

# GSL ENERGY

— SINCE 2006 —

**INVERTER AND BATTERY  
CONNECTION AND SETTING**



SPLIT PHASE



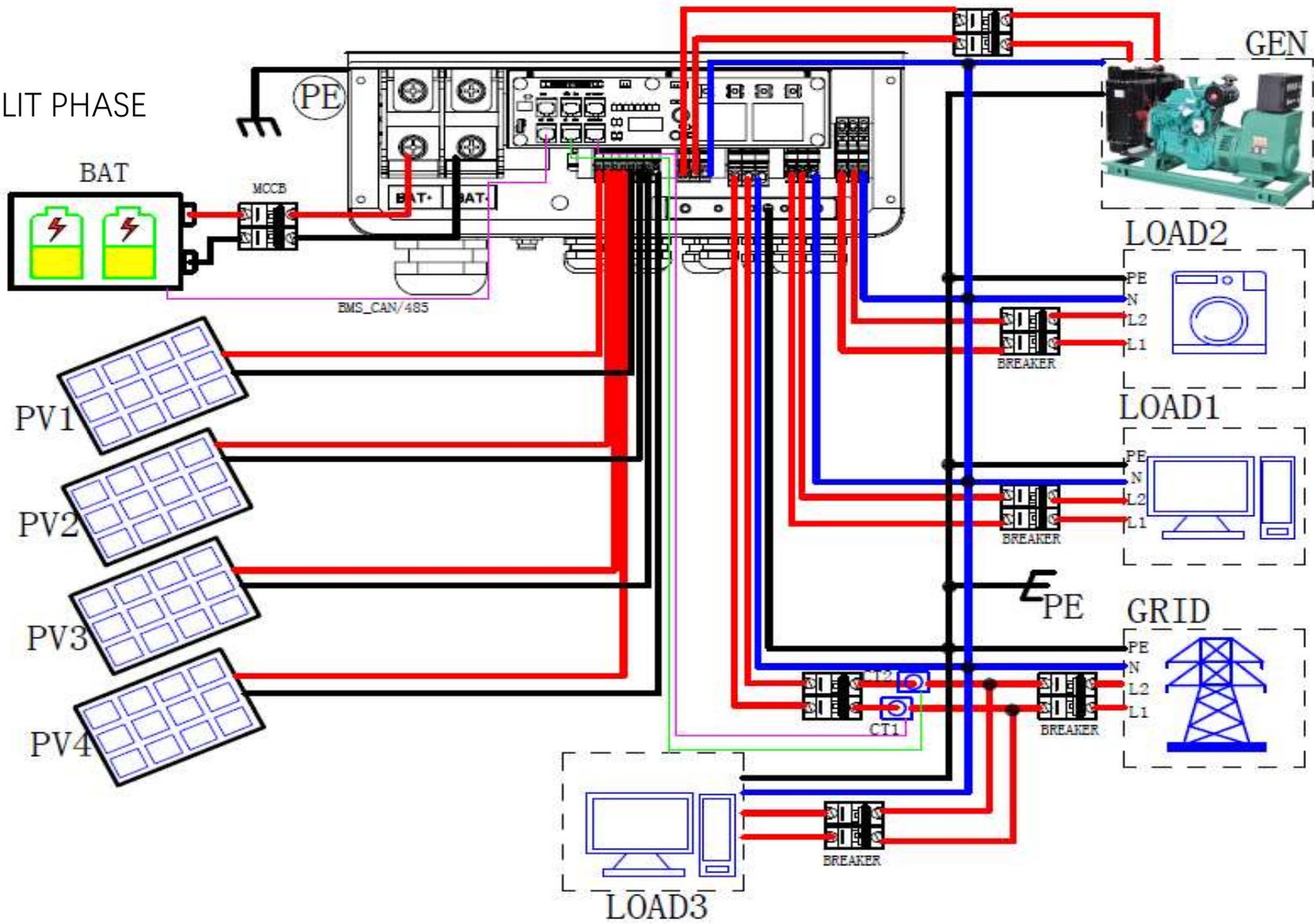
POWER WALL



RACK BATTERY



SPLIT PHASE



9

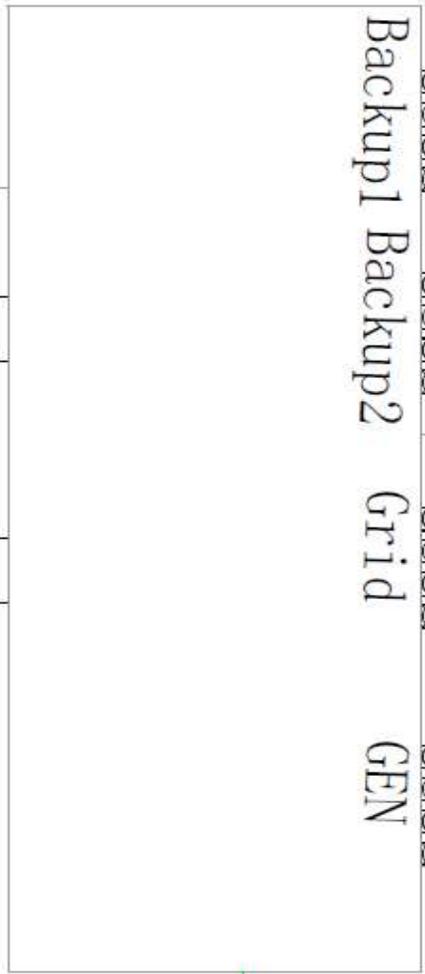


SPLIT PHASE

BMS

Battery

PV



Backup1

Backup2

Grid

GEN

L1  
L2  
N  
PE

L1  
L2  
N  
PE

L1  
L2  
N  
PE

L1  
L2  
N  
PE



load1

load2

Grid

GEN

unimportant load

Do not wire if not used

diesel generator

Do not wire if not used

CT

CT1  
CT2

RCD

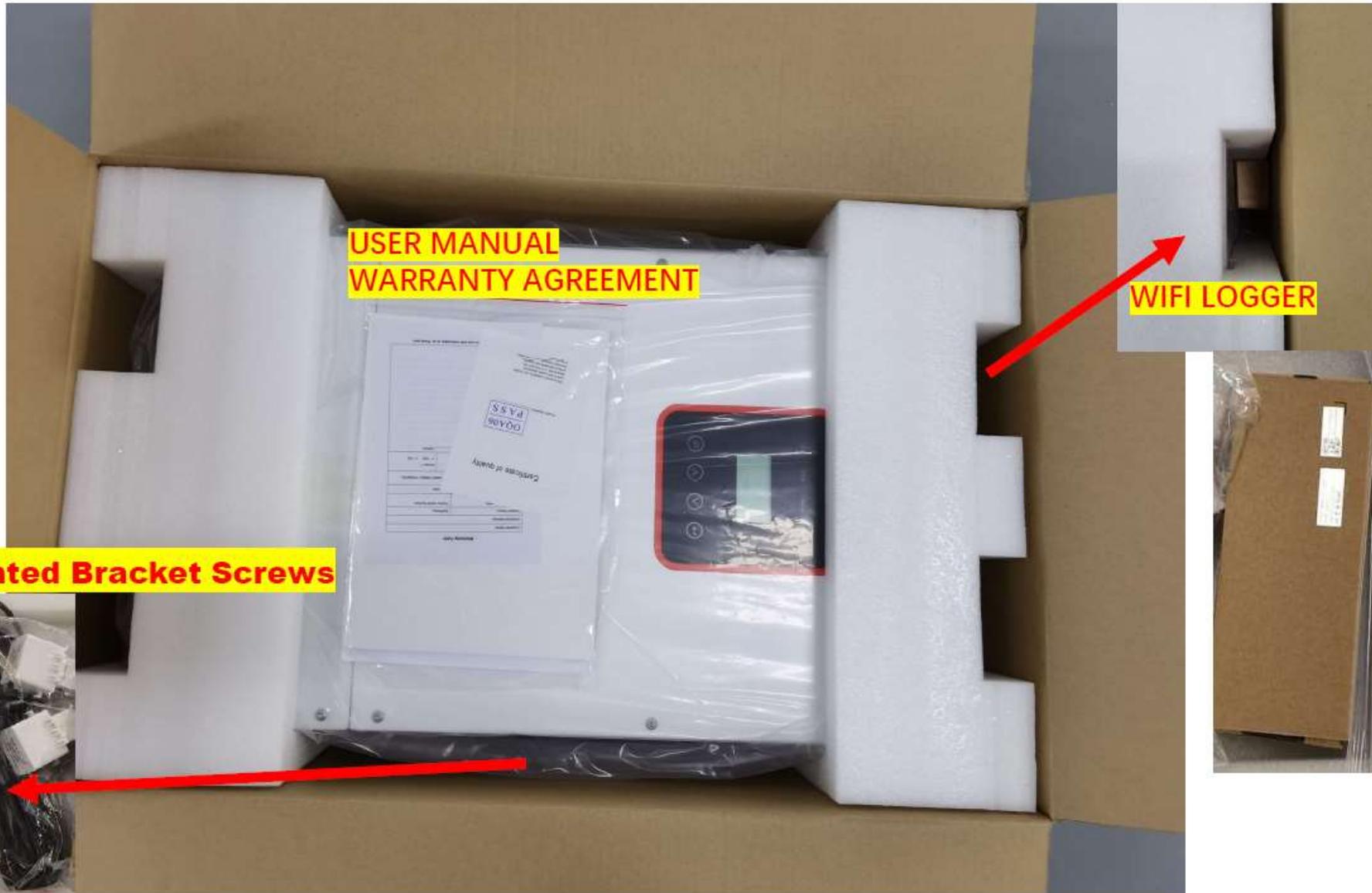
load3

Do not wire if not used

E-BAR

E-BAR

# **INVERTER AND BATTERY PACKAGE DETAILS**



**USER MANUAL  
WARRANTY AGREEMENT**

**WIFI LOGGER**

**CT&Wall mounted Bracket Screws**





# INVERTER INSTALLATION

## Mounting

### Installation Precaution

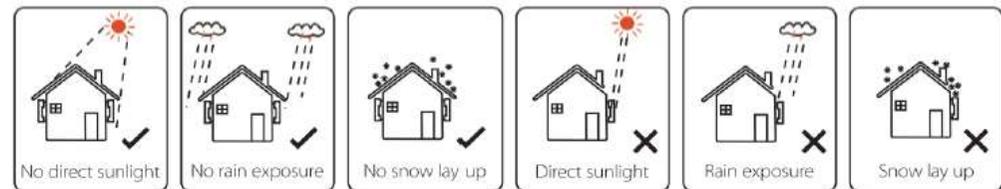
Inverter is designed for outdoor installation (IP 65). Make sure the installation site meets the following conditions:

- ◆ Not in direct sunlight.
- ◆ Not in areas where highly Flammable materials are stored.
- ◆ Not in potential explosive areas.
- ◆ Not in the cool air directly.
- ◆ Not near the television antenna or antenna cable.
- ◆ Not higher than altitude of about 2000m above sea level.
- ◆ Not in environment of precipitation or humidity (> 95%).
- ◆ Under good ventilation condition.
- ◆ The ambient temperature in the range of -20°C to +60°C.
- ◆ The slope of the wall should be within  $\pm 5^\circ$ .

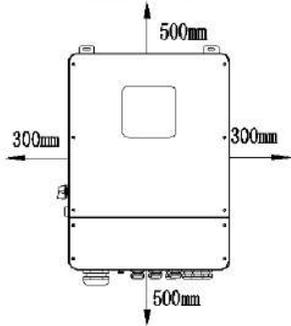
1. solid brick/concrete, or strength equivalent mounting surface;

2. Inverter must be supported or strengthened if the wall's strength isn't enough (such as wooden wall, the wall covered by thick layer of decoration)

Please AVOID direct sunlight, rain exposure, snow laying up during installation and operation.



**Space Requirement**



Position	Min.size
Left	300mm
Right	300mm
Top	500mm
Bottom	500mm
Front	1000mm

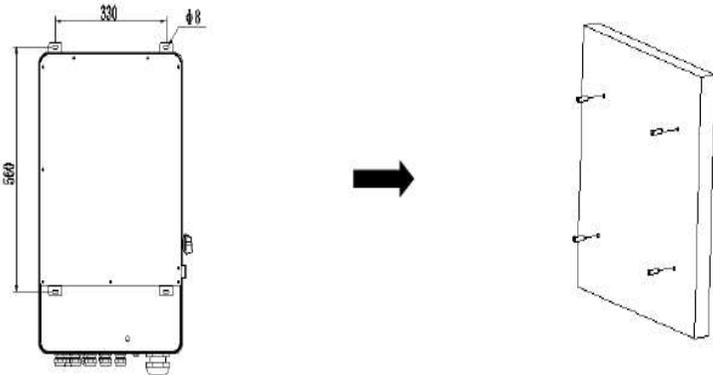
**Mounting**

Tools required for installation.

Installation tools : crimping pliers for binding post and RJ45, screwdriver, manual wrench etc

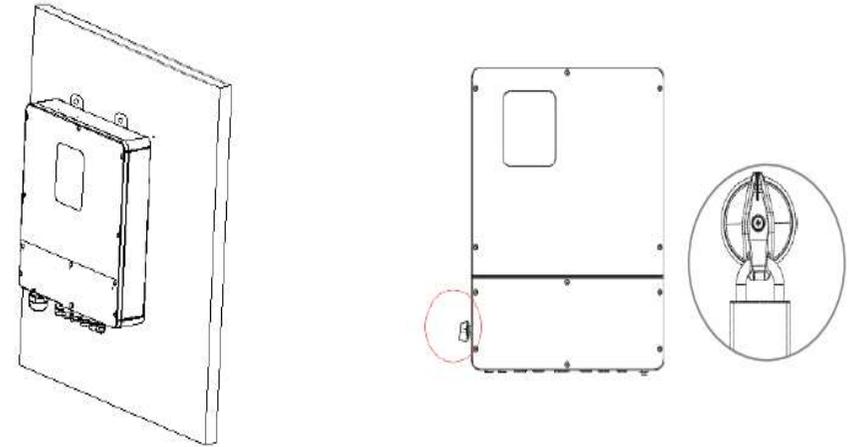


**Step 1:** Drill 4 holes in the wall according to the following distance dimensions, 50~60mm depth. Then use a proper hammer to fit the expansion bolt into the holes.

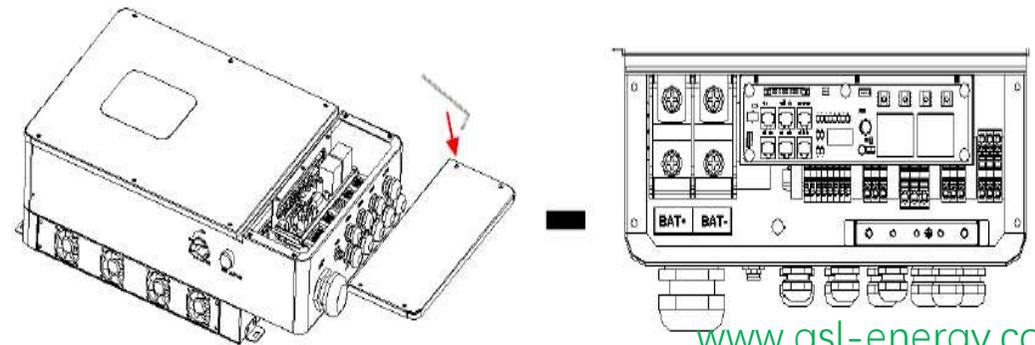


**Step 2:** Lift up the inverter and align the hole of the inverter with the expansion bolt, Fix the inverter on the wall.

**Step 3:** Tighten the nut of expansion bolt , and install an anti-theft lock on DC switch of the inverter



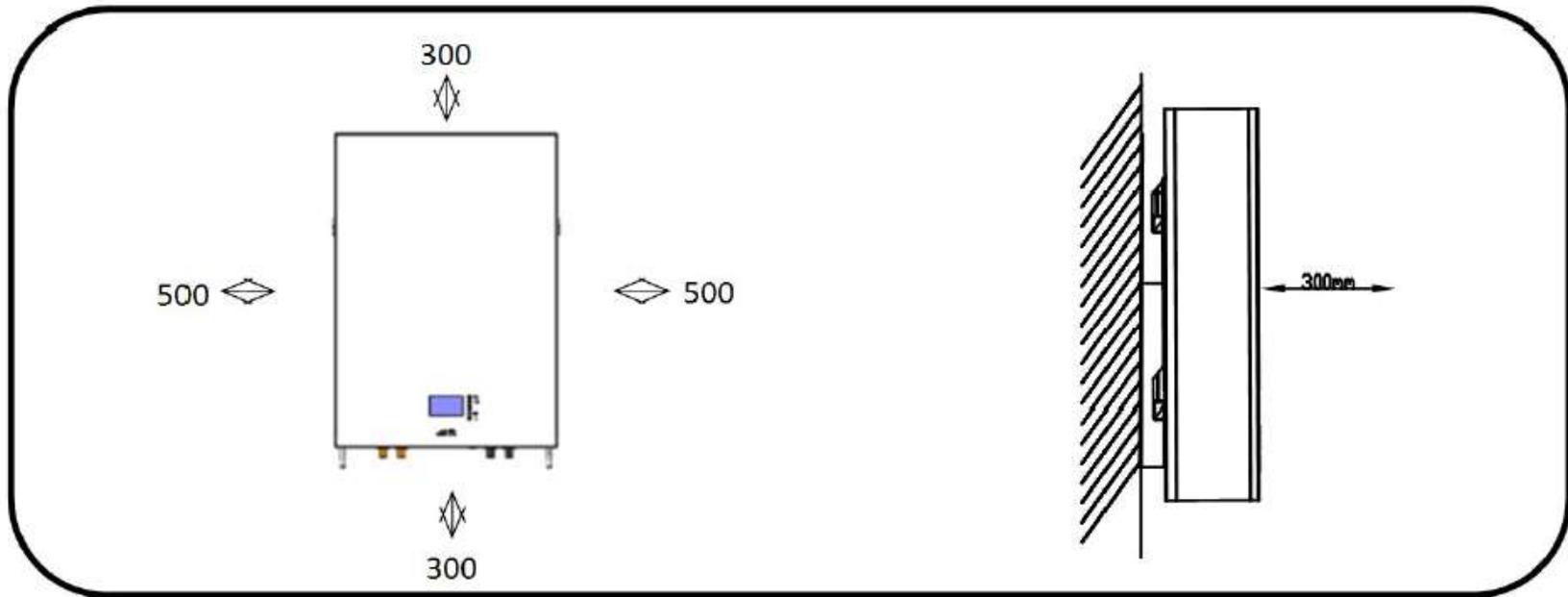
**Step 4:** Remove the cover screws by Allen Wrench and remove the cover. Remove the waterproof cover by a flat blade screwdriver. Wiring box conduit plugs, Conduit plugs are provided for 1 inch conduit fittings. If used conduit fitting is not 1 inch, an appropriate conduit adaptor should be used.





