

User Manual

Hybrid Inverter



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1.About This Manual

This manual provides product information, safety warnings, installation guidelines, operating instructions, and maintenance guidance for the 3/3.6/4.6/5/6/8kW low voltage single phase hybrid inverter series and 4.6/5/6kW low voltage AC-coupled single phase inverter series. Please read this manual carefully before installing and using the inverter, and keep this manual properly for future reference.

This manual may be updated from time to time throughout the product lifecycle. You can visit our website to view the latest version.

2. Safety Symbols

	Danger - high voltage and electric shock!
	Failure to observe any warnings contained in this manual may result in injury.
	There is high temperature on the surface of the inverter, and it is forbidden to touch it during equipment operation, otherwise it may cause burns.
	Refer to the operating instructions.
	Delayed discharge After the device is powered off, please wait for 5 minutes until the device is completely discharged.
	CE mark.
	Products shall not be disposed as household waste.
	PE protective conductor.

- Read all safety symbols before use.
- The device is internally charged with hazardous voltage. To prevent electric shocks, do not disassemble the device by yourself. If your device needs to be repaired, contact a qualified local service center.
- The grid input and alternating current (AC) output carry high voltage. Do not touch the wiring terminals.
- To minimize the risk of electric shocks, disconnect all wiring before attempting any maintenance.
- To prevent electric shocks, do not open the terminal cover while the device is operating.
- Use only cables that conform to specifications.
- The device must be installed by qualified professionals. Improper installation may cause electric shocks or fires.
- Keep the device out of children's reach.
- Do not install the device in harsh environments, such as damp, greasy, flammable, explosive, or dusty locations.
- Touching the casing during device operation may cause burn injuries.

- We recommend that you install suitable fuses or circuit breakers externally for the device.
- Before routing or adjusting the wiring, make sure that the fuses or circuit breakers for the PV array, grid, and battery terminals are disconnected. Always wear insulated gloves during wiring.
- After installing the device, verify that all connections are secure to prevent loose contacts, which may lead to heat accumulation and fires.
- When the device operates in off-grid mode, make sure that it is the only power source of the load. Parallel connection of the device with other AC power sources will damage the device and appliances and is therefore prohibited.
- The installation of the inverter must comply with local regulations.

To minimize risks, only rechargeable batteries that can be repeatedly charged should be selected. At the same time, the battery must be on the battery list supported by the manufacturer. If it is not on the list, permission from the inverter manufacturer must be obtained; otherwise, no responsibility will be assumed for any adverse effects resulting from this.

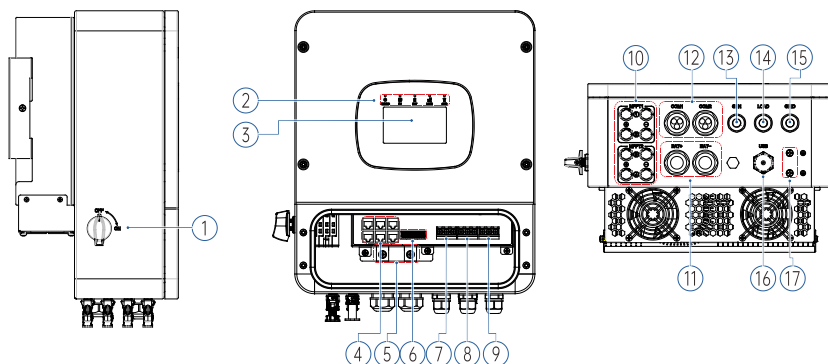
Please read through the safety warnings and operating instructions in this chapter and keep this manual handy for future reference.

Manufacturer is not responsible for device damage or personal injury resulting from failure to install, operate, or configure the device in accordance with this chapter or the applicable provisions in this manual.

3.Product Introduction

This is a multifunctional hybrid energy storage and grid-tied inverter. This innovative device integrates solar energy storage, grid charging, sine wave AC output, CT or smart meter, intelligent communication module, and other features and is controlled by a digital signal processor (DSP). With fast response, high reliability, superior performance, and multiple working modes, it can efficiently support diverse scenarios. For example, it intelligently manages power for loads, stores power to batteries, or feeds power back to the grid.

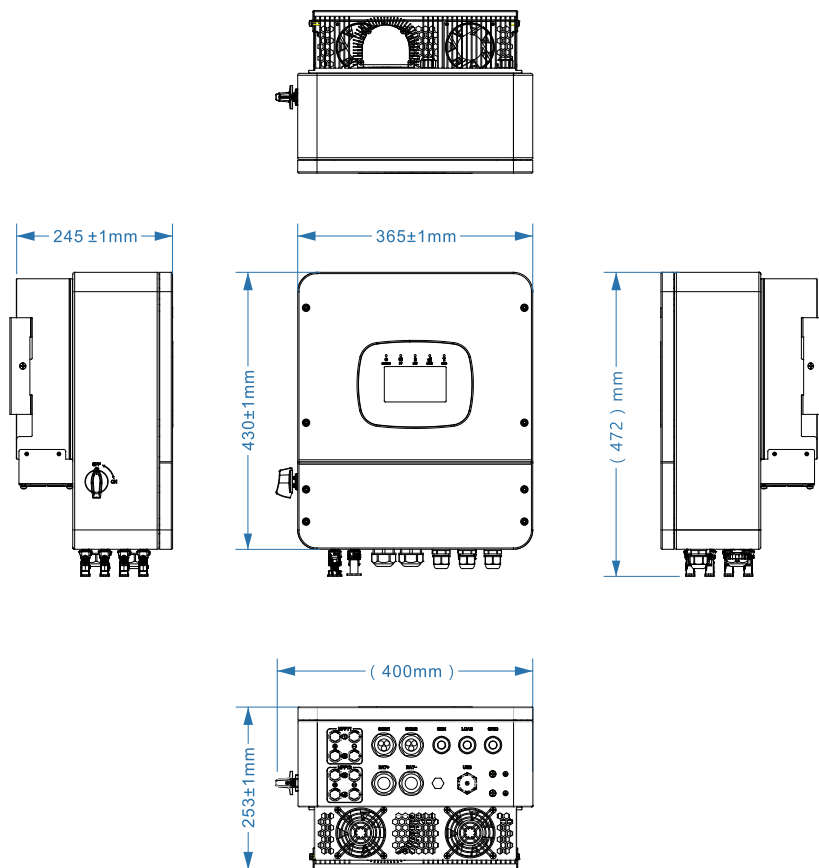
3.1 Overview



1	PV Switch	5	Battery Ports	9	GRID Port	13	GEN	17	Earth Connectors
2	Status Indicators	6	COM Ports	10	PV input Port	14	LOAD		
3	LCD Touch Panel	7	GEN Port	11	Battery	15	GRID		
4	COM Ports (RJ45)	8	LOAD Port	12	COMs	16	USB		

Note: Interface configurations may vary slightly by model; please refer to the actual unit. The 3-6kW hybrid inverters have 2 PV string inputs, and 8kW hybrid inverter have 4 PV string inputs, while the 4.6-6kW AC-coupled inverters do not. Only the 8kW hybrid inverter includes an external fan.

3.2 Dimensions

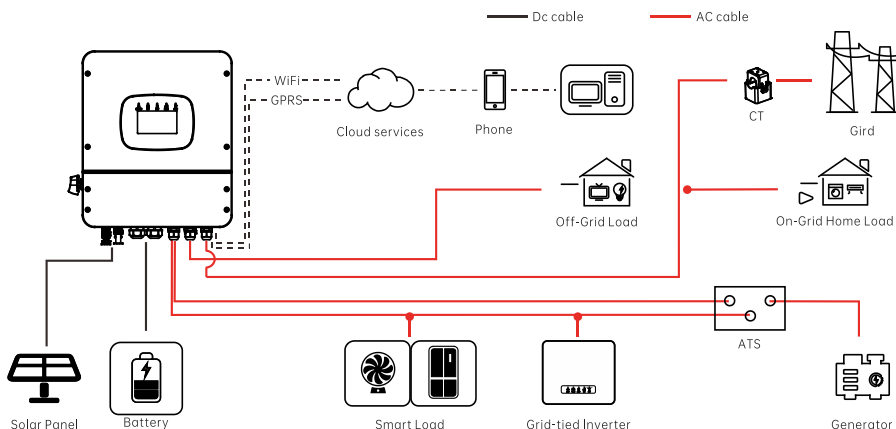


3.3 Features

- Uninterruptible power supply
- Support for peak shaving and valley filling of the grid
- Continuous charging with a maximum current of 190A
- Prolonged maximum 8.8kW full-power discharging without derating
- Compatibility with Lead-Acid and lithium-ion batteries
- Maximum 200% oversize of PV array size, and 200% of PV input power
- Supports up to 2 MPPTs with 36A, support 4 PV strings
- Parallel connection up to 9 units, support single-phase or three-phase parallel expansion
- Maximum 2 times of the rated power, 10 seconds overload output
- Dedicated generator interface, support AC coupling input, or intelligent load output
- Universal Serial Bus (USB)-based or online software upgrade
- Continuous and stable operation under high temperatures

3.4 System Architecture

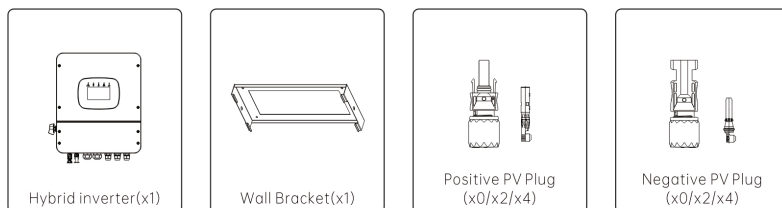
The following diagram shows a typical system architecture of an energy storage inverter.

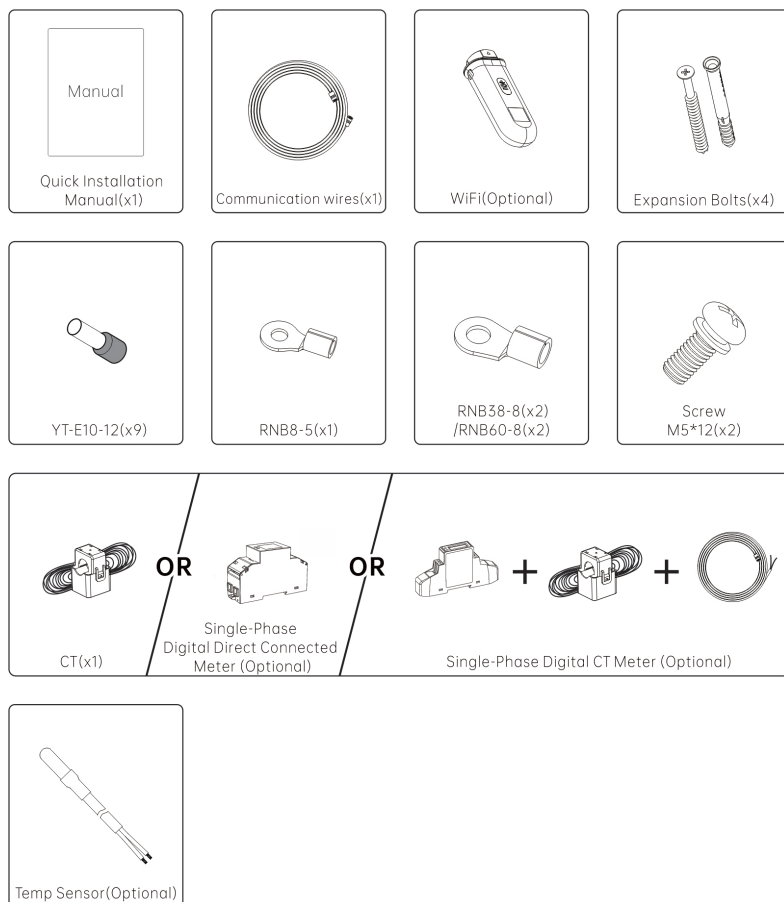


4. Installation and Wiring

4.1 What's in the Box

Before installation, check all items in the package box for damage. The box contains the following items:





4.2 Product Handling Requirements

Transportation, relocation, and installation must comply with national and regional laws, regulations, and applicable standards.

When moving the device to the installation location, keep in mind the following notes to prevent personal injury or device damage during handling:

- Assign adequate manpower when lifting or moving the device to prevent personal injury due to overexertion.
- Wear protective gloves to prevent cuts from metal.
- Maintain balance while carrying the device to prevent dropping.
- Avoid placing the device directly on the ground to prevent scratches on the metal casing.

4.3 Installation Guidelines

● Precautions:

- Make sure that the mounting surface is flat, dry, vertical, and free from concavity.
- Avoid installing the device in areas exposed to sunlight, rain, snow, etc. Direct sunlight, high temperatures, and other adverse conditions may cause output power derating.
- Ensure sufficient space for ventilation, heat dissipation, and operational accessibility.
- Do not install the device in flammable, explosive, corrosive, or toxic environments.
- Keep the device away from TV antennas or antenna cables to prevent interference.
- Install the device at an altitude of up to 3,000 meters above sea level.
- Avoid environments with humidity levels exceeding 95%.
- Install the device in locations inaccessible to unauthorized personnel.
- Install the device at a height that facilitates operation and maintenance to ensure the visibility of indicators and labels and the accessibility of terminals.
- For outdoor installation in regions threatened by salinization, consult manufacturer beforehand. Such regions are typically within 500 meters from coastlines and are affected by factors such as onshore wind, rainfall, and humidity.
- The direct current (DC) and communication cables between the battery and inverter must be shorter than 3 meters. Make sure that their distance meets this requirement.

