

USER MANUAL

MAX III 11KW PV Inverter

Version: 1.0

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1. Introduction

1-1. System Overview

This solar inverter can provide power to connected loads by utilizing PV power, utility power and battery power.

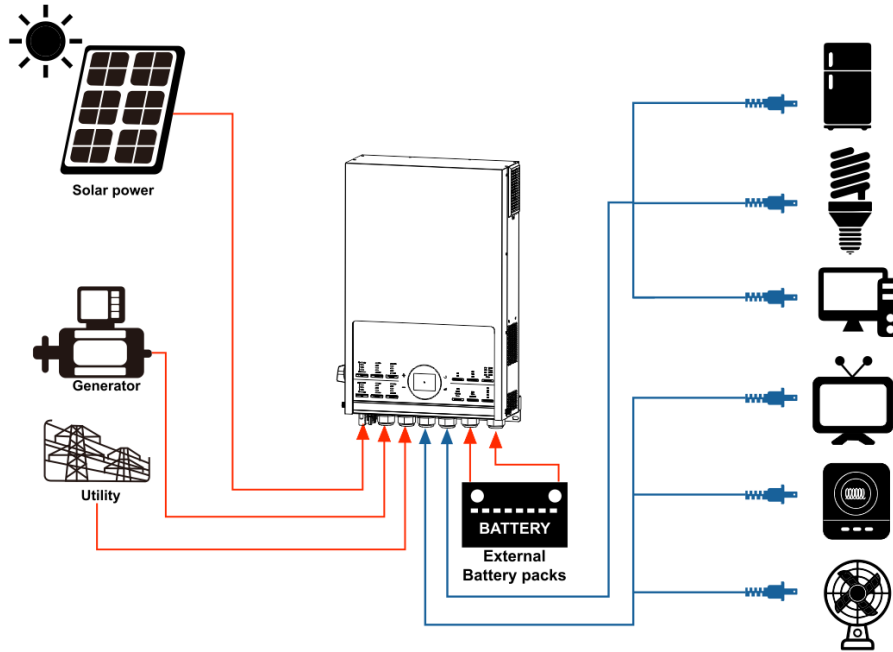
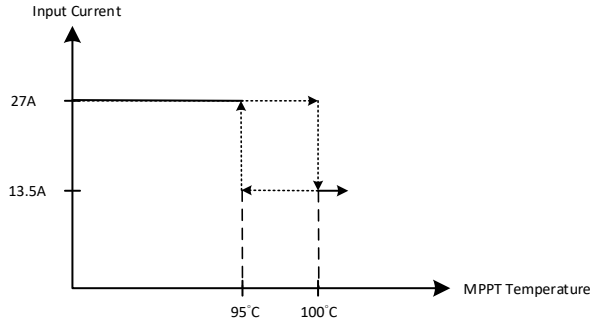
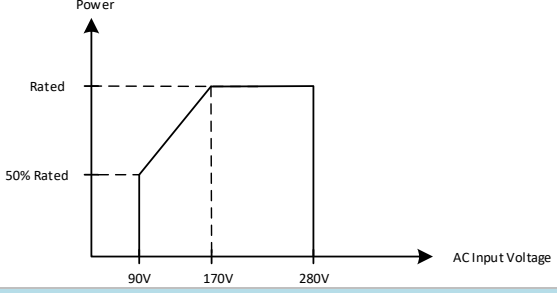


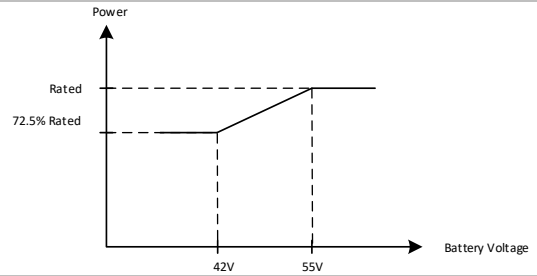
Figure 1 Basic PV System Overview

Depending on different power situations, this solar inverter is designed to generate continuous power from PV solar modules (solar panels), battery, and the utility. When MPP input voltage of PV modules is within acceptable range (see specification for the details), this inverter is able to generate power to feed the grid (utility) and charge battery. This inverter is only compatible with PV module types of single crystalline and poly crystalline. Do not connect any PV array types other than these two types of PV modules to the inverter. Do not connect the positive or negative terminal of the solar panel to the ground.

1-2. Production Specifications

Model	11KW
RATED POWER	11000 W
PV INPUT (DC)	
Maximum DC Power	12000 W
Nominal DC Voltage	360 VDC
Maximum DC Voltage	500 VDC
MPP Voltage Range	90 VDC ~ 450 VDC
Maximum Input Current	2 x 27 A (MAX 40 A)
Isc PV (absolute maximum)	2 x 27 A (MAX 40 A)
Power Limitation	
AC INPUT	
AC Start-up Voltage	180VAC±7V(UPS); 100VAC±7V (Appliances)
Acceptable Input Voltage Range	90 - 280 VAC
Nominal Frequency	50 Hz / 60 Hz
Low Loss / Loss Return Frequency	40±1Hz / 42±1Hz
High Loss / Loss Return Frequency	65±1Hz / 63±1Hz
AC Input Power	11000VA/11000W
Maximum AC Input Current	60 A
Short Circuit Protection	Circuit Breaker
Transfer Time	10ms typical @50Hz (UPS) 20ms typical @50Hz (Appliances)
Power Limitation	
BATTERY MODE OUTPUT (AC)	
Nominal Output Voltage	230VAC±5%
Output Frequency	50 Hz / 60 Hz (auto sensing)
Output Waveform	Pure sine wave
Output Power	11000VA/11000W
Efficiency (DC to AC)	93%
Overload Protection	10s @105%~120% load; 5s @≥120% load; 100ms @≥180% load
THDV	<5% for linear load, <10% for non-linear load @ nominal voltage
No Load Power Consumption	70W

Power Limitation



BATTERY & CHARGER (Lead-acid/Li-ion)

DC Voltage Range **40 – 63 VDC**

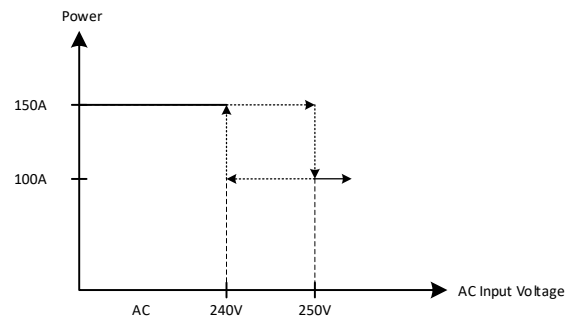
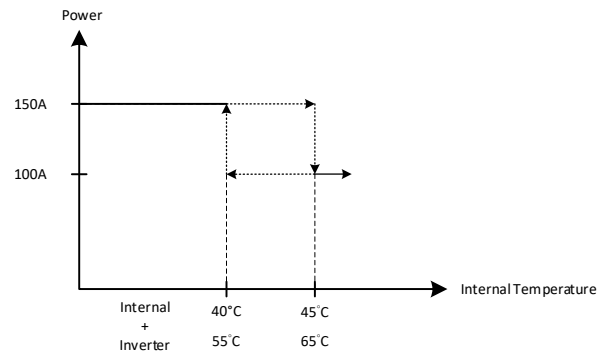
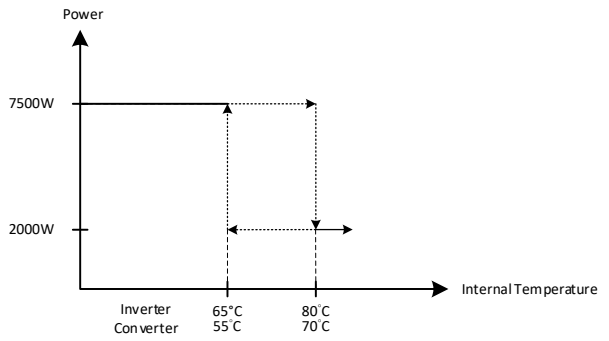
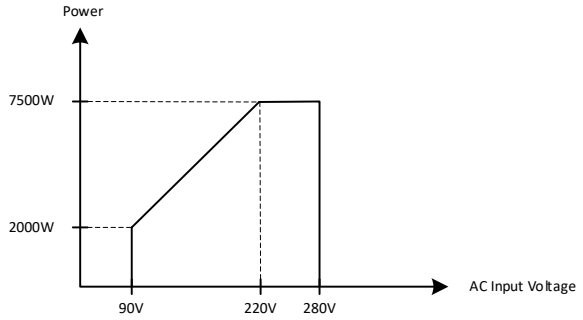
Nominal DC Voltage **48 VDC**

Maximum Battery Discharging Current **228 A**

Maximum Charging Current **150 A**

Overcharge Protection **63 VDC**

Charger power de-rating








GENERAL	
PHYSICAL	
Dimension, D X W X H (mm)	687 x 432.4 x 176.3
Net Weight (kgs)	30Kg
INTERACE	
Communication Port	RS-232/USB/RS485/CAN/Wi-Fi/Dry-Contact
ENVIRONMENT	
Ingress Protection Rating	IP21
Humidity	0 ~ 90% RH (No condensing)
Operating Temperature	-10 to 50°C
Altitude	0 ~ 1500m
Audible Noise	<60dB
Self-usage management	Built-in Current Transformer sensor
Dust-proof function	Anti-dust kit
OTA supported	Yes
PARALLEL	
Max parallel numbers	6
Power Unbalance Ratio	<5% @ 100% Load
Parallel communication	CAN
Parallel Kit	YES

2. Important Safety Warnings

Before using the inverter, please read all instructions and cautionary markings on the unit and this manual. Store the manual where it can be accessed easily. This manual is for qualified personnel. The tasks described in this manual can only be performed by qualified personnel.





Symbols used in Equipment Markings









	Refer to the operating instructions
	Caution! Risk of danger
	Caution! Risk of electric shock
	Caution! Risk of electric shock. Energy storage timed discharge for 5 minutes.
	Caution! Hot surface

Conventions used in this Document

WARNING!	Warnings identify conditions or practices that could result in personal injury;
CAUTION!	Cautions identify conditions or practices that could result in damaged to the unit or other equipment connected.

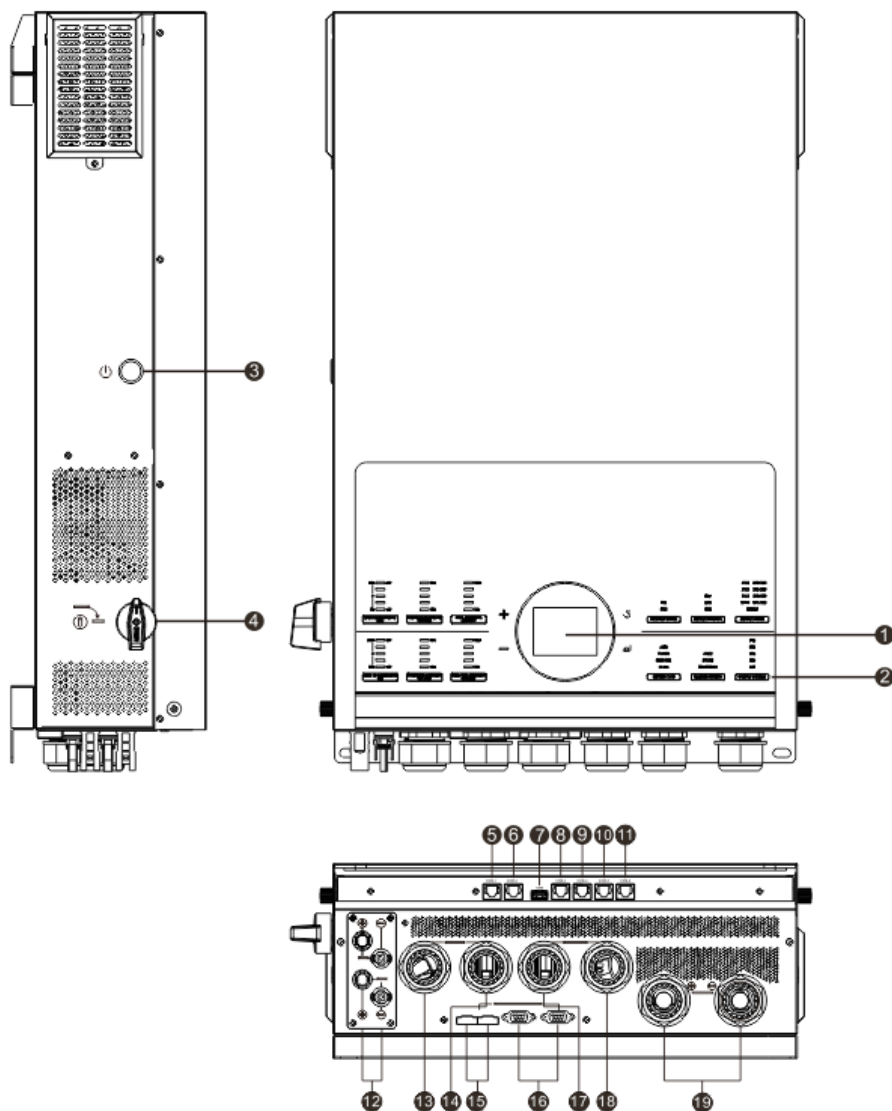
General Precautions

	WARNING! Before installing and using this inverter, read all instructions and cautionary markings on the inverter and all appropriate sections of this guide.
	WARNING! Normally grounded conductors may be ungrounded and energized when a ground fault is indicated.
	WARNING! This inverter is heavy. It should be lifted by at least two people.
	CAUTION! Authorized service personnel should reduce the risk of electrical shock by disconnecting AC, DC and battery power from the inverter before attempting any maintenance, cleaning or working on any circuits connected to the inverter. Turning off controls will not reduce this risk. Internal capacitors can remain charged for 5 minutes after disconnecting all sources of power.

	<p>CAUTION! Do not disassemble this inverter yourself. It contains no user-serviceable parts. Attempt to service this inverter yourself may cause a risk of electrical shock or fire and will void the warranty from the manufacturer.</p>
	<p>CAUTION! To avoid a risk of fire and electric shock, make sure that existing wiring is in good condition and that the wire is not undersized. Do not operate the Inverter with damaged or substandard wiring.</p>
	<p>CAUTION! Under high temperature environment, the cover of this inverter could be hot enough to cause skin burns if accidentally touched. Ensure that this inverter is away from normal traffic areas.</p>
	<p>CAUTION! Use only recommended accessories from installer. Otherwise, not-qualified tools may cause a risk of fire, electric shock, or injury to persons.</p>
	<p>CAUTION! To reduce risk of fire hazard, do not cover or obstruct the cooling fan.</p>
	<p>CAUTION! Do not operate the Inverter if it has received a sharp blow, been dropped, or otherwise damaged in any way. If the Inverter is damaged, please call for an RMA (Return Material Authorization).</p>
	<p>CAUTION! AC breaker, DC switch and Battery circuit breaker are used as disconnect devices and these disconnect devices shall be easily accessible.</p>
	<p>WARNING! Risk of Voltage Backfeed. Before working on this circuit, isolate inverter/Uninterruptible Power System (UPS); then check for Hazardous Voltage between all terminals including the protective earth.</p>

3. Unpacking & Overview

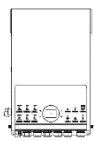
3-1. Product Overview



- ① LCD display panel
- ② Operation buttons
- ③ Power on/off switch
- ④ PV switch
- ⑤ COM1: Dry contact port
- ⑥ COM2: Reserved rapid shutdown control port
- ⑦ Type A USB disk port
- ⑧ COM3: External BTS port
- ⑨ COM4: BMS port
- ⑩ COM5: RS232 port
- ⑪ COM6: Reserved GFCI, AFCI detection port
- ⑫ PV input 1 & 2
- ⑬ Generator input
- ⑭ Grid input
- ⑮ Parallel current sharing port
- ⑯ Parallel communication port
- ⑰ AC output 1
- ⑱ AC output 2
- ⑲ Battery input

3-2. Packing List

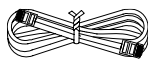
Before installation, please inspect the unit. Be sure that nothing inside the package is damaged. You should have received the following items inside of package:



Inverter unit



RS-232 cable



Parallel cable



Share current wires



CT



PV connectors
x 2 sets



Manual



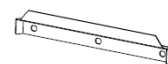
Software CD



Fixing screws



Cable gland
x 6 pcs



Mounting bracket

4. Installation

4-1. Precautions

This solar inverter is designed for indoor or outdoor use (IP65), please make sure the installation site meets the following conditions:

- Not in direct sunlight
- Not exposed during rain or snow
- 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 2000 meters above sea level.
- Not in environment of precipitation or humidity (>95%).

4-2. Selecting the Mounting Location

- Please select a vertical wall with load-bearing capacity for installation and install on a concrete or other non-flammable surface.
- The ambient temperature should be between -25~60°C to ensure optimal operation.
- Be sure to keep other objects and surfaces as shown in the diagram to guarantee sufficient heat dissipation and enough space for removing wires.
- For proper air ventilation to dissipate heat, allow a clearance of approx. 50cm to the sides, approx. 50cm above and below the unit, and 100cm toward the front.



WARNING! FIRE HAZARD. ONLY SUITABLE FOR MOUNTING ON CONCRETE OR OTHER NON-COMBUSTIBLE SURFACE.

4-3. Mounting Unit

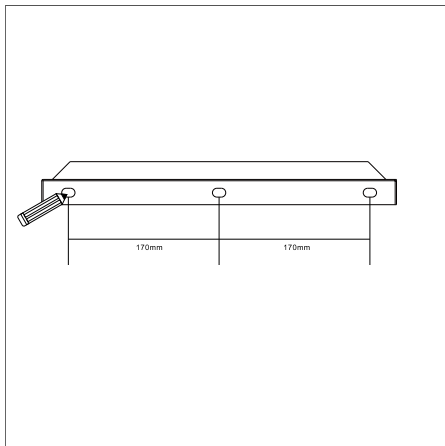


WARNING! Remember that this inverter is heavy! Please be careful when lifting it out from the package.

