MOTOMA®

Power into the Future

USER MANUAL

InfiniSolar WP II 30KW / 50 KW
SOLAR INVERTER / CHARGER

Table of Contents

1. Introduction

1-1. System Overview

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

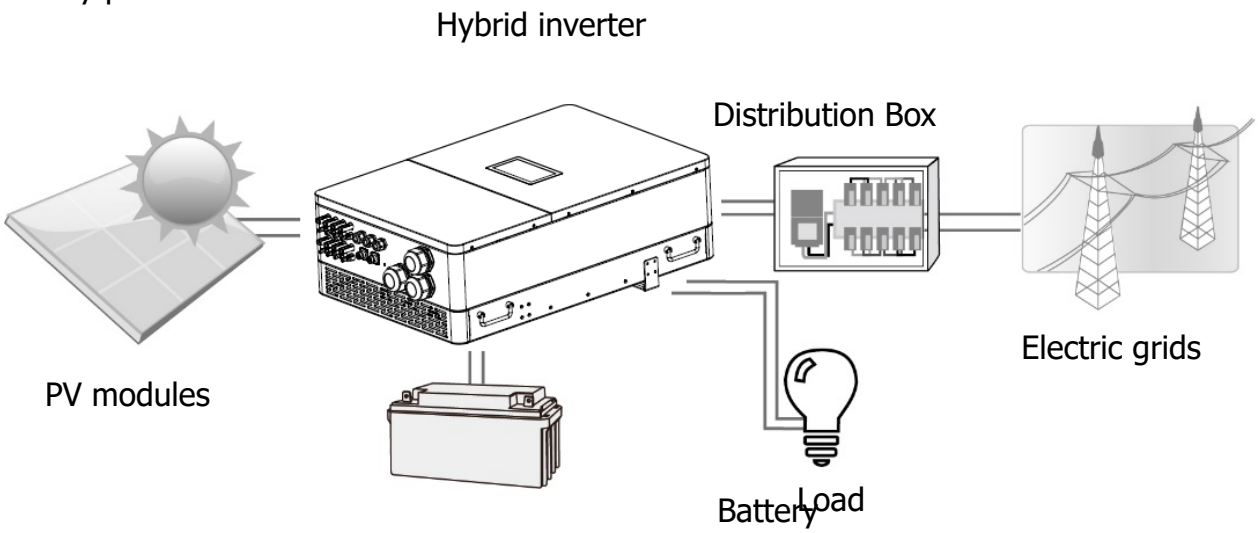


Figure 1 Basic Hybrid PV System Overview

Depending on different power situations, this hybrid inverter is designed to generate power from PV solar panels, battery, and the utility. When PV voltage is within acceptable range (see specification for the details), this inverter can feed-in power to the grid and charge battery. This inverter is compatible with PV module types of single crystalline and poly crystalline only. Do not connect PV panel 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. See Figure 1 for a simple diagram of a typical solar system.

Note: Based on the EEG standard, inverter sold to German is not allowed to charge battery from Utility. The relevant function is automatically disabled by the software.

1-2. Product Specifications

Model	InfiniSolar WP II 30KW	InfiniSolar WP II 50KW
Maximum PV Input Power	48,000 W	65,000 W
Rated Output Power	30,000 W	50,000 W
Maximum Charging Power	30,000 W	50,000 W
PV INPUT (DC)		
Nominal DC Power / DC Voltage Range	720 VDC / 300 VDC ~ 1000 VDC	
Start-up Voltage / Initial Feeding Voltage	300 VDC / 350 VDC	
MPP Voltage Range / Full Load MPP Voltage Range	350 VDC ~ 900 VDC / 500 VDC ~ 900 VDC	
No. of MPP Trackers / Maximum Input Current	3 / 36 A for each	4 / 36 A for each
No. of Strings Per MPP Tracker	2	2
GRID OUTPUT (AC, 3L/N/PE)		
Nominal Output Voltage	230 VAC (P-N) / 400 VAC (P-P)	
Output Voltage Range	184 - 265 VAC per phase	
Output Frequency Range	47.5 ~ 51.5 Hz or 59.3~ 60.5Hz	
Power Factor Range	0.9 lag – 0.9 lead	
EFFICIENCY (DC)		
Maximum Conversion Efficiency (DC/AC)	96.5%	
European Efficiency @ Vnominal	96%	
AC INPUT		
AC Start-up Voltage	120 VAC - 140 VAC per phase	
Auto Restart Voltage	180 VAC per phase	
Acceptable Input Voltage Range	170 - 280 VAC per phase	
Maximum AC Input Current	47.9 A	79.8 A
BATTERY MODE OUTPUT (AC, 3L/N/PE)		
Nominal Output Voltage	230 VAC (P-N) / 400 VAC (P-P)	
Output Waveform	Pure sine wave	
Efficiency (DC to AC)	97%	
BATTERY & CHARGER (Lead-acid/Li-ion)		
DC Voltage Range	200 – 900 VDC	
Maximum Battery Discharging Current	50 A	100 A
Maximum Charging Current	50 A	100 A
GENERAL		
PHYSICAL		
Dimension, D X W X H (mm)	290 x 580 x 900	
Net Weight (kgs)	85	90
INTERACE		
Communication Port	RS232, USB, Dry contact, RS485, WiFi	
Intelligent Slot	Optional SNMP or Modbus	
ENVIRONMENT		
Humidity	0 ~ 100% RH (No condensing)	
Operating Temperature	-20 to 60°C (Power derating above 45°C)	
Altitude	0 - 1000m	

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
	Do Not put it in the waste bin! Recycle it by licensed professional!

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

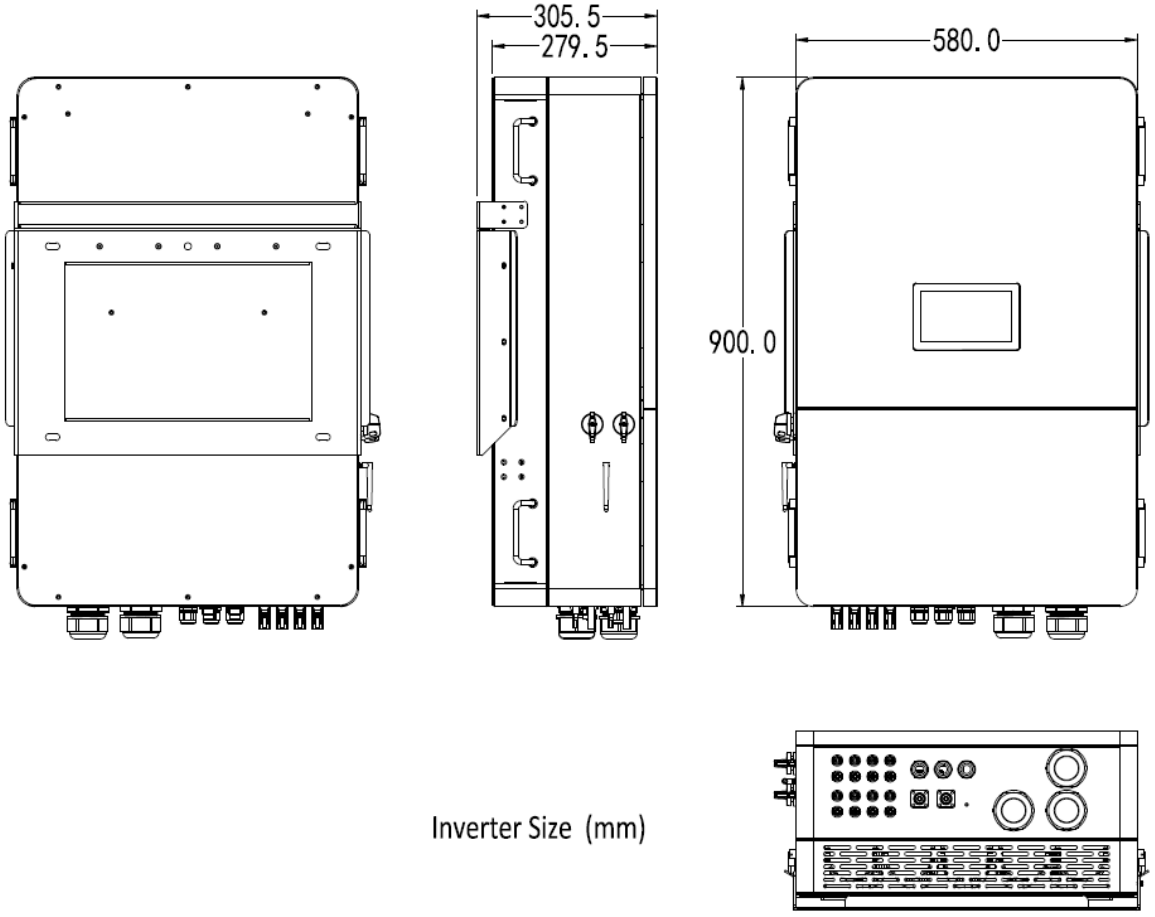
	**WARNING! Before installing and using this inverter, read all instructions and cautionary markings on the inverter and all appropriate sections of this guide.**
	**WARNING!** Normally grounded conductors may be ungrounded and energized when a ground fault is indicated.
	**WARNING!** This inverter is heavy. It should be lifted by at least two people.

	**WARNING!** The positive and negative terminals of the DC input of the inverter must not be grounded.
	**WARNING!** Because this inverter is non-isolated, only three types of PV modules are acceptable: single crystalline, poly crystalline with class A-rated and CIGS modules. To avoid any malfunction, do not connect any PV modules with possible current leakage to the inverter. For example, grounded PV modules will cause current leakage to the inverter. When using CIGS modules, please be sure NO grounding.
	**CAUTION!** It's requested to use PV junction box with surge protection. Otherwise, it will cause damage on inverter when lightning occurs on PV modules.
	**CAUTION!** One piece of 200A fuse is provided as over-current protection for the battery supply.
	**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.
	**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.
	**WARNING!** South Africa-NRS097-2-1:2017 Reference Impedance = 0.5ohm (R = 0.424, X = j0.265) Fault Level: Isc=467A, Ssc=323kVA **It is not intended to connect this inverter to a network with a higher network impedance than that specified above.** United Kingdom: G99 Issue 1 Maximum impedance = 0.145ohm (R=0.12, X=j0.08)
	**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.
	**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.
	**CAUTION!** Use only recommended accessories from installer. Otherwise, not-qualified tools may cause a risk of fire, electric shock, or injury to persons.
	**CAUTION!** To reduce risk of fire hazard, do not cover or obstruct the cooling fan.
	**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).

