

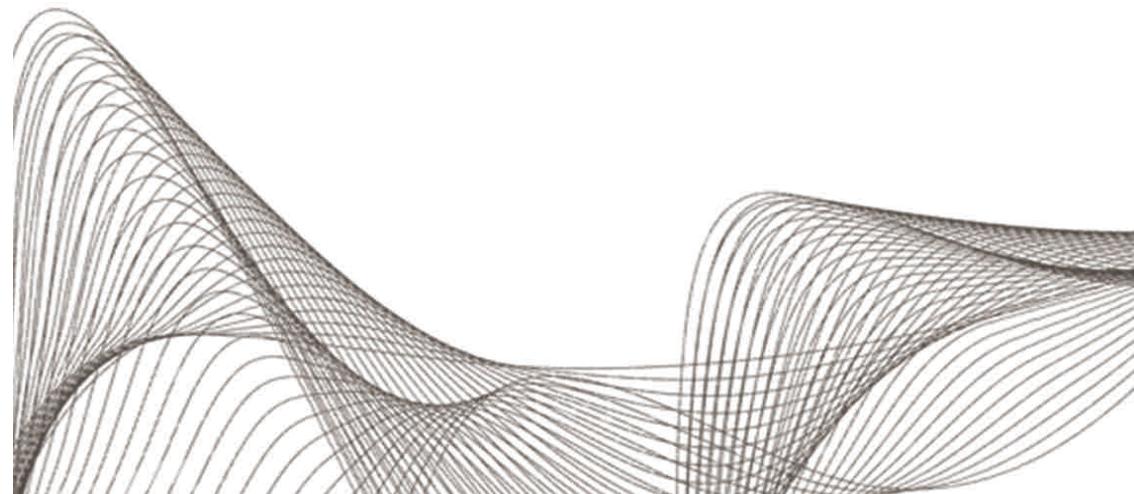
**制作说明：A4对折**

**封面纸质：铜板纸**

# USER MANUAL

## Hybrid

## Solar Inverter



## 5. 试运转

### 单相并联

步骤 1: 调试前检查以下要求:

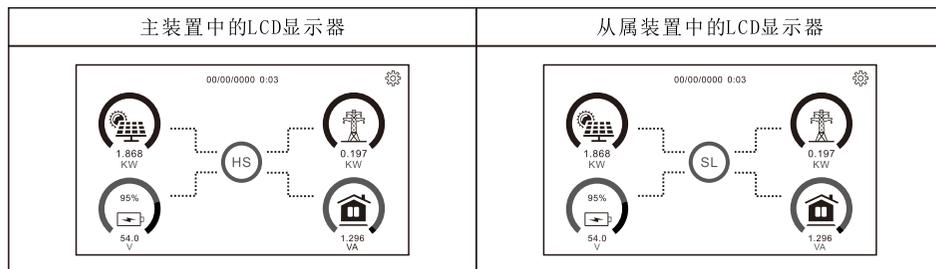
※ 正确的电线连接

※ 确保负载侧线路中的所有断路器断开, 并且每个装置的每个中性线连接在一起。

步骤 2: 打开每个装置, 在每个装置的触摸屏设置系统工作模式中设置输出类型为“PAL”。然后关闭所有装置。

**注意:** 设置LCD程序时, 必须关闭开关。否则, 该设置不能被编程。

步骤 3: 打开每个装置。



注: 主机和从机是随机定义的。

# Table Of Contents

<b>1 About This Manual</b> .....	<b>1</b>
1.1 Purpose.....	1
1.2 Scope.....	1
<b>2 Safety Instructions</b> .....	<b>1</b>
<b>3 Introduction</b> .....	<b>2</b>
3.1 Features.....	2
3.2 Basic System Architecture.....	2
3.3 Product Overview.....	3
<b>4 Installation</b> .....	<b>6</b>
4.1 Unpacking And Inspection .....	6
4.2 Preparation .....	6
4.3 Mounting The Unit.....	6
4.4 Battery Connection.....	7
4.5 Ac Input/Output Connection.....	8
4.6 PV Connection.....	9
4.7 Final Assembly.....	10
<b>5 Operation</b> .....	<b>11</b>
5.1 Power On/off.....	11
5.2 LCD display icon.....	12
5.3 Touch screen flow chart.....	13
5.4 Touch screen operation instructions.....	14
5.5 Fault and alarm description .....	21
<b>6 Trouble removal</b> .....	<b>23</b>
<b>7 Technical datasheet</b> .....	<b>24</b>
<b>Appdix: Parallel function</b> .....	<b>25</b>
1 Mounting the unit.....	25
2 Wiring Connection.....	25
3 PV Connection.....	35
4 LCD Setting and Display.....	36
5 Commissioning.....	37

## 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 manual for future reference.

### 1.2 Scope

This manual provides safety and installation guidelines as well as information on tools and wiring.

## 2 Safety Instructions

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

- Before using the unit read all instructions and cautionary markings on the unit, the batteries and all appropriate sections of this manual.
- 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.
- Do not disassemble the unit Take it to a qualified service center when service or repair is required. Incorrect re-assembly may result in a risk of electric shock or fire.
- To reduce risk of electric shock, disconnect all wirings before attempting any maintenance or cleaning. Turning off the unit will not reduce this risk.
- CAUTION**-Only qualified personnel can install this device with battery.
- NEVER** charge a frozen battery.
- For optimum operation of this inverter/charger, please follow required spec to select appropriate cable size. It's very important to correctly operate this inverter/charger.
- Be very cautious when working with metal tools on or around batteries. A potential risk exists to drop a tool to spark or short circuit batteries or other electrical parts and could cause an explosion.
- Please strictly follow installation procedure when you want to disconnect AC or DC terminals, Please refer to INSTALLATION section of this manual for the details
- One piece of 150A fuse is provided as over-current protection for the battery supply.
- GROUNDING INSTRUCTIONS** -This inverter/ charger should be connected to a permanent grounder wiring system. Be sure to comply with local requirements and regulation to install this inverter.
- NEVER** cause AC output and DC input short circuited. Do NOT connect to the mains when DC input short circuits.
- Warning!!** Only qualified service persons are able to service this device. If errors still persist after following troubleshooting table, please send this inverter/charger back to local dealer or service center for maintenance.

## 3. PV连接

有关 PV 连接的注意事项，请参考单机用户手册：每个逆变器应单独连接至 PV 模块。

## 4. LCD设置和显示

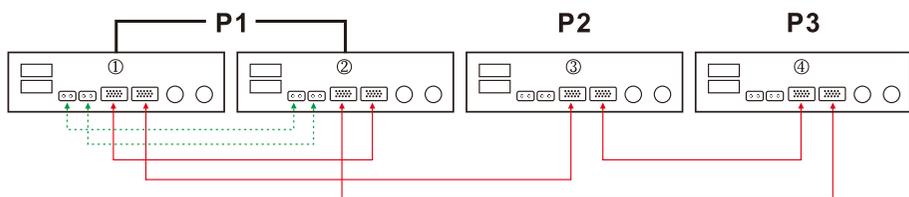
设置程序：

程序	描述		
04	交流输出模式*该设置仅在逆变器处于待机模式（关闭）时可用。	单一：	当装置与单相并联使用时，请在输出类型选择“PAL”。 要求至少有3个逆变器或最多9个逆变器来支持三相设备。要求每相至少有一个逆变器，或者一相最多有四个逆变器。详细信息请选择-2。请在输出类型中为连接到L1相的逆变器选择“3P1”，在输出类型中为连接到L2相的逆变器选择“3P2”，在输出类型中为连接到L3相的逆变器选择“3P3”。 确保将共享电流电缆连接到同相的单元。不要在不同相位的单元之间连接共享电流电缆。 此外，省电功能将自动禁用。
		SI 0	
		平行：	
		PAL	
		L1 相：	
3P1			
L2 相：	3P2		
L3 相：	3P3		

故障代码显示

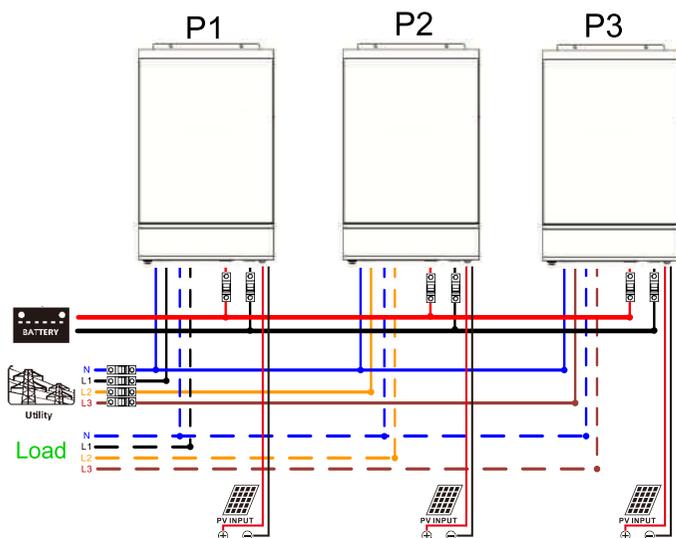
故障代码	故障事件
60	功率反馈保护
71	固件版本不一致
72	均流故障
73	并机系统中输出电压设置不一致
80	CAN故障
81	主机损失
82	同步损失
83	检测到不同的电池电压
84	检测到不同的交流输入电压和频率
85	交流输出电流不平衡
86	交流输出模式设置不同

### 通信连接

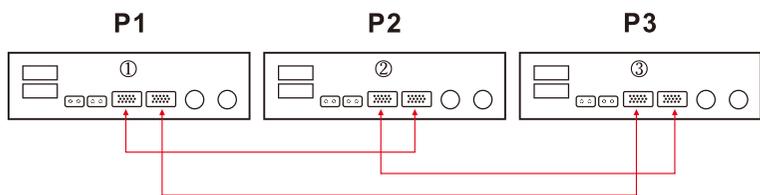


每相一个逆变器:

接电源 (每台机器光伏板需接独立的系统)



### 通信连接



**警告:** 不要在不同相位的逆变器之间连接均流电缆。否则, 可能会损坏逆变器。

## 3 Introduction

This is a multi-function Inverter/charger, combining functions of inverter, solar charger and battery charger to offer uninterrupted power support with portable size. Its comprehensive touch screen provides user configurable and easy-to-operate push-button operations. such as battery charging current, AC/solar charger prioritization, and acceptable input voltages based on different loads.

### 3.1 Features

- ◆ Pure sine wave inverter
- ◆ The input voltage range can be configured for household appliances and personal computers via touch screen Settings
- ◆ Application-based configurable battery charging current setting via touch screen
- ◆ The AC/solar charger priority can be configured through touch screen Settings
- ◆ Compatible to mains voltage or generator power
- ◆ Auto restart while AC is recovering
- ◆ Overload/Over temperature/short circuit protection
- ◆ Smart battery charger design for optimized battery performance
- ◆ Cold start function

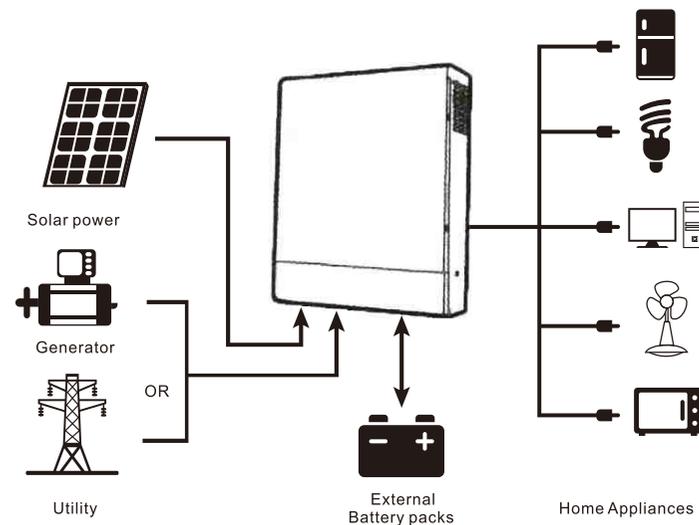
### 3.2 Basic System Architecture

The following illustration shows basic application for this inverter/charger. It also includes following devices to have a complete running system:

- ◆ Generator or Utility
- ◆ PV modules

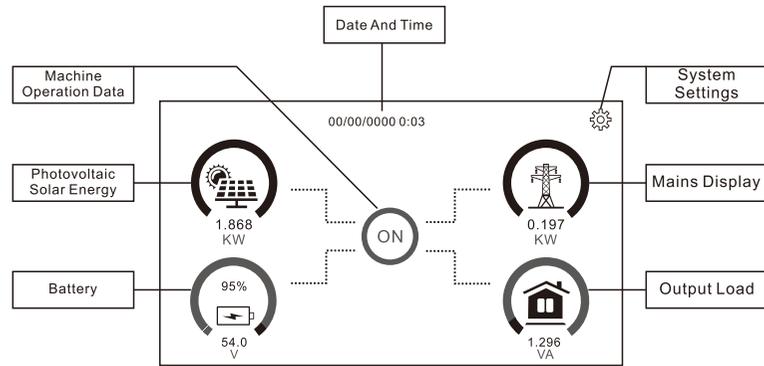
Consult with your system integrator for other possible system architectures depending on your requirements.

This inverter can power all kinds of appliances in home or environment, including motor-type appliances such as tube light, fan, refrigerator and air conditioner.

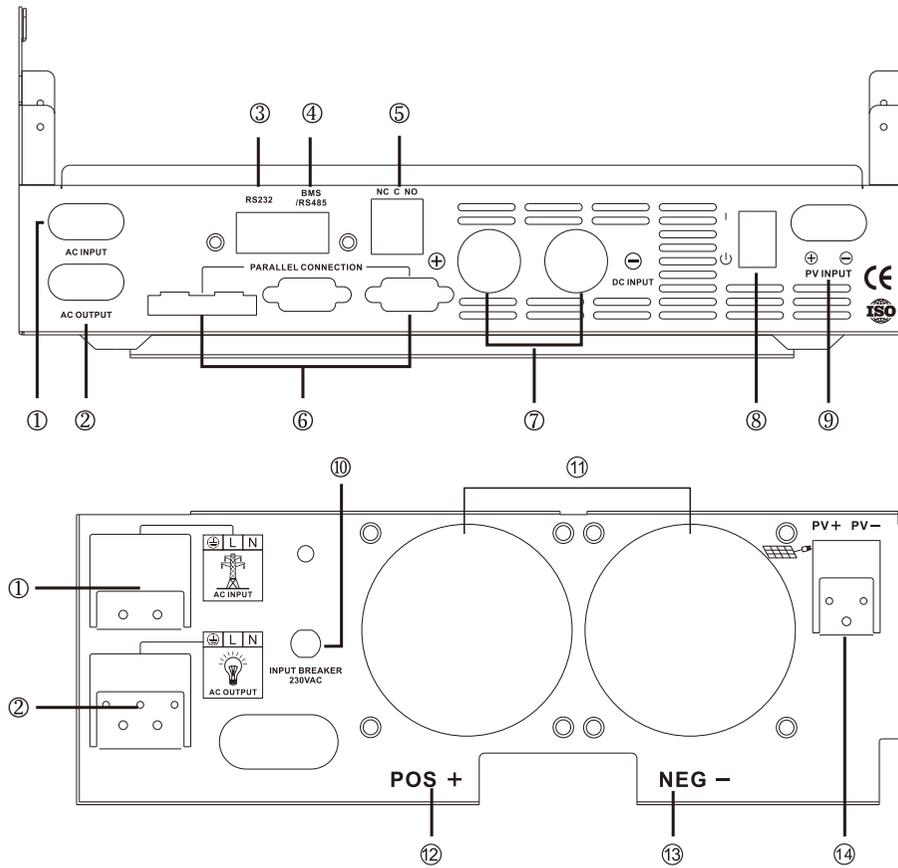


### 3.3 Product Overview

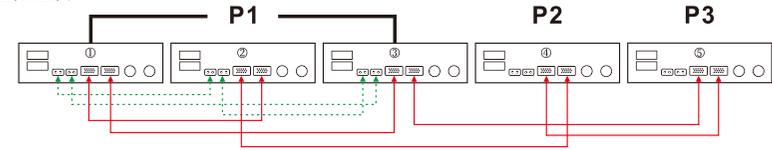
#### 3.3.1 Touch color screen



#### 3.3.2 Back Panel

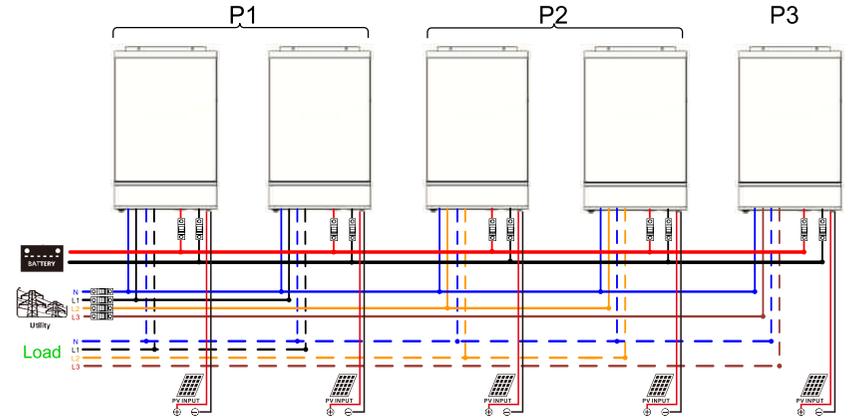


#### 通信连接

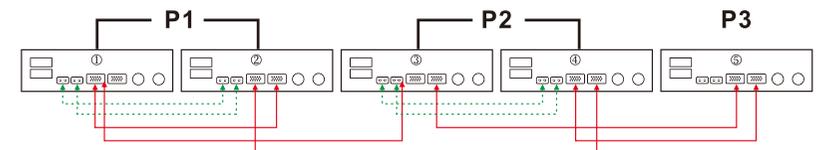


两相中有两个逆变器，其余相只有一个逆变器：电源连接

接电源（每台机器光伏板需接独立的系统）

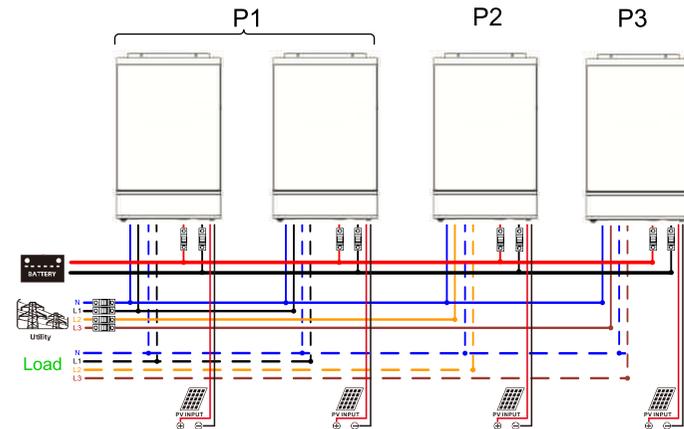


#### 通信连接

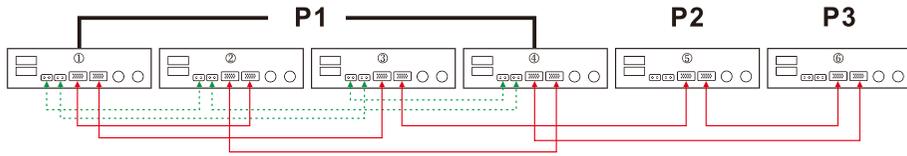


第一相两个逆变器，其余相只有一个逆变器：

接电源（每台机器光伏板需接独立的系统）

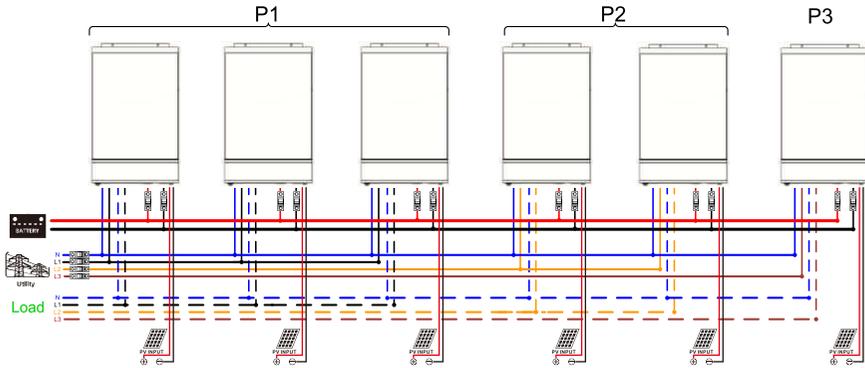


通信连接

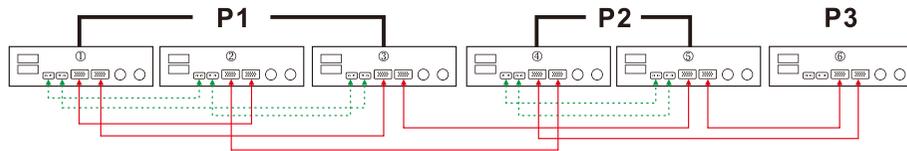


第一相三个逆变器，第二相两个逆变器，第三相一个逆变器：

接电源（每台机器光伏板需接独立的系统）

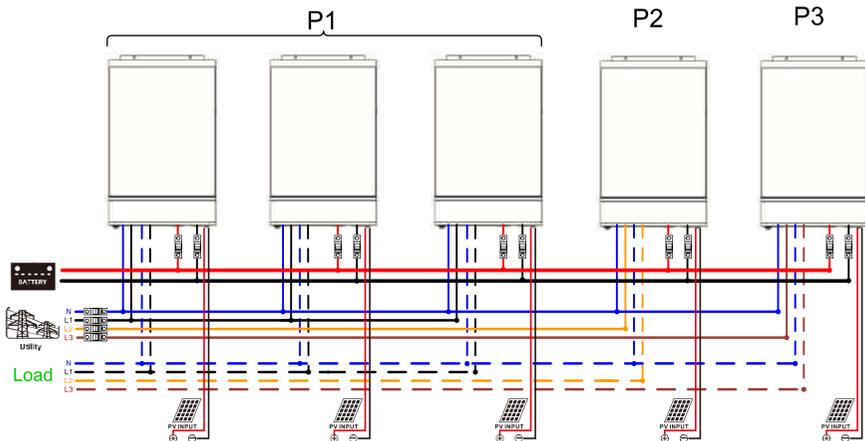


通信连接

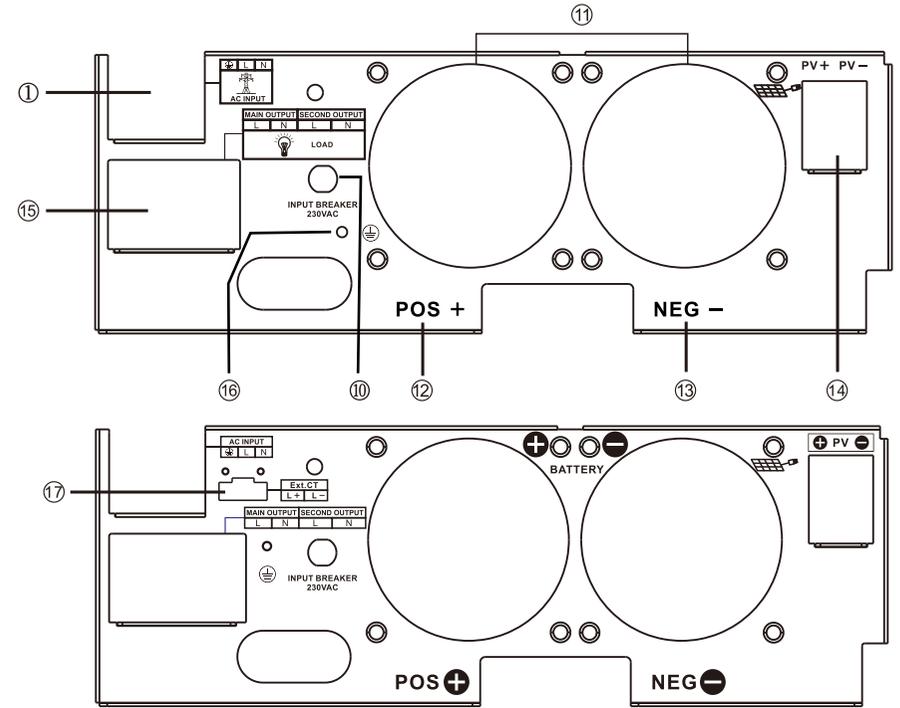


第一相三个逆变器，其余两相只有一个逆变器：

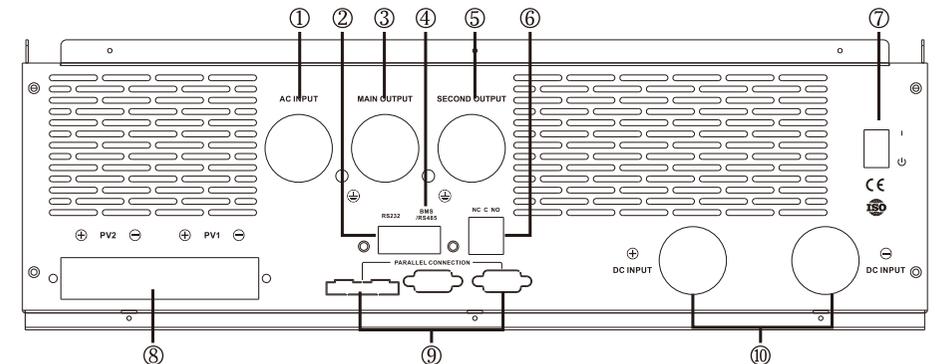
接电源（每台机器光伏板需接独立的系统）

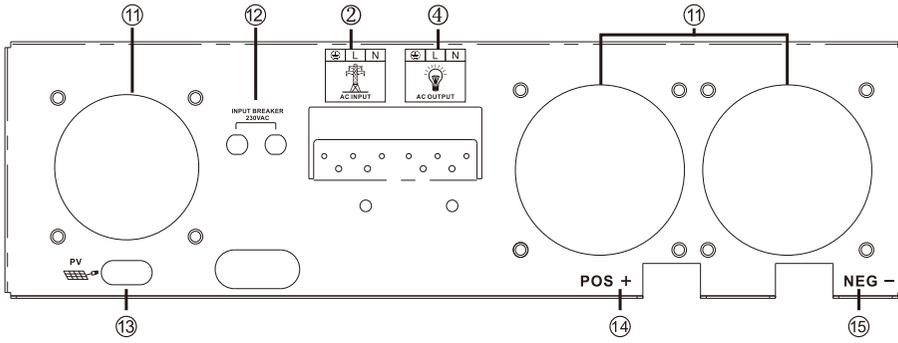


Dual Output Back Panel

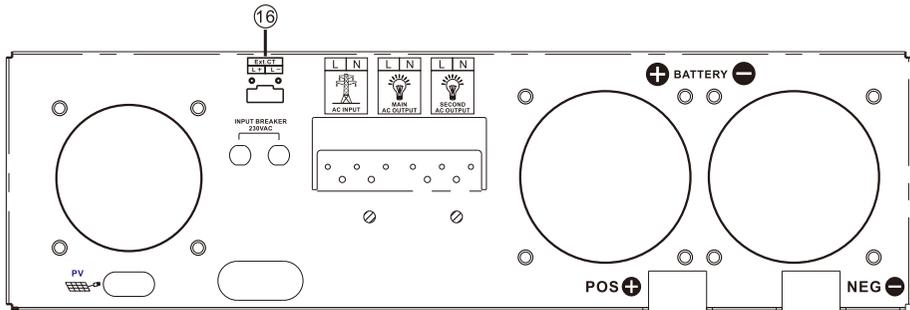
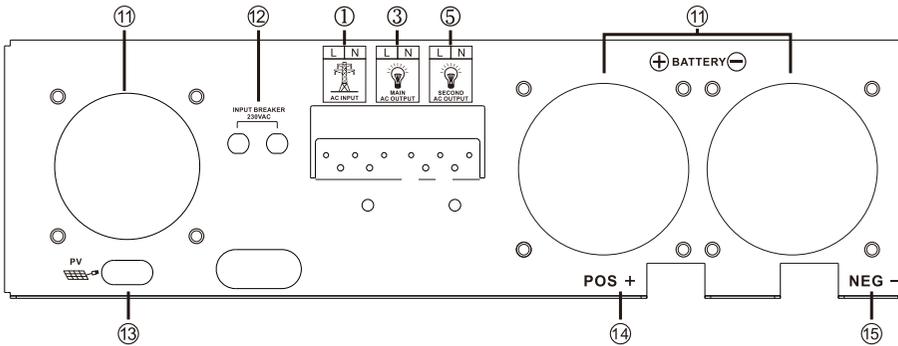