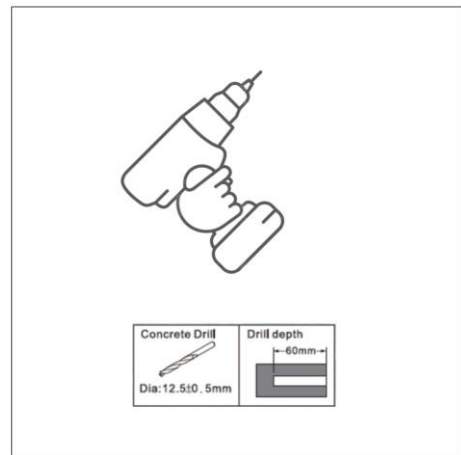
Installation to the wall should be implemented with the proper screws. After that, the device should be bolted on securely.

The inverter only can be used in a **CLOSED ELECTRICAL OPERATING AREA**. Only service people can enter into this area.

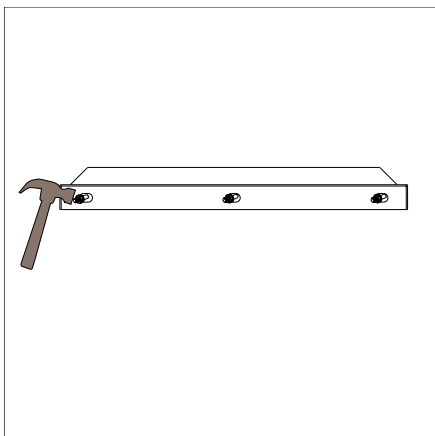
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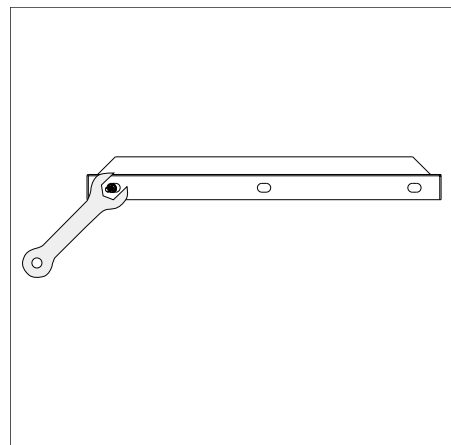
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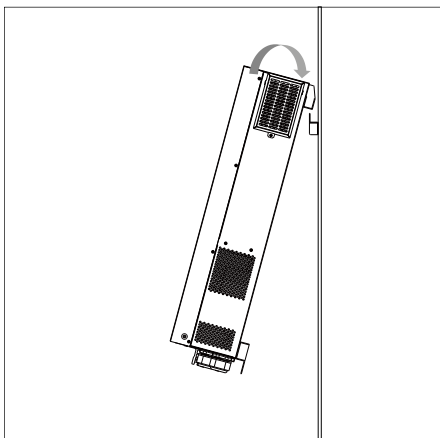
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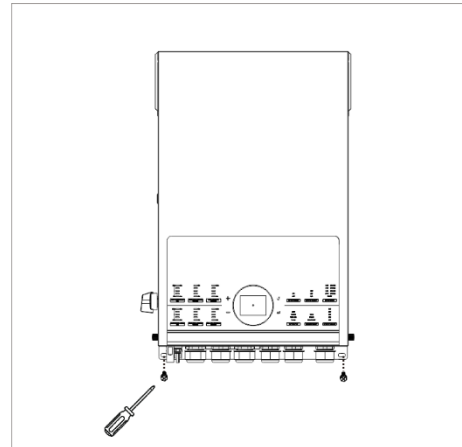
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5.

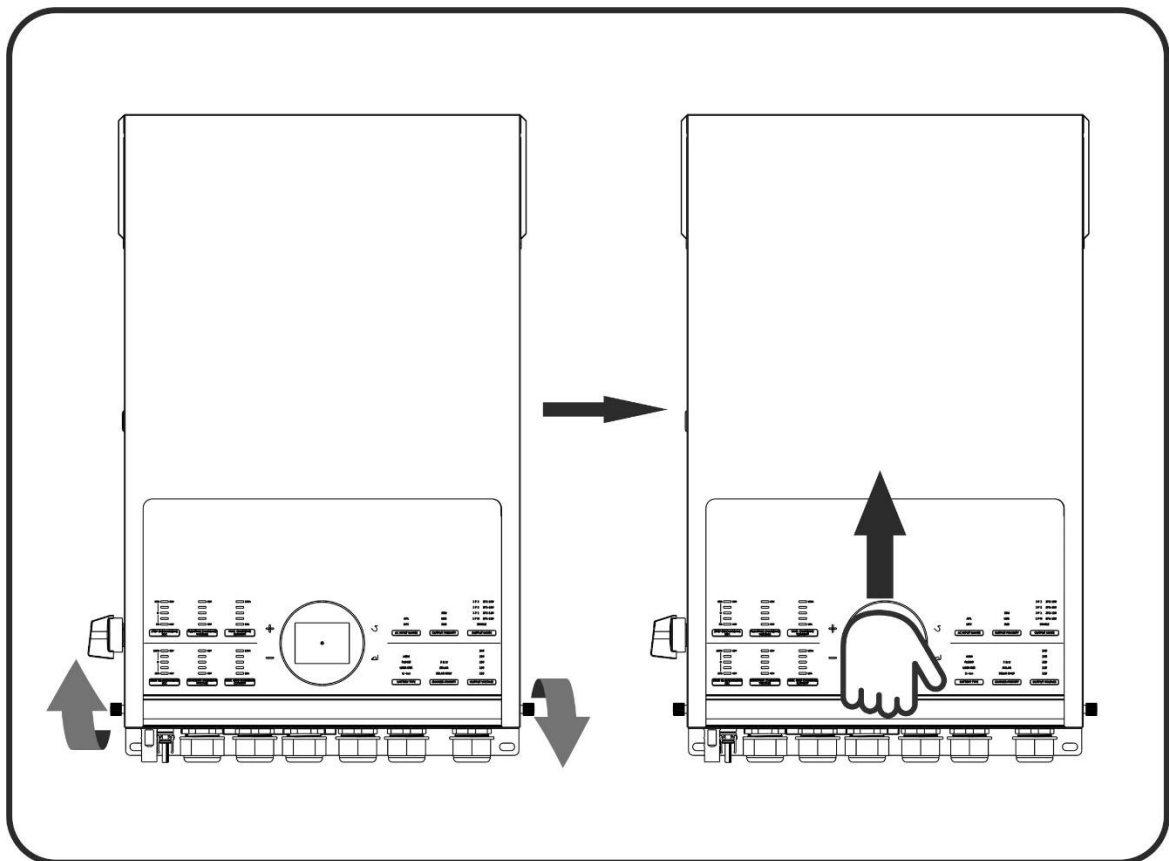
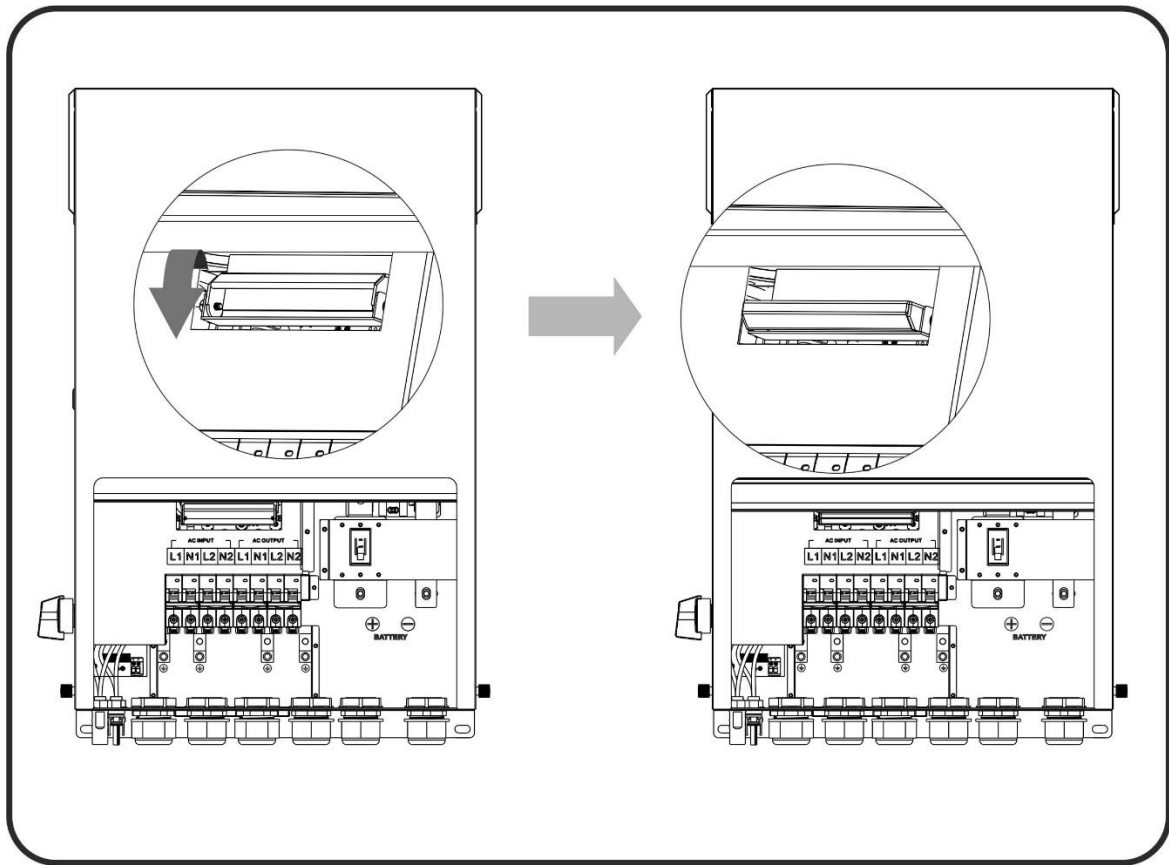


6.

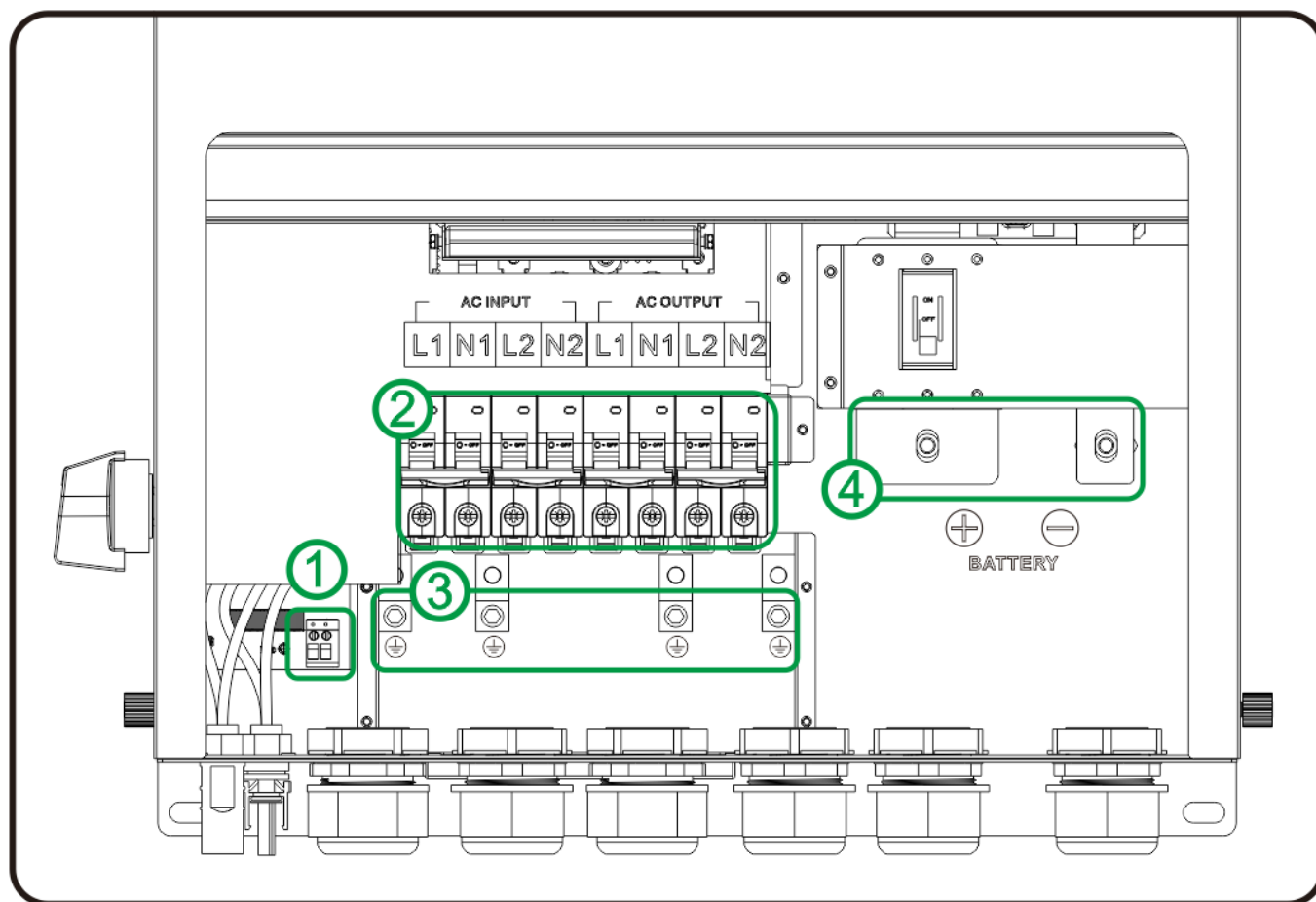


4-4. Preparation

Before connecting all wires, be sure to open sliding cover by releasing the two captive screws on two sides.



Overview of the cable box



- ① External CT Connection
- ② AC Terminal and Breaker
- ③ Ground Studs
- ④ Battery Terminal

5. AC Input 1 (Generator) Connection

5-1. Preparation

NOTE 1: The overvoltage category of the AC input is III. It should be connected to the power distribution.

NOTE 2: Before connecting to grid, please install a separate AC breaker between inverter and grid. This will ensure the inverter can be securely disconnected during maintenance and fully protected from over current. The **recommended AC breaker is 60A/300V.**




WARNING! It's very important for system safety and efficient operation to use appropriate cable for grid (utility) connection. To reduce the risk of injury, please use the recommended cable size.

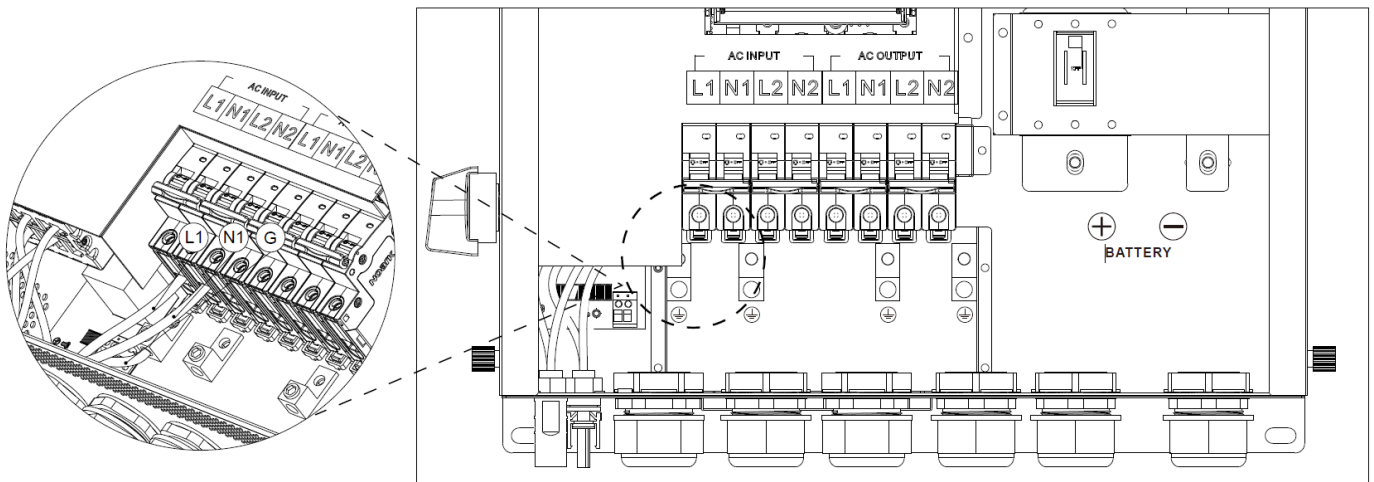
Recommended Cable for AC Wire

Nominal Grid Voltage	230VAC
Conductor cross-section (mm ²)	10-16
AWG no.	6-8

5-2. Connecting to the AC Input 1

Please follow below steps to implement AC input 1 (recommend connect to Generator):

1. Before making AC input connection, be sure to first open the DC protector or disconnecter.
2. Remove 7mm of the insulation sleeve. 
3. Insert AC wires according to the polarities indicated on the terminal block and tighten the terminal screws. Be sure to connect the PE protective conductor (⊕) first.



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

6. AC Input 2 (Utility) Connection

6-1. Preparation

NOTE 1: The overvoltage category of the AC input is III. It should be connected to the power distribution.

NOTE 2: Before connecting to grid, please install a separate AC breaker between inverter and grid. This will ensure the inverter can be securely disconnected during maintenance and fully protected from over current. The **recommended AC breaker is 60A/300V**.