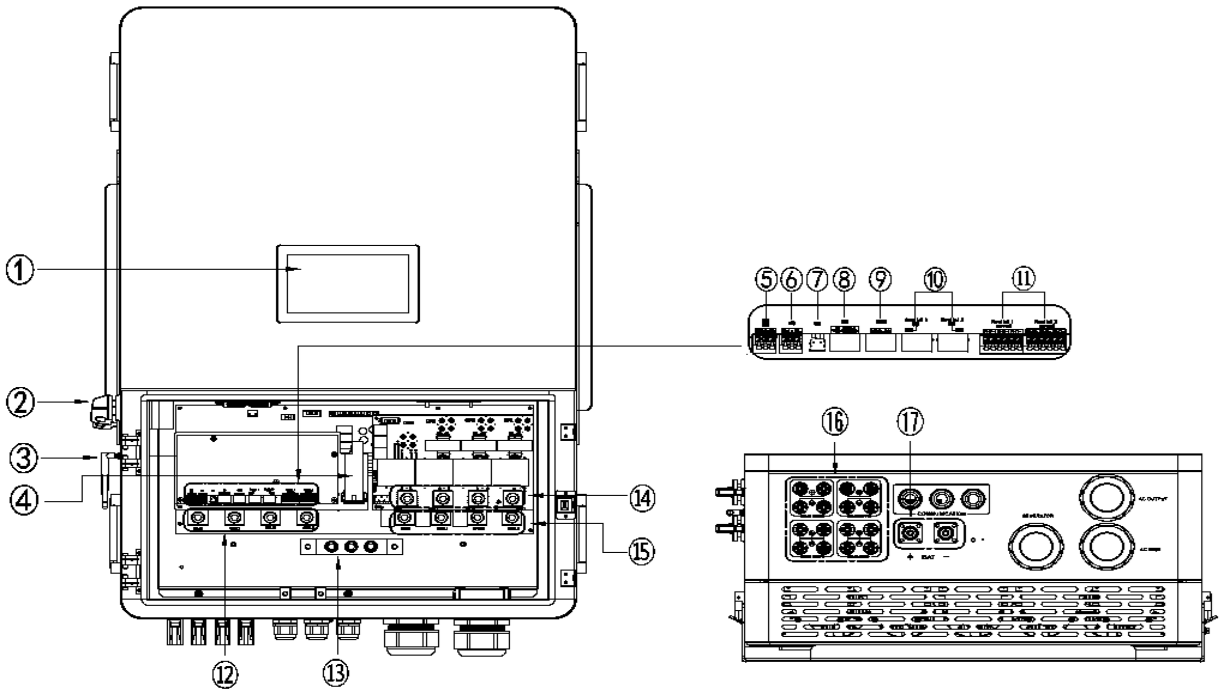
	**CAUTION!** AC breaker, DC switch and Battery circuit breaker are used as disconnect devices and these disconnect devices shall be easily accessible.
	**WARNING!** Risk of Voltage Backfeed. Before working on this circuit, isolate inverter/Uninterruptible Power System (UPS); then check for Hazardous Voltage between all terminals including the protective earth.

3. Unpacking & Overview

3-1. Product Overview



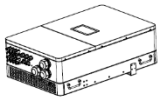
Inverter Size (mm)



① HMI display
② PV switch
③ WiFi antenna
④ Intelligent slot
⑤ Dry contact
⑥ EPO
⑦ USB communication port
⑧ BMS communication port
⑨ RS-232 communication port AC Output connectors (Load connection)
⑩ Parallel CAN port
⑪ Parallel current sharing port
⑫ Generator input
⑬ Earth bar
⑭ Power on/off switch
⑮ Grid input
⑯ PV input
⑰ Battery input

3-2. Packing List

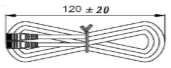
Before installation, please inspect the unit. Be sure that nothing inside the package is damaged. You should have received the following items inside of package:


Inverter unit


Manual


PV connectors x 8 sets


Battery plugs



Parallel CAN cable

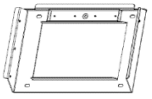

Share current cable

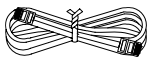

Software CD


Wi-Fi antenna


Fixing screws


Expansion bolt


Wall mount bracket


RS-232 cable

4. Installation

4-1. Precautions

This hybrid 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%).

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

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 -20~60°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.**

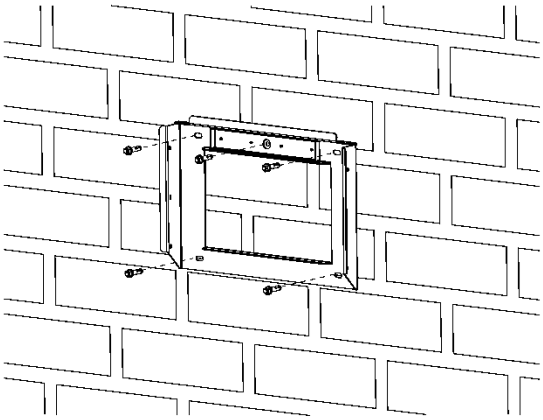
4-3. Mounting Unit

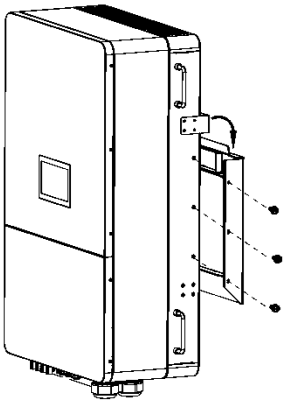
> ⚠ **WARNING! Remember that this inverter is heavy! Please be careful when lifting it out from the package.**

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

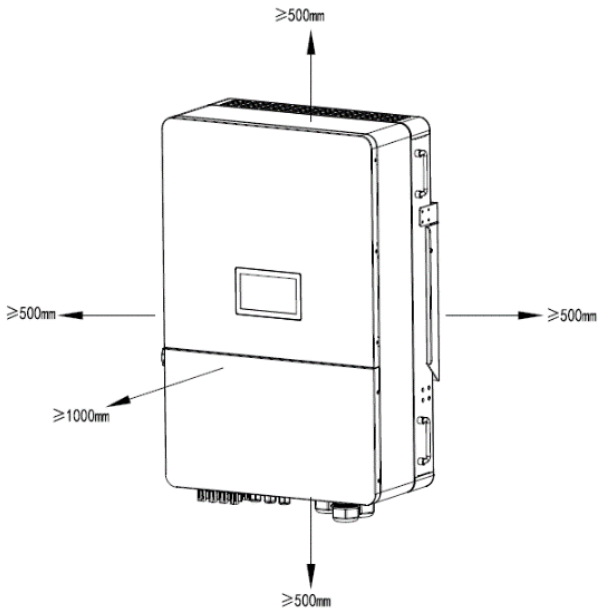
The inverter only can be used in a **CLOSED ELECTRICAL OPERATING AREA.** Only service people can enter into this area.

1. Choose the recommended drill head (as shown in below pic) to drill 5 holes on the wall with 40mm in depth.
2. Fix the wall mounting bracket.
3. Carry the inverter and hold it. Then, hang it on the bracket
4. Install side screws to firmly fasten.



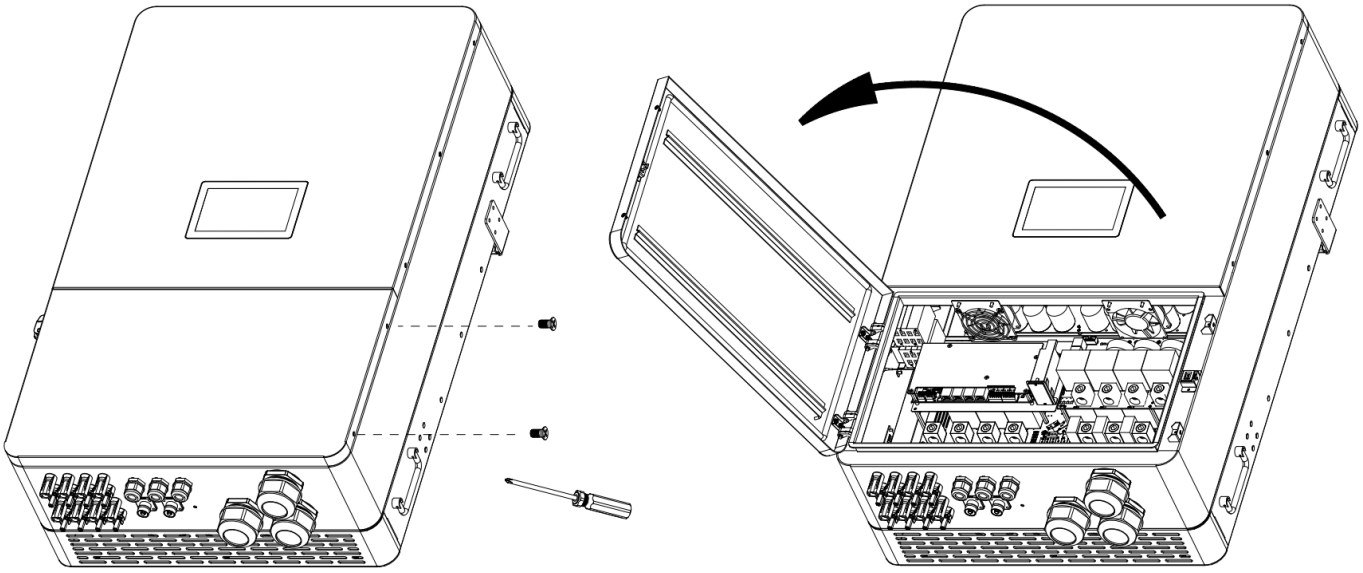


For proper air circulation to dissipate heat, allow a clearance of approx. 500mm to the side, above and below the unit. For the front, please keep a clearance of 1000mm space.

