USER MANUAL

6KWINVERTER

Version: 1.0

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1. ABOUT THIS MANUAL

1.1 Purpose

This manual describes the assembly, installation, operation and troubleshooting of this unit.
Please read this manual carefully before installations and operations. Keep this manual for future reference.

1.2 Scope

This manual provides safety guidelines of installation, and the information on tools and wiring.

1.3 Safety instructions

WARNING: This chapter contains important safety and operating instructions.
Read and keep this manual for future reference.

1. Read and follow all installation, operation, and maintenance in formation carefully before using the product.
2. **CAUTION:** To reduce risk of injury, charge only deep‐cycle lead acid type rechargeable batteries .Other types of batteries may burst, causing personal injury and damage.
3. Do not disassemble the unit personally. Take it to a qualified service center to repair
4. To reduce risk of electric shock, disconnect all wiring before attempting any maintenance or cleaning, turning off the unit will not reduce this risk.
5. **WARNING:** Disconnecting all power supply before any maintaining or cleaning, please noted that if you only turn off the unit are not safe enough.
6. **WARNING:** Only qualified service persons are allowed to operate this product. If fault not solved after following troubleshooting table, please send this inverter back to local dealer or service center for maintenance.
7. **WARNING:** Because this inverter is non-isolated, only three types of PV modules are adaptable: single crystalline, poly crystalline with class A-rated and CIGS modules. To avoid any malfunction, do not connect any PV modules which likely with current leakage flow to the inverter. For example, grounded PV modules may cause current leakage flow to the inverter. When using CIGS modules, please be sure of NO grounding.
8. **CAUTION:** It’s requested to use PV junction box with surge protection. Otherwise, it may cause damage on inverter.

2. INTRODUCTION

This is a multifunctional inverter, combining functions of inverter, solar charger and battery charger to offer uninterruptible power support with portable size. Its comprehensive LCD display offers user configurable and easily accessible operation such as battery charging, AC/solar charging, and acceptable input voltage based on different applications.

2.1 Features

1. Hybrid solar inverter (on /off grid inverter).
2. Output power factor COS ϕ=1.0.
3. Support peak valley charging control.
4. Configurable AC/Solar Charger priority via touch screen.
5. Smart battery charger design for optimized battery performance.
6. Compatible with Utility and generator.
7. Overload, over temperature, short circuit protection, fault record, history record.
8. Built-in WIFI data logger (optional).
9. Parallel operation up to 6 units.
10. Two channels output.
11. Reserved BMS communication port (RS485&CAN).

2.2 Basic System Architecture

The following illustration shows basic application of this inverter. It also includes following devices to have a complete running system.

- Generator or Utility
- PV modules

Consult with your system integrator for other possible system architectures depending on your requirements. This inverter can power all kinds of appliances in home or office environment, including motor type appliances such as refrigerator and air conditioner.

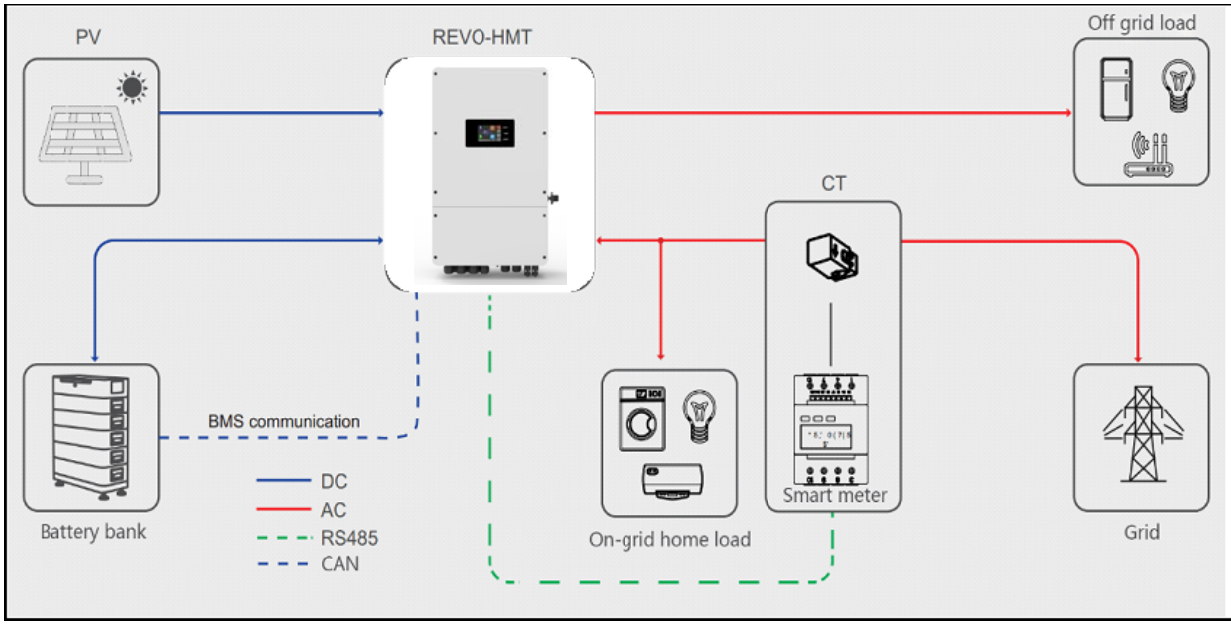
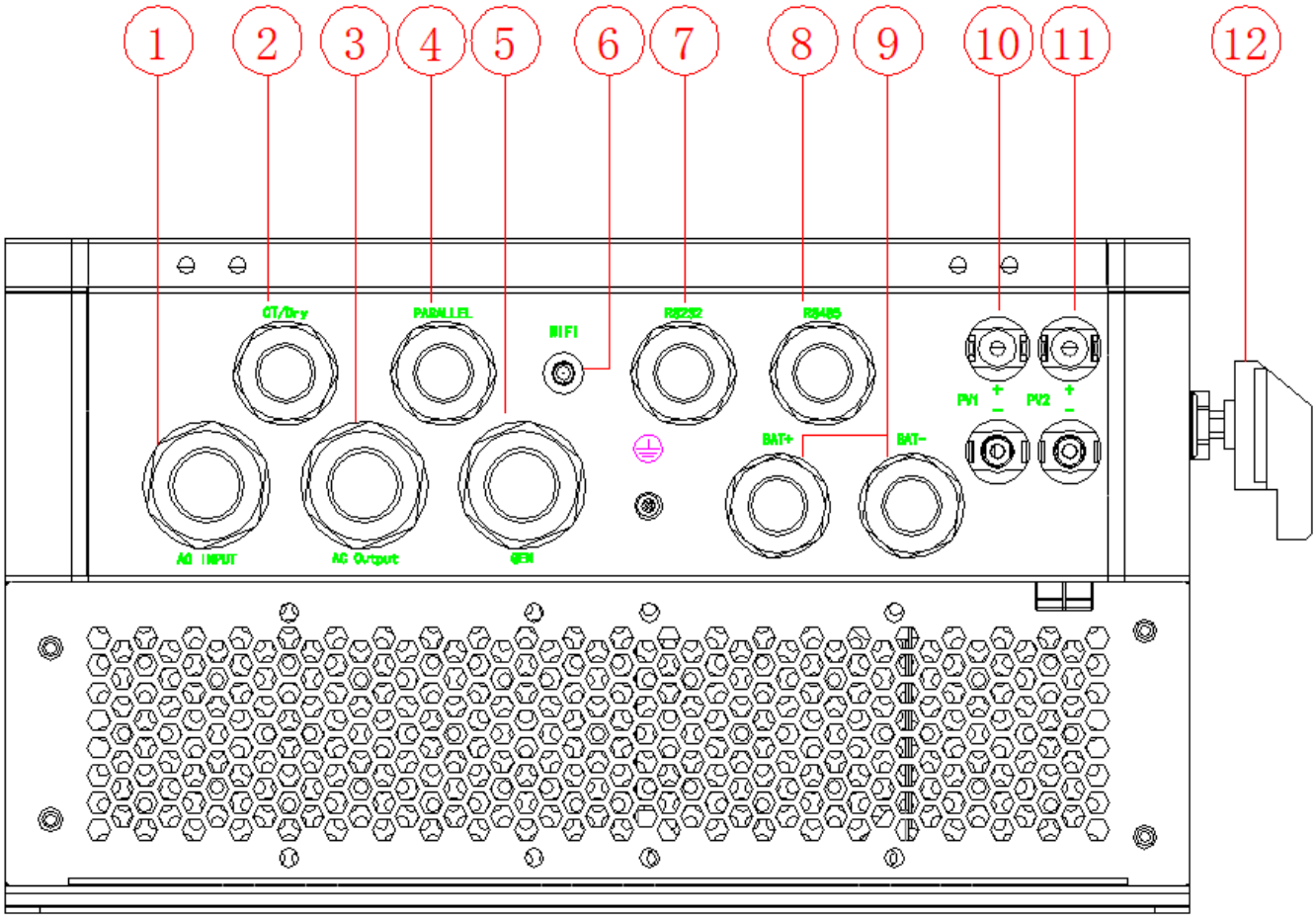


Figure 1

2.3 Product Overview



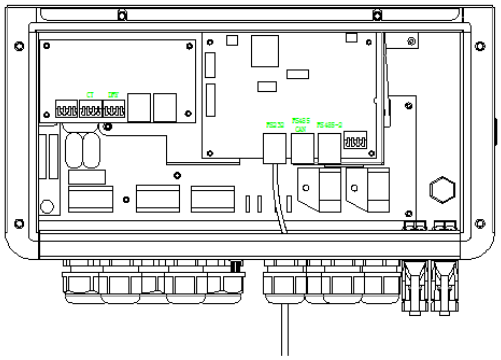
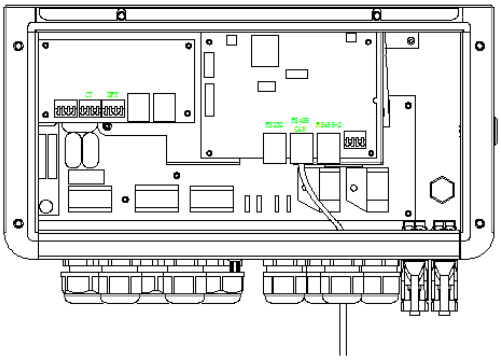
1. AC input
2. CT/cry
3. AC output
4. Parallel
5. GEN
6. WIFI
7. RS232
8. RS485
9. Battery terminals
10. PV input1
11. PV input2
12. PV switch

Note:RS485,CAN communication share the same port ,so it can't be used at the same time.