● Installation tools



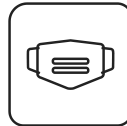
Goggles



Safety shoes



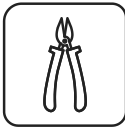
Safety gloves



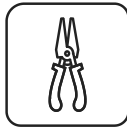
Dust mask



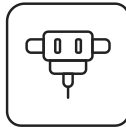
Cable Crimper



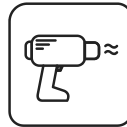
Side Cutter



Wire strippers



Impact drill



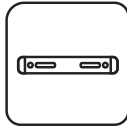
Heat gun



Vacuum cleaner



Marker



Level



Heat shrink
tubing



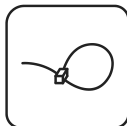
Rubber hammer



Torque Wrench



Multimeter



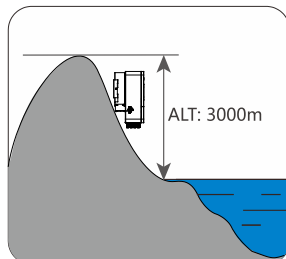
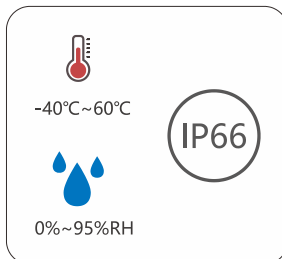
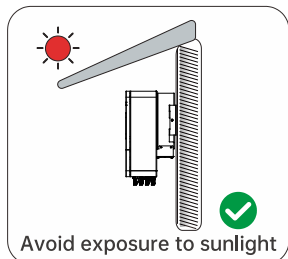
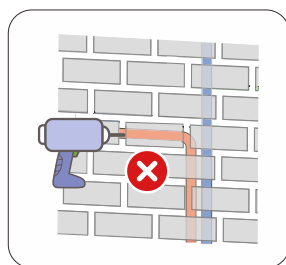
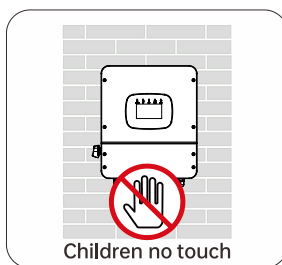
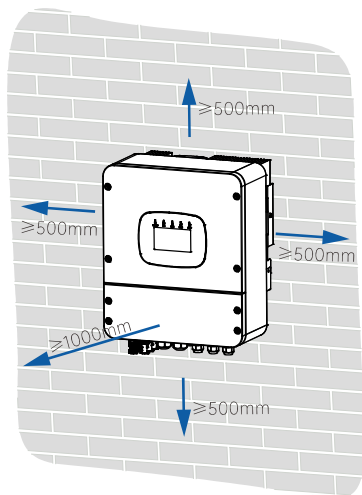
Cable ties

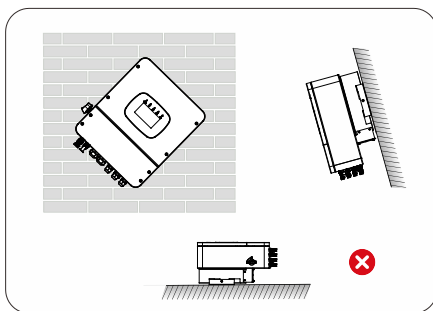
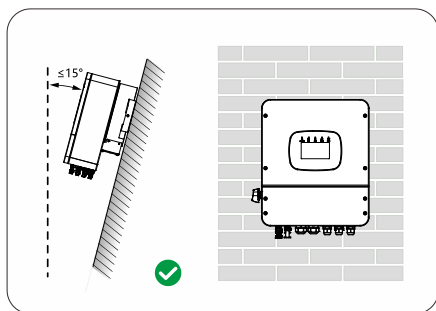
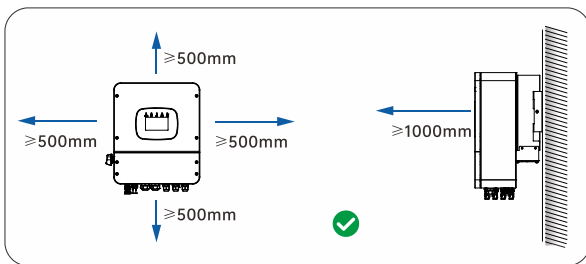
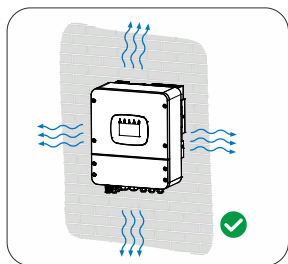
● Installation environment

Install the device on a vertical load-bearing wall of concrete or other non-combustible material and observe the following:

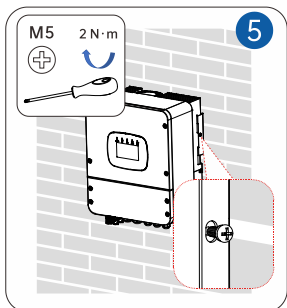
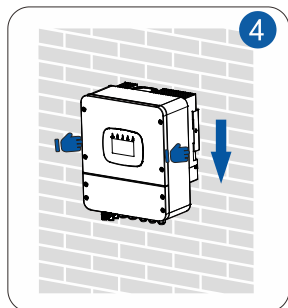
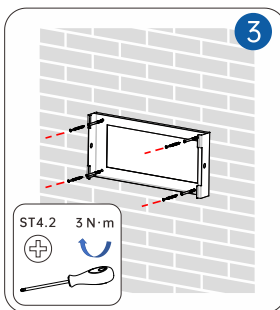
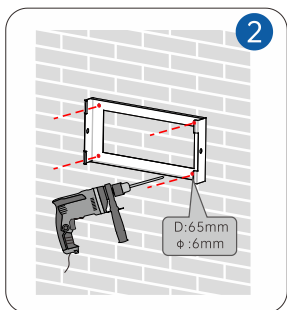
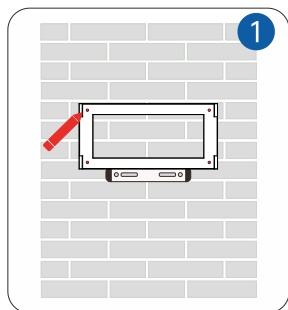
- Install the inverter at eye level for easy reading of the liquid crystal display (LCD).
- Keep the ambient temperature between -40°C and 60°C for optimal performance.
- Maintain sufficient clearance around the inverter, as shown in the diagram below, to ensure adequate space for heat dissipation and wiring access.

The following diagrams illustrate the requirements for the installation environment.





● Installation steps



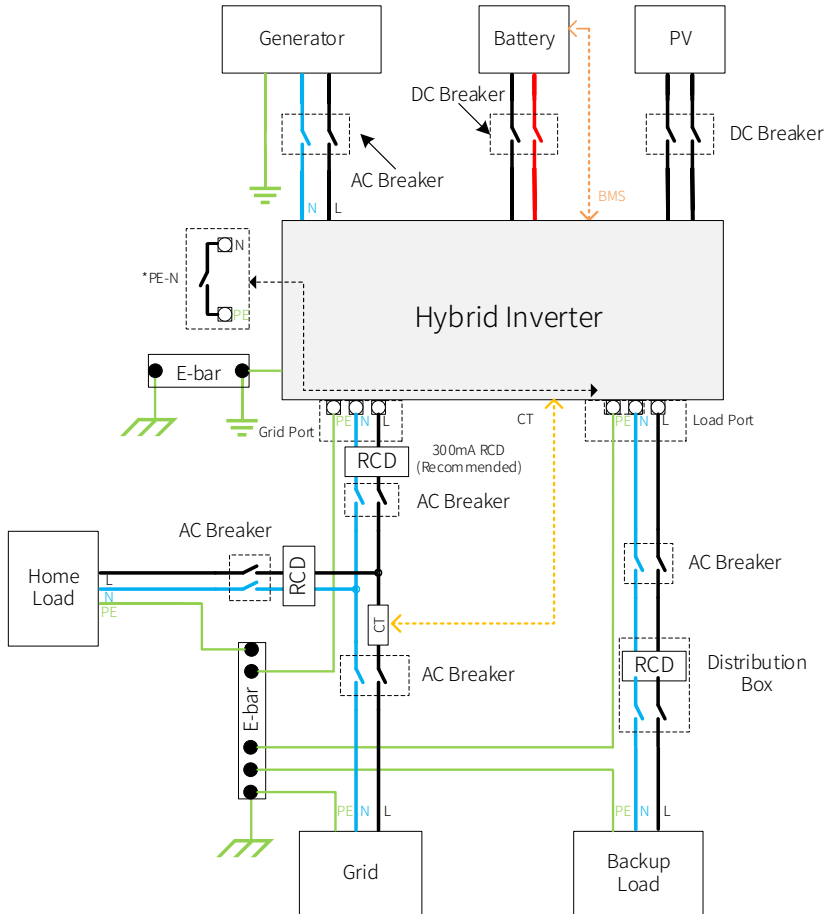
4.4 Inverter System Wiring Diagram

1. System connection diagram for Non-PEN grid connection:

This diagram is an example for an application in which neutral is separated from the PE in the distribution box.

For countries such as China, Germany, the Czech Republic, Italy, etc., please follow local wiring regulations!

Note: Backup function is optional in German market. please leave backup side empty if backup function is not available in the inverter.

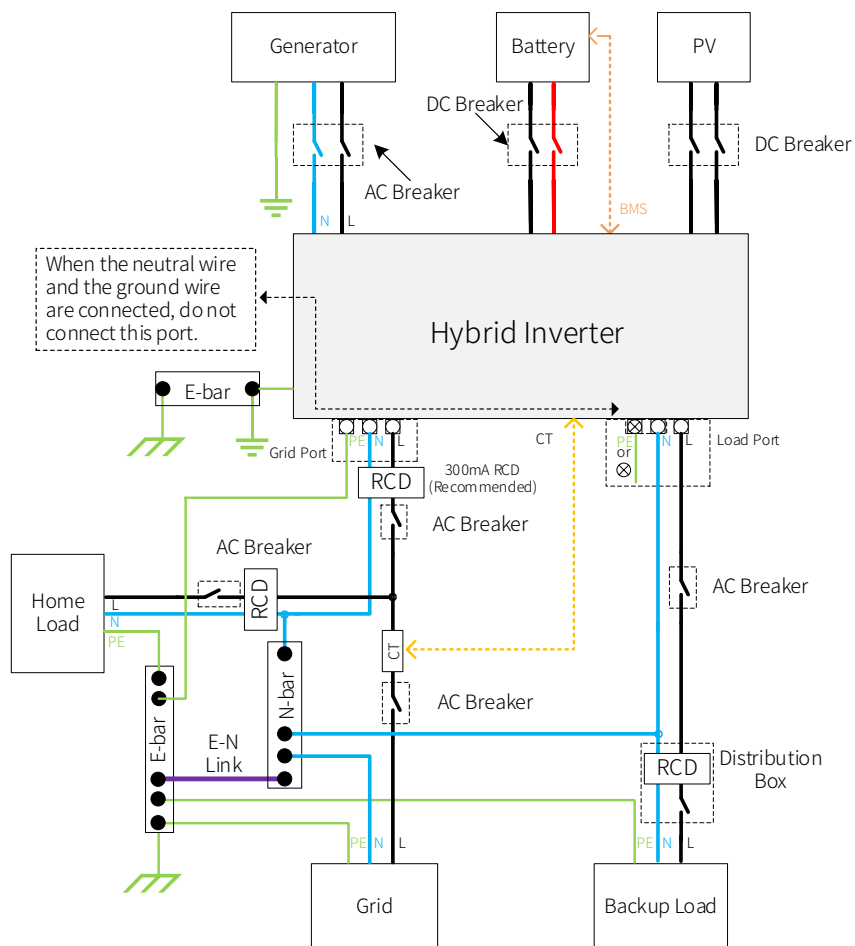


*PE-N: When the inverter operates in the Off-grid mode, the neutral point on the standby side and PE are connected through an internal relay. Additionally, when the inverter operates in the On-grid mode, this internal relay will open.

2. System connection diagram for PEN grid connection:

This diagram shows an application example where the neutral line is connected to the PE in the distribution box. For instance, in countries such as Australia, New Zealand, and South Africa.

(Please follow the local wiring regulations!)



4.5 Wiring Preparations

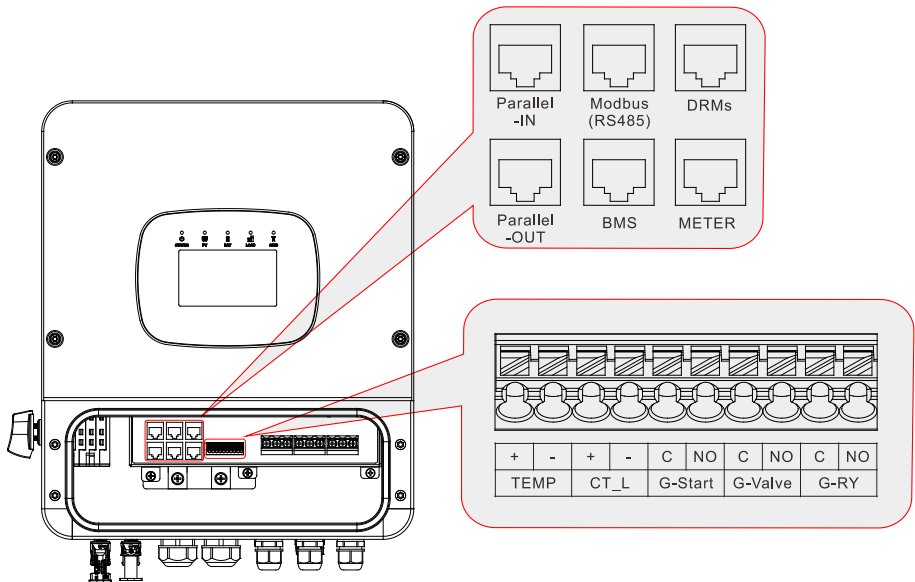
Before connecting to the grid, external wiring and switch circuit breakers must be prepared. Independent AC circuit breakers must be installed respectively between the inverter and the grid, as well as between the backup load and the inverter. This will ensure that the inverter can be safely disconnected during maintenance and is completely protected from overcurrent. The recommended AC circuit breakers for the load port, grid port, and battery port are as follows. All wiring work must be completed by qualified personnel. Using the appropriate cables for AC input connections is crucial for system safety and efficient operation. To reduce the risk of injury, please use the recommended cables below. It is recommended to use 5-core wire.

There are three terminal blocks labeled "GRID", "LOAD", and "GEN". Do not connect the input and output connectors incorrectly. The battery terminal block is labeled "BAT", with 1 positive and 1 negative terminal. Do not connect the polarity incorrectly.

Inverter Model	Port	Cable Specifications	Maximum Operating Current	Recommended Circuit Breaker Specifications
8kW	GRID	10.0mm ² /6AWG	50A	2P-63A
	LOAD	10.0mm ² /6AWG	50A	2P-63A
	GEN	10.0mm ² /6AWG	50A	2P-63A
	BAT	70.0mm ² /000AWG	190A	2P-250A
6kW	GRID	10.0mm ² /6AWG	45A	2P-63A
	LOAD	10.0mm ² /6AWG	45A	2P-63A
	GEN	10.0mm ² /6AWG	45A	2P-63A
	BAT	50.0mm ² /0AWG	140A	2P-200A
4.6/5kW	GRID	10.0mm ² /6AWG	45A	2P-63A
	LOAD	10.0mm ² /6AWG	45A	2P-63A
	GEN	10.0mm ² /6AWG	45A	2P-63A
	BAT	35.0mm ² /1AWG	120A	2P-200A
3/3.6kW	GRID	10.0mm ² /6AWG	45A	2P-63A
	LOAD	10.0mm ² /6AWG	45A	2P-63A
	GEN	10.0mm ² /6AWG	45A	2P-63A
	BAT	25.0mm ² /2AWG	100A	2P-150A
All	MPPT	2.5mm ² /12AWG each wire	20A	/

4.6 Wiring of Internal Signal Terminals and Port

1. Terminal definitions



2. Communication port signal definitions



● BMS port pinout

1	BMS_RS485_B	5	BMS_CANL
2	BMS_RS485_A	6	GND
3	GND	7	
4	BMS_CANH	8	

● METER/CT port pinout

1	METER_RS485_B	5	METER_RS485_A
2	METER_RS485_A	6	GND
3	GND	7	
4	METER_RS485_B	8	

● Modbus port pinout

1	USER_RS485_B	5	USER_RS485_A
2	USER_RS485_A	6	GND
3	GND	7	
4	USER_RS485_B	8	

● DRMS port pinout(optional)

1	DRM1/5	5	GND
2	DRM2/6	6	DRM0
3	DRM3/7	7	
4	DRM4/8	8	

● Parallel-IN and Parallel-OUT ports

These ports are used for parallel signal connections. For more information, see sections about parallel connections.

