dis- --Battery discharge energy

INV Exp- ---Inverse output energy

INV Imp- ---Inverse input energy



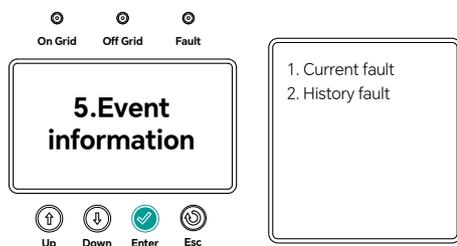
7.2.4 Energy Statistics



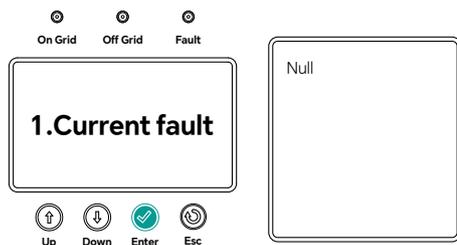
Monthly energy output, annual energy output, and cumulative energy output are also shown in numerical values and bar graphs.

7.2.5 Event Information

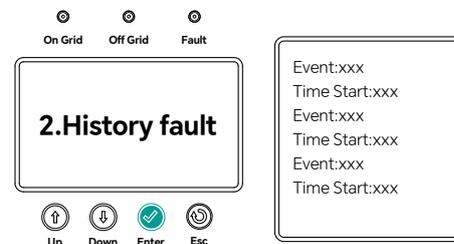
In the event information, press Enter ✓ to enter the submenu interface. The following two options are displayed.



1. Current error information: display the current error information Empty when no error is reported.



2. Historical error information: display historical error information. For three pages, press the "Down" ↓ or "Up" ↑ key to switch the page with three historical error messages per page. Empty appears when the current error is free.



7.3 Automatic Test Function

1. Long press the "Enter" ✓ and "ESC" ⌫ keys for 3 seconds to enter the automatic test function.
2. Wait for about 15 minutes, and the inverter will automatically check and return to the main interface.



8. Turn The inverter On / Off

8.1 Turn On The Inverter

- (1). Turn on the AC circuit breaker
- (2). Turn on the PV DC switch
- (3). Turn on the battery circuit breaker
- (4). When the photovoltaic voltage is above 150V, or the battery voltage is above 42V, the inverter will automatically start (the screen lights on and enters the standby state)

8.2 Disconnect the Inverter

- (1) Disconnect the AC circuit breaker to prevent the inverter from being reactivated.
- (2) Disconnect the battery circuit breaker to prevent the inverter from being reactivated.
- (3) Turn off the photovoltaic PV switch
- (4) Check the running state of the inverter
- (5) After the LCD screen is out, the inverter is turned off

9. Maintenance And Cleaning

9.1 Heat Dissipation Inspection

If the inverter often reduces the output power due to the high temperature, please check whether the inverter is blocked or clean the radiator, and adjust the heat dissipation environment.

9.2 Inverter Cleaning

If the inverter appearance is dirty, please close the inverter and clean the enclosure.

9.3 Check The DC Switch

Check the circuit breaker and cable outside regularly for abnormalities. Check at regular intervals. If the circuit breaker shows signs of damage, or there is visible discoloration or damage to the cable, please contact the installation personnel.



WARNING

It is recommended to operate once a year [rotate the DC switch from "on" to "off" for 5 times]. This can clean the contact point of the rotary switch and contact points, thus extending the electrical endurance time of the DC disconnection.

10. Notes For Dismantling Back To The Factory

10.1 Disassembly The Inverter

- (1) Disconnect the inverter according to the instructions
- (2) Unplug all the connecting cables on the inverter
- (3) Lift the inverter from the bracket and unscrew the support screw



DANGER

There is a risk of burns to the housing parts of the inverter during operation! Please wait for 20 minutes after shutdown before disassembling shell after the housing cools down!

10.2 Packaged The Inverter

If possible, pack the inverter in the original packaging carton and secure it with adhesive tape. If the original package is gone, please use a packing box that can fully support the weight and size of the inverter, and the carton can be completely enclosed.

10.3 Storage Of The Inverter

Store the inverter in a dry place, and the ambient temperature shall be between -25°C and $+60^{\circ}\text{C}$.