Communication port definition:

RS232	1:RXD , 2:TXD,8:GND
RS485-1/ CAN	1:485-A ,2.485-B 4:CAN-H,5:CAN-L
RS485-2(reserve)	1:485-A ,2.485-B

RJ45 PORT

For RS232 port ,you should use a RJ45 cable as follows;	For RS485 port ,you should use a RJ45 cable as follows;
1:RXD , 2:TXD,8:GND	1:485-A ,2.485-B 4:CAN-H,5:CAN-L
	

3. INSTALLATION

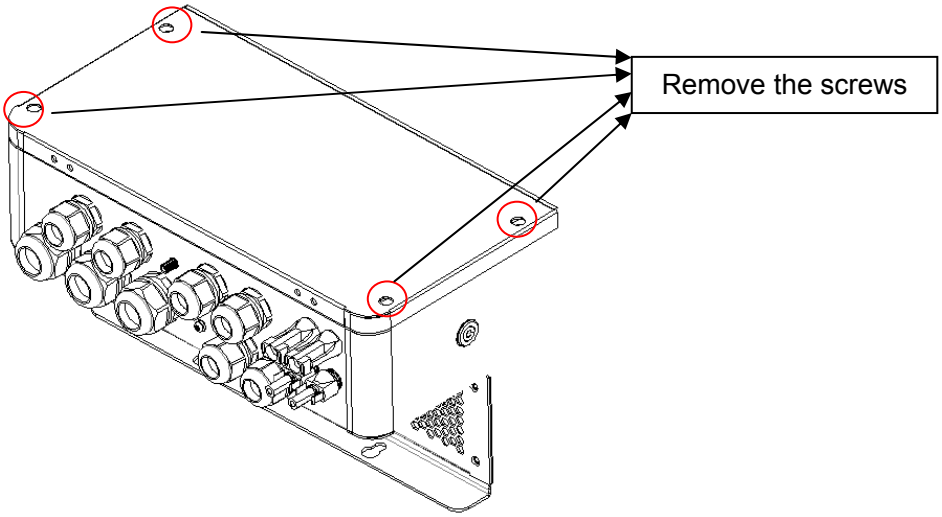
3.1 Unpacking and Inspection

Before installation, please inspect the unit. Be sure that everything in the package is not damaged. The following items inside of package would be received.

- The inverter x1
- User manual x 1
- RS232 Communication cable x 1
- Parallel communication cable x 1(No parallel machine ,No need)
- Current sharing cable x 1 (No parallel machine ,No need)

3.2 Preparation

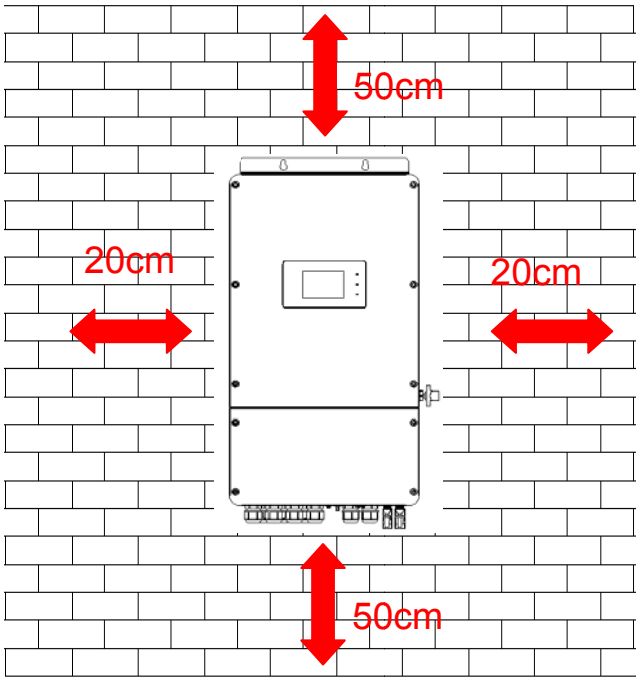
Please remove the four screws on the cover of the device before opening it.



3.3 Mounting the Unit

Consider the below points before selecting where to install:

1. Do not mount the inverter on the surface of flammable construction materials.
2. Mount on the surface of solid material.
3. Install this inverter at a visible place in order to allow the LCD display to be read at all times.
4. For proper air circulation and heat dissipate, make sure there is 20 cm distance from the twoside50 cm distance from bottom of the unit.



5. The ambient temperature should be between -25°C and 50°C to ensure optimal operation.
6. The recommended installation position is to be adhered to the wall vertically.
7. Be sure to keep other objects and surfaces as shown in the diagram to guarantee sufficient heat dissipation and to have enough space for collecting wires. Suitable for mounting on concrete or other non-combustible surface only

3.4 Battery Connection

CAUTION: For safety operation and regulation compliance, it's requested to adopt a separate DC over-current protector or disconnect device between battery and inverter. It may not be necessary to have a disconnect device in some applications, however, it's still need to have adopt over-current protection device. Please refer to typical amperage in below table as required fuse or breaker size.

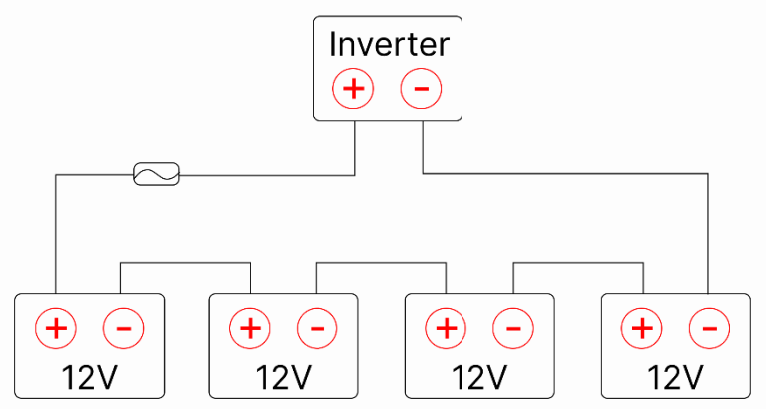
WARNING! All wiring must be performed by qualified personnel.

WARNING! It's very important for system safety and efficient operation to use appropriate cable for battery connection. To reduce risk of injury, please use the proper recommended cable as below.

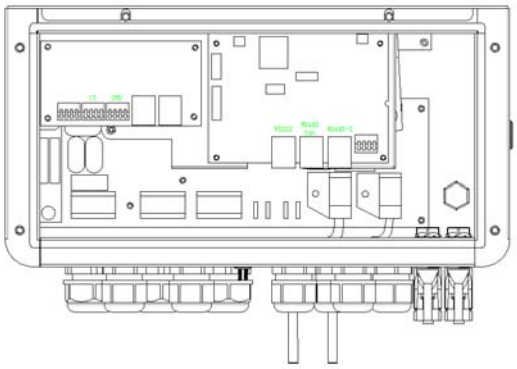
Recommended cable:

Model	Typical amperage	Battery capacity	Gauge	Cable
6KW	142.9A	⩾200Ah	2AWG	35 mm²

48VDC battery connection diagram



CAUTION! Before making the final DC connection or closing DC breaker/disconnection, be sure positive (+) must be connected to positive (+) and negative (-) must be connected to negative (-).

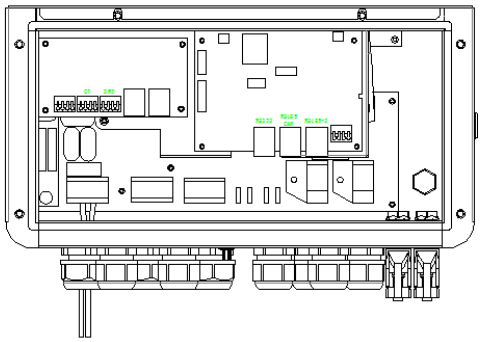
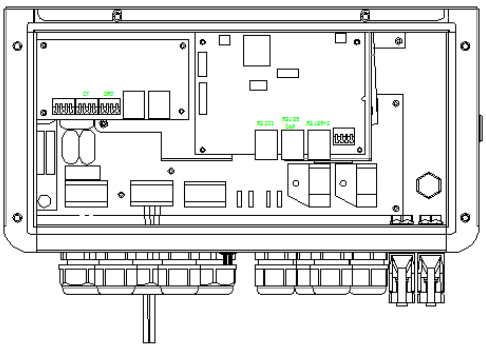


3.5 AC Input/ Output Connection

CAUTION! Before connecting to AC input power source, please install a separate AC breaker between inverter and AC input power source. This will ensure the inverter can be securely disconnected during maintenance and fully protected from over current of AC input. There commended spec of AC breaker is 32A for 4KVA and 50A for 6KVA. There are three terminal blocks with “IN” and “OUT” markings. Please do NOT connect input and output connectors wrong.

WARNING! All wiring must be performed by qualified personnel. It's very important for system safety and efficient operation to use appropriate cable for AC input connection. To reduce risk of injury, please use the proper recommended cable size as below.

Model	Gauge	Cable	Torque Value
6KW	10AWG	6 mm^2	1.2-1.6 Nm

AC Input	AC Output
	

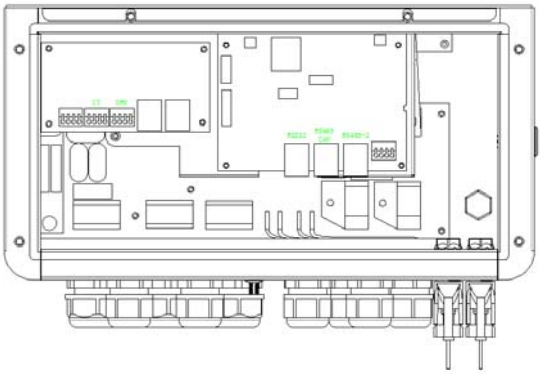
3.6 PV Connection

CAUTION: It is forbidden for inverter to share the same solar panel group.

CAUTION: Before connecting to PV modules, please install separately a DC circuit breaker between inverter and PV modules.

WARNING: It's very important for system safety and efficient operation to use appropriate cable for PV module connection. To reduce risk of injury, please use the proper cable size as below.

Model	Gauge	Cable
6KW	2P*12AWG	2P*4 mm^2



WARNING: Because this inverter is non-isolated, only three types of PV modules are acceptable: Single crystalline, poly crystalline with class A-rated and CIGS modules .To avoid any malfunction do not connect any PV modules with possible current leakage together inverter. For example, grounded PV modules will cause current leakage to the inverter.
When using CIGS modules, please be sure NO grounding connection.
CAUTION: It's requested to use PV junction box with surge protection. Otherwise, it will cause damage on inverter when lightning occurs on PV modules.

PV Module Selection:

When selecting proper PV modules, please be sure to consider below parameters:

1. Open circuit Voltage (Voc) of PV modules not exceeds max. PV array open circuit voltage of inverter.
2. Open circuit Voltage (Voc) of PV modules should be higher than min. battery voltage.