- |                                    |                                |
|------------------------------------|--------------------------------|
| 1..... AC Input                    | 10...Input Breaker             |
| 2..... AC Output                   | 11...Fan                       |
| 3.....Communication Port           | 12...Battery Terminal Positive |
| 4.....BMS/RS485 Communication Port | 13...Battery Terminal Negative |
| 5.....Dry Contact                  | 14...Solar Panel Input         |
| 6.....Parallel connection          | 15...AC Main/Second Output     |
| 7.....Battery Input                | 16...Output ground wire        |
| 8.....Power ON/ OFF Switch         | 17...CT Signal port            |
| 9.....PV Input                     |                                |



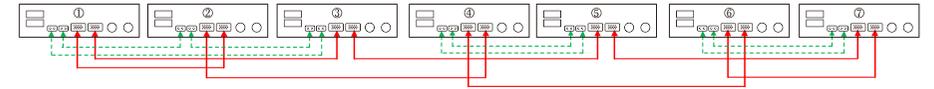


Dual Output Back Panel



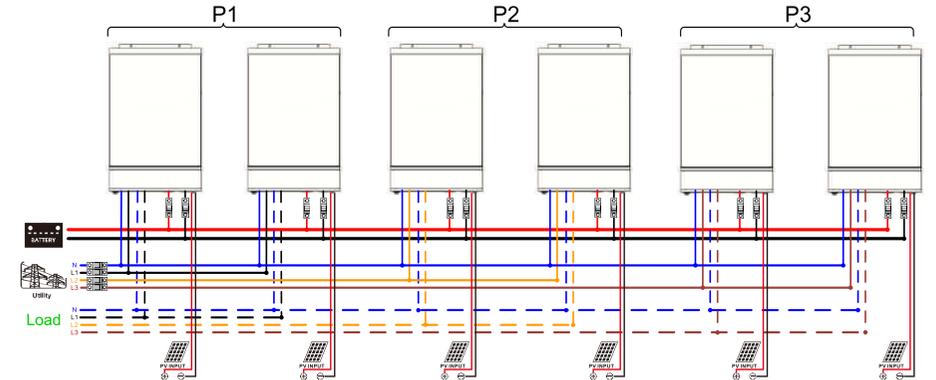
- |                                    |                                |
|------------------------------------|--------------------------------|
| 1.....AC Input                     | 9.....Parallel connection      |
| 2.....RS232 Communication Port     | 10...Battery Input             |
| 3.....Main output                  | 11...Fan                       |
| 4.....BMS/RS485 Communication Port | 12...Input Breaker             |
| 5.....Second Output                | 13...PV Input                  |
| 6.....Dry Contact                  | 14...Battery Terminal Positive |
| 7.....Power ON/OFF Switch          | 15...Battery Terminal Negative |
| 8.....Solar Panel Input            | 16...CT Signal port            |

通信连接

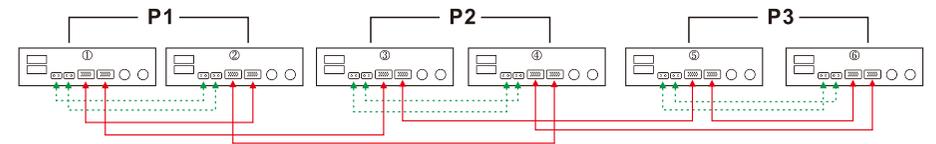


每相两个逆变器:

接电源 (每台机器光伏板需接独立的系统)

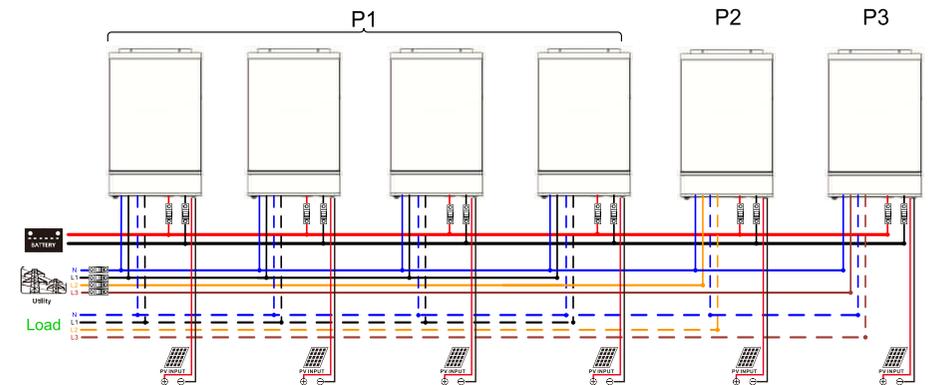


通信连接

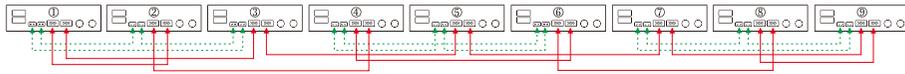


第一相四个逆变器, 另外两相一个逆变器:

接电源 (每台机器光伏板需接独立的系统)

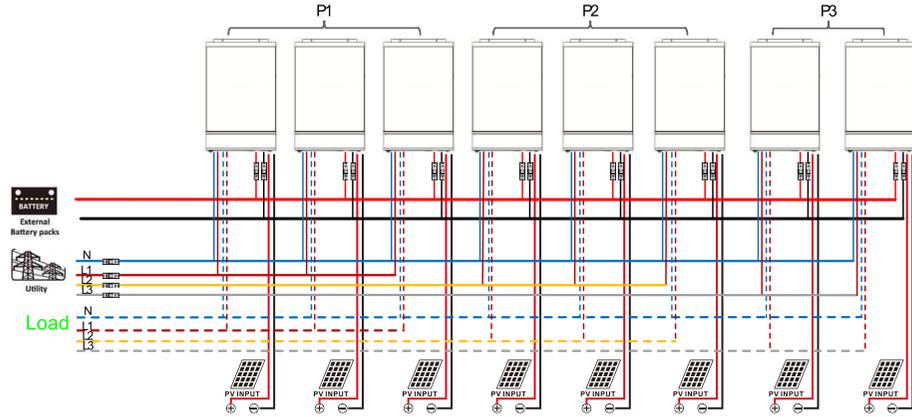


## 通信连接

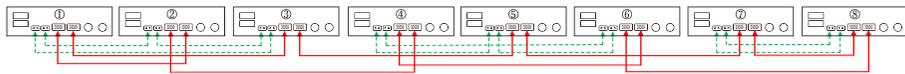


第一相三个逆变器，第二相三个逆变器，第三相两个逆变器：

接电源（每台机器光伏板需接独立的系统）

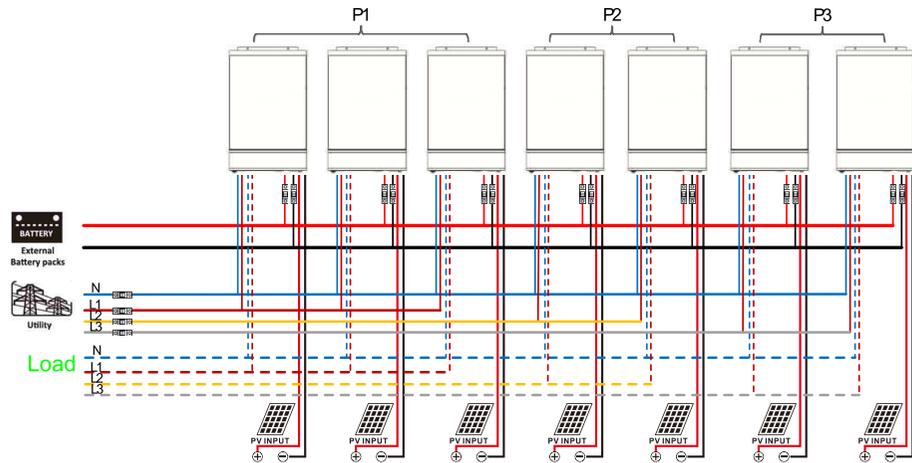


## 通信连接



第一相三个逆变器，第二相两个逆变器，第三相两个逆变器：

接电源（每台机器光伏板需接独立的系统）



## 4 INSTALLATION

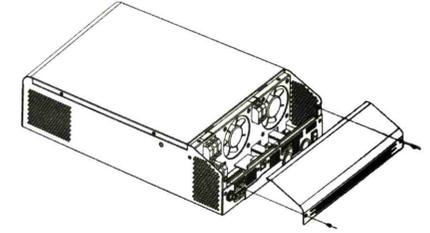
### 4.1 Unpacking and Inspection

Before installation, please inspect the unit. Be sure that nothing inside the package is damaged. You should have received the following items inside of package:

- ◆ The unit x 1
- ◆ User manual 1

### 4.2 Preparation

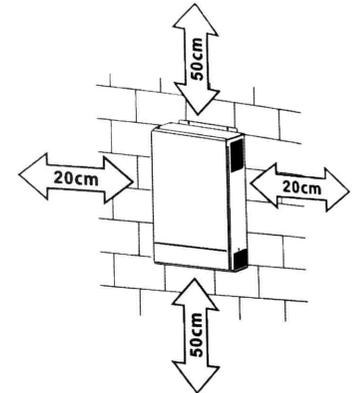
Before connecting all please take off bottom cover by removing two screws as shown below.



### 4.3 Mounting the Unit

Consider the following points before selecting where to install:

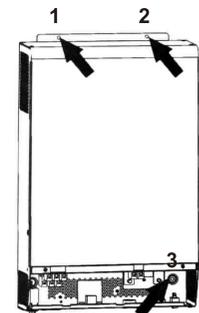
- ※ Do not mount the inverter on flammable construction materials.
- ※ Mount on a solid surface
- ※ Install this inverter at eye level in order to allow the LCD display to be read at all times.
- ※ For proper air circulation to dissipate heat, allow a clearance of approx. 20 cm to the side and approx. 50 cm above and below the unit.
- ※ The ambient temperature should be between and to ensure optimal operation.
- ※ The recommended installation position is to be adhered to the wall vertically.
- ※ Be sure to keep other objects and surfaces as shown in the diagram to guarantee sufficient heat dissipation and to have enough space for removing wires.



**! SUITABLE FOR MOUNTING ON CONCRETE OR OTHER NON-COMBUSTIBLE SURFACE ONLY.**

Install the unit by screwing three screws.

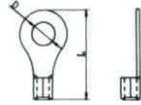
- 1,2 Use the M6\*80mm expansion bolts.
- 3 Use M4 or M5.



#### 4.4 Battery Connection

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

Ring terminal:



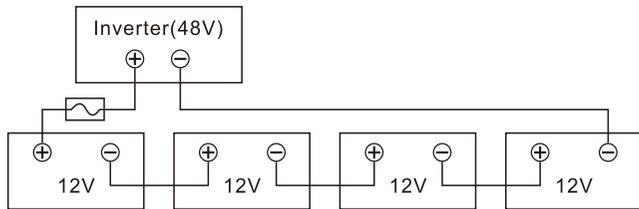
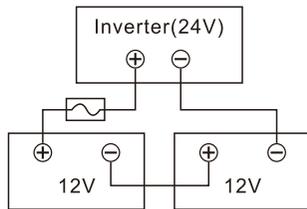
**WARNING!** All wiring must be performed by be qualified personnel.  
**WARNING!** It's very important for system safety and efficient operation to use appropriate cable for battery connection. To reduce risk of injury, please use the proper recommended cable and terminal size as below.

Recommended battery cable and terminal size:

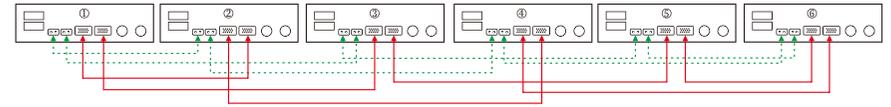
Rated Capacity	Typical Amperage	Battery capacity	Wire Size	Ring Terminal			Torque value
				Cable(mm <sup>2</sup> )	Dimensions		
					D(mm)	L(mm)	
3KVA	132A	100AH	1*4AWG	22	6.4	33.2	2~3 Nm
		200AH	2*8AWG	9	6.4	29.2	
3.6KVA	165A	200AH	2*4AWG	25	8.4	33.2	5Nm
4KVA	165A	200AH	2*4AWG	25	8.4	33.2	5Nm
5.5KVA	121A	200AH	1*2AWG	34	6.4	39.2	2~3 Nm
			2*6AWG	14	6.4	33.2	
6.2KVA	124A	200AH	1*2AWG	38	8.4	39.2	5Nm
			2*4AWG	25	8.4	33.2	
11KVA	228A	250AH	1*3/0AWG	85	8.4	54	5Nm

please follow below steps to implement battery connection:

1. Assemble battery ring terminal based on recommended battery cable and terminal size.

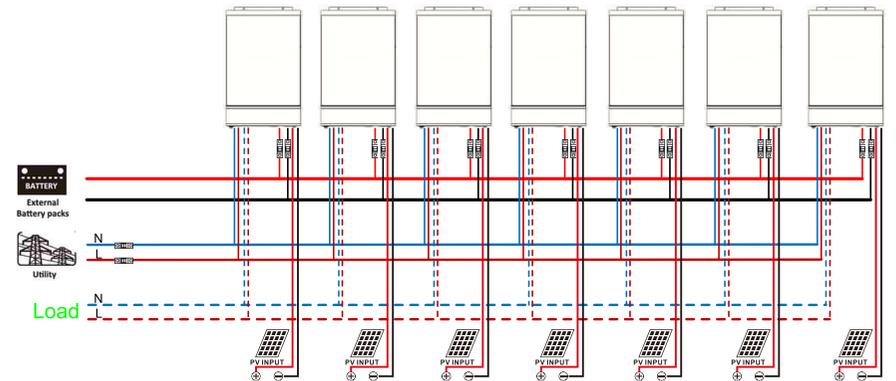


#### 通信连接



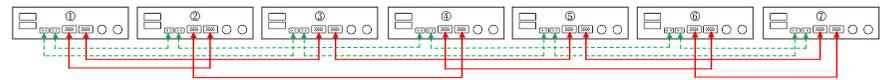
七至九个并联逆变器:

接电源 (每台机器光伏板需独立的系统)

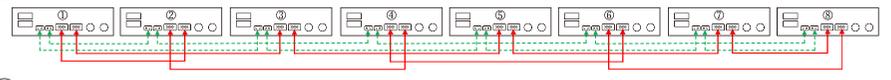


#### 通信连接

七个并联逆变器



八个并联逆变器



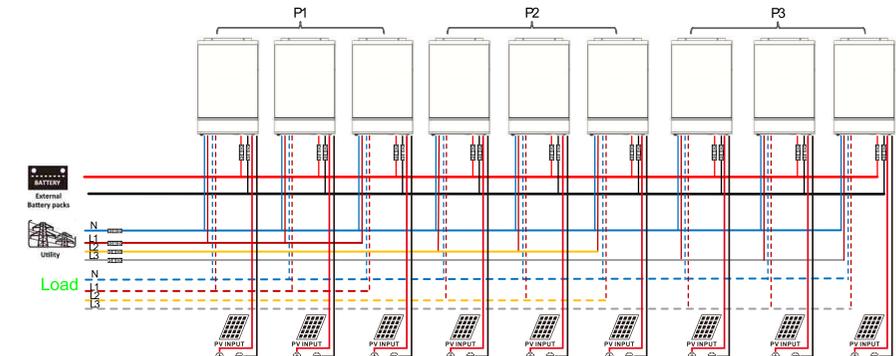
九个并联逆变器



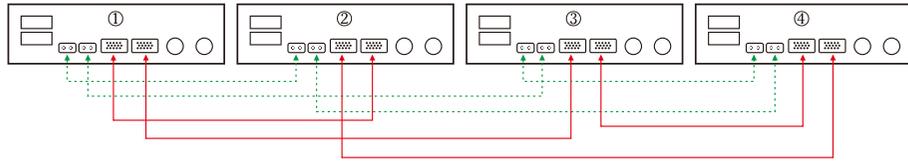
#### 2-2. 支持三相设备

每相三个逆变器:

接电源 (每台机器光伏板需独立的系统)

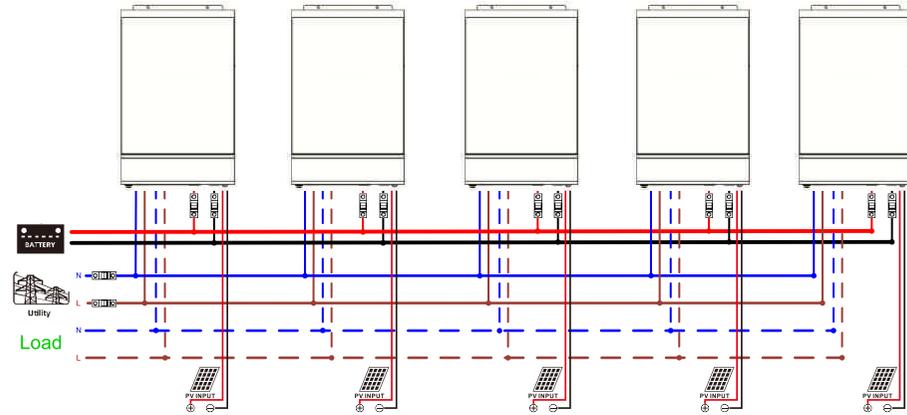


**通信连接**

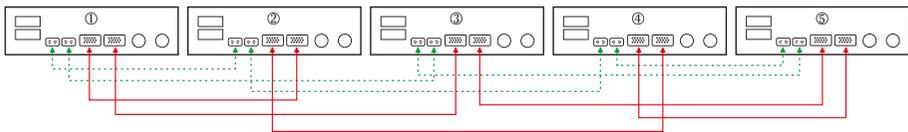


**五个并联逆变器:**

接电源（每台机器光伏板需接独立的系统）

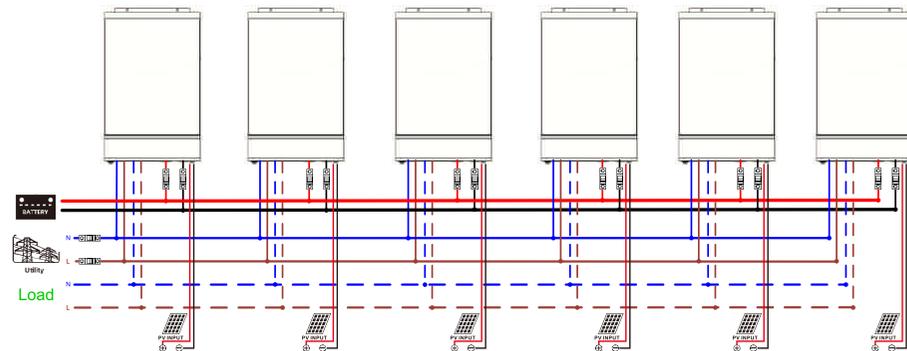


**通信连接**

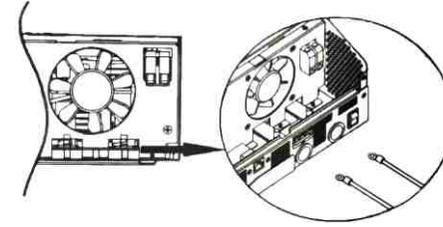


**六个并联逆变器:**

接电源（每台机器光伏板需接独立的系统）



2. Insert the battery wires flatly into battery connectors of inverter and make sure the bolts are tightened with torque of 2 Nm in clockwise direction. Make sure polarity at both the battery and the inverter/charge is correctly connected and conductors are tightly screwed into the battery terminals. Recommended tool: # 2 Pozi Screwdriver



**WARNING:** Shock Hazard  
Installation must be performed with care due to high battery voltage in series.



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

**4.5 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 disconnected during maintenance and fully protected from over current of AC input. The recommended spec of breaker is 32A for 24V system and 63A for 48V system .

**CAUTION!!** There are two terminal blocks with " IN " and " OUT " markings. Please do NOT mis-connect input and output connectors.

**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 AC input connection. To reduce risk of injury, please use the proper recommended cable size as below.

**Suggested cable requirement for AC wires**

Rated Capacity	Gauge	Torque value
3KVA	12AWG	1.2~1.6Nm
3.6KVA	12AWG	1.2~1.6Nm
4KVA	12AWG	1.2~1.6Nm
5.5KVA	10AWG	1.4~1.6Nm
6.2KVA	10AWG	1.4~1.6Nm
11KVA	8AWG	1.4~1.6Nm

Please follow below steps to implement AC input/ output connection

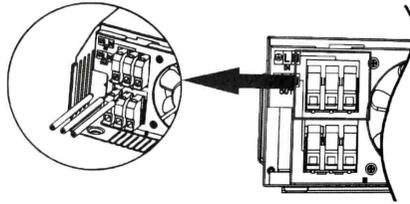
1. Before making AC input/output connection be sure to open DC protector or disconnector first.
2. Remove insulation sleeve 10mm for six conductors. And shorten phase L and neutral conductor N3 mm.

3. Insert AC input wires according to polarities indicated on terminal block and tighten the terminal screws. Be sure to connect PE protective conductor(⊕)first.

⊕→Ground(yellow-green)

L→LINE(brown or black)

N→Neutral (blue)



**WARNING:**

Be sure that AC power source is disconnected before attempting to hardwire it to the unit.

4. Make sure the wires are securely connected

**CAUTION:** Appliances such as air conditioner are required at least 2~3 minutes to restart because it's required to have enough time to balance refrigerant gas inside of circuits. If a power shortage occurs and recovers in a short time, it will cause damage to your connected appliances. To prevent this kind of damage, please check manufacturer of air conditioner if it's equipped with time-delay function before installation. Otherwise, this inverter/ charger will trig overload fault and cut off output to protect your appliance but sometimes it still causes internal damage to the air conditioner.

**4.6 PV Connection**

**PV Connection(Only apply for the model with solar charger)**

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

**WARNING!** All wiring must be performed by a qualified personnel.

**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 recommended cable size as below.

Typical Amperage	Gauge	Torque Value
30A	12AWG	1.4~1.6Nm

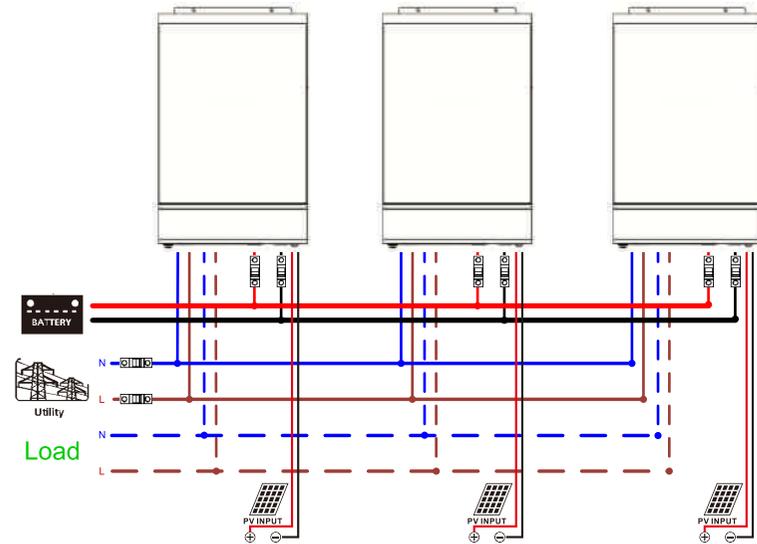
**PV module selection:**

When choosing the right PV module, be sure to first consider the following requirements:

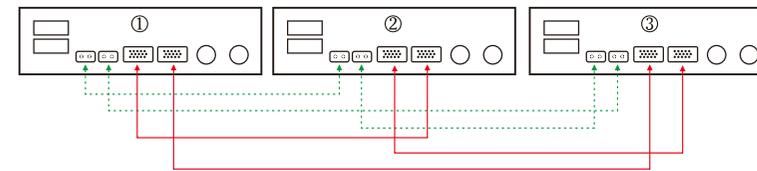
The open circuit voltage (Voc) of the PV modules does not exceed the maximum PV array open circuit voltage of the inverter. The maximum supply voltage of the PV modules should be close to the optimal PV access voltage range of the inverter for best performance. If one PV module cannot meet this requirement, it is necessary to connect multiple PV modules in series.