# POWERWALL BATTERY INSTALLATION

Direction	Minimum clearance (mm)
Above	300
Below	300
Sides	500
Front	300



## Installing the Battery Pack

### Mounting to a wall

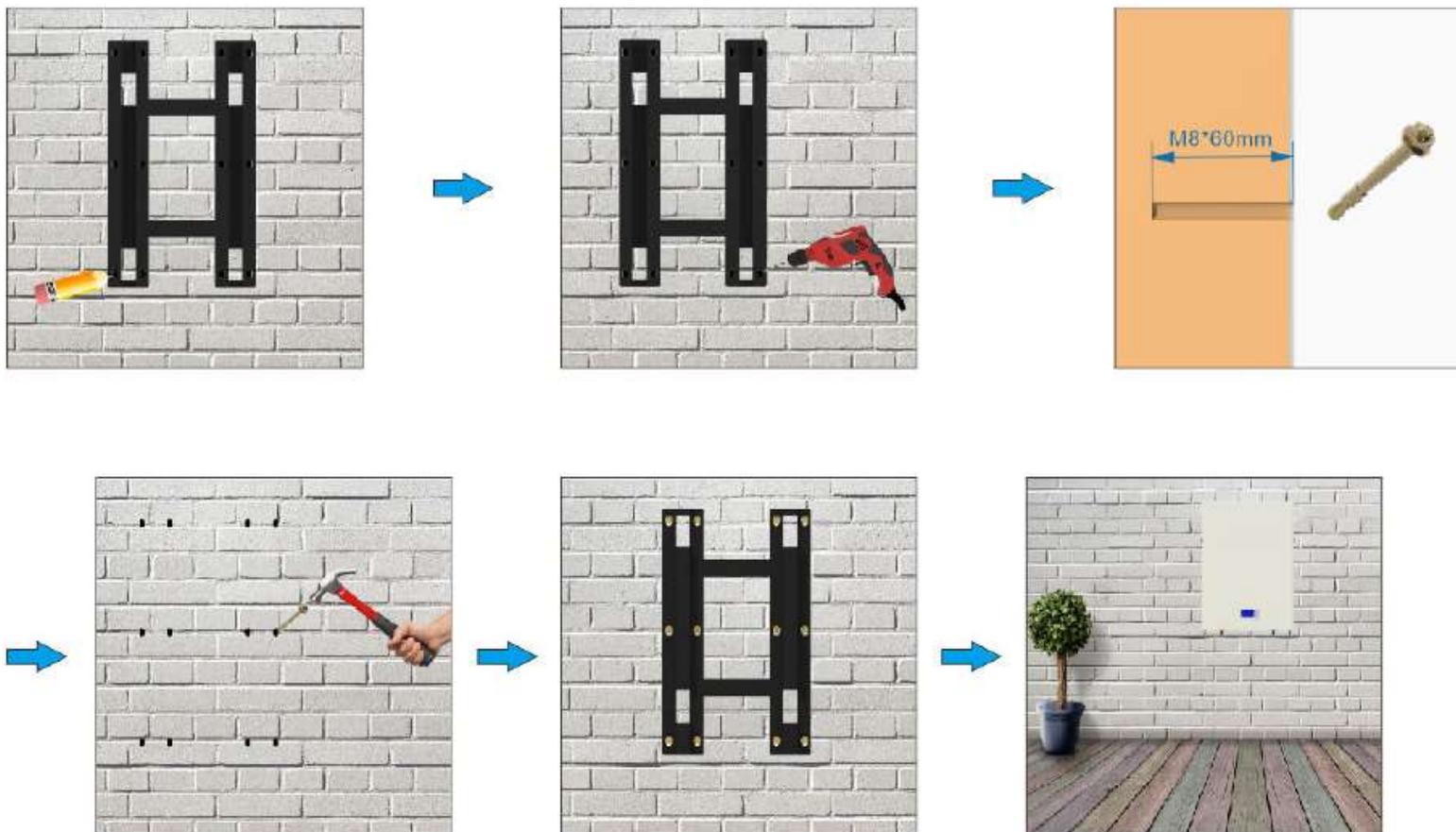


#### WARNING

In order to avoid electrical shock or other injury, inspect existing electronic or plumbing installations before drilling holes.

The battery is heavy, please handle with care to avoid damage to the product or injury to the installer.

1. Choose suitable firm wall with thickness greater than 80mm.
2. Use the mounting frame as a template, mark the hole position.
3. Drill 8 holes according to the hole position, it is  $\varnothing 10$  with depth 60mm.
4. Hammer the M8 screws to the above holes, and screw the nut. Note: Do not position screws flush to the wall - leave 10 to 20 mm exposed.
5. Fix the mounting frame to the 8 screws.
6. Raise the battery a little higher than the mounting frame whilst maintaining the balance of the battery. Hang the battery on the frame through the match hooks.



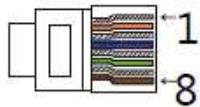
**WARNING**

Falling equipment can cause serious or even fatal injury: never mount the inverter on the bracket unless you are sure that the mounting frame is firmly mounted on the wall after thorough checking.

# POWER CABLE & COMMUNICATION LINE CONNECTION BETWEEN THE INVERTER AND BATTERY

## ➤ BMS PIN Definition

Communication interface between inverter and battery is RS485 or CAN with a RJ45 connector.



	PIN	1	2	3	4	5	6	7	8
CAN	Definition	X	X	X	BMS_CANH	BMS_CANL	X	X	X
RS485	Definition	X	X	X	X	X	GND	BMS_485A	BMS_485B

When using RS485 protocol, please note that PIN2 must be disconnected !

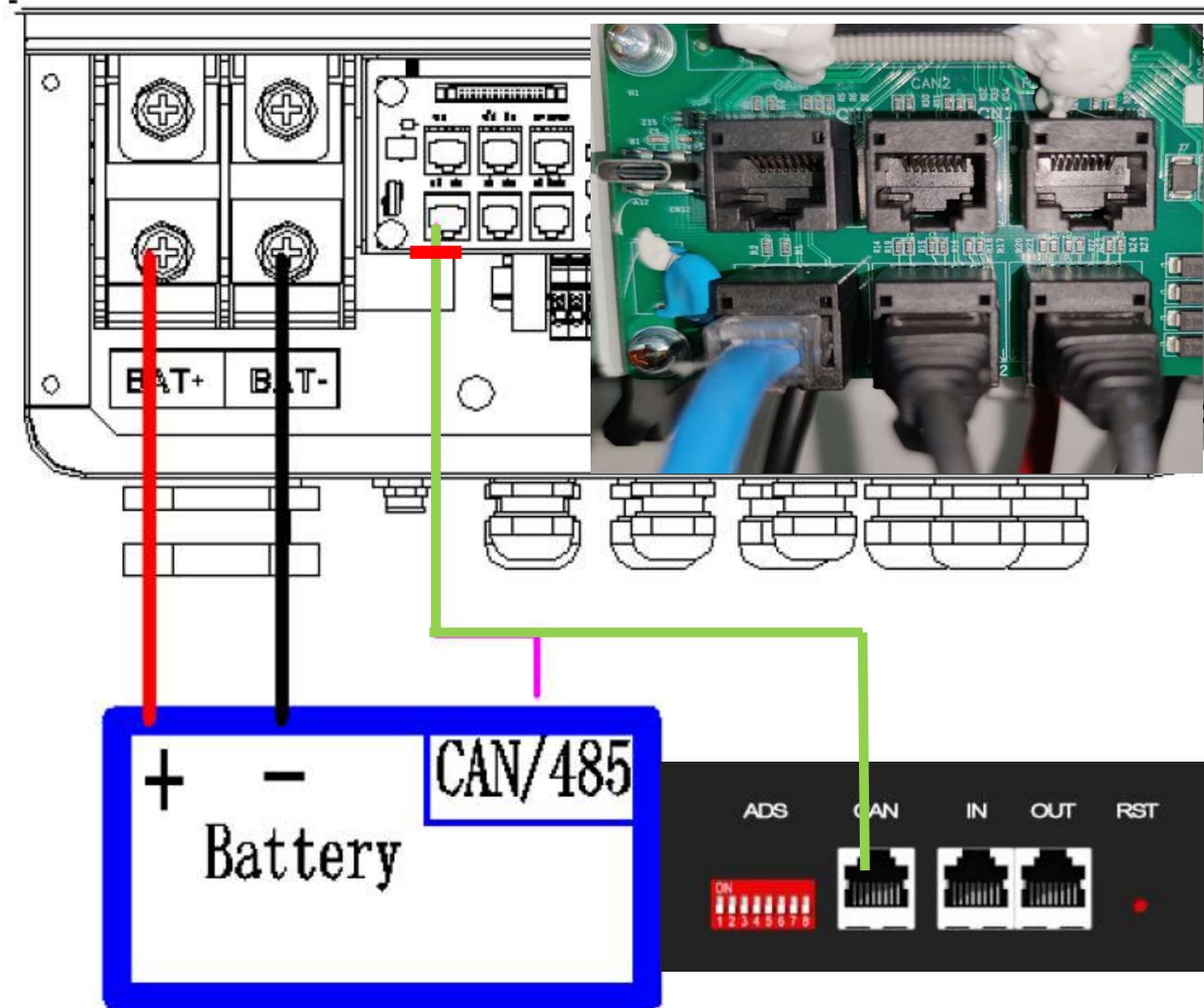


Note !

The battery communication can only work when the battery BMS is compatible with the inverter.

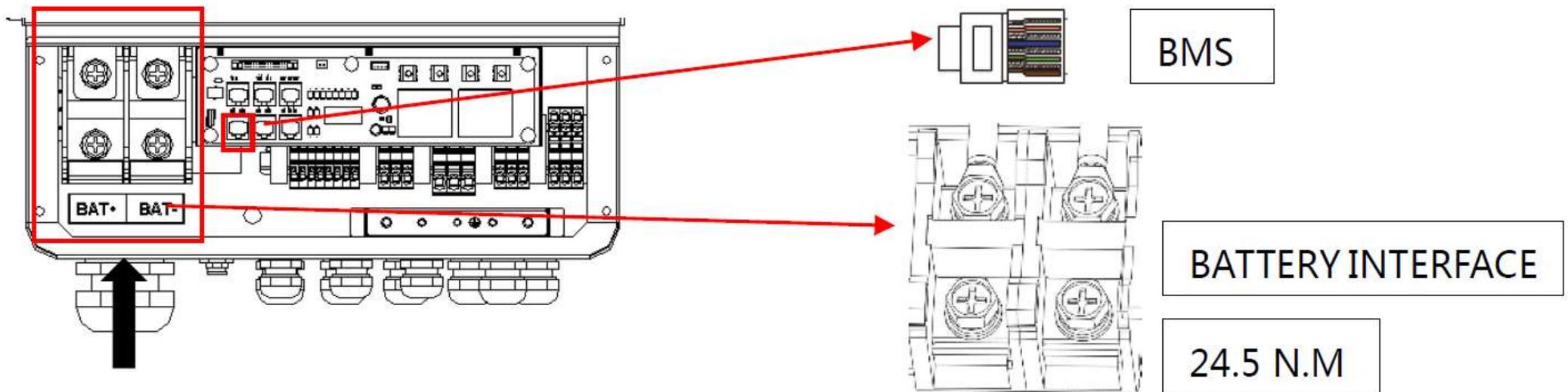
# Battery connection diagram

## SPLIT PHASE INVERTER



## SPLIT PHASE INVERTER

Cross the battery cable although the battery port. Connect battery cable to battery terminal

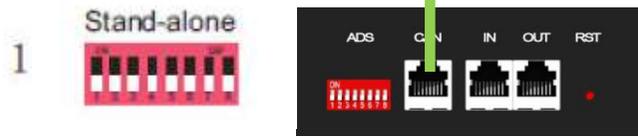


### Note !

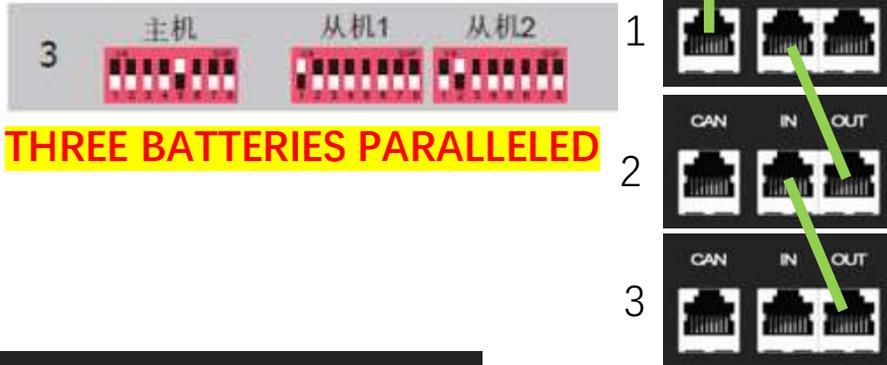
Positive and negative lines are not allowed to reverse.



### ONE BATTERY



### TWO BATTERIES PARALLELED



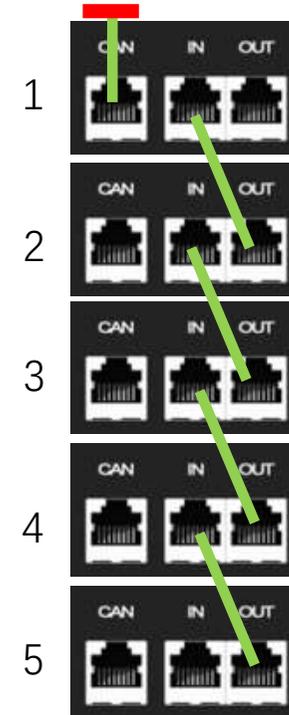
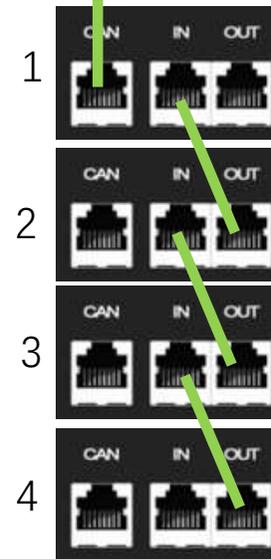
### THREE BATTERIES PARALLELED



### BATTERY COMMUNICATION LINE CONNECTION

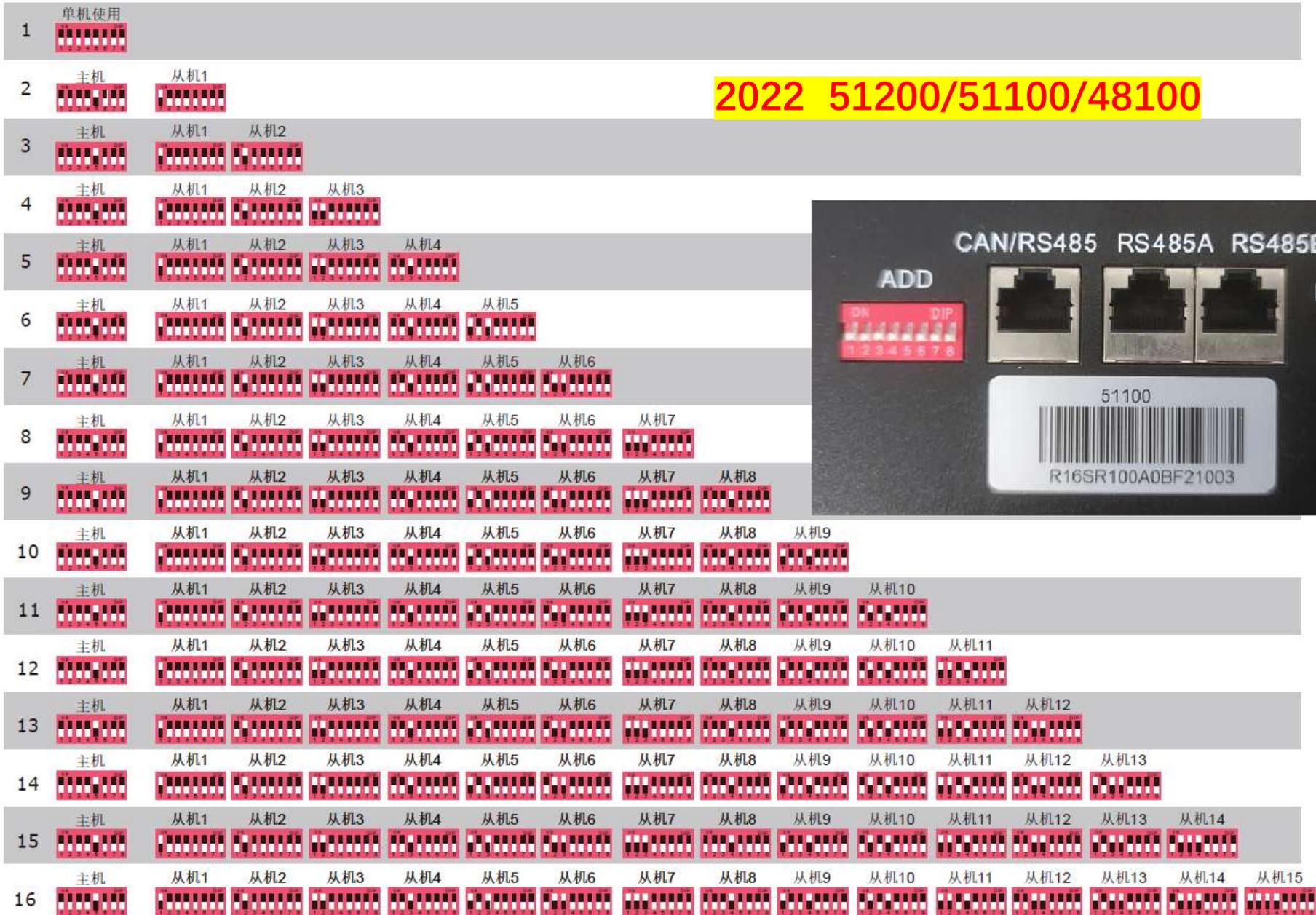


### FOUR BATTERIES PARALLELED



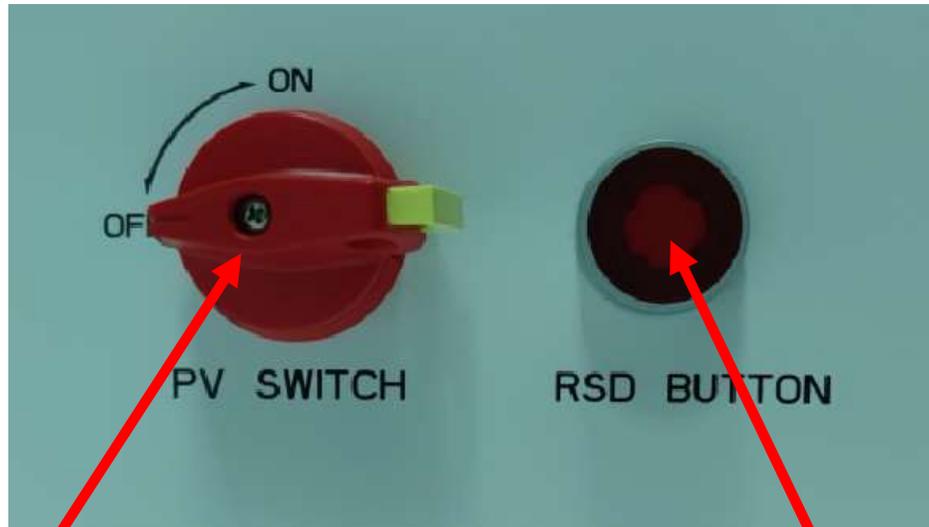
### FIVE BATTERIES PARALLELED

2022 51200/51100/48100





# SPLIT PHASE INVERTER INTRODUCTION&SETTING



**PV ON&OFF**

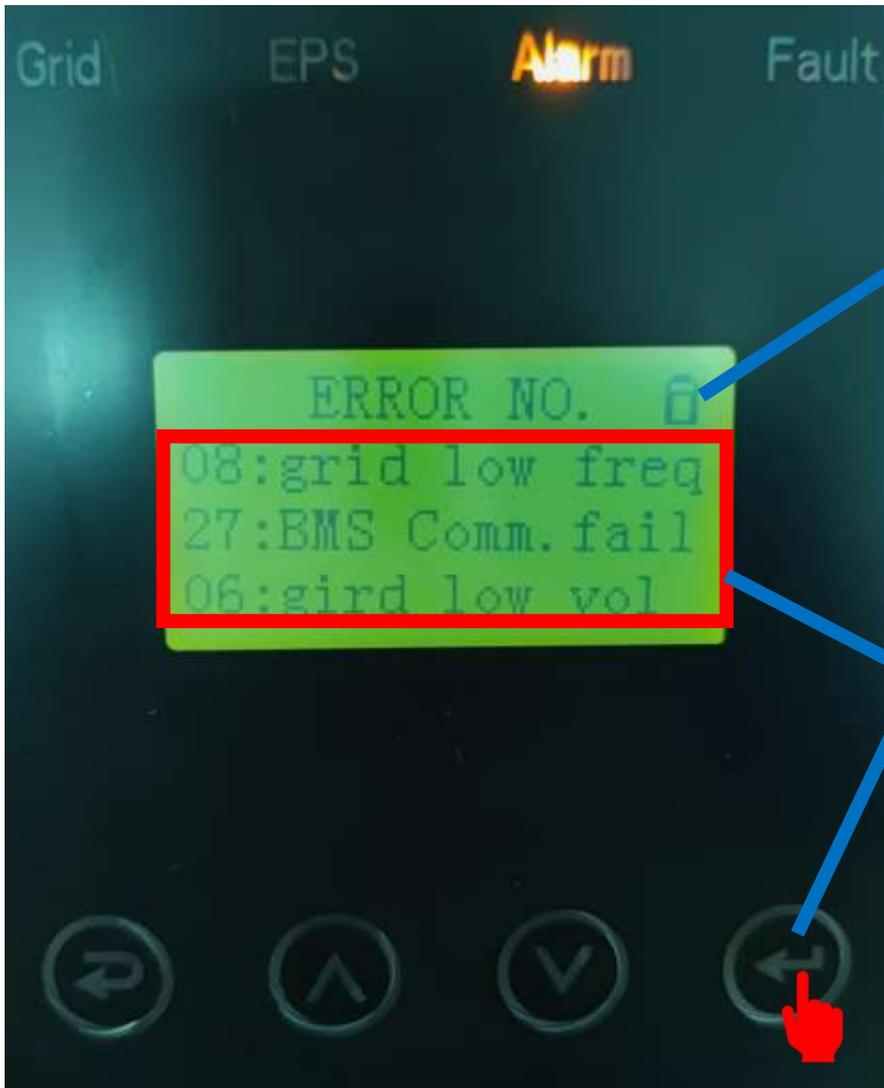
**BATTERY ON&OFF BUTTON**



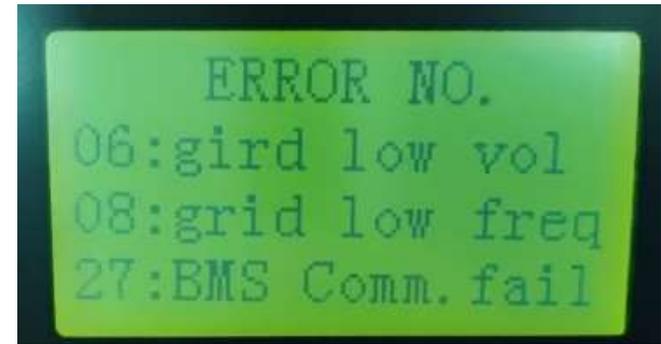
# SYSTEM OPERATION INFORMATION INTRODUCTION



**NORMAL AND SYSTEM WORKING WELL**



screen lock screen, press ENTER to CANCEL, Press ENTER to Lock again.