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

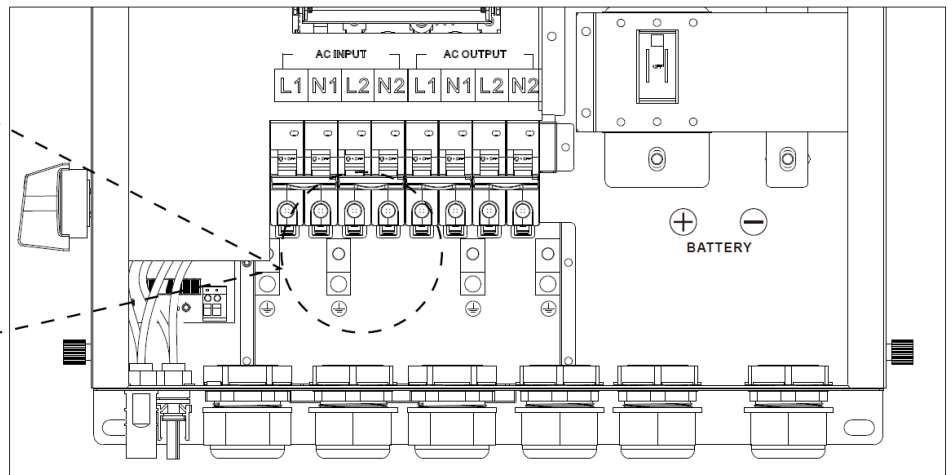
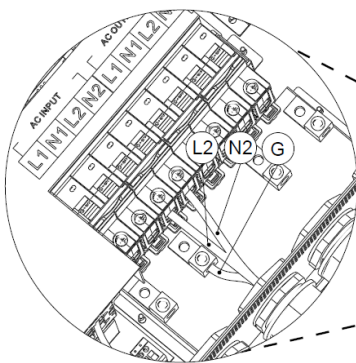
Recommended cable size

Nominal Grid Voltage	230VAC
Conductor cross-section (mm ²)	10-16
AWG no.	6-8

6-2. Connecting to the AC Input 2

Please follow the steps below to implement the AC input 2 (recommend connect to Utility):

1. Before making AC input 2 connection, be sure to first open the DC protector or disconnecter.
2. Remove 7mm of the insulation sleeve. 
3. Insert the AC wires according to the polarities indicated on terminal block and tighten the terminal screws. Be sure to connect the PE protective conductor (⊕) first.



WARNING! Be sure that the generator power source is disconnected before attempting to hardwire it to the unit.

7. PV Module (DC) Connection

7-1. Preparation

NOTE1: Before connecting to the PV modules, please **separately** install a DC circuit breaker between the inverter and the PV modules. Please use a **600VDC/30A circuit breaker**.

NOTE2: The overvoltage category of the PV input is II.



WARNING! Because this inverter is non-isolated, only two types of PV modules are acceptable: single crystalline and poly crystalline with class A-rated. To avoid any malfunction, do not connect any PV modules with the possibility of leakage current to the inverter. For example, grounded PV modules will cause leakage current to the inverter.



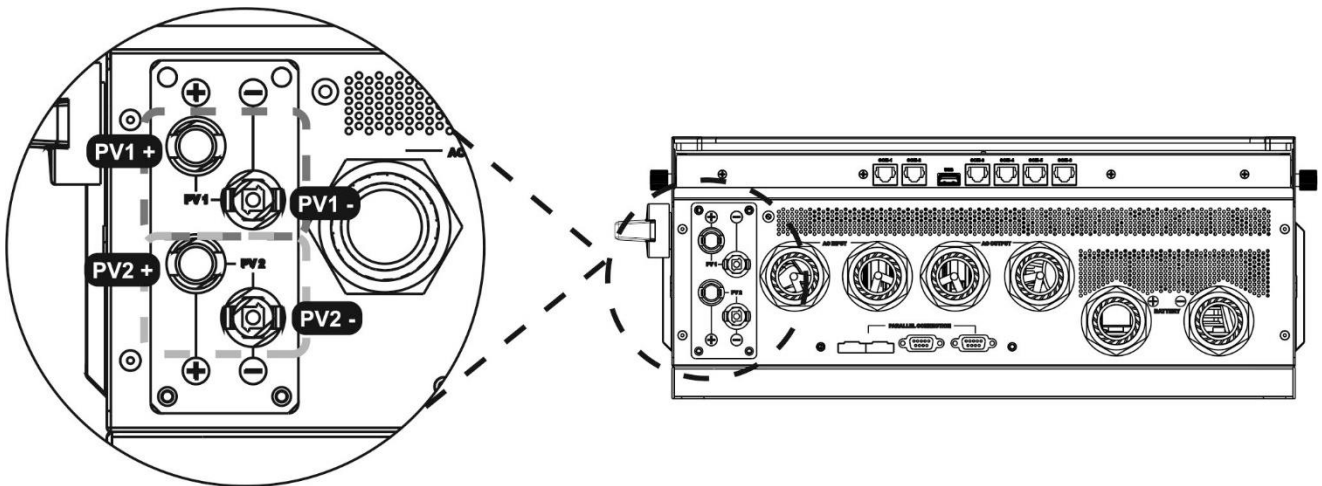
CAUTION: It's requested to have PV junction box with surge protection. Otherwise, it will cause inverter damage when lightning occurs on the PV modules.



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

Recommended cable size

Conductor cross-section (mm ²)	AWG no.
4~6	10~12



Please follow below steps to implement PV module connection:

1. Open circuit Voltage (Voc) of PV modules not to exceed maximum PV array open circuit voltage of the inverter.
2. Open circuit Voltage (Voc) of PV modules should be higher than the start-up voltage.
3. Disconnect the circuit breaker and switch off the PV switch located on the side of the inverter.
4. Check correct polarity of connection cable from PV modules and PV input connectors.



CAUTION: Exceeding the maximum input voltage can destroy the unit!! Check the system before wire connection.

7-2. Recommended Panel Configuration

Specifications	Solar panel			
Nominal Max. Power (Pmax) (W)	615	620	630	640
Opt. Operating Voltage (Vmp) (V)	35.5	35.7	35.9	36.1
Opt. Operating Current (Imp) (A)	17.33	17.37	17.41	17.46
Open Circuit Voltage (Voc) (V)	42.7	42.9	43.1	43.3
Short Circuit Current (Isc) (A)	18.26	18.31	18.36	18.41
For 12KW input recommendation				
Numbers in series of MPPT1	10	10	10	109
Numbers of strings in MPPT1	1	1	1	1
Maximum input voltage of MPPT1 (V)	427	429	431	433
Input power of MPPT1 (W)	6150	6200	6300	6400
Numbers in series of MPPT2	10	10	10	109
Numbers of strings in MPPT2	1	1	1	1
Maximum input voltage of MPPT2 (V)	427	429	431	433
Input power of MPPT2 (W)	6150	6200	6300	6400
Total input power (W)	12300	12400	12600	12800
Minimum input recommendation				
Numbers in series of MPPT1	3	3	3	3
Numbers of strings in MPPT1	1	1	1	1
Maximum input voltage of MPPT1 (V)	106.5	107.1	107.7	108.3
Input power of MPPT1 (W)	1845	1860	1890	1920
Numbers in series of MPPT2	3	3	3	3
Numbers of strings in MPPT2	1	1	1	1
Maximum input voltage of MPPT2 (V)	106.5	107.1	107.7	108.3
Input power of MPPT2 (W)	1845	1860	1890	1920
Total input power (W)	3690	3720	3780	3840

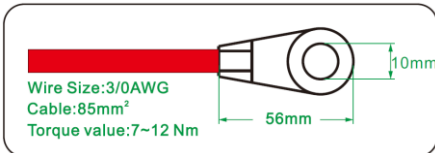
8. Battery Connection

NOTE1: Before connecting to batteries, please install **separately** a DC circuit breaker between inverter and batteries. Please use **80VDC/300A circuit breaker**.

NOTE2: Please only use sealed lead acid battery, vented and Gel battery. Please check the maximum charging voltage and current when first using this inverter. If using a Lithium iron or Nicd battery, please consult with installer for the details.

NOTE3: The overvoltage category of the battery input is II.

Recommended battery cable and terminal size for each inverter



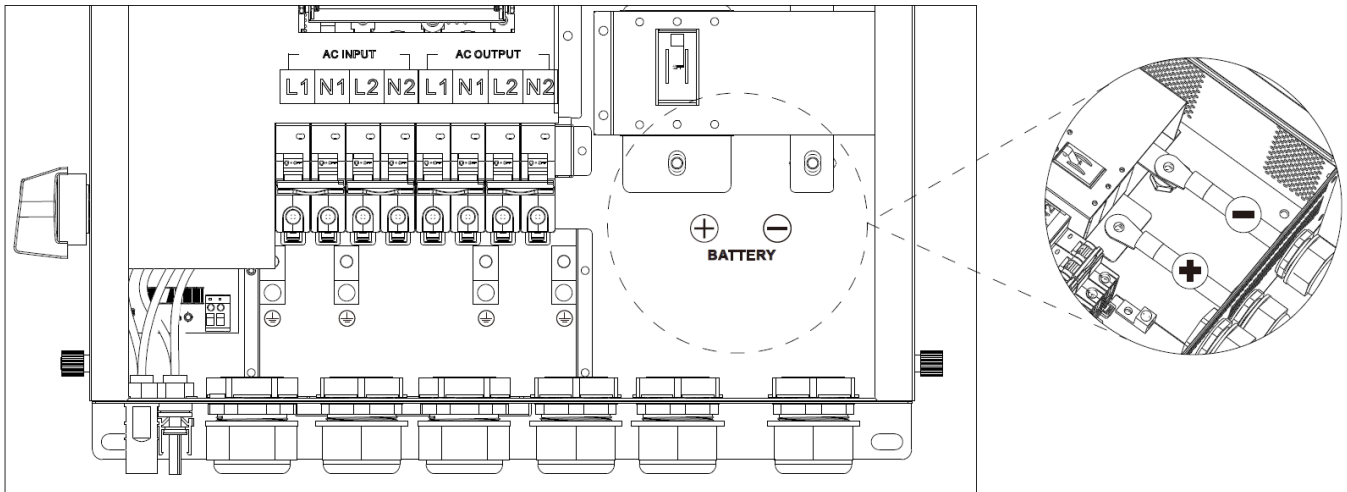
Please follow below steps to implement battery connection:

1. Check the nominal voltage 48VDC of batteries.



WARNING! Be sure the length of all battery cables are the same. Otherwise, there will be a voltage difference between inverter and battery and cause parallel inverters to not work.

2. Insert battery wires according to polarities indicated on the terminal block and tighten the terminal screws.



WARNING! Wrong connections will damage the internal fuse.

9. Load (AC Output) Connection

9-1. Preparation

NOTE1: To prevent further supply to the load via the inverter during any mode of operation, an additional disconnection device should be placed on in the building wiring installation.




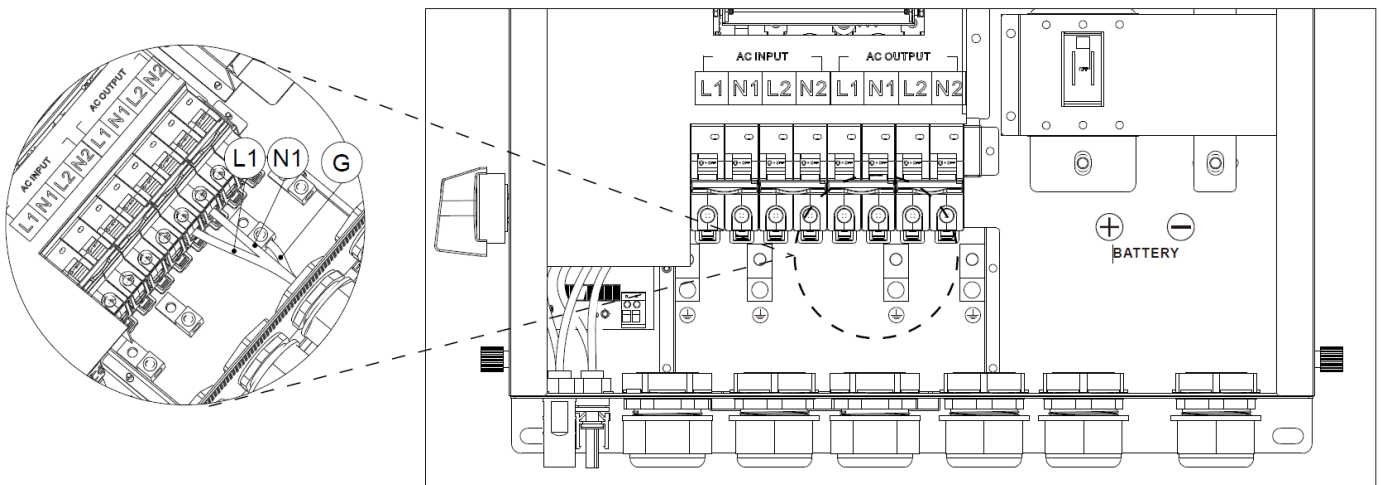
WARNING! It's very important for system safety and efficient operation to use the appropriate cable for AC connection. To reduce the risk of injury, please use the recommended cable size.

Recommended Cable Size

Nominal Grid Voltage	230 VAC
Conductor cross-section (mm ²)	10-16
AWG no.	8-6

9-2. Connecting to the AC output 1

1. Before making output 1 connection, be sure to first open the DC protector or disconnecter.
2. Remove 7mm of the insulation sleeve. 
3. Insert AC wires according to the polarities indicated on terminal block and tighten the terminal screws. Be sure to connect the PE protective conductor (⊕) first.



CAUTION: Do NOT connect the utility to "AC Output Connector (Load connector)". Be sure to connect the L terminal of load to the L terminal of "AC Output Connector (Load connector)" and the N terminal of load to the N terminal of "AC Output Connector (Load connector)". The G terminal of "AC Output Connector" is connected to grounding of the load.

9-3. Connecting to the AC Output 2

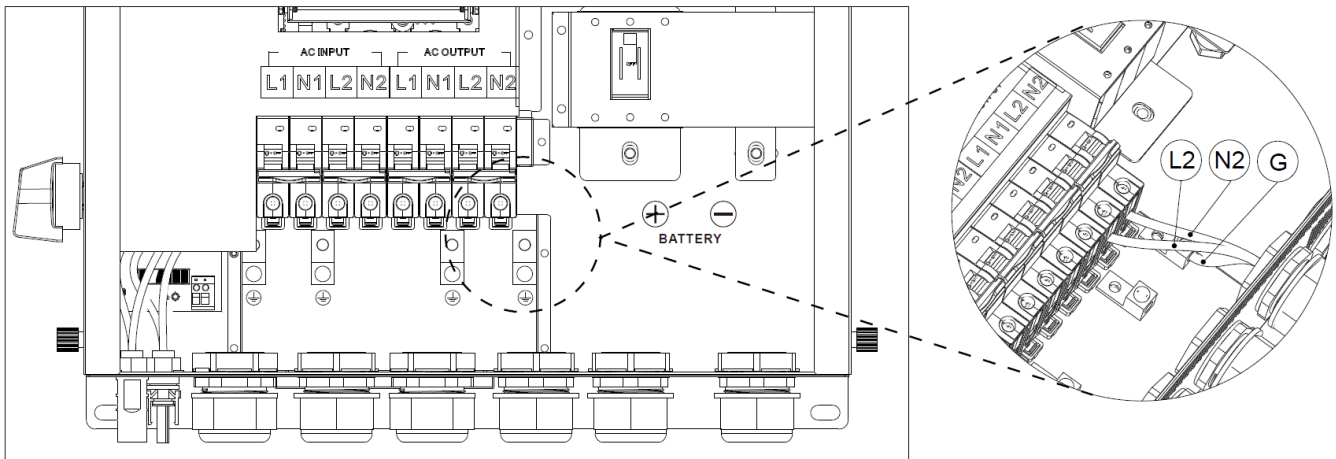
Please follow the steps below to implement the AC output 2 connection:

4. Before making output 2 connection, be sure to first open the DC protector or disconnecter.

5. Remove 7mm of the insulation sleeve.



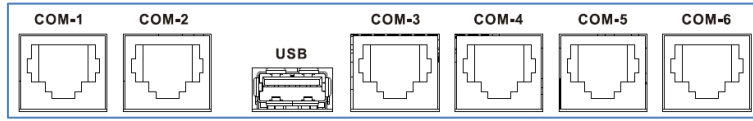
6. Insert the AC wires according to the polarities indicated on terminal block and tighten the terminal screws. Be sure to connect the PE protective conductor (⊕) first.



CAUTION: Appliances such as air conditioner require at least 2~3 minutes to restart because it's needs enough time to balance the refrigerant gas inside its 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 with the manufacturer of air conditioner to see if it's equipped with time-delay function before installation. Otherwise, this inverter/charger will trigger an overload fault and cut off the output to protect your appliance, but sometimes it may still cause internal damage to the air conditioner.

10. Communication

The inverter is equipped with several communication ports to communicate with a PC with the corresponding software. Follow the below procedure to connect the communication wiring and install the software.



Please install monitoring software in your computer. Detailed information is listed in the next chapter. After software is installed, you may initial the monitoring software and extract data through communication port.

10-1. Wi-Fi Connection

This unit is equipped with a Wi-Fi transmitter. The Wi-Fi transmitter can enable wireless communication between the off-grid inverters and the monitoring platform. Users can access and control the monitored inverter with downloaded APP. You may find “i.Solar” app from the Apple® Store and Google® Play Store. All data loggers and parameters are saved in iCloud. For quick installation and operation, please refer to The Wi-Fi Operation Guide for details.

10-2. Pin Assignment of COM-1 Port (Dry Contact)

PIN #	Definition	PIN #	Definition
PIN 1	NC	PIN 5	COM
PIN 2	NC	PIN 6	NO
PIN 3	NC	PIN 7	NO
PIN 4	COM	PIN 8	NO

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

Unit Status	Condition			NC & COM	NO & COM
Power Off	Unit is off and no output is powered.			Close	Open
Power On	Output is powered from Battery power or Solar energy.	Output source priority set as USB (utility first) or SUB (solar first)	Battery voltage < Low DC warning voltage	Open	Close
			Battery voltage > Setting value in restart charge or battery charging reaches floating stage	Close	Open
		Output source priority is set as SBU (SBU priority)	Battery voltage < Setting value stop discharge	Open	Close
			Battery voltage > Setting value in restart charge or battery charging reaches floating stage	Close	Open

10-3. Pin Assignment of COM-2 Port (12V for supplying external RSD)

PIN #	Definition	PIN #	Definition
PIN 1	+12V	PIN 5	GND
PIN 2	+12V	PIN 6	GND
PIN 3	+12V	PIN 7	GND
PIN 4	+12V	PIN 8	GND

This port is reserved to integrate with external RSD (Rapid Shutdown Device).