**三个并联逆变器:**

接电源 (每台机器光伏板需接独立的系统)

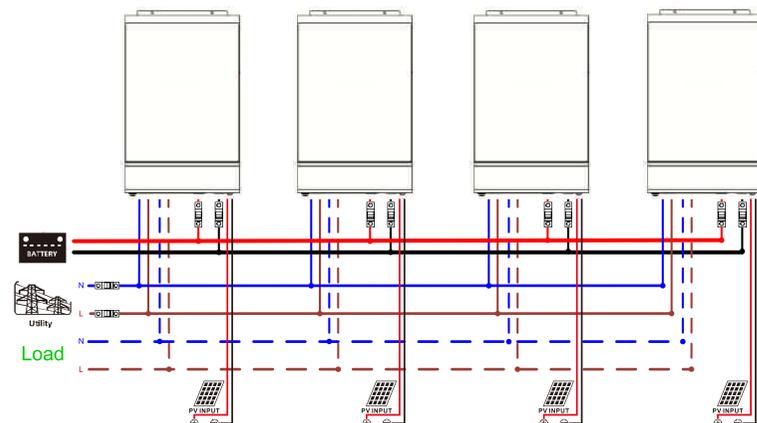


**通信连接**



**四台并联逆变器:**

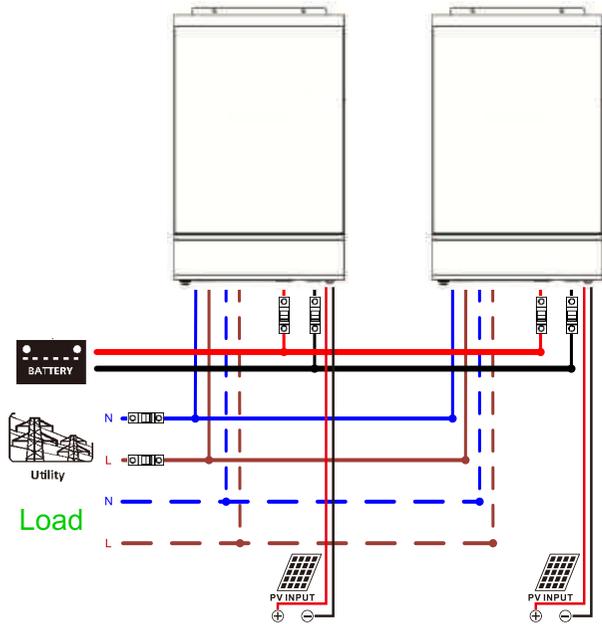
接电源 (每台机器光伏板需接独立的系统)



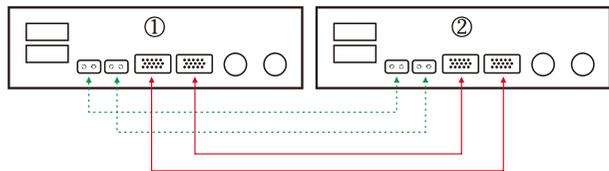
## 2-1. 单相并联运行

两个并联逆变器:

接电源 (每台机器光伏板需接独立的系统)



通信连接

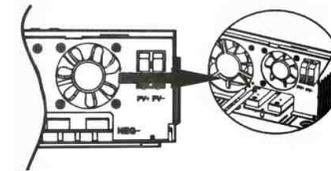
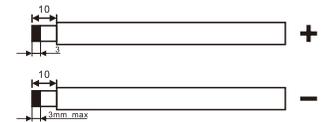


Model	3024SMH	3624SMH	4024SMH	5548SMH	6248SMH	11048MH
PV Charging Mode	MPPT	MPPT	MPPT	MPPT	MPPT	MPPT Dual MPPT
MAX.PV Input Power	5000W	6500W	6500W	8500W	8500W	2*5500W
MPPT Tracking Range	60~500Vdc					90~500Vdc
Best voltage	300~400V	300~400V	300~400V	360~430V	360~430V	300~400V
MAX.PV Input Voltage	500Vdc	500Vdc	500Vdc	500Vdc	500Vdc	500Vdc
PV max input current	18A	27A	27A	27A	27A	18A/18A
MAX.PV Charging Current	100A	120A	120A	100A	120A	150A
MAX.AC Charging Current	60A	100A	100A	100A	100A	150A
MAX.Charging Current	100A	120A	120A	100A	120A	150A

### PV Module Wire Connection

Please follow below steps to implement PV module connection:

1. Remove insulation sleeve 10 mm for positive and negative conductors.
2. Suggest to put bootlace ferrules on the end of positive and negative wires with a proper crimping tool
3. Fix wire cover to the inverter with supplied screws as shown in below chart.



4. Check correct polarity of wire from PV modules and PV input connectors. Then, connect positive pole (+) of connection wire to positive pole (+) of PV input connector. Connect negative pole (-) of connection wire to negative pole (-) of PV input connector. Screw two wires tightly in clockwise direction. Recommended tool: 4mm blade screwdriver.

### The CT Operation Guide

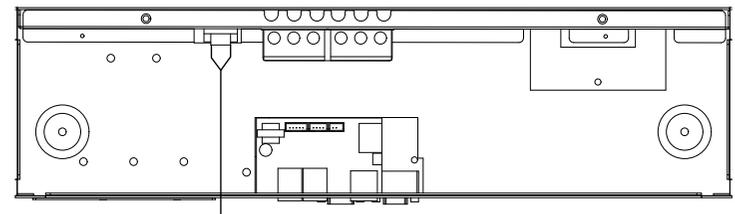
With CT connected, hybrid inverter can be easily integrated into the existing household system. It's to arrange self-consumption via CT to control power generation and battery charging of the Inverter.

#### 1. Single commissioning

**Step 1.** Power off the inverter and connect the external CT by using the tool accessory to install on the spring terminal block. Be noted the mark of current flow direction on the CT should point to the Inverter and the polarity on connecting CT wires on the terminal block should be followed as "L+" VS red wire and "L-" VS black wire.

**Step 2.** Power on the inverter.

**Step 3.** Enter LCD setting on the inverter with CT sensor connected and set CT function to " Enable ".



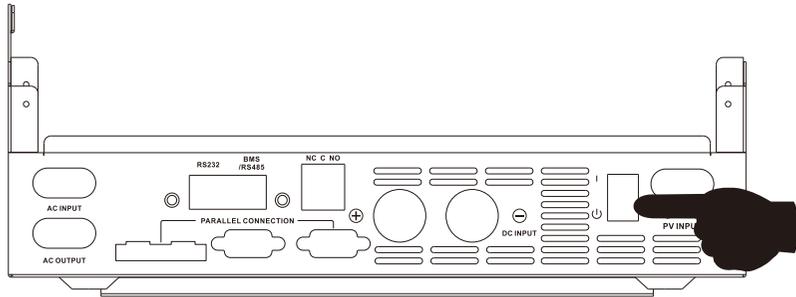
## 4.7 Final Assembly

After connecting all wirings, please put bottom cover back by screwing two screws as shown below.



## 5 OPERATION

### 5.1 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.

#### 5.1.1 Steps to start up

Connect the battery that meets the requirements (battery voltage needs to be beyond 23V) or AC (AC needs to confirm the suitable input range depend on the output mode), then you can start up the inverter.

##### ➤ Mains power on

Connect to normal AC power, press the switch, the system will automatically turn on. If you set AC output power priority, after waiting for a period of time, the panel will display AC mode that represents turn on the machine successfully, then will enter the AC mode.

When the normal mains power is connected and press the power-on button then the system will automatically power on. If it is set as AC output priority, after a period of time, the panel will display the AC mode to indicate that the power-on is complete and enter the AC mode.

##### ➤ Battery boot

Connect to battery, press the power-on button to establish a working power source.

The system will automatically turn on, after waiting for a period of time, the panel will display battery mode that represents turn on the machine successfully, then will enter the battery mode.

#### 5.1.2 Shutdown steps

When the system is in battery mode or AC mode output, press the switch again, then the system will be turned off.

您需要将每个逆变器的电缆连接在一起。以电池电缆为例：您需要使用连接器或汇流条作为接头将电池电缆连接在一起，然后连接到电池端子。从接头到电池所用的电缆尺寸应为电缆尺寸的X倍。上表中显示了并联逆变器的数量。

关于交流输入和输出,也请遵循同样的原则。

**警告!!** 确保每个逆变器的所有输出N线必须始终连接。否则,将导致逆变器故障,错误代码#72。

**小心!!** 请在电池和交流输入侧安装断路器。这将确保逆变器在维护过程中可以安全断开,并受到电池或交流输入过电流的全面保护。

#### 每个逆变器电池的推荐断路器规格:

额定容量	1 单位*	额定容量	1 单位*
3KW	150A/70VDC	6.2KW	150A/70VDC
3.6KW	200A/70VDC	11KW	300A/70VDC
4KW	200A/70VDC		
5.5KW	150A/70VDC		

\*如果您想在整个系统的电池侧仅使用一个断路器,断路器的额定值应为1台机器电流的X倍。“X”指示并联的逆变器数量。

#### 单相交流输入的推荐断路器规格:

额定容量	2 单位	3 单位	4 单位	5 单位	6 单位	7 单位	8 单位	9 单位
3KW	80A/ 230VAC	120A/ 230VAC	160A/ 230VAC	200A/ 230VAC	240A/ 230VAC	280A/ 230VAC	320A/ 230VAC	360A/ 230VAC
3.6KW	80A/ 230VAC	120A/ 230VAC	160A/ 230VAC	200A/ 230VAC	240A/ 230VAC	280A/ 230VAC	320A/ 230VAC	360A/ 230VAC
4KW	80A/ 230VAC	120A/ 230VAC	160A/ 230VAC	200A/ 230VAC	240A/ 230VAC	280A/ 230VAC	320A/ 230VAC	360A/ 230VAC
5.5KW	80A/ 230VAC	120A/ 230VAC	160A/ 230VAC	200A/ 230VAC	240A/ 230VAC	280A/ 230VAC	320A/ 230VAC	360A/ 230VAC
6.2KW	80A/ 230VAC	120A/ 230VAC	160A/ 230VAC	200A/ 230VAC	240A/ 230VAC	280A/ 230VAC	320A/ 230VAC	360A/ 230VAC
11KW	120A/ 230VAC	180A/ 230VAC	240A/ 230VAC	300A/ 230VAC	360A/ 230VAC	/	/	/

**注意1:** 此外,需在每个逆变器的交流输入处安装一个断路器,断路器的选择参照机器铭牌的AC输入电流大小。

**注意2:** 对于三相系统,您可以直接使用4极断路器。断路器的额定值应与最大装置相的相电流限制兼容。

#### 推荐的电池容量

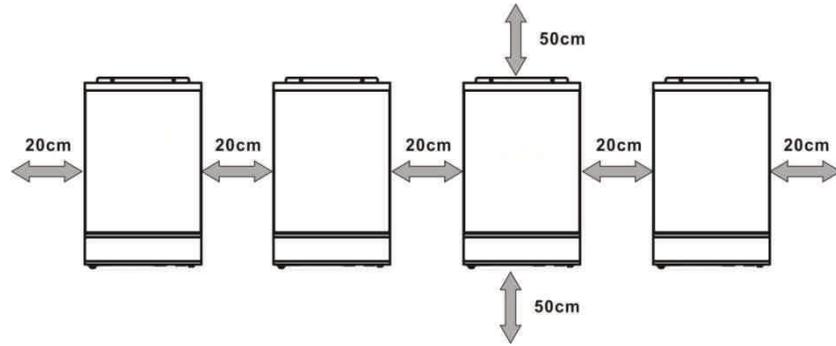
逆变器并联编号	2	3	4	5	6	7	8	9
3KW的电池容量	400AH	600AH	800AH	1000AH	1200AH	1400AH	1600AH	1800AH
3.6KW的电池容量	400AH	600AH	800AH	1000AH	1200AH	1400AH	1600AH	1800AH
4KW的电池容量	400AH	600AH	800AH	1000AH	1200AH	1400AH	1600AH	1800AH
5.5KW的电池容量	400AH	600AH	800AH	1000AH	1200AH	1400AH	1600AH	1800AH
6.2KW的电池容量	400AH	600AH	800AH	1000AH	1200AH	1400AH	1600AH	1800AH
11KW的电池容量	450AH	750AH	1000AH	1250AH	1500AH	/	/	/

**警告!** 确保所有逆变器共享同一个电池组。否则,逆变器将转换到故障模式。

## 附录：并机操作

### 1. 安装装置

当安装多台机器时, 请遵循下表。



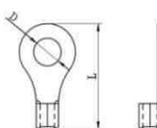
**注意：**为了使空气流通散热, 请留出侧面约20厘米, 上下约50厘米, 确保将每台机器安装在同一水平面上。

### 2. 布线连接

**注意：**并机运行时需要连接电池。

每个逆变器的电缆尺寸如下所示：

**每个逆变器的推荐电池电缆和端子尺寸：**

模式	线规	环形终端			扭矩值	环形终端： 
		电缆 毫米 <sup>2</sup>	尺寸			
			直径 (毫米)	长度 (毫米)		
3KW	1*4AWG	22	6.4	33.2	2~3Nm	
3.6KW	2*4AWG	25	8.4	33.2	5Nm	
4KW	2*4AWG	25	8.4	33.2	5Nm	
5.5KW	1*2AWG	38	6.4	39.2	2~3Nm	
6.2KW	1*2AWG	38	8.4	39.2	2~3Nm	
11KW	1*3/0AWG	85	8.4	54	5Nm	

**警告：**确保所有电池电缆的长度相同。否则, 逆变器和电池之间会产生电压差, 导致并联逆变器无法工作。

**每个逆变器的建议交流输入和输出电缆尺寸：**

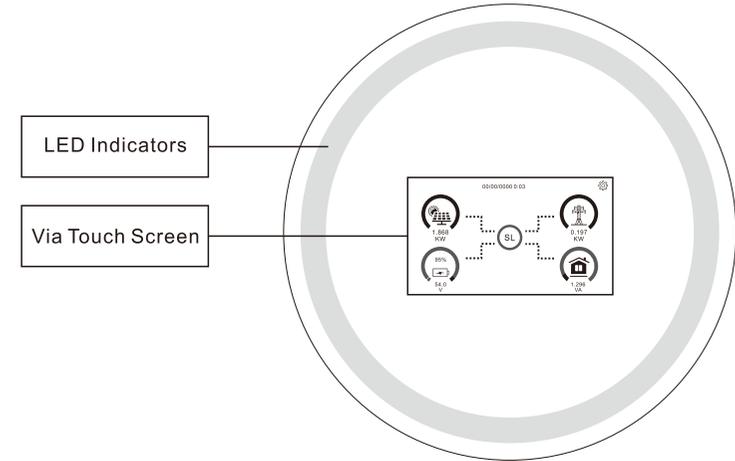
额定容量	AWG编号	扭矩
3KW	12AWG	1.2~1.6Nm
3.6KW	12AWG	1.2~1.6Nm
4KW	12AWG	1.2~1.6Nm
5.5KW	10AWG	1.2~1.6Nm
6.2KW	10AWG	1.2~1.6Nm
11KW	8AWG	1.4~1.6Nm

### 5.2 LCD display icon

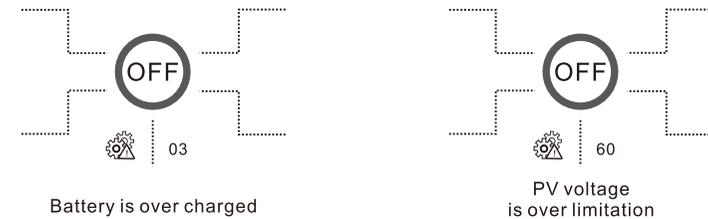
The operation and display panel shown below is located on the front panel of the inverter. It includes an RGB indicators and a LCD display.

#### 5.2.1 Home Screen

The LCD is a touch screen. The upper part of the LCD screen overall information of the inverter.



1.The absence of an icon in the center of the home screen indicates that the system is operating normally. If the gray icon and characters are displayed in the center of the main screen, it means that the inverter has an alarm, and the alarm information will be displayed in characters under this icon (detailed error information can be viewed in the instruction manual alarm menu). If the red icon and characters are displayed in the center of the main screen, it means that the inverter is faulty, and the fault information will be displayed in characters under this icon (detailed error information can be viewed in the instruction manual alarm menu).



2.At the top of the screen is the time.

3.System Settings icon, press the Settings button, you can enter the system Settings screen, including battery Settings, System working mode, grid settings, basic settings, advanced features, device information.

4. The main screen displays information including PV, mains, load and battery. It also shows the direction of energy flow with arrows. Equivalent power. When approaching the limit value, the color on the panel will change from green to red, making the system information vividly displayed on the main screen.

5. Photovoltaic power and load power are always positive.

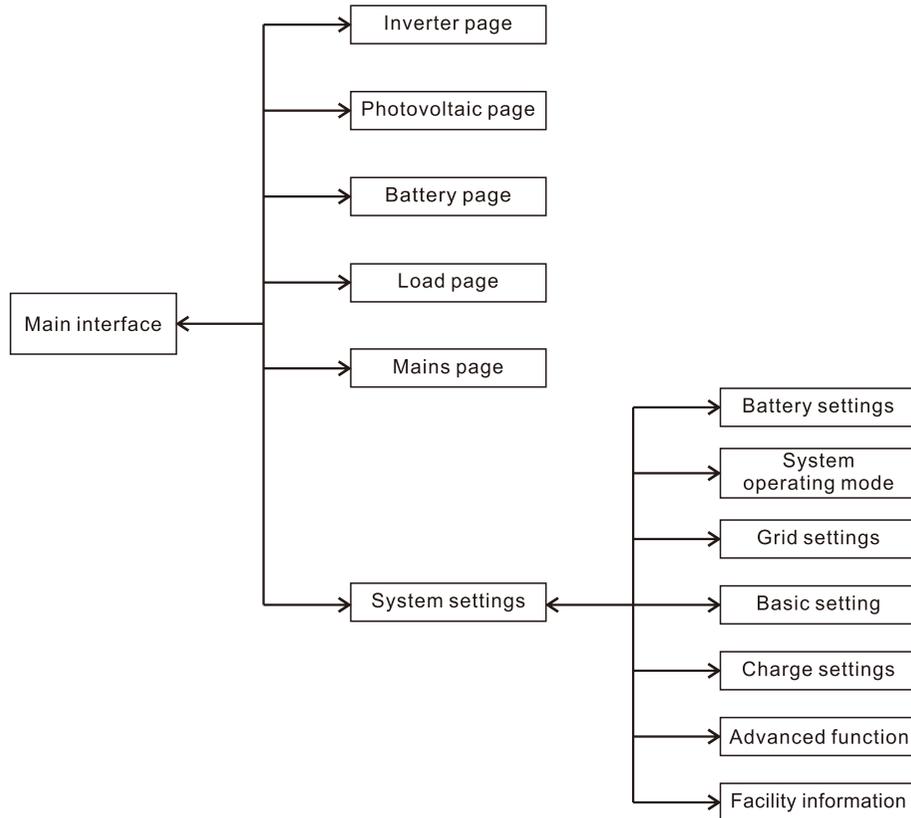
6. The mains power is connected negatively to the grid and obtained positively.

7. The negative direction of battery power supply means charging, and the positive direction means discharging.

### 8.LED indicator functions

Code	Machine state	Color	Effect	Breath light
1	Stand by/Self-test	Colorful	Gradient color display	NO
2	Under DC mode	blue	Monochrome display (one light keeps flashing)	NO
3	Under AC/Full charge under AC mode	green	Monochrome display	NO
4	Charging under AC mode	green	Monochrome display	YES
5	Solar charging	yellow	Monochrome display	YES
6	Full charge under solar power	yellow	Monochrome display	NO
7	Under the alarm	red	Monochrome display	YES (recoverable)
				NO (non-recoverable)
8	Solar energy and AC charging at the same time	half and half	yellow on the top, green at the bottom	YES

### 5.3 Touch screen flow chart



## 7. 技术数据表

模式		3024SMH	3624SMH	4024SMH	5548SMH	6248SMH	11048MH	
输入	输入制式	L+N+PE						
	额定输入电压	220/230/240VAC						
	电压范围	90-280VAC±3V (APL模式) 170-280VAC±3V (UPS模式)						
	频率范围	50Hz/60Hz (自适应)						
输出	额定功率	电池逆变	3000W	3600W	4000W	5500W	6200W	11000W
		光伏逆变	3600W	4500W	4500W	6500W	6500W	12000W
	输出电压	220/230/240VAC+5%						
	输出频率	50/60Hz±0.1%						
	波形	纯正弦波						
	切换时间(可设)	计算机设备10ms, 家用电器20ms						
	峰值功率	6000VA	7200VA	8000W	11000VA	12400VA	22000VA	
	过载能力	电池模式:负载为11S@105%~150%;负载为2s@150%~200%;400毫秒@>200%负载						
并网运行	输出电压	220/230/240VAC±5%						
	馈入电网电压范围	170-265VAC						
	馈入电网频率范围	49-51±1Hz/59-61±1Hz						
	标称输出电流	13A	15.7A	17.4A	23.9A	26.9A	47.8A	
	功率因数范围	>0.99						
	最大转换效率(DC/AC)	98%						
电池	额定电压	24Vdc	24Vdc	24Vdc	48Vdc	48Vdc	48Vdc	
	恒压充电电压(可设)	28.2Vdc	28.2Vdc	28.2Vdc	56.4Vdc	56.4Vdc	56.4Vdc	
	浮充充电电压(可设)	27Vdc	27Vdc	27Vdc	54Vdc	54Vdc	54Vdc	
充电器	PV充电方式	MPPT	MPPT	MPPT	MPPT	MPPT	MPPT Dual MPPT	
	PV最大输入功率	5000W	6500W	6500W	8500W	8500W	2*5500W	
	MPPT输入电压范围	60~500Vdc						
	最佳Vmp工作范围	300~400V	300~400V	300~400V	360~430V	360~430V	300~400V	
	最大PV输入电压	500Vdc	500Vdc	500Vdc	500Vdc	500Vdc	500Vdc	
	最大PV输入电流	18A	27A	27A	27A	27A	18A/18A	
	最大PV充电电流	100A	120A	120A	100A	120A	150A	
	最大市电充电电流	60A	100A	100A	100A	100A	150A	
最大充电电流	100A	120A	120A	100A	120A	150A		
显示	LCD接口	可显示运行模式/负载/输入/输出等						
接口	RS232	波特率2400						
	扩展插槽通讯接口	锂电池BMS通信卡、WIFI卡、干接点卡等						
	并网接口	无并网功能			并网(网)功能			
环境参数	运行环境温度	-10~50°C						
	运行环境湿度	20%-95% (非冷凝)						
	储存温度	-15~60°C						
	海拔高度	海拔不超过1000米, 超过1000米降额, 最大4000米, 参考IEC62040						
	噪音	≤50db						
标准和认证	EN-IEC 60335-1, EN EC60335-2-29, EC 62109-1							

## 6. 事故处理

问题	液晶显示器/发光二极管/蜂鸣器	解释/可能的原因	做什么
装置在启动过程中自动关闭。	LCD/LED和蜂鸣器将激活3秒钟,然后完全关闭。	电池电压太低(<1.91V/电池)	1. 充电电池。 2. 更换电池。
通电后无响应。	没有指示。	1. 电池电压太低了。(<1.4V/电池) 2. 内部保险丝跳闸。	1. 联系维修中心更换保险丝。 2. 给电池充电。
有交流电输入,但设备在电池模式下工作。	液晶屏上显示输入电压为0,绿色LED闪烁。	输入保护器跳闸	3. 更换电池。检查交流断路器是否跳闸,交流接线是否连接良好。
	绿色LED正在闪烁	交流电源质量不足。(交流电或发电机不稳定)	1. 检查交流电线是否太细或太长。 2. 检查发电机(如果使用)是否工作正常,或者输入电压范围设置是否正确。(向上→装置)
	绿色LED正在闪烁	将“太阳能优先”设置为输出源的优先级。	首先将输出源优先级更改为交流电优先。
当装置打开时,内部继电器反复打开和关闭。	液晶屏和指示灯闪烁	电池已断开。	检查电池导线是否连接良好。
蜂鸣器持续发出蜂鸣声,红色LED亮起。	故障代码07	过载错误。逆变器过载105%,时间到了。	通过关闭一些设备来减少连接的负载。
		如果PV输入电压高于规格,输出功率将会降低。此时,如果连接的负载高于降额输出功率,将会导致过载。	减少串联PV组件或连接负载的数量。
	故障代码05	输出短路。	检查接线是否连接良好,并移除异常负载。
		内部转换器组件温度超过120°C	检查装置气流是否受阻或环境温度是否过高。
	故障代码02	逆变器组件的内部温度超过100°C	
	故障代码03	电池充电过度。	返回维修中心。
		电池电压过高。	检查电池的规格和数量是否符合要求。
	故障代码01	风扇故障	更换风扇。
	故障代码06/58	输出异常(逆变器电压低于190Vac或高于260Vac)	1. 减少连接负载。 2. 返回维修中心
	故障代码08/09/53/57	内部组件出现故障。	返回维修中心。
故障代码51	过电流或电涌。	重启设备,如果错误再次发生,请返回维修中心。	
故障代码52	总线电压太低。		
故障代码55	输出电压不平衡。		
故障代码59	PV输入电压超出规格。	减少串联PV组件的数量。	