3.CT signals

● CT_L: You can connect this port to an external current transformer (CT) , corresponding to the L phase, detecting the current of grid for anti-reverse power protection. For more information, see the CT wiring diagram.

3.TEMP signals(optional)

● TEMP: This port is for detecting the temperature of the lead-acid battery.

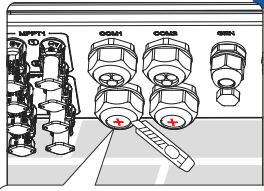
4.Dry Contact signal

● G-Start: In the generator setting page, when "Gen Port Function" is set to "Generator En" or "Generator Force En", if the lithium battery SOC or lead-acid voltage is lower than the set start value, this dry contact signal will be connected; if the lithium battery SOC or lead-acid voltage is higher than the set diesel generator shutdown value, this dry contact will be disconnected. When "Gen Port Function" is set to "Smart Load Output", if the lithium battery SOC or lead-acid voltage is higher than the set start value, the G-Start dry contact signal will be disconnected.

● G-Valve/Grid-Ry: Reserve dry contact signal ports. They can be used as SG-1/SG-2 signal control ports for SG-Ready devices, such as heat pumps and smart loads, as required.is set to "Smart Load Output", if the lithium battery SOC is higher than the set start value, the G-Start dry contact signal will be disconnected.

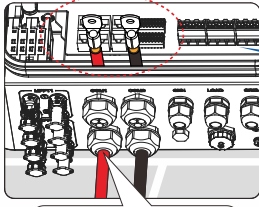
4.7 Battery Connection

1. Battery wiring steps



1

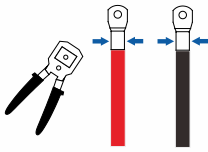
Cut a cross slit with a utility knife, and keep the slit length 2 mm shorter than the cable's nominal outer diameter.



2

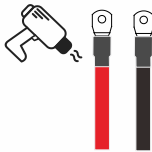
Pass the cable through the waterproof connector.

18mm



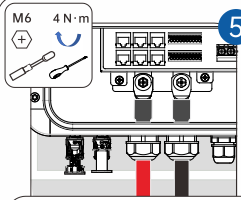
3

Use a crimping tool to crimp the RNB cable lug.



4

Form the heat-shrink tubing using a heat gun.



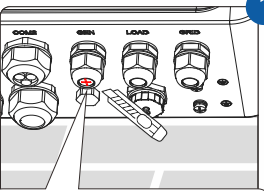
5

M6 4 N·m

Use a socket wrench or a Phillips screwdriver to tighten the M6 screw with a torque of 4 N·m.

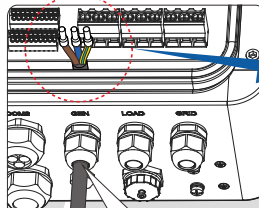
4.8 AC Connection

1. Generator wiring steps



1

Cut a cross slit with a utility knife, and keep the slit length 2 mm shorter than the cable's nominal outer diameter.



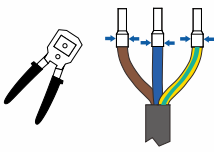
2

Pass the cable through the waterproof connector.

YT-E10-12

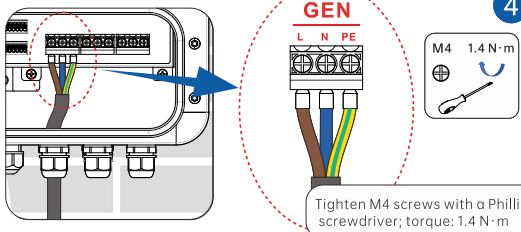
12mm

> 60mm



3

Use a crimp tool to fit cord end terminals (YT-E10-12).



4

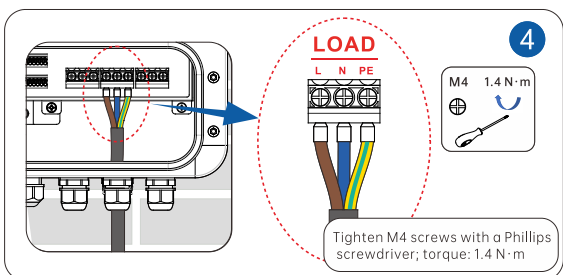
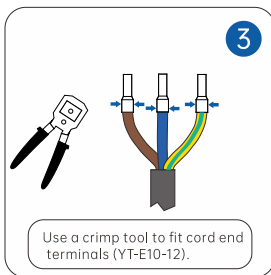
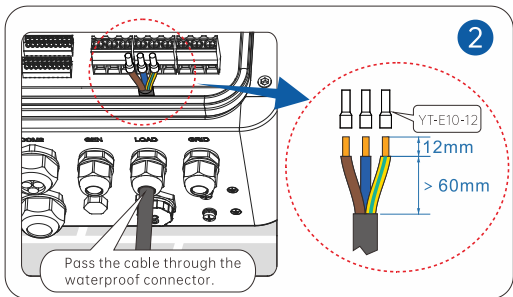
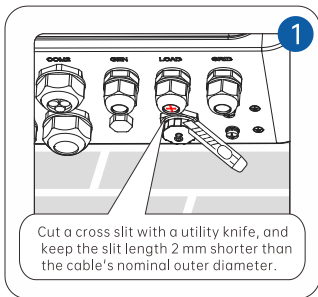
GEN

L N PE

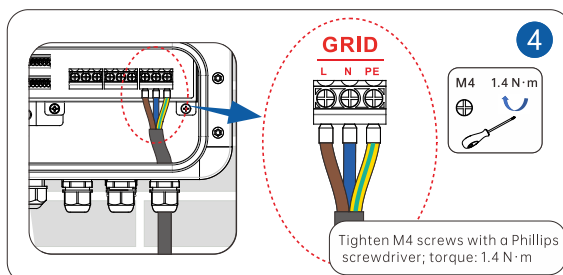
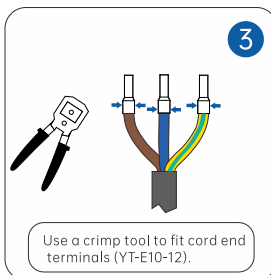
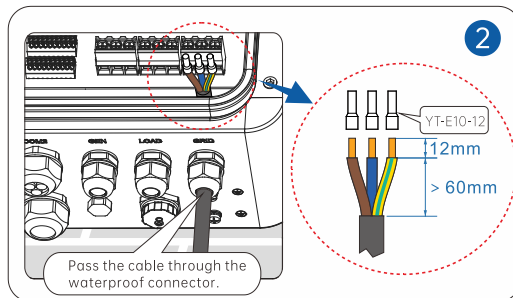
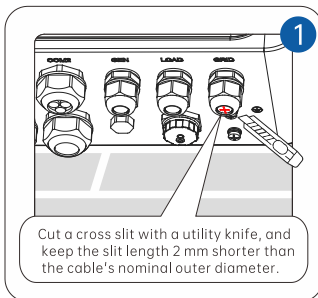
M4 1.4 N·m

Tighten M4 screws with a Phillips screwdriver; torque: 1.4 N·m

2. Load wiring steps



3. Grid wiring steps



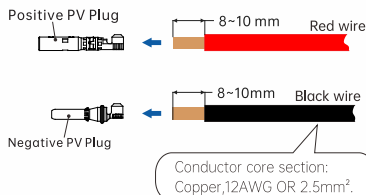
4.9 PV Array Connection

1. PV cable specifications

Before connecting the PV arrays, please install an independent DC breaker between the inverter and the PV arrays.

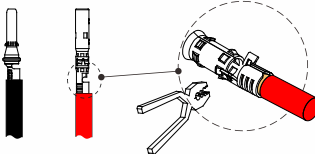
use the PV plugs and connectors from the accessory box.

1



Connect the PV cable to the PV connectors.

2



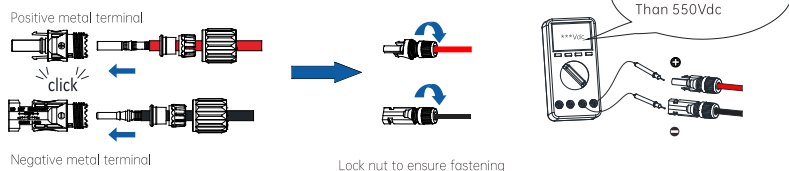
! Note:
Please make sure cable can't put out from terminal after pressing.

Screw the cap on and plug it into the inverter side.
Make sure the cable polarity is correct.

Note:

1. There will be a clicking sound if the connectors are inserted correctly into the PV ports.
2. Pull the PV cable to make sure there is no loosen or shaking.

3

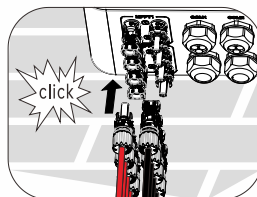
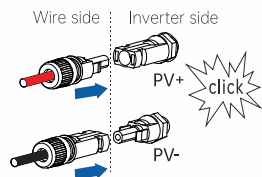


The polarity of the PV strings must not be connected in a reverse manner. Otherwise, the inverter could be damaged.

Note:

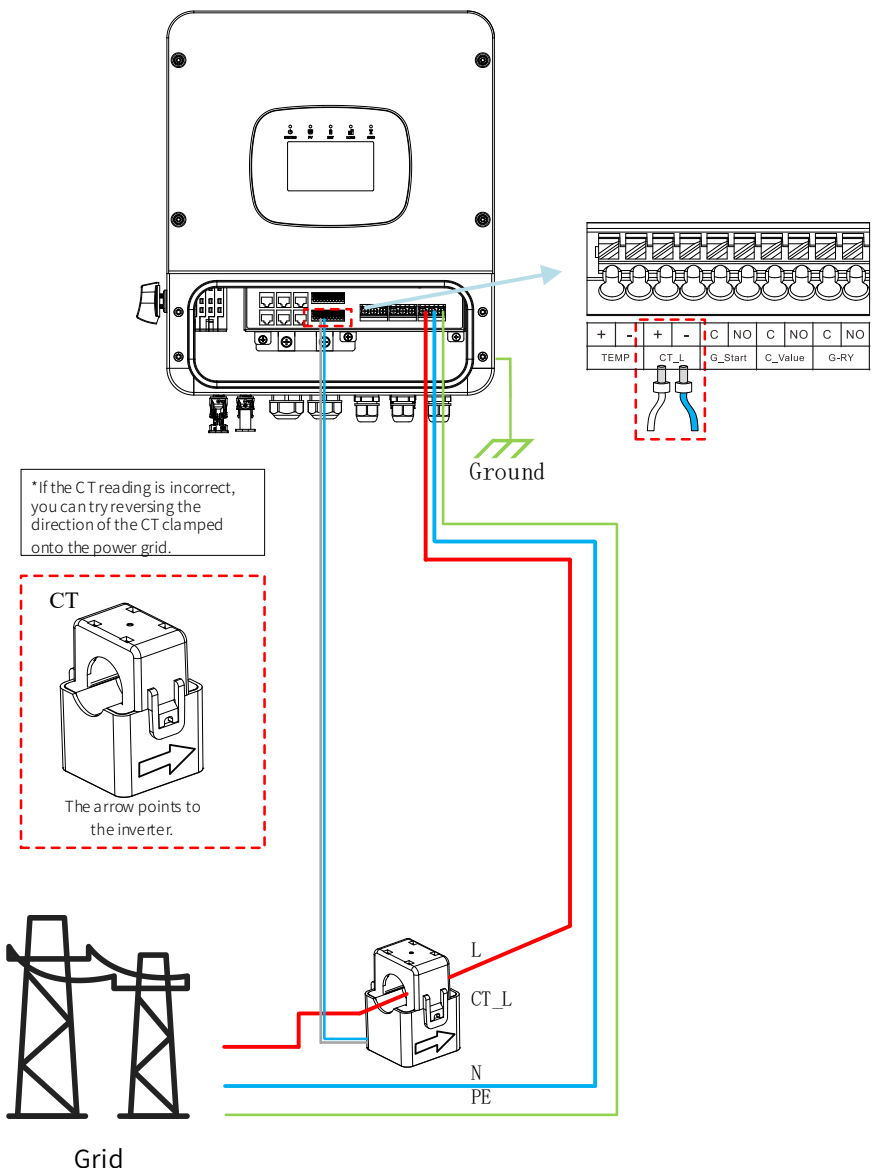
1. Please make sure the PV input voltage/current not beyond the specification before plug in;
2. When installing the PV terminal, pay attention to the distinction between the positive and negative terminals and the one-to-one correspondence between the terminals and hybrid inverter;
3. When the terminal is docked, there is a click sound. After the terminal is locked, gently pull the PV cable to observe whether looseness.

4



4.10 CT Connection

1. CT wiring diagram

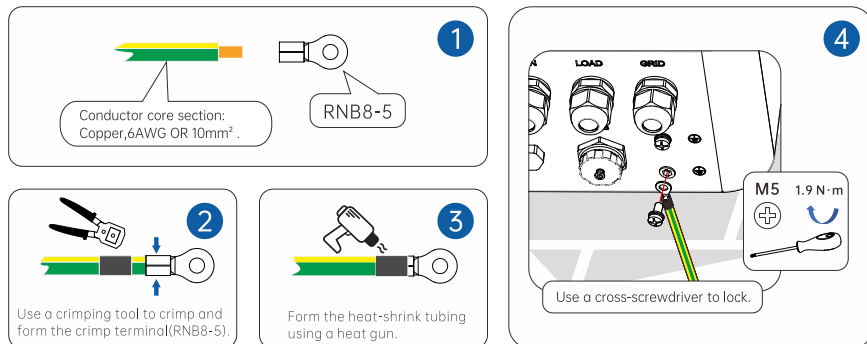


1. Wiring diagram of meter connection:

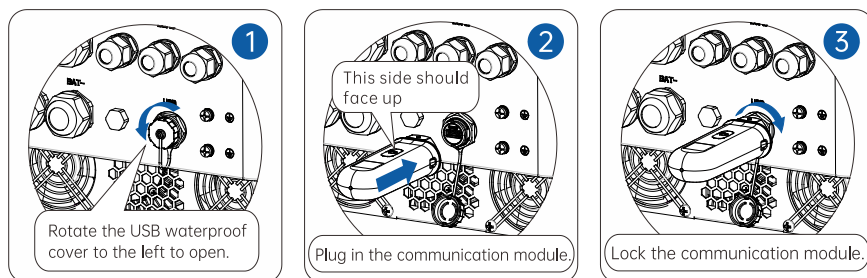
1. Wiring diagram of meter connection:



4.12 Grounding Connection

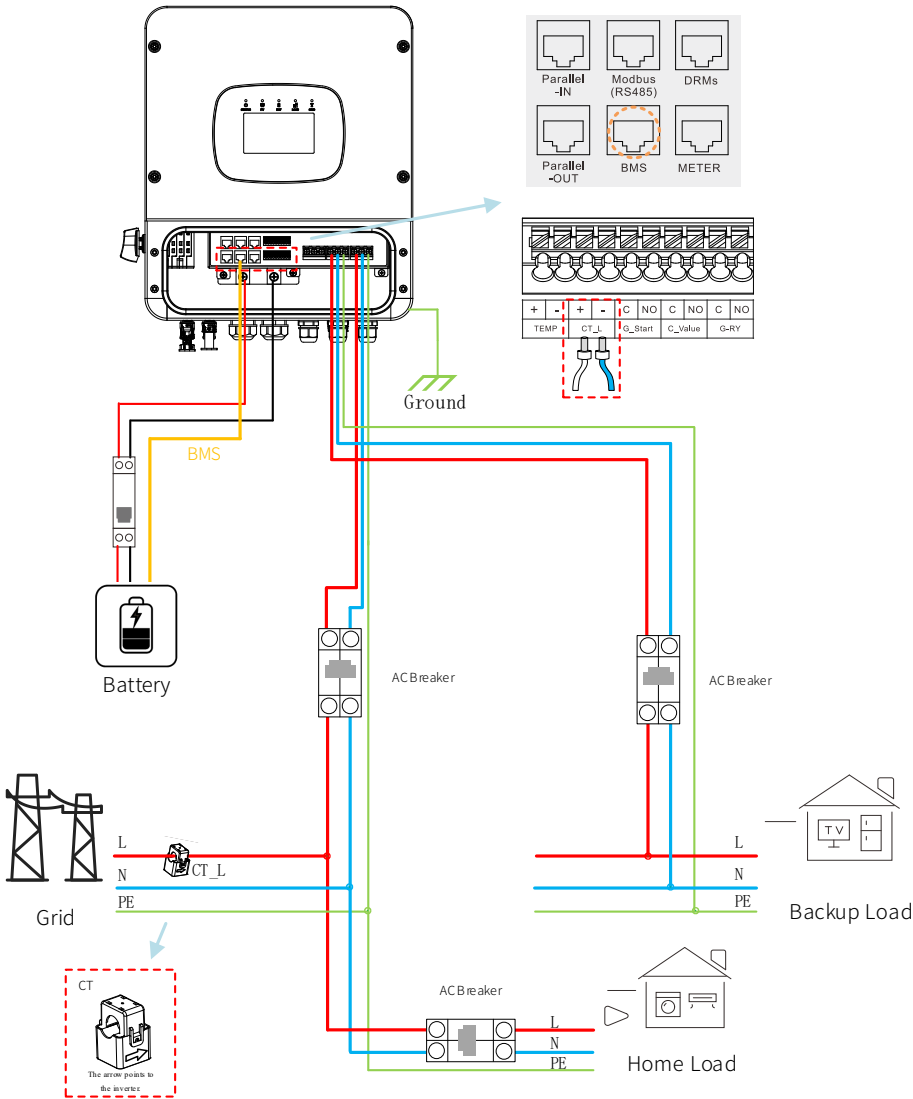


4.13 Communication Module Installation



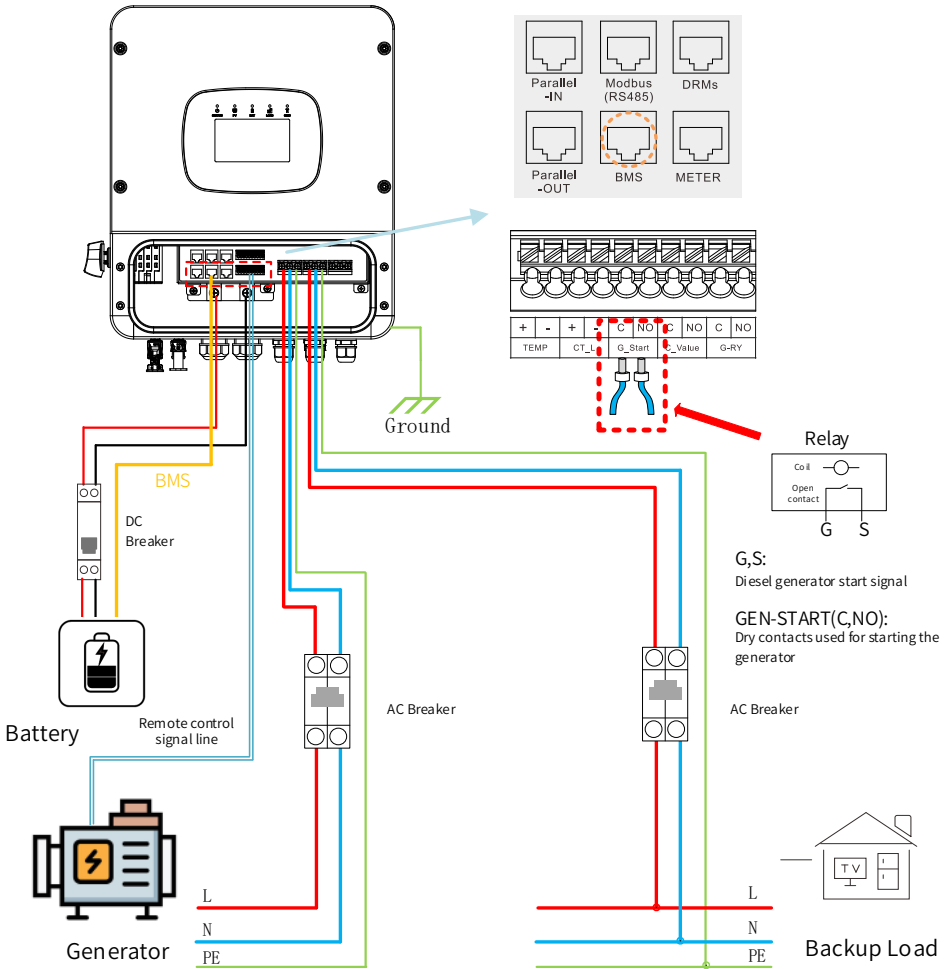
4.14 Typical Application Diagram Of On-grid Wiring

The wiring diagram is shown as follows. When multiple batteries are connected in parallel, to ensure current sharing among the batteries, the power lines of the batteries should be as equal in length as possible.



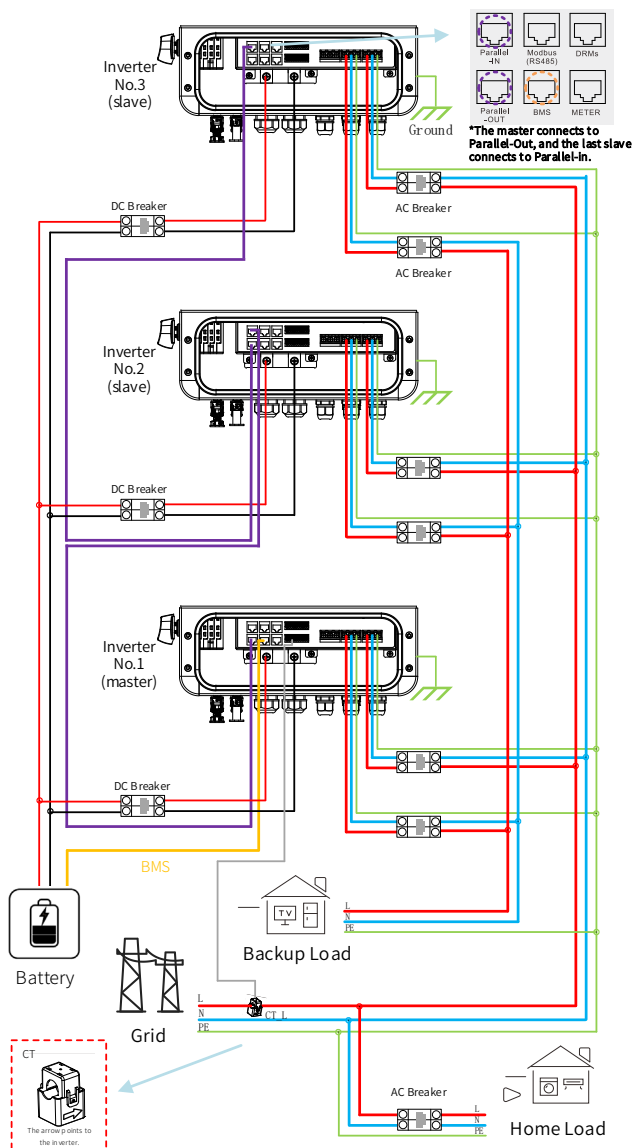
4.15 Typical Application Diagram Of Diesel Generator

The wiring diagram is shown as follows.



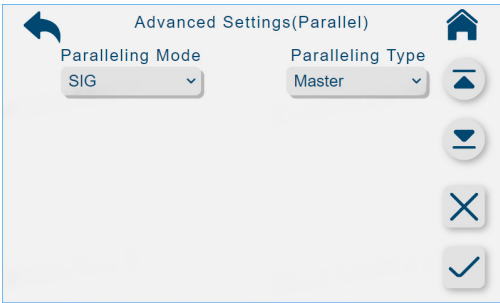
4.16 Parallel Connection Diagram

- Scene 1: Single phase paralalled connection. Take an example of 3 units in parallel.



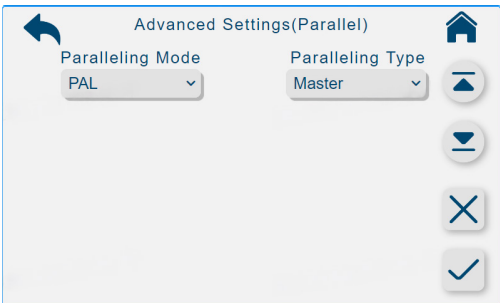
Note: Only the host needs to be connected to the CT line to monitor the power from the power grid to the system, and set the corresponding CT mode as CT on the LCD. Other slave machines do not need to be set.

● Inverter configuration for parallel connection



Advanced Settings(Parallel)	
Parameter	Description
Paralleling Mode	SIG: specifies that only one inverter is connected. PAL: sets the inverter to parallel connection mode. 3P1: sets the inverter output to L1 phase in three-phase parallel connection mode. 3P2: sets the inverter output to L2 phase in three-phase parallel connection mode. 3P3: sets the inverter output to L3 phase in three-phase parallel connection mode.
Paralleling Type	Master: sets the inverter as the master. Slave: sets the inverter as a slave unit.

- Configuration steps for parallel connection
1. Close the battery circuit breaker for each inverter.
 2. Turn on the battery ON/OFF switch of each battery.
 3. Set the paralleling parameters for Inverter No.1 as follows:



4.Set the paralleling parameters for Inverter No.2 as follows:

Advanced Settings(Parallel)

Paralleling Mode
PAL

Paralleling Type
Slave

5.Set the paralleling parameters for Inverter No.3 as follows:

Advanced Settings(Parallel)

Paralleling Mode
PAL

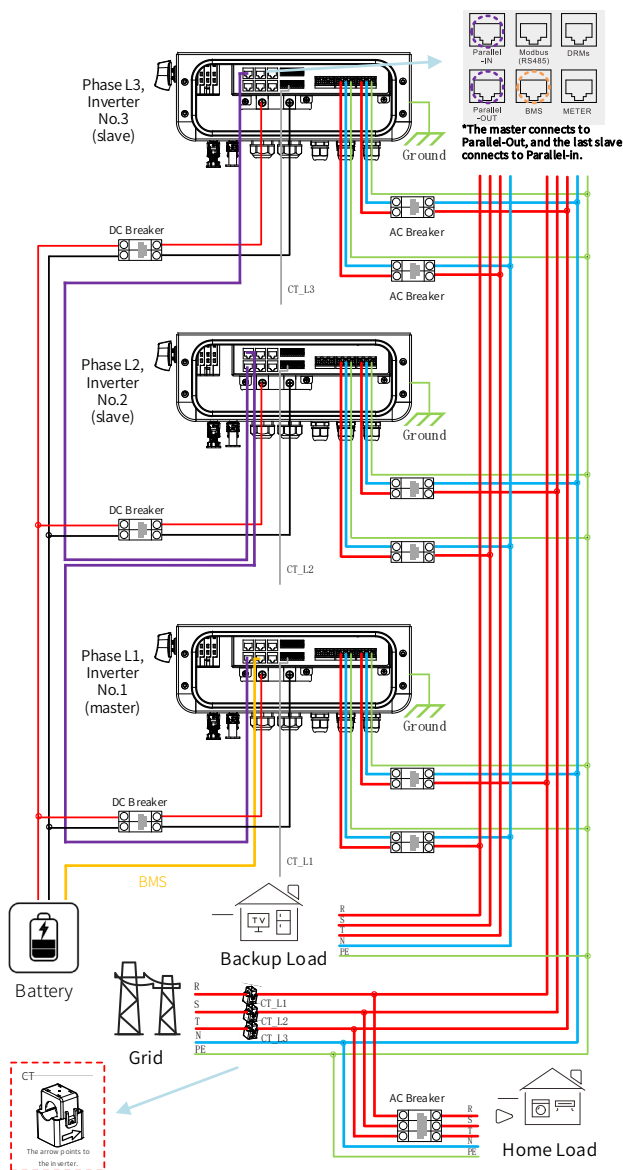
Paralleling Type
Slave

6. Turn off the battery ON/OFF switch of each battery.

7. Close PV switch, and then the grid breaker, load breaker for each inverter.

8. Turn on the battery ON/OFF switch of each battery.

- Scene 2: Three phase parallel connection. Take an example of 3 units in parallel.



Note: The host inverter No.1 needs to be connected to the CT_L1 line to monitor R phase, the slave inverter No.2 needs to be connected to the CT_L2 line to monitor S phase, the slave inverter No.3 needs to be connected to the CT_L3 line to monitor T phase, and set the corresponding CT mode as CT on the LCD.

● Configuration steps for parallel connection

1. Close the battery circuit breaker for each inverter.
2. Turn on the battery ON/OFF switch of each battery.
3. Set the paralleling parameters for Inverter No.1 as follows:

Advanced Settings(Parallel)

Paralleling Type Master

Paralleling Mode 3P1

4. Set the paralleling parameters for Inverter No.2 as follows:

Advanced Settings(Parallel)

Paralleling Type Slave

Paralleling Mode 3P2

5. Set the paralleling parameters for Inverter No.3 as follows:

Advanced Settings(Parallel)

Paralleling Type Slave

Paralleling Mode 3P3

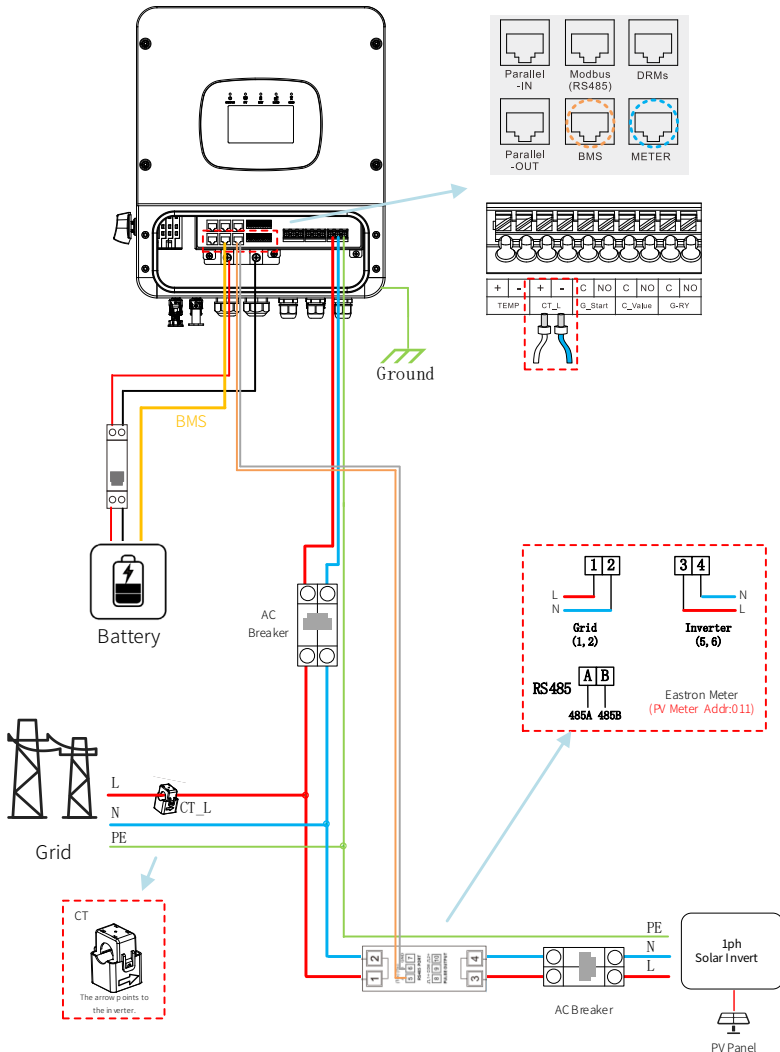
6. Turn off the battery ON/OFF switch of each battery.
7. Close PV switch, and then the grid breaker, load breaker for each inverter.
8. Turn on the battery ON/OFF switch of each battery.