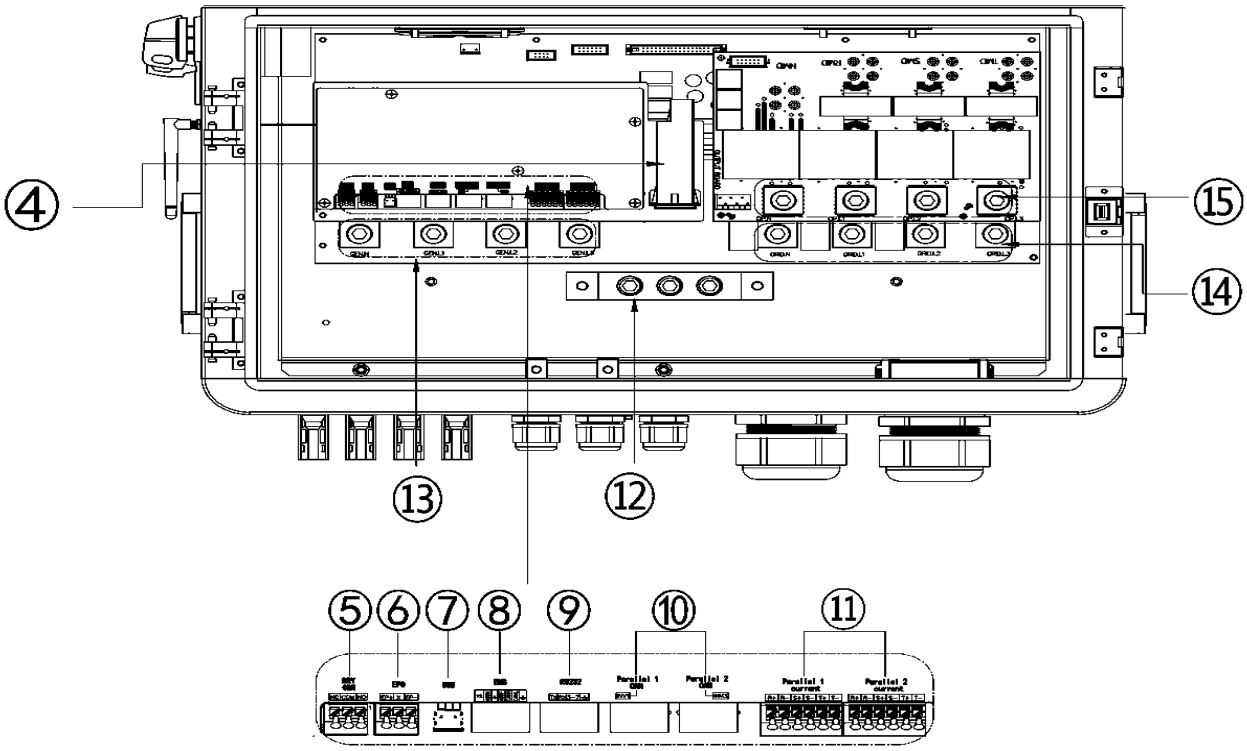


4-4. Preparation

Before connecting all wires, be sure to take off wiring cover by removing the four screws. Refer to chart below for the details.



Overview of the cable box



4) Intelligent slot	8) BMS	12) Generator input
5) Dry contact	9) RS232	13) Earth bar
6) EPO	10) Parallel CAN	14) Grid input
7) USB	11) Parallel current sharing	15) AC output (Load)

5. Grid / Generator / Load Connection

5-1. Preparation

Before connecting to the grid, a separated AC breaker must be installed between the inverter and grid, between the inverter and the backup load. It will ensure the inverter can be disconnected during maintenance and fully protected from over current. The recommended AC breaker for Grid is 240A.

⚠ **WARNING! There are three terminal blocks with "Grid" "Load" and "GEN" markings. Please do not misconnect input and output connectors.**

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

Recommended specification for AC Wire

Nominal Grid Voltage @230VAC per phase	Wire cross-section (mm^2) or AWG	Torque
WP II 30K	10 mm^2 or 6AWG	10Nm
WP II 30K (need 90A bypass)	25 mm^2 or 2AWG	10Nm
WP II 50K	25 mm^2 or 2AWG	20Nm
WP II 50K(need 200A bypass)	95 mm^2 or 0000	20Nm

5-2. Connecting to the Grid, Load and Generator

⚠ **WARNING! To prevent risk of electric shock, ensure the ground wire is properly earthed before operating this hybrid inverter no matter the grid is connected or not.**

⚠ **WARNING! Check the grid voltage and frequency with a multi-meter. It should be the same to "VAC" value on the product label.**

Please follow below steps to implement Grid, load and Gen port connection:

1. Before making Grid, Load and Generator connection, be sure to first turn off AC breaker.
2. Remove 10mm of the insulation sleeve for the conductors.

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

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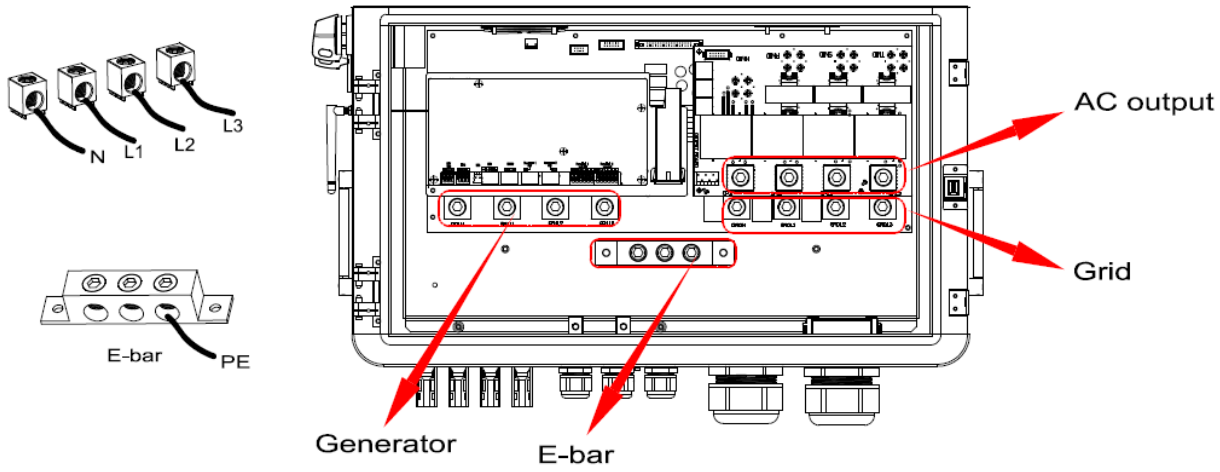
WARNING! Be sure that grid is disconnected before connect wire to the unit.

WARNING! To avoid big inrush current from the load, add an ATS before the load (ATS rating should be higher than 380V/160A)



4. Then insert AC output wires according to polarities indicated on the terminal block and tighten terminal. Be sure to connect corresponding N wires and PE wires to related terminals as well.

5. Make sure the wires are securely connected.

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

6. PV Module (DC) Connection

6-1. 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 **1000VDC/35A circuit breaker**.
NOTE2: The overvoltage category of the PV input is II.

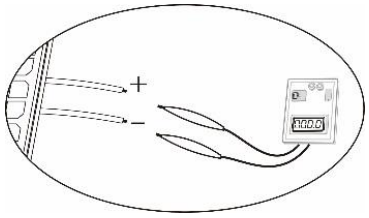
⚠	**WARNING! Because this inverter is non-isolated, only two types of PV modules are acceptable: single crystalline and poly crystalline with class A-rated. To avoid any malfunction, do not connect any PV modules with the possibility of leakage current to the inverter. For example, grounded PV modules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

Nominal/Max PV Voltage	720VDC/1000VDC
Wire cross-section (mm^2) or AWG	4-6mm^2 or 10-12AWG

Please follow below steps to implement PV module connection:

1. Check the input voltage of PV array modules. The acceptable input voltage of the inverter is 300VDC - 1000VDC. Please make sure that the maximum current load of each PV input connector is 36A.



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

2. Keep disconnect the circuit breaker and switch off the DC switch.

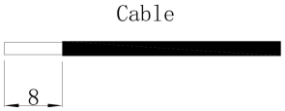
3. Assemble provided PV connectors with PV modules by the following below steps.

<u>Components for PV connectors and Tools:</u>

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

<u>Prepare the cable and follow the connector assembly process:</u>

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



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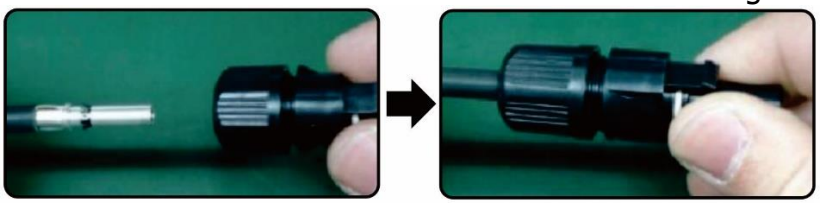
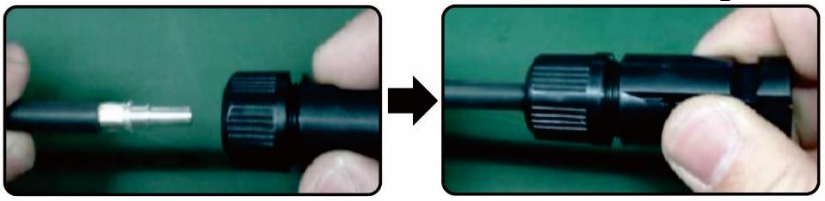
Insert striped cable into female terminal and crimp female terminal as shown below.

Insert assembled cable into female connector housing as shown below.



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

Insert assembled cable into male connector housing as shown below.



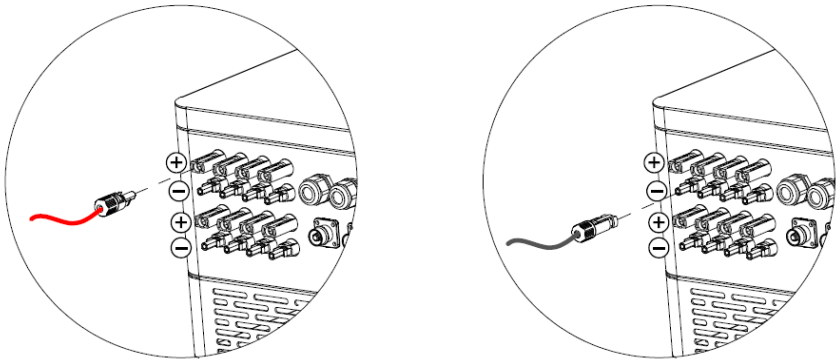
Reference insertion force: ≦ 50N

Reference withdrawal force: ≧ 50N

Then, use spanner to screw pressure dome tightly to female connector and male connector as shown below.

The reference Nut cap locking force is 2.0~2.5Nm.

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



CAUTION: Never directly touch terminals of the inverter. It will cause lethal electric shock. Do NOT touch the inverter to avoid electric shock. When PV modules are exposed to sunlight, it may generate DC voltage to the inverter.