10-4. Pin Assignment of USB Port

PIN #	Definition
PIN 1	VCC
PIN 2	D-
PIN 3	D+
PIN 4	GND

This port is used to export internal log or communicate with PC.

10-5. Pin Assignment of COM-3 Port (Battery temperature sensor)

PIN #	Definition	PIN #	Definition
PIN 1	X	PIN 5	Ext. Bat.Temp
PIN 2	X	PIN 6	Ext.Bat.Temp.SCL
PIN 3	X	PIN 7	Ext.Bat.Temp.SDA
PIN 4	+3.3V	PIN 8	GND

This port is reserved to accept external BTS signal for compensating charging parameters.

10-6. Pin Assignment of COM-4 Port (BMS communication)

PIN #	Definition	PIN #	Definition
PIN 1	X	PIN 5	RS485P
PIN 2	X	PIN 6	CANH
PIN 3	RS485N	PIN 7	CANL
PIN 4	X	PIN 8	GND

This port is used to communicate with the BMS of Lithium batteries.

10-7. Pin Assignment of COM-5 Port (RS232 communication)

PIN #	Definition	PIN #	Definition
PIN 1	RS232TX	PIN 5	X
PIN 2	RS232RX	PIN 6	X
PIN 3	X	PIN 7	X
PIN 4	X	PIN 8	GND

This port is used to communicate with PC.

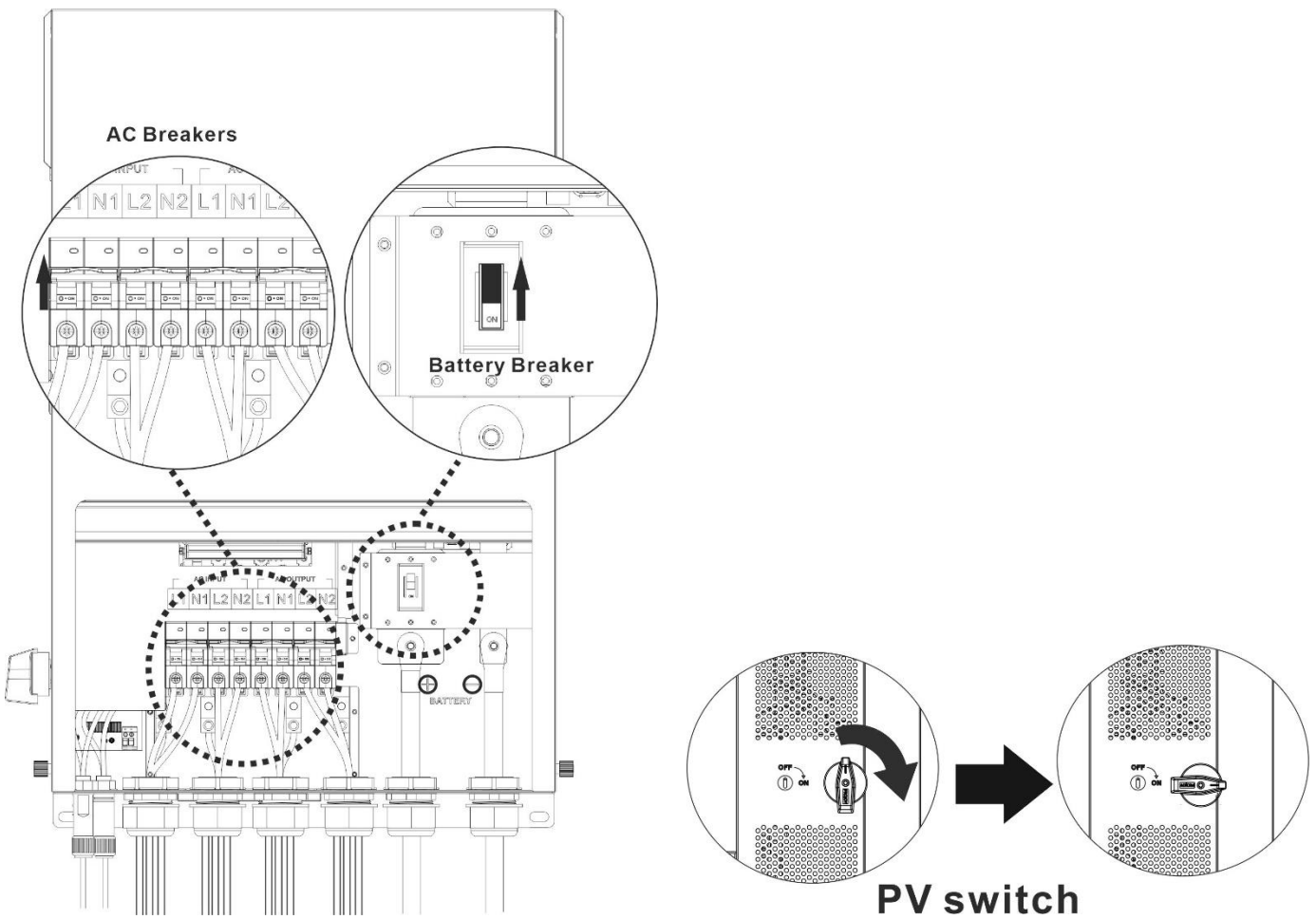
10-8. Pin Assignment of COM-6 Port (AFCI, GFCI, E-STOP Detections)

PIN #	Definition	PIN #	Definition
PIN 1	+12V	PIN 5	AFCI_AFD.ALM
PIN 2	E-STOP Input	PIN 6	X
PIN 3	AFCI_FRB	PIN 7	X
PIN 4	+5V	PIN 8	GND

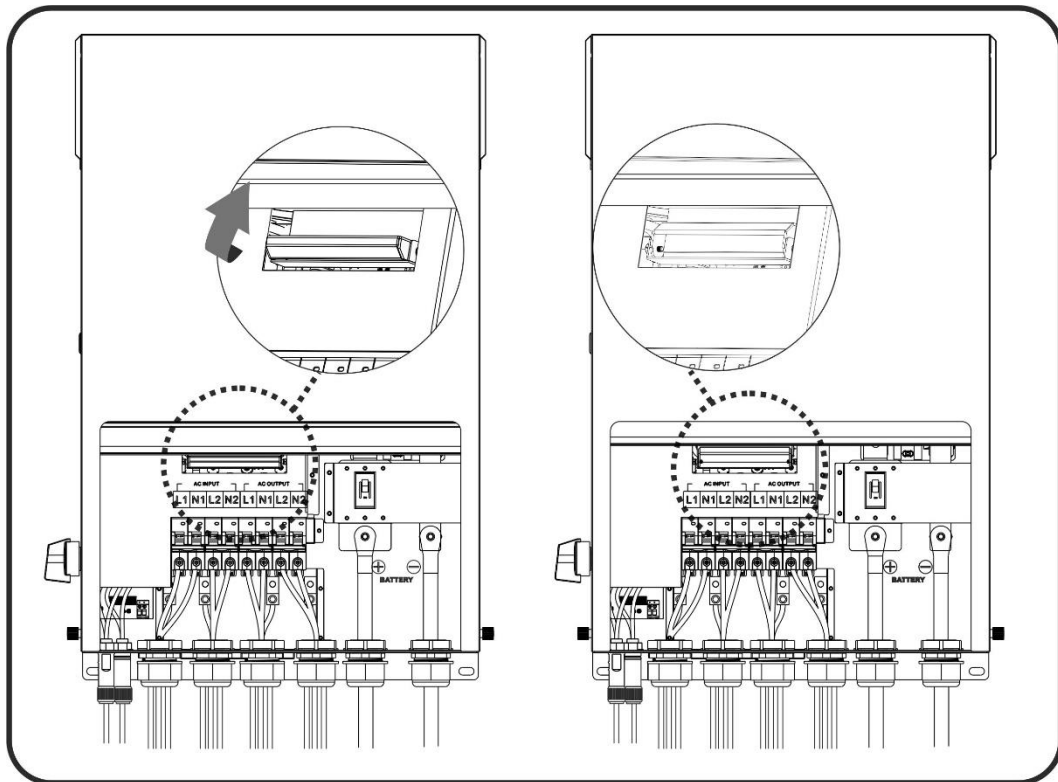
This port is reserved to integrate with external AFCI, GFCI or E-STOP device.

11. Commissioning

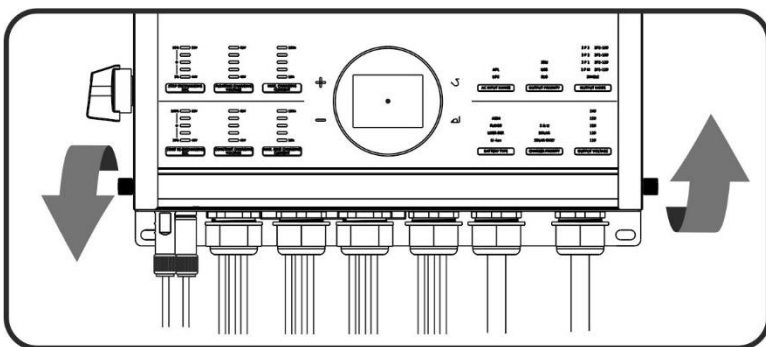
1. Check the following requirements before commissioning:
 - Ensure that the inverter is firmly secured
 - Check if the open circuit DC voltage of the PV module meets the requirements (see Section 7)
 - Check if the open circuit utility voltage of the utility is approximately the same as the nominal expected value from local utility company.
 - Check if the connection of AC cable to grid (utility) is correct, if the utility is required.
 - Full connection to PV modules.
2. Switch on the battery breaker and then switch on the PV switch. After that, if there is utility connection, please switch on the AC breakers.



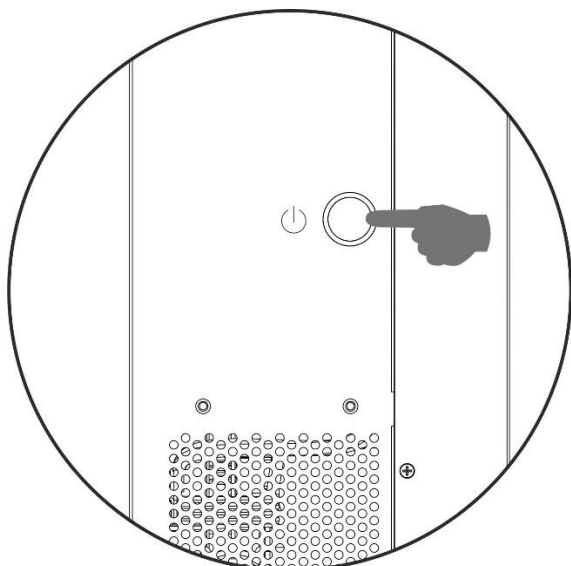
3. Return cover holder to original position and close sliding cover.



4. Lock two screws tightly on the two sides.



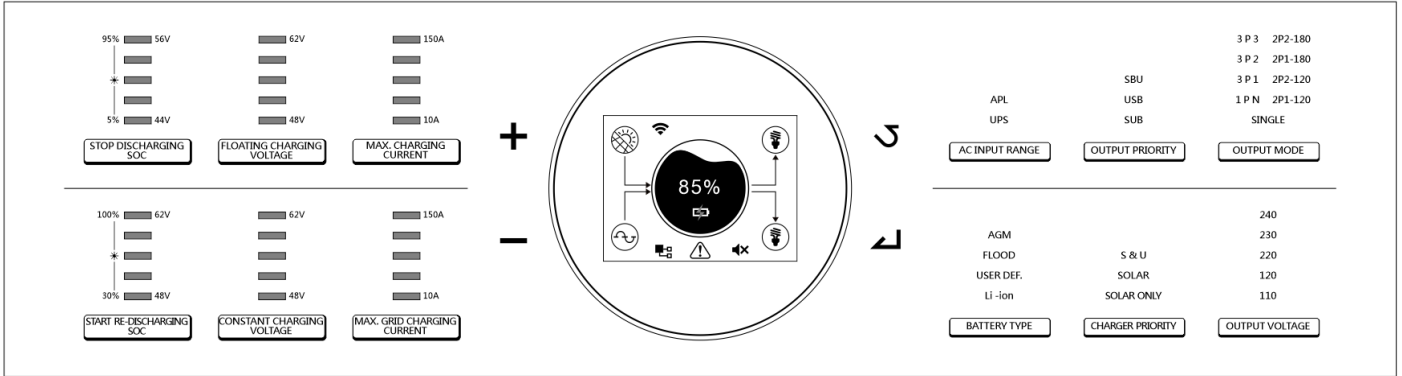
5. Press power on/off switch to turn on the inverter.



12. Operation

12-1. Interface

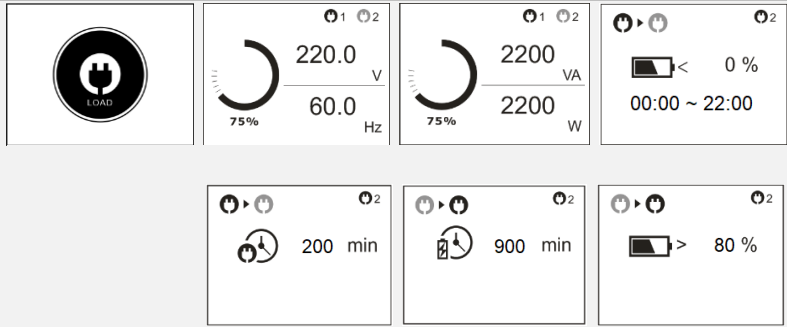
The operation panel, shown in the chart below, includes four touchable function keys, twelve setting indicators and a colorful LCD display to indicate the operating status, configured critical parameters and all power information.



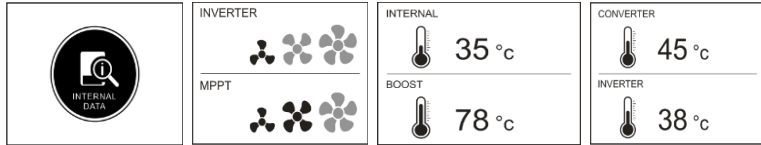
12-2. LCD Information

Display	
Home page: indicates the summarized power flow and energy information.	
Battery page: Indicates the battery information.	
PV page: Indicates the dual PV information.	
AC input page: Indicates the dual AC input information.	
AC output page: Indicates the dual AC output	

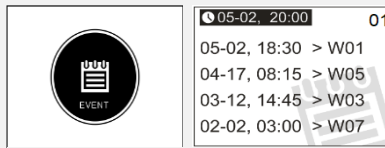
information.



Internal data page:
Indicates fan speed and temperature information.



Logs page:
Indicates all event, warning, and fault messages.

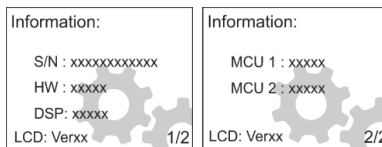


Configuration

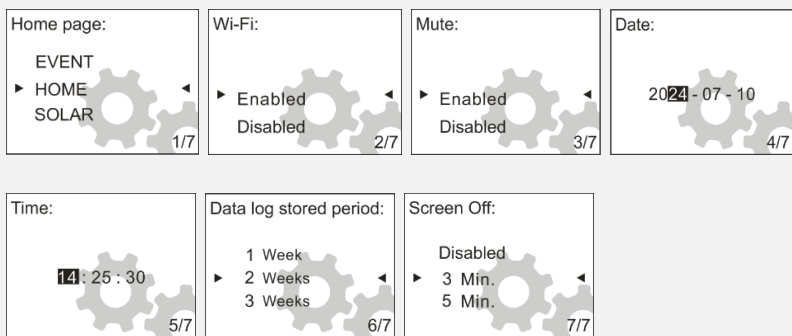
Press icon for 3s to enter the setting menu.
There are three sub-menus: Information, Basic and Advanced.
Click icon to exit setting and return to Home page.



Information:
Serial number, Hardware and Firmware versions

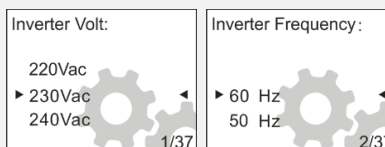


Basic:
HOME page selection, Wi-Fi & Mute function, Date & Time & Log period adjustment



Advanced

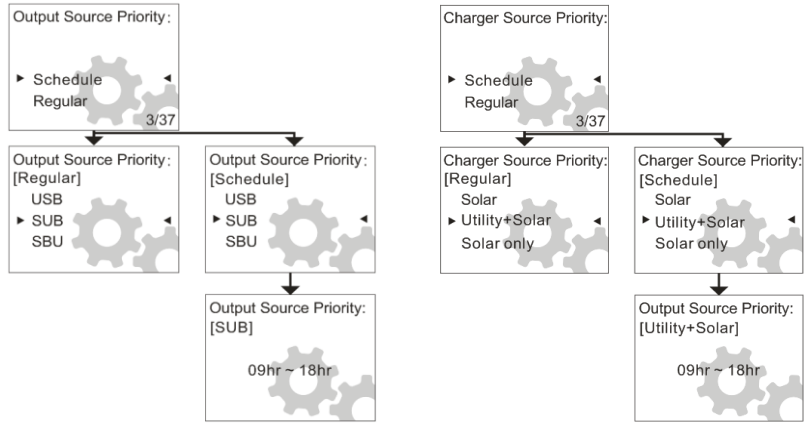
The nominal voltage and frequency
Default: 230Vac, 50Hz



The output and charger source priority

Regular: Priority arranged every day
 Schedule: Priority arranged during setting hours
 If setting 00hr – 00hr, the setting will not be activated.