4.17 AC Coupling Application Diagram

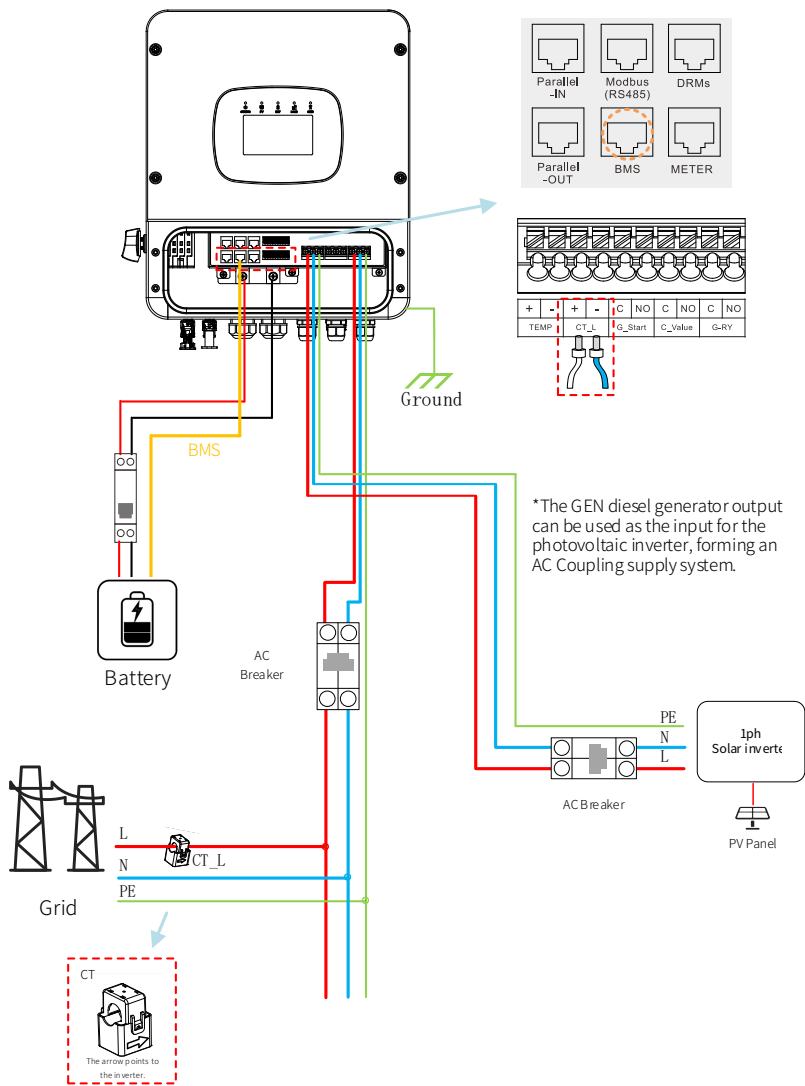
If a photovoltaic inverter has already been installed, when it is necessary to add energy storage, the following block diagram can be followed to assemble an AC-coupled system.

● **Solution 1:** the AC output of the photovoltaic inverter is connected to the power grid. Only the installation of a electricity meter and signal lines is required, which should be connected to the METER interface of the hybrid inverter.

The hybrid inverter reads the electricity meter and collects the photovoltaic data. For detailed requirements, please refer to the "General Settings" function.



● Solution 2: the AC output of the photovoltaic inverter is connected to the GEN interface of the hybrid inverter. The hybrid inverter will directly collect the photovoltaic data. Under this wiring scheme, it will no longer be possible to connect a diesel generator. For the setup requirements, please refer to the "Generator settings" function.

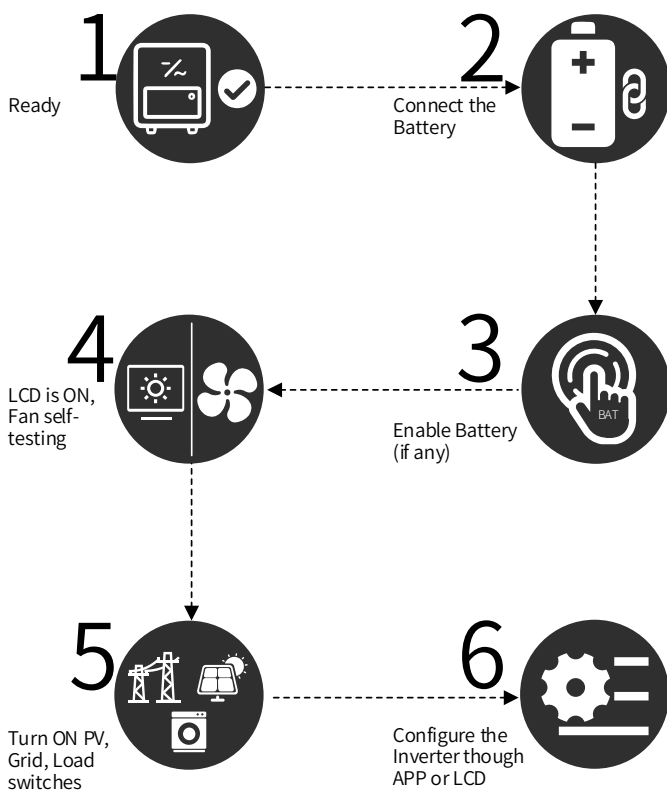


5. Inverter Power-on Procedure

5.1 Precheck

1. Make sure that the inverter is reliably installed in a well-ventilated clean location that facilitates operation and maintenance.
2. Verify that the PE wire, DC input cables, AC output cables, and communication cables are correctly and firmly connected.
3. Confirm that all cables are properly routed and damage-free.
4. Make sure that the reserved cable entry holes are blocked with waterproof plugs.
5. Make sure that all cable entry holes in use are properly sealed.
6. Check that the voltage and frequency at the grid connection point meet the requirements.

5.2 Inverter Power-on



Power-on steps: Close the battery circuit breaker > Push battery ON/OFF button > Close the PV switch > Close the PV circuit breaker > Close the grid circuit breaker > Close the load circuit breaker.

5.3 Power-on Navigation Interface (First Power-on)

When the device is powered on for the first time, it will initially enter the startup navigation interface.

1. Please select the settings on the Power-on navigation(1/2):

The screenshot shows a 'Power-on navigation(1/2)' window. It contains three settings, each with a dropdown menu:

- Certification Code:** EN50549
- Working Mode:** Selling First
- CT Mode:** CT

At the bottom right, there are two icons: a blue 'X' in a square and a blue checkmark in a square.

Setting instructions	
settings	instructions
Safety Settings	Select the grid code, and the options are described as follows: NULL: No settings, use the default standard set by the device at the factory (Notes: New grid code may be added in the future, but they are not included in the above list.)
Working Mode	Selling First: This mode allows inverter to sell the PV generation surplus to the grid. If Time Slot function is enabled at the same time, then inverter can sell battery energy to grid. Zero Sell To EPS: Hybrid inverter only supply power to EPS port connected load; in this mode, the hybrid inverter will not supply Grid-tied load nor sell energy to Grid. Zero Sell To Grid Load: Hybrid inverter will power the EPS load and Grid-tied load. In this mode, hybrid inverter will not sell energy to grid, this mode requires CT or Digital Meter attached to the inverter. Solar Sell To EPS: This mode is based on the Zero Sell To EPS. In this mode, excess PV power can be fed back into the grid. Solar Sell To Grid Load: This mode is based on the Zero Sell To Grid Load. In this mode, excess PV power can be fed back into the grid.
CT Mode	Based on the connected device, select "CT" or "Meter", "Disable".
	Tap this icon to save parameter changes.

2. Please select the settings on ther Power-on navigation(2/2):

Power-on navigation(2/2)

Battery Type

Lead-acid

Discharge Cutoff Voltage(V)

42.0

Charging Cutoff Voltage(V)

56.4

AC Charge Current Limit(A)

140.0

Setting instructions	
settings	instructions
Battery Type	Please select "Lead-Acid" , "Lithium" , or "No Battery" based on the connected battery.
Discharge Cutoff Voltage(V)	The battery voltage at which the lead-acid battery stops discharging when the inverter is disconnected from the grid. Value range: 40 to 52. Default value: 42.
Charging Cutoff Voltage(V)	The battery voltage at which the lead-acid battery stops being charged. Value range: 48 to 59.2. Default value: 56.4.
Charge Current Limit(A)	This setting value represents the maximum charging current for the machine battery when using AC power to charge battery. (The setting range is 1 to 190)
	Tap this icon to save parameter changes.

3. Device restart waiting interface

Waiting...

Setup Complete.
Automatic restart is imminent.

Interface of "Waiting..."	
settings	instructions
Waiting	The parameters are being set. Please wait for the device to complete its restart.

5.4 Indicator Check

1.The following diagram shows the indicators.



2.Normal operation logic of indicators:

● Inverter operation status

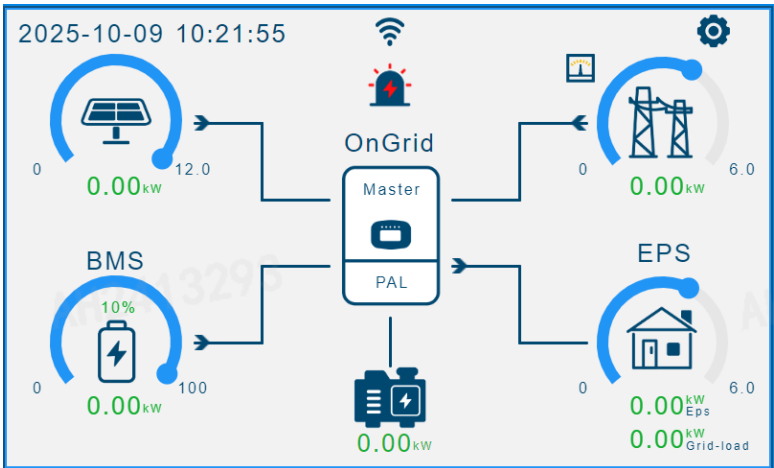
	No Fault	Fault	Warning	Upgrading
STATUS	LED keeps green	The red LED stays on	the green LED blinking for 1 second	the green LED blinking for 0.5 second

● Port status

	Voltage detected on Port	Power presents on Port	Upgrading
PV	the green LED blinking for 1 second	LED keep green	the green LED is flashing for 0.5 second
BAT	the green LED blinking for 1 second	LED keep green	the green LED is flashing for 0.5 second
LOAD	the green LED blinking for 1 second	LED keep green	the green LED is flashing for 0.5 second
GRID	the green LED blinking for 1 second	LED keep green	the green LED is flashing for 0.5 second
NOTE: Five LED flash at the same time when updating the program.			

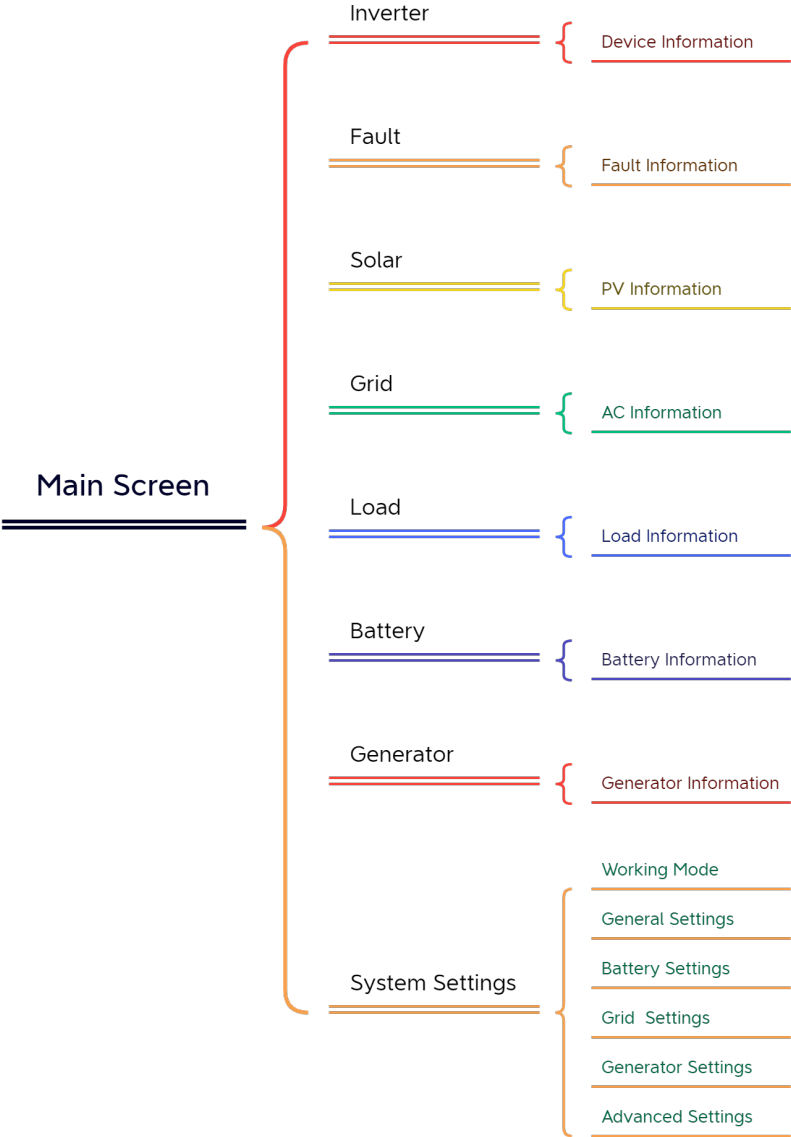
6.System Information

6.1 Homepage



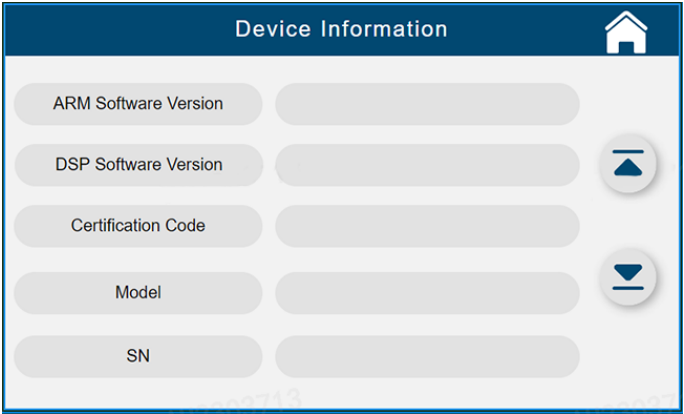
Homepage	
Icon	Description
2025-10-09 10:21:55	The system time.
Standby	The System status Standby: The machine is in standby mode OnGrid: There is an electricity grid Off-Grid: There is no electricity grid Fault: The machine has a fault Flash: The software/firmware upgrade Bypass: There is no PV and the battery cannot charge/discharge Self-charging: The PV capacity cannot independently power the load; the PV can only charge the battery.
	If displayed, this icon indicates that the inverter is connected to a meter.
	If displayed, this icon indicates that the inverter metric sampler is connected to the internet.
	Tap this icon to go to the PV Information page.
	Tap this icon to go to the Battery Information page.
	Tap this icon to go to the Generator Information page. This icon is displayed only when a generator is connected.
	Tap this icon to go to the Load Information page.
	Tap this icon to go to the AC Information page.
	Tap this icon to go to the Device Information page.
	This icon indicates that there is a fault with the current device. Click on this icon to enter the fault alarm information interface.
	Tap this icon to go to the System Settings page.
BMS	Indicate that the current device has successfully communicated with the lithium battery.
	This ring indicates the current proportion of PV power.
	This ring indicates the current battery capacity.
	This ring indicates the current power proportion of the grid.
	This ring indicates the current power proportion of the Load port.