08&06: NO GRID POWER CONNECT,  
**Does not affect the normal operation of the system**

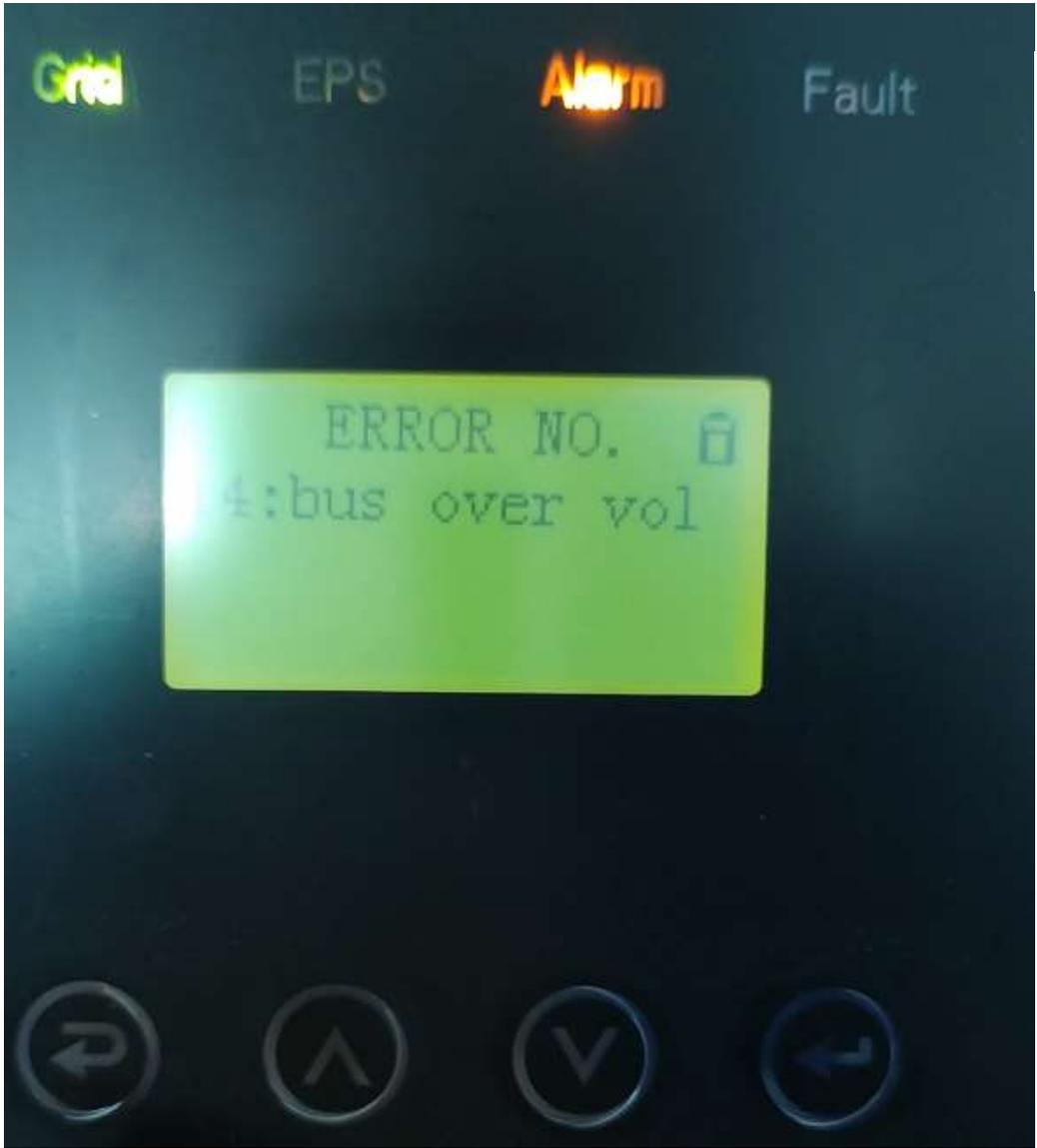
27: The communication is not successful between the inverter and battery. Affect the normal operation of the system with lithium model. If the user can not deal it, pls choice Lead Acid in the battery type setting.



08&06: NO GRID POWER CONNECT,  
**Does not affect the normal operation of the system**

gird low vol	06	(1)Check if the grid is abnormal. (2) Restart the inverter and wait until it functions normally. (3) Contact customer service if error warning continues.
grid low freq	08	(1)Check if the grid is abnormal. (2) Restart the inverter and wait until it functions normally. (3) Contact customer service if error warning continues.

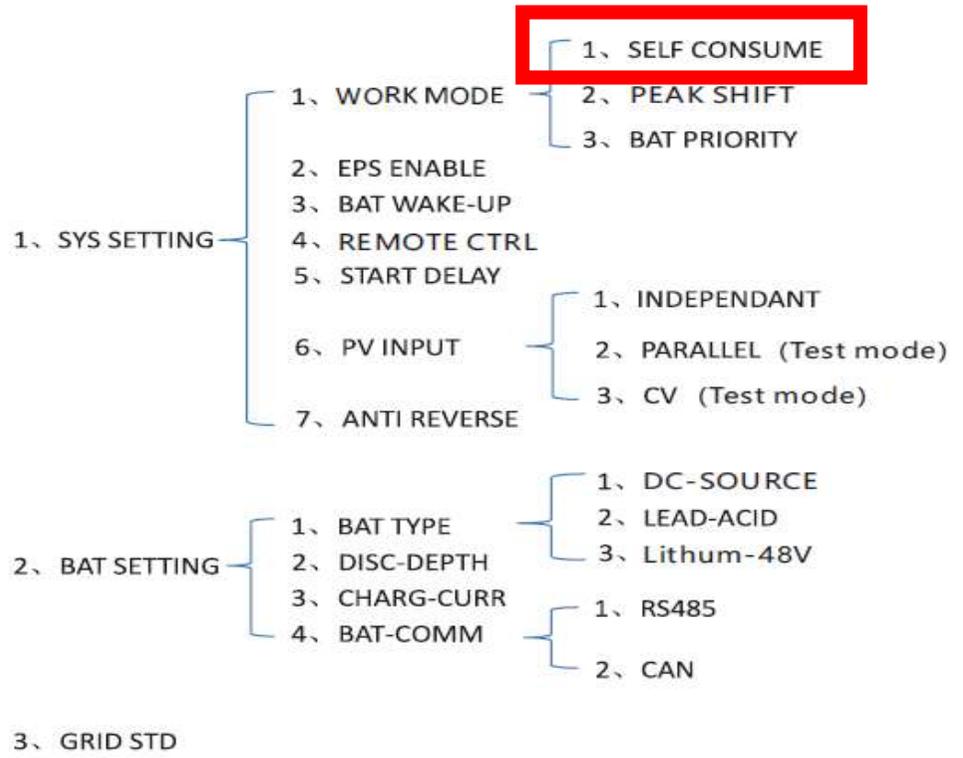
**The communication is successful between the inverter and battery.**

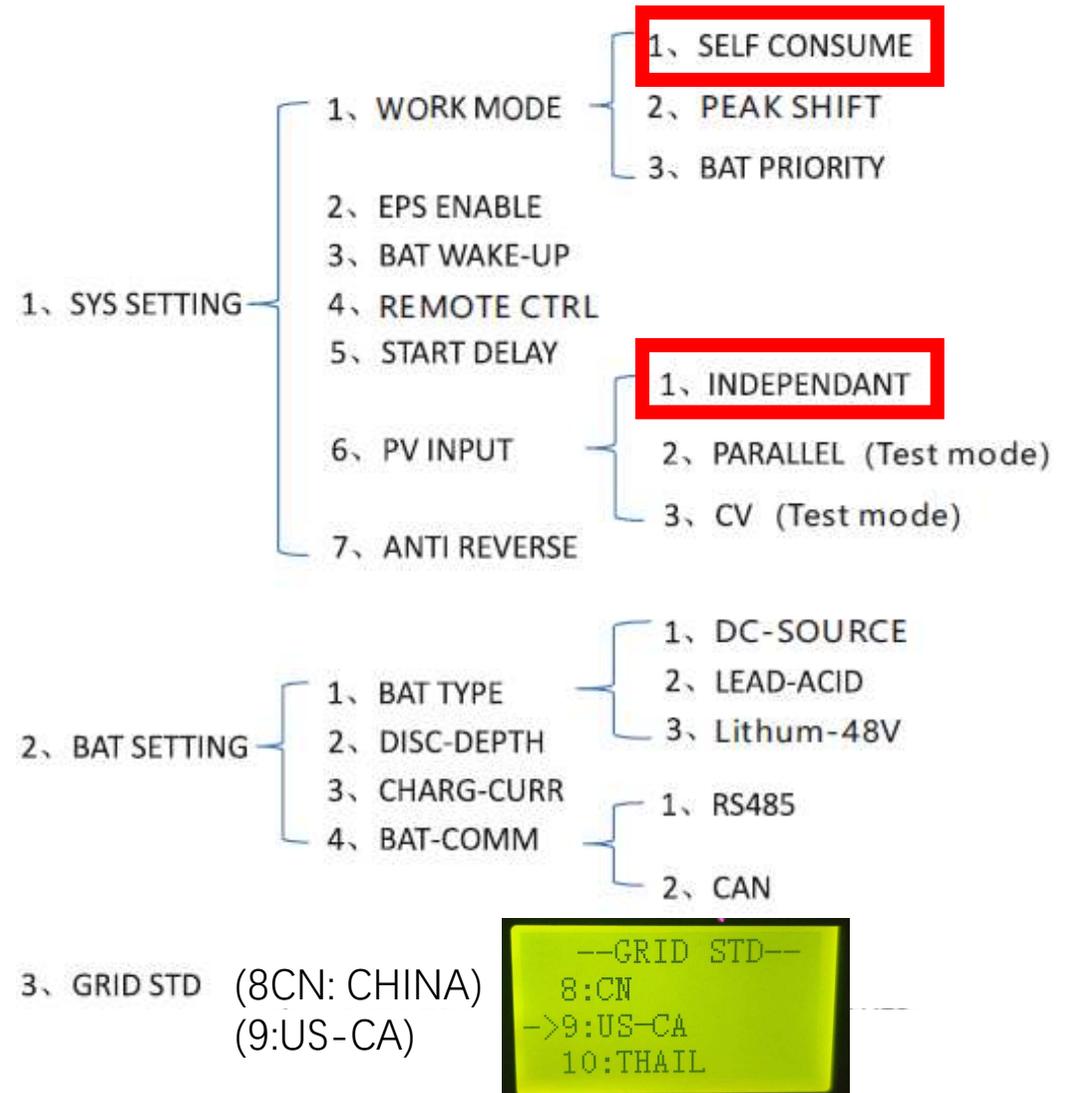
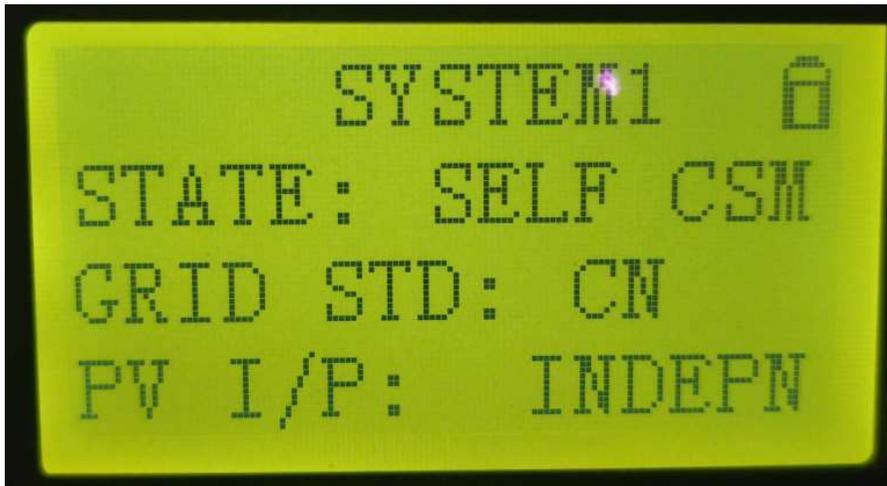


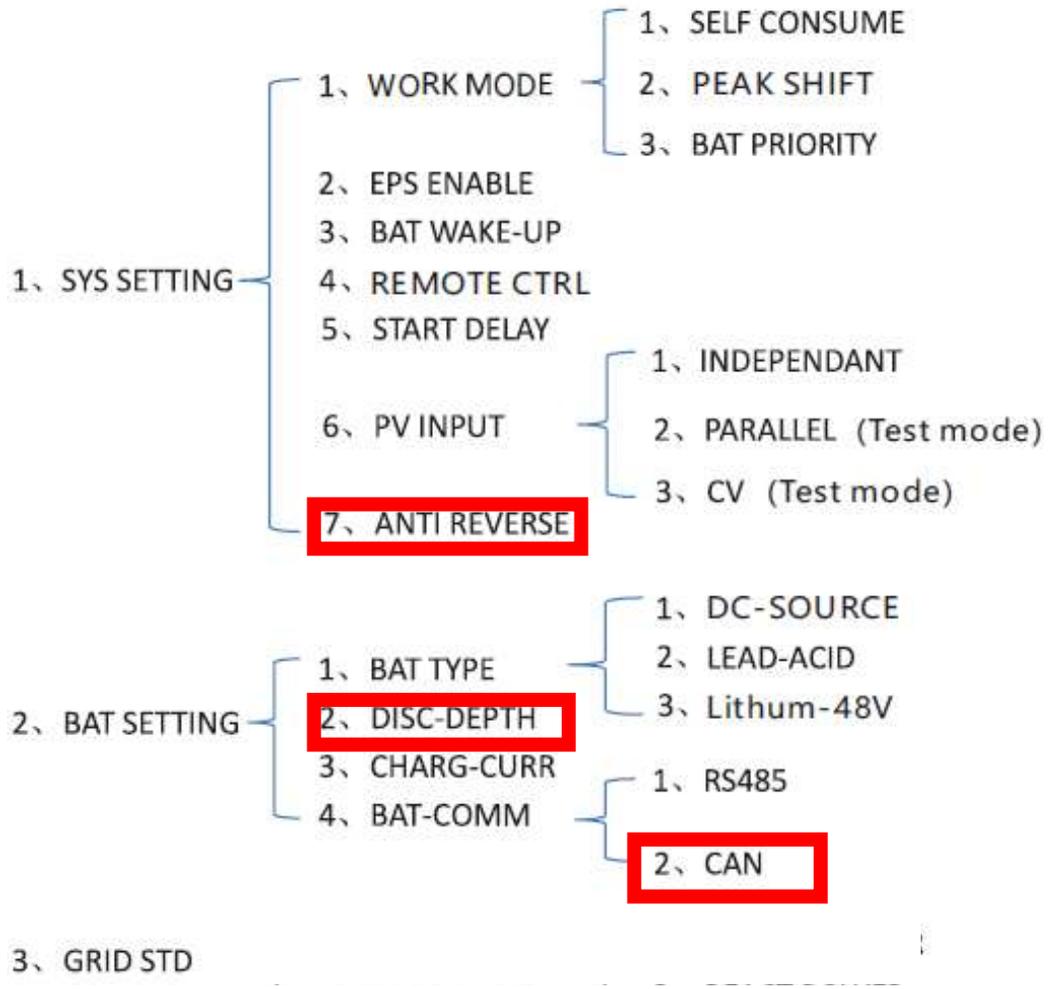
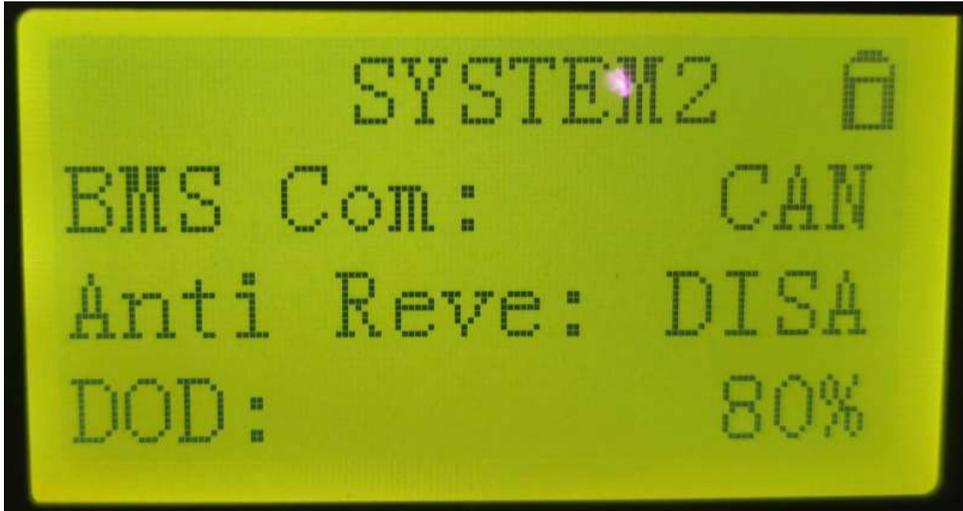
bus over vol

14

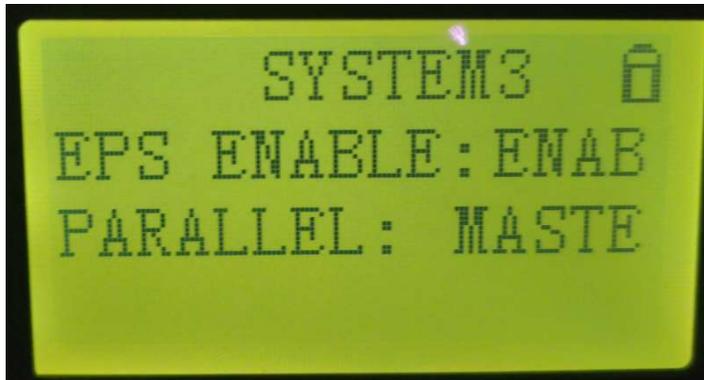
- (1) Check the input mode setting is correct.
- (2) Restart the inverter and wait until it functions normally.
- (3) Contact customer service if error warning continues.