6-2. Recommended Panel Configuration

Specifications	**Solar panel**
Nominal Max. Power (Pmax) (W)	740
Opt. Operating Voltage (Vmp) (V)	43
Opt. Operating Current (Imp) (A)	17.5
Open Circuit Voltage (Voc) (V)	50
Short Circuit Current (Isc) (A)	18.5
Cells	132

Recommended Combination					
Total Input Power	**PV1**	**PV2**	**PV3**	**PV4**	**Q'ty of modules**
26600W	18pcs*1	18pcs*1	X	X	36 pcs
40000W	18pcs*1	18pcs*1	18pcs*1	X	54 pcs
53000W	18pcs*1	18pcs*1	18pcs*1	18pcs*1	72 pcs
66000W	18pcs*2	18pcs*1	18pcs*1	18pcs*1	90 pcs

7. Battery Connection

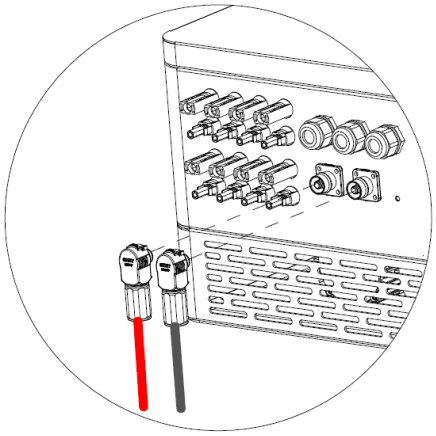
NOTE1: Before connecting to batteries, please install **separately** a DC circuit breaker between inverter and batteries. Please use **100VDC/200A circuit breaker**.
NOTE2: Please only use sealed lead acid battery, vented and Gel battery. Please check the maximum charging voltage and current when first 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

Model	**SIZE**
WP II 30K	25 mm^2 or 2AWG
WP II 50K	35 mm^2 or 1AWG

Crimp terminal onto wire with crimper tooling.

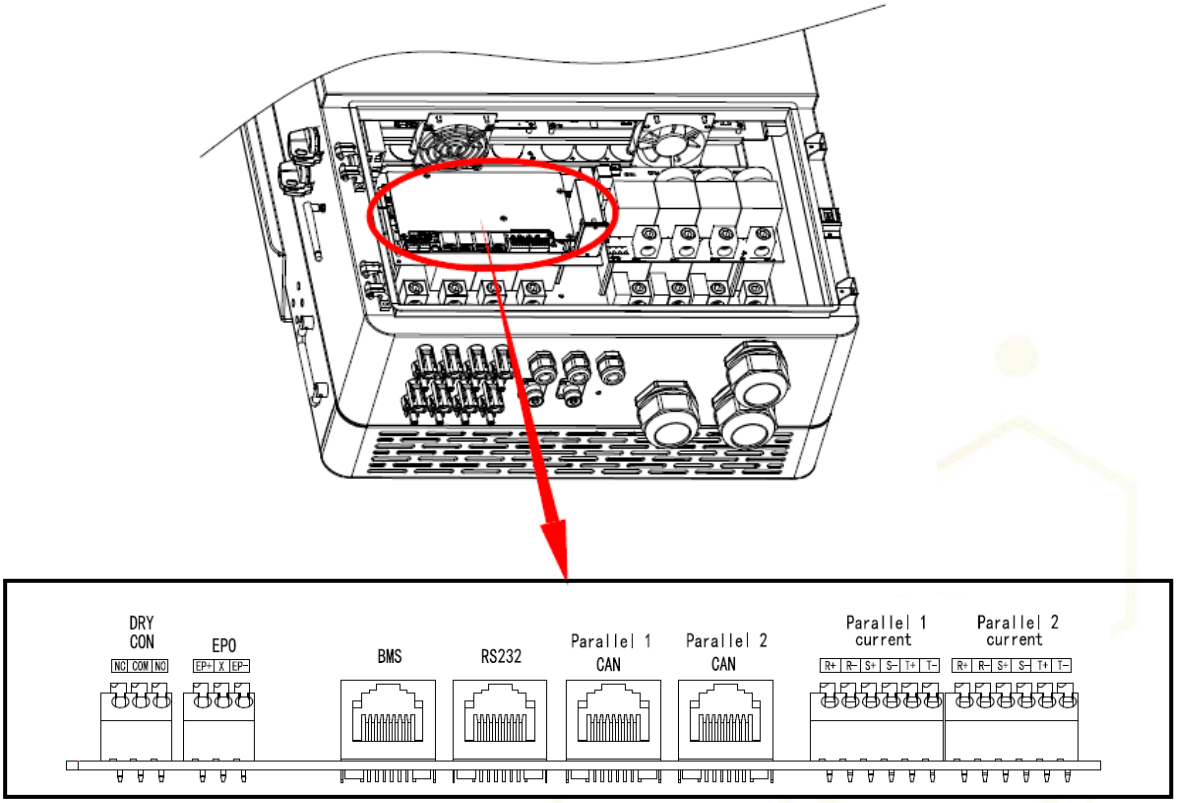
RED cable to the positive terminal (+);
BLACK cable to the negative terminal (-).



WARNING! Wrong connections will damage the unit permanently.

8. Communication

The inverter is equipped with several communication ports to communicate with a PC with the corresponding software. This intelligent slot is suitable to install with SNMP card and Modbus card. 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.

8-1. Wi-Fi Connection

This unit is equipped with a Wi-Fi transmitter. The Wi-Fi transmitter can enable wireless communication between the solar inverters and the monitoring platform. Users can access and control the monitored inverter with downloaded APP. You may find "Energy-Mate" 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.

8-2. Dry Contact Signal

There is one dry contact available on the communication board. It could be used to remote control external generator.

> ⚠ **CAUTION:** The application of the dry contact should not exceed the electric parameter shown as below. Otherwise, the internal relay will be damaged.

Electric Parameter

Parameter	Symbol	Max.	Unit
Relay DC voltage	Vdc	30	V
Relay DC current	Idc	1	A

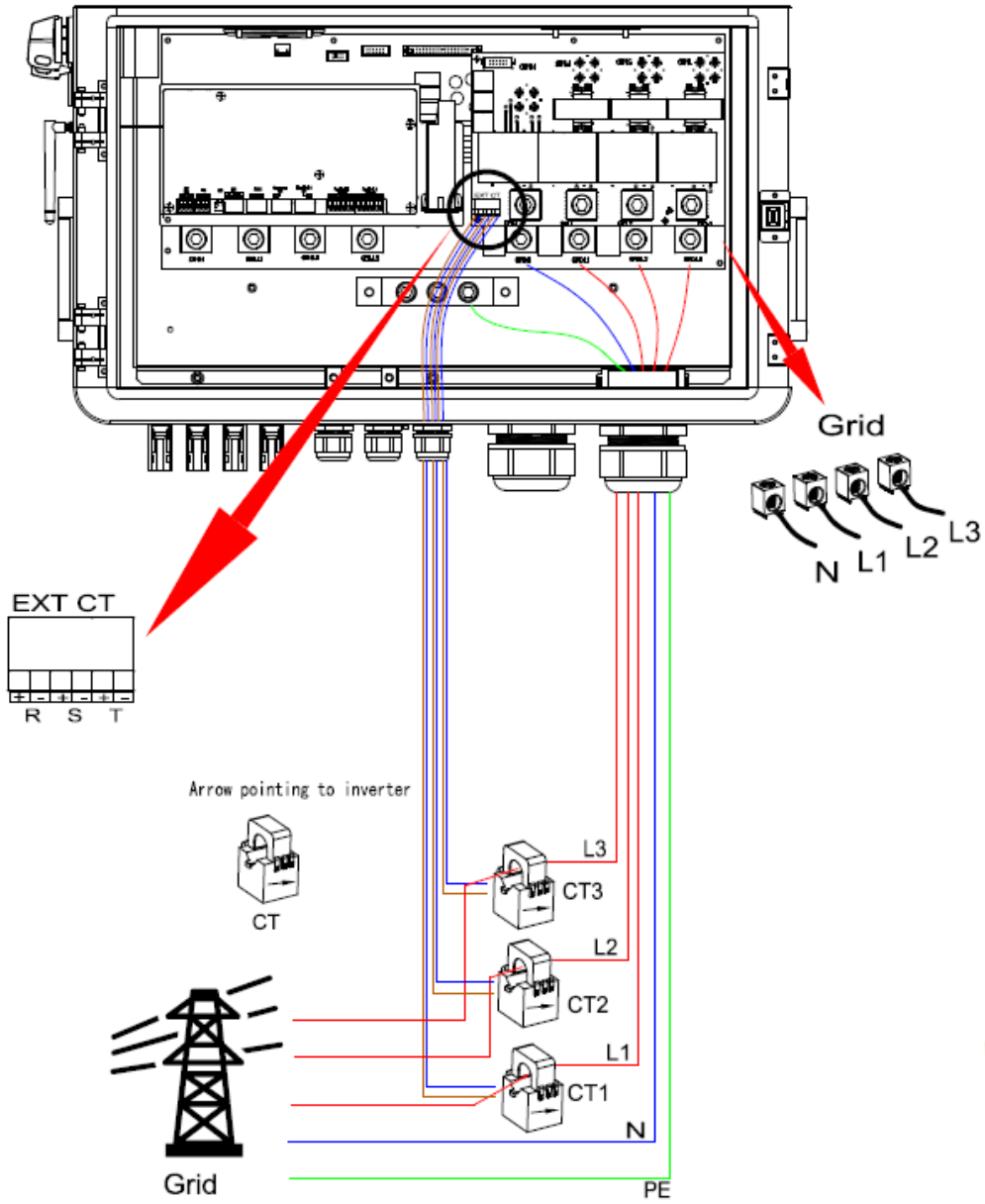
Function Description

Unit Status	Condition	Dry contact port: 	
		NO&C	NC&C
Power Off	Unit is off and no output	Open	Close
Power On	Battery voltage is higher than Battery re-discharging voltage when grid is available/unavailable.	Open	Close
	Battery voltage is lower than setting battery cut-off discharging voltage when grid is available/unavailable.	Close	Open

9. Application with External CT

9-1. Connection with External CT only (when household panel near the inverter)

With the CT connected, the hybrid 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.