## 5. 4 Touch screen operation instructions

### 5.4.1 Touch screen Home screen Content

Inverter page	Inverter data details page
<p><b>Detail</b></p> <p>Machine Type: 6248      Lcd Version: V10.01            Inverter Type: HPVINV04      Driver Version: V10.01            Boosting Temp: 31°C      Main Version: V10.03            Machine Temp: 51°C            MPPT Temp: 25°C            MOS Temp: 39°C            IAP Status: Normal</p> <p style="text-align: right;">Back</p>	<p>This page shows the inverter machine model, machine type, booster tube temperature, machine temperature, MPPT temperature, inverter temperature, bottom program is normal, color screen version number, central control board version number, machine control board version number.</p>
PV page	PV data details page
<p><b>Solar</b></p> <p>PV1 Input: 262.6 V 7.0 A            PV1 Input Power: 1855 W            PV2 Input: 0.0 V 0.1 A            PV2 Input Power: 0 W</p> <p>Today: 0.000KWh      Month: 0.0KWh            Year: 0.0 KWh      Total: 0.0 KWh</p> <p style="text-align: right;">Back</p>	<p>This page shows the input voltage, current and power of photovoltaic solar panels in detail.</p> <p>It can also record today's photovoltaic power generation, this month's photovoltaic power generation, this year's photovoltaic power generation, and the total photovoltaic power generation.</p>
Battery page	Battery details page
<p><b>Battery</b></p> <p>Battery Type: AGM            BMS COM Function: OFF            Battery Voltage: 54.0 V            Charge Current: 12 A            Discharge Current: 0 A            Bus Voltage: 428 V            Li Battery Active: OFF</p> <p style="text-align: right;">Back</p>	<p>This page shows the battery type, BMS current communication status, battery voltage, BAT charging current, BAT discharge current and BUS voltage in detail and Li Battery Active.</p>
BMS page	BMS details page
<p><b>BMS</b></p> <p>BMS 485 Protocol: NULL            SOC: 100 %            Charge Current: 0.0 A            Discharge Current: 0.0 A            BMS Temper: 0.0 C            Discharge Limit Voltage: 0.0 V            Charge Limit Voltage: 0.0 V            Charge Limit Current: 100.0 A</p> <p style="text-align: right;">Back</p>	<p>This page displays the BMS current usage protocol, BMS current SOC value, BMS charging current, BMS discharge current BMS temperature, BMS discharge limit voltage, BMS charge limit voltage, BMS charge limit current in detail.</p>

Load page	Load detail page
<div style="border: 1px solid black; padding: 5px;"> <p><b>Load</b></p> <p>Dual Status: OFF</p> <p>Output: 232.1 49.9 Hz</p> <p>Load Percent: 11 %</p> <p>Active Power: 525 W</p> <p>Apparent Power: 525 VA</p> <p style="text-align: right;">Back</p> </div>	<p>This page displays the output mode, output voltage, output frequency, inductive current, active power, reactive power in detail.</p>
<div style="border: 1px solid black; padding: 5px;"> <p><b>Mains page</b></p> <p><b>AC Input</b></p> <p>Frequency: 50.0 Hz</p> <p>Input Voltage: 232.3 V</p> <p>Ac Input Power: 152 W</p> <p style="text-align: right;">Back</p> </div>	
<div style="border: 1px solid black; padding: 5px;"> <p><b>CT page</b></p> <p><b>External CT Detail</b></p> <p>Frequency: 50.0 Hz</p> <p>Input Voltage: 232.3 V</p> <p>Ac Input Power: 600 W</p> <p style="text-align: right;">Back</p> </div>	<p>This page displays the frequency, input voltage, and power of the grid</p>

#### 5.4.2 System Settings menu

System Settings menu	System Settings menu page
<div style="border: 1px solid black; padding: 5px;"> <p><b>System Setup</b></p> <div style="display: flex; flex-wrap: wrap;"> <div style="border: 1px solid black; padding: 5px; width: 50%;">Battery Setting</div> <div style="border: 1px solid black; padding: 5px; width: 50%;">System Work Mode</div> <div style="border: 1px solid black; padding: 5px; width: 50%;">Grid Setting</div> <div style="border: 1px solid black; padding: 5px; width: 50%;">Charge Setting</div> <div style="border: 1px solid black; padding: 5px; width: 50%;">Basic Setting</div> <div style="border: 1px solid black; padding: 5px; width: 50%;">Advanced Function</div> <div style="border: 1px solid black; padding: 5px; width: 50%;">Device Info</div> </div> <p style="text-align: right;">←</p> </div>	<p>This is the system Settings page, including battery Settings, system working mode, battery Settings, mains Settings, charging Settings, basic Settings, advanced functions, device information</p>

#### 5.5.2 警告描述

□ 警报：红色LED闪烁，LCD显示警报代码，逆变器不进入故障模式。

警告指示灯

警告代码	警告事件	声音警报
01	逆变器开启时, 风扇被锁定。	每1秒钟哔三声
02	温度过高	无
03	电池充电过度	每1秒钟哔一声
04	低电量	每1秒钟哔一声
07	过载	每0.5秒钟哔一声
10	输出功率降额	每3秒钟哔两声
15	PV能量低。	每3秒钟哔两声
16	总线软启动期间的高交流输入(>280VAC)	无
E9	电池均衡	无
6P	电池未连接	无

#### 5.5.3 代码参考

相关信息代码将显示在LCD屏幕上。请检查逆变器LCD屏幕的操作。

代码	说明
60	如果逆变器和电池之间的通信成功后，电池状态不允许充电和放电，它将显示代码60，停止电池充电和放电。
61	通信中断 <ul style="list-style-type: none"> <li>• 电池连接后，1分钟内未检测到通信信号，蜂鸣器将发出蜂鸣声。</li> <li>• 逆变器和电池连接成功后，发生通信中断，蜂鸣器立即发出蜂鸣声。</li> </ul>
69	如果逆变器和电池之间的通信成功后，电池状态不允许充电，它将显示代码69，停止对电池充电。
70	如果逆变器和电池之间的通信成功后，电池状态必须充电，它将显示代码70，给电池充电。
71	如果逆变器和电池之间的通信成功后，电池状态不允许放电，它将显示代码71，停止电池放电。

当BMS/485通信接口外部连接时,如下图所示:



### 通讯连接

请使用提供的通信电缆连接到逆变器和电脑。请在电脑上安装监控软件。

### 干接点信号

后面板上有一个干接点(3A/250VAC)。当电池电压达到警告水平时,可用于向外部设备传递信号。

单元状态	条件		干接点端口:		
			NC & C	NO & C	
电源关闭	装置关闭且无输出电源		关	开	
开机	输出由 电池或 太阳能 供电	正常模式	蓄电池电压< 低直流警告电压	开	关
			蓄电池电压> 浮动充电电压	关	开
	太阳能 优先模式	蓄电池电压< 太阳能至交流电压	开	关	
			蓄电池电压> 交流到直流电压	关	开

## 5.5 功能和警报描述

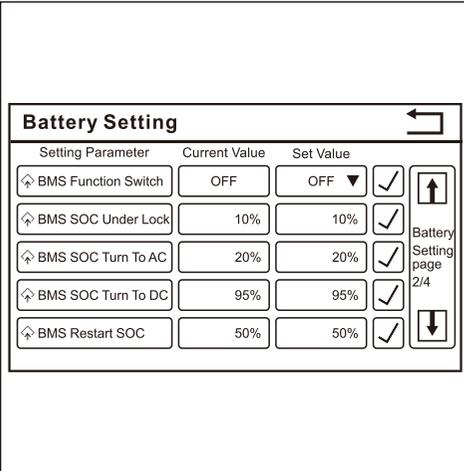
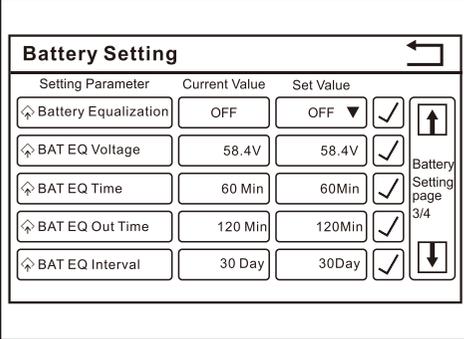
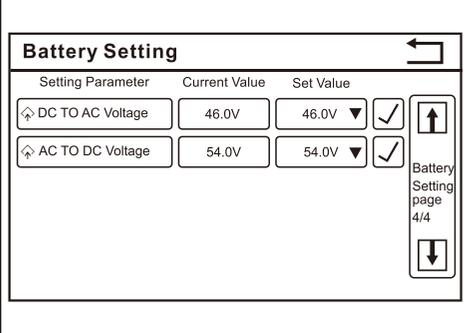
### 5.5.1 故障描述

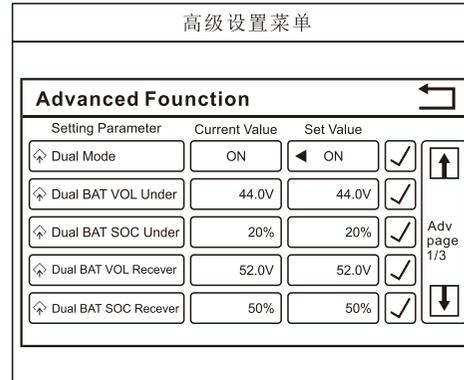
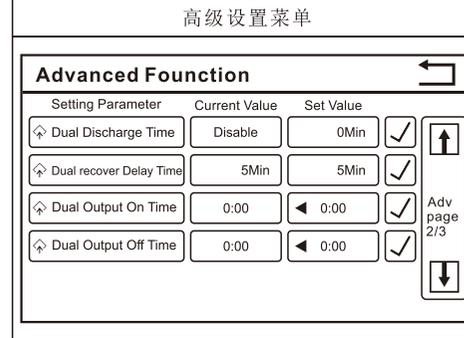
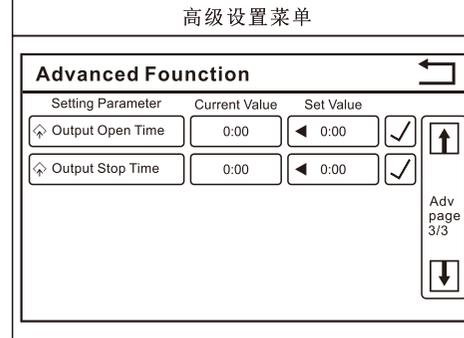
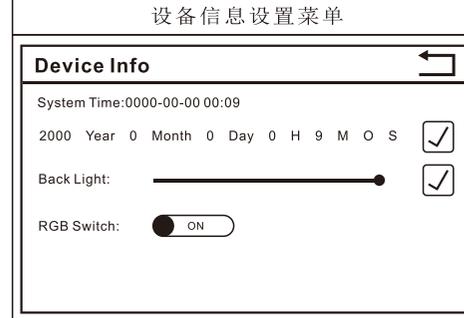
□ 故障: 逆变器进入故障模式, 红色LED灯常亮, LCD显示故障代码。

故障参考代码

故障代码	故障事件
01	逆变器关闭时, 风扇被锁定。
02	温度过高或NTC连接不良。
03	电池电压过高。
04	电池电压过低。
05	机器内部检测到输出短路或过热
06	输出电压太高。
07	过载超时。
08	总线电压太高。
09	总线软启动失败。
51	过电流或电涌。
52	总线电压太低。
53	逆变器软启动失败。
55	交流输出中的直流电压过高。
57	电流传感器故障。
58	输出电压太低。
59	PV电压超出限值。

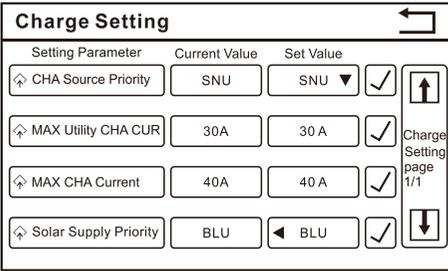
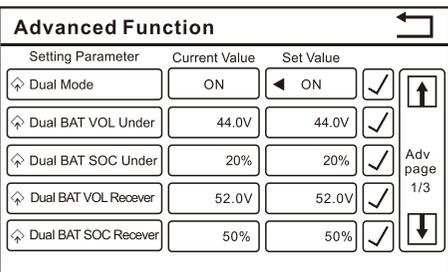
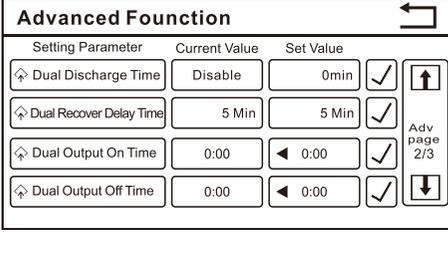
Basic Settings menu	Basic Settings menu page
	<p>This page can be set                      Inverter voltage: 220/230/240V(default 230V)                      Inverter frequency: 50/60HZ(default 50HZ)  <b>Alarm Control:</b> ON/OFF  <b>Over Load Bypass:</b> ON/OFF  <b>Over Load Restart:</b> ON/OFF</p>
	<p>This page can be set  <b>MIP Cut Off Buz:</b> ON/OFF  <b>Over Temp Restart:</b> ON/OFF  <b>Auto Back Menu:</b> ON/OFF</p>
Battery Settings menu	Battery Settings menu page
	<p>This page can be set  <b>Battery Type:</b> AGM/FLD/USE/LIA/PYL/TQF /GRO/LIB/LIC  <b>Bluck Charging VOL:</b> If you select Custom in the battery type, you can set the program. The Settings range for 24V system is 24. 0V-30.0V, and the Settings range for 48V system 48.0V-60.0V  <b>Float Charging VOL:</b> 27V/54V  <b>Battery Cut-off VOL:</b> If battery power is the only power available, the converter will shut down. If PV energy and battery power are available, the inverter will charge the battery without AC output. If Custom is selected in the battery type, you can set the program.                      24V system are set from 20.0V-26.0V                      48V system are set from 40.0V-52.0V                      and the Battery Cut-off VOL will be fixed at the set value regardless of the proportion of load connected.  <b>Battery Low VOL:</b> 24V system are set from 20.0V-27.0V, 48V system are set from 40.0V-54.0V</p>

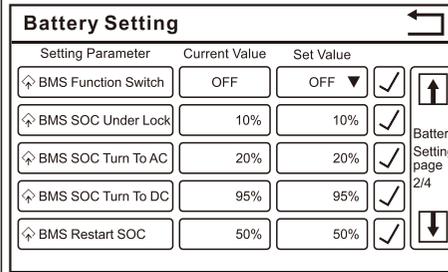
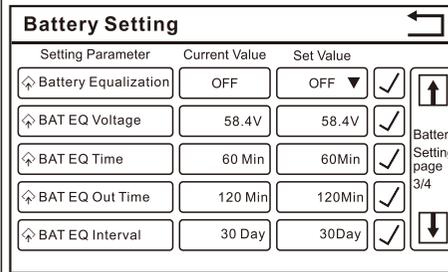
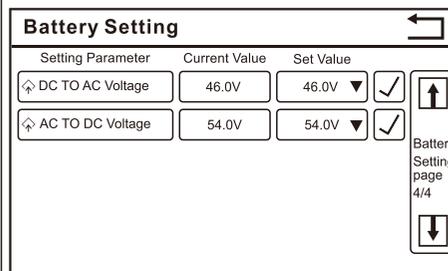
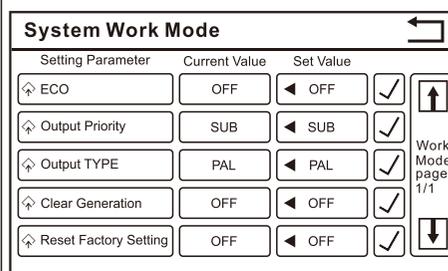
 <p><b>Battery Setting</b></p> <table border="1"> <thead> <tr> <th>Setting Parameter</th> <th>Current Value</th> <th>Set Value</th> <th></th> </tr> </thead> <tbody> <tr> <td>BMS Function Switch</td> <td>OFF</td> <td>OFF</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>BMS SOC Under Lock</td> <td>10%</td> <td>10%</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>BMS SOC Turn To AC</td> <td>20%</td> <td>20%</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>BMS SOC Turn To DC</td> <td>95%</td> <td>95%</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>BMS Restart SOC</td> <td>50%</td> <td>50%</td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table> <p>Battery Setting page 2/4</p>	Setting Parameter	Current Value	Set Value		BMS Function Switch	OFF	OFF	<input checked="" type="checkbox"/>	BMS SOC Under Lock	10%	10%	<input checked="" type="checkbox"/>	BMS SOC Turn To AC	20%	20%	<input checked="" type="checkbox"/>	BMS SOC Turn To DC	95%	95%	<input checked="" type="checkbox"/>	BMS Restart SOC	50%	50%	<input checked="" type="checkbox"/>	<p>This page can be set</p> <p><b>BMS Function Switch:</b> Whether to enable the BMS communication function.</p> <p><b>BMS SOC Under Lock:</b> The SOC value of the BMS falls below the set value and the inverter shuts down to protect the battery.</p> <p><b>BMS SOC Turn To AC:</b> When the inverter operating mode is set to battery priority mode, when the BMS SOC is below the set value, the inverter will be forced to enter the power supply to charge.</p> <p><b>BMS SOC Turn To DC:</b> When the inverter works in battery priority mode, the inverter works in DC mode when the BMS SOC is higher than the set value.</p> <p><b>BMS Restart SOC:</b> When the inverter is turned on, the SOC must be higher than the set value to work properly.</p>
Setting Parameter	Current Value	Set Value																							
BMS Function Switch	OFF	OFF	<input checked="" type="checkbox"/>																						
BMS SOC Under Lock	10%	10%	<input checked="" type="checkbox"/>																						
BMS SOC Turn To AC	20%	20%	<input checked="" type="checkbox"/>																						
BMS SOC Turn To DC	95%	95%	<input checked="" type="checkbox"/>																						
BMS Restart SOC	50%	50%	<input checked="" type="checkbox"/>																						
 <p><b>Battery Setting</b></p> <table border="1"> <thead> <tr> <th>Setting Parameter</th> <th>Current Value</th> <th>Set Value</th> <th></th> </tr> </thead> <tbody> <tr> <td>Battery Equalization</td> <td>OFF</td> <td>OFF</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>BAT EQ Voltage</td> <td>58.4V</td> <td>58.4V</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>BAT EQ Time</td> <td>60 Min</td> <td>60Min</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>BAT EQ Out Time</td> <td>120 Min</td> <td>120Min</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>BAT EQ Interval</td> <td>30 Day</td> <td>30Day</td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table> <p>Battery Setting page 3/4</p>	Setting Parameter	Current Value	Set Value		Battery Equalization	OFF	OFF	<input checked="" type="checkbox"/>	BAT EQ Voltage	58.4V	58.4V	<input checked="" type="checkbox"/>	BAT EQ Time	60 Min	60Min	<input checked="" type="checkbox"/>	BAT EQ Out Time	120 Min	120Min	<input checked="" type="checkbox"/>	BAT EQ Interval	30 Day	30Day	<input checked="" type="checkbox"/>	<p>This page can be set</p> <p><b>Battery Equalization:</b> You can set this program if you select "Liquid Battery" or "User Defined" in the battery type.</p> <p><b>BAT EQ Voltage:</b> 29.2V for 24V system, 58.4V for 48V system,</p> <p><b>BAT EQ Time:</b> The value ranges from 5 minutes to 900 minutes.</p> <p><b>BAT EQ Out Time:</b> The value ranges from 5 minutes to 900 minutes.</p> <p><b>BAT EQ Interval:</b> The value ranges from 0 to 90 days.</p>
Setting Parameter	Current Value	Set Value																							
Battery Equalization	OFF	OFF	<input checked="" type="checkbox"/>																						
BAT EQ Voltage	58.4V	58.4V	<input checked="" type="checkbox"/>																						
BAT EQ Time	60 Min	60Min	<input checked="" type="checkbox"/>																						
BAT EQ Out Time	120 Min	120Min	<input checked="" type="checkbox"/>																						
BAT EQ Interval	30 Day	30Day	<input checked="" type="checkbox"/>																						
 <p><b>Battery Setting</b></p> <table border="1"> <thead> <tr> <th>Setting Parameter</th> <th>Current Value</th> <th>Set Value</th> <th></th> </tr> </thead> <tbody> <tr> <td>DC TO AC Voltage</td> <td>46.0V</td> <td>46.0V</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>AC TO DC Voltage</td> <td>54.0V</td> <td>54.0V</td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table> <p>Battery Setting page 4/4</p>	Setting Parameter	Current Value	Set Value		DC TO AC Voltage	46.0V	46.0V	<input checked="" type="checkbox"/>	AC TO DC Voltage	54.0V	54.0V	<input checked="" type="checkbox"/>	<p>This page can be set</p> <p><b>DC TO AC voltage:</b>22V-25.5V/44V-51V</p> <p><b>AC TO DC voltage:</b>24V-29/48V-58V</p>												
Setting Parameter	Current Value	Set Value																							
DC TO AC Voltage	46.0V	46.0V	<input checked="" type="checkbox"/>																						
AC TO DC Voltage	54.0V	54.0V	<input checked="" type="checkbox"/>																						

<p>高级设置菜单</p>  <p><b>Advanced Function</b></p> <table border="1"> <thead> <tr> <th>Setting Parameter</th> <th>Current Value</th> <th>Set Value</th> <th></th> </tr> </thead> <tbody> <tr> <td>Dual Mode</td> <td>ON</td> <td>ON</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Dual BAT VOL Under</td> <td>44.0V</td> <td>44.0V</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Dual BAT SOC Under</td> <td>20%</td> <td>20%</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Dual BAT VOL Receiver</td> <td>52.0V</td> <td>52.0V</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Dual BAT SOC Receiver</td> <td>50%</td> <td>50%</td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table> <p>Adv page 1/3</p>	Setting Parameter	Current Value	Set Value		Dual Mode	ON	ON	<input checked="" type="checkbox"/>	Dual BAT VOL Under	44.0V	44.0V	<input checked="" type="checkbox"/>	Dual BAT SOC Under	20%	20%	<input checked="" type="checkbox"/>	Dual BAT VOL Receiver	52.0V	52.0V	<input checked="" type="checkbox"/>	Dual BAT SOC Receiver	50%	50%	<input checked="" type="checkbox"/>	<p>高级设置菜单页面</p> <p>此页面可设置第二输出电池电压：开/关闭第二输出电池电压：44V/22V，如果电池电压低于逆变器设置，则第二输出被切断。</p> <p>关闭第二输出电池容量：默认20%，如果电池容量低于SOC设置，则第二个输出将被切断。</p> <p>恢复第二输出电池电压：默认52V/26V，如果电池电压高于电池电压设置，第二输出将恢复。</p> <p>恢复第二输出电池容量：默认50%，如果电池容量高于SOC设置，则将恢复第二个输出。</p>
Setting Parameter	Current Value	Set Value																							
Dual Mode	ON	ON	<input checked="" type="checkbox"/>																						
Dual BAT VOL Under	44.0V	44.0V	<input checked="" type="checkbox"/>																						
Dual BAT SOC Under	20%	20%	<input checked="" type="checkbox"/>																						
Dual BAT VOL Receiver	52.0V	52.0V	<input checked="" type="checkbox"/>																						
Dual BAT SOC Receiver	50%	50%	<input checked="" type="checkbox"/>																						
<p>高级设置菜单</p>  <p><b>Advanced Function</b></p> <table border="1"> <thead> <tr> <th>Setting Parameter</th> <th>Current Value</th> <th>Set Value</th> <th></th> </tr> </thead> <tbody> <tr> <td>Dual Discharge Time</td> <td>Disable</td> <td>0Min</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Dual recover Delay Time</td> <td>5Min</td> <td>5Min</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Dual Output On Time</td> <td>0:00</td> <td>0:00</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Dual Output Off Time</td> <td>0:00</td> <td>0:00</td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table> <p>Adv page 2/3</p>	Setting Parameter	Current Value	Set Value		Dual Discharge Time	Disable	0Min	<input checked="" type="checkbox"/>	Dual recover Delay Time	5Min	5Min	<input checked="" type="checkbox"/>	Dual Output On Time	0:00	0:00	<input checked="" type="checkbox"/>	Dual Output Off Time	0:00	0:00	<input checked="" type="checkbox"/>	<p>高级设置菜单页面</p> <p>此页面可设置</p> <p><b>第二输出放电时间：0-990min</b> 配置放电时间以关闭第二输出，并在逆变器返回线路模式或电池处于充电状态时等待时间以打开第二输出。</p> <p><b>第二输出恢复延迟时间：</b> 配置第二输出恢复延迟。即使满足恢复第二输出电池电压和恢复第二输出电池容量条件，仍需等待恢复延迟结束后恢复第二输出，值范围为0-66min</p> <p><b>第二输出开启时间：</b>值范围为0到23。</p> <p><b>第二输出关闭时间：</b>值范围为0至23。</p>				
Setting Parameter	Current Value	Set Value																							
Dual Discharge Time	Disable	0Min	<input checked="" type="checkbox"/>																						
Dual recover Delay Time	5Min	5Min	<input checked="" type="checkbox"/>																						
Dual Output On Time	0:00	0:00	<input checked="" type="checkbox"/>																						
Dual Output Off Time	0:00	0:00	<input checked="" type="checkbox"/>																						
<p>高级设置菜单</p>  <p><b>Advanced Function</b></p> <table border="1"> <thead> <tr> <th>Setting Parameter</th> <th>Current Value</th> <th>Set Value</th> <th></th> </tr> </thead> <tbody> <tr> <td>Output Open Time</td> <td>0:00</td> <td>0:00</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Output Stop Time</td> <td>0:00</td> <td>0:00</td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table> <p>Adv page 3/3</p>	Setting Parameter	Current Value	Set Value		Output Open Time	0:00	0:00	<input checked="" type="checkbox"/>	Output Stop Time	0:00	0:00	<input checked="" type="checkbox"/>	<p>高级设置菜单页面</p> <p>此页面可设置</p> <p><b>输出打开时间：</b>值范围为0到23。</p> <p><b>输出停止时间：</b>值范围为0至23。</p>												
Setting Parameter	Current Value	Set Value																							
Output Open Time	0:00	0:00	<input checked="" type="checkbox"/>																						
Output Stop Time	0:00	0:00	<input checked="" type="checkbox"/>																						
<p>设备信息设置菜单</p>  <p><b>Device Info</b></p> <p>System Time:0000-00-00 00:09</p> <p>2000 Year 0 Month 0 Day 0 H 9 M 0 S <input checked="" type="checkbox"/></p> <p>Back Light: <input checked="" type="checkbox"/></p> <p>RGB Switch: <input checked="" type="checkbox"/></p>	<p>设备信息设置菜单页面</p> <p>此页面可设置系统时间：年/月/日/小时/分钟/秒。</p> <p>屏幕亮度：从暗到亮。</p> <p>RGB开关：开/关</p>																								