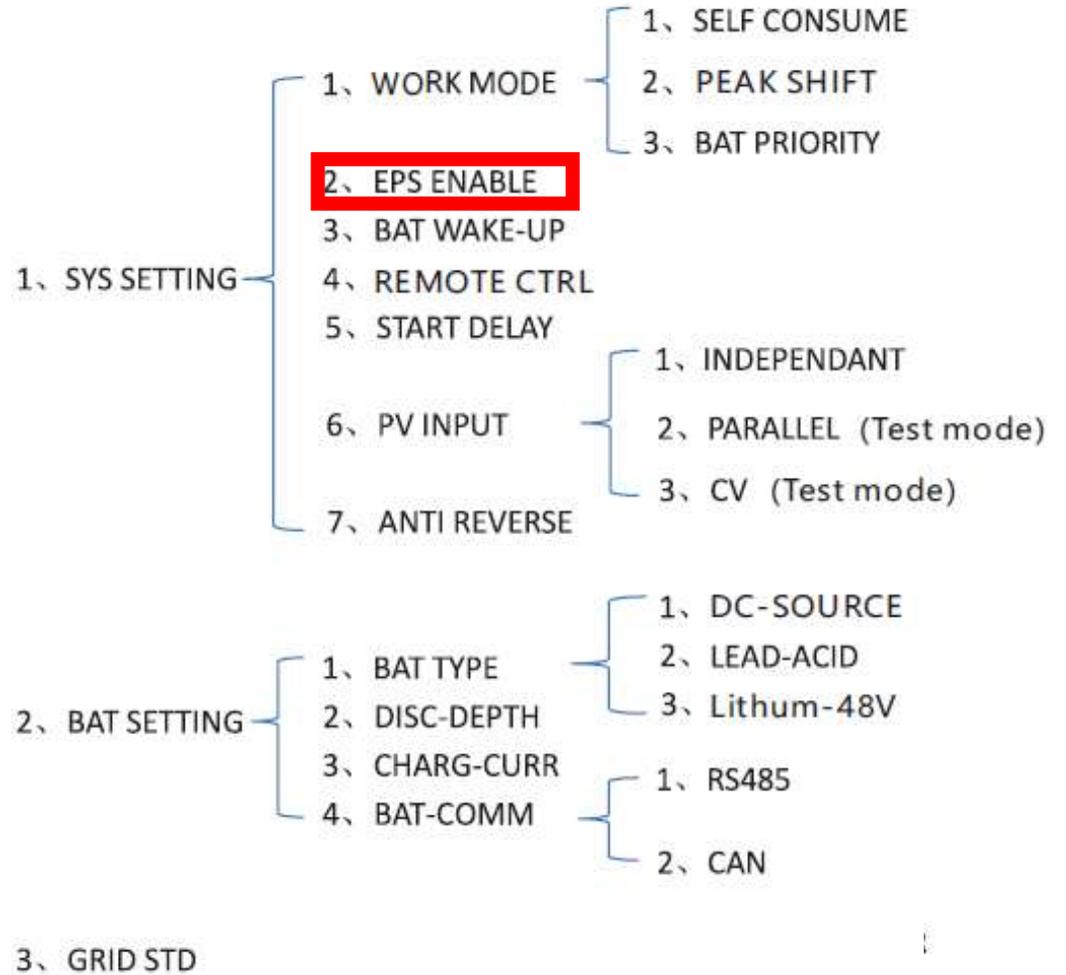
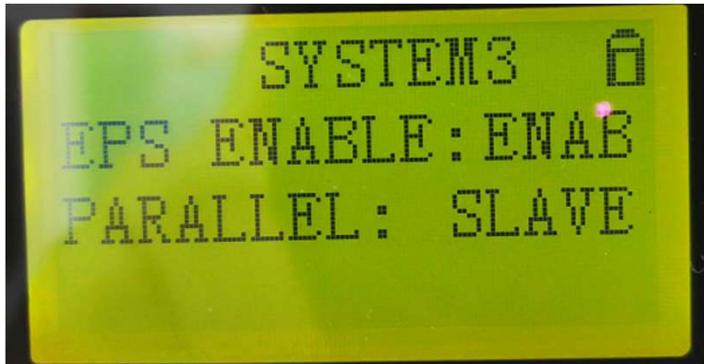




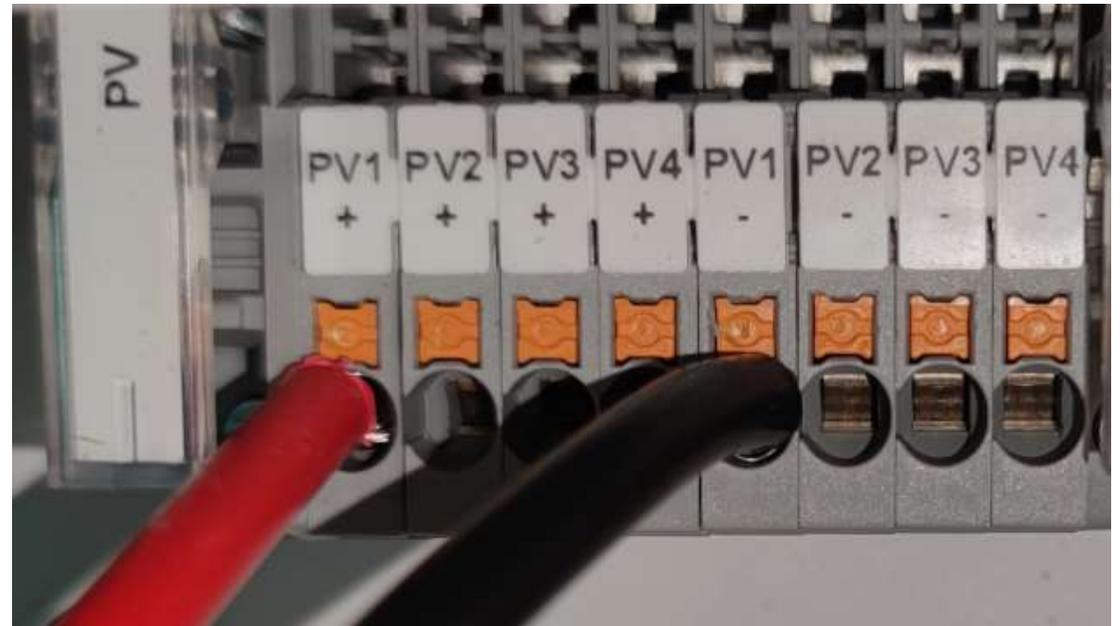
# MASTER INVERTER



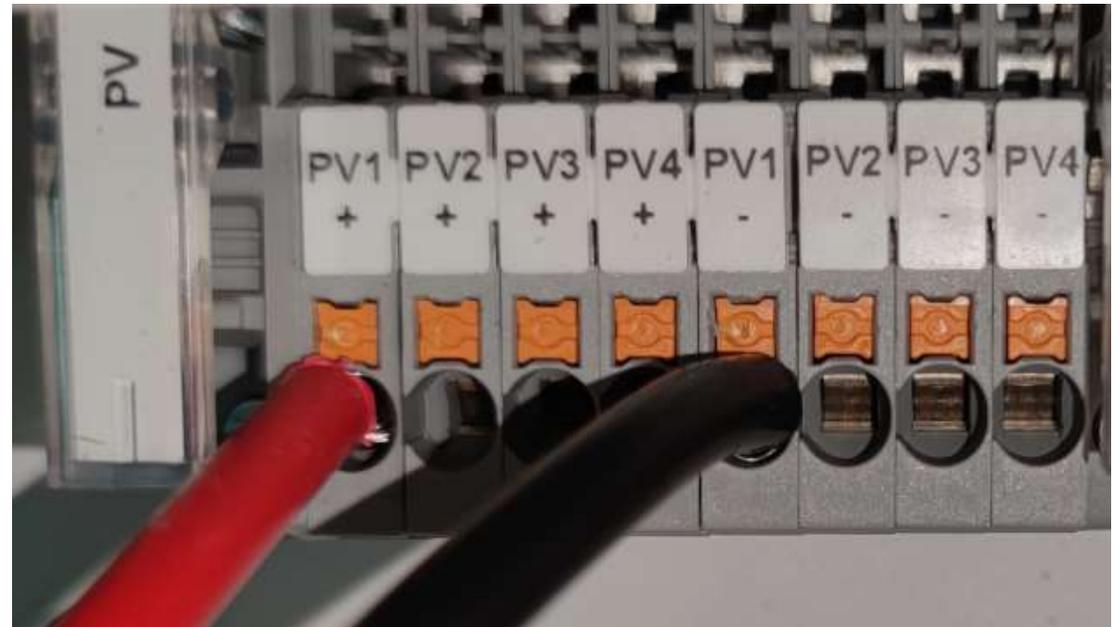
# SLAVE INVERTER



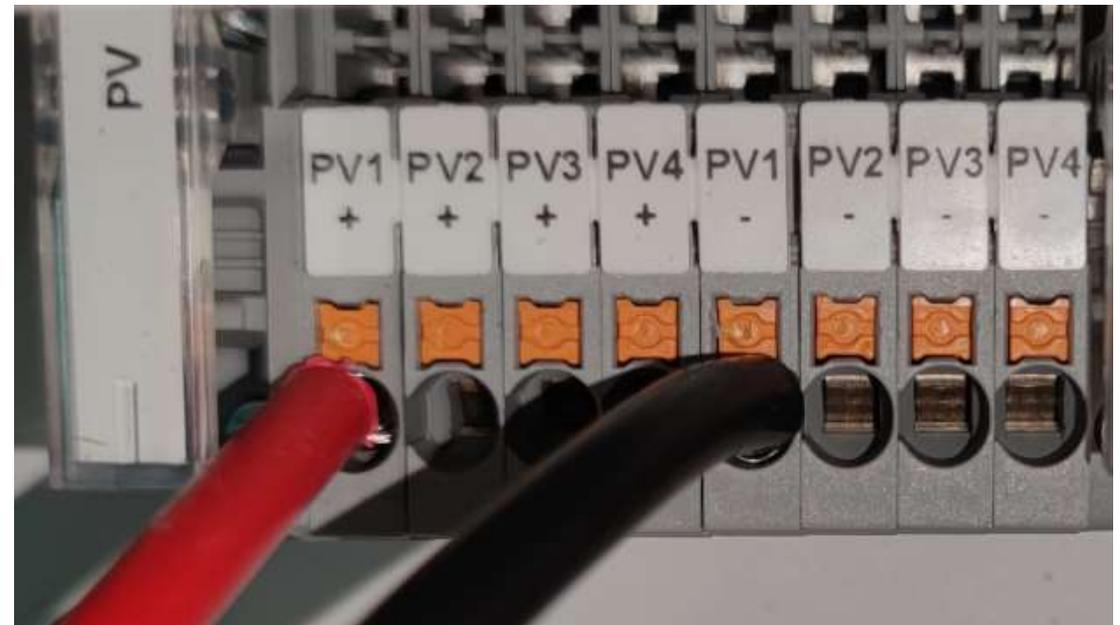
PV 1 WORKING



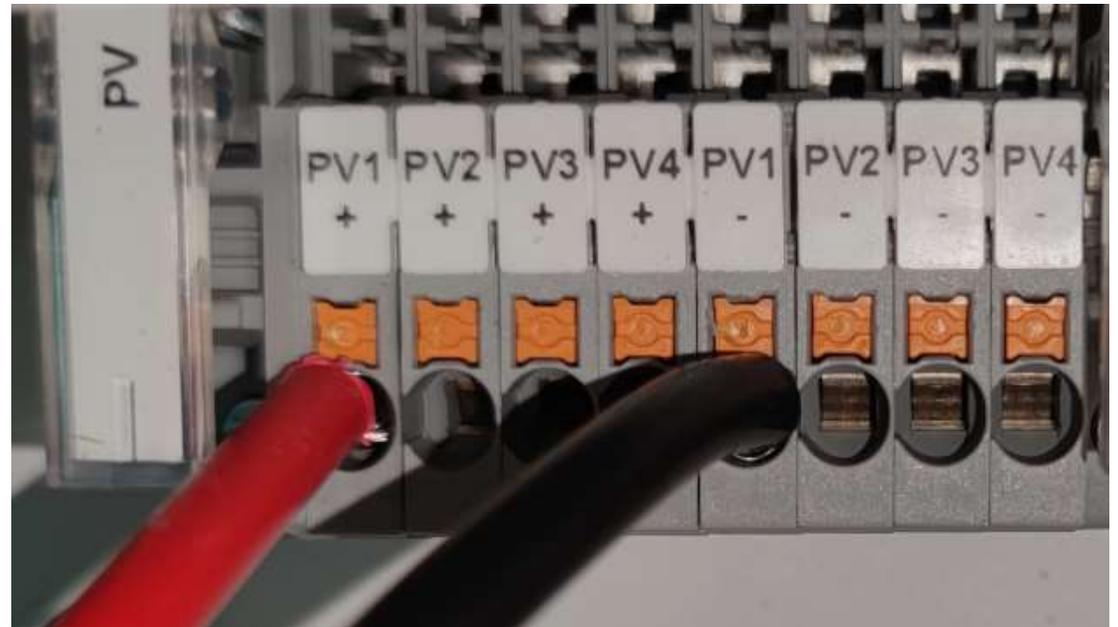
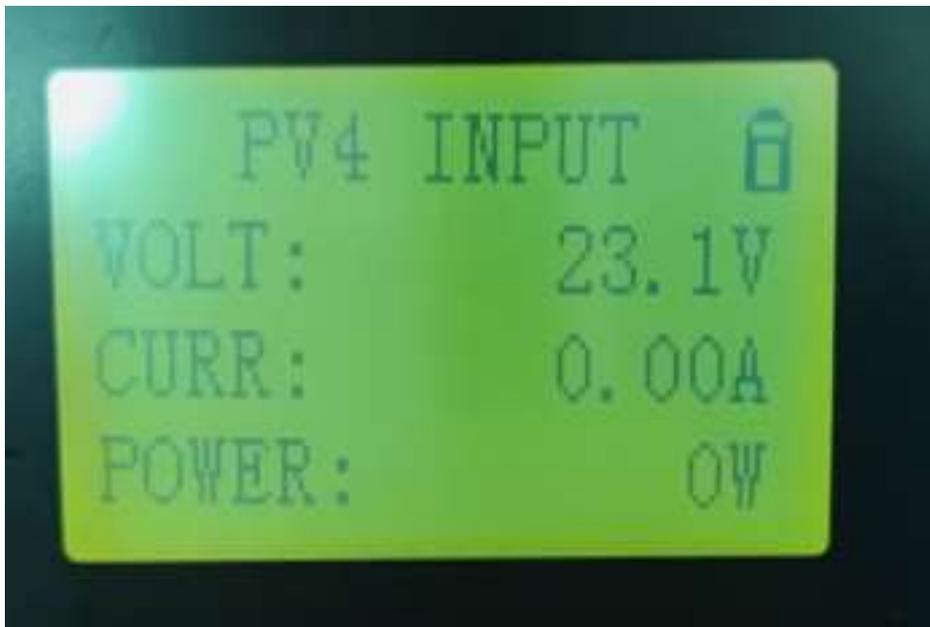
## PV 2 NO CONNECTION



## PV 3 NO CONNECTION



## PV 4 NO CONNECTION



Model	GSL-H-5KLV-US	GSL-H-8KLV-US
<b>PV Input</b>		
PV input power	7.5KW	12KW
MPPT number		4
PV voltage range		350V/85V - 500V
MPPT voltage range		120V-500V
Single MPPT input current	12A	12A

8kw inverter pv design idea

PV1 +	PV2 +	PV3 +	PV4 +	PV1 -	PV2 -	PV3 -	PV4 -
-------	-------	-------	-------	-------	-------	-------	-------

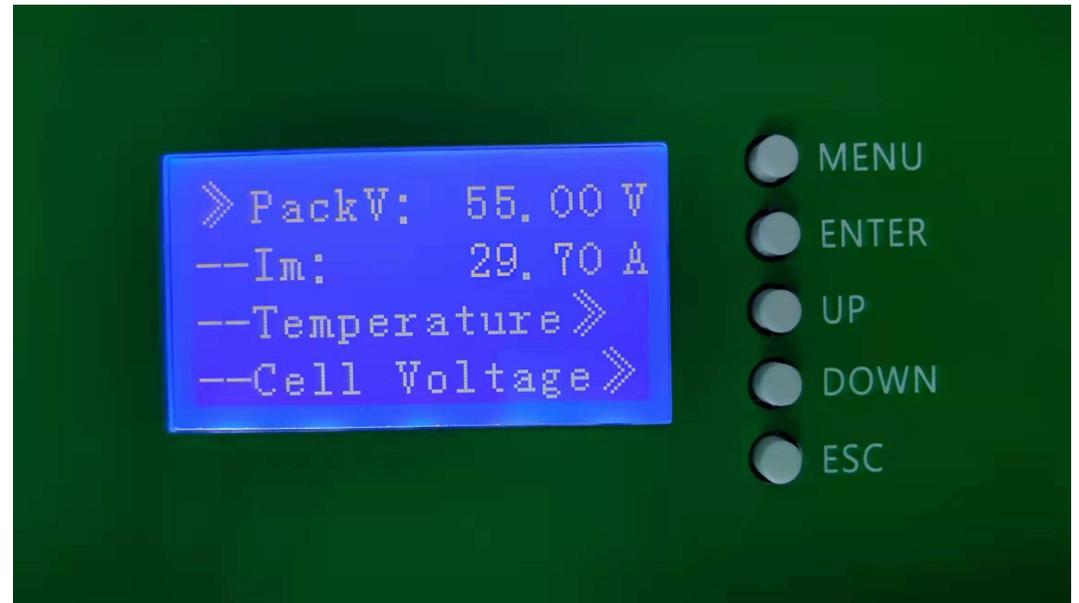
PLAN1 : MAX 26PCS\*450W=12KW 9PC connected with PV1+ & PV1-  
 9PC connected with PV2+ & PV2-  
 8PC connected with PV3+ & PV3-