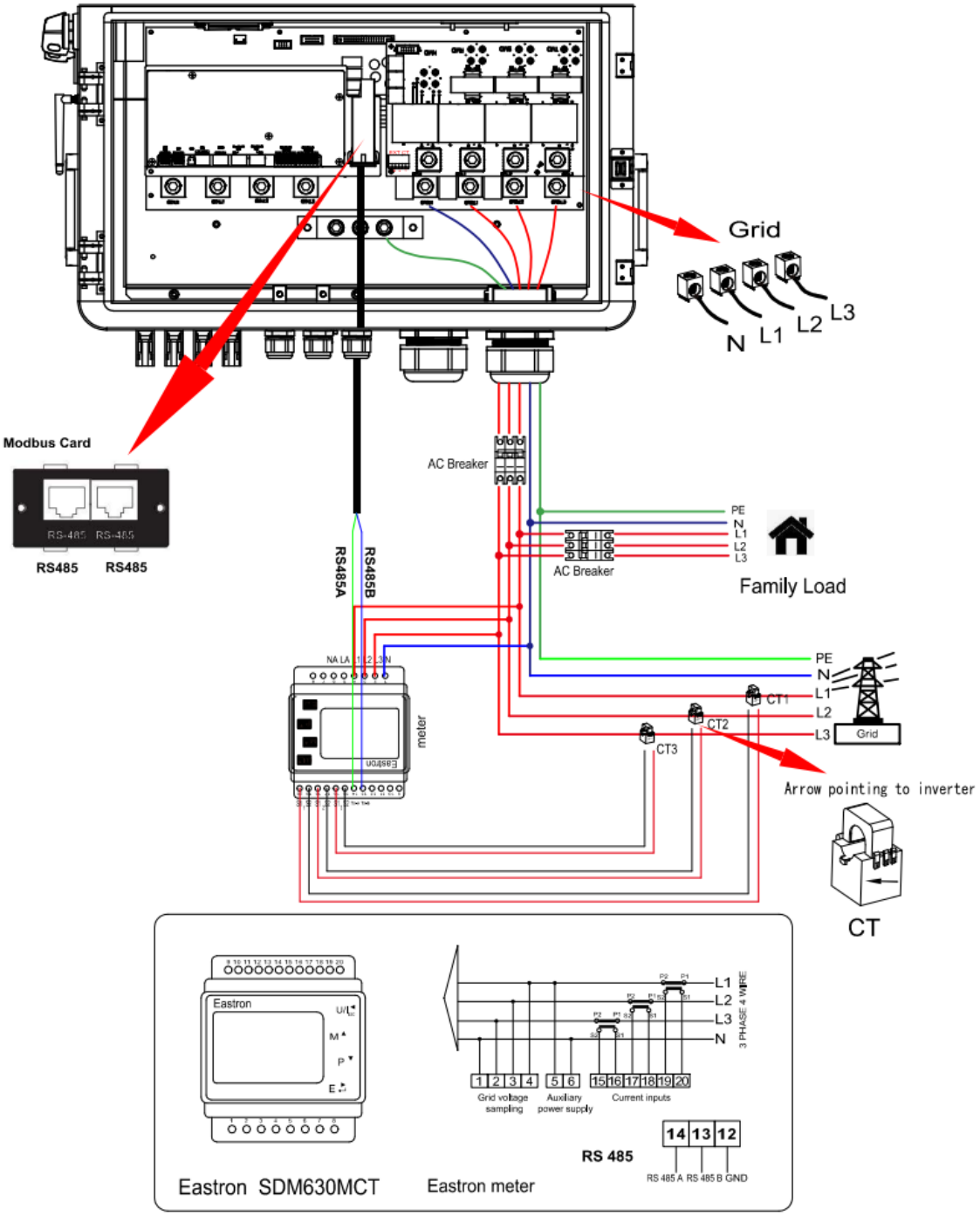


NOTE: When the reading of the load power on the LCD is not correct, please reverse the CT arrow.

9-2. Connection with External CT and Energy Meter

With Modbus card II and energy meter, hybrid inverter can be easily integrated into the existing household system. For details please refer to Modbus card II manual.

Equipped with Modbus card II, hybrid inverter is connected to energy meter with RS485 communication port. It's to arrange self-consumption via Modbus card to control power generation and battery charging of the inverter.



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10. 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 6)
- 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.
- AC circuit breaker (only applied when the utility is required), battery circuit breaker, and DC circuit breaker are installed correctly.

2. Switch on the battery circuit breaker and then switch on the PV DC breaker. After that, if there is utility connection, please switch on the AC circuit breaker. At this moment, the inverter is turned on already. However, there is no output generation for loads. Then:

- If the LCD lights up to display the current inverter status, commissioning has been successful. After pressing "ON" button, the inverter will start to supply power to the loads.
- If a warning/fault indicator appears in LCD, an error has occurred to this inverter. Please inform your installer.

3. Please insert CD into your computer and install monitoring software in your PC. Follow the below steps to install software.

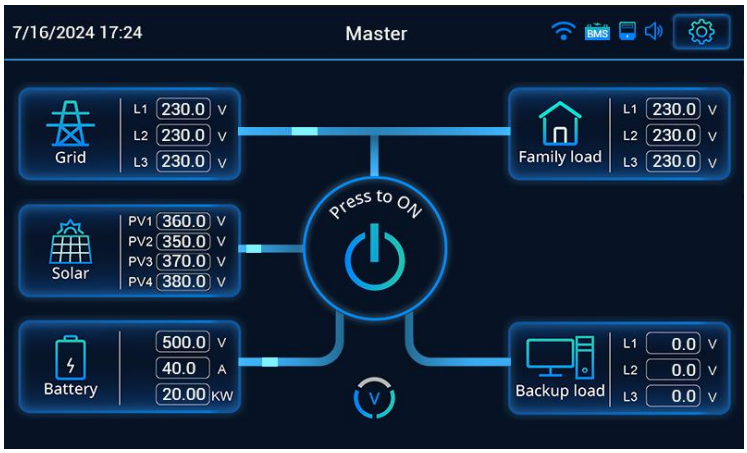
- Follow the on-screen instructions to install the software.
- When your computer restarts, the monitoring software will appear as shortcut icon located in the system tray, near the clock.

NOTE: If using modbus card as communication interface, please install bundled software. Check local dealer for the details.

11. Operation

11-1. Main interface

The LCD is touchscreen and main screen shows the overall information of the inverter.
WP II 30K model is equipped with three PV strings and WP II 50K model is with four PV strings.



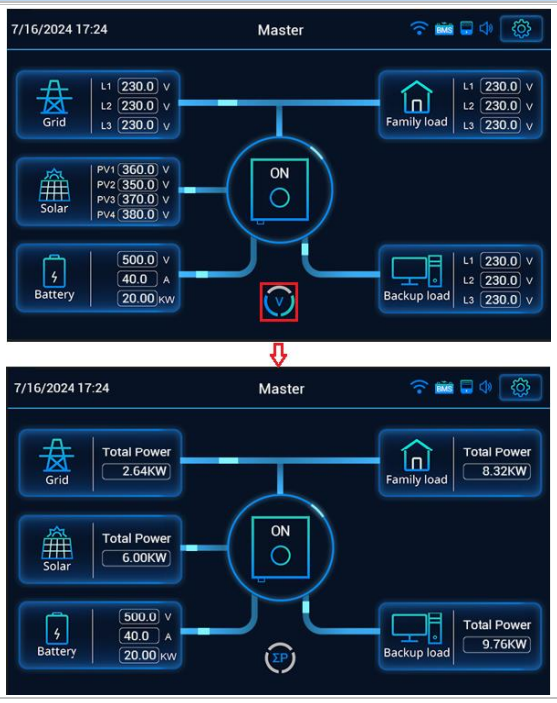
11-2. LCD Information

Display	Function
7/16/2024 17:24	Indicates date and time
Master	Indicates parallel operation is working. Parallel status: Master or Slave Stand-alone status: Single
	Indicates the WiFi is connected. The icon grayed out indicates not connected
BMS	Indicates the BMS is connected. The icon grayed out indicates not connected
	Indicates the meter is connected. The icon grayed out indicates not connected
	Indicates the buzzer is ring. The icon grayed out indicates is silent.
	Touch the icon to system setting
Grid L1 230.0 V L2 230.0 V L3 230.0 V **or** Generator L1 230.0 V L2 230.0 V L3 230.0 V	Displays Grid or Generator voltage and current
Solar PV1 360.0 V PV2 350.0 V PV3 370.0 V PV4 380.0 V	Displays Solar voltage and current
Battery 50.0 V 60.0 A 3.00 KW	Displays Battery voltage and current
Family load L1 230.0 V L2 230.0 V L3 230.0 V	Displays Family load voltage and current
Backup load L1 230.0 V L2 230.0 V L3 230.0 V	Displays Backup load (AC output) voltage and current

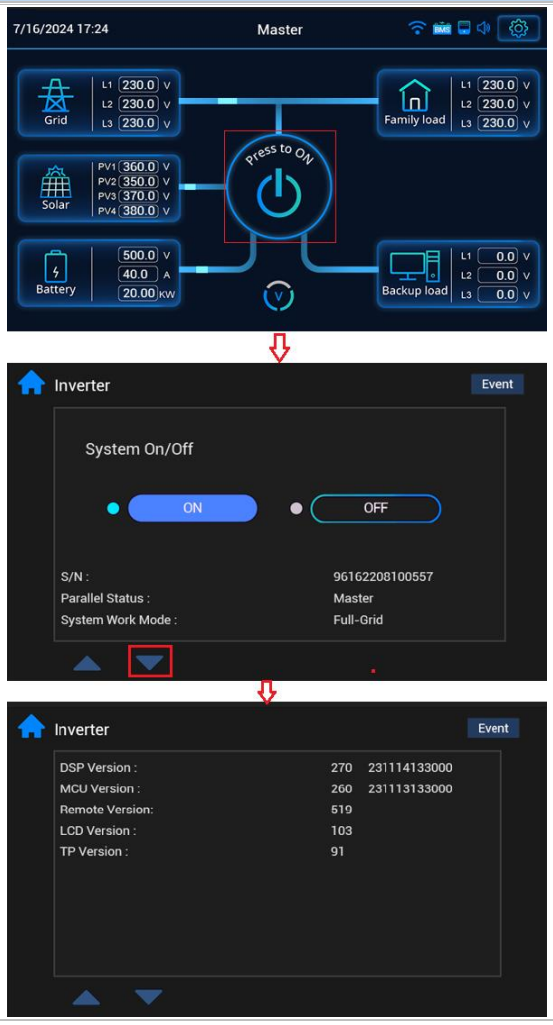
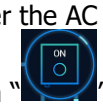
	Touch the icon to enter the Inverter screen
	Three Phase Data (Voltage, Current and Power are cycle displayed every 5s)
	Return to main screen.
	Touch "▼" to see the information of next page. Touch "▲"to see the information of previous page
	**Touch this icon back to previous page.**

11-3. Detailed Operation

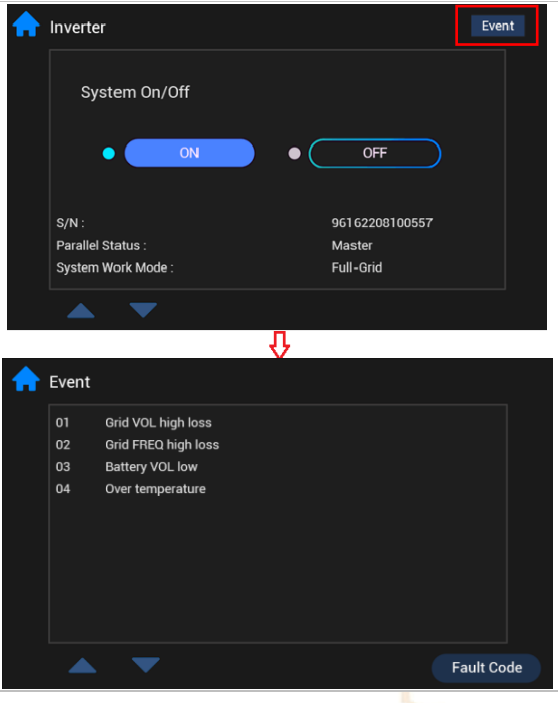
- **Main Screen**

Display	Details
	In default main screen, it will show information of Grid, Solar, Battery, Family load and Backup load. Touch "  " and it will turn to "  ". The main screen will change to show the total power of the grid, the total Solar power, the total power of the family load, and the total power of the Backup load.