6.2 LCD Operation Flow Chart



6.3 Device Information

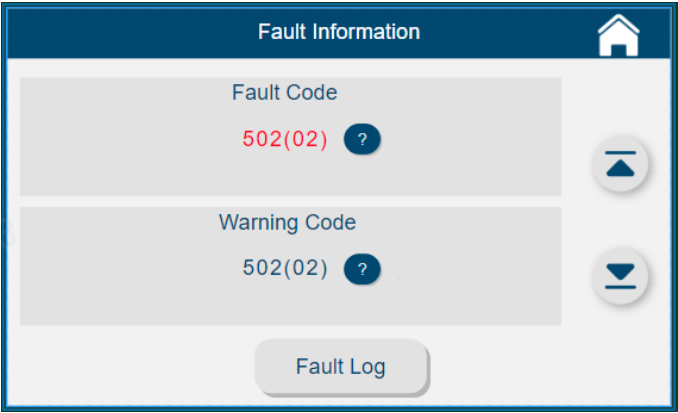
● Tap  to go to the Device Information page, as shown below:

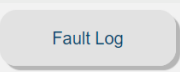


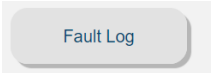
Device Information	
Parameter/Icon	Description
ARM Software Version	The version of the communication software.
DSP Software Version	The version of the DSP software.
Certification Code	The security certification code.
Model	The model of the inverter.
SN	The serial number of the inverter.
	Tap this icon to return to the homepage.
	Tap the Page Down or Page Up icon to turn pages.

6.4 Fault Information

- Tap  to go to the Fault Information page, as shown below:



Fault Information	
Parameter/Icon	Description
Fault Code	The fault code.
Warning Code	The warning code.
	Tap this icon to go to the Fault Log page.
	Tap this icon to view the specific fault or alarm of the device.
	Tap this icon to return to the homepage.
	Tap the Page Down or Page Up icon to turn pages.

- Tap  to go to the Fault Log page.

Fault Log(1/4)			
NO.	Fault Code	Time of occurrence	
1	502(02)	2024-12-30 20:12:35	
2	500(01)	2024-12-28 13:12:35	
3	400(02)	2024-12-27 16:12:35	
4	100(01)	2024-12-25 18:12:35	
5	200(02)	2024-12-18 23:12:35	

6.5 PV Information

● Tap  to go to the PV Information page, as shown below:

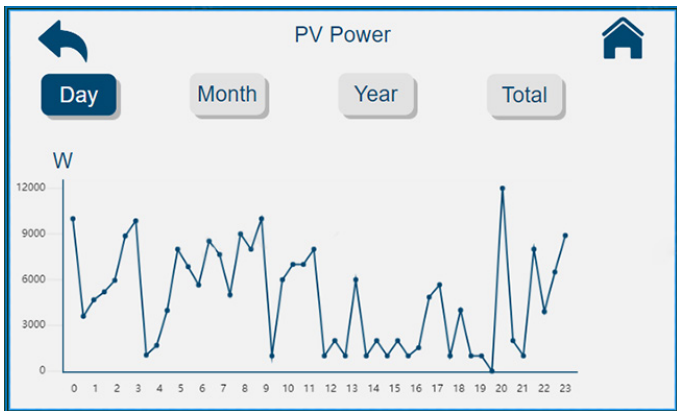
PV Information				
Total Power(kW):0.00				
	Voltage(V)	Current(A)	Power(kW)	
PV1				
PV2				
				

The following table describes the icons on the PV Information page.

PV Information	
Icon	Description
	Tap this icon to go to the PV Power page.

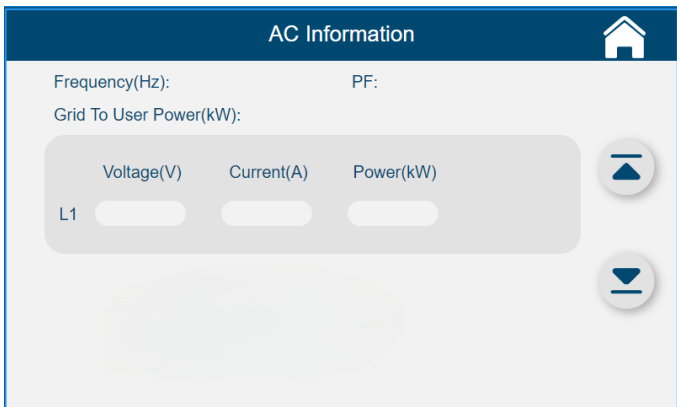
	Tap this icon to return to the homepage.
 	Tap the Page Down or Page Up icon to turn pages.

Tap **Energy Statistics** to go to the PV Power page. You can view the statistical curve of PV power by day, month, or year, or the total amount.



6.6 AC Information

- Tap  to go to the AC Information page, as shown below:

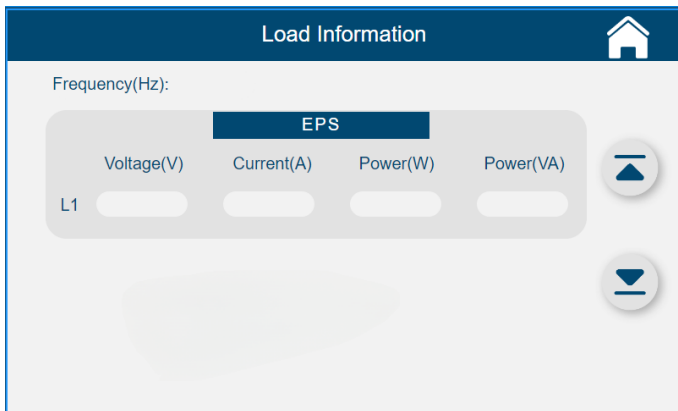


	Voltage(V)	Current(A)	Power(kW)
L1			

AC Information	
Parameter/Icon	Description
Voltage(V) Current(A)	Display the grid voltage and current. When the CT mode is "Disable", it will display the voltage and current values of the machine's Grid port.
Power(kW)	The active power fed to or supplied from the grid.
Frequency(Hz)	The frequency at the grid port of the inverter.
PF	The power factor.
	Tap this icon to return to the homepage.
	Tap the Page Down or Page Up icon to turn pages.

6.7 Load Information

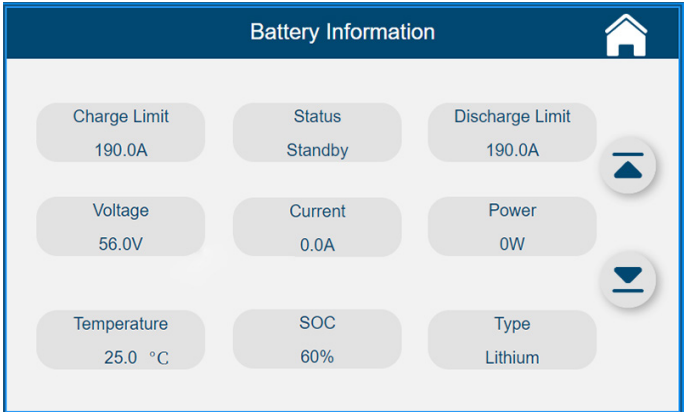
- Tap  to go to the Load Information page, as shown below:



Load Information	
Parameter/Icon	Description
Voltage(V) Current(A)	The voltage and current at the emergency power supply (EPS) port of the inverter.
Power(kW)	The active power at the EPS port of the inverter.
Frequency(Hz)	The frequency at the EPS port of the inverter.
	Tap this icon to return to the homepage.
	Tap the Page Down or Page Up icon to turn pages.

6.8 Battery Information

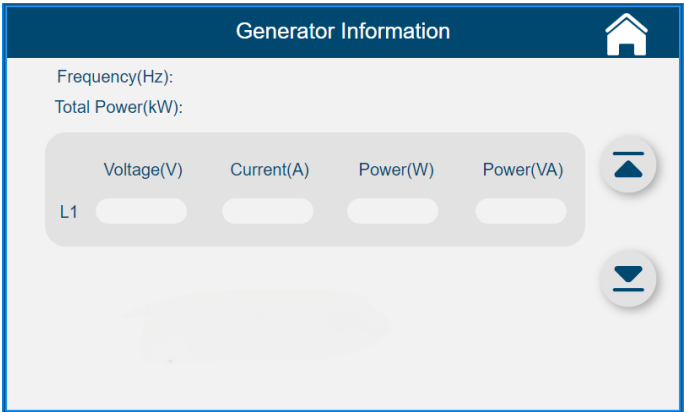
● Tap  to go to the Battery Information page, as shown below:



Battery Information	
Parameter/Icon	Description
Status	Discharge: The battery is discharging. Charge: The battery is being charged. Standby: The battery is in standby mode.
Charge Limit Discharge Limit	The maximum current allowed to charge the battery. The maximum current allowed to discharge the battery.
Voltage(V) Current(A)	The voltage at the battery port of the inverter. The current at the battery port of the inverter.
Power(kW)	The power at the battery port of the inverter.
Temperature(°C)	The battery temperature.
SOC	The battery SOC.
Type	Lead-Acid: The lead-acid battery is in use. Lithium: The lithium-ion battery is in use. No Battery: No battery is in use.
	Tap this icon to return to the homepage.
	Tap the Page Down or Page Up icon to turn pages.

6.9 Generator Information

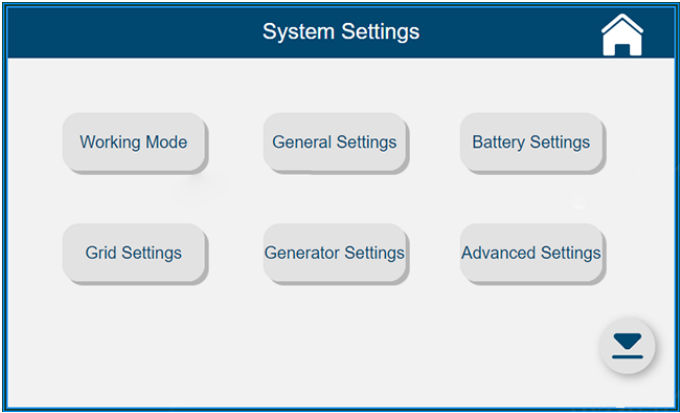
● Tap  to go to the Generator Information page, as shown below:



Generator Information	
Parameter/Icon	Description
Voltage(V) Current(A)	The voltage and current at the generator port of the inverter.
Power(kW)	The active power at the generator port of the inverter.
Frequency(Hz)	The frequency at the generator port of the inverter.
	Tap this icon to return to the homepage.
	Tap the Page Down or Page Up icon to turn pages.

6.10 System Settings

● On the homepage, tap  in the upper-right corner to go to the System Settings page, as shown below:



6.10.1 Working Mode

- Tap **Working Mode** to go to the Working Mode page, as shown below:

Working Mode

Working Mode

Selling First

PV Energy Allocation Priority

Load Priority

Maximum Grid-Feeding Power(kW)

6.00

Dynamic Grid-Feeding Power Calibration(W)

0

Working Mode	
Parameter/Icon	Description
Working Mode	Selling First: This mode allows inverter to sell the PV generation surplus to the grid. If Time Slot function is enabled at the same time, then inverter can sell battery energy to grid. Zero Sell To EPS: Hybrid inverter only supply power to EPS port connected load; in this mode, the hybrid inverter will not supply Grid-tied load nor sell energy to Grid. Zero Sell To Grid Load: Hybrid inverter will power the EPS load and Grid-tied load. In this mode, hybrid inverter will not sell energy to grid, this mode requires CT or Digital Meter attached to the inverter. In above 3 working modes, if battery is needed for energy scheduling, then Time Slots function need to be enabled; Time Slots function can work with Peak Shaving function together. ● If Time Slots function is enabled, during the time period pecified, battery will be discharged to the load and sell energy to grid if PV is insufficient, if the battery SOC is higher than the setting SOC. While when PV is excessive, battery will be charged instead. If Time Slots function is not enabled, battery will not discharge, if PV is insufficient, the shortage will be taking from the grid. ● If Peak Shaving and Time Slots are enabled at the same time, Peak Shaving prioritized over Time Slots. When shaving power cannot cover load power, battery will discharge to meet the shortage. When shaving

Working Mode	power is greater than load power, battery will be charged if current SOC is below the backup SOC, if AC charging is set allowed, battery can be charged through grid. ● If Grid Charge in Time Slots function is enabled, and AC Charge in General Setting is enabled, then the battery can be charged from the grid. Solar Sell To EPS: This mode is based on the Zero Sell To EPS. In this mode, excess PV power can be fed back into the grid. Solar Sell To Grid Load: This mode is based on the Zero Sell To Grid Load. In this mode, excess PV power can be fed back into the grid.
PV Energy Allocation Priority	Load Priority: prioritizes supplying PV power to the loads. Battery Priority: prioritizes using PV power to charge the battery.
Maximum Grid-Feeding Power(kW)	The maximum grid-feeding power.
Dynamic Grid-Feeding Power Calibration(W)	The dynamic compensation for grid-feeding power offset. Larger values improve the effectiveness of anti-reverse power protection. Value range: 0 to 800.
	Tap this icon to save parameter changes.