Inverter Model	6kW
Maximum PV Array Open voltage(V)	500VDC
PV Array MPPT Voltage Range	90-450VDC

Application Example:

Solar Panel Spec. 250WpVmp, 30.1Vdc Imp, 8.3A Voc, 37Vdc ISC, 8.4A	SOLAR INPUT (Min in serial: 6pcs, max. in serial: 12pcs)	Qty of panels	Total input power
	6pcs in series	6pcs	1500W
	9pcs in series	9pcs	2250W
	12pcs in series	12pcs	3000W
	9 pieces in series and 2 sets in parallel	18pcs	4500W
	10pieces in series and 2 sets in parallel	20pcs	5000W
	11 pieces in series and 2 sets in parallel	22pcs	5500W
	12pieces in series and 2 sets in parallel	24pcs	6000W

PV Module Wire Connection:
Please follow below steps to implement PV module connection:
1 Assemble provided PV connectors with PV modules by the following steps.

Female connector housing	
Female terminal	
Male connector housing	
Male terminal	
Crimping tool and spanner	

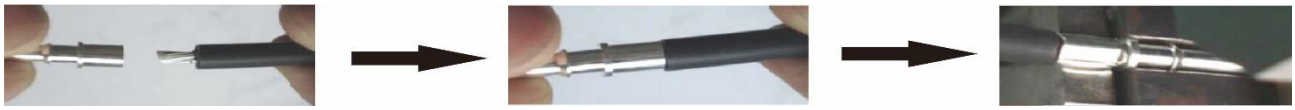
Components for PV connectors and Tools:
Prepare the cable and follow the connector assembly process:

Strip one cable 8 mm on both end sides and be careful NOT to nick conductors.

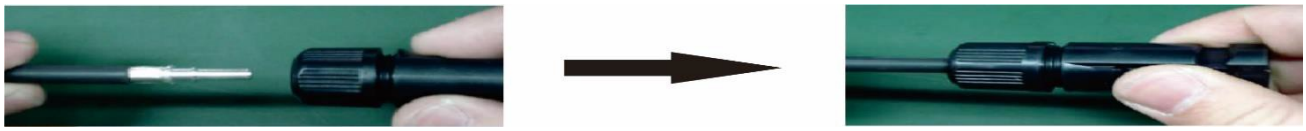
Insert striped cable into female terminal and crimp female terminal as shown below.

Insert assembled cable into female connector housing as shown below.

Insert striped cable into male terminal and crimp male terminal as shown below.

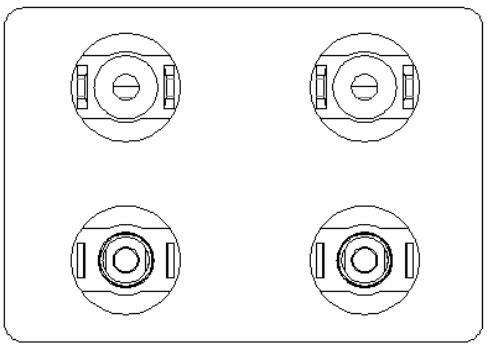


Insert assembled cable into male connector housing as shown below.



Check correct polarity of connection cable from PV modules and PV input connectors. Then, connect positive pole (+) of connection cable to positive pole (+) of PV input connector. Connect negative pole (-) of connection cable to negative pole (-) of PV input connector.

PV 1	PV 2
⊕	⊕
⊖	⊖



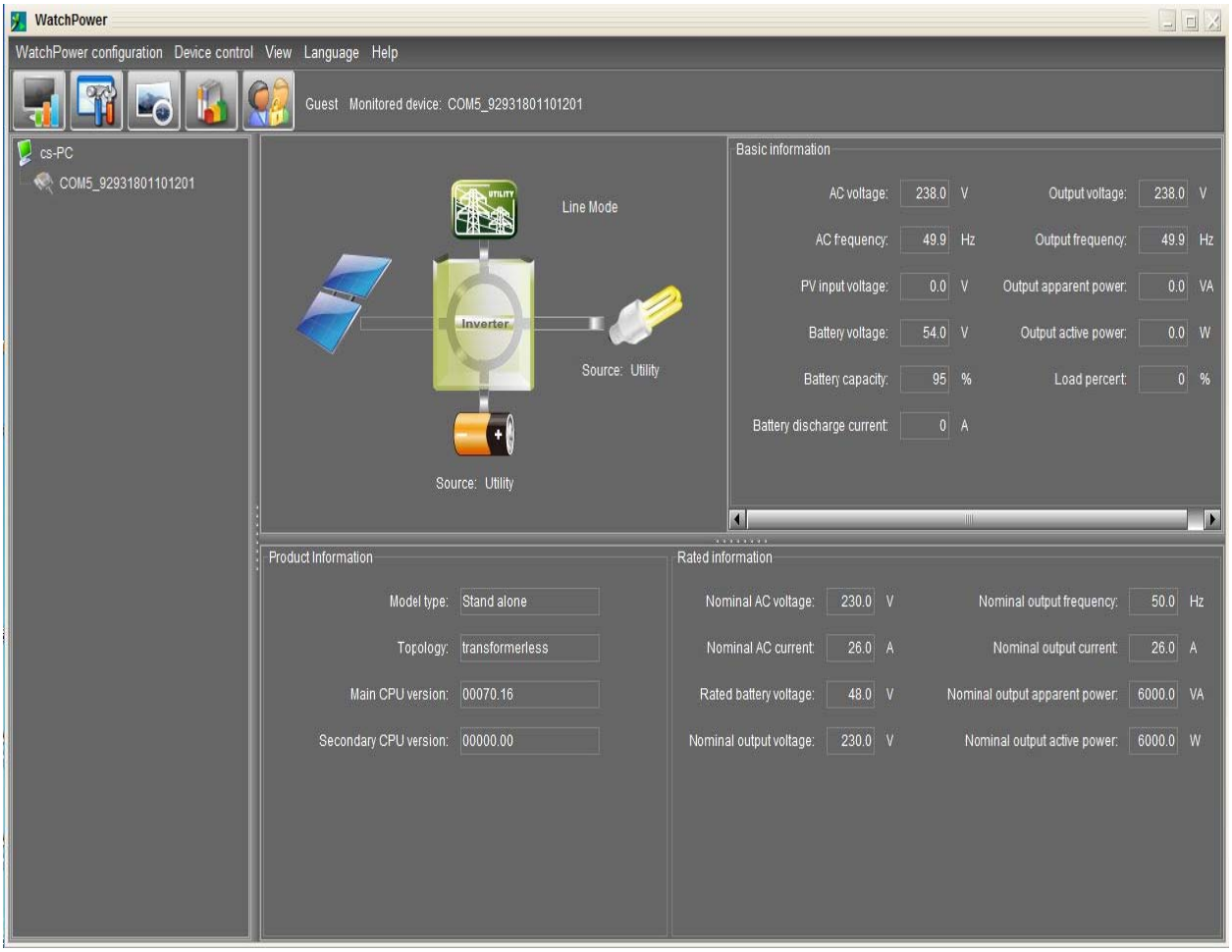
3.7 Final Assembly

After connecting all wires, please put bottom cover back by screwing screws.

3.8 RS232CommunicationConnection

Please download software “Watch power” from the official website. When the inverter is connected to the computer, the following interface will be displayed.

Note: The following dates are for reference only.



3.9 Wi-Fi Connection(Optional)

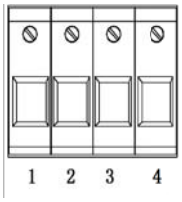
1.The device has its own standard WIFI port, if users need to monitor the status and information of the device through WIFI, they must connect to the WIFI collector.

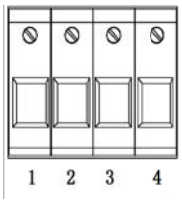
2.Users can download ”**SmartEss**” WIFI monitoring software from the app store on their phone.

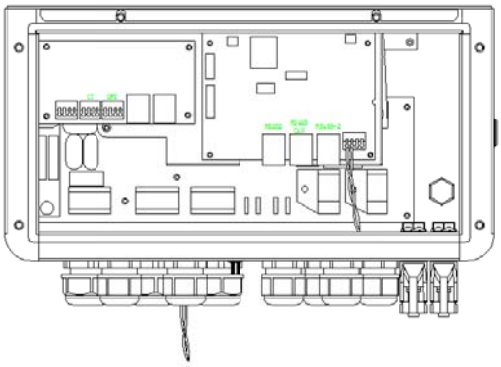
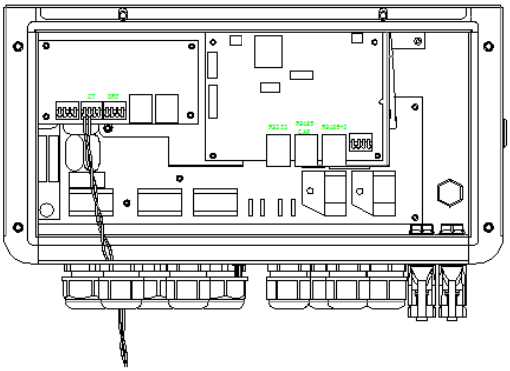
3.Inverters come equipped with factory-integrated Wi-Fi capability which makes it very easy to integrate into a home network (Wi-Fi Dongle is Optional)This makes it ideal for local monitoring via the inverter's own wireless home network or for online monitoring platforms.

3.10 Dry Contact And CT Contact

There is one dry contact (3A250VAC) available on the rear panel. It could be used to deliver signal to external device when battery reaches warning level.

Unit Status	Condition	
		DRY:1&2
Power Off	Unit is off and no output is powered	Open --
Power On	Battery voltage <Setting the voltage in program BAT Para	Close --
	Battery voltage >Setting the voltage in program BAT	Open

	Para	--
Unit Status	Condition	
CT	It is installed at AC input L	--- 1:CT+ 2:CT -

Dry Contact	CT Contact
	

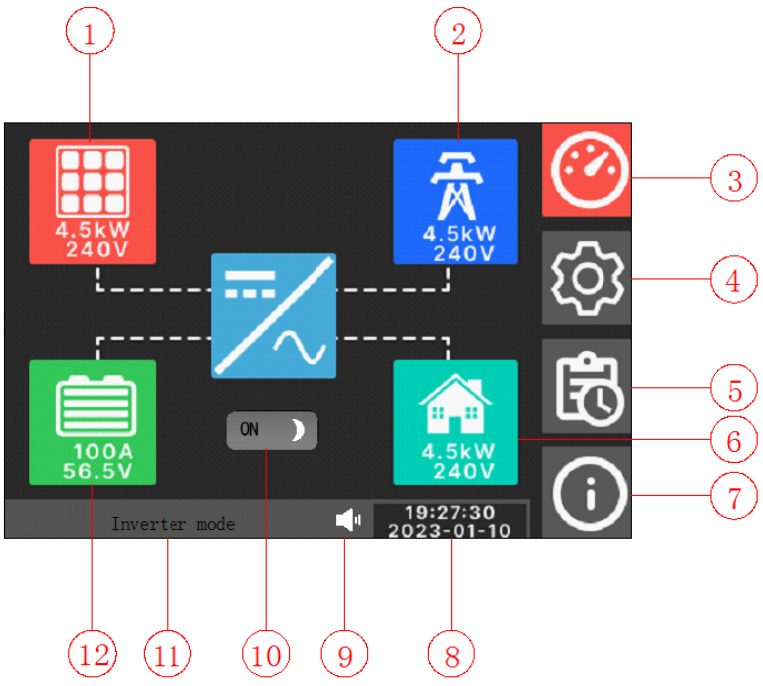
4. OPERATION

4.1 Power ON/OFF

Once the unit has been properly installed and the batteries are connected well, simply press On/Off switch (located on the button of the case) to turn on the unit.