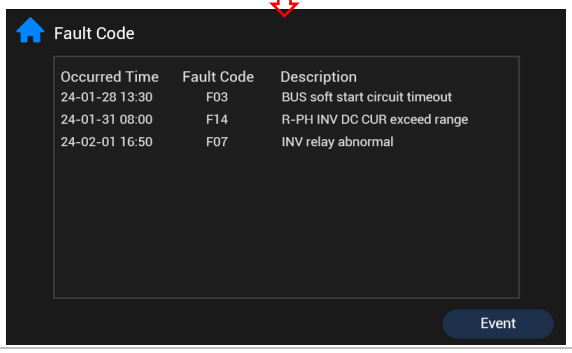
- **Main Screen – System On/ Off**

Display	Details
	Touch the "  "to enter the System On/Off page. System On/Off: Press ON icon to turn on AC output and press OFF icon to turn off AC output. After the AC output is turn on, icon "  " changes to icon "  ". It will show inverter information below. • S/N: Inverter ID • Parallel Status: Single, Master, Slave • System work mode: It will show inverter working mode • DSP version • MCU version • Remote version • LCD version • TP version View the internal software version number of the inverter.

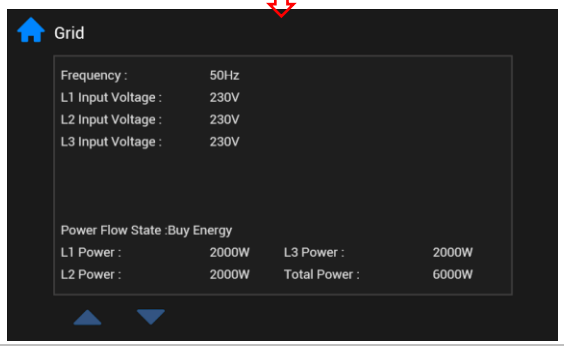
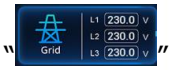
- **Main Screen – Event**

Display	Details
	Touch "Event" icon in Inverter screen or Fault code screen to access the warning information. Touch HOME icon to return to main screen. Touch "Fault Code" to check the fault record.

- **Main Screen – Fault Code**

Display	Details
 	When the fault icon is currently displayed in main screen, touch the icon "  "to check the detailed fault record of this inverter.

- **Main Screen – Grid or Generator Information**

Display	Details
 	Touch "  " to enter the Grid screen page. It will list Grid information. ① Frequency ② Input voltage for each phase (L1, L2, L3) ③ Power Flow State: Buy or Sell ④ Power of each phase (L1, L2, L3) and Total power

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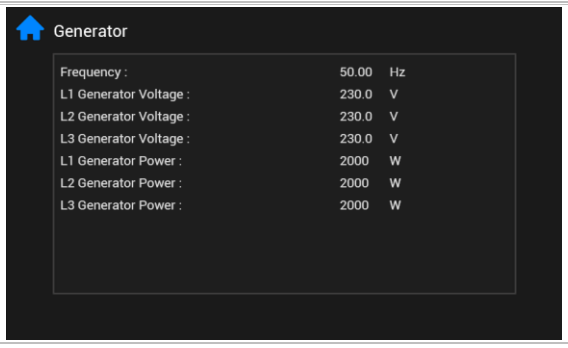
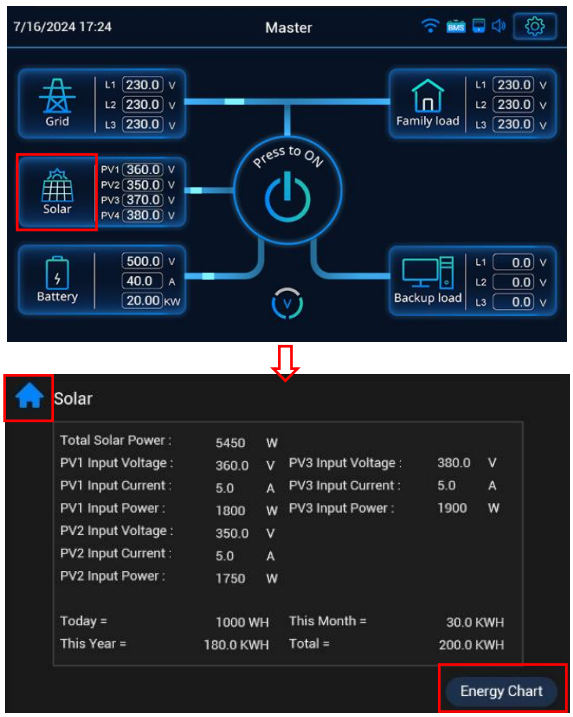
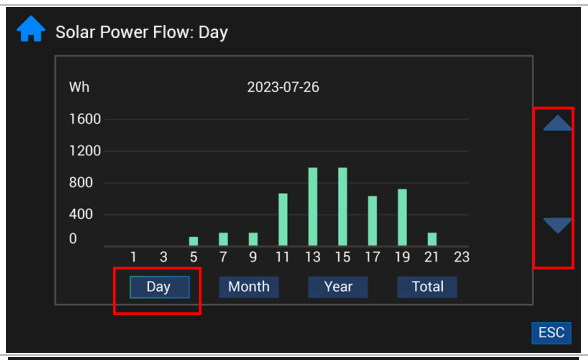
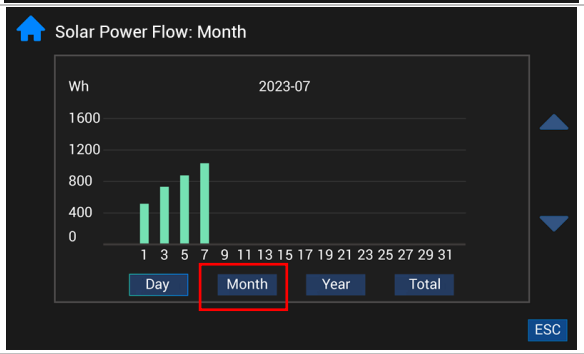


If this inverter is connected to generator, the "Generator" icon will display. Touch "  " to enter the Generator screen page.

① Frequency
② Generator voltage for each phase (L1, L2, L3)
③ Power of each phase (L1, L2, L3)

- **Main Screen – Solar Information**

Display	Details
	Touch "  " to enter the Solar screen page. It displays detailed Solar information including total PV power, PV1/PV2/PV3 voltage and current power. Touch "Energy Chart" to access power generation statistic page. Touch HOME icon return to main screen.
 	Daily, monthly, annual and total power generation will be displayed on this page. If it's in "Day" page, touch "▲" will show the energy data for the previous day. Touch "▼" will show the energy data for the next day

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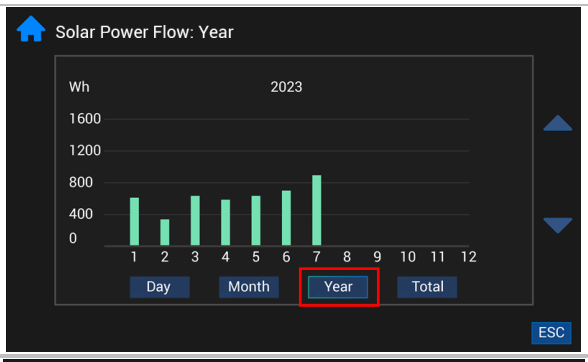
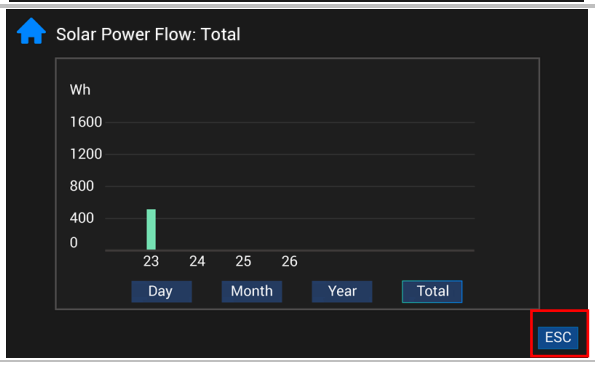
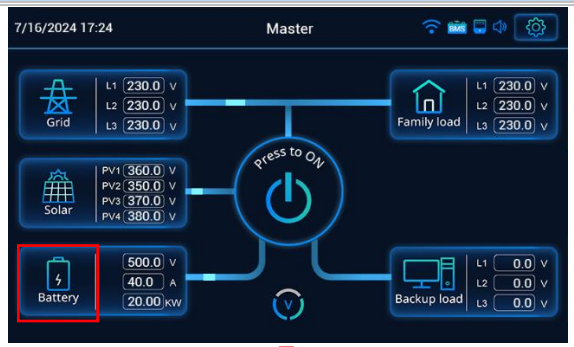
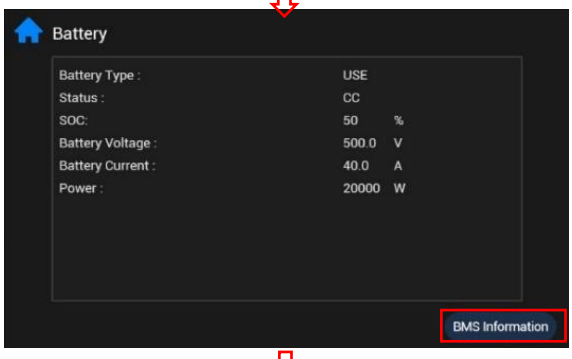
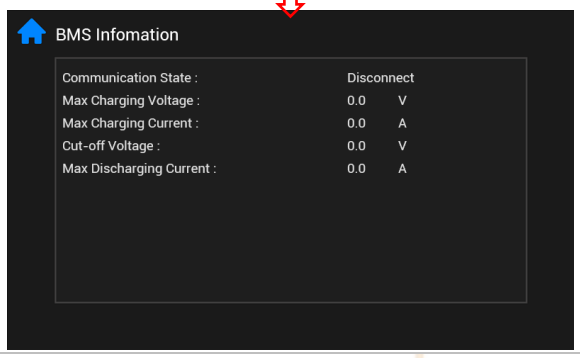
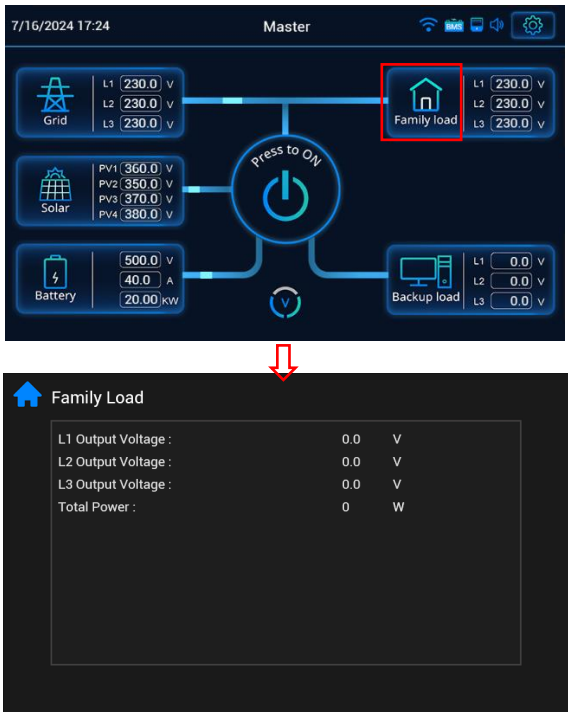
	