Default: Regular

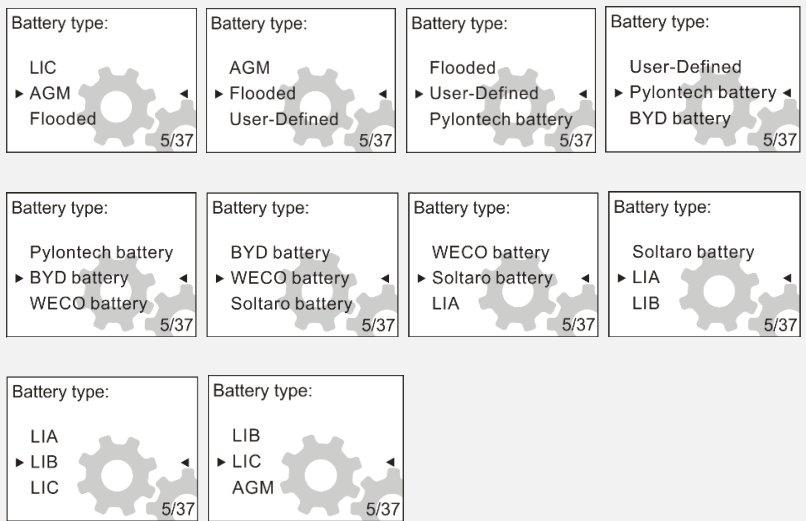


Battery Type Selection

If "User-Defined" is selected, battery charge voltage and minimum voltage can be set up.

Any type of lithium battery selected, maximum charging current and voltage will be managed by BMS automatically.

Default: AGM

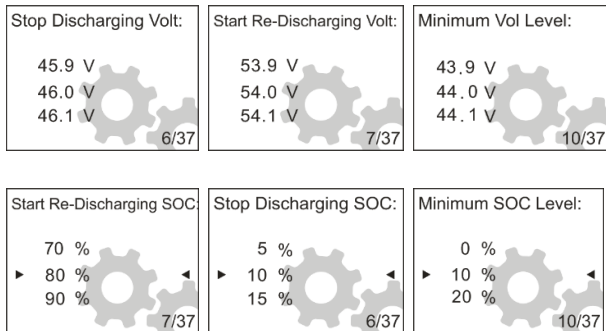


The stop and restart discharging voltage/SOC and minimum voltage/SOC

Any type of lithium battery selected, setting value will be managed by BMS automatically.

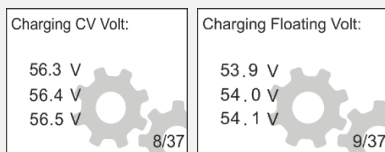
Default: 46V (Stop discharging Volt), 54V (Start re-discharging Volt), 44V (Minimum Vol Level).

Default: 10% (Stop discharging Volt), 80% (Start re-discharging Volt), 10% (Minimum Vol Level)



The CV and floating voltage





Default: 56.4V (Charging CV Volt), 54V (Charging Floating Volt)



<p>The maximum charging current and limitation while charging from Utility and Generator</p> <p>Default: 60A (Max charging current), 30A (Generator charging current), 30A (AC charging current)</p>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p>Max. Chrging Current:</p> <p>10 A ▶ 20 A ◀ 30 A</p> <p style="text-align: right;">11/37</p> </div> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p>Generator Chrging Current:</p> <p>2 A ▶ 10 A ◀ 20 A</p> <p style="text-align: right;">12/37</p> </div> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p>Utility Chrging Current:</p> <p>2 A ▶ 10 A ◀ 20 A</p> <p style="text-align: right;">13/37</p> </div> </div>
<p>The max. discharging current</p> <p>Default: Disabled (no limitation)</p>	<div style="border: 1px solid black; padding: 5px; width: 100%;"> <p>Max. Discharge Current:</p> <p>Disabled ▶ 30 A ◀ 40 A</p> <p style="text-align: right;">14/37</p> </div>
<p>The compatibility of AC input source</p> <p>Default: Generator</p>	<div style="border: 1px solid black; padding: 5px; width: 100%;"> <p>AC Input Volt Range:</p> <p>Generator-Sensitive ▶ Generator ◀ Utility</p> <p style="text-align: right;">15/37</p> </div>
<p>Configure fault or overload behaviors</p> <p>Default: Disabled</p>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>Fault Auto-restart:</p> <p>▶ Enabled ◀ Disabled</p> <p style="text-align: right;">16/37</p> </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>Overload Bypass:</p> <p>▶ Enabled ◀ Disabled</p> <p style="text-align: right;">17/37</p> </div> </div>
<p>The operation of AC output mode</p> <p>Default: Single</p>	<div style="border: 1px solid black; padding: 5px; width: 100%;"> <p>AC Output Mode:</p> <p>L3 phase ▶ Single ◀ Parallel</p> <p style="text-align: right;">18/37</p> </div>
<p>The external CT function</p> <p>Default: Disabled</p>	<div style="border: 1px solid black; padding: 5px; width: 100%;"> <p>External CT function:</p> <p>▶ Enabled ◀ Disabled</p> <p style="text-align: right;">19/37</p> </div>
<p>The battery equalization function</p> <p>Voltage, time, timeout and interval setting</p> <p>Default: Disabled 58.4V, 60 min, 120 min, 30 days</p>	<div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p>Battery EQ Function:</p> <p>▶ Enabled ◀ Disabled</p> <p style="text-align: right;">20/37</p> </div> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p>Battery EQ Volt:</p> <p>48.0 V ▶ 48.1 V ◀ 48.2 V</p> <p style="text-align: right;">21/37</p> </div> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p>Battery EQ time:</p> <p>55 min ▶ 60 min ◀ 65 min</p> <p style="text-align: right;">22/37</p> </div> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p>Battery EQ Timeout:</p> <p>115 min ▶ 120 min ◀ 125 min</p> <p style="text-align: right;">23/37</p> </div> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p>Battery EQ Interval:</p> <p>29 days ▶ 30 days ◀ 31 days</p> <p style="text-align: right;">24/37</p> </div> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p>EQ Immediately:</p> <p>▶ Enabled ◀ Disabled</p> <p style="text-align: right;">25/37</p> </div> </div>
<p>The second output control according to the battery cut-off/restart voltage point or SOC</p> <p>Any type of lithium battery selected, the setting value will be managed by</p>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>Discharge Volt O/P-2:</p> <p>60.0 V ▶ 42.0 V ◀ 42.1 V</p> <p style="text-align: right;">26/37</p> </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>Re-Discharge Volt O/P-2:</p> <p>61.0 V ▶ 43.0 V ◀ 43.1 V</p> <p style="text-align: right;">29/37</p> </div> </div>

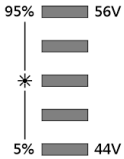





<p>BMS automatically.</p> <p>Default: 42V, 46V, 0%, 20%</p>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>Discharge SOC O/P-2:</p> <p>55 % ▶ 60 % ◀ 65 %</p> <p style="text-align: right;">26/37</p> </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>Re-Discharge SOC O/P-2:</p> <p>55 % ▶ 60 % ◀ 65 %</p> <p style="text-align: right;">29/37</p> </div> </div>
<p>The second output control according to the battery discharge timer or discharge/charging time</p> <p>Default: 00hr~23hr, Disabled, 0 min</p>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p>Discharge Time O/P-2:</p> <p>990 min ▶ Disable ◀ 0 min</p> <p style="text-align: right;">27/37</p> </div> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p>Discharge Interval O/P-2:</p> <p>00hr ~ 23hr</p> <p style="text-align: right;">28/37</p> </div> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p>Re-Discharge Time O/P-2:</p> <p>Disabled ▶ 0 min ◀ 5 min</p> <p style="text-align: right;">30/37</p> </div> </div>
<p>Calibration with external meter</p> <p>Default: 0, 200W</p>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>Earth LED Calibration:</p> <p>Condition: 10</p> <p>- 1 ▶ + 0 ◀ + 1</p> <p style="text-align: right;">31/37</p> </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>Reverse LED Calibration:</p> <p>190 W ▶ 200 W ◀ 210 W</p> <p style="text-align: right;">32/37</p> </div> </div>
<p>Specific critical operations activate (It's necessary to enter Password 4743 to access)</p> <ul style="list-style-type: none"> - Feed power to Grid function - Reset to factory setting - Erase all logs - Export all logs - Firmware upgrade 	<div style="display: flex; flex-wrap: wrap; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p>Feeding To Grid Config:</p> <p>Password</p> <p>0000</p> </div> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p>Feeding To Grid Config:</p> <p>▶ Enabled ◀ Disabled</p> </div> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p>Erase all data log:</p> <p>Password</p> <p>0000</p> </div> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p>Erase all data log:</p> <p>▶ Not reset ◀ Reset</p> </div> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p>Reset to default:</p> <p>Password</p> <p>0000</p> </div> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p>Reset to default:</p> <p>▶ Enabled ◀ Disabled</p> </div> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p>Firmware Upgrade:</p> <p>Password</p> <p>0000</p> </div> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p>Firmware Upgrade:</p> <p>▶ NO ◀ YES</p> </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>Export Logs:</p> <p>Password</p> <p>0000</p> </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>Export Logs:</p> <p>▶ NO ◀ YES</p> </div> </div>

12-3. Touchable function keys

Key	Operation	Function
	Quick touch Long Press	Confirm selection Enter configuration mode
	Quick touch.	Exit the setting
	Quick touch.	Select next selection or scroll to next page
	Quick touch.	Select next selection or scroll to up page

NOTE: If backlight of LCD module shuts off, you may activate it by touching any key

12-4. Setting LED Information

 STOP DISCHARGING SOC	 FLOATING CHARGING VOLTAGE	 MAX. CHARGING CURRENT	APL UPS AC INPUT RANGE	SBU USB SUB OUTPUT PRIORITY	3 P 3 2P2-180 3 P 2 2P1-180 3 P 1 2P2-120 1 P N 2P1-120 SINGLE OUTPUT MODE
 START RE-DISCHARGING SOC	 CONSTANT CHARGING VOLTAGE	 MAX. GRID CHARGING CURRENT	AGM FLOOD USER DEF. Li-ion BATTERY TYPE	S & U SOLAR SOLAR ONLY CHARGER PRIORITY	240 230 220 120 110 OUTPUT VOLTAGE

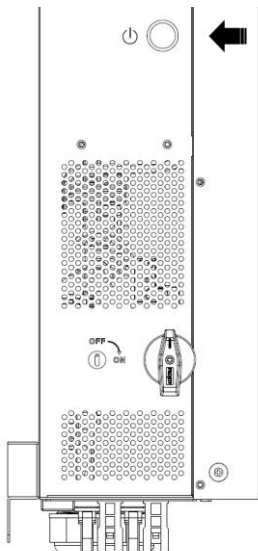
Critical Parameter Indications:

- Start Discharging / Stop Discharging SOC
- Floating / Constant Charging Voltage
- Max. Charging / AC Charging Current
- Output / Charger Priority
- Output Mode / Output Voltage
- AC Input Range
- Battery Type

STOP DISCHARGING SOC	FLOATING CHARGING VOLTAGE	MAX. CHARGING CURRENT	AC INPUT RANGE	OUTPUT PRIORITY	OUTPUT MODE
START RE-DISCHARGING SOC	CONSTANT CHARGING VOLTAGE	MAX. GRID CHARGING CURRENT	BATTERY TYPE	CHARGER PRIORITY	OUTPUT VOLTAGE

12 shortcut indicators are used to enter configuration easily when the LCD in the setting page.

12-5. On/Off Operation (located on the side of the inverter)



Quick press to wake up inverter when the input power is supplied from battery only.

Press and hold the button for 3 seconds to turn on/off the AC output of the inverter.

13. Maintenance & Cleaning

Check the following points to ensure proper operation of whole solar system at regular intervals.

- Ensure all connectors of this inverter are cleaned all the time.
- Before cleaning the solar panels, be sure to turn off PV switch first.
- Clean the solar panels, during the cool time of the day, whenever it is visibly dirty.
- Periodically inspect the system to make sure that all wires and supports are securely fastened in place.



WARNING! There are no user-replaceable parts inside of the inverter. Do not attempt to service the unit yourself.

Battery Maintenance

- Servicing of batteries should be performed or supervised by personnel knowledgeable about batteries and the required precautions.
- When replacing batteries, replace with the same type and number of batteries or battery packs.
- The following precautions should be observed when working on batteries:
 - a) Remove watches, rings, or other metal objects.
 - b) Use tools with insulated handles.
 - c) Wear rubber gloves and boots.
 - d) Do not lay tools or metal parts on top of batteries.
 - e) Disconnect the charging source prior to connecting or disconnecting battery terminals.
 - f) Determine if battery is inadvertently grounded. If it is inadvertently grounded, remove source from ground. Contact with any part of a grounded battery can result in electrical shock. The likelihood of such shock can be reduced if such grounds are removed during installation and maintenance (applicable to equipment and remote battery supplies not having a grounded supply circuit).



CAUTION:

A battery can present a risk of electrical shock and high short-circuit current.

Do not dispose of batteries in a fire. The batteries may explode.


Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.

14. Trouble Shooting

When there is no information displayed in the LCD, please check if PV module/battery/grid connection is correctly connected.


NOTE: The warning and fault information can be recorded by a remote monitoring software.

18-1. Warning List

When a warning situation occurs,  icon will flash. Touch “—” or “+” to select displaying warning code. If there are several codes, it will display in a sequence. Please contact your installer when you can't handle the warning situations.

Code #	Event	Code #	Event
W01	AC input source not presented or out of acceptable range.	W10	Communication lost between inverter and BMS of lithium battery.
W02	PV source not presented or out of acceptable range.	W11	Communication lost between internal controllers.
W03	Lithium battery pack is not detected.	W13	AC input circuit breaker is tripped.
W04	Weak SoC of the connected battery	W14	Battery is in equalization process.
W05	Weak voltage of the connected PV power.	W15	MCU communication lost.
W06	Power de-rating due to environmental restrictions.	W16	Charging and discharging are forbidden sent from the BMS of lithium battery.
W07	Heavy load connected.	W17	Charging is forbidden sent from the BMS of lithium battery.
W08	Over temperature.	W18	Discharging is forbidden sent from the BMS of lithium battery.
W09	Fan is not functioning properly.	W19	Force charging from the BMS of lithium battery.

18-2. Fault Reference Codes

When a fault occurs,  icon will solid on as a reminder. See below for fault codes for reference.

Code #	Event	Code #	Event
F01	Fan not working.	F17	DC offset of AC output exceeds the max. level.
F02	PV voltage exceeds the max. level.	F18	Overload on the AC output.
F03	Battery voltage exceeds the max. level.	F19	Fault on the current sensor of AC output.
F04	Battery voltage is lower than alarm level.	F20	Backfeed fault.
F05	Short circuit on the AC output.	F21	Firmware fault.
F06	Output voltage exceeds the max. level.	F22	CAN bus communication error in parallel operation.
F07	Output voltage exceeds the min. level.	F23	Host circuit on the parallel function doesn't work.
F08	Internal DC bus voltage exceeds the max. level.	F24	Sync circuit on the parallel function doesn't work.
F09	Internal DC bus voltage exceeds the min. level.	F25	Battery quantity doesn't match in parallel operation.
F10	PV current exceeds the max. level.	F26	AC input condition doesn't match while paralleling
F11	Over-temperature on the Inverter related components	F27	Amperfier on the parallel function doesn't work
F12	Internal DC bus current exceeds the max. level.	F28	Parallel related setting doesn't match.
F13	Discharging current exceeds the max. level.	F29	Output short circuited.
F14	Over temperature.	F30	GFCI fault detected on the AC input side.
F15	DC bus start fault.	F31	Low isolation resistance detected on the PV side.
F16	Inverter soft start fault.	F32	Arc fault detected on the PV side.

Appendix I: Parallel Installation Guide

Introduction

This inverter can be used in parallel with maximum 6 units. The supported maximum output power is 66KW/66KVA.

Parallel cable

You will find the following items in the package:

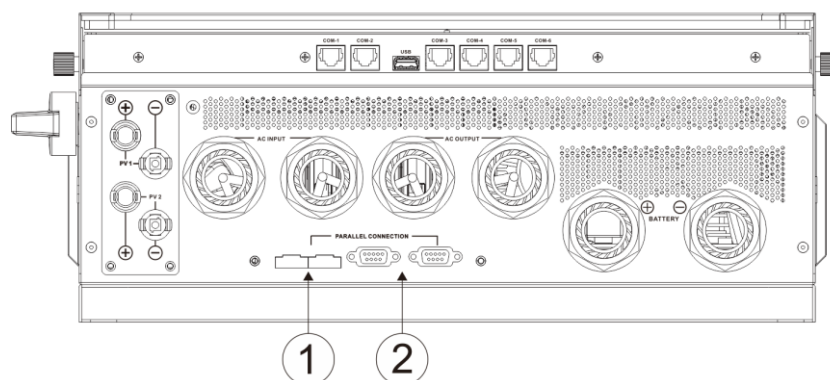


Parallel communication cable



Current sharing wires

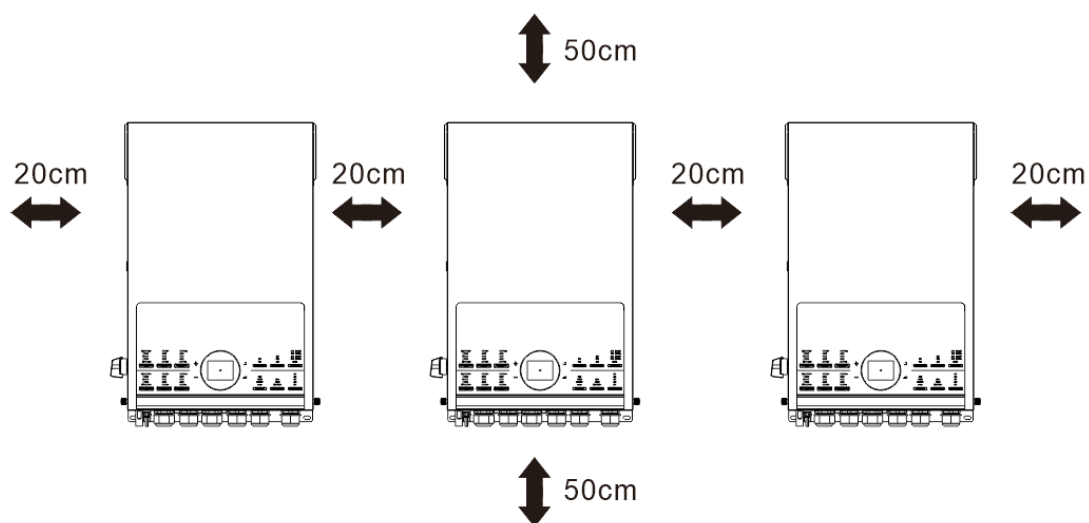
Overview



1. Current sharing port
2. Parallel communication port

Mounting the Unit

When installing multiple units, please follow below chart.