PLAN2 : MIN 10PCS\*450W=4.5KW 10PC connected with PV1+ & PV1-

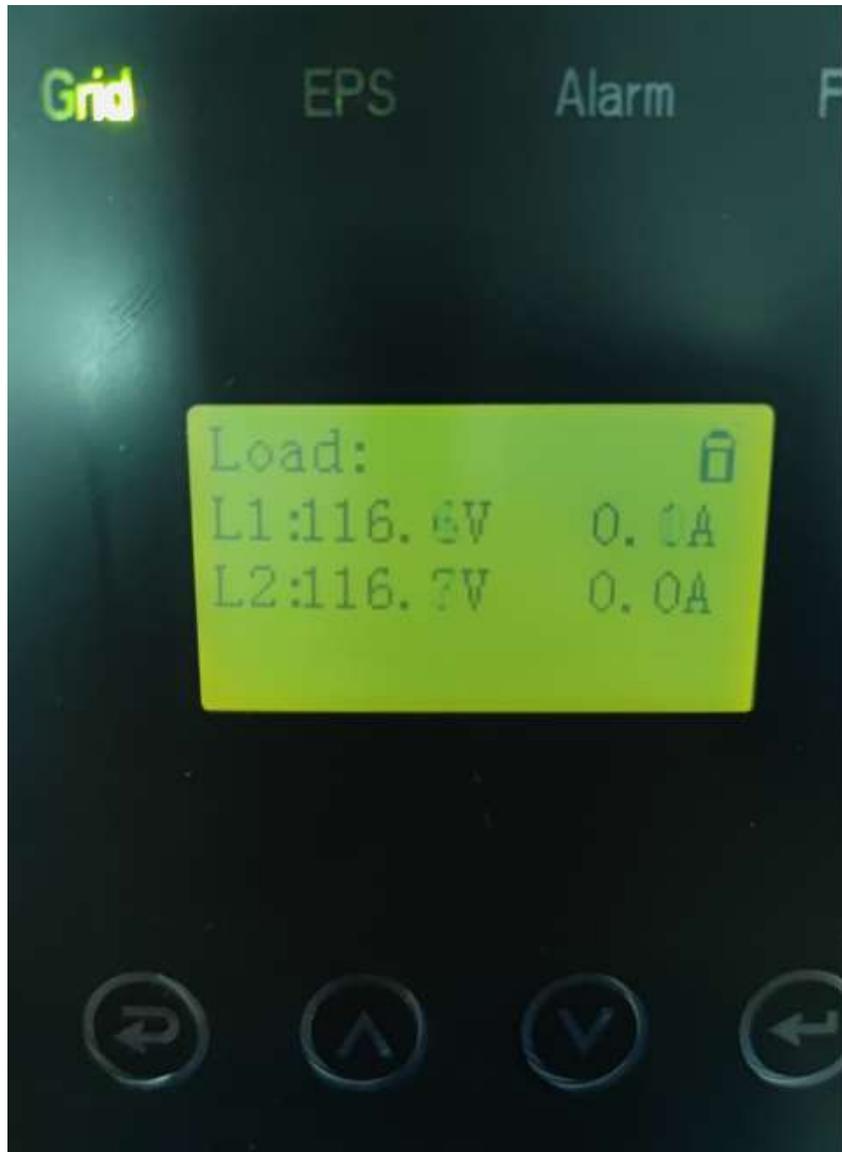
PLAN3 : MIN 10PCS\*450W=4.5KW 5PC connected with PV1+ & PV1-  
 5PC connected with PV3+ & PV3-

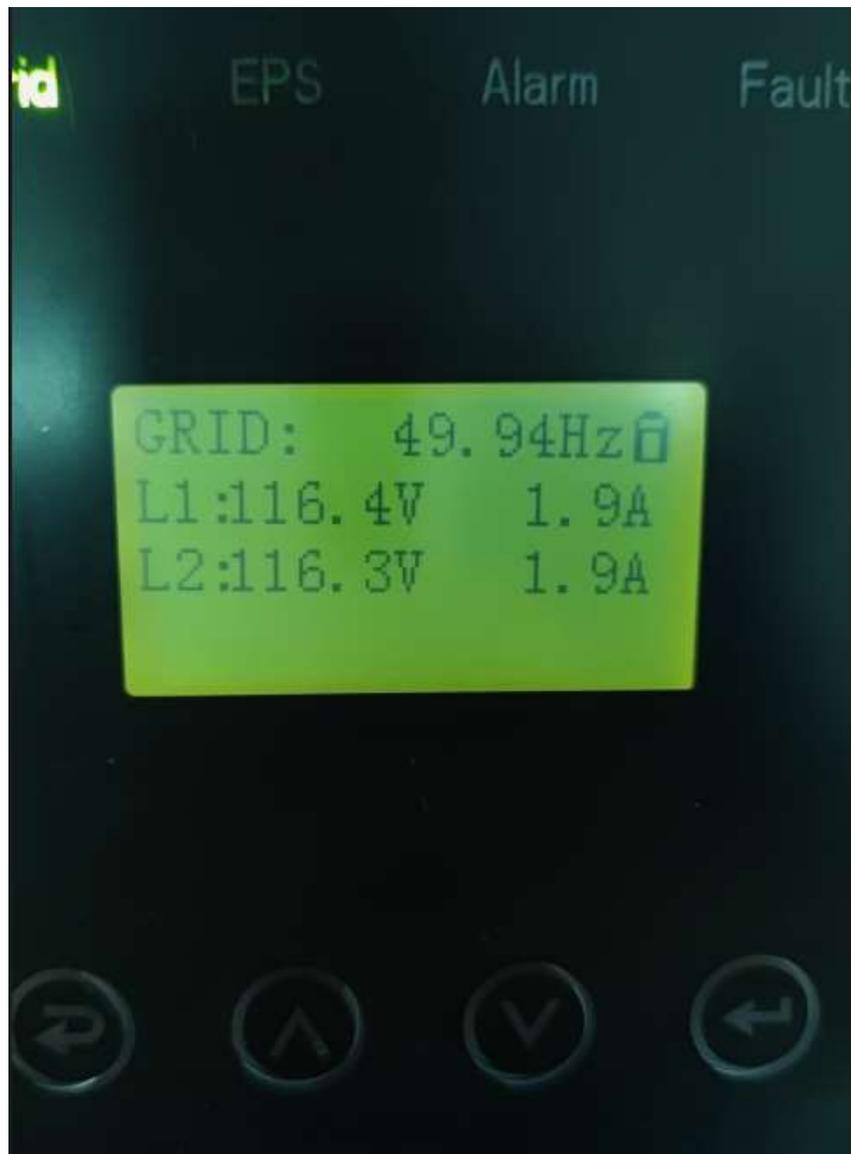


The DC BUS voltage is the DC bus voltage inside the inverter (the DC bus voltage after the PV input is tracked and transformed by the MPPT)  
Vp BUS (BUS peak voltage)  
Vn BUS (BUS normal voltage)









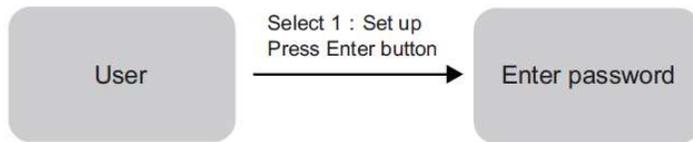




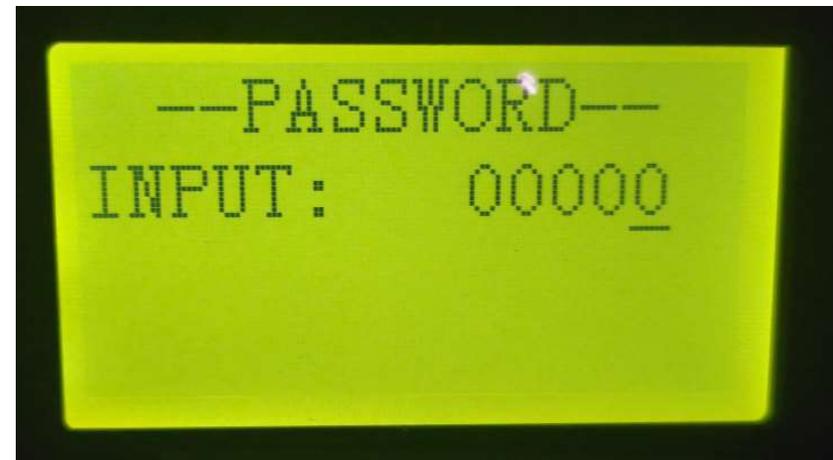
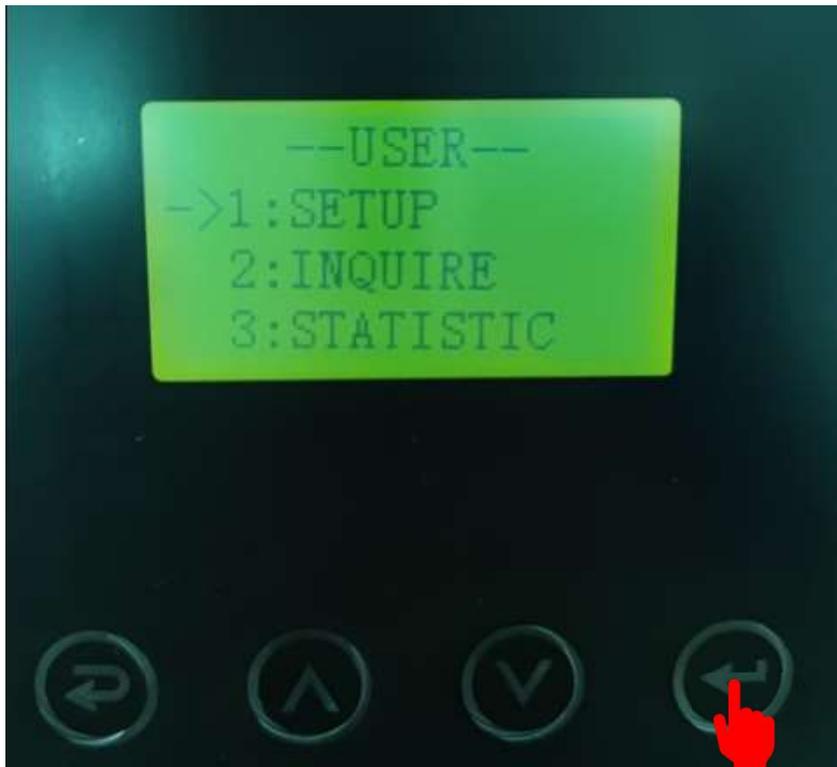
SYSTEM ENERGY SUPPLIER: PV+GRID  
INVERTER: GRID  
DCDC: BATTERY CHARGING

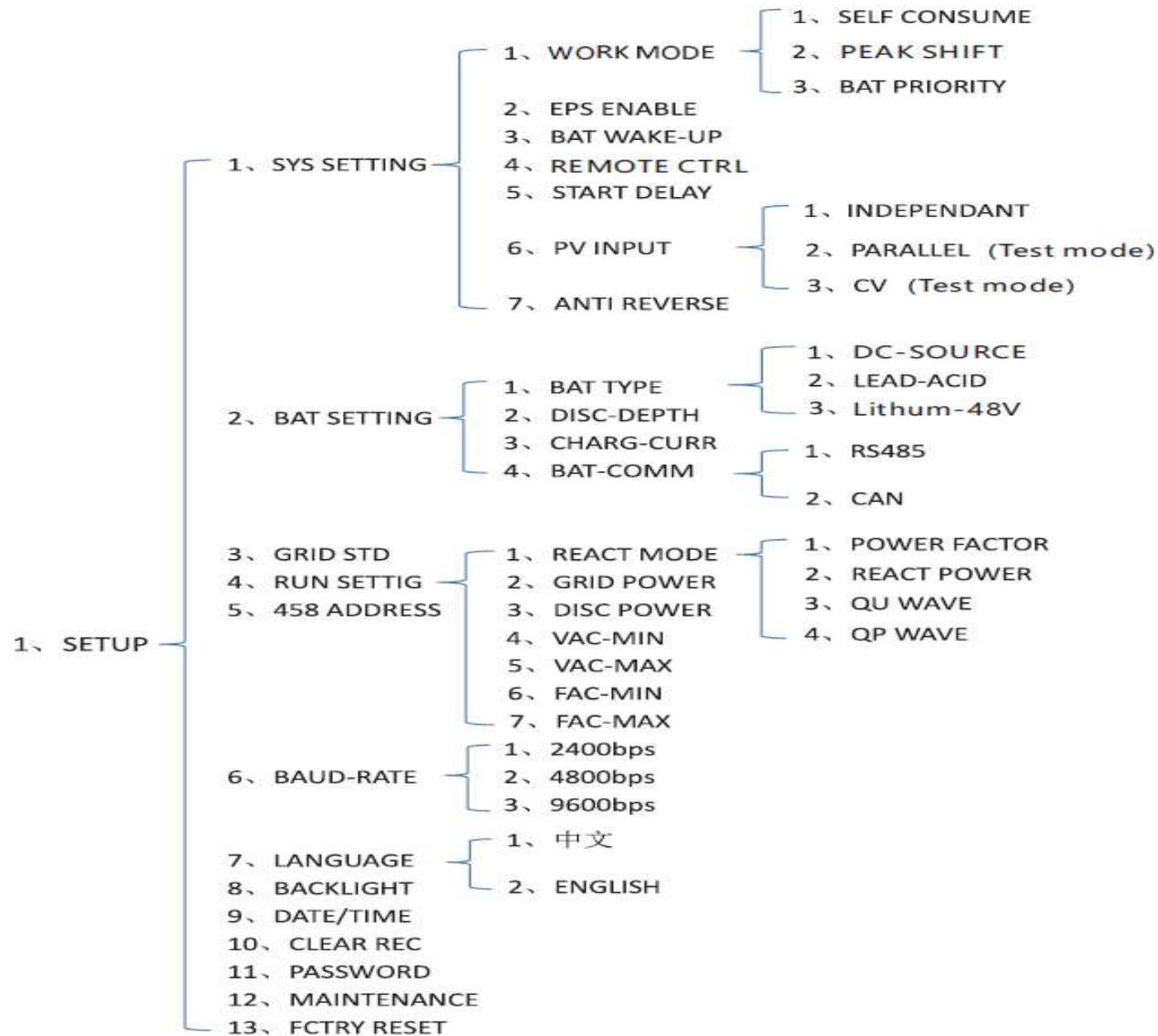
# USER SET UP DETAILS

Pls make the inverter setting with the battery power at first,  
without the grid power.



Default password 00000  
Press UP/DOWN button  
Adjust the figure.



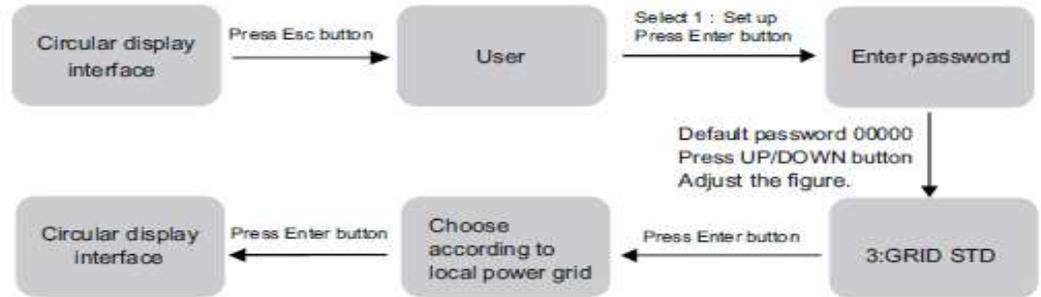


- 2、INQUIRE {
  - 1、INV MODULE
  - 2、MODULE SN
  - 3、FIRMWARE
  - 4、RECORD

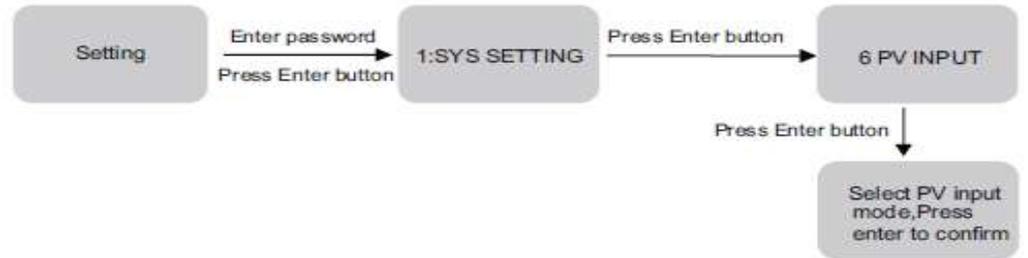
- 3、STATISTIC {
  - 1、TIME STAT
  - 2、CONNE TIMES
  - 3、PEAK POWER
  - 4、E-TODAY
  - 5、E-MONTH
  - 6、E-YEAR
  - 7、E-TOTAL

For example, Before selecting the mode, you can set it up according to the local power grid, PV input mode and battery type.

Power grid :



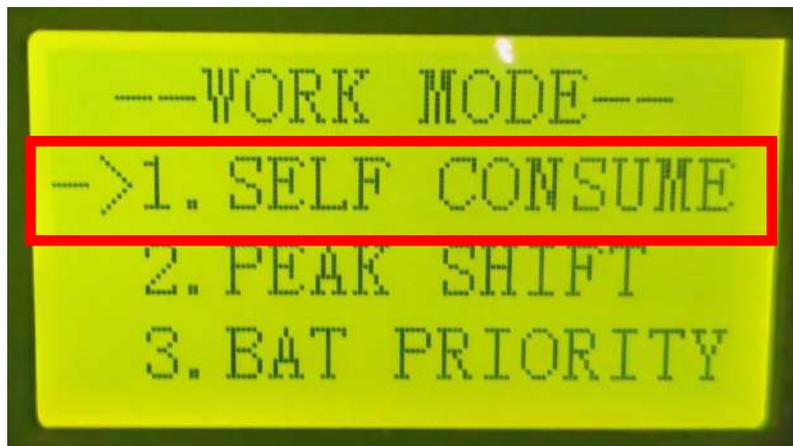
PVinput mode :



Battery parameters :



# SYSTEM SEETING



## 1.WORK MODEL

(1). SELF CONSUME

(2). PEAK SHIFT

(3). BAT PRIORITY

# HOW TO CHOICE THE WORK MODE?

- 1、WORK MODE
  - 1、 SELF CONSUME
  - 2、 PEAK SHIFT
  - 3、 BAT PRIORITY

If your home have **no grid power** connected with inverter



- The load is supplied at first.** ✓ SELF CONSUME ★
- The battery is charged at first.** ✓ BAT PRIORITY (EPS)

If your home have **grid power** connected with inverter



- The load is supplied at first.** ✓ SELF CONSUME ★
- ✓ PEAK SHIFT(6 TIMES SETTING)
- The battery is charged at first.** ✓ BAT PRIORITY



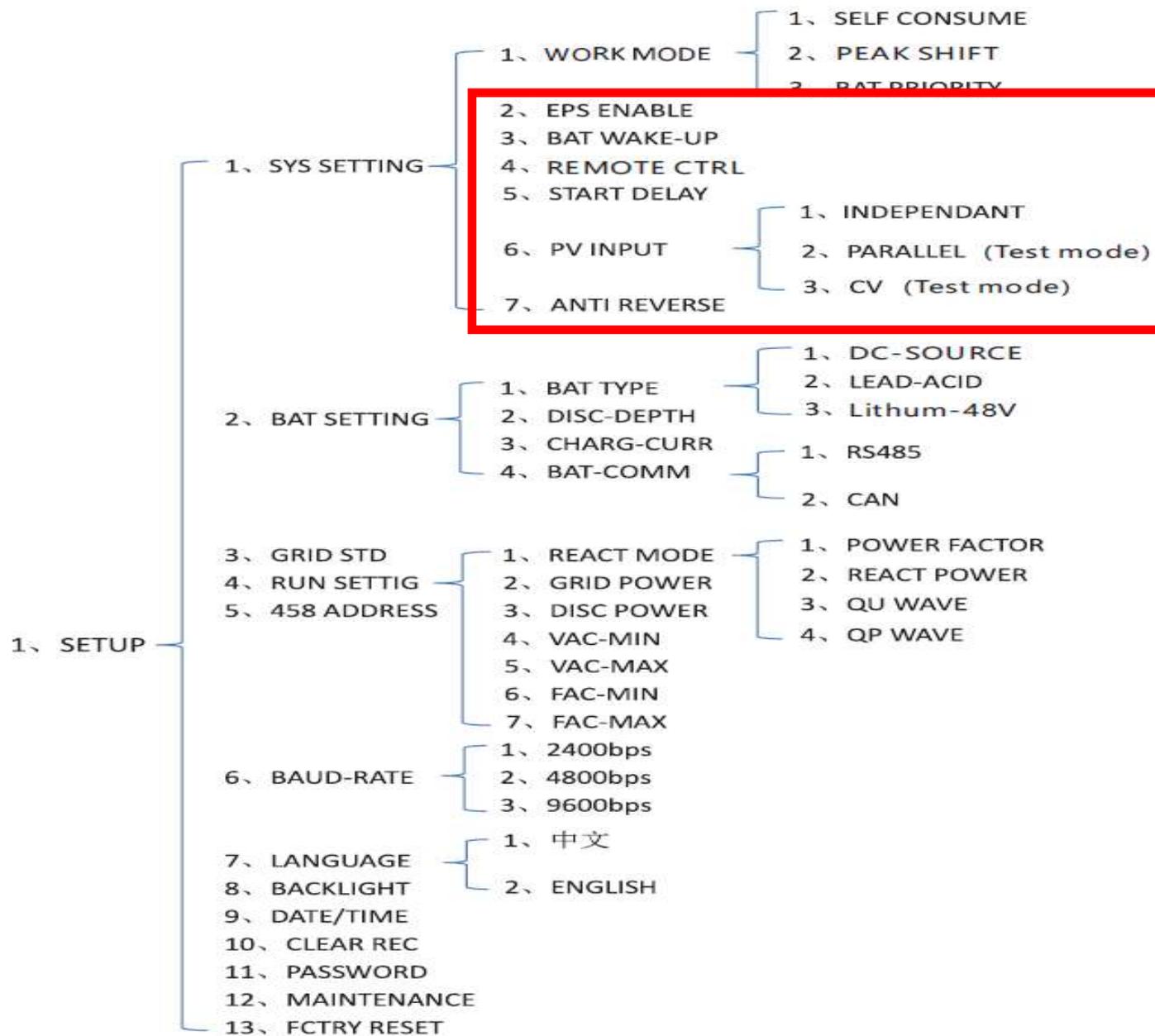
Note!  
If set anti-Reverse function allowable, Once on the work mode of Self-use, Peak shift, battery priority, the system will not feed power to grid.