Working Mode



Number Of Time Periods

10

Delete Time Slots

Time Periods Settings

Time1

Time2

Time3

Time4

Time5

Time6

Time7

Time8

Time9

Time10

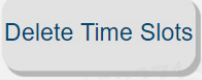
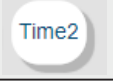








Working Mode	
Parameter/Icon	Description
Number Of Time Periods	The number of active time periods. For example, if you set the value to 2, Time1 and Time2 become active. The value 0 disables the Time Period feature. Value range: 0 to 10. Default value: 0.

	Tap this icon to clear the settings of all time periods and disable the Time Period feature.
	Tap the icon for an active time period to go to its configuration page.
	Tap this icon to save parameter changes.


Working Mode (Time1)


Start - End Time

00 : 00 — 23 : 59

Monday Tuesday Wednesday Thursday Friday Saturday Sunday

☐
☐
☐
☐
☐
☐
☐

Grid Charge
☐
Gen Charge
☐

Backup SOC (%)

50.0

Discharge Power(kW)

6.00

Peak Shaving Enable
☐

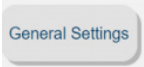





Working Mode	
Parameter/Icon	Description
Start - End Time 00 : 00 — 23 : 59 Monday Tuesday Wednesday Thursday Friday Saturday Sunday ☐ ☐ ☐ ☐ ☐ ☐ ☐	The time period and days of the week. You must specify days of the week for a time period. The 10 time periods cannot overlap. The settings for working conditions on this page take effect during the specified time period.
Grid Charge	Specifies whether the battery can be charged by the grid during the specified time period.
Gen Charge	Specifies whether the battery can be charged by the generator during the specified time period.

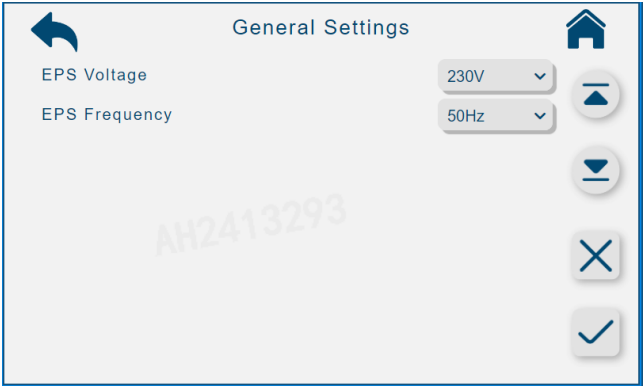
Backup SOC[Lithium Battery](%)	The target backup SOC of the lithium-ion battery. If the actual SOC is higher than this value, the battery discharges during the specified time period. Otherwise, the battery is charged during the specified time period. Value range: 0 to 100. If the specified value is lower than that of the End Of Discharge SOC(%) parameter on the Battery Settings(Lithium) page, the latter is used.
Backup Voltage[Lead-acid Battery](V)	The target backup voltage of the lead-acid battery. Default value is 42V. If the actual battery voltage is higher than this value, the battery discharges during the specified time period. Otherwise, the battery is charged during the specified time period. Value range: 40 to 59.2. If the specified value is lower than that of the Discharge Cutoff Voltage(V) parameter on the Battery Settings(Lead-acid) page, the latter is used.
Discharge Power(kW)	The maximum discharging power of the battery. It represents the output power of the inverter.
Peak Shaving Enable	The Peak Shaving Enable parameter specifies whether to enable peak shaving. The Max Peak Power parameter specifies the maximum AC input power supplied from the grid. The two parameters are mutually exclusive. If you select Peak Shaving Enable, the Max Peak Power parameter will take effect. By default, Peak Shaving Enable is not selected.
	Tap this icon to save parameter changes.

6.10.2 General Settings

- Tap  to go to the General Settings page, as shown below:



General Settings	
Parameter/Icon	Description
On/Off Settings	ON: enables inverter output and battery charge/discharge. This is the default value. OFF: disables inverter output and battery charge/discharge.
Language	English: sets the display language to English. To add more languages, please contact manufacturer.
CT Mode	Meter: measures the grid power with a meter.This is the default value. CT: measures the grid power with a CT. Disable: disables the meter or CT. You can select this value if no meter or CT is connected.
AC Charge	Specifies whether to enable AC charging. Disable: disables AC charging. Enable: enables AC charging. This is the default value.
Eps	Specifies whether to enable EPS. Disable: disables EPS. Enable: enables EPS. This is the default value.
	Tap this icon to save parameter changes.



General Settings(Restart Options)	
Parameter/Icon	Description
EPS Voltage	The output voltage of the EPS port. Default value: 230VAC. Valid values: 200VAC, 208VAC, 220VAC, 230VAC, and 240VAC.
EPS Frequency	The output frequency of the EPS port. Default value: 50Hz. Valid values: 50Hz and 60Hz.
	Tap this icon to save parameter changes.

6.10.3 Battery Settings

● Tap **Battery Settings** to go to the Battery Settings page.

1.Configure the lithium-ion battery on the Battery Settings(Lithium) page.

Battery Settings(Lithium)

Battery Type: Lithium

End Of Charge SOC(%): 100

End Of Discharge SOC(%): 20

End Of Off-grid Discharge SOC(%): 20

Charge Current Limit(A): 140.0

AC Charge Current Limit(A): 140.0

Activate Battery: NULL

Battery Settings(Lithium)	
Parameter	Description
End Of Charge SOC(%)	The SOC at which the lithium-ion battery stops being charged. Value range: 10 to 100. Default value: 100.
End Of Discharge SOC(%)	The SOC at which the lithium-ion battery stops discharging when the inverter is connected to the grid. Value range: 10 to 100. Default value: 20.
End Of Off-grid Discharge SOC(%)	The SOC at which the lithium-ion battery stops discharging when the inverter is disconnected from the grid. Value range: 10 to 100. Default value: 20.
Charge Current Limit(A)	This setting value represents the maximum charging current for the machine battery (please refer to the allowable maximum charging current of the selected battery for setting)
AC Charge Current Limit(A)	This setting value represents the maximum charging current for the machine battery when using AC power to charge battery.
Activate Battery	This setting is for the inverter's manual wake-up function for the lithium battery. Using this function requires entering the password "666666".
When you tap the input box, a numeric keypad appears. After you enter the values, tap to apply the settings.	

2. Or configure the lead-acid battery on the Battery Settings (Lead-acid) page.

Battery Settings(Lead-acid)

Battery Type

Lead-acid

Charge Current Limit(A)

140.0

Discharge Cutoff Voltage(V)

42.0

Charging Cutoff Voltage(V)

56.4

AC Charge Current Limit(A)

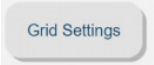
140.0

Battery Settings(Lead-acid)	
Parameter	Description
Charge Current Limit(A)	The maximum charging current for battery charging. The value cannot be greater than the maximum allowable charging current of the battery.
Discharge Cutoff Voltage(V)	The battery voltage at which the lead-acid battery stops discharging when the inverter is disconnected from the grid. Value range: 40 to 52. Default value: 42.
Charging Cutoff Voltage(V)	The battery voltage at which the lead-acid battery stops being charged. Value range: 48 to 59.2. Default value: 56.4.
AC Charge Current Limit(A)	This setting value represents the maximum charging current for the machine battery when using AC power to charge battery.
When you tap the input box, a numeric keypad appears. After you enter the values, tap to apply the settings.	

General specifications of lead-acid batteries

Battery Type	Absorption Stage	Float Stage	Equalization Voltage
AGM (or PCC)	14.2V (57.6V)	13.4V (53.6V)	14.2V (57.6V)
Gel	14.1V (56.4V)	13.5V (54.0V)	
Wet	14.7V (59.0V)	13.7V (55.0V)	14.7V (59.0V)

6.10.4 Grid Settings

- Tap  to go to the Grid Settings page, as shown below:



Grid Settings



Min. On-grid Voltage (V)



Max. On-grid Voltage(V)



Min. On-grid Frequency(Hz)



Max. On-grid Frequency(Hz)

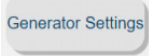






Grid Settings	
Parameter	Description
Min. On-grid Voltage (V)	The minimum grid voltage for grid connection. If the grid voltage is lower than this value, the inverter disconnects from the grid and triggers an alarm. Value range: 46 to 240. Default value: as specified by the security certification.
Max. On-grid Voltage(V)	The maximum grid voltage for grid connection. If the grid voltage is higher than this value, the inverter disconnects from the grid and triggers an alarm. Value range: 200 to 290. Default value: as specified by the security certification.
Min. On-grid Frequency(Hz)	The minimum grid frequency for grid connection. If the grid frequency is lower than this value, the inverter reports an error. Value range: 45 to 50.1 if you set the EPS Frequency parameter to 50Hz or 55 to 60.1 if you set the EPS Frequency parameter to 60Hz.
Max. On-grid Frequency(Hz)	The maximum grid frequency for grid connection. If the grid frequency is higher than this value, the inverter reports an error. Value range: 49.9 to 55 if you set the EPS Frequency parameter to 50Hz or 59.9 to 65 if you set the EPS Frequency parameter to 60Hz.
When you tap the input box, a numeric keypad appears. After you enter the values, tap  to apply the settings.	

6.10.5 Generator Settings

● Tap  to go to the Generator Settings page and configure the GEN port, as shown below:



Generator Settings



Gen Port Function

Generator En

▼

Gen Charge En

Disable

▼

Gen Input Rated Power(kW)

6.00

Gen on SOC(%)

40

Gen Off SOC(%)

60

▲

▼

✕

✓

Generator Settings	
Parameter	Description
Gen Port Function	Default: Under this mode, the diesel generator port has no output and is in a disconnected state internally. Generator En: Under this mode, the inverter will, based on the settings of this interface for turning on/off the battery SOC (in lithium battery mode) or the battery voltage (in lead-acid battery mode), detect that the diesel generator port has been connected to the generator. Then, it will use the generator to supply power to the load. After the diesel generator charging is enabled, the diesel generator can charge the battery. Generator Force En: Under this mode, the generator will be forced to start. Based on the discharge cut-off SOC (for lithium battery mode) or the discharge cut-off voltage (for lead-acid battery mode), if it is detected that the diesel generator can also charge the battery, the diesel generator will be forced to charge the battery. Smart Load Output: Under this mode, the intelligent load switch will operate according to the settings on this interface to either activate or deactivate the battery's SOC (in lithium battery mode) or the battery voltage (in lead-acid battery mode).

Gen Port Function	AC Couple On SecEPS Side: Under this mode, it is supported to connect the grid output port of another photovoltaic machine to the Gen port of this machine. Click  to enter the device restart waiting interface.
Gen Charge En	Specifies whether to enable battery charging by the generator.
Gen Input Rated Power(kW)	The maximum input power of the generator.
Smart Load On SOC(%) /Gen Off SOC(%)	These two parameters apply to the lithium-ion battery. For the smart load switch, if the battery SOC exceeds the value of the Smart Load On SOC(%) parameter, the battery discharges to the GEN port. For the generator, if the battery SOC exceeds the value of the Gen Off SOC(%) parameter, the generator stops charging the battery and the generator dry contact opens. Value range: 10 to 100.
Smart Load Off SOC(%) /Gen On SOC(%)	These two parameters apply to the lithium-ion battery. For the smart load switch, if the battery SOC falls below the value of the Smart Load Off SOC(%) parameter, the battery will stop discharging to the GEN port. For the generator, if the battery SOC falls below the value of the Gen On SOC(%) parameter, the generator dry contact closes and the generator starts charging the battery. Value range: 10 to 100.
Smart Load On Volt(V) /Gen Off Volt(V)	These two parameters apply to the lead-acid battery. For the smart load switch, if the battery voltage exceeds the value of the Smart Load On Volt(V) parameter, the battery discharges to the GEN port. For the generator, if the battery voltage exceeds the value of the Gen Off Volt(V) parameter, the generator stops charging the battery and the generator dry contact opens. Value range: 48 to 59.2.
Smart Load Off Volt(V) /Gen On Volt(V)	These two parameters apply to the lead-acid battery. For the smart load switch, if the battery voltage falls below the value of the Smart Load Off Volt(V) parameter, the battery will stop discharging to the GEN port. For the generator, if the battery voltage falls below the value of the Gen On Volt(V) parameter, the generator dry contact closes and the generator starts charging the battery. Value range: 40 to 52.
When you tap the input box, a numeric keypad appears. After you enter the values, tap  to apply the settings.	

6.10.6 Advanced Settings

- Tap **Advanced Settings** to go to the Advanced Settings page, as shown below:

Advanced Settings

Certification Code

EN50549

▼

Charing Power(%)

5

Discharging Power(%)

5

Factory Reset

Confirm

▲

▼

✕

✓

Advanced Settings	
Parameter	Description
Certification Code	The security certification code, as specified by the security certification.
Charging Power(%)	The charging power percentage. The inverter limits the maximum charging power based on this percentage. Value range: 0 to 100.
Discharging Power(%)	The discharging power percentage. The inverter limits the maximum discharging power based on this percentage. Value range: 0 to 100.
Factory Reset	To restore factory settings, select "Confirm" and enter the password "666666" .

Advanced Settings(Anti-Reverse)

Anti-Reverse En

Disable

▼

Anti-Reverse Failure Timeout(s)

120

Feed-in limit when Anti-Reverse Failure (%)

0

Feed-in Power - R(%)

0

▲

▼

✕

✓

Advanced Settings(Anti-Reverse)	
Parameter	Description
Anti-Reverse En	After enabling the feed-in power function, the other parameters of this interface will take effect only after the enabling is completed.
Anti-Reverse Failure Timeout(s)	The timeout period for anti-reverse power protection. When the reverse power exceeds the set value, the inverter limits the grid-feeding power based on the value of the Feed-in Power Failure Percent(%). Value range: 30 to 120.
Feed-in limit when Anti-Reverse Failure (%)	The feed-in power failure percentage. After the timeout period for anti-reverse protection, the inverter limits the grid-feeding power based on this percentage. Value range: 0 to 100.
Feed-in Power - R(%)	The R/L1 phase feed-in power percentage when when meter communication is normal. Value range: 0 to 100.



Advanced Settings(Parallel)



Paralleling Type

Master ▾

Paralleling Mode

SIG ▾



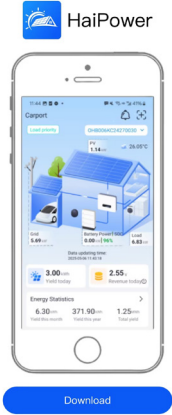



AH2413293

Advanced Settings(Parallel)	
Parameter	Description
Paralleling Mode	SIG: specifies that only one inverter is connected. PAL: sets the inverter to parallel connection mode. 3P1: sets the inverter output to L1 phase in three-phase parallel connection mode. 3P2: sets the inverter output to L2 phase in three-phase parallel connection mode. 3P3: sets the inverter output to L3 phase in three-phase parallel connection mode.
Paralleling Type	Master: sets the inverter as the master. Slave: sets the inverter as a slave unit.

7. Use the App

Scan the QR code below with your mobile phone to obtain the installation package of the APP, and follow the instructions in the APP to install and register.