NOTE: For proper air circulation to dissipate heat, it's necessary to 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.

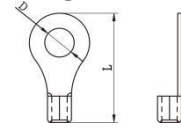
Wiring Connection

The cable size of each inverter is shown as below:

Recommended battery cable and terminal size for each inverter:

Wire Size	Ring Terminal			Torque value
	Cable mm ²	Dimensions		
		D (mm)	L (mm)	
3/0AWG	85	8.4	56	7~12 Nm

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 to not work.

Recommended AC input and output cable size for each inverter:

AWG no.	Conductor cross-section	Torque
8-6 AWG	10~16 mm ²	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. "X" indicates the number of inverters connected in parallel. Regarding cable size of AC input and output, please also follow the same principle.



CAUTION: Please install a breaker at the battery side. This will ensure the inverter can be securely disconnected during maintenance and fully protected from overcurrent of battery.

Recommended battery capacity

Inverter parallel numbers	2	3	4	5	6
Battery Capacity	400AH	600AH	800AH	1000AH	1200AH



CAUTION: Please follow the battery charging current and voltage from battery spec to choose the suitable battery. The wrong charging parameters will reduce the battery lifecycle sharply.

Recommended PV connection

Please refer to user manual of single unit for PV Connection.

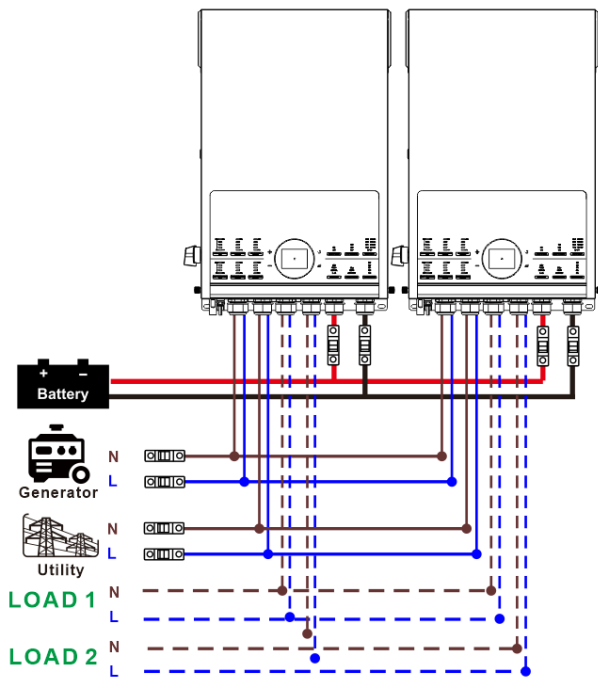


CAUTION: Each inverter should connect to PV modules separately.

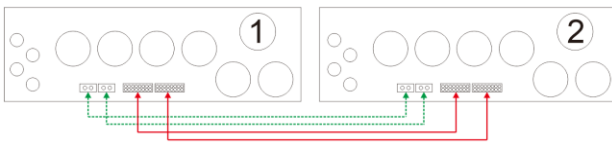
Inverters Configuration

Two inverters in parallel:

Power Connection

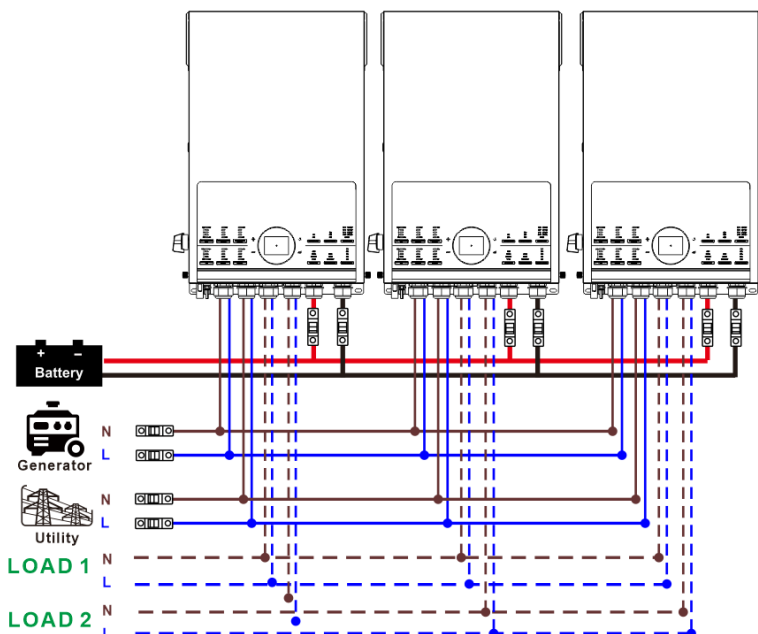


Communication Connection

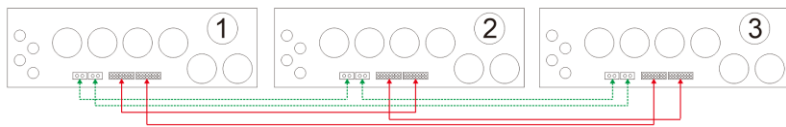


Three inverters in parallel:

Power Connection

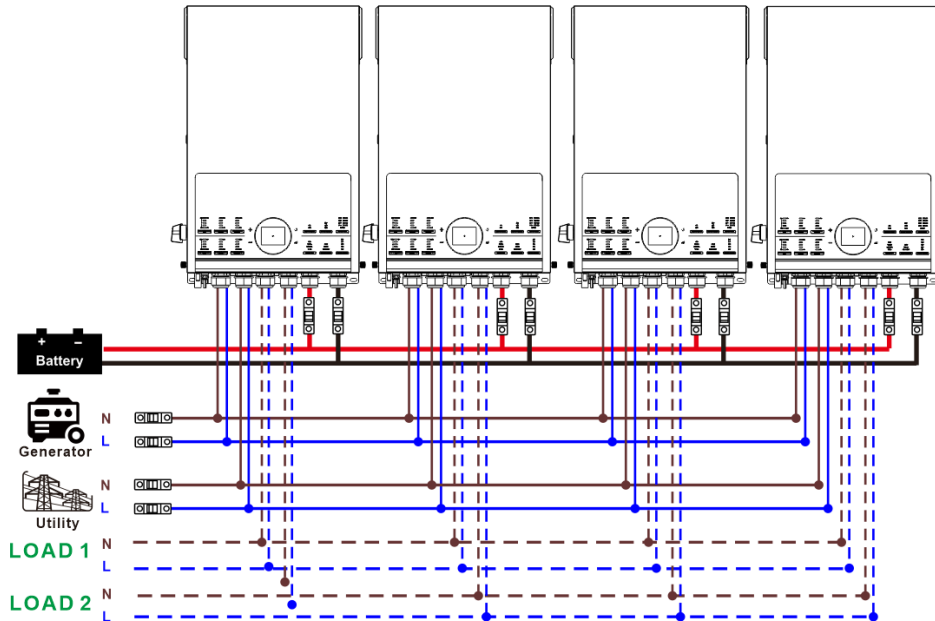


Communication Connection

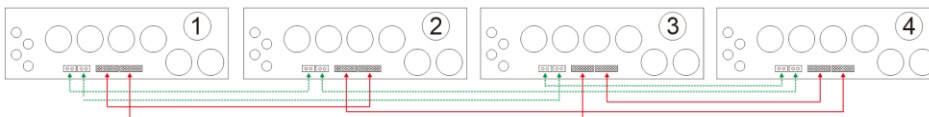


Four inverters in parallel:

Power Connection

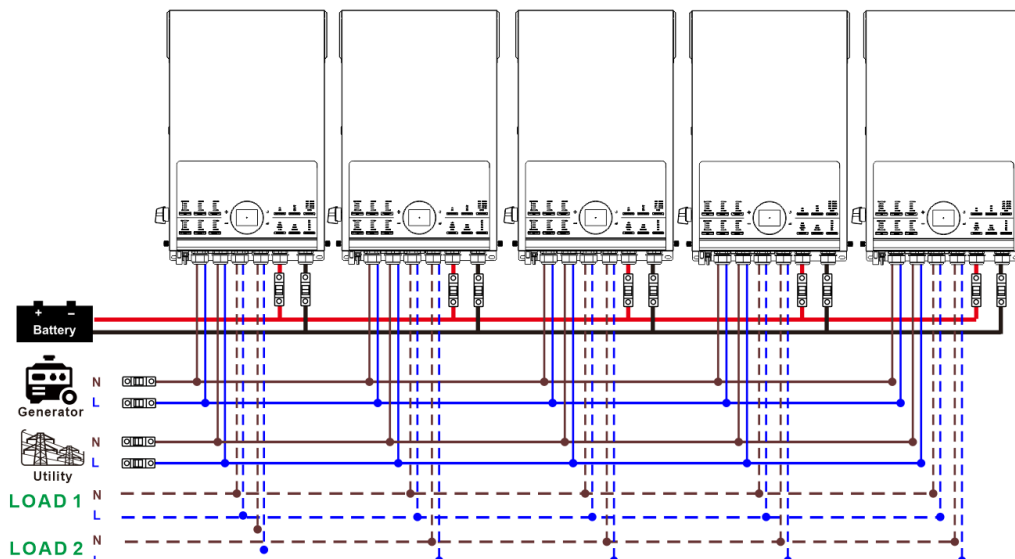


Communication Connection

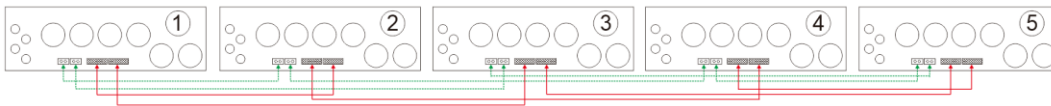


Five inverters in parallel:

Power Connection

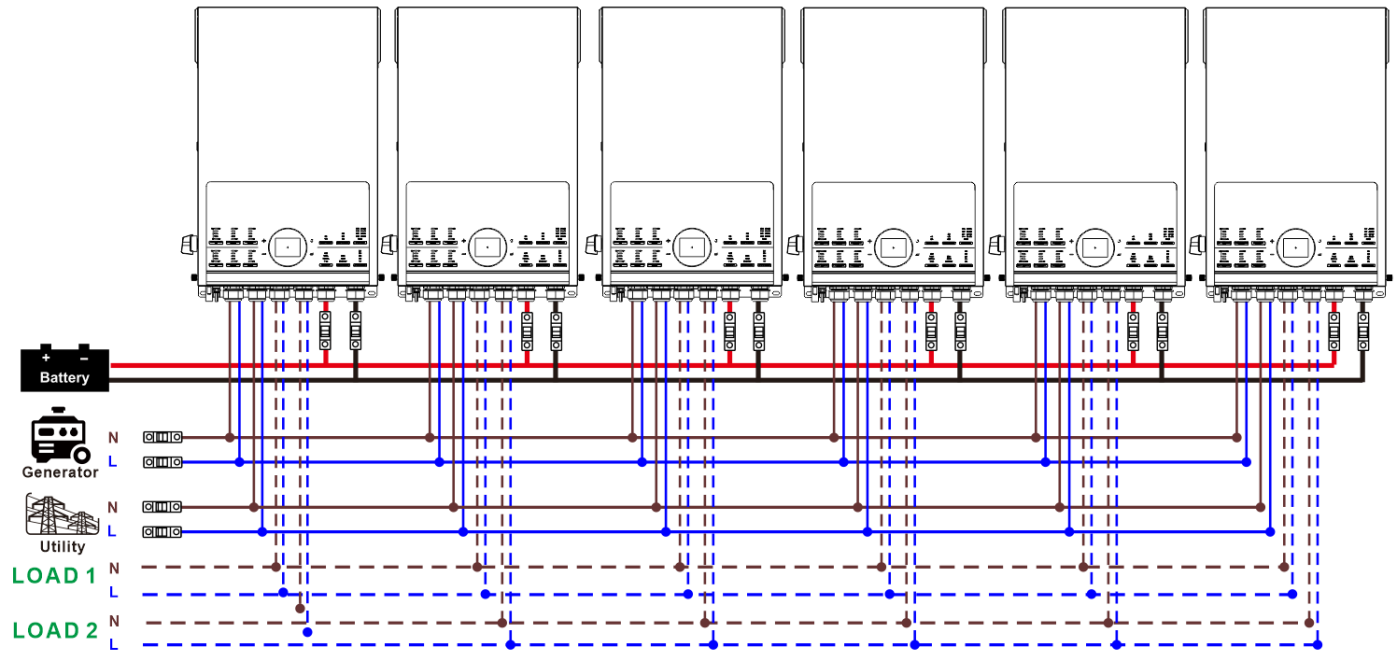


Communication Connection

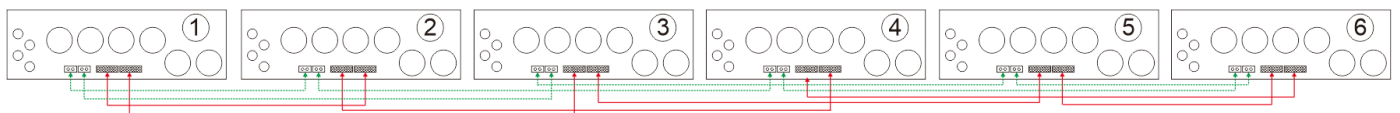


Six inverters in parallel:

Power Connection






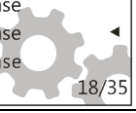

Communication Connection





LCD Setting and Display

Setting Program:

Description	Selectable option	
AC output mode *This setting is able to set up only when the inverter is in standby mode. Be sure that on/off switch is in "OFF" status.	Single AC Output Mode: L3 phase ▶ Single ◀ Parallel 	When the unit is operated alone, please select "Single"
	Parallel AC Output Mode: Single ▶ Parallel ◀ L1 phase 	When the units are used in parallel for single phase application, please select "Parallel". Please refer to 4-1 for detailed information.

	L1 phase: AC Output Mode: Parallel ▶ L1 phase L2 phase 	When the units are operated in 3-phase application, please choose phase to define each inverter. It is required to have at least 3 inverters or maximum 6 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 refers to 4-2 for detailed information. Please select "L1 phase" for the inverters connected to L1 phase, "L2 phase" for the inverters connected to L2 phase and "L3 phase" 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.
	L2 phase: AC Output Mode: L1 phase ▶ L2 phase L3 phase 	
	L3 phase: AC Output Mode: L2 phase ▶ L3 phase Single 	

Code Reference:

Code	Description	Icon on
NE	Unidentified unit master or slave	No master and slave icon show on LCD
HS	Master unit	
SL	Slave unit	

Commissioning

Parallel in single phase

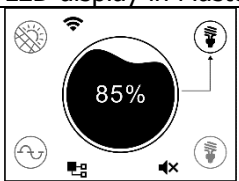
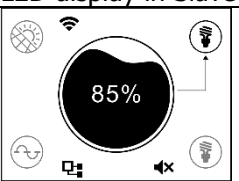
Step 1: Check the following requirements before commissioning:

- 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 "Parallel" in LCD setting of each unit. And then shut down all units.

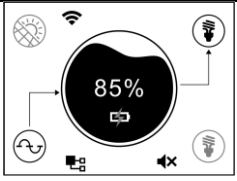
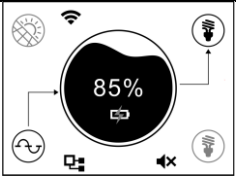
NOET: It's necessary to turn off switch when setting LCD program. Otherwise, the setting cannot be programmed.

Step 3: Turn on each unit.

LCD & LED display in Master unit	LCD & LED display in Slave unit
 1PN OUTPUT MODE	 1PN OUTPUT MODE

NOTE: Master and slave units are randomly defined.

Step 4: Switch on all AC breakers of Line wires in AC input. It's better to have all inverters connect to utility at the same time. If not, it will display fault 26 in following-order inverters. However, these inverters will automatically restart. If detecting AC connection, they will work normally.

LCD & LED display in Master unit	LCD & LED display in Slave unit
	
1 P N	1 P N
<input type="button" value="OUTPUT MODE"/>	<input type="button" value="OUTPUT MODE"/>

Step 5: If there is no more fault alarm, the parallel system is completely installed.

Step 6: Please switch on all breakers of Line wires in load side. This system will start to provide power to the load.

Support three-phase equipment

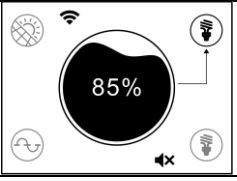
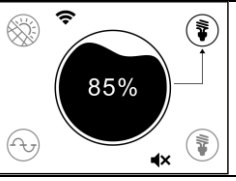
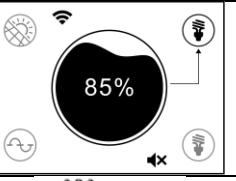
Step 1: Check the following requirements before commissioning:


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

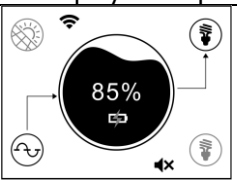
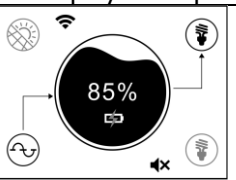
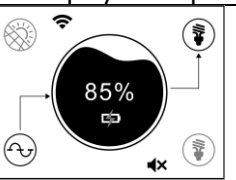
Step 2: Turn on all units and configure AC output mode as L1, L2 and L3 sequentially. And then shut down all units.

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

Step 3: Turn on all units sequentially.

LCD & LED display in L1-phase unit	LCD & LED display in L2-phase unit	LCD & LED display in L3-phase unit
		
3 P 1	3 P 2	3 P 3
<input type="button" value="OUTPUT MODE"/>	<input type="button" value="OUTPUT MODE"/>	<input type="button" value="OUTPUT MODE"/>

Step 4: Switch on all AC breakers of Line wires in AC input. If AC connection is detected and three phases are matched with unit setting, they will work normally. Otherwise, the AC icon  will off and they will not work in line mode.