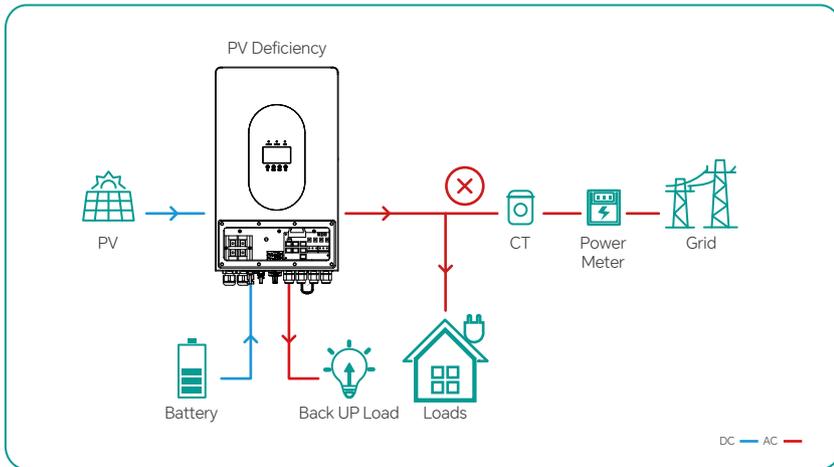
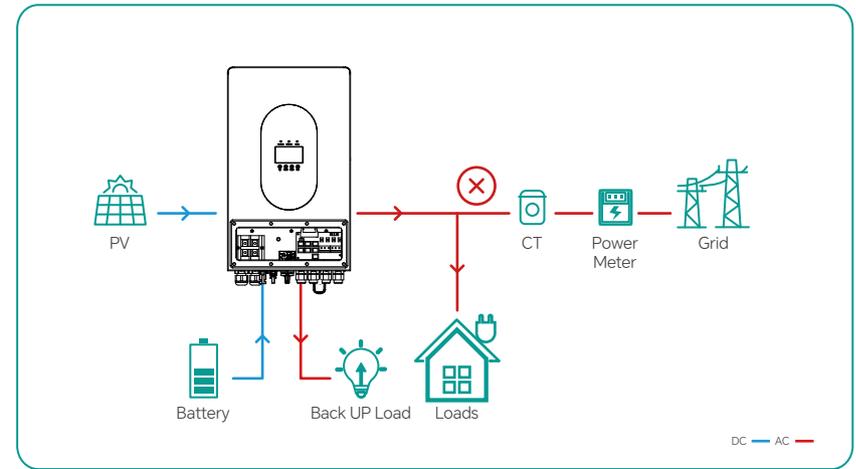
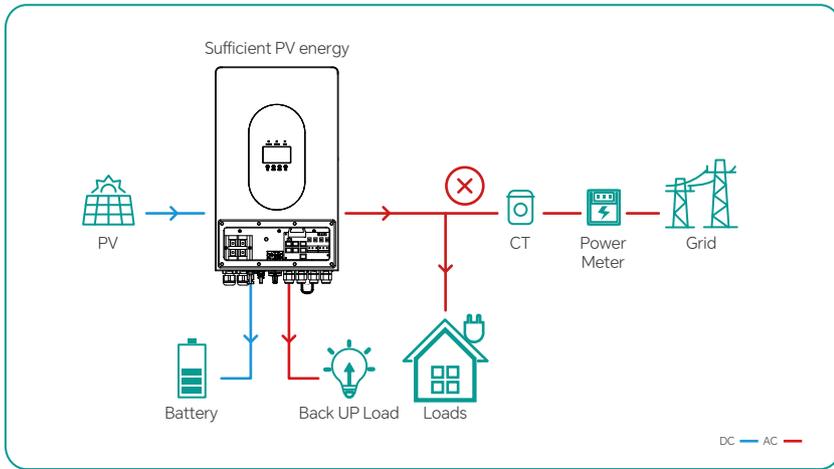
11. Work Pattern

This series of hybrid inverters has the following main working modes:

11.1 Self-use Mode:

Pv will be preferentially used for loads and cells. When the photovoltaic power cannot meet the load demand, the power supply is discharged by the battery. When the photovoltaic power meets the load, the excess energy is stored in the cell.

Priority: Load > Battery > Power Grid



11.2 Electricity Selling Mode

Photovoltaic and cells output all their energy to the grid at a set time
 Priority: Load > Grid > Battery

12. Technical Parameters

Model	GH3000TL	GH4600TL	GH5000TL
PV Input (DC)			
Maximum Input Power (W)	5200w	6500w	7000w
Maximum Input Voltage (V)	500V		
Starting Voltage	150V		
PV Input Voltage Range	150V~500V		
MPPT Voltage Range	120V~430V		
MPPT Quantity	2		
Number of Strings per MPPT	1		
Max. Input Current per MPPT (A)	15A/15A		
AC Output Data			
Nominal Apparent Power Output to Utility Grid (W)	3600W	4600W	5000W
Rate Power (Charge)	3600W	4600W	5000W
Rate Power (Discharge)	3600W	4600W	5000W
Max. Apparent Power Output to Utility Grid (VA)	3960VA	4600VA	5500VA
Max. AC Current Output to Utility Grid (A)	17.2A	20A	23.9A
Nominal Output Voltage (V)	230V		
Nominal AC Grid Frequency (Hz)	50Hz		
Max. Total Harmonic Distortion	<3%		
Power Factor (cos)	±0.8 (Adjustable from 0.8 leading to 0.8 lagging)		
AC Output Data (Back-up)			
Back-up Nominal Apparent Power (W)	3600W	4500W	4500W
Nominal Output Voltage (V)	230V		
Nominal Output Frequency (Hz)	50Hz (60Hz optional)		
Switch Time	<20ms (capacitive load); <10ms (resistive load)		
Total Harmonic Distortion(Linear Load)	<3%		
Overload Capacity	110% 30s / 120% 10s / 150% 80ms		
Battery			
Battery Voltage Range (V)	41.6~ 58.5V		
Max. Continuous Charging Current (A)	80A(PV&AC hybrid charging)	95A(PV&AC hybrid charging)	95A(PV&AC hybrid charging)
Max. Continuous Discharging Current (A)	85A	100A	100A
Battery Type	Lithium / Lead-Acid		
Communication Way	RS485/CAN		

Conversion Efficiency	
Max. Efficiency	98%
EU Efficiency	97%
Max. Battery to AC Efficiency	95%
MPPT Efficiency	99.99%
IP Rate	IP65
Noise	<35dB
Operating Temperature Range (°C)	-25°C~+60°C
Cooling Method	natural cooling
Relative Humidity	0 to 95 %, non-condensing
Installation Altitude above Sea Level	Up to 2000 m above sea level
Self-consumption at Night (W)	<10W
Display	LCD
Communications	USB/RS485/CAN
Warranty	5 years
Dimensions (H x W x D mm)	580 x 350 x 230mm
Weight	25kg