<p style="text-align: center;">市电网设置菜单</p> <div style="border: 1px solid black; padding: 5px;"> <p><b>Grid Setting</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Setting Parameter</th> <th>Current Value</th> <th>Set Value</th> <th></th> </tr> </thead> <tbody> <tr> <td>Input Voltage Range</td> <td>APL</td> <td>APL</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Grid-Connected Regulation</td> <td>Mode 04</td> <td>Mode 04</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Grid Feed Enable</td> <td>OFF</td> <td>OFF</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Grid Feed Current</td> <td>10A</td> <td>10A</td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table> <p style="text-align: right; font-size: small;">Grid Setting page 1/2</p> </div>	Setting Parameter	Current Value	Set Value		Input Voltage Range	APL	APL	<input checked="" type="checkbox"/>	Grid-Connected Regulation	Mode 04	Mode 04	<input checked="" type="checkbox"/>	Grid Feed Enable	OFF	OFF	<input checked="" type="checkbox"/>	Grid Feed Current	10A	10A	<input checked="" type="checkbox"/>	<p style="text-align: center;">市电网设置菜单页面</p> <p>该页面可设置  <b>输入电压范围:</b> APL\UPS  <b>光伏能源类型:</b> 模式01\模式02\模式03\模式04  <b>并网模式:</b> 禁用\启用  <b>市电并网电流:</b> 默认20A</p>
Setting Parameter	Current Value	Set Value																			
Input Voltage Range	APL	APL	<input checked="" type="checkbox"/>																		
Grid-Connected Regulation	Mode 04	Mode 04	<input checked="" type="checkbox"/>																		
Grid Feed Enable	OFF	OFF	<input checked="" type="checkbox"/>																		
Grid Feed Current	10A	10A	<input checked="" type="checkbox"/>																		
<div style="border: 1px solid black; padding: 5px;"> <p><b>Grid Setting</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Setting Parameter</th> <th>Current Value</th> <th>Set Value</th> <th></th> </tr> </thead> <tbody> <tr> <td>External CT Function</td> <td>Enable</td> <td>Enable</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Zero Export To CT</td> <td>500 W</td> <td>500 W</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>AC CHA Open Time</td> <td>0.00</td> <td>0.00</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>AC CHA Stop Time</td> <td>0.00</td> <td>0.00</td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table> <p style="text-align: right; font-size: small;">Grid Setting page 2/2</p> </div>	Setting Parameter	Current Value	Set Value		External CT Function	Enable	Enable	<input checked="" type="checkbox"/>	Zero Export To CT	500 W	500 W	<input checked="" type="checkbox"/>	AC CHA Open Time	0.00	0.00	<input checked="" type="checkbox"/>	AC CHA Stop Time	0.00	0.00	<input checked="" type="checkbox"/>	<p>此页面可以设置  <b>外部CT功能:</b> 配置外部CT功能  <b>默认值:</b> disable  <b>零输出到CT:</b> 设置主输入功率范围10W-500W  <b>默认值:</b> 150W  <b>市电充电开始时间:</b> 可设置范围0-23  <b>市电充电关闭时间:</b> 可设置范围0-23</p>
Setting Parameter	Current Value	Set Value																			
External CT Function	Enable	Enable	<input checked="" type="checkbox"/>																		
Zero Export To CT	500 W	500 W	<input checked="" type="checkbox"/>																		
AC CHA Open Time	0.00	0.00	<input checked="" type="checkbox"/>																		
AC CHA Stop Time	0.00	0.00	<input checked="" type="checkbox"/>																		
<p style="text-align: center;">充电设置菜单</p> <div style="border: 1px solid black; padding: 5px;"> <p><b>Charge Setting</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Setting Parameter</th> <th>Current Value</th> <th>Set Value</th> <th></th> </tr> </thead> <tbody> <tr> <td>CHA Source Priority</td> <td>SNU</td> <td>SNU</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>MAX Utility CHA CUR</td> <td>30A</td> <td>30 A</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>MAX CHA Current</td> <td>40A</td> <td>40 A</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Solar Supply Priority</td> <td>BLU</td> <td>BLU</td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table> <p style="text-align: right; font-size: small;">Charge Setting page 1/1</p> </div>	Setting Parameter	Current Value	Set Value		CHA Source Priority	SNU	SNU	<input checked="" type="checkbox"/>	MAX Utility CHA CUR	30A	30 A	<input checked="" type="checkbox"/>	MAX CHA Current	40A	40 A	<input checked="" type="checkbox"/>	Solar Supply Priority	BLU	BLU	<input checked="" type="checkbox"/>	<p>该页面可设置  <b>充电优先级:</b> 配置充电优先级  1. CS0: 太阳能将优先为电池充电。只有当太阳能不可用时,交流电才会给电池充电。  2. SNU: 太阳能和市电会同时给电池充电。  3. OS0: 无论是否有交流电,太阳能都将是唯一的充电器来源。  <b>注: 如果逆变器/充电器在电池模式下工作,只有太阳能可以给电池充电。如果有充足的太阳能,太阳能会给电池充电。</b>  <b>交流电电流最大值</b>  注意:如果最大充电电流中的设定值小于交流电电流最大值中的设定值,逆变器将使用最大充电电流中的充电电流为交流电充电器充电。  <b>最大充电电流:</b>  配置太阳能和交流充电器的总充电电流</p>
Setting Parameter	Current Value	Set Value																			
CHA Source Priority	SNU	SNU	<input checked="" type="checkbox"/>																		
MAX Utility CHA CUR	30A	30 A	<input checked="" type="checkbox"/>																		
MAX CHA Current	40A	40 A	<input checked="" type="checkbox"/>																		
Solar Supply Priority	BLU	BLU	<input checked="" type="checkbox"/>																		

<p style="text-align: center;">System working mode setting menu</p> <div style="border: 1px solid black; padding: 5px;"> <p><b>System Work Mode</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Setting Parameter</th> <th>Current Value</th> <th>Set Value</th> <th></th> </tr> </thead> <tbody> <tr> <td>ECO</td> <td>OFF</td> <td>OFF</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Output Priority</td> <td>SUB</td> <td>SUB</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Output TYPE</td> <td>PAL</td> <td>PAL</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Clear Generation</td> <td>OFF</td> <td>OFF</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Reset Factory Setting</td> <td>OFF</td> <td>OFF</td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table> <p style="text-align: right; font-size: small;">Work Mode page 1/1</p> </div>	Setting Parameter	Current Value	Set Value		ECO	OFF	OFF	<input checked="" type="checkbox"/>	Output Priority	SUB	SUB	<input checked="" type="checkbox"/>	Output TYPE	PAL	PAL	<input checked="" type="checkbox"/>	Clear Generation	OFF	OFF	<input checked="" type="checkbox"/>	Reset Factory Setting	OFF	OFF	<input checked="" type="checkbox"/>	<p style="text-align: center;">System working mode setting menu page</p> <p>This page can be set  <b>ECO function:</b> Under the battery model, when the load is low, the system will temporarily stop.  <b>Output priority:</b> Output source priority option.  1. SUB: Solar energy as the first priority for the load, if the solar energy is not enough to supply all connected loads, the utility grid energy will supply the load at the same time. Solar power as the first priority provides power for the load output source priority selection.  2. SBU: If the solar energy is not enough to supply all the connected loads, the battery energy will supply the loads simultaneously. The mains supplies power to the load only when the battery voltage drops to a low level warning voltage or when the solar and battery are insufficient.  <b>Output TYPE:</b> SIG/PAL/3P1/3P2/3P3  Remove the power generation capacity: tick the check box and click "YES".  <b>Clear Generation:</b> OFF/ON  <b>Reset Factory Setting:</b> To restore the default values, tick the check box and click "YES".</p>
Setting Parameter	Current Value	Set Value																							
ECO	OFF	OFF	<input checked="" type="checkbox"/>																						
Output Priority	SUB	SUB	<input checked="" type="checkbox"/>																						
Output TYPE	PAL	PAL	<input checked="" type="checkbox"/>																						
Clear Generation	OFF	OFF	<input checked="" type="checkbox"/>																						
Reset Factory Setting	OFF	OFF	<input checked="" type="checkbox"/>																						
<p style="text-align: center;">Mains grid Settings menu</p> <div style="border: 1px solid black; padding: 5px;"> <p><b>Grid Setting</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Setting Parameter</th> <th>Current Value</th> <th>Set Value</th> <th></th> </tr> </thead> <tbody> <tr> <td>Input Voltage Range</td> <td>APL</td> <td>APL</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Grid-Connected Regulation</td> <td>Mode 04</td> <td>Mode 04</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Grid Feed Enable</td> <td>OFF</td> <td>OFF</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Grid Feed Current</td> <td>10A</td> <td>10A</td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table> <p style="text-align: right; font-size: small;">Grid Setting page 1/2</p> </div>	Setting Parameter	Current Value	Set Value		Input Voltage Range	APL	APL	<input checked="" type="checkbox"/>	Grid-Connected Regulation	Mode 04	Mode 04	<input checked="" type="checkbox"/>	Grid Feed Enable	OFF	OFF	<input checked="" type="checkbox"/>	Grid Feed Current	10A	10A	<input checked="" type="checkbox"/>	<p style="text-align: center;">Mains grid Settings menu page</p> <p>This page can be set  <b>Input Voltage Range:</b> APL/UPS  <b>Grid-Connected Regulation:</b> Mode 01/ Mode 02/Mode 03/Mode 04  <b>Grid Feed Enable:</b> Disable / Enable  <b>Grid Feed Current:</b> Default 20A</p>				
Setting Parameter	Current Value	Set Value																							
Input Voltage Range	APL	APL	<input checked="" type="checkbox"/>																						
Grid-Connected Regulation	Mode 04	Mode 04	<input checked="" type="checkbox"/>																						
Grid Feed Enable	OFF	OFF	<input checked="" type="checkbox"/>																						
Grid Feed Current	10A	10A	<input checked="" type="checkbox"/>																						
<div style="border: 1px solid black; padding: 5px;"> <p><b>Grid Setting</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Setting Parameter</th> <th>Current Value</th> <th>Set Value</th> <th></th> </tr> </thead> <tbody> <tr> <td>External CT Function</td> <td>Enable</td> <td>Enable</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Zero Export To CT</td> <td>500 W</td> <td>500 W</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>AC CHA Open Time</td> <td>0.00</td> <td>0.00</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>AC CHA Stop Time</td> <td>0.00</td> <td>0.00</td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table> <p style="text-align: right; font-size: small;">Grid Setting page 2/2</p> </div>	Setting Parameter	Current Value	Set Value		External CT Function	Enable	Enable	<input checked="" type="checkbox"/>	Zero Export To CT	500 W	500 W	<input checked="" type="checkbox"/>	AC CHA Open Time	0.00	0.00	<input checked="" type="checkbox"/>	AC CHA Stop Time	0.00	0.00	<input checked="" type="checkbox"/>	<p>This page can be set  <b>External CT function:</b> Configure external CT function  Default: disable  <b>Zero output to CT:</b> set the mains input power of 10W ~ 500W  <b>Default:</b> 150W  <b>AC CHA Open Time:</b> The value ranges from 0 to 23.  <b>AC CHA Stop Time:</b> The value ranges from 0 to 23.</p>				
Setting Parameter	Current Value	Set Value																							
External CT Function	Enable	Enable	<input checked="" type="checkbox"/>																						
Zero Export To CT	500 W	500 W	<input checked="" type="checkbox"/>																						
AC CHA Open Time	0.00	0.00	<input checked="" type="checkbox"/>																						
AC CHA Stop Time	0.00	0.00	<input checked="" type="checkbox"/>																						

Charging Settings menu	Charging Settings menu page
	<p>This page can be set</p> <p><b>CHA Source Priority:</b> Set the charging priority</p> <ol style="list-style-type: none"> <li>CSO: Solar energy will give priority to battery charging. Alternating current only charges the battery when solar power is not available.</li> <li>SNU: Solar and mains power will charge the battery at the same time.</li> <li>OSO: Solar energy will be the only source of chargers, whether there is AC or not.</li> </ol> <p>Note: If the inverter/charger is operating in battery mode, only solar energy can charge the battery. If there is enough solar energy, the solar energy will charge the battery.</p> <p><b>MAX Utility CHA CUR:</b> MAX CHA Current is smaller than that in program in MAX Utility CHA CUR, the inverter will apply charging current from program MAX CHA Current for utility charger.</p> <p><b>MAX CHA Current:</b> MAX CHA Current To configure total charging current for solar and utility chargers</p> <p><b>Solar Supply Priority:</b> BLU solar power priority to provide energy to battery/LBU solar power priority to provide energy to the load.</p>
Advanced Settings menu	Advanced Settings menu page
	<p>This page can be set</p> <p><b>Dual mode: ON/OFF</b></p> <p><b>Dual BAT VOL Under:</b> 44V/22V, if the battery voltage is lower than the inverter setting, the dual output is cut off.</p> <p><b>Dual BAT SOC Under:</b> Default 20%, if the BMS capacity is lower than the SOC setting the second output will be cut.</p> <p><b>Dual BAT VOL Receiver:</b> Default 52V/26V, if the battery voltage is higher than the inverter setting, the dual will be restored.</p> <p><b>Dual BAT SOC Receiver:</b> Default 50%, if the BMS capacity is higher than the SOC setting, the second output will be restored.</p>
	<p>This page can be set</p> <p><b>Dual Discharge Time:</b> The value ranges from 0-990min Configure Discharge Time to turn off second output, and waiting time to turn on the second output when the inverter is back to Line mode or Battery is in charging status.</p> <p><b>Dual Recover Delay Time:</b> Configure the second output recovery delay. Even if Dual BAT VOL Receiver and Dual BAT SOC Receiver conditions are met, enable the second output after the recovery delay ends, The value ranges from 0-60min.</p> <p><b>Dual Output On Time:</b> The value ranges from 0 to 23.</p> <p><b>Dual Output Off Time:</b> The value ranges from 0 to 23.</p>

	<p>该页面可设置</p> <p><b>BMS功能开关:</b> 是否启用BMS通信功能</p> <p><b>BMS Soc锁定:</b> BMS的SOC值低于设定值, 逆变器将关闭以保护电池。</p> <p><b>BMS Soc转为AC:</b> 当逆变器的的工作模式设置为电池优先模式时, 当BMS的SOC低于设置值时, 逆变器将被迫进入电源充电。</p> <p><b>BMS Soc转为DC:</b> 当逆变器的的工作模式设置为电池优先模式时, 当BMS的SOC高于设置值时, 逆变器恢复直流工作模式。</p> <p><b>电池Soc重启:</b> 当逆变器打开时, SOC必须高于设定值才能正常工作。</p>
	<p>该页面可设置</p> <p><b>电池均衡:</b> 如果在电池类型选择“液体电池”或“用户定义”, 则可以设置该程序。</p> <p><b>电池均衡电压:</b> 24V系统型号默认29.2V, 48V系统型号默认58.4V</p> <p><b>电池均衡时间:</b> 设置范围从5分钟到900分钟。</p> <p><b>电池均衡超时:</b> 设置范围从5分钟到900分钟。</p> <p><b>均衡间隔:</b> 设置范围是从0到90天</p>
	<p>该页面可设置</p> <p><b>直流到交流电压:</b> 22V-25.5V\44V-51V</p> <p><b>交流到直流电压:</b> 24V-29V\48V-58V</p>
系统工作模式设置菜单	系统工作模式设置菜单页面
	<p>该页面可设置</p> <p><b>ECO功能:</b> 当电池模式下负载较低时, 系统将暂时停止。</p> <p><b>输出优先级:</b> 输出源优先级选项</p> <ol style="list-style-type: none"> <li>SUB: 太阳能作为第一优先事项为负载, 如果太阳能不足以为所有连接的负载供电, 公用电网能源将同时为负载供电。太阳能作为第一优先事项为负载输出源优先级选择提供电力。</li> <li>SBU: 如果太阳能不足以为所有连接的负载供电, 电池能量将同时为负载供电。只有当电池电压降至低电平警告电压或太阳能和电池不足时, 市电才向负载供电。</li> </ol> <p><b>输出类型:</b> SIG\PAL\3P1\3P2\3P3</p> <p><b>恢复出厂设置:</b> 恢复默认值时需勾选框后点击“YES”键</p>

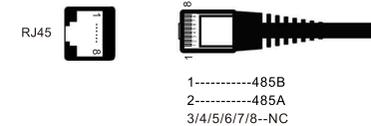
负载页面	负载详细页面
<div style="border: 1px solid black; padding: 5px;"> <p><b>Load</b></p> <p>Dual Status: OFF</p> <p>Output: 232.1 49.9 Hz</p> <p>Load Percent: 11 %</p> <p>Active Power: 525 W</p> <p>Apparent Power: 525 VA</p> <p style="text-align: right;">Back</p> </div>	<p>该页面详细的显示了输出模式、输出电压、输出频率、电感电流、有功功率、无功功率。</p>

Basic Setting	该页面可设置																
<div style="border: 1px solid black; padding: 5px;"> <p><b>Basic Setting</b></p> <table border="1"> <thead> <tr> <th>Setting Parameter</th> <th>Current Value</th> <th>Set Value</th> <th></th> </tr> </thead> <tbody> <tr> <td>MIP Cut Off Buz</td> <td>ON</td> <td>ON</td> <td>✓</td> </tr> <tr> <td>Over Temp Restart</td> <td>OFF</td> <td>OFF</td> <td>✓</td> </tr> <tr> <td>Auto Back Menu</td> <td>ON</td> <td>ON</td> <td>✓</td> </tr> </tbody> </table> <p style="text-align: right;">Basic Setting page 2/2</p> </div>	Setting Parameter	Current Value	Set Value		MIP Cut Off Buz	ON	ON	✓	Over Temp Restart	OFF	OFF	✓	Auto Back Menu	ON	ON	✓	<p>输入源提示功能: ON/OFF            过温重启功能: ON/OFF            自动返回第一页功能: ON/OFF</p>
Setting Parameter	Current Value	Set Value															
MIP Cut Off Buz	ON	ON	✓														
Over Temp Restart	OFF	OFF	✓														
Auto Back Menu	ON	ON	✓														

电池设置菜单	电池设置菜单页面																								
<div style="border: 1px solid black; padding: 5px;"> <p><b>Battery Setting</b></p> <table border="1"> <thead> <tr> <th>Setting Parameter</th> <th>Current Value</th> <th>Set Value</th> <th></th> </tr> </thead> <tbody> <tr> <td>Battery Type</td> <td>AGM</td> <td>AGM</td> <td>✓</td> </tr> <tr> <td>Bluck Charging VOL</td> <td>56.4V</td> <td>56.4V</td> <td>✓</td> </tr> <tr> <td>Float Charging VOL</td> <td>54.0V</td> <td>54.0V</td> <td>✓</td> </tr> <tr> <td>Battery Cut-off VOL</td> <td>42.0V</td> <td>42.0V</td> <td>✓</td> </tr> <tr> <td>Battery Low VOL</td> <td>44.0V</td> <td>44.0V</td> <td>✓</td> </tr> </tbody> </table> <p style="text-align: right;">Battery Setting page 1/4</p> </div>	Setting Parameter	Current Value	Set Value		Battery Type	AGM	AGM	✓	Bluck Charging VOL	56.4V	56.4V	✓	Float Charging VOL	54.0V	54.0V	✓	Battery Cut-off VOL	42.0V	42.0V	✓	Battery Low VOL	44.0V	44.0V	✓	<p>该页面可设置</p> <p><b>电池类型:</b> AGM/FLD/USE/LIA/PYL/TQF/GRO/LIB/LIC</p> <p><b>强充电压:</b> 如果在电池类型选择了自定义,则可以设置该程序。</p> <p>24V系统型号的设置范围为24.0V至30.0V, 48V系统型号的设置范围为48.0V至60.0V。</p> <p><b>浮充电压:</b> 27V\54V</p> <p><b>低电截止电压:</b> 如果电池电源是唯一可用的电源,转换器将关闭。</p> <p>如果PV能源和电池电源可用,逆变器将在没有交流输出的情况下为电池充电。如果在电池类型选择了自定义,则可以设置该程序。</p> <p>24V系统型号的设置范围为20.0至26.0V, 48V系统型号的设置范围40.0V至52.0V,无论连接多大比例的负载,低直流截止电压都将固定为设定值。</p> <p><b>电池过压:</b> 24V系统型号的设置的范围20.0V-27.0V, 48V系统型号的设置范围40.0V-54.0V</p>
Setting Parameter	Current Value	Set Value																							
Battery Type	AGM	AGM	✓																						
Bluck Charging VOL	56.4V	56.4V	✓																						
Float Charging VOL	54.0V	54.0V	✓																						
Battery Cut-off VOL	42.0V	42.0V	✓																						
Battery Low VOL	44.0V	44.0V	✓																						

Advanced Function	Device information setting menu												
<div style="border: 1px solid black; padding: 5px;"> <p><b>Advanced Function</b></p> <table border="1"> <thead> <tr> <th>Setting Parameter</th> <th>Current Value</th> <th>Set Value</th> <th></th> </tr> </thead> <tbody> <tr> <td>Output Open Time</td> <td>0:00</td> <td>0:00</td> <td>✓</td> </tr> <tr> <td>Output Stop Time</td> <td>0:00</td> <td>0:00</td> <td>✓</td> </tr> </tbody> </table> <p style="text-align: right;">Adv page 3/3</p> </div>	Setting Parameter	Current Value	Set Value		Output Open Time	0:00	0:00	✓	Output Stop Time	0:00	0:00	✓	<p>This page can be set</p> <p><b>Output Open Time:</b> The value ranges from 0 to 23.</p> <p><b>Output Stop Time:</b> The value ranges from 0 to 23.</p>
Setting Parameter	Current Value	Set Value											
Output Open Time	0:00	0:00	✓										
Output Stop Time	0:00	0:00	✓										
<div style="border: 1px solid black; padding: 5px;"> <p><b>Device Info</b></p> <p>System Time:0000-00-00 00:09</p> <p>2000 Year 0 Month 0 Day 0 H 9 M 0 S</p> <p>Back Light: <input type="checkbox"/></p> <p>RGB Switch: <input checked="" type="checkbox"/> ON</p> </div>	<p>This page can be set</p> <p><b>System time :</b>year/month/day/hour/minute /second.</p> <p><b>Back Light:</b> From dark to light.</p> <p><b>RGB Switch :</b> ON/OFF</p>												

When the BMS/485 communication interface is externally connected, as shown in the following figure:



### Communication Connection

Please use supplied communication cable to connect to inverter and PC. Please install a monitoring software on the computer.

### Dry Contact Signal

There is one dry contact (3A/250VAC)available on the rear panel. It could be used to deliver signal to external device when battery voltage reaches warning level.

Unit Status	Condition	Dry contact port: NC C NO			
		NC & C	NC & C		
Power Off	Unit is off and no output is powered.	Close	Open		
Power On	Output is powered from battery or solar.	Normal mode	Battery voltage < Low DC warning voltage	Open	Close
			Battery voltage > Float charging voltage	Close	Open
	Solar first mode	Battery voltage < Solar to AC voltage	Open	Close	
		Battery voltage > AC to DC voltage	Close	Open	

## 5.5 Fault and alarm description

### 5.5.1 Faults Descriptions

➤ **Fault:** The inverter enters the fault mode, the red LED light is always on and the LCD displays the fault code.

#### Fault Reference Code

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

市电页面	市电详细页面
	该页面显示电网的频率、输入电压、电网功率。
CT页面	CT详细信息页面
	该页面显示CT检测点处的频率、输入电压和电网功率

### 5.4.2 系统设置菜单

系统设置菜单	系统设置菜单页面
	这是系统设置页面，包括电池设置、系统工作模式、电池设置、市电设置、充电设置、基本设置、高级功能、设备信息。
基本设置菜单	基本设置菜单页面
	<p>该页面可设置</p> <p><b>逆变电压:</b> 220/230/240V (默认230V)</p> <p><b>逆变频率:</b> 50/60HZ (默认50HZ)</p> <p><b>蜂鸣器:</b> ON/OFF</p> <p><b>旁路开关:</b> ON/OFF</p> <p><b>过载重启:</b> ON/OFF</p>

## 5.4 触摸屏操作说明

### 5.4.1 触摸屏主界面页面内容

逆变器页面	逆变器数据详细页面
<div style="border: 1px solid black; padding: 5px;"> <p><b>Detail</b></p> <p>Machine Type: 6248      Lcd Version: V10.01</p> <p>Inverter Type: HPVINV04      Driver Version: V10.01</p> <p>Boosting Temp: 31°C      Main Version: V10.03</p> <p>Machine Temp: 51°C</p> <p>MPPT Temp: 25°C</p> <p>MOS Temp: 39°C</p> <p>IAP Status: Normal</p> <p style="text-align: right;">Back</p> </div>	<p>该页面详细的显示了逆变器的机器型号、机器类型、升压管温度、机内温度、MPPT温度、逆变温度、底层程序是否正常、彩屏版本号、中央集控板版本号、机器控制板版本号。</p>
光伏页面	光伏数据详细页面
<div style="border: 1px solid black; padding: 5px;"> <p><b>Solar</b></p> <p>PV1 Input: 262.6 V 7.0 A</p> <p>PV1 Input Power: 1855 W</p> <p>PV2 Input: 0.0 V 0.1 A</p> <p>PV2 Input Power: 0 W</p> <p>Today: 0.000KWh Month: 0.0KWh</p> <p>Year: 0.0 KWh Total: 0.0 KWh</p> <p style="text-align: right;">Back</p> </div>	<p>该页面详细的显示了光伏太阳能板的输入电压、电流、功率。还能记录今日光伏发电量、本月光伏发电量、本年光伏发电量、光伏发电总量。</p>
电池页面	电池详细页面
<div style="border: 1px solid black; padding: 5px;"> <p><b>Battery</b></p> <p>Battery Type: AGM</p> <p>BMS COM Function: OFF</p> <p>Battery Voltage: 54.0 V</p> <p>Charge Current: 12 A</p> <p>Discharge Current: 0 A</p> <p>Bus Voltage: 428 V</p> <p>Li Battery Active: OFF</p> <p style="text-align: right;">Back</p> </div>	<p>该页面详细的显示了电池类型、BMS当前通讯状态、电池电压、BAT充电电流、BAT放电电流及BUS总线电压和锂电激活状态。</p>
BMS页面	BMS 详细页面
<div style="border: 1px solid black; padding: 5px;"> <p><b>BMS</b></p> <p>BMS 485 Protocol: NULL</p> <p>SOC: 100 %</p> <p>Charge Current: 0.0 A</p> <p>Discharge Current: 0.0 A</p> <p>BMS Temper: 0.0 C</p> <p>Discharge Limit Voltage: 0.0 V</p> <p>Charge Limit Voltage: 0.0 V</p> <p>Charge Limit Current: 100.0 A</p> <p style="text-align: right;">Back</p> </div>	<p>该页面详细的显示了BMS当前使用协议、BMS当前SOC值、BMS充电电流、BMS放电电流BMS温度、BMS放电限制电压、BMS充电限制电压、BMS充电限制电流。</p>

## 5.5.2 Alarm Descriptions

➤ **Alarm:** The red LED flashes, and the LCD displays an alarm code, the inverter does not enter the failure mode

### Alarm Indicator

Alarm Code	Alarm Event	Audible Alarm
01	Fan is locked when inverter is on.	Beep three times every second
02	Over temperature	None
03	Batery is over-charged	Beep once every second
04	Low battery	Beep once every second
07	Overload	Beep once every 0.5 second
10	Output power derating	Beep twice every 3 seconds
15	PV energy is low.	Beep twice every 3 seconds
16	High AC input (>280VAC) during BUS soft start	None
E9	Battery equalization	None
6P	Battery is not connected	None

## 5.5.3 Code Reference

Related information code will be displayed on LCD screen. Please check inverter LCD screen for the operation.