8. Fault and Warning Codes

Code Type	Code	Fault/Warning	Solution
Fault code	100	Grid voltage beyond the allowable range	1. Check the grid voltage and restart the inverter. 2. If the fault persists, contact the manufacturer.
	101	Grid frequency beyond the allowable range	1. Check the grid frequency and restart the inverter. 2. If the fault persists, contact the manufacturer.
	102	Grid disconnected	1. Power off the inverter and check grid connections. 2. If the fault persists, contact the manufacturer.
	103	Excessive DC component in the output current	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.

Fault code	104	Neutral-to-Ground voltage abnormal	1. Check whether the N Line on the inverter side with PV negative grounding is short-circuit with the ground cable and whether the output side is isolated with a transformer. 2. If the fault persists, contact the manufacturer.
	105	Bypass overload	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.
	110	Grid phase sequence abnormal	1. Adjust the phase sequence of the AC grid connection. 2. If the warning persists, contact the manufacturer.
	200	Low off-grid output voltage	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.
	201	High off-grid output voltage	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.
	202	Off-grid output short circuit	1. Check the AC connection, or restart the inverter. 2. If the fault persists, contact the manufacturer.
	203	Off-grid output overload	1. Release some home load, or restart the inverter. 2. If the fault persists, contact the manufacturer.
	204	Abnormal DC component in the output voltage	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.
	300	Reverse battery polarity	1. Properly connect the battery terminals. 2. If the fault persists, contact the manufacturer.
	301	Battery open circuit	1. Properly connect the battery terminals. 2. If the fault persists, contact the manufacturer.
	302	Battery output overload	1. Make sure that the load does not exceed the battery discharge rating. 2. If the fault persists, contact the manufacturer.
	304	LLC converter soft-start failure	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.

Fault code	305	High battery voltage	1. Check the battery voltage. 2. If the fault persists, contact the manufacturer.
	306	LLC overcurrent protection	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.
	307	Battery communication fault	1. Check whether the lithium-ion battery is enabled. 2. Make sure that the lithium-ion battery is correctly connected to the inverter.
	308	BMS fault	1. Check the status of the lithium-ion battery. 2. If the fault persists, contact the manufacturer.
	400	High PV input voltage	1. Immediately open the DC switch and check the voltage. 2. If the fault persists after the voltage returns to normal, contact the manufacturer.
	401	Low casing insulation resistance (Riso)	1. Power off the inverter and check the casing grounding. 2. If the fault persists, contact the manufacturer.
	402	Ground-fault circuit interrupter (GFCI) fault	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.
	403	PV panel short circuit	1. Properly connect the PV input terminals. 2. Restart the inverter. 3. If the fault persists, contact the manufacturer.
	404	Reverse PV polarity	1. Properly connect the PV terminals. 2. If the fault persists, contact the manufacturer.
	405	Arc-fault circuit interrupter (AFCI) fault	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.
	500	Abnormal BUS voltage	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.
	501	Abnormal BUS voltage sampling	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.
	502	Internal communication fault	1. Power off the inverter and check the communication cables. 2. If the fault persists, contact the manufacturer.

Fault code	503	Automatic diagnosis fault	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.
	504	Mode type mismatch	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.
	505	Thermometer connection fault	1. Power off the inverter and check the connection of the temperature sampling module. 2. If the fault persists, contact the manufacturer.
	506	Over temperature protection	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.
	507	Relay fault	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.
	508	Over current protection	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.
	509	Anti-reverse power output timeout	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.
	510	Communication protocol version mismatch	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.
	511	Fan fault	1. Check the fan wiring. 2. Restart the inverter. 3. If the fault persists, contact the manufacturer.
	512	CT/Meter overcurrent	1. Check whether the load power exceeds the rated capacity. 2. If the fault persists, contact the manufacturer.
	513	Inverter paralleling fault	1. Check the communication cables for inverter paralleling. 2. Check the paralleling parameters of the inverter.
	514	Inverter soft-start failure	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.
	515	Current sampling anomaly	1. Restart the inverter. 2. If the fault persists, contact the manufacturer.

Warning code	100	Meter communication exception	1. Make sure that the meter is correctly connected to the inverter. 2. Make sure that the distance between the inverter and meter meets the requirement. 3. Rewire and restart the inverter and meter. 4. If the warning persists, contact the manufacturer.
	101	Reverse meter polarity	1. Properly connect the meter terminals. 2. If the warning persists, contact the manufacturer.
	102	Reverse CT polarity	1. Properly connect the CT terminals. 2. If the warning persists, contact the manufacturer.
	103	Grid power unavailable	1. Make sure that the inverter is connected to the grid. 2. If the warning persists, contact the manufacturer.
	104	Grid voltage beyond the allowable range	1. Check the grid voltage and restart the inverter. 2. If the warning persists, contact the manufacturer.
	105	Grid frequency beyond the allowable range	1. Check the grid frequency and restart the inverter. 2. If the warning persists, contact the manufacturer.
	106	No generator output voltage	1. Confirm the generator status and restart the generator. 2. If the warning persists, contact the manufacturer.
	107	Generator output voltage beyond the allowable range	1. Check the generator voltage and restart the generator. 2. If the warning persists, contact the manufacturer.
	108	Generator output frequency beyond the allowable range	1. Check the generator frequency and restart the generator. 2. If the warning persists, contact the manufacturer.
	109	Anti-reverse power output timeout	1. Restart the inverter. 2. If the warning persists, contact the manufacturer.
	110	Grid phase sequence abnormal	1. Adjust the phase sequence of the AC grid connection. 2. If the warning persists, contact the manufacturer.

Warning code	200	Off-grid output overload	1. Restart the inverter. 2. If the warning persists, contact the manufacturer.
	302	Low battery SOC	The battery level is low. Please charge the battery.
	303	Battery on/off Switch is turn off	1.Please check if the battery on/off switch is in the off position.If so,please turn it on 2.If the warning persists, contact the manufacturer.
	304	Abnormal BMS information	1. Restart the battery. 2. If the warning persists, contact the manufacturer.
	305	Low battery voltage	1. Check the battery voltage. 2. If the warning persists, contact the manufacturer.
	501	Fan exception	1. Check the fan wiring. 2. Check the fan for foreign object obstruction. 3. If the warning persists, contact the manufacturer.
	502	Electrically erasable programmable read-only memory (EEPROM) read/write exception	1. Restart the inverter. 2. If the warning persists, contact the manufacturer.
	503	Parallel current sharing abnormal	1. Please check whether the EPS wiring is normal. 2. Restart the inverter. 3.If the warning persists, contact the manufacturer.

9. Product Specifications

9.1 Datasheet of hybrid inverter

Technical Data	3kW	3.6kW	4.6kW	5kW	6kW	8kW
Solar Input Data						
Recommended Max. PV Array Size (Wp)	6000	7360	9200	10000	12000	16000
Max. PV Input Power(W)	6000	7360	9200	10000	12000	16000
Max. Input Voltage(V)	550	550	550	550	550	550

Start-up Voltage(V)	60	60	60	60	60	60
Rated Input Voltage(V)	360	360	360	360	360	360
MPPT Operating Voltage Range(V)	80~520	80~520	80~520	80~520	80~520	80~520
MPPT Voltage Range (full load) (V)	120~440	150~440	180~440	200~440	240~440	200~440
Max. Input Current per MPPT(A)	20+20	20+20	20+20	20+20	20+20	36+36
Max. Short Circuit Current per MPPT(A)	25+25	25+25	25+25	25+25	25+25	45+45
Number of MPPTs	2	2	2	2	2	2
Number of Strings per MPPT	1+1	1+1	1+1	1+1	1+1	2+2
Max. Inverter Backfeed Current to The Array(A)	0	0	0	0	0	0

Battery Data

Battery Type	Lead-acid or Lithium-ion					
Rated Battery Voltage(V)	48	48	48	48	48	48
Battery Voltage Range(V)	40~60	40~60	40~60	40~60	40~60	40~60
Max. Charge/Discharge Current(A)	100	100	120	120	140	190
Max. Charge/Discharge Power(W)	3000/3300	3680/4048	4600/5060	5000/5500	6000/6600	8000/8800
Battery Communication	CAN/RS485	CAN/RS485	CAN/RS485	CAN/RS485	CAN/RS485	CAN/RS485
Number of Battery Input	1	1	1	1	1	1

AC Input/Output Data (Grid, Load & Generator)

Rated AC Input/ Output Active Power(W)	3000	3680	4600	5000	6000	8000
Max. AC Input/Output Apparent Power (VA)	3300	3680	4600	5000	6600	8800
Peak Apparent Power (off-grid)	2 times of rated power, 10s					
Rated AC Input/ Output Current(A)	13.6/13.0 /12.5	16.0 (@230V)	20.9/20.0 /19.2	22.7/21.7 /20.8	27.3/26.1 /25.0	36.4/34.8 /33.3
Max. AC Input/Output Current(A)	15.0	16.0 (@230V)	20.9	22.7	30.0	40.0
Max. Continuous AC Passthrough (A)	45	45	45	45	45	50
Max. Continuous GEN Passthrough (A)	45	45	45	45	45	50
Max. Output Fault Current(A)	27.3	33.5	45.5	45.5	54.5	72.7
Max. Output Over Current Protection(A)	104.3	104.3	104.3	104.3	104.3	134.1
Rated Input/Output Voltage(V)	220/230/240					
Input/Output Voltage Range(V)	0.85Un-1.1Un					
Grid Connection Form	L+N+PE					
Rated Grid Frequency/Range (Hz)	50/45~55, 60/55~65					
Power Factor	0.8 leading~0.8 lagging					
THDi (nominal power)	<3%					
DC Injection Current	< 0.5%In					
Switch time(ms)(Typ)	4					

Efficiency						
Max. Efficiency	97.60%	97.60%	97.60%	97.60%	97.60%	97.60%
European Efficiency	96.50%	96.50%	96.50%	96.50%	96.50%	96.50%
MPPT Efficiency	>99.9%	>99.9%	>99.9%	>99.9%	>99.9%	>99.9%
Max. Charge/ Discharge Efficiency	94.60%	94.60%	94.60%	94.60%	94.60%	94.60%
Protection						
PV Reverse Polarity Protection	yes	yes	yes	yes	yes	yes
Anti-Islanding Protection	yes	yes	yes	yes	yes	yes
Output Short Protection	yes	yes	yes	yes	yes	yes
Ground fault monitoring	yes	yes	yes	yes	yes	yes
Insulation Resistance Monitoring	yes	yes	yes	yes	yes	yes
Over-current Protection	yes	yes	yes	yes	yes	yes
Over-temperature Protection	yes	yes	yes	yes	yes	yes
AC/DC Surge Protection	TYPE II(DC), TYPE II(AC)					
AFCI Protection	Optional	Optional	Optional	Optional	Optional	Optional
DC Switch	yes	yes	yes	yes	yes	yes
Residual Current Monitoring	yes	yes	yes	yes	yes	yes
Grid Monitoring	yes	yes	yes	yes	yes	yes
General Data						

Dimension (W*H*D) (mm)	365×430×245(Excluding connectors)	
Weight(kg)	< 20	< 22
Relative Humidity	0~100%	
Operating Temperature Range(°C)	-40 to +60, >45 Derating	
Storage Temperature(°C)	-45 to +85	
Noise Emission(dB)	< 35	< 55
Altitude(m)	3000	
Cooling Method	Natural Cooling	Intelligent Air Cooling
Ingress Protection	IP66	
Over Voltage Category	OVC II(DC), OVC III(AC)	
Topology	Non-Isolated	
Protective Class	I	
Communication Interface	RS485/CAN/Bluetooth/WIFI, LAN/4G/GPRS (optional)	
Power Grid Side Energy Detection Method	CT, Meter(optional)	
Display	LCD & APP	
Standby / Internal Consumption(W)	<25(night)	
PV Connector	MC4 compatible connector(Max.6mm ²)	
Battery Connector	Connector(Max.50mm ²)	Connector (Max.70mm ²)
AC Connector	Connector(Max.10mm ²)	

9.2 Datasheet of AC-coupled inverter

Technical Data	4.6kW	5kW	6kW
Battery Data			
Battery Type	Lead-acid or Lithium-ion		
Rated Battery Voltage(V)	48	48	48
Battery Voltage Range(V)	40~60	40~60	40~60
Max. Charge/Discharge Current(A)	120	120	140
Max. Charge/Discharge Power(W)	4600/5060	5000/5500	6000/6600
Battery Communication	CAN/RS485	CAN/RS485	CAN/RS485
Number of Battery Input	1	1	1
AC Input/Output Data (Grid, Load & Generator)			
Rated AC Input/Output Active Power(W)	4600	5000	6000
Max. AC Input/Output Apparent Power (VA)	4600	5000	6600
Peak Apparent Power (off-grid)	1.5 times of rated power, 10s		
Rated AC Input/Output Current(A)	20.9/20.0/19.2	22.7/21.7/20.8	27.3/26.1/25.0
Max. AC Input/Output Current(A)	20.9	22.7	30.0
Max. Continuous AC Passthrough (A)	45	45	45
Max. Continuous GEN Passthrough (A)	45	45	45

Max. Output Fault Current(A)	45.5	45.5	54.5
Max. Output Over Current Protection(A)	104.3	104.3	104.3
Rated Input/Output Voltage(V)	220/230/240		
Input/Output Voltage Range(V)	0.85Un-1.1Un		
Grid Connection Form	L+N+PE		
Rated Grid Frequency/Range (Hz)	50/45~55, 60/55~65		
Power Factor	0.8 leading~0.8 lagging		
THDi (nominal power)	<3%		
DC Injection Current	< 0.5%In		
Switch time(ms)(Typ)	4		
Efficiency			
Max. Charge/Discharge Efficiency	94.60%	94.60%	94.60%
Protection			
PV Reverse Polarity Protection	yes	yes	yes
Anti-Islanding Protection	yes	yes	yes
Output Short Protection	yes	yes	yes
Ground fault monitoring	yes	yes	yes
Insulation Resistance Monitoring	yes	yes	yes
Over-current Protection	yes	yes	yes
Over-temperature Protection	yes	yes	yes

AC/DC Surge Protection	TYPE II(DC), TYPE II(AC)		
AFCI Protection	Optional	Optional	Optional
DC Switch	yes	yes	yes
Residual Current Monitoring	yes	yes	yes
Grid Monitoring	yes	yes	yes
General Data			
Dimension (W*H*D) (mm)	365×430×245(Excluding connectors)		
Weight(kg)	< 20		
Relative Humidity	0~100%		
Operating Temperature Range(°C)	-40 to +60, >45 Derating		
Storage Temperature(°C)	-45 to +85		
Noise Emission(dB)	< 35		
Altitude(m)	3000		
Cooling Method	Natural Cooling		
Ingress Protection	IP66		
Over Voltage Category	OVC II(DC), OVC III(AC)		
Topology	Non-Isolated		
Protective Class	I		
Communication Interface	RS485/CAN/Bluetooth/WIFI, LAN/4G/GPRS (optional)		

Power Grid Side Energy Detection Method	CT, Meter(optional)
Display	LCD & APP
Standby / Internal Consumption(W)	<25(night)
PV Connector	MC4 compatible connector(Max.6mm ²)
Battery Connector	Connector(Max.50mm ²)
AC Connector	Connector(Max.10mm ²)