LCD & LED display in L1-phase unit	LCD & LED display in L2-phase unit	LCD & LED display in L3-phase unit
		
3 P 1	3 P 2	3 P 3
<input type="button" value="OUTPUT MODE"/>	<input type="button" value="OUTPUT MODE"/>	<input type="button" value="OUTPUT MODE"/>

Step 5: If there is no more fault alarm, the system to support 3-phase equipment is completely installed.

Step 6: Please switch on all breakers of Line wires in load side. This system will start to provide power to the load.

Note 1: To avoid overload occurring, before turning on breakers in load side, it's better to have whole system in operation first.

Note 2: Transfer time for this operation exists. Power interruption may happen to critical devices, which cannot bear transfer time.

Appendix II: The Wi-Fi Operation Guide

1. Introduction

Wi-Fi module can enable wireless communication between solar inverters and the monitoring platform. Users can remotely monitor and control their inverters when they combine the Wi-Fi module with i.Solar APP. The App uses the Wi-Fi chip to provide remote monitoring data services, which is beneficial for the daily data monitoring of the inverter, querying the real-time data in the device, sending commands from the device, and operating the device remotely. The app is available for both iOS and Android.

2. iSolar App

2-1. Download and install APP

Please find "i.Solar" app from Apple® store or Google® Play Store. Install this app in your mobile phone.



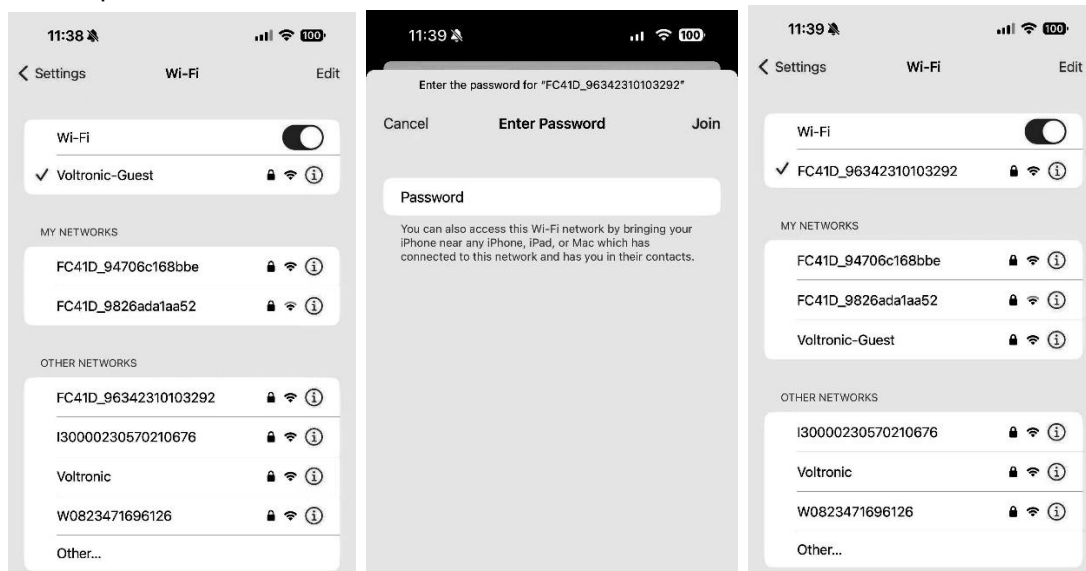
(iOS)



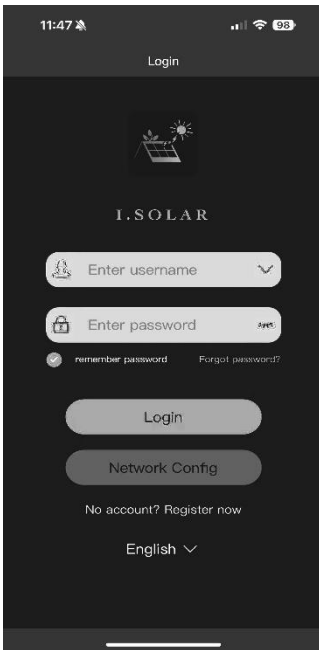
(Android)

2-2. Initial Setup

- Turn on the unit.
- Open the Wi-Fi settings from your smart phone.
- Connect your smart phone to the Wi-Fi module. The Wi-Fi named starts with "FC41D_serial number".
- Default password for the Wi-Fi module is: 12345678



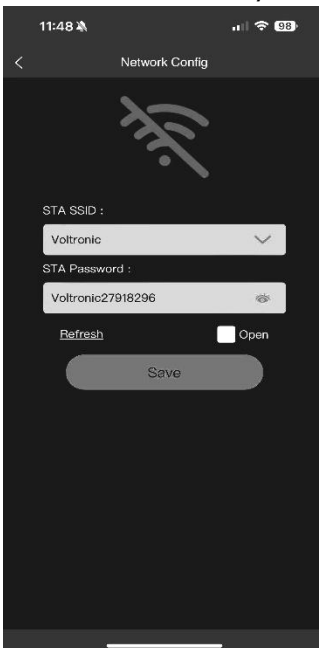
- Once the Wi-Fi connection is successful, click the i.Solar APP installed in the phone to enter the login page. Then, click the "Network Config" button to enter the Wi-Fi configuration page.



- Enter your router name (STA SSID) and router password (STA Password), then click the "Save" button to complete the setting.

If you check "Open" checkbox, you only need to enter the router name (STA SSID), no need to enter the router password. Then, click the "Save" button to complete the setting.

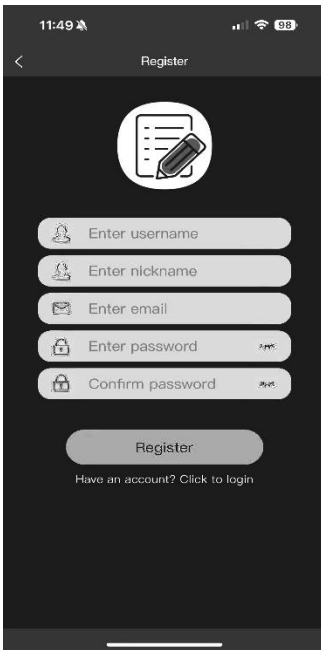
The Wi-Fi module only could connect the router at **2.4GHz**.



- After configuration, please **forget** the Wi-Fi module on the smartphone to avoid automatic connection and unable to access the Internet.

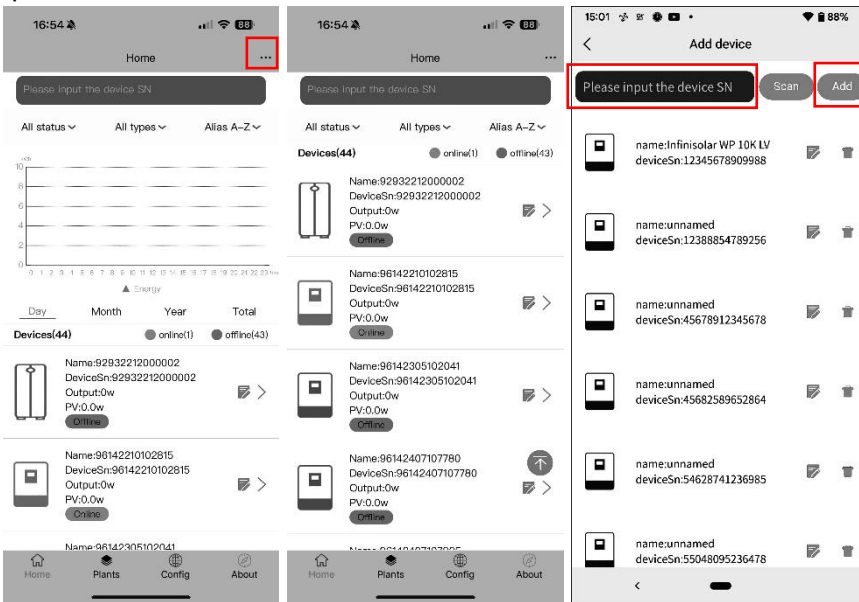
2-3 Login

- Connect your smart phone to the router.
- Registration at first time.
After fill in user name and password, click the "Register" button to complete the user registration. Once registration is complete, click "Click to log in" or return to the previous page (click the left arrow to return to the login page). Then, enter the registered user name and password to log in.

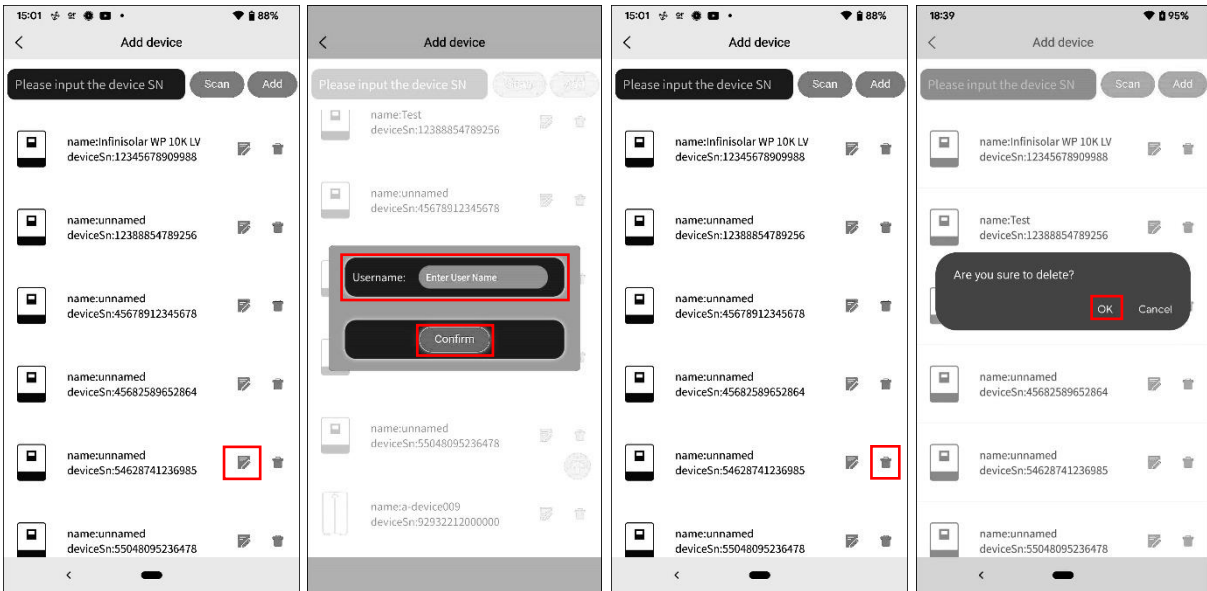


2-4 Home Page

- After login, the default Home page will appear.
- Tap the icon (located on the right top) to enter the page to add, delete or rename the device. Input the device serial number to add the device.



Rename or delete the device



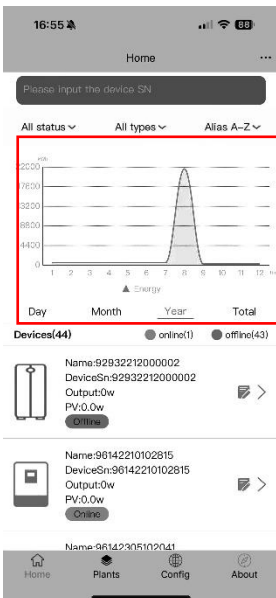
Above is the chart data area:

Day: Click the button to query the hourly power generation data of the current day.

Month: Click the button to query the daily power generation data of the current month.

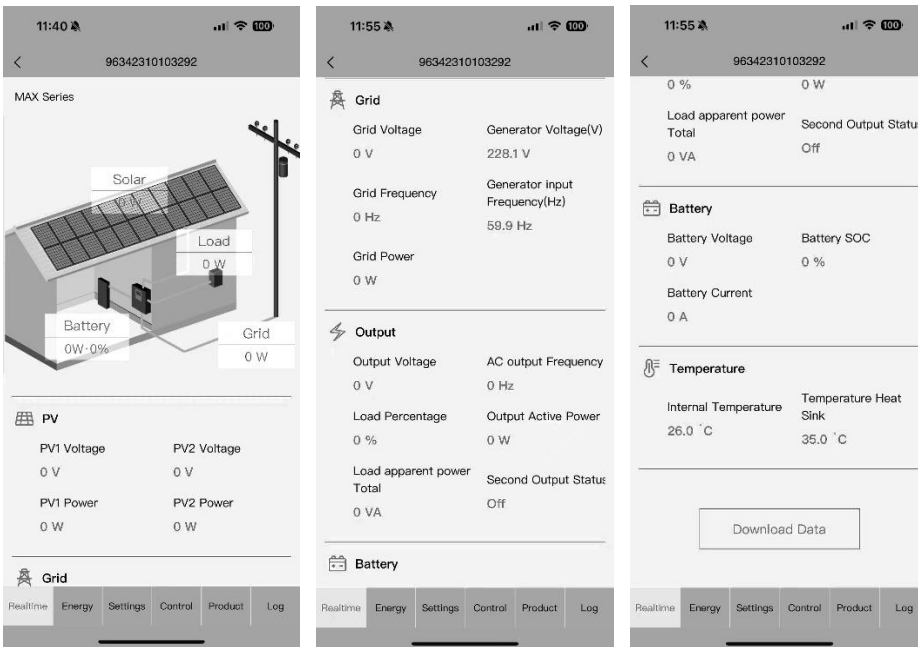
Year: Click the button to query the monthly power generation data of the current year.

Total: Click the button to query the annual power generation data.



2-5 Real-time data

- Displays battery power, grid power, solar power, and load consumption.



2-6 Energy

- Displays solar, grid, load, and battery information.

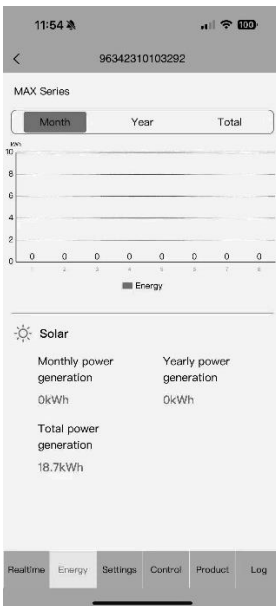
Above is the chart data area:

Day: Click the button to query the hourly power generation data of the current day.

Month: Click the button to query the daily power generation data of the current month.

Year: Click the button to query the monthly power generation data of the current year.

Total: Click the button to query the annual power generation data.



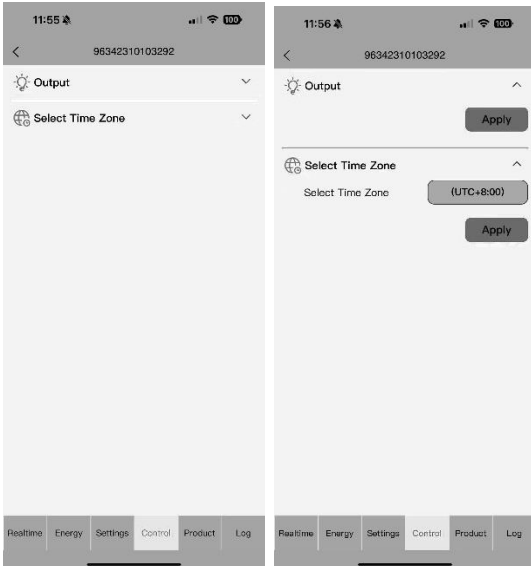
2-7 Settings

- Displays the setting items. Different models, the setting items on the parameter page will be different. Tap the icon, select the setting and click the "Apply" button to change the setting.



2-8 Control

- Output: remote control power on/off (The control item not support all models)
- Select Time Zone



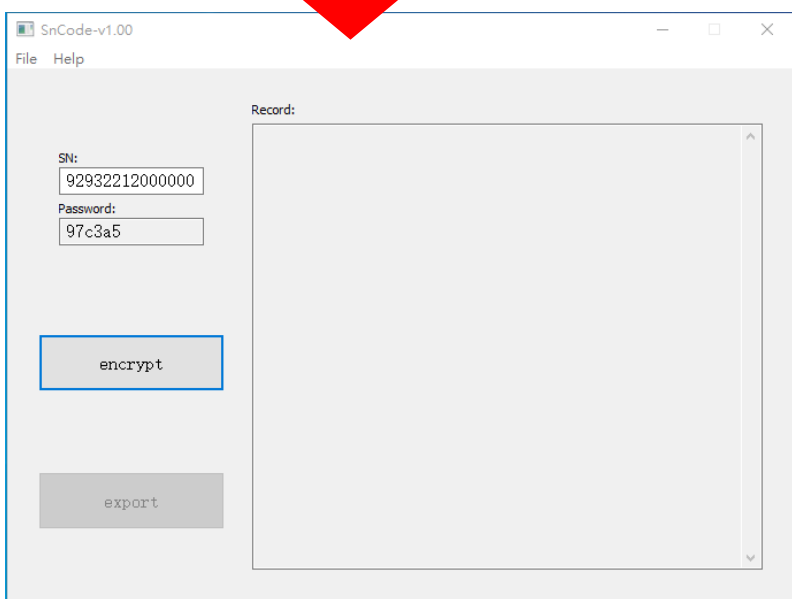
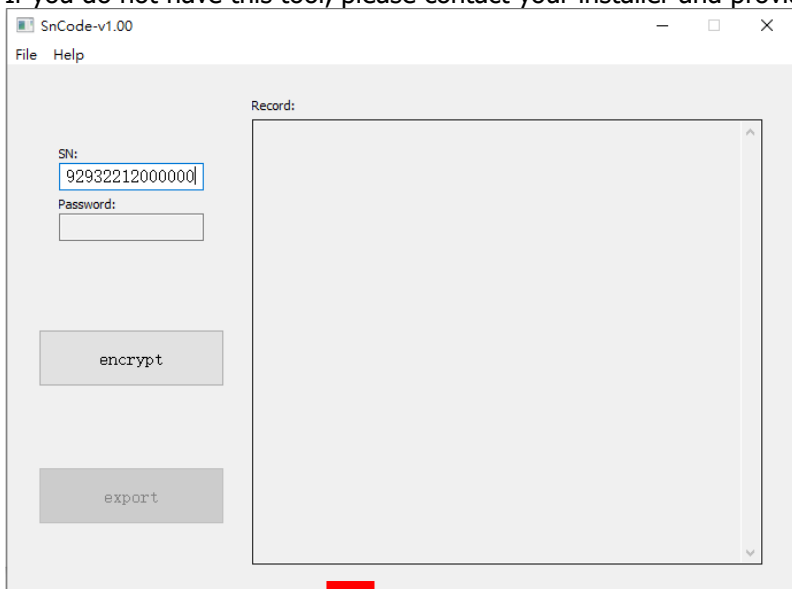
2-9 Product

Firmware upgrade, product information, rating information and restore factory settings.