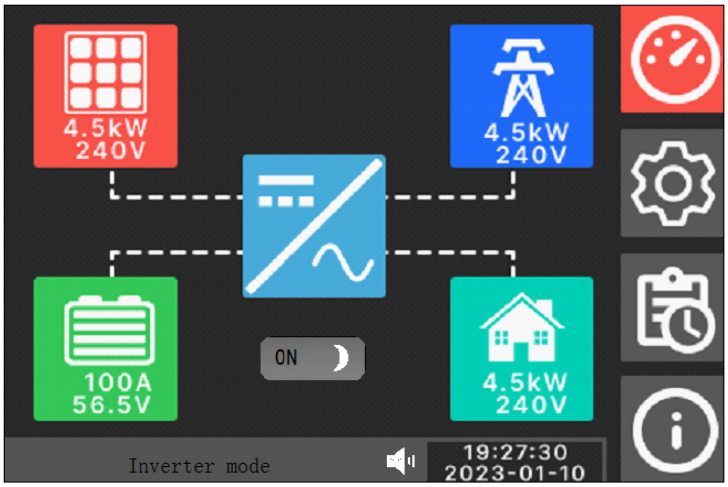
4.2 Operation and Display Panel

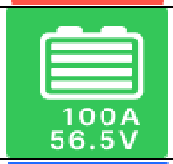
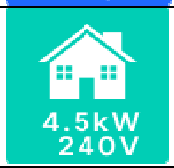
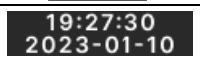
The operation and display panel, shown in below chart, is on the front panel of the inverter. It includes three indicators, four touchable function keys and a LCD display, indicating the operating status and input/output power information.



1. PV information
2. AC information
3. Main interface
4. Setting
5. History
6. Load information
7. About
8. Time & Date
9. Buzzer alarm
10. Startup & Shutdown
11. Running status information
12. Battery status information

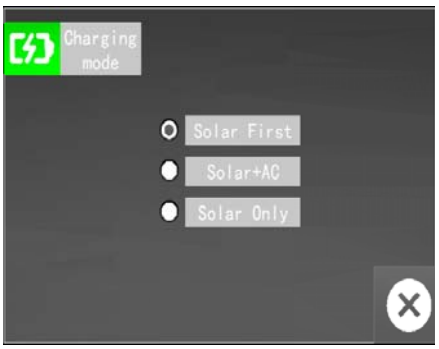
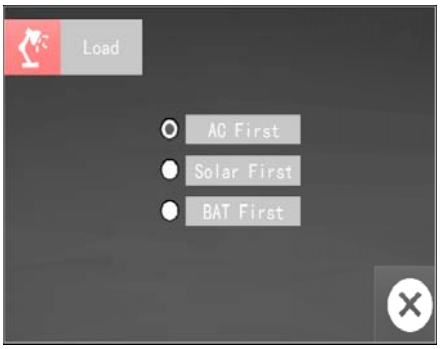
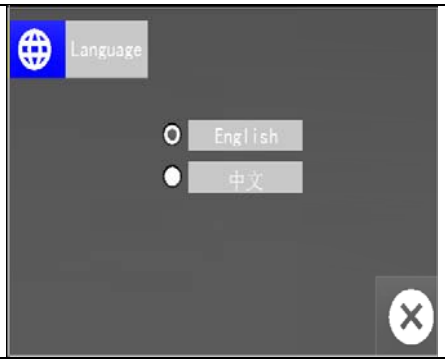
4.3 LCD Display Icons

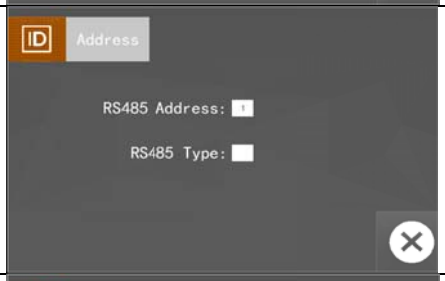
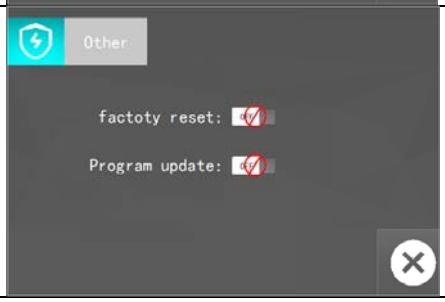
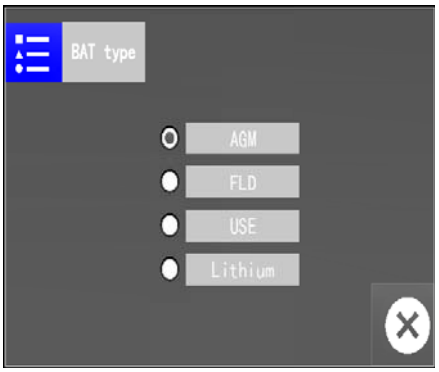
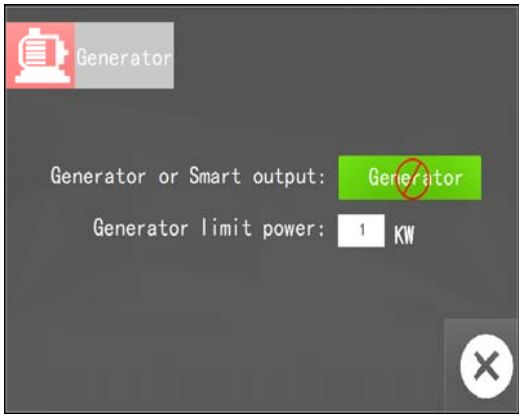


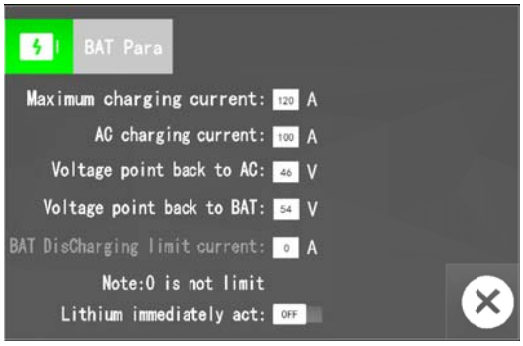
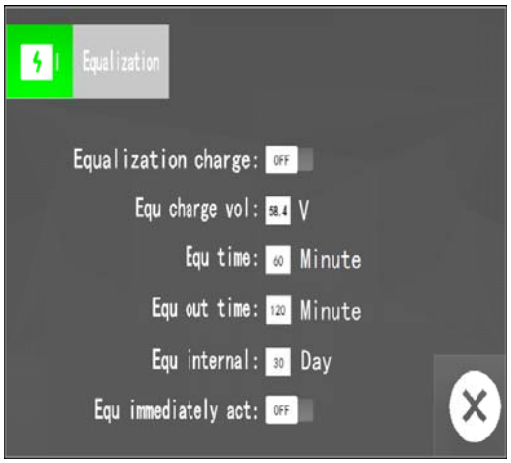
Icons	Description
	PV voltage, current and power. Click this icon to see the PV statistics.
	Battery voltage, current and power Click this icon to see the BMS data.
	Input voltage, current and power Click this icon to see the AC statistics.
	Output voltage, current and power Click this icon to see the output statistics.
	Main interface Click this icon back to Dashboard page.
	Setting Click this icon back to Setting page.
	History Click this icon back to History page.
	About Click this icon back to About page. You can get the model and the firmware version of inverter here.
	Date & Time
	Buzzer alarm
	Inverter running status information.
	Startup & Shutdown

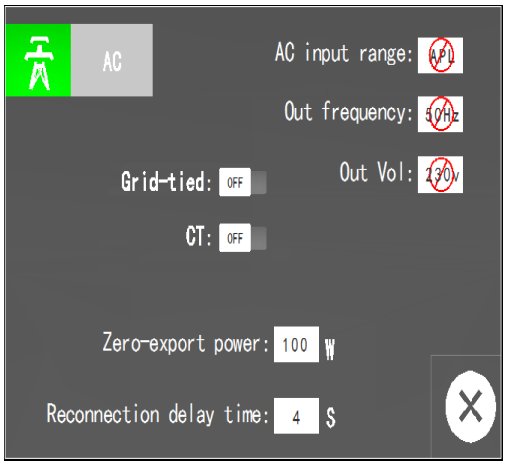
4.4 LCD Setting

After click setting button, the unit will enter setting page. Setting password:1155

Items	Description	Selectable Option	
	Charger source priority: To configure charger source priority.	If this inverter/charger is working in Line, Standby or Fault mode, charger source can be programmed as below:	
		Solar first	Solar energy will charge battery as first priority. AC will charge battery only when solar energy is not available.
		Solar + AC	Solar energy and AC will charge battery at the same time.
		Solar Only	Solar energy will be the only charger source no matter AC is available or not.
		If this inverter/charger is working in Battery mode, only solar energy can charge battery. Solar energy will charge battery if it's available and sufficient.	
	Output source priority: To configure load power source priority	AC first	AC will provide power to the loads as first priority. Solar and battery energy will provide power to the loads only when AC power is not available.
		Solar first	Solar energy provides power to the loads as first priority. If solar energy is not sufficient to power all connected loads, battery energy will supply power the loads at the same time. Utility provides power to the loads only when any one condition happens: - Solar energy is not available - Battery voltage drops to low-level warning voltage
		Battery first	Solar energy provides power to the loads as first priority. If solar energy is not sufficient to power all connected loads, battery energy will supply power to the loads at the same time. Utility provides power to the loads only when battery voltage drops to either low-level warning voltage.
	Language	Under the language menu, customers can choose from 2 languages, including English and Chinese. Default: English Additional languages can be added according to the customer needs. To change the language, just check the corresponding language.	