Code	Description
60	If battery status is not allowed to charge and discharge after the communication between the inverter and battery is successful, it will show code 60 to stop charging and discharging battery.
61	Communication lost <ul style="list-style-type: none"> <li>After battery is connected, communication signal is not detected for 1 minutes, buzzer will beep.</li> <li>Communication lost occurs after the inverter and battery is connected successfully, buzzer beeps immediately.</li> </ul>
69	If battery status is not allowed to charge after the communication between the inverter and battery is successful, it will show code 69 to stop charging battery.
70	If battery status must to charge after the communication between the inverter and battery is successful, it will show code 70 to charge battery.
71	If battery status is not allowed to discharge after the communication between the inverter and battery is successful, it will show code 71 to stop discharge battery.

## 6. Trouble removal

Problem	LCD/LED/Buzzer	Explanation/Possible cause	What to do
Unit shuts down automatically during startup process.	LCD/LEDs and buzzer will be active for 3 seconds and then complete off.	The battery voltage is too low (<1.91V/Cell)	1. Re-charge battery. 2. Replace battery.
No response after power on.	No indication	1. The battery voltage is far too low.<1.4V/Cell) 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 tripped	Check if AC breaker is tripped and AC wiring is connected well.
	Green LED is flashing	Insufficient quality of AC power. (Shore 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.(UP-->sppliance)
	Green LED is flashing.	Set "Solar First" as the priority of output source.	Change output source priority to Utility first.
When the unit is turned on, internal relay is switched on and off repeatedly.	LCD display and LEDs are flashing	Battery is disconnected.	Check if battery wires are connected well.
Buzzer beeps continuously and red LED is on.	Fault code 07	Overload error. The inverter is overload 105% and time is up.	Reduce the connected load by switching off some equipment.
		If PV input voltage is higher than specification, the output power will be derated.At this time, if connected loads is higher than derated output power, it will cause overload.	Reduce the number of PV modules in series or the connected load.
	Fault code 05	Output short circuited.	Check if wiring is connected well and remove abnormal load.
		Temperature internal converter component is over 120°C.	Check whether the air flow of the unit is blocked or whether the ambient temperature is too high.
	Fault code 02	Internal temperature of inverter component is over 100°C	
	Fault code 03	Battery is over-charged	Return to repair center.
		The battery voltage is too high.	Check if spec and quantity of batteries are meet requirements.
	Fault code 01	Fan fault	Replace the fan.
	Fault code 06/58	Output abnormal (Inverter voltage below than 190Vac or is higher than 260Vac)	1. Reduce the connected load. 2. Return to repair center
	Fault code 08/09/53/57	Internal components failed.	Return to repair center.
	Fault code 51	Over current or surge.	Restart the unit, if the error happens again, please return to repair center.
	Fault code 52	Bus voltage is too low.	
Fault code 55	Output voltage is unbalanced.		
Fault code 59	PV input voltage is beyond the specification.	Reduce the number of PV modules in series.	

5. 光伏功率和负载功率始终保持正值。

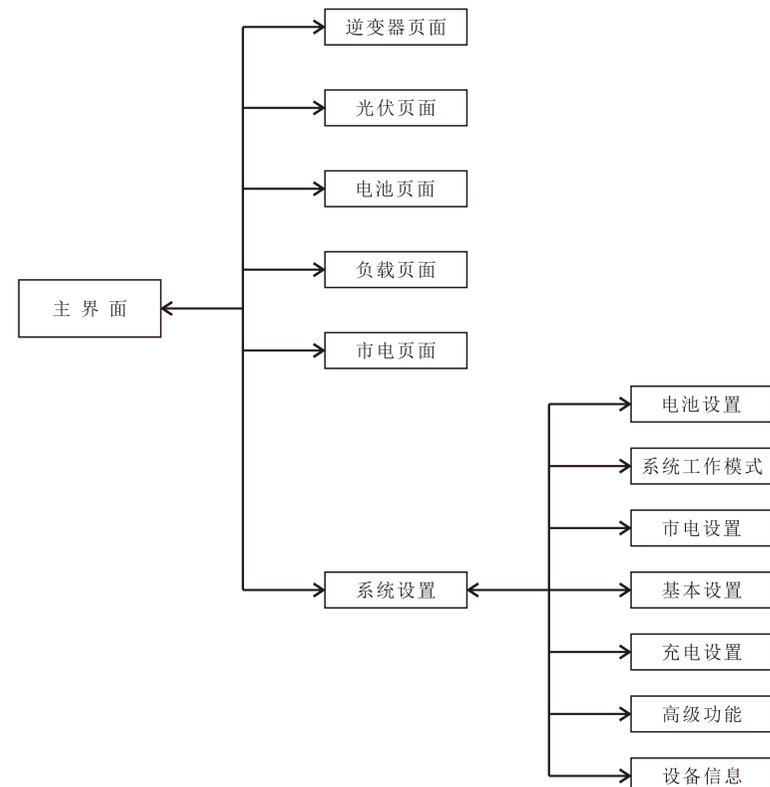
6. 市电电源负向并网，正向获取。

7. 蓄电池电源负向意味着充电，正向意味着放电。

8. 指示灯信息表

号码	机器状态	颜色	显示效果	呼吸灯
1	待机状态/自检测	多色的	渐变色显示	否
2	DC状态下	蓝色	单色显示（一个灯持续闪烁）	否
3	AC状态下/或充满电时	绿色	单色显示	否
4	AC状态下充电	绿色	单色显示	是
5	光伏充电时	黄色	单色显示	是
6	太阳能下充满电	黄色的	单色显示	否
7	机器报警	红色	单色显示	是（可恢复的）
				否（不可恢复的）
8	光伏与市电同时充电时	一半一半	上半部分黄色，下半部分绿色	是

## 5.3 触摸屏显示流程图

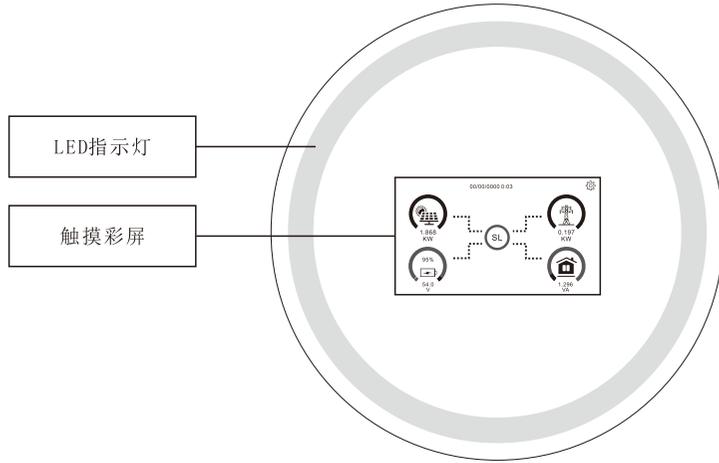


## 5.2 LCD显示器图标

下图所示的操作和显示面板位于逆变器的前面板上。它包括四个指示灯和一个触摸彩屏。

### 5.2.1 主画面

液晶显示屏为触摸屏，屏幕上方显示逆变器的整体信息。



1. 主屏幕中心的无图标表示系统处于正常运行状态。如果主屏幕中心显示灰色图标及字符，这意味着逆变器出现告警，告警信息将以字符显示在这个图标下（详细的错误信息可以在说明书报警菜单中查看）。如果主屏幕中心显示红色图标及字符，这意味着逆变器出现故障，故障信息将以字符显示在这个图标下（详细的错误信息可以在说明书报警菜单中查看）。



2. 屏幕上方是时间。

3. 系统设置图标，按此设置按钮，您可以进入系统设置画面，其中包括电池设置，系统工作模式、网络设置、基本设置、高级功能、设备信息。

4. 主屏幕显示的信息，包括光伏，市电，负载和电池。它还以箭头显示能量流动方向。当功率接近极限值时，面板上的颜色将从绿色变为红色，使系统信息生动地显示在主屏幕上。

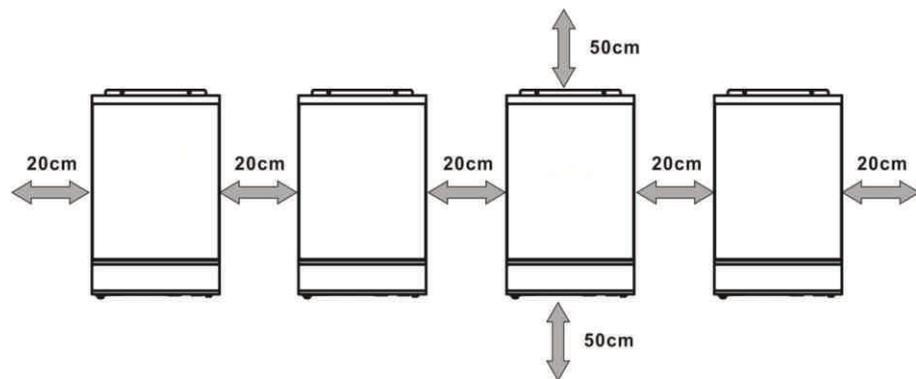
## 7. Technical datasheet

Model		3024SMH	3624SMH	4024SMH	5548SMH	6248SMH	11048MH
Input	Input Sources	L+N+PE					
	Rated Input Voltage	220/230/240VAC					
	Voltage Range	90-280VAC±3V(APL Mode)170-280VAC±3V(UPS Mode)					
	Frequency	50Hz/60Hz(Auto Adaptive)					
Output	Rated power	The battery inverts 3000W	The battery inverts 3600W	The battery inverts 4000W	The battery inverts 5500W	The battery inverts 6200W	The battery inverts 11000W
		Photovoltaic inverter 3600W	Photovoltaic inverter 4500W	Photovoltaic inverter 4500W	Photovoltaic inverter 6500W	Photovoltaic inverter 6500W	Photovoltaic inverter 12000W
	Output Voltage	220/230/240VAC±5%					
	Output Frequency	50/60Hz±0.1%					
	Waveform	Pure Sine Wave					
	Transfer Time (adjustable)	Computers(UPS Mode)10ms, Appliance(APL Mode )20ms					
	Peak Power	6000VA	7200VA	8000VA	11000VA	12400VA	22000VA
	Overload capacity	Battery mode11s@105%~150% Load;2s@150%~200% Load;400ms@>200% Load					
Grid-connected operation	Output Voltage	220/230/240VAC±5%					
	Feed into the grid voltage range	170-265VAC					
	Feed into the grid frequency range	49-51±1Hz/59-61±1Hz					
	Nominal output current	13A	15.7A	17.4A	23.9A	26.9A	47.8A
	Power Factor Range	> 0.99					
	Maximum conversion efficiency (DC/AC)	98%					
Battery	Battery Voltage	24Vdc	24Vdc	24Vdc	48Vdc	48Vdc	48Vdc
	Constant Charging Voltage(Adjustable)	28.2Vdc	28.2Vdc	28.2Vdc	56.4Vdc	56.4Vdc	56.4Vdc
	Floate Charging Voltage(Adjustable)	27Vdc	27Vdc	27Vdc	54Vdc	54Vdc	54Vdc
Chargers	PV Charging Mode	MPPT	MPPT	MPPT	MPPT	MPPT	MPPT Dual MPPT
	MAX.PV Input Power	5000W	6500W	6500W	8500W	8500W	2*5500W
	MPPT Tracking Range	60~500Vdc					
	Best voltage	300~400V	300~400V	300~400V	360~430V	360~430V	300~400V
	MAX.PV Input Voltage	500Vdc	500Vdc	500Vdc	500Vdc	500Vdc	500Vdc
	PV max input current	18A	27A	27A	27A	27A	18A/18A
	MAX.PV Charging Current	100A	120A	120A	100A	120A	150A
	MAX.AC Charging Current	60A	100A	100A	100A	100A	150A
MAX.Charging Current	100A	120A	120A	100A	120A	150A	
Display	LCD interface	CAN display running mode/load/input/output, etc.					
	RS232	Baud Rate2400					
Interface	Extend the socket communication interface	Lithium Battery BMS Communication Card WifiCard, Dry Contact					
	Parallel machine interface	No parallel function			Parallel Machine (network) function		
Environments	Operating Temperature	-10~50°C					
	Humidity	20%~95%(Non-condensing)					
	Storage Temperature	-15~60°C					
	Altitude	Altitude Not Over 1000m,Derating over 1000m,Max 4000m. Refer to IEC62040					
Noise	≤50db						
Standards and certification		EN-IEC 60335-1,EN IEC 60335-2-29, IEC 62109-1					

## Appendix I: Parallel function

### 1. Mounting the unit

When installing multiple units, please follow below chart.



**NOTE:** For proper air circulation to dissipate heat, allow a clearance of approx. 20 cm to the side and approx. 50 cm above and below the unit. Be sure to install each unit in the same level.

### 2. Wiring Connection

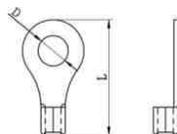
**NOTICE:** It's requested to connect to battery for parallel operation.

The cable size of each inverter is shown as below:

**Recommended battery cable and terminal size for each inverter:**

Rated Capacity	Wire Size	Ring Terminal			Torque value
		Cable mm <sup>2</sup>	D (mm)	L (mm)	
3KW	1*4AWG	22	6.4	33.2	2~3Nm
3.6KW	2*4AWG	25	8.4	33.2	5Nm
4KW	2*4AWG	25	8.4	33.2	5Nm
5.5KW	1*2AWG	38	6.4	39.2	2~3Nm
6.2KW	1*2AWG	38	8.4	39.2	2~3Nm
11KW	1*3/0AWG	85	8.4	54	5Nm

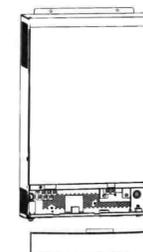
Ring terminal:



**WARNING:** Be sure the length of all battery cables is the same. Otherwise, there will be voltage difference between inverter and battery to cause parallel inverters not working.

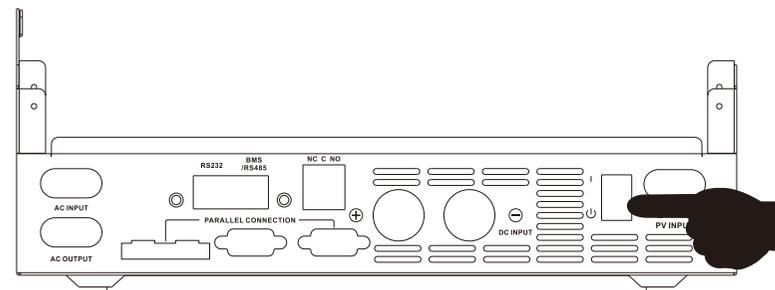
### 4.7 最终组装

连接所有接线后，请拧紧两个螺钉，将底盖放回原位，如下所示。



## 5 操作

### 5.1 电源开/关



一旦装置安装正确，电池连接良好，只需按下开/关电源键(位于外壳按钮上)即可打开装置。

#### 5.1.1 故障和报警说明

连接符合要求的电池(电池电压需要超过23V)或交流电(交流电需要根据输出模式确定合适的输入范围)，然后可以启动逆变器。

#### ☐ 交流电模式开机

接通正常交流电电源，按下开关，系统会自动开机。如果您设置了交流电输出功率优先级，在等待一段时间后，面板将显示交流电模式，指示机器已成功开机，然后将进入交流电模式。

当连接正常市电并按下开机按钮时，系统将自动开机，如果设置为交流输出优先级，一段时间后，面板将取消交流模式，表示开机完成并进入交流模式。

#### ☐ 电池模式开机

连接电池，按下电源开关，电池提供电流。

系统将自动打开，等待一段时间后，面板将显示电池模式，指示机器已成功打开，然后将进入电池模式。

#### 5.1.2 关闭步骤

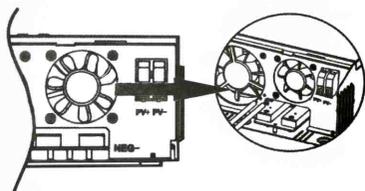
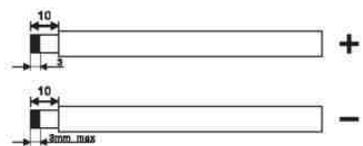
当系统处于电池模式或交流模式输出时，再次按下开关，系统将关闭。

型号	3024SMH	3624SMH	4024SMH	5548SMH	6248SMH	11048MH
PV充电模式	MPPT	MPPT	MPPT	MPPT	MPPT	MPPT Dual MPPT
PV输入功率最大值	5000W	6500W	6500W	8500W	8500W	2*5500W
MPPT跟踪范围	60~500Vdc					90~500Vdc
最佳电压	300-400V	300-400V	300-400V	360-430V	360-430V	300~400V
PV输入电压最大值	500Vdc	500Vdc	500Vdc	500Vdc	500Vdc	500Vdc
PV充电电流最大值	18A	27A	27A	27A	27A	18A/18A
PV充电电流最大值	100A	120A	120A	100A	120A	150A
交流充电电流最大值	60A	100A	100A	100A	100A	150A
充电电流最大值	100A	120A	120A	100A	120A	150A

### PV模块电线连接

请按照以下步骤实施PV组件连接:

1. 将正负导线的绝缘套管拆下10毫米。
2. 建议用合适的压接工具将导线固定在正极和负极电线的末端
3. 如下图所示, 用提供的螺丝将线盖固定到逆变器上。



4. 检查PV模块和PV输入连接器的电线极性是否正确。然后, 将连接线的正极(+)连接到PV输入连接器的正极(+). 将连接线的负极(-)连接到PV输入连接器的负极(-)上。顺时针方向拧紧两根电线。  
推荐工具: 4毫米刀片螺丝刀。

### CT操作指南

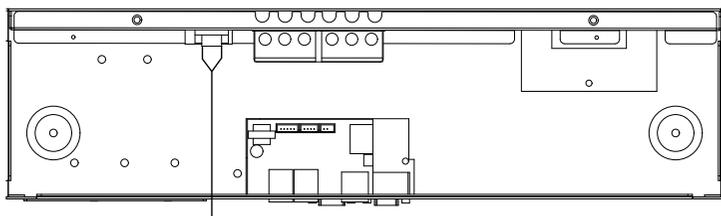
通过CT连接, 混合逆变器可以轻松集成到现有的家庭系统中。它通过CT安排自我消耗, 以控制逆变器的发电和电池充电。

#### 1. 单一调试步骤

步骤 1. 关闭逆变器, 并使用工具附件安装在弹簧端子上连接外部CT。请注意: CT的电流方向标记应指向逆变器, 端子上连接CT线的极性应遵循“L+”对红线和“L-”对黑线。

步骤 2. 打开逆变器的电源。

步骤 3. 在连接有CT传感器的逆变器上输入LCD设置, 并将CT功能设置为“Enable”



### Recommended AC input and output cable size for each inverter:

Rated Capacity	AWG no.	Torque
3KW	12AWG	1.2~1.6Nm
3.6KW	12AWG	1.2~1.6Nm
4KW	12AWG	1.2~1.6Nm
5.5KW	10AWG	1.2~1.6Nm
6.2KW	10AWG	1.2~1.6Nm
11KW	8AWG	1.4~1.6Nm

You need to connect the cables of each inverter together. Take the battery cables for example: You need to use a connector or bus-bar as a joint to connect the battery cables together, and then connect to the battery terminal. The cable size used from joint to battery should be X times cable size in the tables above. indicates the number of inverters connected in parallel.

Regarding AC input and output, please also follow the same principle.

**WARNING!!** Make sure all output N wires of each inverter must be connected all the time. Otherwise, it will cause inverter fault in error code #72.

**CAUTION!!** Please install the breaker at the battery and AC input side. This will ensure the inverter can be securely disconnected during maintenance and fully protected from over current of battery or AC input.

### Recommended breaker specification of battery for each inverter:

Rated Capacity	1 unit*	Rated Capacity	1 unit*
3KW	150A/70VDC	6.2KW	150A/70VDC
3.6KW	200A/70VDC	11KW	300A/70VDC
4KW	200A/70VDC		
5.5KW	150A/70VDC		

\*If you want to use only one breaker at the battery side for the whole system, the rating of the breaker should be X times current of 1 unit. "X" indicates the number of inverters connected in parallel.

### Recommended breaker specification of AC input with single phase:

Rated Capacity	2 units	3 units	4 units	5 units	6 units	7 units	8 units	9 units
3KW	80A/ 230VAC	120A/ 230VAC	160A/ 230VAC	200A/ 230VAC	240A/ 230VAC	280A/ 230VAC	320A/ 230VAC	360A/ 230VAC
3.6KW	80A/ 230VAC	120A/ 230VAC	160A/ 230VAC	200A/ 230VAC	240A/ 230VAC	280A/ 230VAC	320A/ 230VAC	360A/ 230VAC
4KW	80A/ 230VAC	120A/ 230VAC	160A/ 230VAC	200A/ 230VAC	240A/ 230VAC	280A/ 230VAC	320A/ 230VAC	360A/ 230VAC
5.5KW	80A/ 230VAC	120A/ 230VAC	160A/ 230VAC	200A/ 230VAC	240A/ 230VAC	280A/ 230VAC	320A/ 230VAC	360A/ 230VAC
6.2KW	80A/ 230VAC	120A/ 230VAC	160A/ 230VAC	200A/ 230VAC	240A/ 230VAC	280A/ 230VAC	320A/ 230VAC	360A/ 230VAC
11KW	120A/ 230VAC	180A/ 230VAC	240A/ 230VAC	300A/ 230VAC	360A/ 230VAC	/	/	/

**Note1:** Also, a circuit breaker should be installed at the AC input of each inverter, and the selection of the circuit breaker should refer to the AC input current of the machine nameplate.

**Note2:** Regarding three-phase system, you can use 4-pole breaker directly and the rating of the breaker should be compatible with the phase current limitation from the phase with maximum units.

## Recommended battery capacity

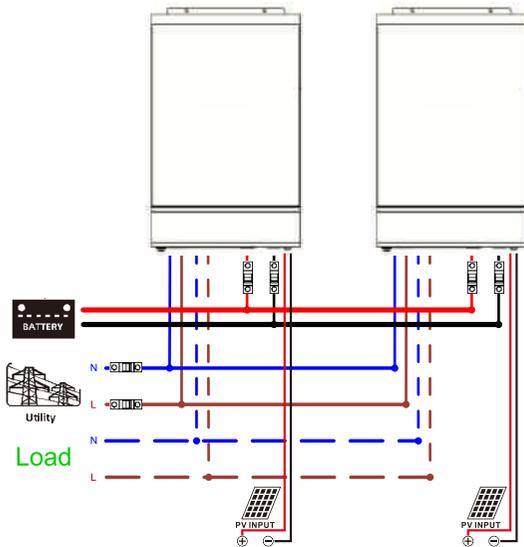
Inverter parallel numbers	2	3	4	5	6	7	8	9
Battery Capacity for 3KW	400AH	600AH	800AH	1000AH	1200AH	1400AH	1600AH	1800AH
Battery Capacity for 3.6KW	400AH	600AH	800AH	1000AH	1200AH	1400AH	1600AH	1800AH
Battery Capacity for 4KW	400AH	600AH	800AH	1000AH	1200AH	1400AH	1600AH	1800AH
Battery Capacity for 5.5KW	400AH	600AH	800AH	1000AH	1200AH	1400AH	1600AH	1800AH
Battery Capacity for 6.2KW	400AH	600AH	800AH	1000AH	1200AH	1400AH	1600AH	1800AH
Battery Capacity for 11KW	500AH	750AH	1000AH	1250AH	1500AH	/	/	/

**WARNING!** Be sure that all inverters will share the same battery bank . Otherwise, the inverters will transfer to fault mode.