- ✓ DISABLE: FEED POWER TO GRID
- ✓ ENABLE: NOT FEED POWER TO GRID

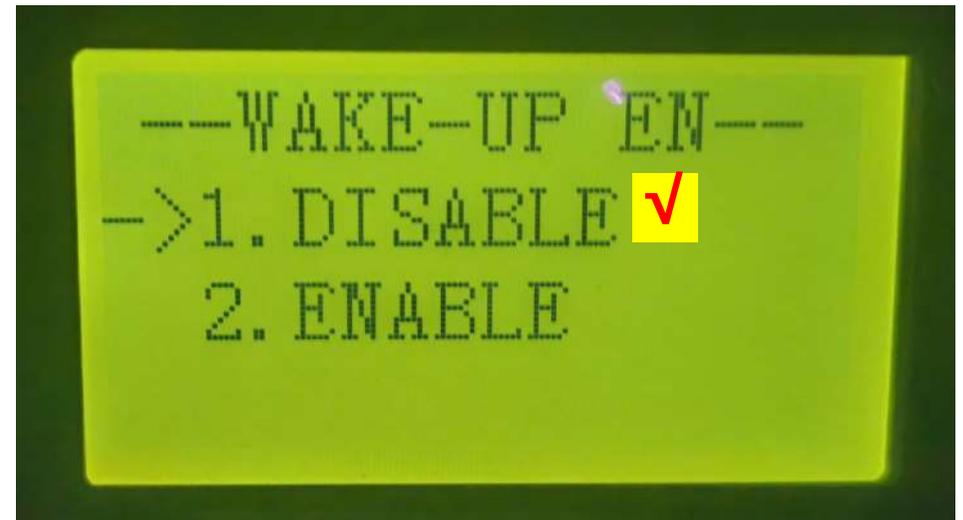
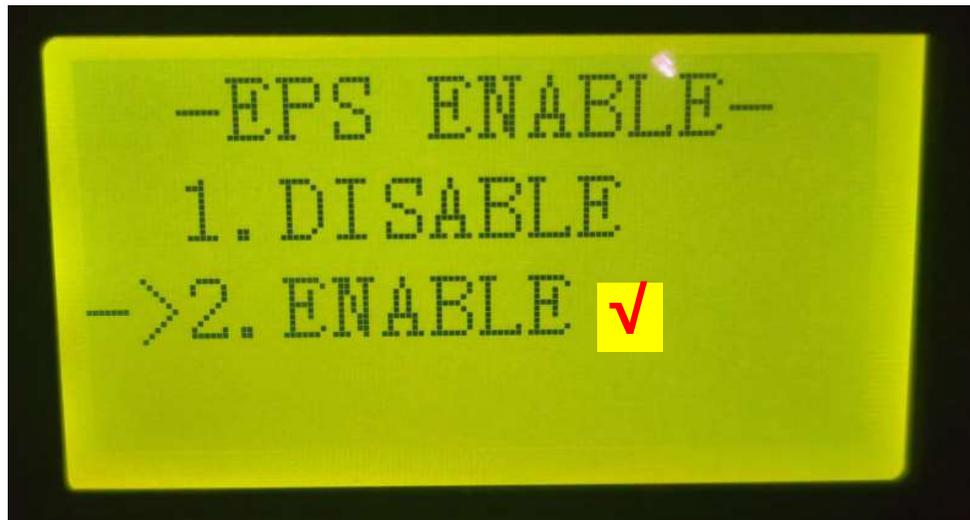
# SYSTEM SEETING

2. EPS ENABLE (ENABLE)
3. BAT WAKE-UP(ENABLE)
4. REMOTE CTRL(ENABLE)
5. START DELAY(60 SECOND)
6. PV INPUT(INDEPENDENT)
7. ANTI REVERSE(ENABLE)
8. ARC ENABLE
9. BUTT ENABLE



2、 EPS ENABLE

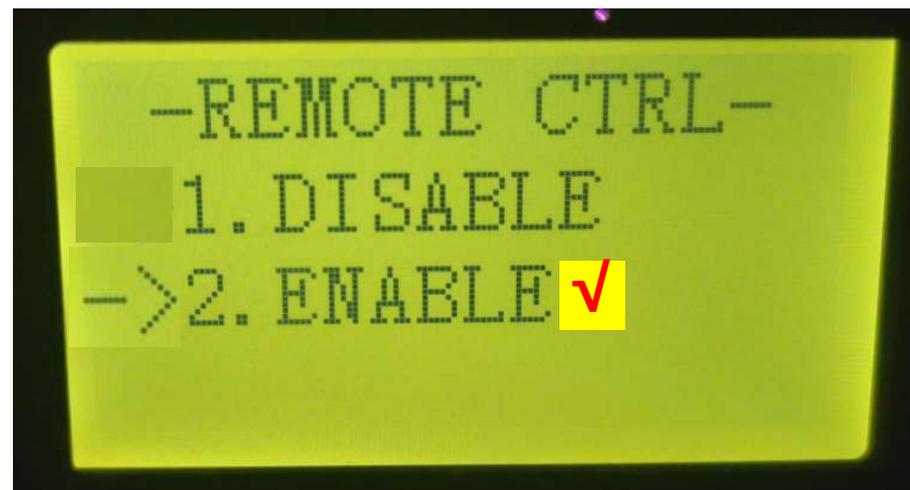
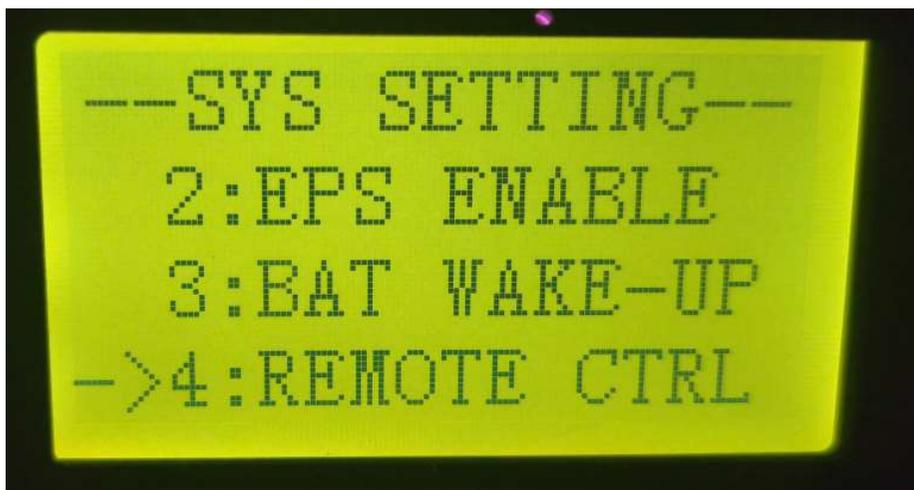
3、 BAT WAKE-UP (IF THE INVERTER CONNECTED THE LITHIUM BATTERY, CHOICE ENABLE)



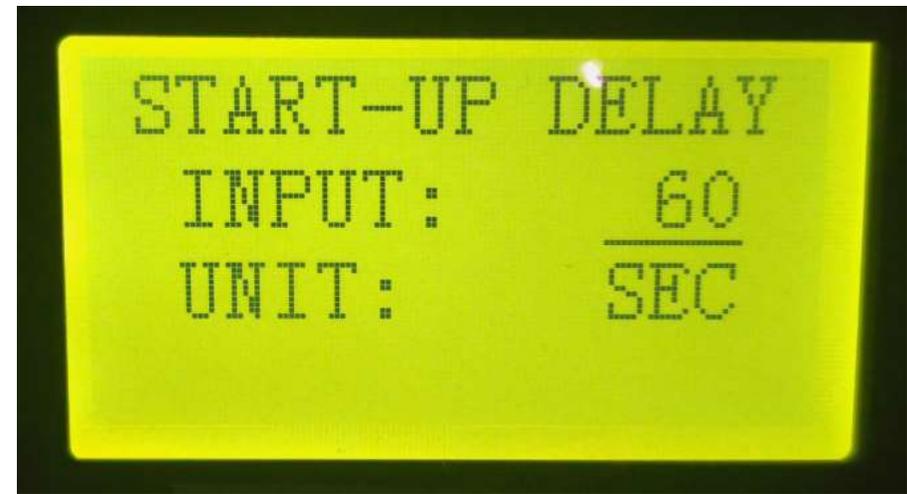
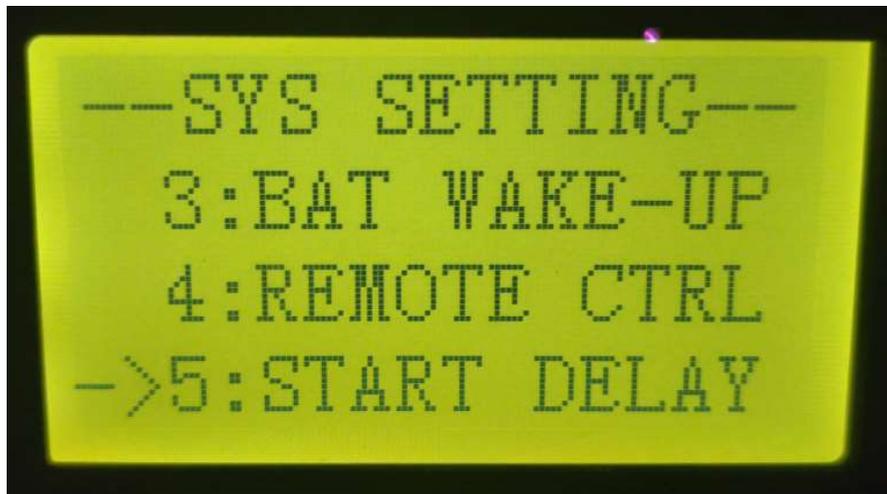
## 4、 REMOTE CTRL (REMOTE CONTROL)

DISABLE: THE SETTING CAN NOT BE CHANGED THROUGH THE WIFI LOGGER  
THE SOFTWARE CAN NOT BE UPDATE THROUGHT THE WIFI LOGGER

ENABLE 

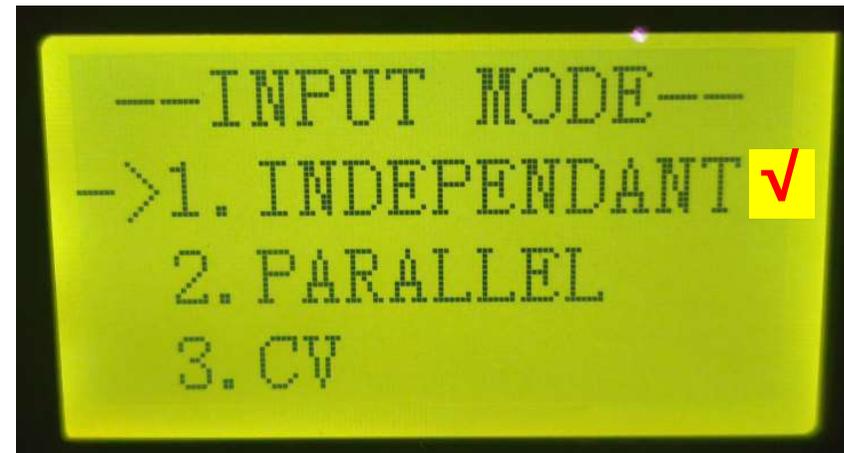


## 5、START DELAY



6、PV INPUT

- 1、INDEPENDANT 
- 2、PARALLEL (Test mode)
- 3、CV (Test mode)



## 7、 ANTI REVERSE



```
--SYS SETTING--  
5:START DELAY  
6:PV INPUT  
->7:Anti Reverse
```

```
-AntiReverse-  
->1.DISABLE  
2.ENABLE
```

DISABLE: FEED POWER TO GRID

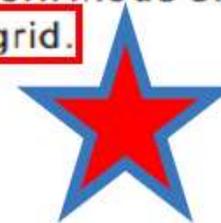
```
-AntiReverse-  
1.DISABLE  
->2.ENABLE
```

ENABLE: NOT FEED POWER TO GRID

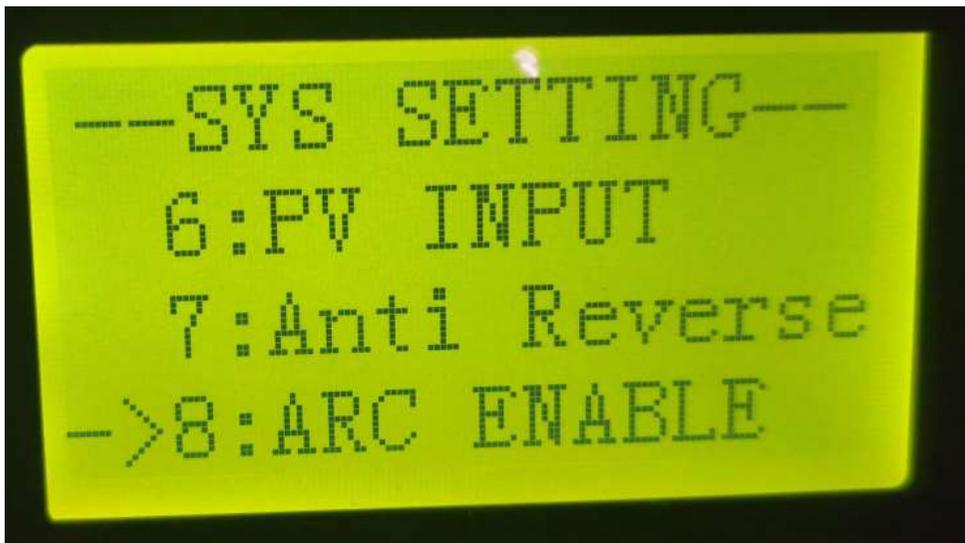


### Note!

If set anti-Reverse function allowable Once on the work mode of Self-use, Peak shift, battery priority, the system will not feed power to grid.



## 8. ARC ENABLE



## 9. BUTT ENABLE

--SYS SETTING--  
7:Anti Reverse  
8:ARC ENABLE  
->9:BUTT ENABLE

-BUTTON ENABLE-  
1.DISABLE  
->2.ENABLE

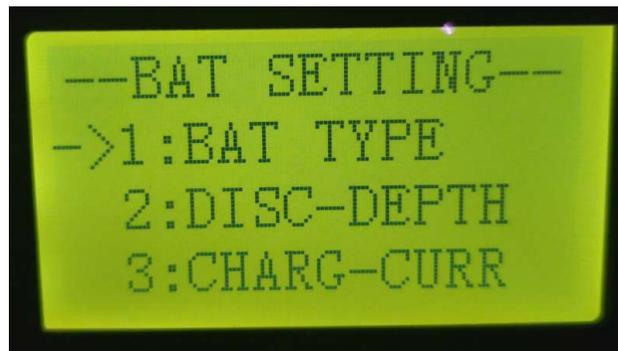
# BATTERY SEETING

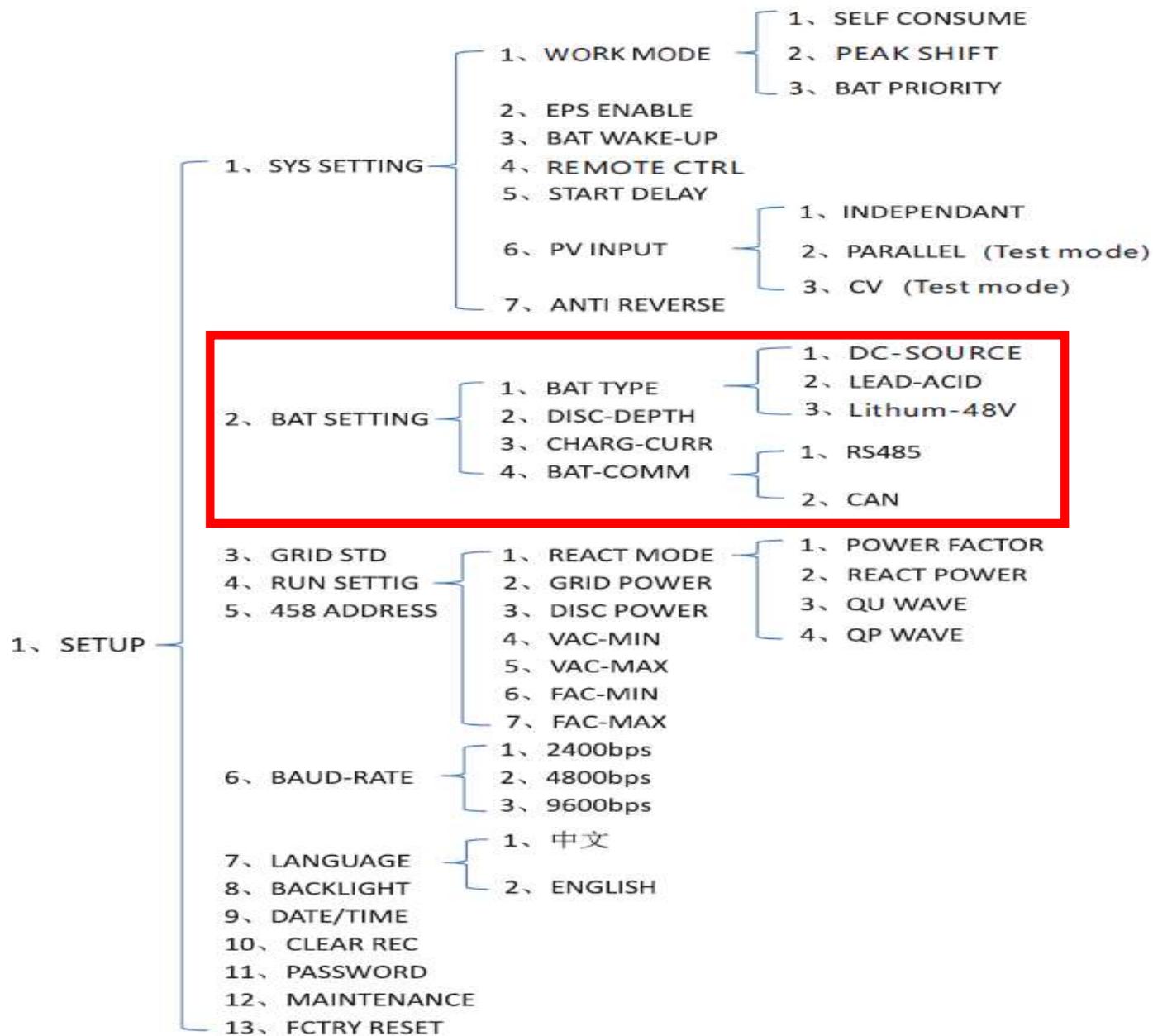
BAT TYPE(Lithium 40-60V)

DISC-DEPTH(80%-90%)

CHARGE-CURR(60A)

BAT-COMM(CAN)





```
--BAT TYPE--  
->3:Lithium  
1:DC-SOURCE  
2:LEAD-ACID
```

```
-DISC DEPTH-  
Grid DOD: 080%  
OFFGridDOD:080%  
Return: 020%
```

```
-CHARGE CURR-  
INPUT: 060  
UNIT: A
```

```
-BAT COMM-  
1.RS485  
->2.CAN
```

The recommended charging current is around 60A(5kWh) and 80A (10kWh)

# GRID&THE OTHER SEETING

GRID STD (Check the local grid standard)

GRID SET

RUN SETTING

485 ADDRESS

BAUD-RATE( 9600bps)

Language

Back Light

Date/Time

Clear REC

Password

Maintenance

Factory Reset

Parallel Function( 2 units)

Generator

```
--SETUP--  
1:SYS SETTING  
2:BAT SETTING  
->3:GRID STD
```

```
--SETUP--  
4:GRID SET  
5:RUN SETTING  
->6:485 ADDRESS
```

```
--SETUP--  
7:BAUD RATE  
8:LANGUAGE  
->9:BACKLIGHT
```

```
--SETUP--  
10:DATE/TIME  
11:CLEAR REC  
->12:PASSWORD
```

```
--SETUP--  
13:MAINTENANCE  
14:FCTRY RESET  
->15:PARALLEL
```

```
--SETUP--  
14:FCTRY RESET  
15:PARALLEL  
->16:GENERATOR
```

# GRID STD / GRID SET

Choose according to the actual situation of the user's country

Pls make the inverter setting with the battery power at first, without the grid power.