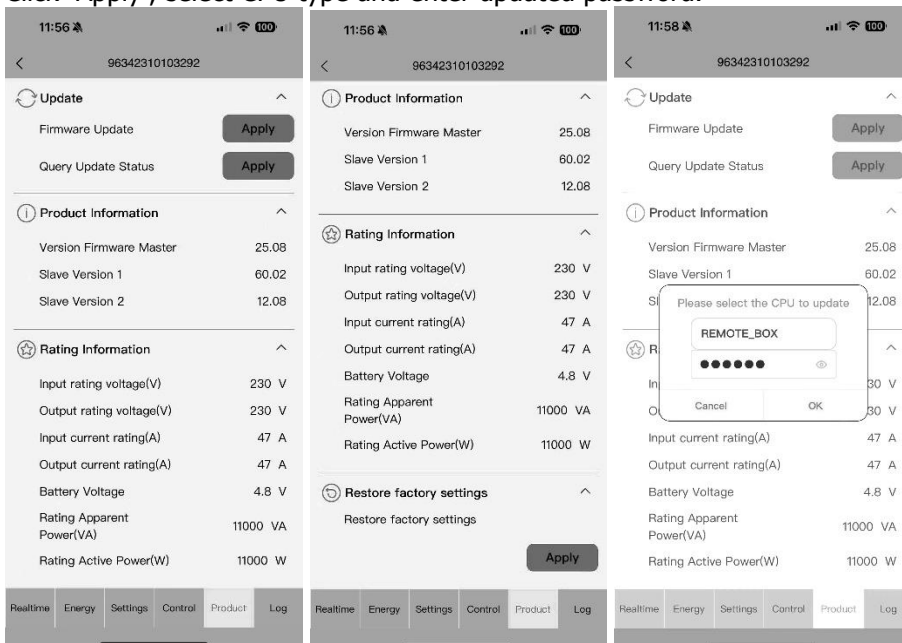


- Update: Please input the serial number through "SnCode" to get the updated password.

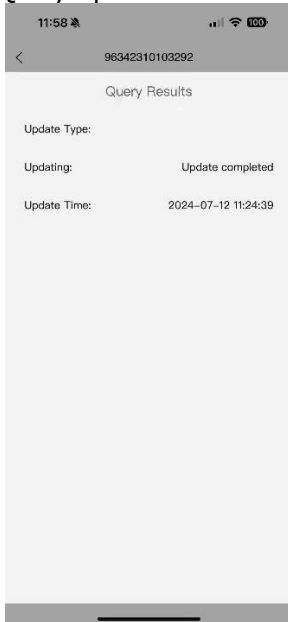
If you do not have this tool, please contact your installer and provide the serial number to open the permission.



Click "Apply", select CPU type and enter updated password.



Query Update Status:



If the DSP is being updated, the LCD screen will display "LOADING..." until the update is complete.

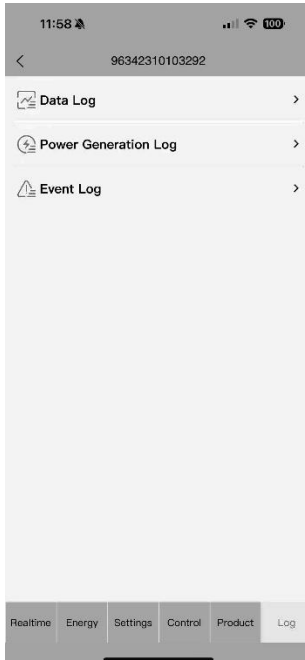
If the panel MCU is being updated, the LCD screen will display "LOADING..." and the button light will be off until the update is complete.

NOTE 1: It is normal for the device is offline on the home page of the APP during the update process.

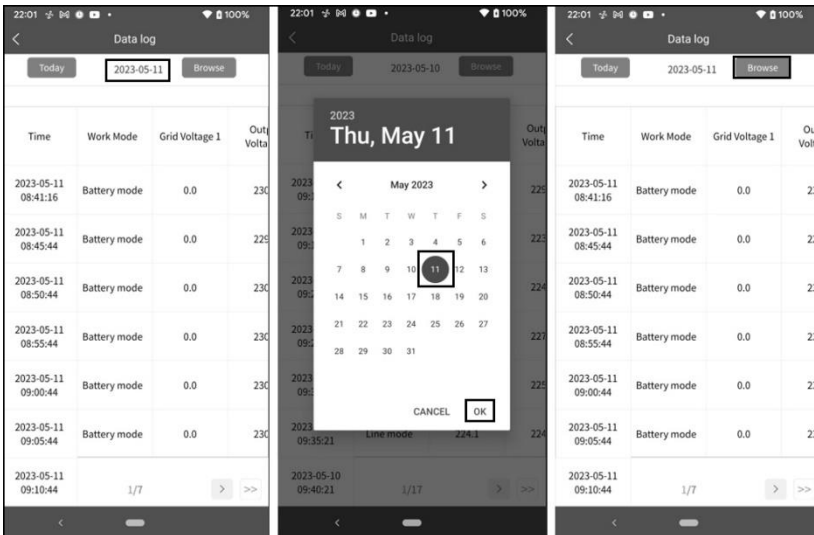
NOTE 2: If the update fails, ex. network disconnection or power failure, just restart device, no need to click any settings in the APP. Once the network is ok, the device will automatically update until the update is successful.

2-10 Log

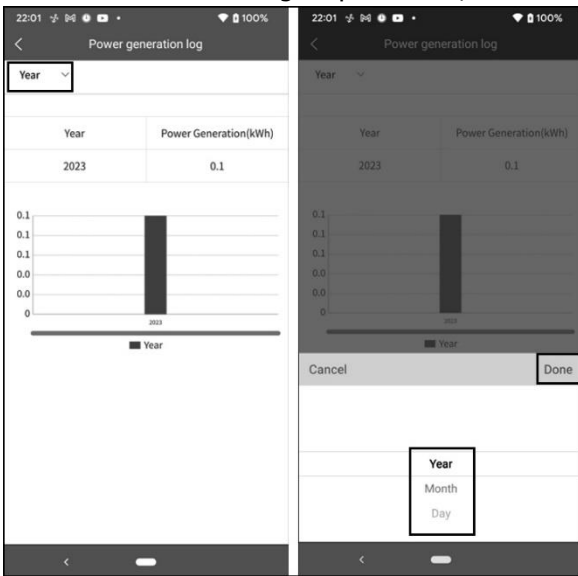
Log: displays data log, solar power generation log, load consumption log and event.



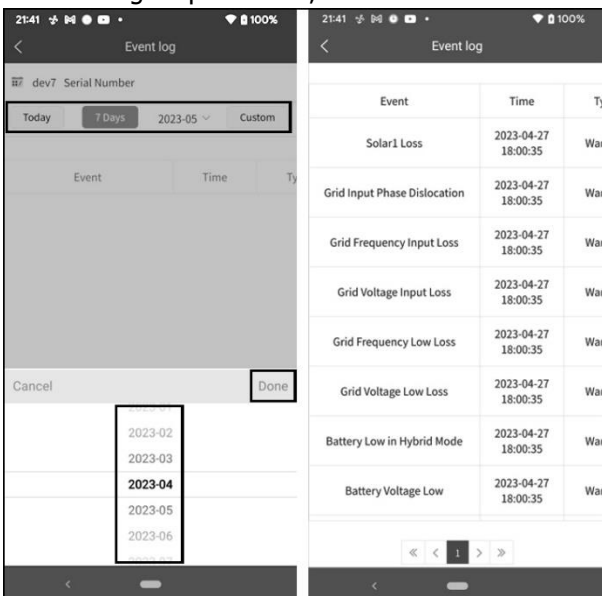
- Data log: Tap the time, select the date and click the "Browse" button to update log.



- Power Generation Log: Tap the time, select the day, month or year, and click the "Done" button to update log.

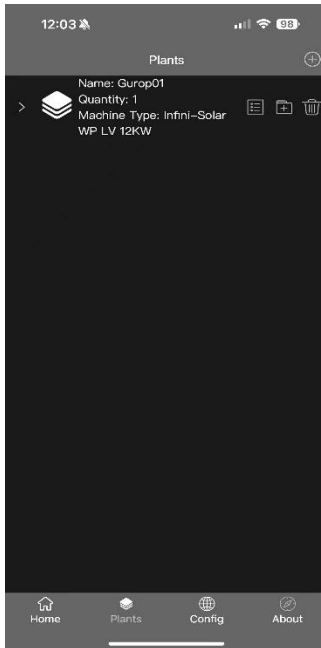


- Event log: Tap the time, select the month and click the "Browse" button to update log.



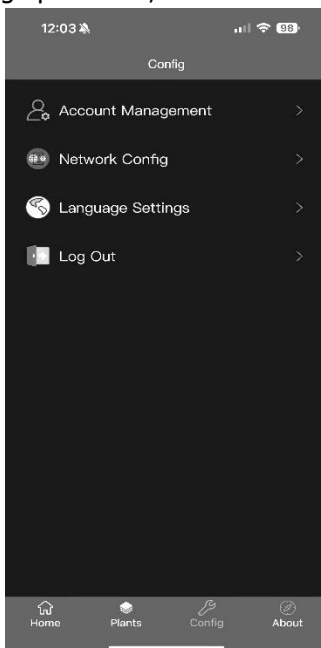
2-11 Plants

Click the "Plants" tab to categorize devices.



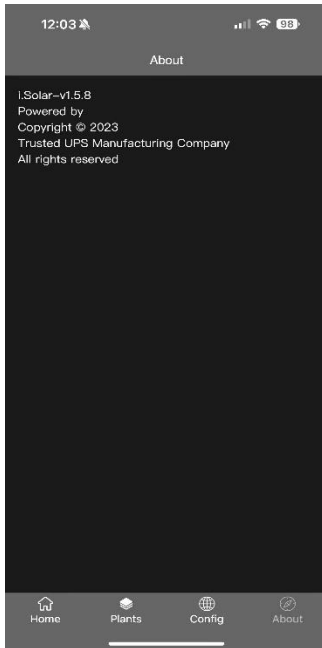
2-12 Configuration

Change password, remove account and change language



2-13 About

- Click the 'About' tab to enter the about page, where you can view the information about the App.

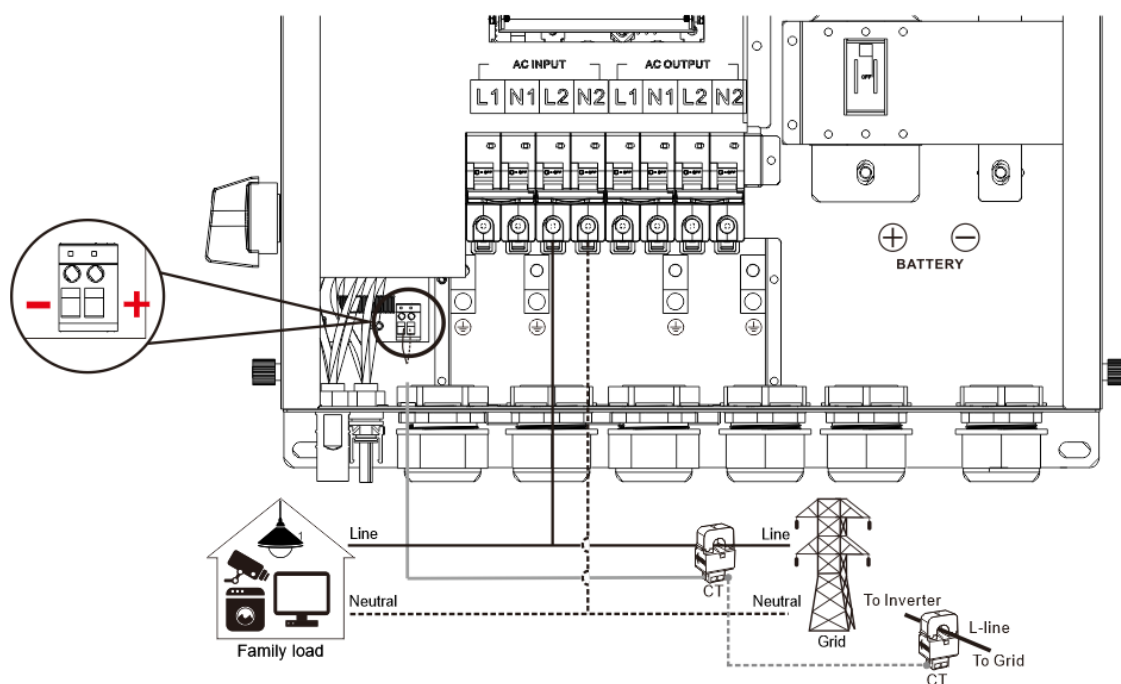


Appendix III: The CT Operation Guide

With the CT connected, the solar inverter can be easily integrated into the existing household system. The CT can be used to control power generation and the battery charging of the inverter.

Single commissioning

Step 1. Power off the inverter and connect the external CT 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 white wire.



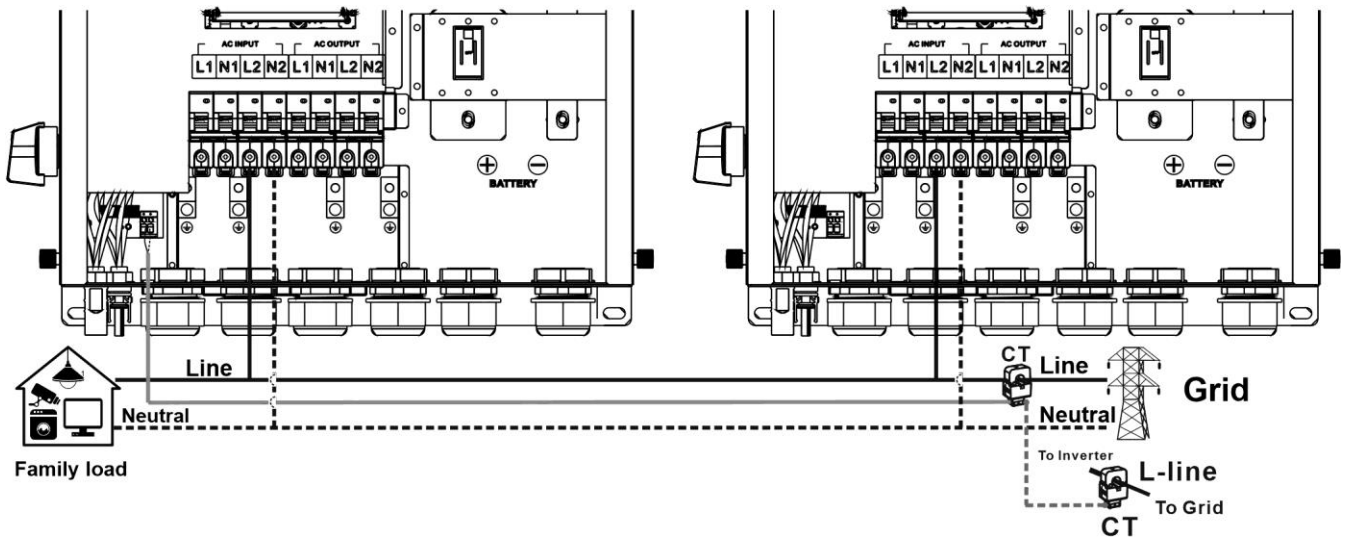
Step 2: Turn on the inverter

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

External CT function	Disable (default)	Enable
	External CT function: Enabled ▶ Disabled	External CT function: ▶ Enabled Disabled

Parallel commissioning

Step 1. Power off the inverters and connect the CT sensor according to the wiring diagram below. For other parallel circuits, please follow Appendix I.

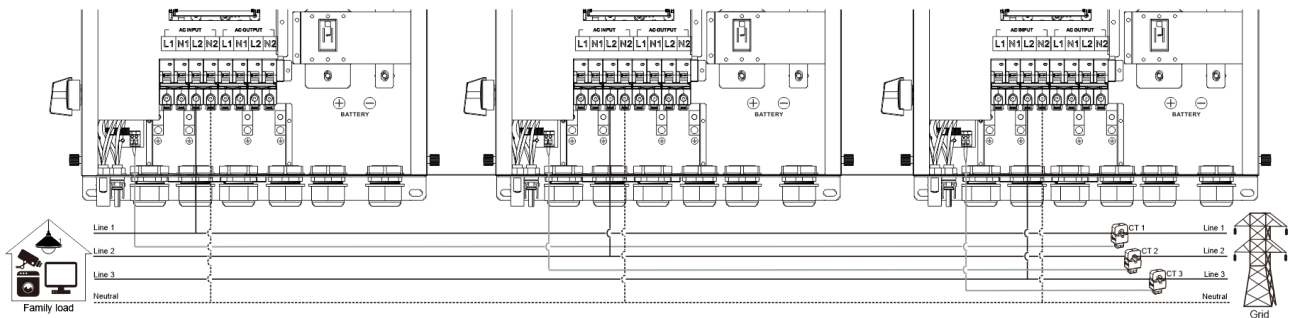


Step 2: Turn on each inverter.

Step 3: Enter LCD setting on the inverter with CT sensor connected and set CT function to “enabled”.

Three-phase commissioning

Step 1. Power off the inverters and connect the CT sensor according to the wiring diagram below. For other parallel circuits, please follow Appendix I.



Step 2: Turn on each inverter.

Step 3: Enter LCD setting on the inverter with CT sensor connected and set CT function to “enabled”.

IMPORTANT ATTENTION:

If applying CT function during parallel operation, it only needs one inverter from the parallel system connected to CT sensor. Be sure to enable LCD external CT function on the one inverter with CT connected and set up ‘Disable’ on the remaining inverters. Otherwise, it will cause CT function not working during parallel operation.