<table>
<tr><td>
</td><td>Date & Time</td><td colspan="2">Click the button” ▲” or “ ▼ ” to set the date and time.
Format:yyyy-mm-dd hh:mm</td></tr>
<tr><td> 
</td><td>Address for RS485 port</td><td colspan="2">Set the RS485 port address of the inverter for communication with the battery.
Can be set within the range of 0-999.
Default:01</td></tr>
<tr><td> 
</td><td>Other</td><td colspan="2">Factory reset.
Program update.
Setting password:1357
Default: OFF</td></tr>
<tr><td rowspan="4"> 
</td><td rowspan="4">Battery type</td><td>AGM</td><td></td></tr>
<tr><td>FLD</td><td></td></tr>
<tr><td>USE</td><td>User-defined, all battery parameters can be set.
Default: Bulk Voltage:56.4V
Floating Voltage:54.0V
Cut-Off Voltage:42.0V</td></tr>
<tr><td>Lithium</td><td>Battery Discharge Limit SOC: the battery SOC is lower than such criterion, output will be shut down.
Set Range of 0-70%
Available when the battery type is lithium battery.</td></tr>
<tr><td rowspan="2"> 
</td><td>Generator</td><td colspan="2">Setting password: 2525
Default: Generator</td></tr>
<tr><td>Smart output</td><td colspan="2">1、 The output voltage is consistent with one output.
2、 The battery voltage is discharged to the set point and the second output is turned off
3、 After the secondary output is turned off , the secondary AC can be automatically activate when it comes in output.
4、After the secondary output is turned off , the secondary PV can be automatically activate when it comes in output.</td></tr>
</table>

<table>
<tr>
<td rowspan="5"> 
</td>
<td rowspan="5">BAT Para</td>
<td>AC charging current</td>
<td>AC input 230Vac,
setting range: 2-100A</td>
</tr>
<tr>
<td>Discharging limited current:</td>
<td>If the battery discharge current is greater than the set value, the battery will stop discharging. At this point, if mains power is available, the inverter will operate in bypass mode. If there is no utility power, the inverter will turn off the output.
Setting range:0-200A
If the setting value is 0, the function will be disabled.</td>
</tr>
<tr>
<td>Total charging current(PV+AC)</td>
<td>Total charging current,
setting range: 10-120A</td>
</tr>
<tr>
<td>Battery Recharge Recovery Point</td>
<td>After the battery is fully charged, the inverter will stop charging and when the battery voltage is lower than this value the inverter will resume charging again. And the set range is 48V-58V.</td>
</tr>
<tr>
<td>Recovery point</td>
<td>When the battery Is under voltage the battery voltage should be Greater than this set value to restore the inverter AC output of the battery and the set range is44V～ 51V</td>
</tr>
<tr>
<td rowspan="6"> 
</td>
<td rowspan="6">Equalization</td>
<td>Equalization charge:</td>
<td>Disable: No equalization charging
Enable: Enable equalization charging, only Flooded lead-acid battery, sealed lead-acid battery and user-defined are effective</td>
</tr>
<tr>
<td>Charging voltage:</td>
<td>Equalization Charging Voltage, with the set range of 48V-60V available for Flooded lead-acid battery, sealed lead-acid battery and user-defined.</td>
</tr>
<tr>
<td>Charging time:</td>
<td>Equalization Charging Time, with the Set Range of 5min-900min, available for Flooded lead-acid battery, sealed lead-acid battery and user-defined.</td>
</tr>
<tr>
<td>Charging delay:</td>
<td>Equalization Charging Delay, with the set range of 5min-900min, available for Flooded lead-acid battery, sealed lead-acid battery and user-defined.</td>
</tr>
<tr>
<td>Charging Interval Time:</td>
<td>Equalization Charging Delay, with the set range of 0-90D, available for Flooded lead-acid battery, sealed lead-acid battery and user-defined.</td>
</tr>
<tr>
<td>Forced equalization:</td>
<td>Start equalization charging immediately.</td>
</tr>
</table>

<table>
<tr><td rowspan="7"> 
</td><td rowspan="6">AC input</td><td>AC input range</td><td>UPS: The input AC voltage range of 230V machine is 170～280V
APL: The input AC voltage range of 230V machine is 90～280V</td></tr>
<tr><td>Out frequency</td><td>50Hz/60Hz</td></tr>
<tr><td>Out Voltage</td><td>220V/230V/240V</td></tr>
<tr><td>CT</td><td>OFF/ON</td></tr>
<tr><td>Zero Export power</td><td>Range:0-999W</td></tr>
<tr><td>Reconnection delay time:</td><td>When the utility is connected, the waiting time can be set. After reaching the waiting time, the utility will start working.
Range:0-999S</td></tr>
<tr><td>Grid-tied</td><td colspan="2">When the system supply mode is AC first and the battery is full or not-connected, the system with sufficient solar energy will work in grid connected power generation mode.</td></tr>
<tr><td rowspan="3">
</td><td rowspan="3">Parallel setting</td><td>Single phase</td><td>Single phase parallel</td></tr>
<tr><td>Three phases</td><td>The phase needs to be set to one of A, B, and C.</td></tr>
<tr><td>Disable</td><td>Parallel function is disabled.
This setting is only available when the inverter is in standby mode (Switch off).</td></tr>
<tr><td rowspan="4">
</td><td rowspan="4">Peak Valley</td><td>Timer 1</td><td>Timer start time.
Type: discharge or charge</td></tr>
<tr><td>Timer 2</td><td>Timer start time.
Type: discharge or charge</td></tr>
<tr><td>Timer 3</td><td>Timer start time.
Type: discharge or charge</td></tr>
<tr><td>Timer 4</td><td>Timer start time.
Type: discharge or charge</td></tr>
</table>

4.5 Parallel function operation instructions

(Maximum of 6 parallel units)

CAUTION: It is forbidden for inverter to share the same solar panel group.

Single phase parallel：

1. Connecting the parallel communication line and power cable as shown below

Warning: All inverters must share the same battery pack when paralleling.

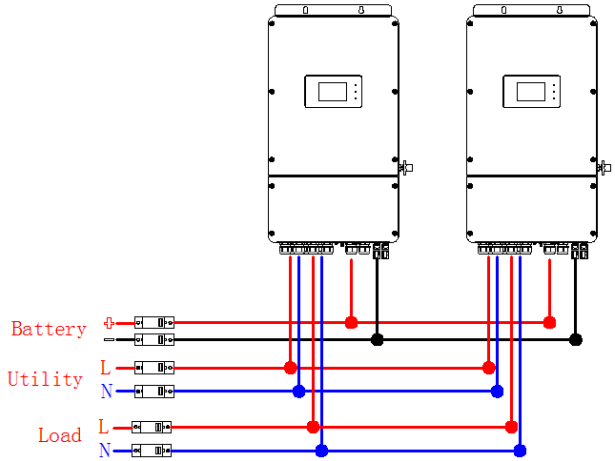
2. Set the parameters of each inverter separately (working mode, single-phase parallel function).

Warning: When working in parallel, the working mode of each inverter must be the same working mode.

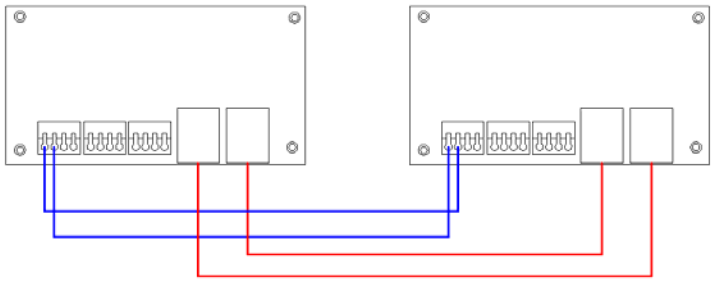
3. After setting the parameters, turn on each inverter in turn.

Two inverters parallel：

Power Connection:

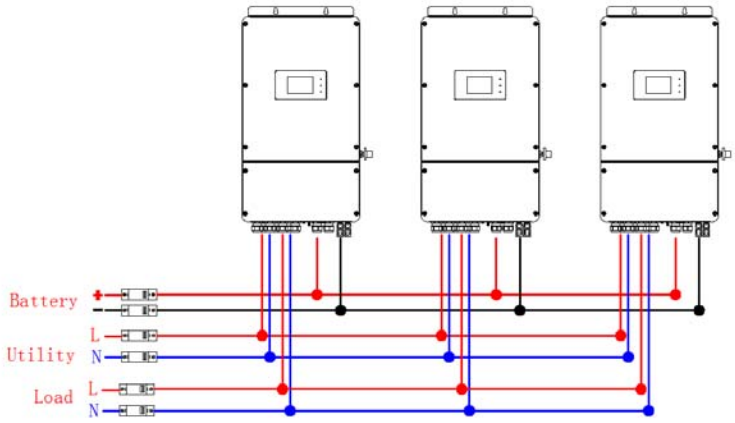


Communication Connection:

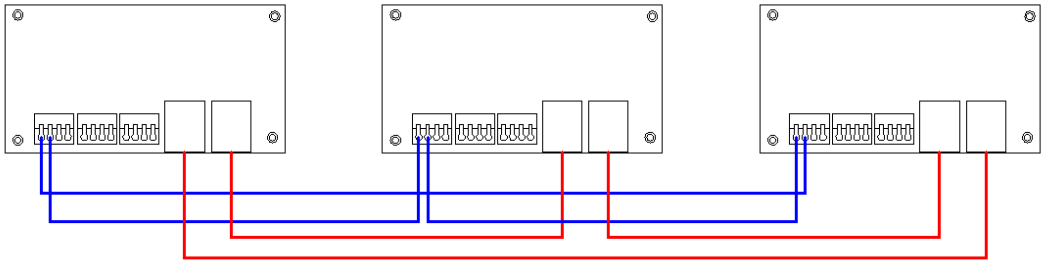


Three inverters parallel：

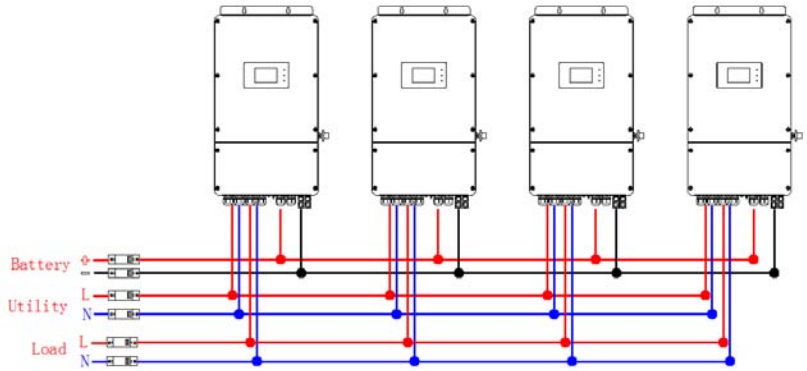
Power Connection:



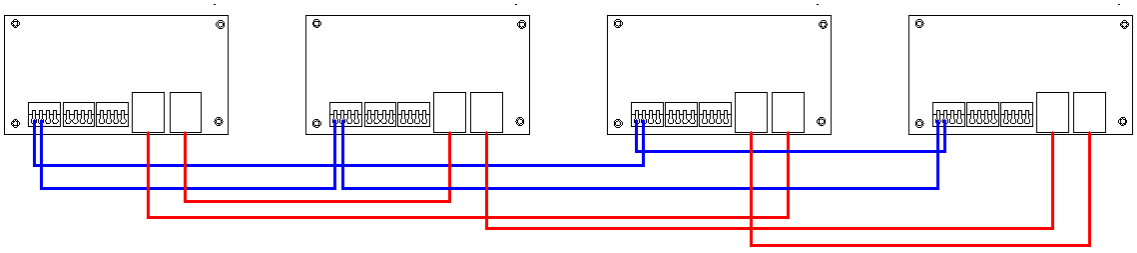
Communication Connection：



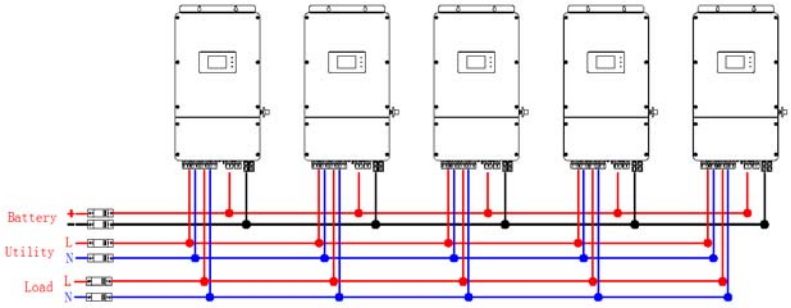
Four inverters parallel：
Power Connection:



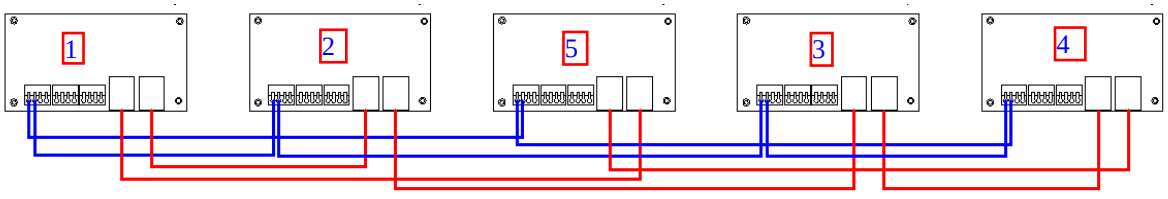
Communication Connection:



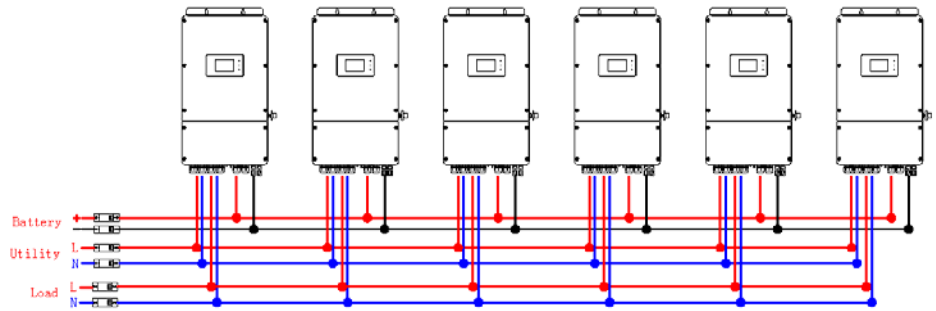
Five inverters parallel：
Power Connection:



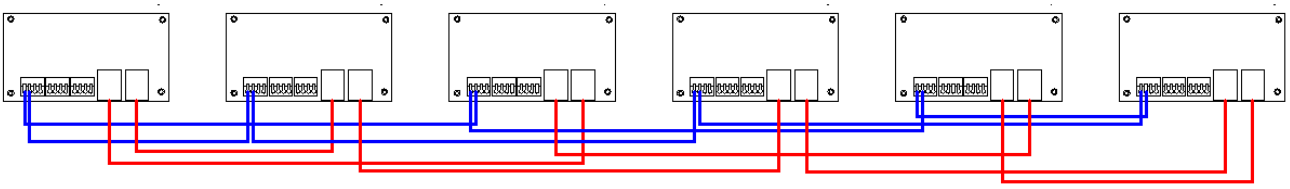
Communication Connection:



Six inverters parallel：
Power Connection:



Communication Connection:



Three-phase parallel：

CAUTION: It is forbidden for inverter to share the same solar panel group.

1. Connecting the parallel communication cables and power cables as shown below:

Warning： All inverters must share the same battery pack when paralleling

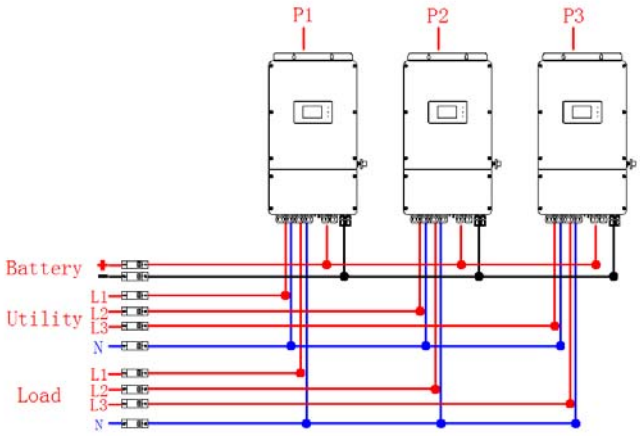
2. Set the parameters of each inverter independently (working mode, single-phase parallel function, three-phase parallel function and set A/B/C phase sequence).

Warning： When working in parallel, the working mode of each inverter must be the same.

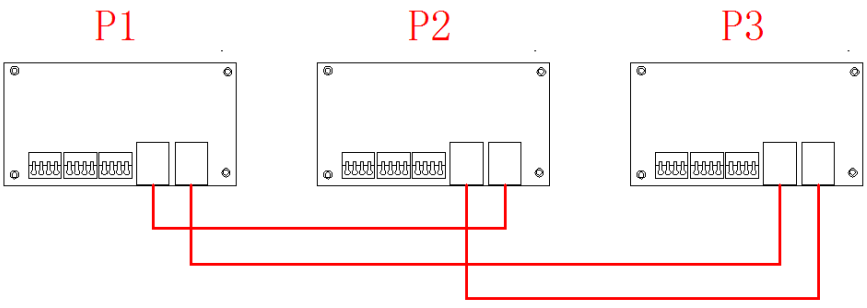
3. After setting the parameters, first turn on the A phase inverter and then turn on each inverters in turn.

One inverters in each phase:

Power connection:

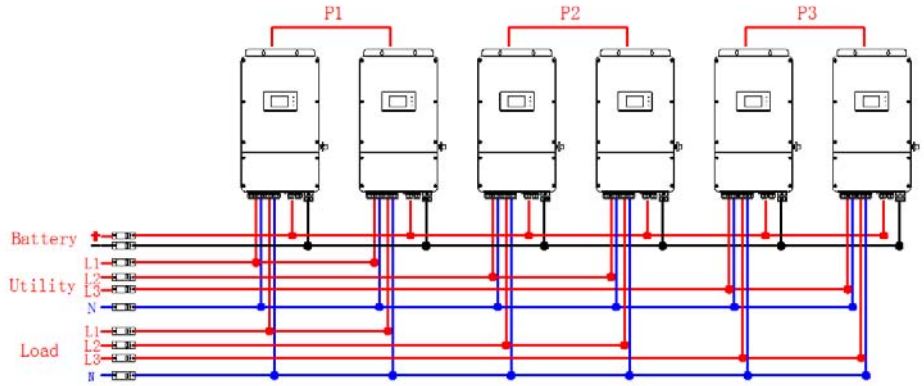


Communication Connection:

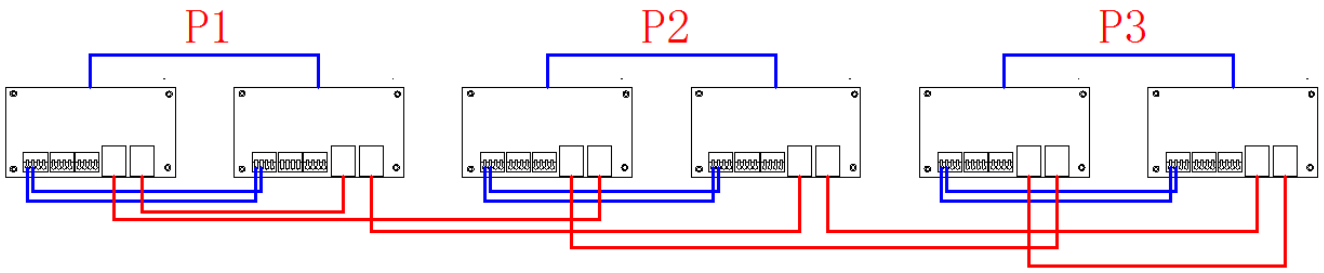


Two inverters in each phase:

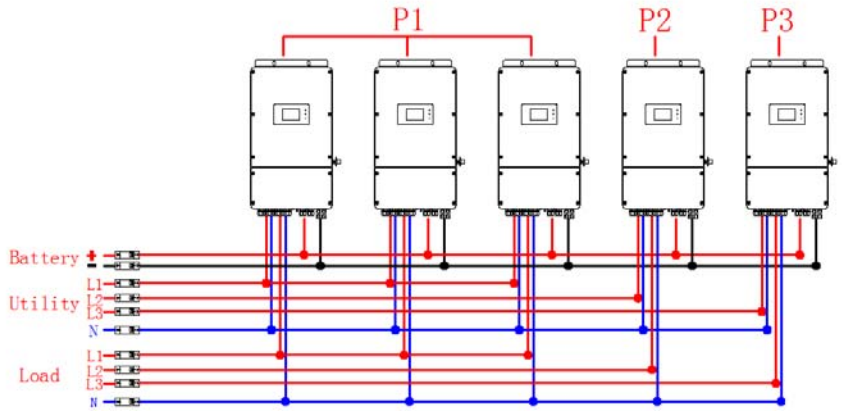
Power connection:



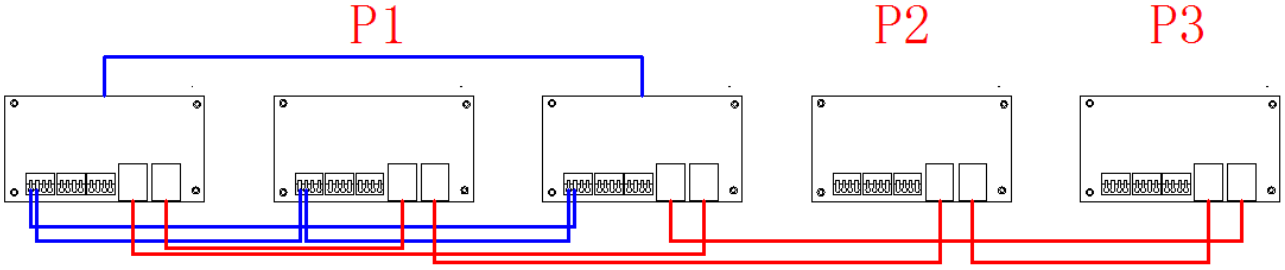
Communication Connection:



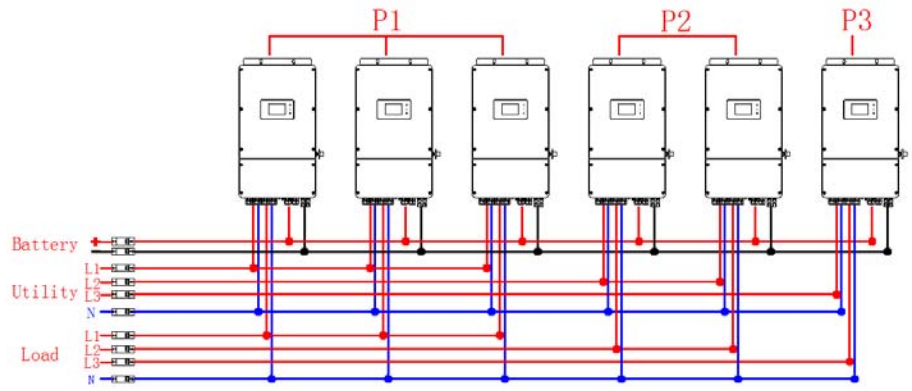
Three inverters in one phase and only one inverter for the remaining two phases:
Power Connection:



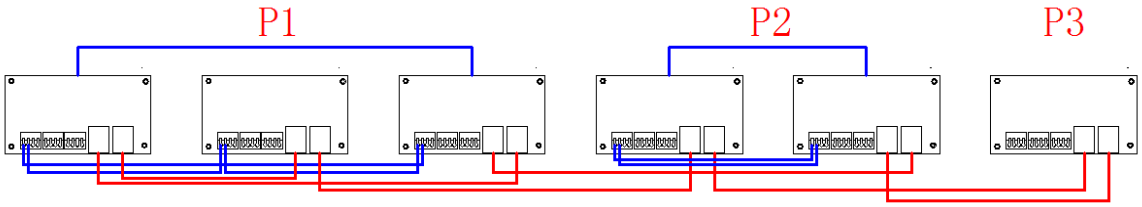
Communication Connection



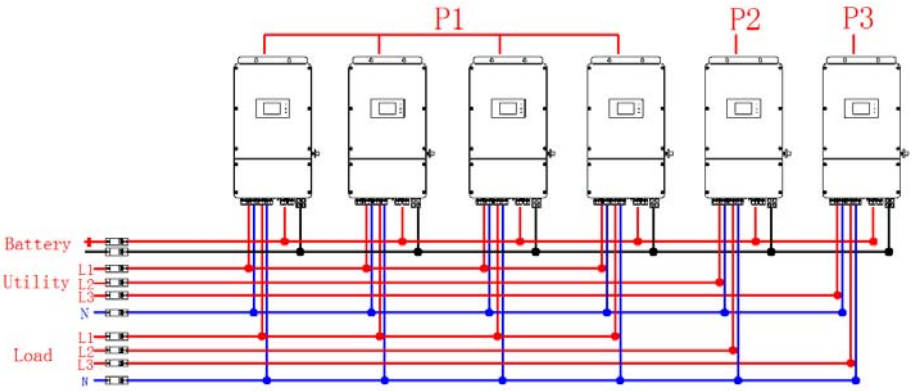
Three inverters in one phase, two inverters in second phase and one inverter for the third phase:
Power Connection:



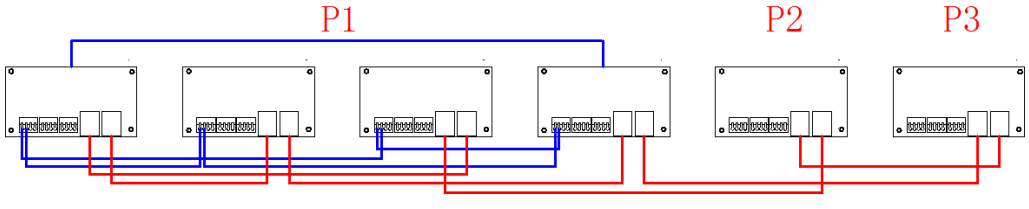
Communication Connection



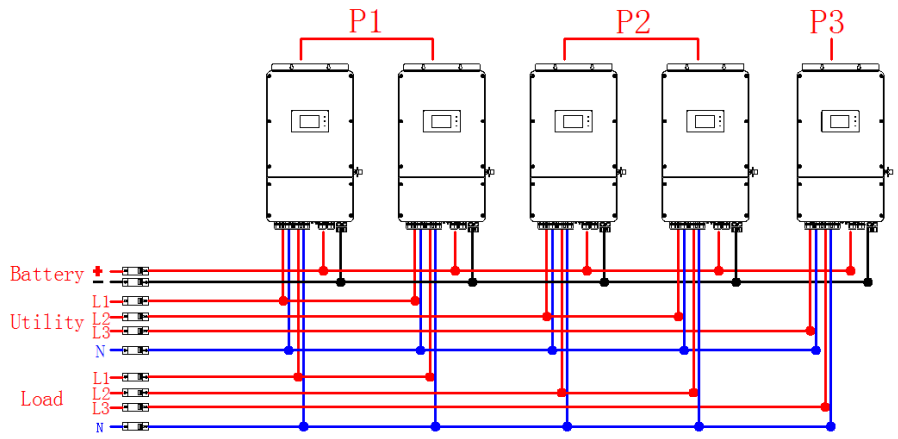
Four inverters in one phase and one inverter for the other two phases:
Power Connection:



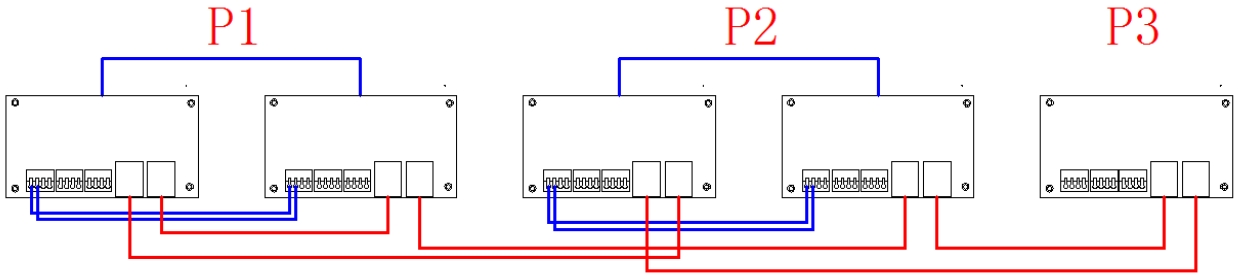
Communication Connection



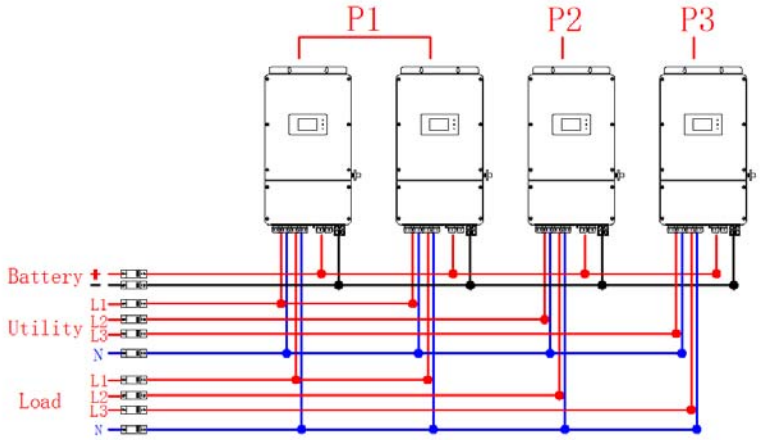
Two inverters in two phases and only one inverter for the remaining phase:
Power Connection:



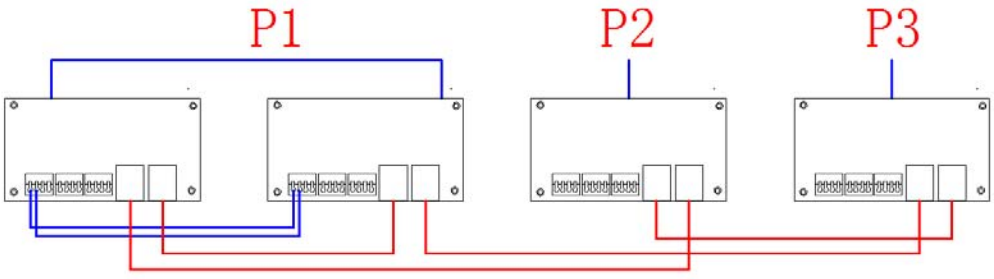
Communication Connection



Two inverters in one phase and only one inverter for the remaining phases:
Power Connection:



Communication Connection



4.6 Fault Code

Fault Code	Fault Event
01	Fan is locked
02	Over temperature
03	Battery voltage is too high
04	Battery voltage is too low
05	Output short circuited.
06	Output voltage is too high.
07	Overload time out
08	Bus voltage is too high
09	Bus soft start failed
52	Bus voltage is too low
53	Inverter soft start failed
55	Over DC voltage in AC output
57	Current sensor failed
58	Output voltage is too low

4.7 Warning Code

Warning Code	Warning Event
01	Fan is locked
02	Over temperature
03	Battery is over-charged
04	Low battery
07	Overload
08	Discharge over current
10	Output power derating
15	PV energy is low
16	High AC input (>280VAC) during BUS soft start
22	PV over voltage
24	PV over temperature
59	PV low voltage