	Press "ESC" icon to back to previous page.

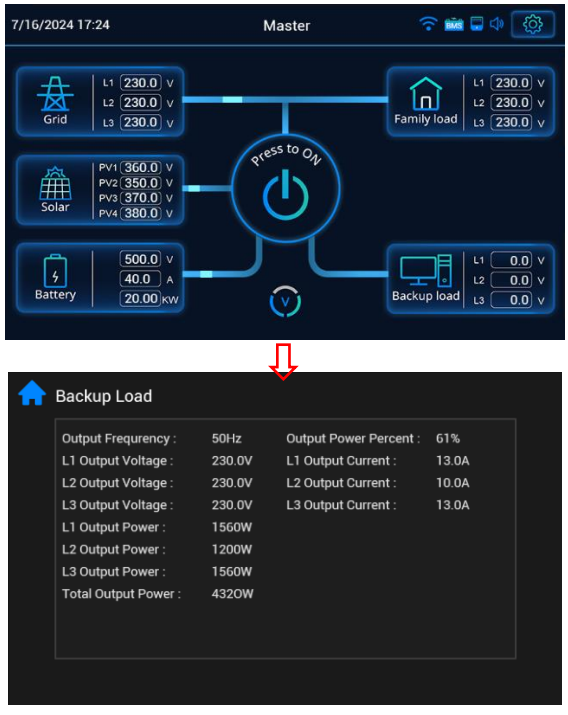
- **Main Screen –Battery Information**

Display	Details
  	Touch "  " to enter the Battery screen page. ● Battery Type (USE, LIB, PYL, PYC, REPT, GSL) ● Status: CC/ CV/ Floating Discharging/ Disconnect ● SOC: 0-100% ● Battery Voltage: 200-900V ● Battery Current: -50~50A (WP II 30KW) -100~100A (WP II 50KW) Negative numbers represent discharges and positive numbers represent charges ● Power: 0~30KW (WP II 30KW) 0~50KW (WP II 50KW) Touch "  " icon to check battery BMS information. ● Communication Status: Connect/ Disconnect ● Max Charging Voltage ● Max Charging Current ● Cut-off Voltage ● Max Discharging Current

Main Screen –Family load Information

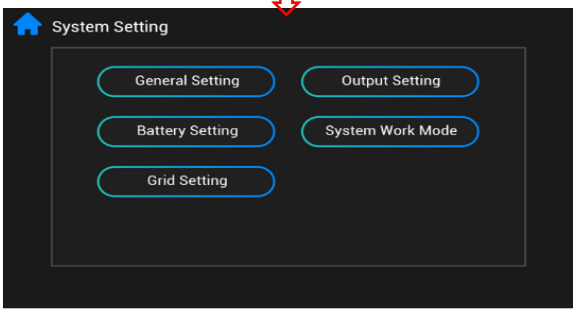
Display	Details
	Touch "  " to enter the Family load screen. ● L1& L2& L3: Output Voltage for each phase. ● Total Power

- **Main Screen –Backup load Information**

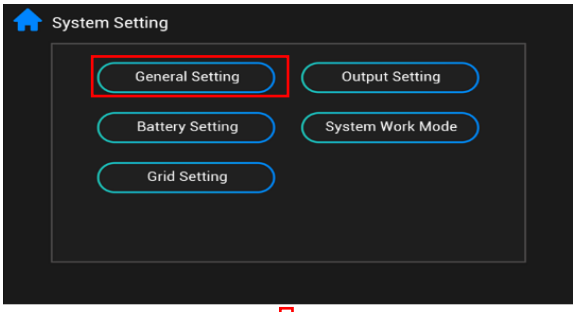
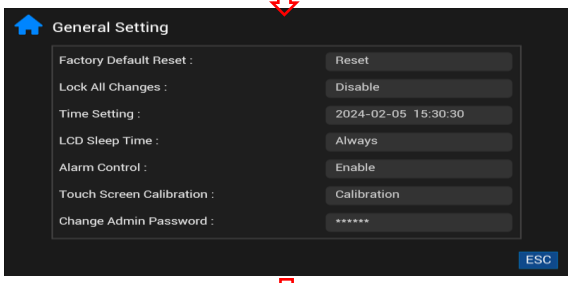
Display	Details
	Touch "  " to enter the Backup load screen. ● L1& L2& L3: Output voltage, current, power for each phase ● Total Output Active Power ● Output Frequency:50Hz / 60Hz ● Output Power Percent:0-100%

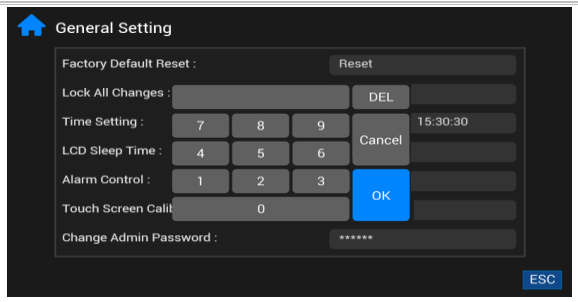
11-4. System setting

- **Main Screen- System setting**

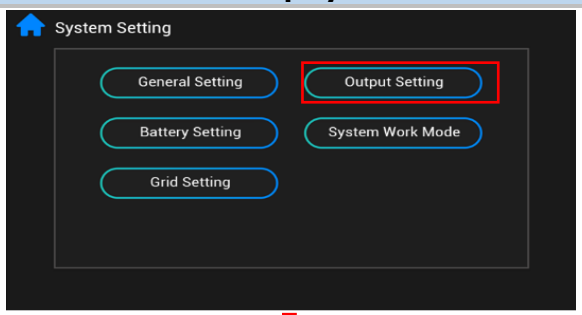
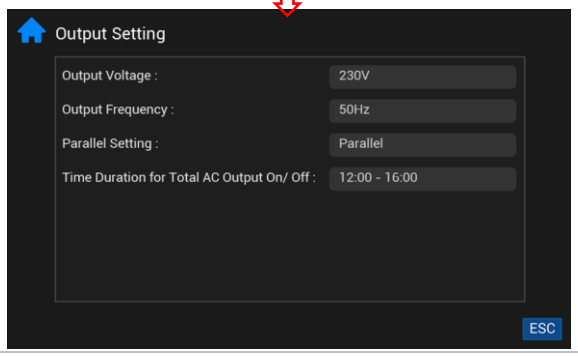
Display	Details
 	Touch "  " to enter the Backup load screen. ● General Setting ● Output Setting ● Battery Setting ● System Work Mode ● Grid Setting

- **System setting – General Setting**

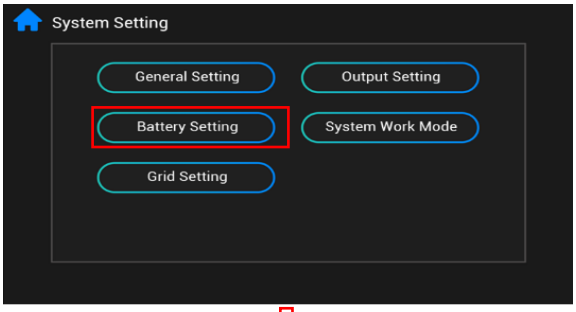
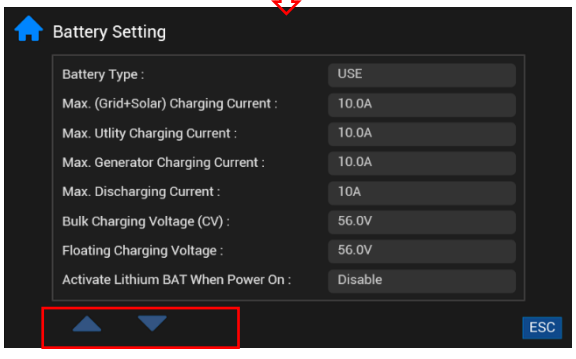
Display	Details
 	Enter the General Setting screen. ● Lock All Changes: Cannot change any option after it is enabled. ● Time Setting: Set the inverter time based on the local time ● LCD Sleep Time: Set the time to turn off the screen for 30s, 1min or never ● Alarm control: When the function is enabled, the buzzer is silent ● Touch Screen Calibration: If the touch screen is insensitive, you can calibrate the touch screen with this option ● Change Admin Password: Default password 0000. It is recommended to change the password after the inverter is running ● Factory Default Reset: Password is required for Factory Default Reset. Input the default password press "OK" to confirm enter Factory Default Reset. Note: This operation will also clear all existed data stored here, and shall be used cautiously.