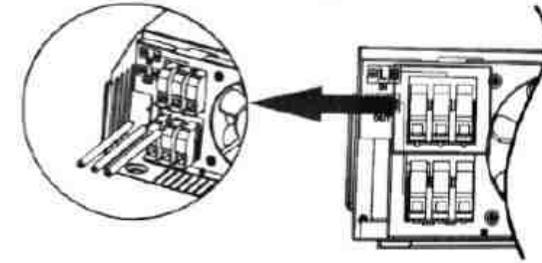
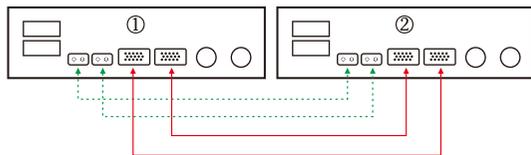
### 2-1. Parallel operation in single phase

Two inverters in parallel:

**Power Connection**(Each photovoltaic panel needs to be connected to an independent system)



### Communication Connection



**警告：**在尝试将交流电源硬连接到设备之前，请确保交流电源已断开。

#### 4. 确保电线连接牢固

**注意：**空调等设备需要至少2-3分钟才能重新启动，因为需要有足够的时间来平衡回路内的制冷剂气体。如果电力短缺发生并在短时间内恢复，则会对连接的设备造成损坏。为防止此类损坏，请在安装前检查空调制造商是否配备了延时功能。否则，此逆变器/充电器将触发过载故障并切断输出以保护您的设备，但有时它仍会对空调造成内部损坏。

#### 4.6 PV连接

PV连接(仅适用于带太阳能充电的型号)

**注意：**在连接PV模块之前，请在逆变器和PV模块之间单独安装一个直流断路器。

**警告！**所有接线必须由合格人员执行。

**警告！**使用合适的电缆连接PV组件对系统的安全和高效运行非常重要。为了降低受伤的风险，请使用以下推荐的合适电缆尺寸。

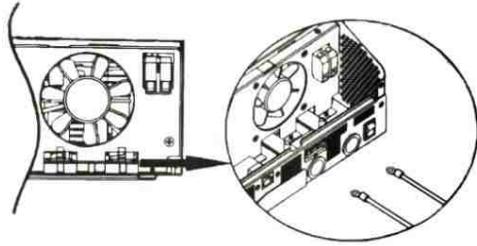
典型安培数	线规	扭矩值
30A	12AWG	1.4-1.6Nm

#### PV组件选择:

选择合适的PV组件时，确保首先考虑以下要求：

PV组件的开路电压( $V_{oc}$ )不超过逆变器的最大PV阵列开路电压。为了获得最佳性能，PV模块的最大电源电压应接近逆变器的最佳PV接入电压范围。如果一个PV组件不能满足这一要求，则需要串联多个PV组件。

2. 将电池电线平插入逆变器的电池连接器中，并确保以顺时针方向2Nm的扭矩拧紧螺栓。确保电池和逆变器/充电器的极性正确连接，并且导线牢固地拧入电池端子。推荐工具：#2Pozi螺丝刀



	<b>警告:电击危险</b> 由于串联电池电压很高，安装时必须小心。
	<b>注意!!</b> 在进行最终直流连接或闭合直流断路器/隔离开关之前,确保正极(+)必须连接到正极(+),负极(-)必须连接到负极(-)。

#### 4.5 交流输入输出连接

**注意!!** 在连接到交流输入电源之前,请在逆变器和交流输入电源之间安装一个单独的交流断路器。这将确保逆变器在维护期间可以断开连接,并防止交流电输入电流过大。推荐的断路器规格24V系统的断路器是32A,48V系统的断路器是63A。

**注意!!** 有两个带有“IN”和“OUT”标记的端子板。请不要错误连接输入和输出连接器。

**警告!** 所有接线必须由合格人员进行。

**警告!** 使用合适的电缆连接交流输入对系统的安全和有效运行非常重要。为了降低受伤的风险,请使用以下推荐的合适电缆尺寸。

#### 交流电线的建议电缆要求

模式	线规	扭矩值
3KVA	12AWG	1.2~1.6Nm
3.6KVA	12AWG	1.2~1.6Nm
4KVA	12AWG	1.2~1.6Nm
5.5KVA	10AWG	1.4~1.6Nm
6.2KVA	10AWG	1.4~1.6Nm
11KVA	8AWG	1.4~1.6Nm

请按照以下步骤实现交流输入/输出连接

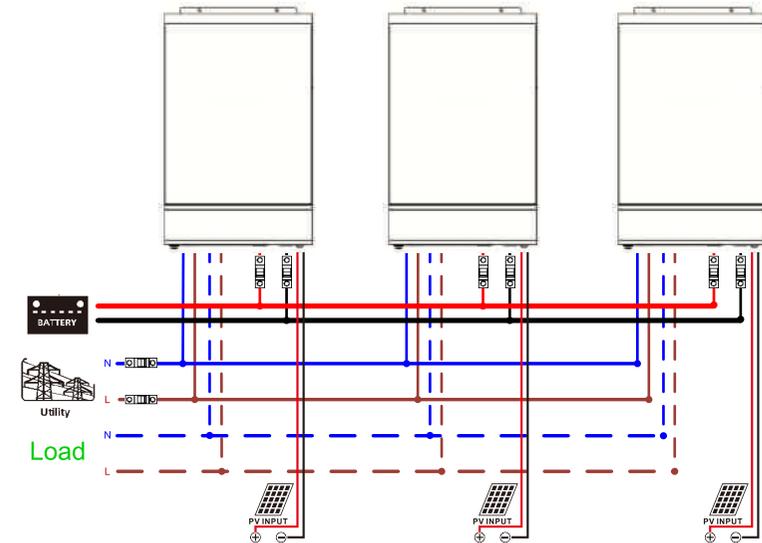
1. 在进行交流输入/输出连接之前,确保首先打开直流保护器或隔离开关。
2. 移除六根导线的10毫米绝缘套管。并将L相和中性线N缩短3毫米。

根据端子板上指示的极性插入交流输入,并拧紧端子螺钉。首先确保连接P和E接触良好(⊕)。

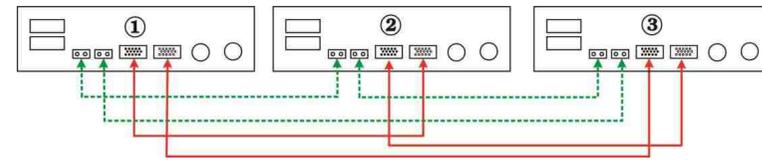
- ⊕ → 接地 (黄绿色)
- L → 导线 (棕色或黑色)
- N → 中性 (蓝色)

#### Three inverters in parallel:

**Power Connection**(Each photovoltaic panel needs to be connected to an independent system)

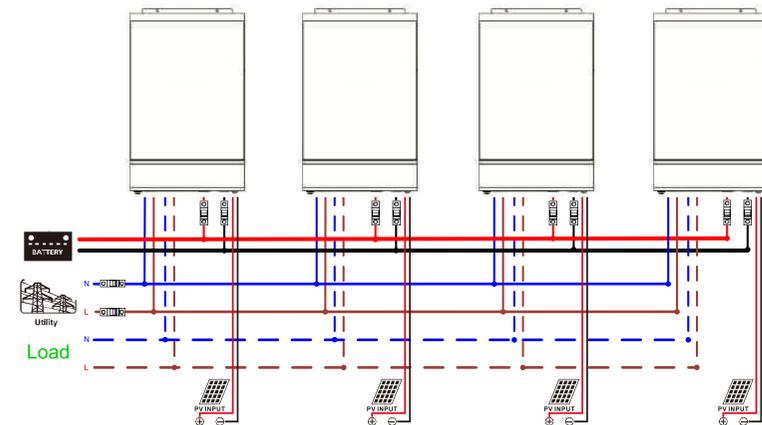


#### Communication Connection

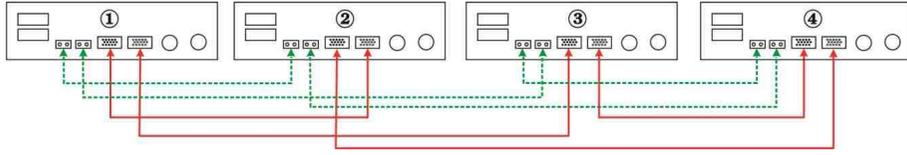


#### Four inverters in parallel:

**Power Connection**(Each photovoltaic panel needs to be connected to an independent system)

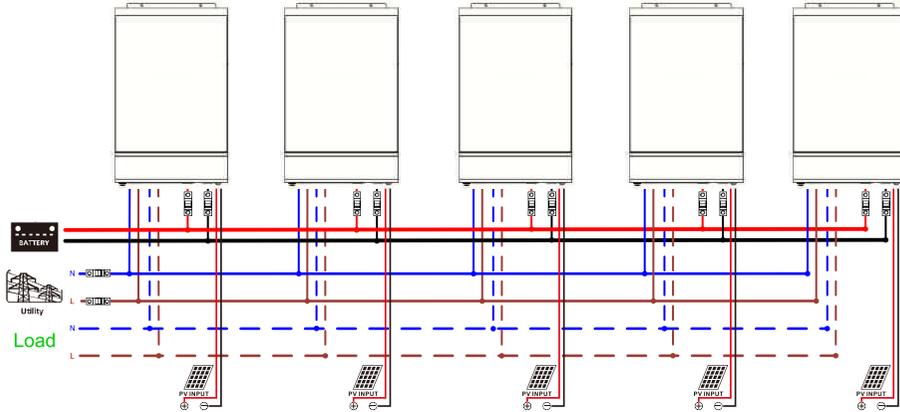


### Communication Connection

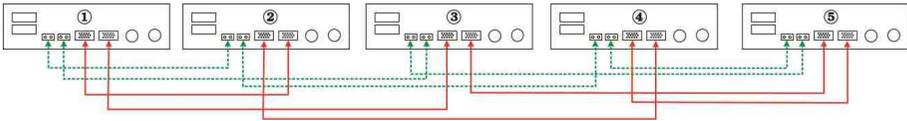


Five inverters in parallel:

**Power Connection**(Each photovoltaic panel needs to be connected to an independent system)

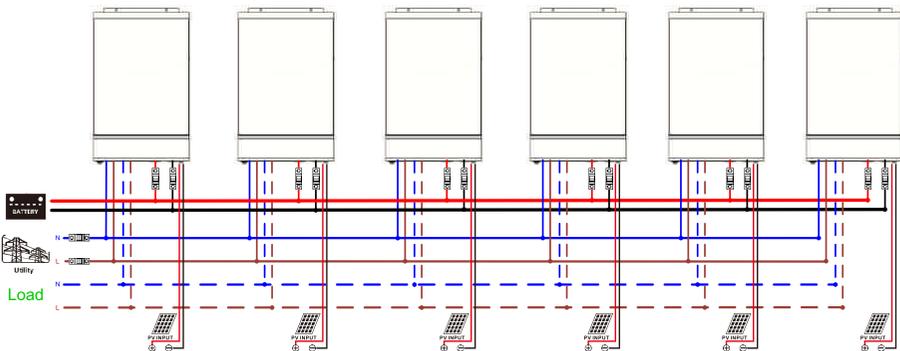


### Communication Connection



Six inverters in parallel:

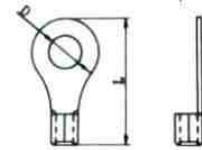
**Power Connection**(Each photovoltaic panel needs to be connected to an independent system)



### 4.4 电池连接

注意：为了安全操作和符合规定，要求在电池和逆变器之间安装单独的直流过电流保护器或断开装置。在某些应用中，可能不要求有断开装置，但是仍然要求安装过电流保护装置。请参考下表中所需保险丝或断路器尺寸的典型安培数。

环形终端：



**警告！**所有接线必须由合格人员进行。

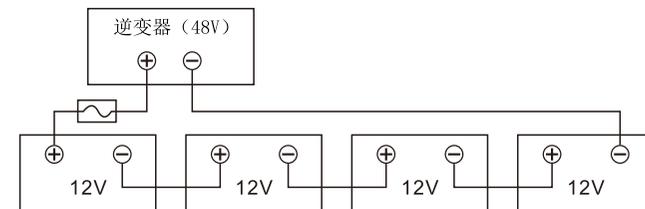
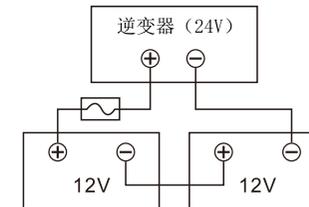
**警告！**使用合适的电缆连接电池对系统安全和高效运行非常重要。为了降低受伤的风险，请使用以下推荐的合适的电缆和端子尺寸。

推荐的电池电缆和端子尺寸：

型号	典型电流	蓄电池容量	电缆尺寸	环形终端			扭矩值
				电缆 (mm <sup>2</sup> )	尺寸		
					直径 (mm)	长度 (mm)	
3KVA	132A	100AH	1*4AWG	22	6.4	33.2	2-3Nm
		200AH	2*8AWG	9	6.4	29.2	
3.6KVA	165A	200AH	2*4AWG	25	8.4	33.2	5Nm
4KVA	165A	200AH	2*4AWG	25	8.4	33.2	5Nm
5.5KVA	121A	200AH	1*2AWG	34	6.4	39.2	2-3Nm
			2*6AWG	14	6.4	33.2	
6.2KVA	124A	200AH	1*2AWG	38	8.4	39.2	5Nm
			2*4AWG	25	8.4	33.2	
11KVA	228A	250AH	1*3/0AWG	85	8.4	54	5Nm

请按照以下步骤进行电池连接：

1. 根据推荐的电池电缆和端子尺寸组装电池环形端子。



## 4 安装

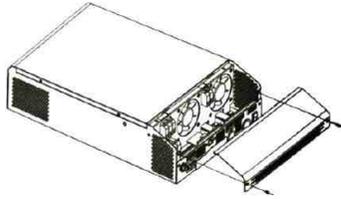
### 4.1 开箱检查

安装前,请检查装置。确保包装内没有任何损坏。您应已收到包裹中的以下物品:

- 整机x1
- 用户手册x1

### 4.2 准备

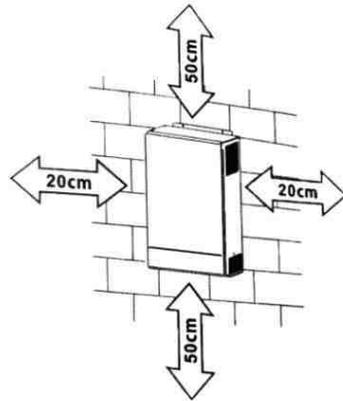
在连接所有部件之前,请取下底盖,取下两个螺丝,如下图所示。



### 4.3 安装装置

在选择安装位置之前,请考虑以下几点:

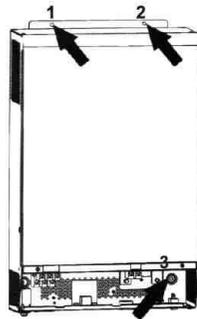
- ※ 请勿将逆变器安装在易燃建筑材料上。
- ※ 安装在固体表面上
- ※ 将该逆变器安装在眼睛高度,以便随时读取LCD显示。
- ※ 为了使空气适当循环散热,请留出侧面距离约20CM。装置上方和下方50CM的间隙。
- ※ 环境温度应在室温之间,以确保最佳运行。
- ※ 推荐的安装位置是垂直贴在墙上。
- ※ 请务必保持如图所示的其他物体和表面,以保证足够的散热,并有足够的空间移除电线。



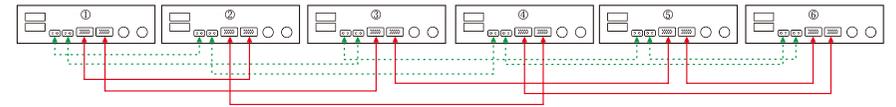
仅适用于安装在混凝土或其他不可燃表面。

拧紧三个螺钉,安装该装置。

- 1、2使用M6\*80mm膨胀螺栓。
- 3使用M4或M5螺。

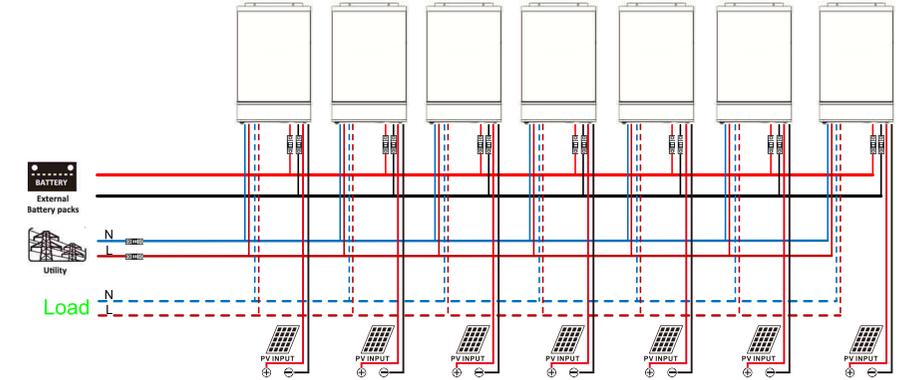


### Communication Connection



Seven to nine inverters in parallel:

Power Connection(Each photovoltaic panel needs to be connected to an independent system)

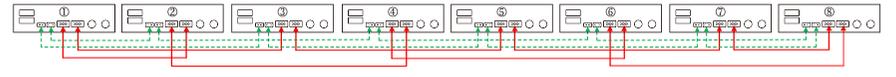


### Communication Connection

Seven inverters in parallel



Eight inverters in parallel



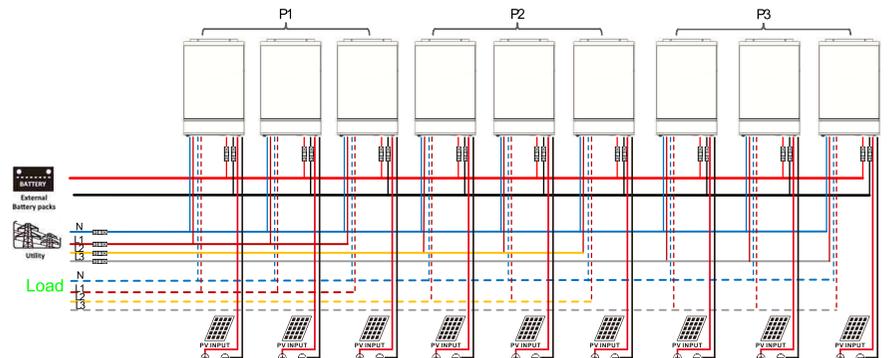
Nine inverters in parallel



### 1-2. Support 3-phase equipment

Three inverters in each phase:

Power Connection(Each photovoltaic panel needs to be connected to an independent system)

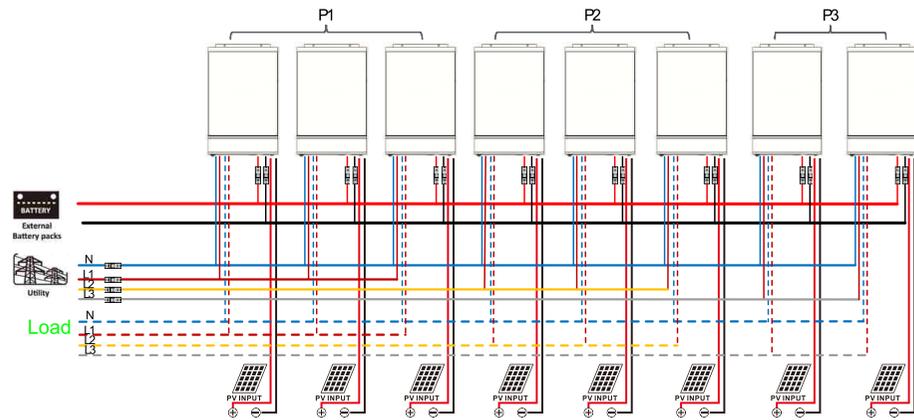


### Communication Connection



Three inverters in one phase, three inverters in second phase and two inverters for the third phase:

**Power Connection**(Each photovoltaic panel needs to be connected to an independent system)

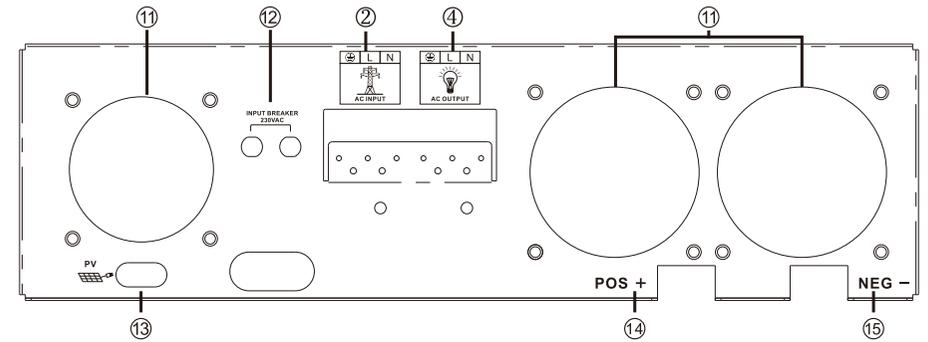
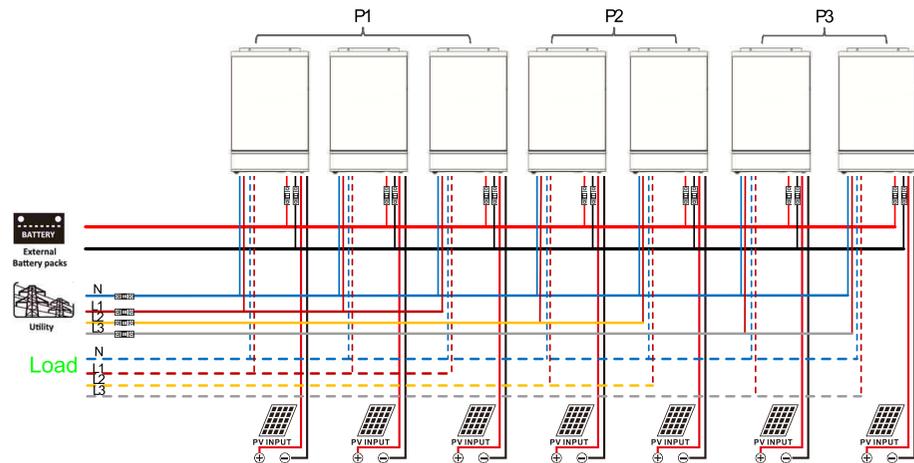


### Communication Connection

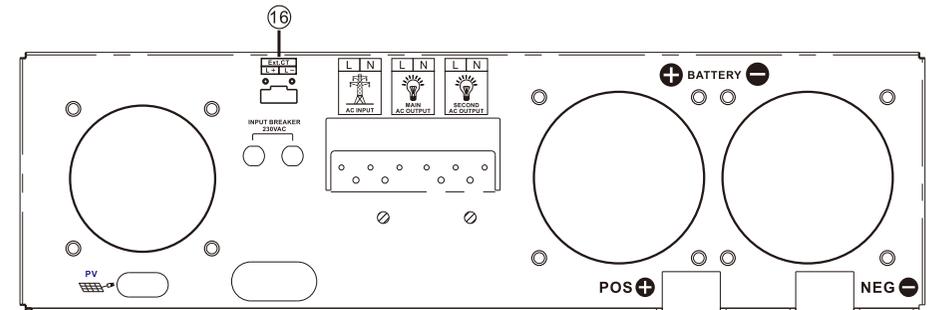
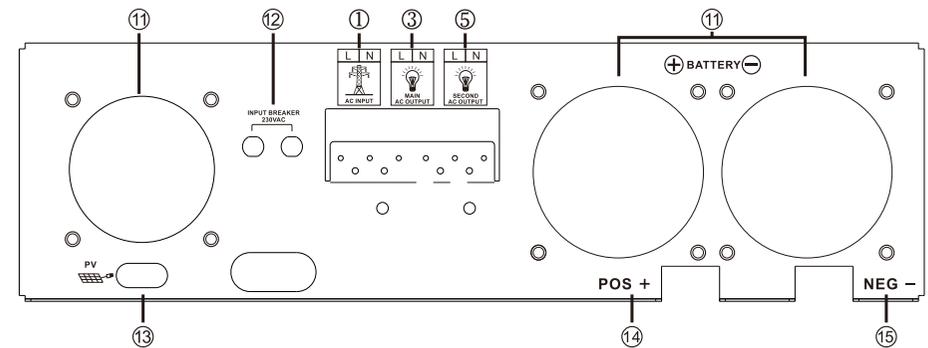


Three inverters in one phase, two inverters in second phase and two inverters for the third phase:

**Power Connection**(Each photovoltaic panel needs to be connected to an independent system)

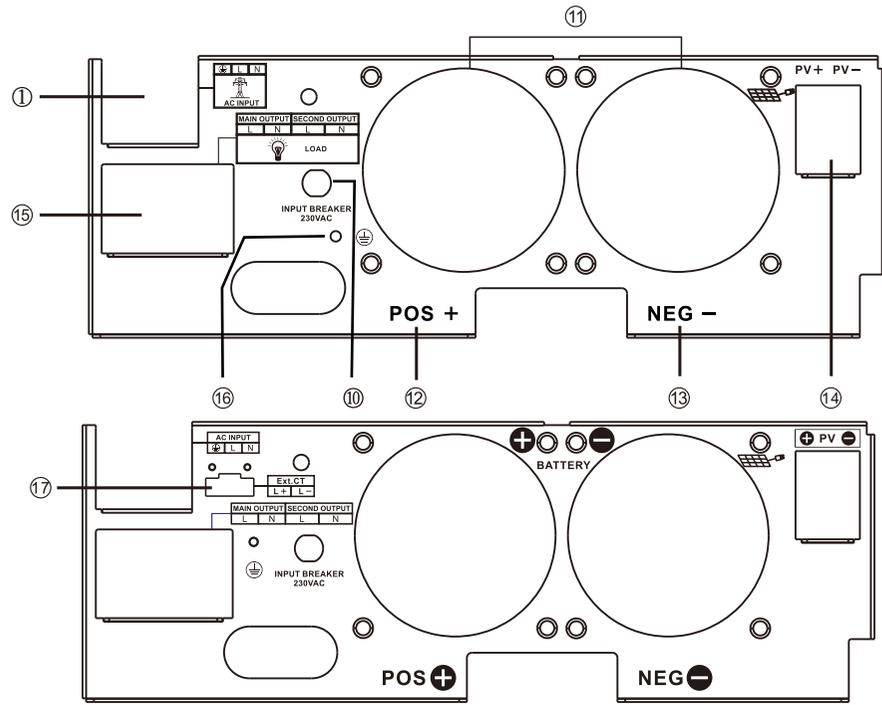


### Dual Output Back Panel



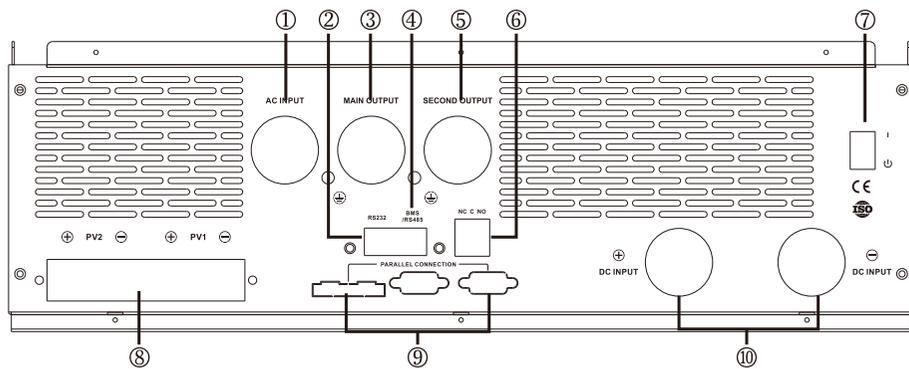
- 1.... 交流输入
- 2.... RS232通信端口
- 3.... 主要输出
- 4.... BMS/RS485通信端口
- 5.... 第二输出
- 6.... 干触点
- 7.... 电源开/关键
- 8.... 太阳能电池板输入
- 9.... 并联端口
- 10.... 电池输入
- 11.... 风扇
- 12.... 输入断路器
- 13.... PV输入
- 14.... 电池正极端子
- 15.... 电池负极端子
- 16.... CT信号端口