4.8 Parallel Faults Code

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

5. TROUBLE SHOOTING

Problem	LCD/LED/Buzzer	Possible cause	What to do
Unit shuts down automatically during start up process	LCD/LED and buzzer will be active then complete off	The battery voltage is too low	1.Re-charge battery. 2. Replace battery
No response after power on	No indication	1.The battery voltage is too low. 2. Internal fuse tripped	1.Contact repair center for replacing the fuse. 2. Re-charge battery. 3. Replace battery.
Mains exist but the unit works in battery mode	Input voltage is displayed as '0' on the LCD and green LED is flashing	Input protector is triggered	Check if AC breaker is turned on and AC wiring is connected well.
	LED is flashing	Insufficient quality of AC power(grid or generator)	1. Check if AC wires are too thin and/or too long. 2. Check if generator (if applied) is working well or if input voltage range setting is correct.
When the unit is turned on, internal relay is switched on and off repeatedly	LCD display and LED flashing	Set "Solar First" as the priority of output source.	Change output source priority to utility first.
Buzzer beeps continuously and red LED is on	Fault code 01	Fan fault	Replace the fan
	Fault code 02	Internal temperature of inverter component is over 85°C	Check whether the environment around the equipment well ventilated
	Fault code 03	The battery voltage is too high	Check if spec and quantity of batteries are meet requirements
		battery is overcharged	Return to repair center
	Fault code 04	The battery voltage is too low	1.The battery is dead, please charge the battery immediately 2.Check the battery for damage
	Fault code 05	Output short circuited	1.Check that the output cable is connected 2.Return to the maintenance center
	Fault code 06/58	Output abnormal (Inverter voltage range 180-260VAC)	Return to the maintenance center
	Fault code 07	Overload error , the inverter is overload 110% and overload time reaches the upper limit	Reduce load

Buzzer beeps continuously and red LED is on	Fault code 08/09/12/53/57	Internal fault of inverter	Return to the maintenance center
	Fault code 10	Over current or surge	Remove abnormal load or check PV input
	Fault code 11	The configuration of the solar panel is higher than the PV input voltage required by the inverter	Remove the excess solar panels
	Fault code 13	Battery discharge over current	Please check whether the discharge current of Item 40 is lower than the discharge current of the inverter
	Fault code 52/55	Internal fault of inverter	Return to the maintenance center
	Fault code 60	Power feedback protection	1.Restart the inverter. 2.Check if L/N cables are not connected reversely in all inverters. 3.For parallel system in single phase ,make sure the sharing are connected in all inverters. for supporting three-phase system, make sure the sharing cables are connected in the inverters in the same phase. and disconnected in the inverters in different phase.
	Fault code 71	Firmware version inconsistent	1.Update all inverter firmware to the same version 2.If the problem remains ,please contact your installer.
	Fault code 72	The output current of each inverter is different	1.check if sharing cables are connected well and restart the inverter. 2.if the problem remains ,please contact your installer.
	Fault code 73	AC output voltage setting is different	Check whether the output voltage of each inverter are set the same

Buzzer beeps continuously and red LED is on	Fault code 80	CAN data loss	1.Check if communication cables are connected well and restart the inverter 2.If the problem remains, please contact your installer.
	Fault code 81	Host data loss(only for three-phase parallel)	
	Fault code 82	Synchronization data loss	
	Fault code 83	The battery voltage of each inverter is not the same.	1.Make sure all inverters share same groups of batteries together. 2.Remove all loads and disconnect AC input and PV input. Then, check battery voltage of all inverters. If the values from all inverters are close, please check if all battery cables are the same length and same material type. Otherwise, please contact your installer to provide SOP to calibrate battery voltage of each inverter. 3.If the problem still remains, please contact your installer.
	Fault code 84	AC input voltage and frequency detected different	Check whether the input voltage and frequency of each inverter are set the same
	Fault code 85	AC output current unbalance	1.Restart the inverter 2.Remove some excessive loads and re-check load information from LCD of inverters. If the values are different, please check if AC input and output cables are in the same length and material type.
	Fault code 86	AC output mode setting is different.	1.Check whether it is set to parallel mode 2. Return to the maintenance center

6. SPECIFICATIONS

Table 1 Line Mode Specifications

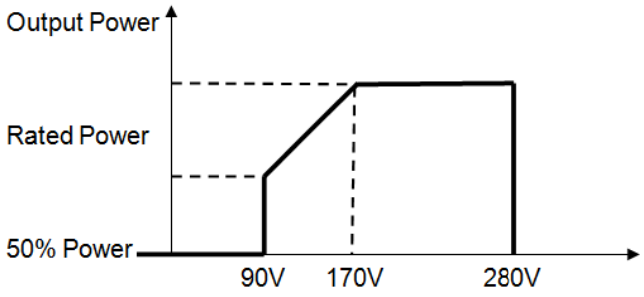
INVERTER MODEL	6KW
Input Voltage Waveform	Sinusoidal (utility or generator)
Nominal Input Voltage	230Vac
Low Loss Voltage	90Vac±7V (wide range) 170Vac±7V (narrow range);
Low Loss Return Voltage	100Vac±7V (wide range) 180Vac±7V (narrow range);
High Loss Voltage	280Vac±7V
High Loss Return Voltage	270Vac±7V
Max AC Input Voltage	280Vac
Nominal Input Frequency	50Hz / 60Hz (Auto detection)
Low Loss Frequency	40±1Hz
Low Loss Return Frequency	42±1Hz
High Loss Frequency	65±1Hz
High Loss Return Frequency	63±1Hz
Output Short Circuit Protection	Circuit Breaker
Efficiency (Line Mode)	>95% (Rated R load, battery full charged)
Transfer Time	10ms typical (wide range); 20ms typical (narrow range)
Output power derating: When AC input voltage drops to 170V, the output power will be derated.	

Table 2 Inverter Mode Specifications

INVERTER MODEL	6KW
Rated Output Power	6000W
Output Voltage Waveform	Pure Sine Wave
Output Voltage Regulation	230Vac±5%
Output Frequency	50Hz/60Hz
Max. Peak Efficiency	93%
Overload Protection	5s@≥110%load; 10s@101%~110% load
Surge Capacity	2* rated power for 5 seconds
Nominal DC Input Voltage	48Vdc
Cold Start Voltage	46Vdc
Low DC Warning Voltage	46.0Vdc±0.5V
Low DC Warning Return Voltage	47.0Vdc±0.5V
Low DC Cut-off Voltage	42.0Vdc±0.5V
High DC Recovery Voltage	60±1Vdc
High DC Cut-off Voltage	63±1Vdc
No Load Power Consumption	<100W

Table 3 Charge Mode Specifications

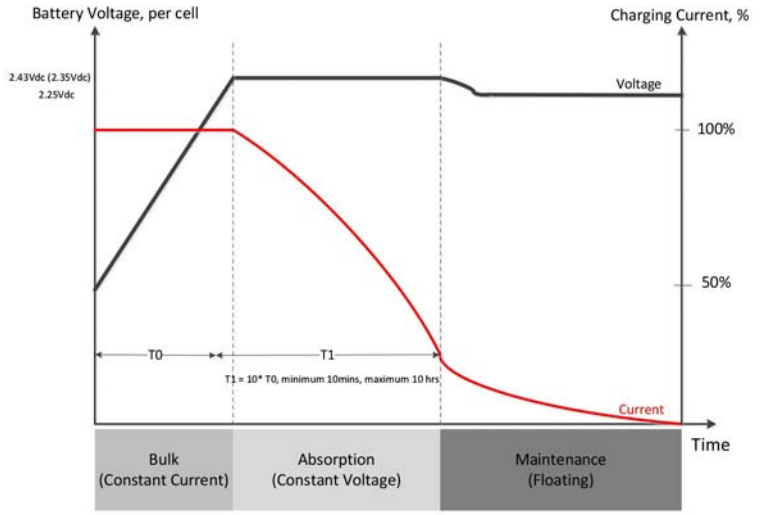
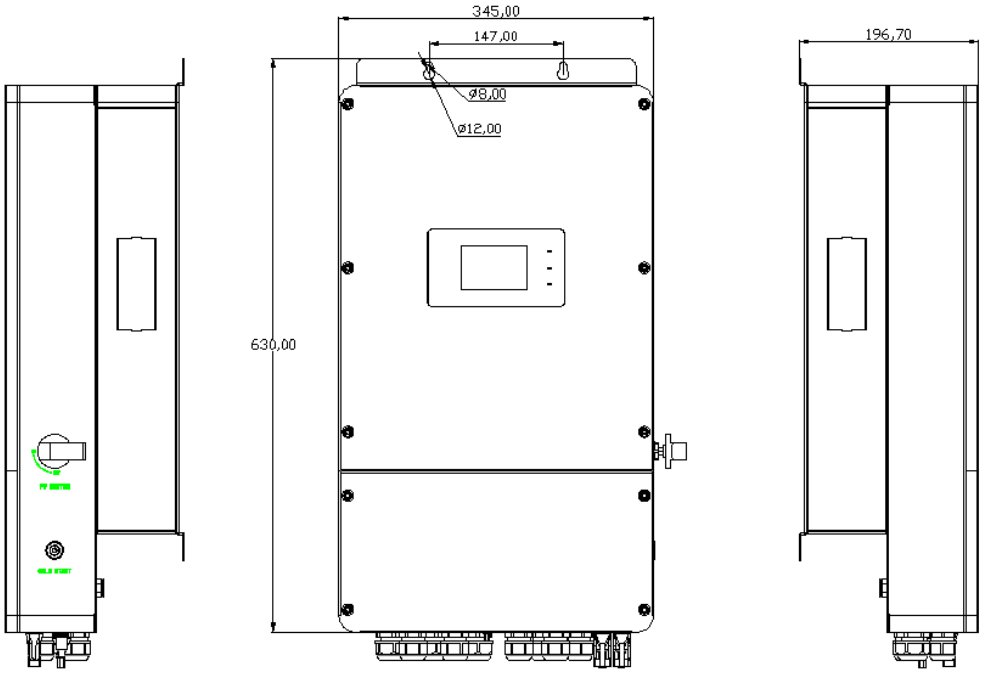
Utility Charging Mode		
INVERTER MODEL		6KW
Charging Algorithm		3-Step
AC Charging Current (Max)		100A(@VI/P=230Vac)
Bulk Charging Voltage	Flooded Battery	58.4Vdc
	AGM / Gel Battery	56.4Vdc
Floating Charging Voltage		54Vdc
Charging Curve		
MPPT Solar Charging Mode		
INVERTER MODEL		6KW
Max. PV Array Power		7000W
Nominal PV Voltage		360Vdc
Start-up Voltage		100Vdc +/- 10Vdc
PV Array MPPT Voltage Range		90-450Vdc
MAX. PV Input Current		30A
Max. PV Array Open Circuit Voltage		500Vdc
Max Charging Current (AC charger + solar charger)		120A

Table4 General Specifications

INVERTERMODEL	6KW
Operating Temperature Range	-25°C~50°C
Storage temperature	-15°C~60°C
Humidity	5%to 95%RelativeHumidity(Non-condensing)
Dimension(D*W*H),mm	196.7*345*630
Net Weight,kg	29.3

7.INSTALLATION DIMENSION DRAWING

(unit: mm)

NOTE: The following picture is only a schematic diagram of the equipment .If the actual chassis does not conform to the schematic due to a structural upgrade, it is subject to prior notice.