# RUN SEETING

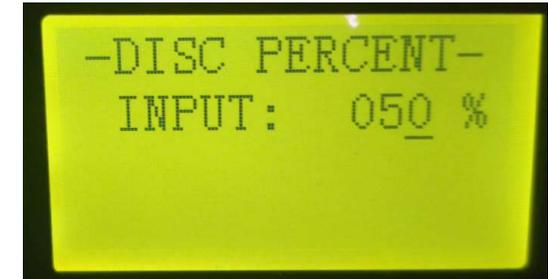
1. REACT MODEL
2. GRID POWER

3. DISC POWER ★

4. PV POWER
5. VAC-MIN
6. VAC-MAX
7. FAC-MIN
8. FAC-MAX
9. ACTIVE REP



```
--RUN SETTING--  
->1:REACT MODE  
  2:GRID POWER  
  3:DISC POWER
```



```
-DISC PERCENT-  
INPUT:  050 %
```

Discharge Current setting:

$$8\text{kW} * 100\% = 8\text{kW} / 51.2\text{V} = 156\text{A}$$

$$8\text{kW} * 90\% = 7.2\text{kW} / 51.2\text{V} = 140\text{A}$$

$$\underline{8\text{kW} * 80\% = 6.4\text{kW} / 51.2\text{V} = 125\text{A} (20\text{kWh battery})}$$

$$8\text{kW} * 70\% = 5.6\text{kW} / 51.2\text{V} = 109\text{A}$$

$$8\text{kW} * 60\% = 4.8\text{kW} / 51.2\text{V} = 93\text{A}$$

$$\underline{8\text{kW} * 50\% = 4\text{kW} / 51.2\text{V} = 78\text{A} (10\text{kWh battery})}$$

$$8\text{kW} * 40\% = 3.2\text{kW} / 51.2\text{V} = 62\text{A}$$

$$\underline{8\text{kW} * 30\% = 2.4\text{kW} / 51.2\text{V} = 46\text{A} (5\text{kWh battery})}$$

$$8\text{kW} * 20\% = 1.6\text{kW} / 51.2\text{V} = 31\text{A}$$

```
--RUN SETTING--
->1:REACT MODE
  2:GRID POWER
  3:DISC POWER
```

```
--RUN SETTING--
  4:PV POWER
  5:VAC-MIN
->6:VAC-MAX
```

```
--RUN SETTING--
  7:FAC-MIN
  8:FAC-MAX
->9:ACTIVE REP.
```

```
-REACT MODE-
->1.POWER FACTOR
  2.REACT POWER
  3.QU WAVE
```

```
-GRID PERCENT-
INPUT: 100 %
Default factory value
```

```
-PV PERCENT-
INPUT: 100 %
Default factory value
```

```
-GRID FREQ LOW-
INPUT: 45.0
UNIT: Hz
```

```
-POWER FACTOR-
INPUT: C1.00
Default factory value
```

```
-DISC PERCENT-
INPUT: 050 %
Default factory value
```

```
-GRID VOLT LOW-
INPUT: 150
UNIT: V
Default factory value
```

```
GRID FREQ HIGH
INPUT: 55.0
UNIT: Hz
```

```
-REACT POWER-
INPUT: +00 %
Default factory value
```

```
GRID VOLT HIGH
INPUT: 280
UNIT: V
Default factory value
```

50 Hz: 45—50Hz  
60 Hz: 55—65Hz

```
--RUN SETTING--
7:FAC-MIN
8:FAC-MAX
->9:ACTIVE REP.
```

<pre>-ACTIVE Type- -&gt;1.PWR-VOLT RES 2.PWR-FREQ RES 3.PFC-VOLT RES</pre>	<pre>-PWR-VOLTAGE- -&gt;1.DISABLE 2.ENABLE</pre> <p><b>Default factory value</b></p>	<pre>-PWR-FREQUENCY -&gt;1.DISABLE 2.ENABLE</pre> <p><b>Default factory value</b></p>	<pre>-PFC-VOLTAGE- -&gt;1.DISABLE 2.ENABLE</pre> <p><b>Default factory value</b></p>
--	--	---	--

<pre>-ACTIVE Type- -&gt;4:PFC-FREQ RES 5.ACTIVEISLAND 6:Leak Current</pre>	<pre>-PFC-FREQUENCY -&gt;1.DISABLE 2.ENABLE</pre> <p><b>Default factory value</b></p>	<pre>-ACTIVEISLAND- 1.DISABLE -&gt;2.ENABLE</pre> <p><b>Default factory value</b></p>	<pre>-Leak Dete- 1.DISABLE -&gt;2.ENABLE</pre> <p><b>Default factory value</b></p>
--	---	---	--

<pre>-ACTIVE Type- 5.ACTIVEISLAND 6:Leak Current -&gt;7. Insulation d</pre>	<pre>-Insul Dete- 1.DISABLE -&gt;2.ENABLE</pre> <p><b>Default factory value</b></p>	<pre>--RUN SETTING-- 8:FAC-MAX 9:ACTIVE REP. -&gt;10:GRID RECONN</pre>	<pre>-GRID RECONNECT T-INPUT: 100 s</pre> <p><b>Default factory value</b></p>
---	---	--	---

```
--SETUP--  
6:485 ADDRESS  
7:BAUD RATE  
->8:LANGUAGE
```

```
--485 ADDRESS--  
INPUT:  1
```

Default factory value

```
--SELECT--  
->3:9600 bps  
2:4800 bps
```

Default factory value

```
--LANGUAGE--  
1:中文  
->2:ENGLISH
```

```
--SETUP--  
9:BACKLIGHT  
10:DATE/TIME  
->11:CLEAR REC
```

```
--LIGHT TIME--  
INPUT:  20  
UNIT:   SEC
```

Default factory value

```
--DATE/TIME--  
DATE:2022-09-15  
TIME: 21:00:20  
WEEK: Thursda
```

```
--DEL REC--  
->1:CANCEL  
2:CONFIRM
```

Default factory value

```
--SETUP--  
12:PASSWORD  
13:MAINTENANCE  
->14:FACTRY RESET
```

```
--PASSWORD--  
OLD:  XXXXX  
NEW:  XXXXX  
CONFIRM: XXXXX
```

```
--PASSWORD--  
INPUT:  XXXXX
```

```
--FACTORY RESET--  
->1:CANCEL  
2:CONFIRM
```

Default factory value

```

--SETUP--
13:MAINTENANCE
14:FACTRY RESET
->15:PARALLEL

```

# How to parallel and set the 2 units inverters

Except for the parallel setting, follow the instructions on the next page to operate the Settings, the other Settings in the master and slave inverters must be consistent.

MASTER INVERTER

```

SYSTEM3
EPS ENABLE:ENAB
PARALLEL: MASTE

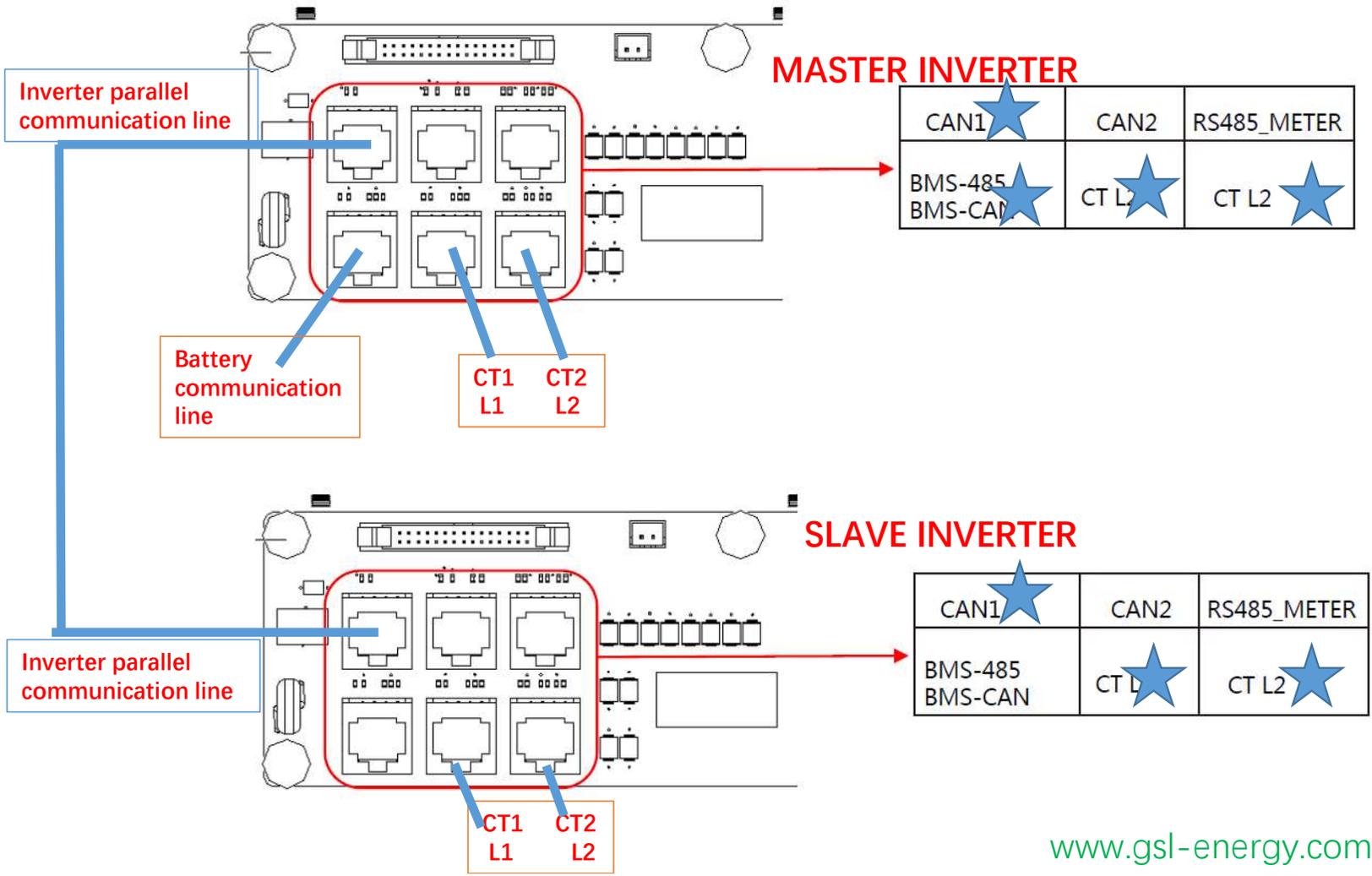
```

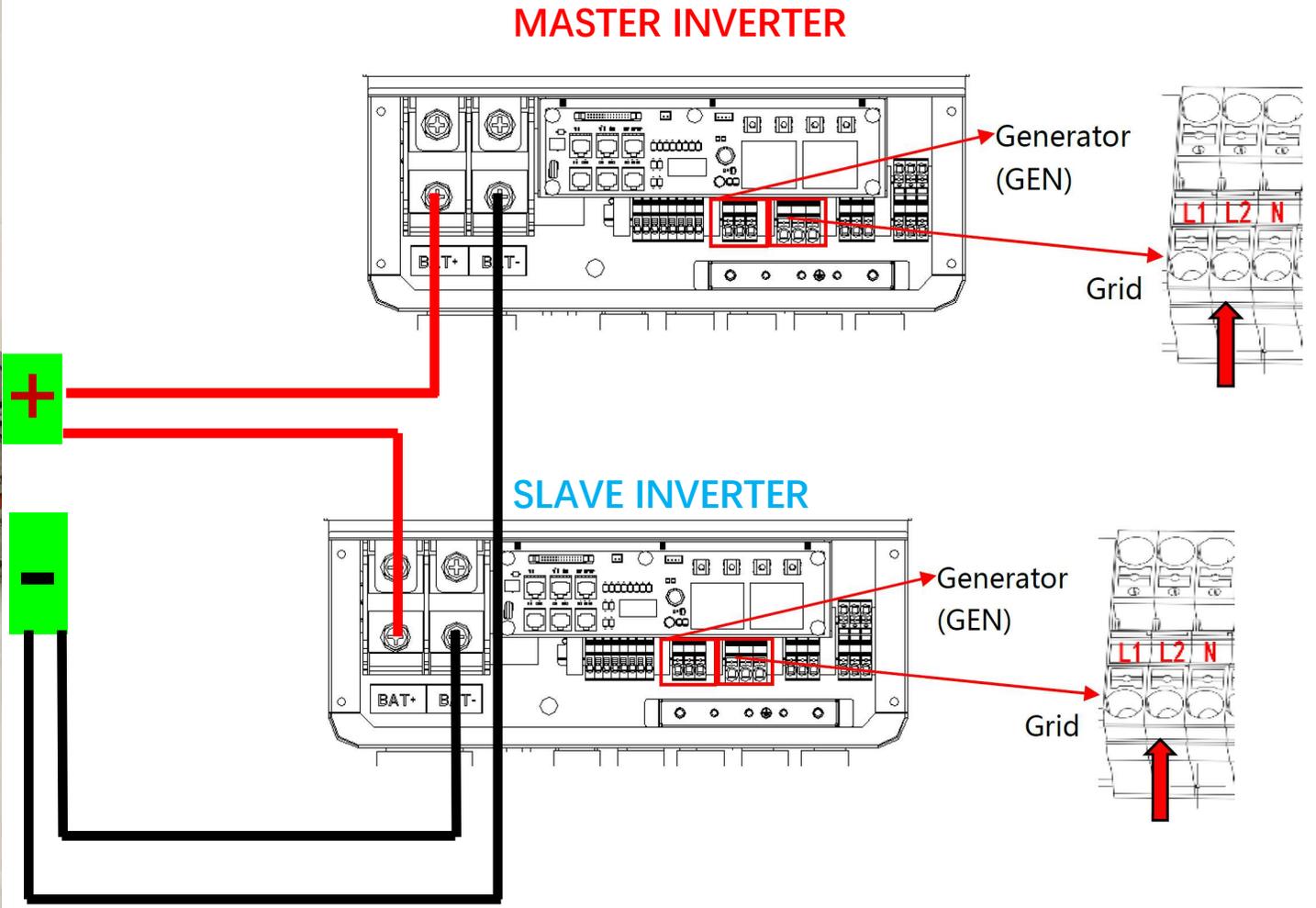
SLAVE INVERTER

```

SYSTEM3
EPS ENABLE:ENAB
PARALLEL: SLAVE

```





## MASTER INVERTER

-PARALLEL NUM-  
INPUT:   2    
**1**

-Master/Slave-  
->1. Master  
  2. Slave  
**2**

-Parallel Addr-  
INPUT:   1    
**3**

-COMMON BAT-  
1. DISABLE  
->2. ENABLE  
**4**

-COMMON CT-  
->1. DISABLE  
  2. ENABLE  
**5**

-Phase A/B/C-  
->1:A  
  2:B  
  3:C  
**6**

## SLAVE INVERTER

-PARALLEL NUM-  
INPUT:   2    
**1**

-Master/Slave-  
1. Master  
->2. Slave  
**2**

-Parallel Addr-  
INPUT:   2    
**3**

-COMMON BAT-  
1. DISABLE  
->2. ENABLE  
**4**

-COMMON CT-  
->1. DISABLE  
  2. ENABLE  
**5**

-Phase A/B/C-  
->1:A  
  2:B  
  3:C  
**6**

--Parallel--  
  7:CHARGE CURR  
  8:DISCHG CURR  
->9:PARALLEL EN

## MASTER INVERTER

-Charge Curr-  
INPUT:   0100    
UNIT:   A    
**7**

-Discharge Curr-  
INPUT:   0100    
UNIT:   A    
**8**

-Parallel EN-  
1. DISABLE  
->2. ENABLE  
**9**

## SLAVE INVERTER

-Charge Curr-  
INPUT:   0100    
UNIT:   A    
**7**

-Discharge Curr-  
INPUT:   0100    
UNIT:   A    
**8**

-Parallel EN-  
1. DISABLE  
->2. ENABLE  
**9**

--Parallel--  
->1:NUM  
  2:MASTER/SLAVE  
  3:ADDRESS

--Parallel--  
  4:COMMON BAT  
  5:COMMON CT  
->6:PHASE A/B/C

## MASTER INVERTER

```
BATTERY INFO   
TYPE: Lithium  
TEMP: 33°C  
SOC: 46%
```

```
BMS PRMETER   
CHAR VOL: 56.0V  
CHARGE: 50A  
DISCHA: 50A
```

```
BATTERY   
VOLT: 51.2V  
CURR: -49.6A  
STA: C D
```

THE BATTERY IS SUCCESSFUL  
COMMUNICATION CONNECTED WITH  
THE 2 UNITS PARALLELED  
CONNECTION SUCCESSFUL INVERTERS

```
Pack info  
 51.4V  -102.2A  
 46%  -5.25kW  
 S  0
```