双输出背板

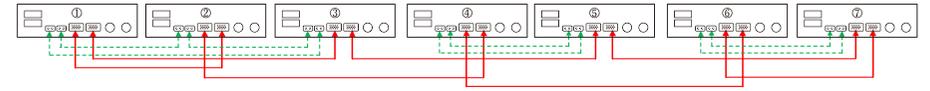


- 1.... 交流输入
- 2.... 交流输出
- 3.... RS232通信端口
- 4.... BMS/RS485通信端口
- 5.... 干触点
- 6.... 并联端口
- 7.... 电池输入
- 8.... 电源开/关键

- 9.... PV输入
- 10.... 输入断路器
- 11.... 风扇
- 12.... 电池正极端子
- 13.... 电池负极端子
- 14.... 太阳能电池板输入
- 15.... 交流主/次输出
- 16.... 输出地线
- 17.... CT信号端口

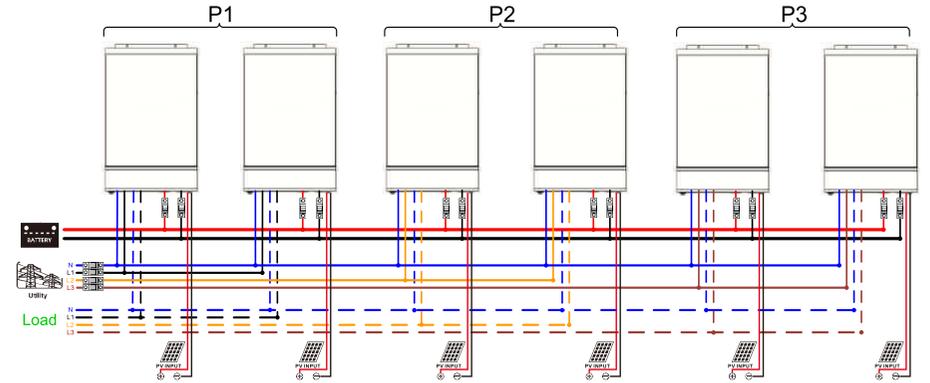


Communication Connection

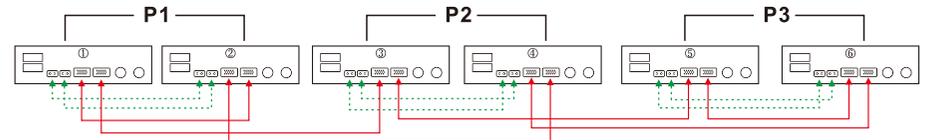


Two inverters in each phase:

**Power Connection**(Each photovoltaic panel needs to be connected to an independent system)

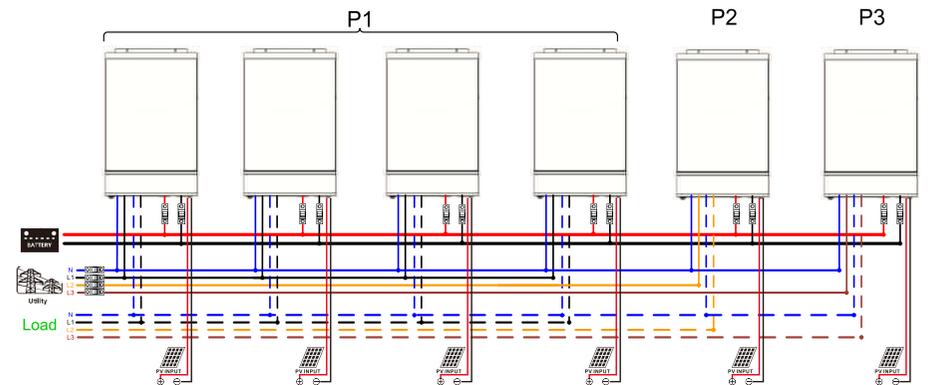


Communication Connection

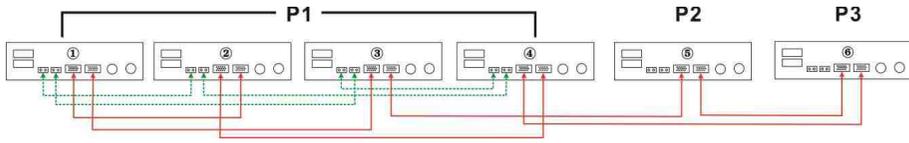


Four inverters in one phase and one inverter for the other two phases:

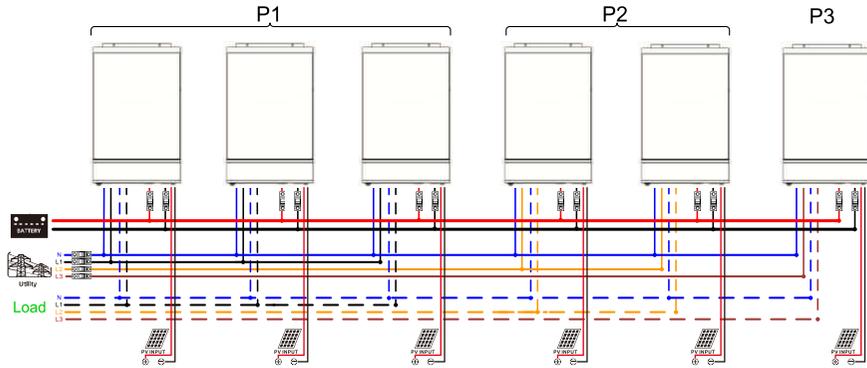
**Power Connection**(Each photovoltaic panel needs to be connected to an independent system)



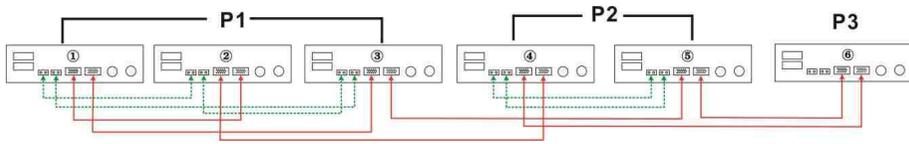
### Communication Connection



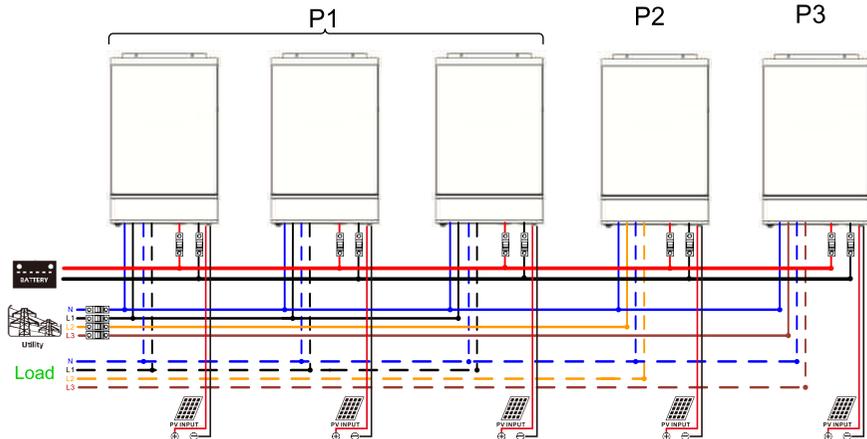
Three inverters in one phase, two inverters in second phase and one inverter for the third phase:  
**Power Connection**(Each photovoltaic panel needs to be connected to an independent system)



### Communication Connection

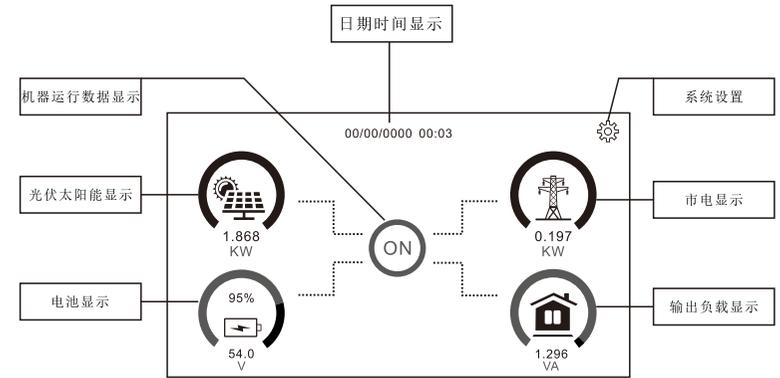


Three inverters in one phase and only one inverter for the remaining two phases:  
**Power Connection**(Each photovoltaic panel needs to be connected to an independent system)

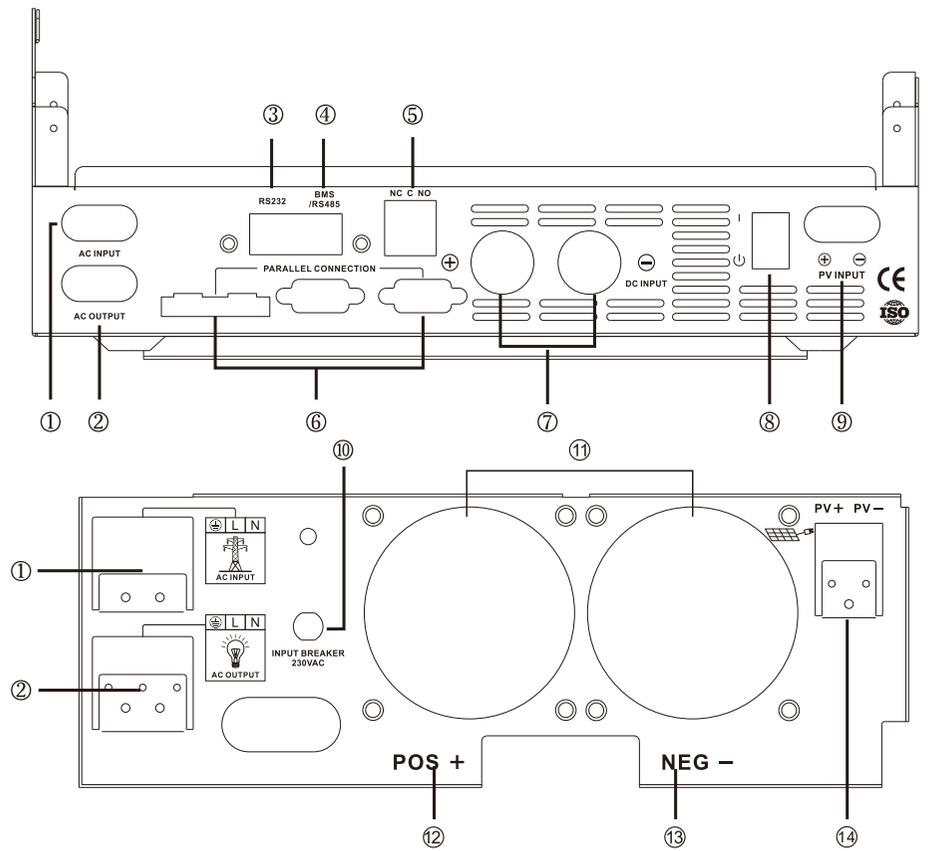


### 3.3 产品概述

#### 3.3.1 触摸彩色屏幕



#### 3.3.2 背面板



### 3 介绍

这是一款多功能逆变器/充电器,结合了逆变器、太阳能充电器和电池充电器的功能,提供不间断电源支持。其全面的触摸屏提供用户可配置且易于操作的按钮操作,如电池充电电流、交流电/太阳能充电器优先级,基于不同负载的可接受输入电压。

#### 3.1 特征

- 纯正弦波逆变器
- 可通过触摸屏设置为家用电器和个人电脑配置输入电压范围
- 通过触摸屏设置基于应用的可配置电池充电电流
- 通过触摸屏设置可配置交流/太阳能充电器优先级
- 与电源电压或发电机电源兼容
- 交流电恢复时自动重启
- 过载/过热/短路保护
- 智能电池充电器设计,优化电池性能
- 冷启动功能

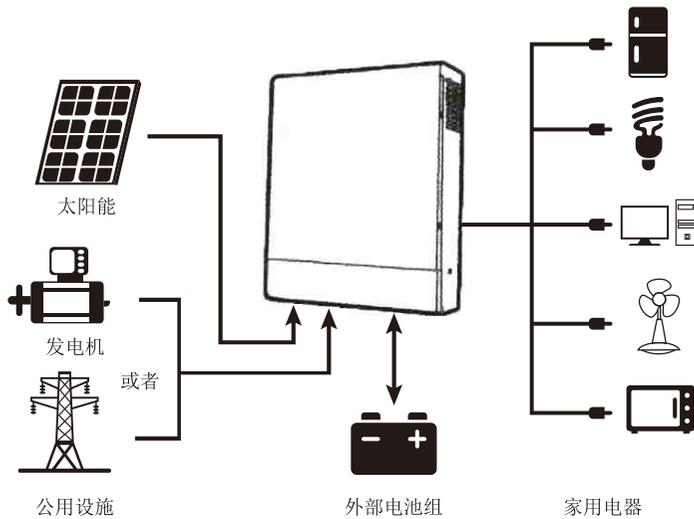
#### 3.2 基本系统架构

下图显示了该逆变器/充电器的基本应用。它还包括以下设备,以构成一个完整的运行系统:

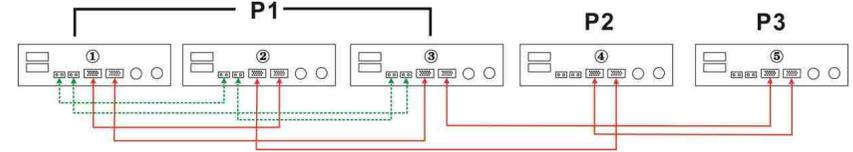
- 发电机或交流电
- PV组件

根据您的要求,咨询您的系统集成商,了解其他可能的系统架构。

这种逆变器可以为家庭或环境中的各种电器供电,包括电机类型的电器,如筒灯、风扇、冰箱和空调。

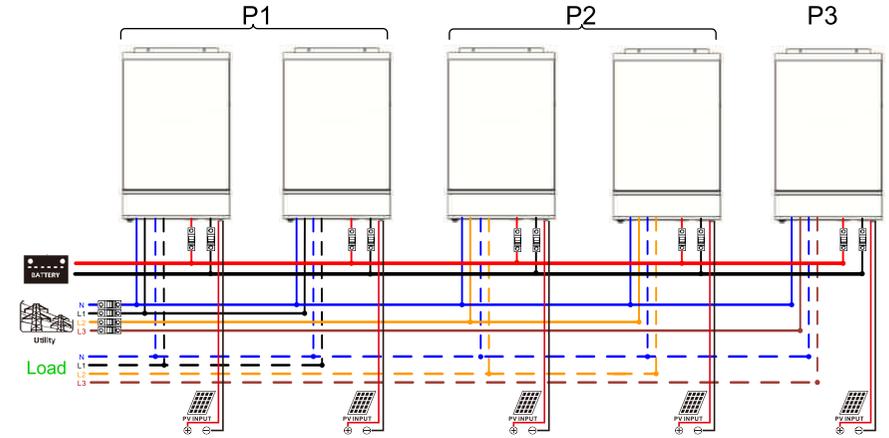


#### Communication Connection

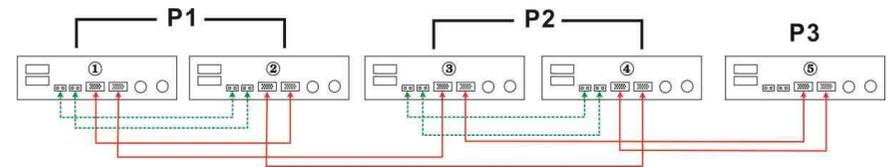


Two inverters in two phases and only one inverter for the remaining phase:

**Power Connection**(Each photovoltaic panel needs to be connected to an independent system)

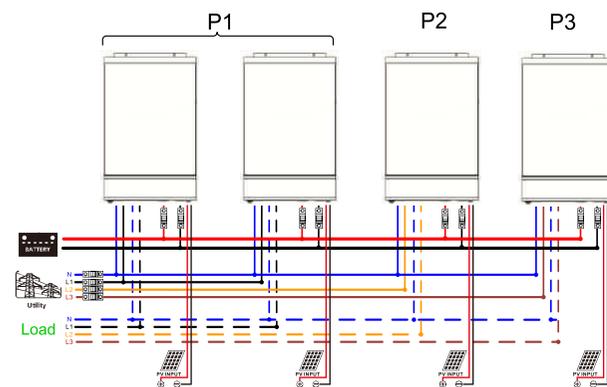


#### Communication Connection

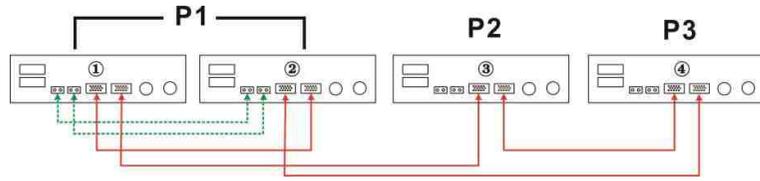


Two inverters in one phase and only one inverter for the remaining phases:

**Power Connection**(Each photovoltaic panel needs to be connected to an independent system)

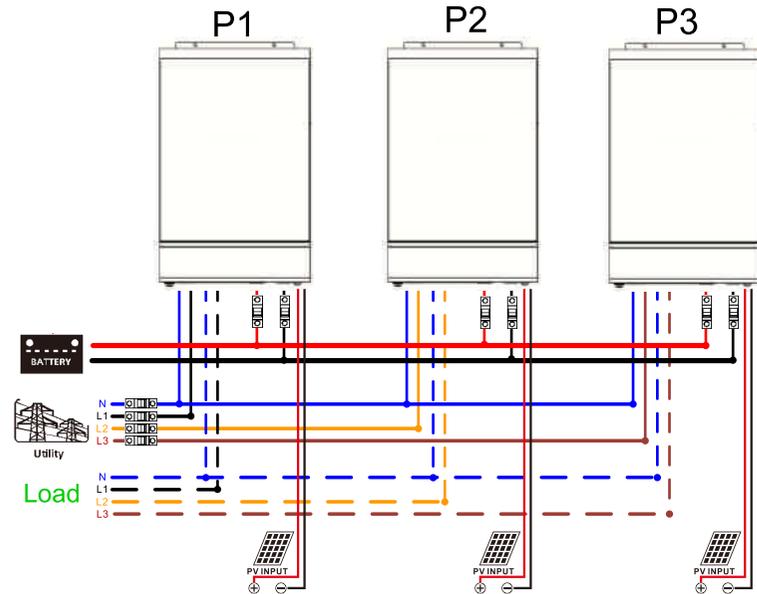


## Communication Connection

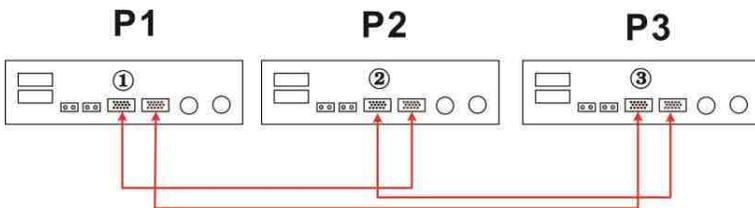


One inverter in each phase:

**Power Connection**(Each photovoltaic panel needs to be connected to an independent system)



## Communication Connection



**WARNING:**Do not connect the current sharing cable between the inverters which are in different phases. Otherwise, it may damage the inverters.

## 3. PV Connection

Please refer to user manual of single unit for PV Connection

**CAUTION:**Each inverter should connect to PV modules separately.

## 1 关于本手册

### 1.1 目的

本手册描述了本装置的组装、安装、操作和故障排除。安装和操作前,请仔细阅读本手册,并保存手册以备将来参考。

### 1.2 范围

本手册提供了安全安装指引和接线指引。

## 2 安全说明



**警告:**本章包含重要的安全和操作说明。阅读并保存本手册,以备将来参考。

1. 使用本装置之前,请阅读设备上的相关章节上的所有说明和警示标记。
2. **注意-**为了降低伤害的风险,机器可对铅酸蓄电池,磷酸铁锂电池充电。其他类型的电池可能会爆炸,造成人身伤害和机器损坏。
3. 请勿自行拆卸机器内部设备。需要维修或维护时,应将设备送到有资质的维修中心。不正确的重新组装可能会导致触电或火灾危险。
4. 为降低触电风险,在试图进行任何维护或清洁之前,请断开所有接线。关闭装置不会降低这种风险。
5. **注意-**只有具备资质的人员才能安装带电池的的设备。
6. 不要给冻结的电池充电。
7. 为了使本逆变器/充电器的性能达到最佳状态,请根据所要求的规格选择合适的电缆尺寸。对正常使用这个逆变器/充电器是非常重要的。
8. 在电池上或电池周围使用金属工具时要非常小心。存在工具掉落引发火花或短路电池或其他电气部件的潜在风险,并可能导致爆炸。
9. 当您断开交流或直流端子时,请严格遵守安装程序,详情请参阅本手册的安装部分。
10. 提供一个150A的保险丝作为电池电源的过电流保护。
11. **接地说明:**该逆变器/充电器应连接到永久性接地布线系统。安装该逆变器时,请务必遵守当地要求和法规。
12. 请勿造成交流输出和直流输入短路。直流输入短路时,禁止直接接市电。
13. **警告!!**只有合格的维修人员才能维修本设备。如果在执行故障排除后错误仍然存在,请将此逆变器/充电器送回当地经销商或服务中心进行维护。

## 目 录

1	关于本手册.....	1
1.1	目的.....	1
1.2	范围.....	1
2	安全说明.....	1
3	介绍.....	2
3.1	特点.....	2
3.2	基本系统架构.....	2
3.3	产品概述.....	3
4	安装.....	6
4.1	开箱检查.....	6
4.2	准备.....	6
4.3	安装装置.....	6
4.4	电池连接.....	7
4.5	交流输入输出连接.....	8
4.6	光伏连接.....	9
4.7	最终组装.....	11
5	操作.....	11
5.1	电源开/关.....	11
5.2	LCD显示器图标.....	12
5.3	触摸屏显示流程图.....	13
5.4	触摸屏操作说明.....	14
5.5	故障和报警说明.....	20
6	故障排除.....	22
7	技术数据表.....	23
	附录一: 并机操作.....	24
1.	安装装置.....	24
2.	布线连接.....	24
3.	PV连接.....	35
4.	LCD设置和显示.....	35
5.	试运转.....	36

## 4.LCD Setting and Display

### Setting Program:

Program	Description	Selectable option	
04	AC output mode *This setting is only available when the inverter is in standby mode (Switch off).	Single: SI G	When the units are used in parallel with single phase, please select "PAL" in output type.
		Parallel: PAL	It is required to have at least 3 inverters or maximum 9 inverters to support three-phase equipment. It's required to have at least one inverter in each phase or it's up to four inverters in one phase please-2 for detailed information. Please select "3P1" in output type for the inverters connected to phase, "3P2" in output type for the inverters connected to L2 phase and "3P3" in output type for the inverters connected to L3 phase.  Be sure to connect share current cable to units which are on the same phase. Do NOT connect share current cable between units on different phases.  Besides, power saving function will be automatically disabled.
		L1 phase: 3P1	
		L2 phase: 3P2	
		L3 phase: 3P3	

### Fault code display

Fault Code	Fault Event
60	Power feedback protection
71	Firmware version inconsistent
72	Current sharing fault
73	Inconsistent output voltage settings in parallel-connected systems
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. Commissioning

### Parallel in single phase

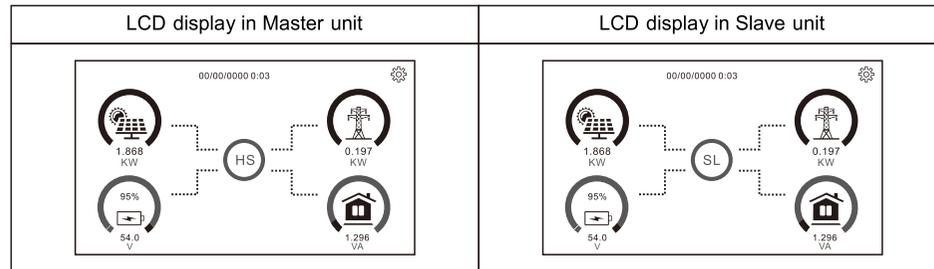
Step 1: Check the following requirements before commissioning:

- ⌘ Correct wire connection
- ⌘ Ensure all breakers in Line wires of load side are open and each Neutral wires of each unit are connected together.

Step 2: Turn on each unit and Set the output type to "PAL" in the touch screen setting system operating mode of each device. And then shut down all units.

**NOET:** It's necessary to turn off switch when setting LCD program. Otherwise, the setting can not be programmed.

Step 3: Turn on each unit.



**NOTE:** Master and slave units are randomly defined.

# 用户手册

## 混合式

## 太阳能逆变器