## SLAVE INVERTER

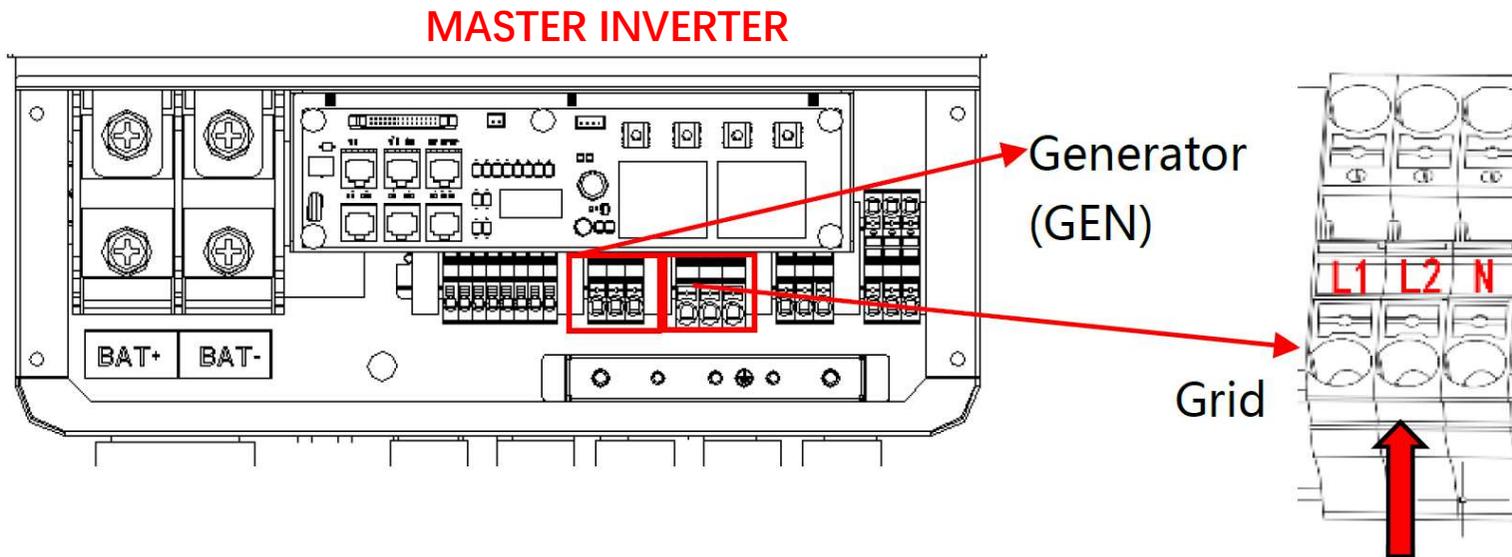
```
BATTERY INFO   
TYPE: Lithium  
TEMP: --°C  
SOC: --%
```

```
MASTER->SLAVE   
CHAR VOL: 56.0V  
CHARGE: 50A  
DISCHA: 50A
```

```
BATTERY   
VOLT: 50.8V  
CURR: -50.3A  
STA: C D
```

# How to connect and set the generator with inverter

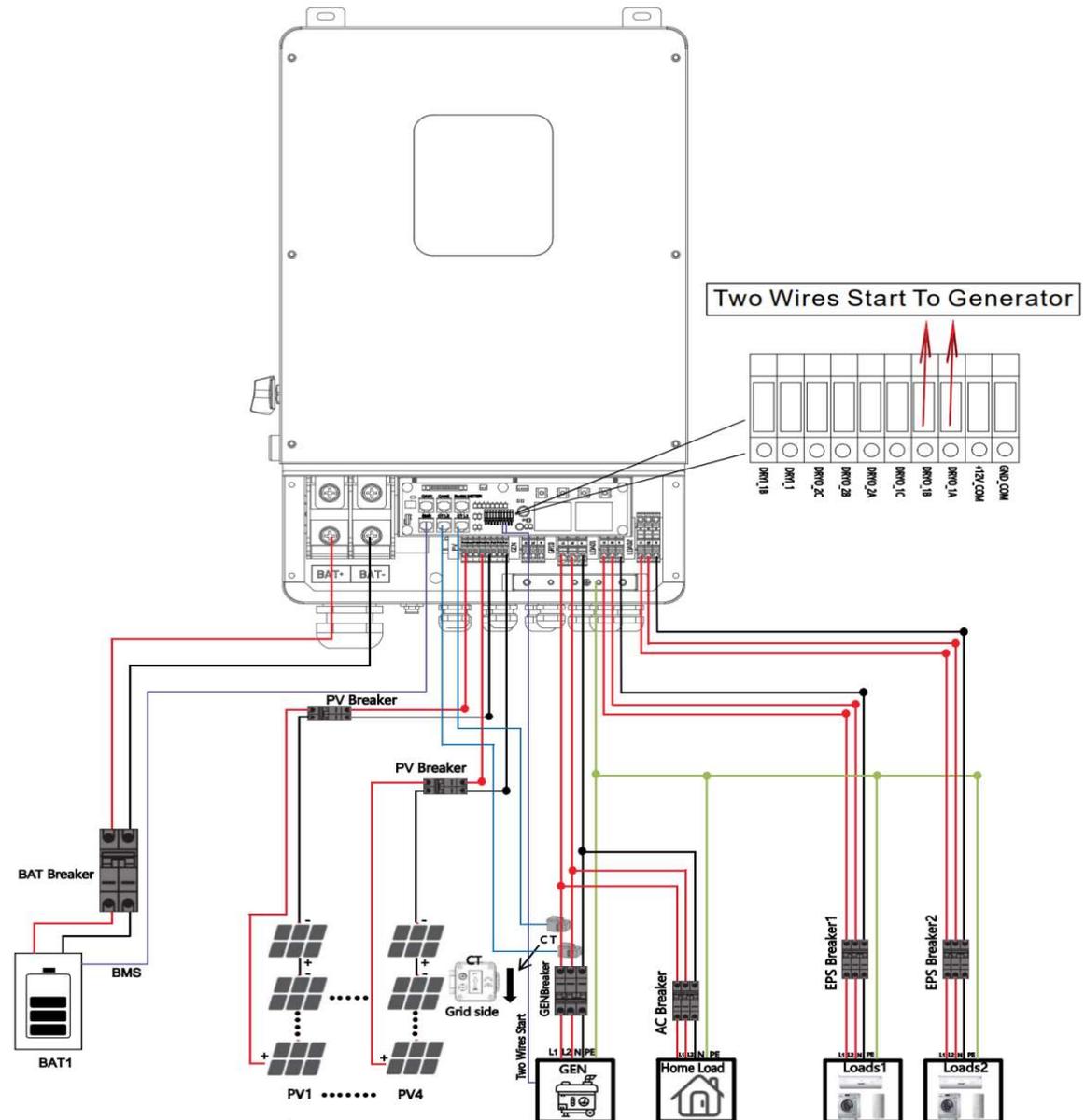
```
--SETUP--  
14:FCTRY RESET  
15:PARALLEL  
->16:GENERATOR
```



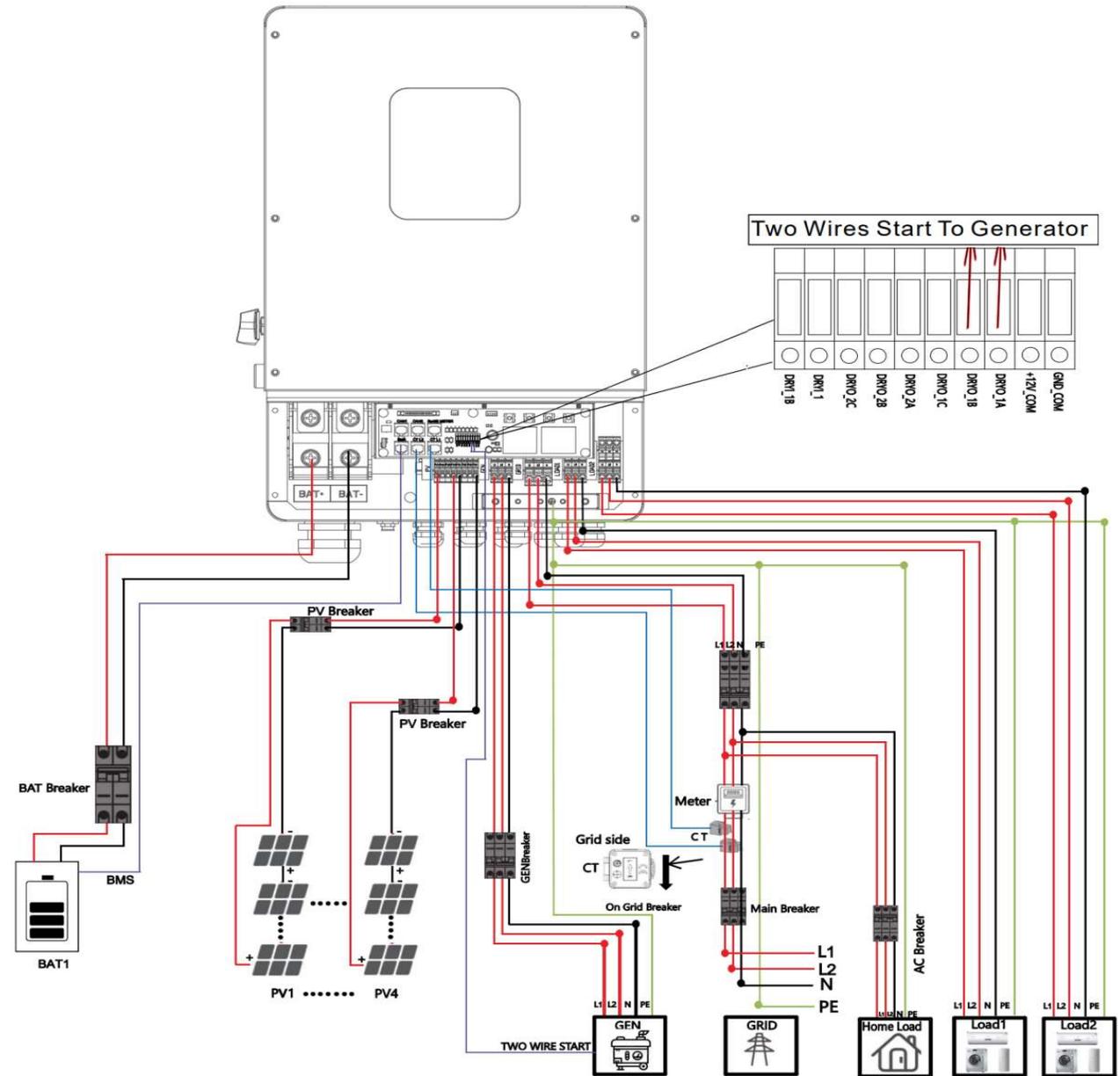
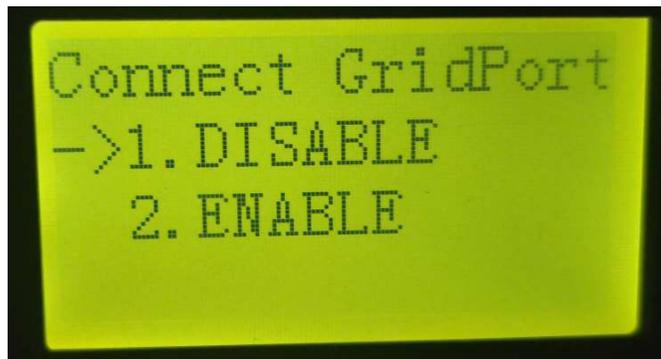
# Generator Use Operation Guide

## 11.1 Generator Use Diagram

1) The Generator is connected to the grid port of the inverter. The connecting cable shall be covered with CT. It is used in some off network situations. The system diagram is as follows.



- The Generator is normally connected to the Generator port. The connecting cable between the Generator and the inverter does not need to be covered with CT. The connection line of the power grid port should be connected with CT. The system diagram is as follows.



## 11.2 Generator Operation Notes

1) The two wire start signal **DRYO\_1A** and **DRYO\_1B** of the Generator is used to automatically control the start and stop of the Generator.

2) Make sure the inverter units software version support Generator function. **USER->INQUIRE->FIRMWARE**

• When the generator is used in inverter parallel situation, the two wires start signal is only needed to be connected to the master unit. The wiring and the setting of the Generator should be exactly same.

4) Please check the diagram above .

```
FIRMWARE
ARM: V1.XX.XX

DSP: V1.XX.XX
```



```
--FIRMWARE--
ARM: V1.03.06
DSP: V1.04.06
140100 130202
```

Interface	Description
<p>Generator .</p> <ol style="list-style-type: none"> <li>1. START SOC.</li> <li>2. STOP SOC</li> <li>3. ChgCurrToBAT</li> <li>4. MAX RUN TIME</li> <li>5. COOLDOWN</li> <li>6. CONTRL</li> <li>7. POWER</li> </ol>	<p>This interface shows Generator setting</p> <ol style="list-style-type: none"> <li>1. When the SOC of battery is lower than the setpoint, the Generator drycontact is enabled and Generator Manual operation is disabled, the connected Generator will be started.</li> <li>2. When the SOC of battery is higher than the setpoint, the Generator drycontact is enabled and Generator Manual operation is disabled, the connected Generator will be stopped.</li> <li>3. It indicates the maximum current that the inverter charges the battery from Generator.</li> <li>4. It indicates the longest time Generator can run in one day, when time is up, the Generator will be turned off. The value 240 means 24hours in which state the Generator will not be shut down all the time. The unit is 0.1 hour.</li> <li>5. It indicates the waiting time of the Generator to restart after it has reached the running time. The unit is 0.1 hour.</li> <li>6. Refer to 11.3.2 <b>CONTRL</b>.</li> <li>7. Rated power of Generator.</li> </ol>

负载分为感性负载、阻性负载。

感性负载：即和电源相比当负载电流滞后负载电压一个相位差时负载为感性（如负载为电动机、变压器）。

**柴油发电机功率= 负载功率\* 5倍**

阻性负载：即和电源相比当负载电流负载电压没有相位差时负载为阻性（如负载为白炽灯、电炉）。

**柴油发电机功率=负载功率\*1.5倍**

Load is divided into inductive load and resistive load. Inductive load: that is, when the load current lags the load voltage by a phase difference compared with the power supply, the load is inductive (such as the load for the motor, transformer).

**Diesel generator power = load power \* 5 times**

Resistive load: that is, compared with the power supply when the load current load voltage without phase difference when the load is resistive (such as load for incandescent lamp, electric furnace).

**Diesel generator power = load power \*1.5 times**

## 11.3.2 CONTRL↵

Interface↵	Description↵
<p data-bbox="300 459 629 504">GEN CONTROL</p> <ul style="list-style-type: none"><li data-bbox="300 539 622 584">1.<u>Generator En</u></li><li data-bbox="300 619 562 663">2.Charge <u>En</u></li><li data-bbox="300 699 584 743">3.DryContact</li><li data-bbox="300 778 562 823">4.Manual <u>En</u></li><li data-bbox="300 858 667 903">5.ManualCmd <u>En</u></li><li data-bbox="300 938 651 983">6.Connect Grid↵</li></ul> <p data-bbox="271 1050 304 1078">↵</p>	<p data-bbox="824 427 1715 472">This interface shows Generator CONTRL.↵</p> <ul style="list-style-type: none"><li data-bbox="824 507 1805 552">1. Enable control of the Generator function.↵</li><li data-bbox="824 587 1653 632">2. Generator Charge Enable control ↵</li><li data-bbox="824 667 1989 807">3. If the user wants the Generator to be automatically controlled to start and stop through the dry <u>contact,Enable it.</u>↵</li><li data-bbox="824 842 1917 935">4. If the user wants the Generator to be controlled <u>manually,Enable it.</u>↵</li><li data-bbox="824 970 1957 1015">5. The on/off command in manual control <u>mode</u> , ↵</li><li data-bbox="824 1050 2033 1094">6. Connect the diesel Generator to the grid input port.↵</li></ul> <p data-bbox="824 1114 857 1142">↵</p>

--GENERATOR--  
->1. START SOC  
2. STOP SOC  
3. ChgCurrToBAT



--STRART SOC--  
INPUT: 020 %

1

Chg Curr to BAT  
INPUT: 030  
UNIT: A

3

--STOP SOC--  
INPUT: 090 %

2

--GENERATOR--  
4. MAX RUN TIME  
5. COOLDOWN  
->6. CONTROL



COOL DOWN TIME  
INPUT: 02.0  
UNIT: hours

5

--MAX RUN TIME--  
INPUT: 10.0  
UNIT: hours

4

```
--GEN CONTROL--  
->1. Generator En  
2. Charge En  
3. DryContact
```

```
-GENERATOR EN-  
1. DISABLE  
->2. ENABLE
```

```
--GEN Chg EN--  
1. DISABLE  
->2. ENABLE
```

```
-DryContact EN-  
1. DISABLE  
->2. ENABLE
```

```
--GEN CONTROL--  
4. Manual En  
5. ManualCmd En  
->6. Connect Grid
```

```
-Manual EN-  
1. DISABLE  
->2. ENABLE
```

```
-Manual Cmd EN-  
1. DISABLE  
->2. ENABLE
```

```
Connect GridPort  
->1. DISABLE  
2. ENABLE
```

```
--GENERATOR--  
5. COOLDOWN  
6. CONTROL  
->7. POWER
```

```
--POWER--  
INPUT: 08.0  
UNIT: KW
```

## 6. CONTROL

# INQUIRE

1. INV MODULE
2. MODULE SN
3. FIRMWARE
4. RECORD

```
--INQUIRE--  
->1:INV MODULE  
2:MODULE SN  
3:FIRMWARE
```

```
--FIRMWARE--  
ARM:      V1.03.06  
DSP:      V1.04.06  
140100   130202
```

```
--MODEL--  
8K
```

```
--S / N--  
GUID: 05D9FF33  
4323623831375456  
SN:F0121C018309
```

```
-- REC(64--01)--  
27:BMS Comm.fail  
UP   :03-07 15:46  
DOWN:
```

# STATISTIC

1. TIME STAT
2. CONNE TIMES
3. PEAK POWER
4. E-TODAY
5. E-MONTH
6. E-YEAR
7. E-TOTAL

```
--STAT.--  
->1:TIME STAT.  
2:CONNE. TIMES  
3:PEAK POWER
```

```
-PEAK POWER-  
HISTORY: 0  
TODAY: 0  
UNIT: W
```

```
--E-Year--  
->1:Input  
2:Output
```

```
--TIME--  
RUN: 0  
GRID: 0  
UNIT: HOUR
```

```
--E-TODAY--  
->1:Input  
2:Output
```

```
--E-Total--  
->1:Input  
2:Output
```

```
--CONNE. TIMES--  
TIMES: 0
```

```
--E-Month--  
->1:Input  
2:Output
```

```
    --E-TODAY--  
->1:Input  
   2:Output
```

```
    --E-Month--  
->1:Input  
   2:Output
```

```
    --E-Year--  
->1:Input  
   2:Output
```

```
    --E-Total--  
->1:Input  
   2:Output
```

```
    --E-TODAY--  
PV:      0. OKWH  
GRID:    0. OKWH  
BatD:    0. OKWH
```

```
    --E-MONTH--  
PV:      0KWH  
GRID:    0KWH  
BatD:    0KWH
```

```
    --E-YEAR--  
PV:      0KWH  
GRID:    0KWH  
BatC:    0KWH
```

```
    --E-TOTAL--  
PV:      0KWH  
GRID:    0KWH  
BatC:    0KWH
```

```
    --E-TODAY--  
BatC:    0. OKWH  
GRID:    0. OKWH  
CNSUM:   0. OKWH
```

```
    --E-MONTH--  
BatC:    0KWH  
GRID:    0KWH  
CNSUM:   0KWH
```

```
    --E-YEAR--  
BatD:    0KWH  
GRID:    0KWH  
CNSUM:   0KWH
```

```
    --E-TOTAL--  
BatD:    0KWH  
GRID:    0KWH  
CNSM:    0KWH
```

# GSL ENERGY

— SINCE 2006 —



GSL 7.2kwh 48v 150ah Power Storage Wall Lifepo4 Lithium Battery For Solar Off Grid System



GSL 10kwh 48v 200ah Power Storage Wall Lifepo4 Lithium Battery For Solar Off Grid System



GSL 7.2kwh 48v 150ah Power Storage Wall Lifepo4 Lithium Battery For Solar Off Grid System



GSL 5kwh 48v 100ah Power Storage Wall Lifepo4 Lithium Battery For Solar Off Grid System



GSL 10kwh 48v 200ah Power Storage Wall Lifepo4 Lithium Battery For Solar System



20KVA 3PHASE 50KWH Lifepo4 Battery HYBRID Solar Energy Storage System



# GSL ENERGY

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