● System setting – Output Setting

Display	Details
 	Enter the Output Setting screen. ● Output voltage: 220V/ 230V(default)/ 240 V ● Output frequency: 50Hz(default)/ 60 Hz ● Parallel Setting: Single/ Parallel ● Time Duration for Total AC output on/ off The setting range of scheduled time for AC output on is from 00:00 to 23:00.

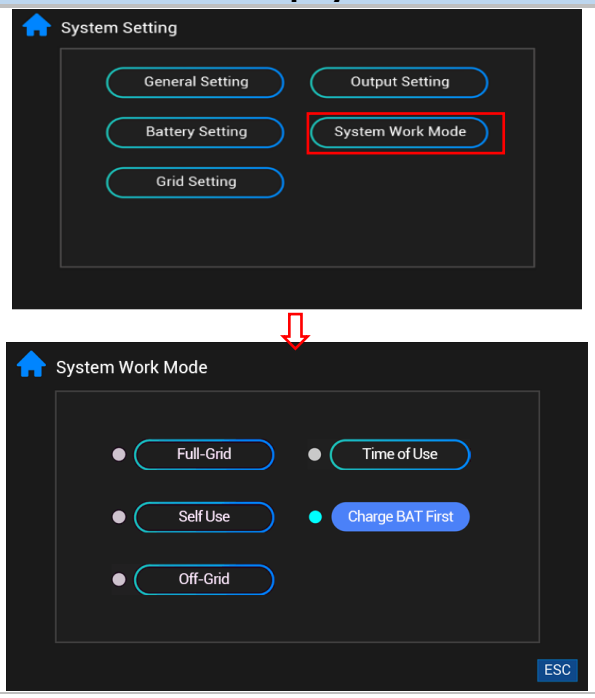
● System setting – Battery Setting

Display	Details
 	Enter the Battery Setting screen. ● Battery type ● Max. (Grid+Solar) Charging Current: 10A(default). Setting range is from 1A to 100A(WPII50K) or 50A(WPII 30K).Increment of each click is 1A. ● Max. Utility Charging Current 10A(default). Setting range is from 1A to 100A(WPII50K) or 50A(WPII 30K).Increment of each click is 1A. ● Max. Discharging Current: 50A(default). Setting range is from 1A to 100A(WPII50K) or 50A(WPII 30K).Increment of each click is 1A. ● Bulk Charging Voltage (CV): 664.2V(default). Setting range is from 500V to 900V. Increment of each click is 1V. ● Floating Charging Voltage: 664.2V(default). Setting range is from 500V to 900V. Increment of each click is 1V. ● Activate Lithium BAT When Powered On: Disable(default) / Enable Touch "▼" go to next page with more setting:

System setting – Battery Setting - Battery type

Display	Details
	Enter the Battery type Setting screen. ● USE (default): User-defined settings for Max. (Grid+Solar) Charging Current, Bulk Charging Voltage (CV), and Floating Charging Voltage. ● LIB: Vol's Lithium (485 protocol) ● PYL: Pylontech (Modbus, 485 protocol) ● PYC: Pylontech (CAN protocol) ● REPT: REPT Lithium (CAN protocol) ● GSL: GSL Lithium (485 protocol) If LIB, PYL, PYC, REPT, or GSL is selected, the system will automatically set the Max. (Grid+Solar) Charging Current, Bulk Charging Voltage (CV), and Floating Charging Voltage. If any lithium battery is selected in Battery type, setting value will change to SOC automatically. Setting range is from 5% to 80%. Increment of each click is 5%.

System setting – System Work Mode

Display	Details
	Enter the System Work Mode screen. ● Full-Grid ● Time of Use ● Self Use ● Charge BAT First ● Off-Grid

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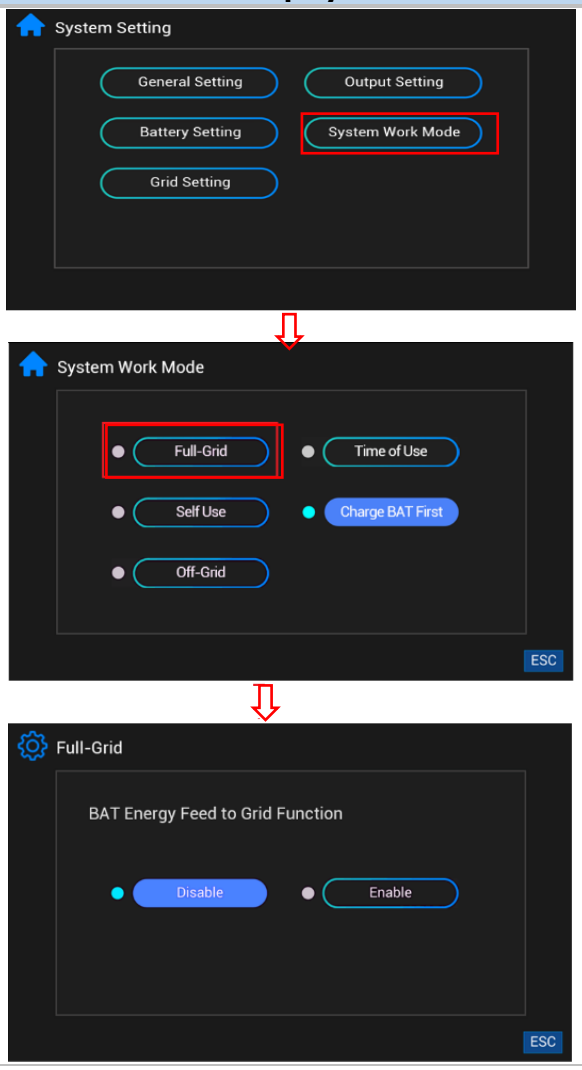
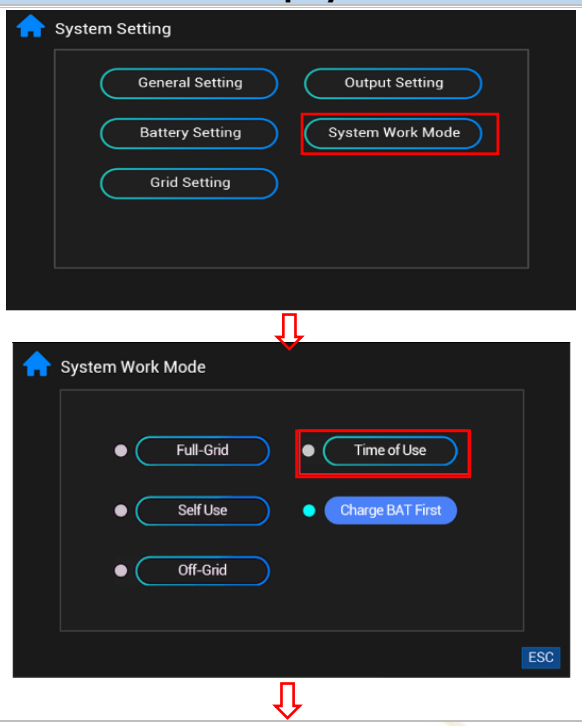
System setting – System Work Mode – Full-Grid

Display	Details
	Full-Grid Mode: This mode allows hybrid inverters to feed excess power generated by solar panels into the grid. If the "BAT Energy Feed to Grid Function" is enabled, energy from the battery can also be fed into the grid. The priority of power sources for the load is as follows: 1. Solar panels 2. Battery (until the state of charge (SOC) or voltage reaches the re-discharging point) 3. Grid

System setting – System Work Mode – Time of Use

Display	Details
	Time Of Use Mode Set specific times to charge/discharge the battery from the grid. ● Charging Time: Grid charges the battery. ● Discharging Time: PV/Battery power the load first; excess PV charges the battery. ● No Charging/Discharging Time: Battery doesn't discharge, even at full SOC. Example: Charging: 19:00-23:30

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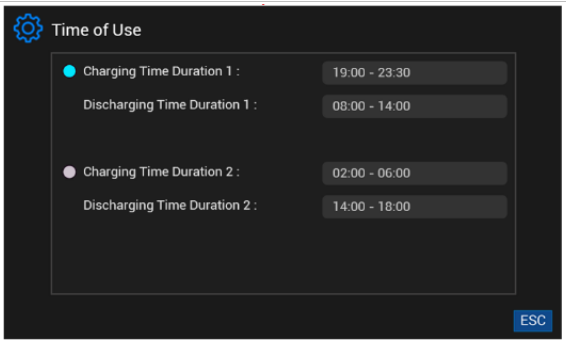
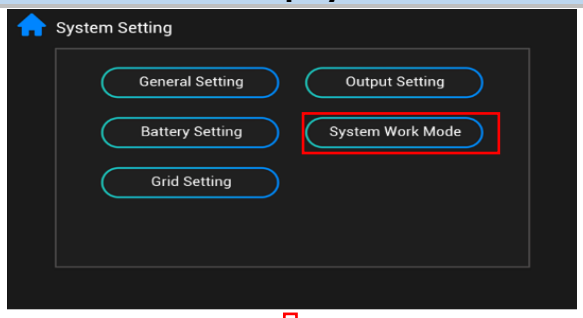
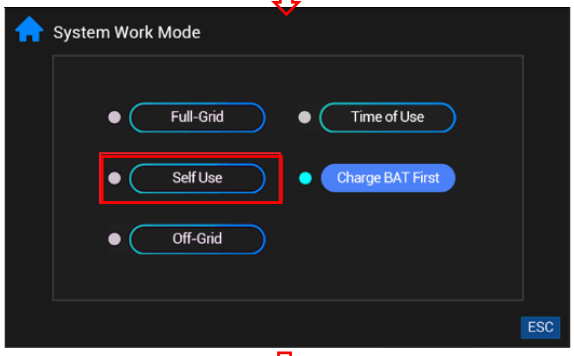
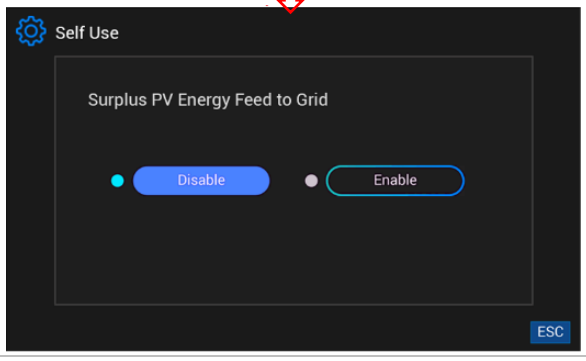
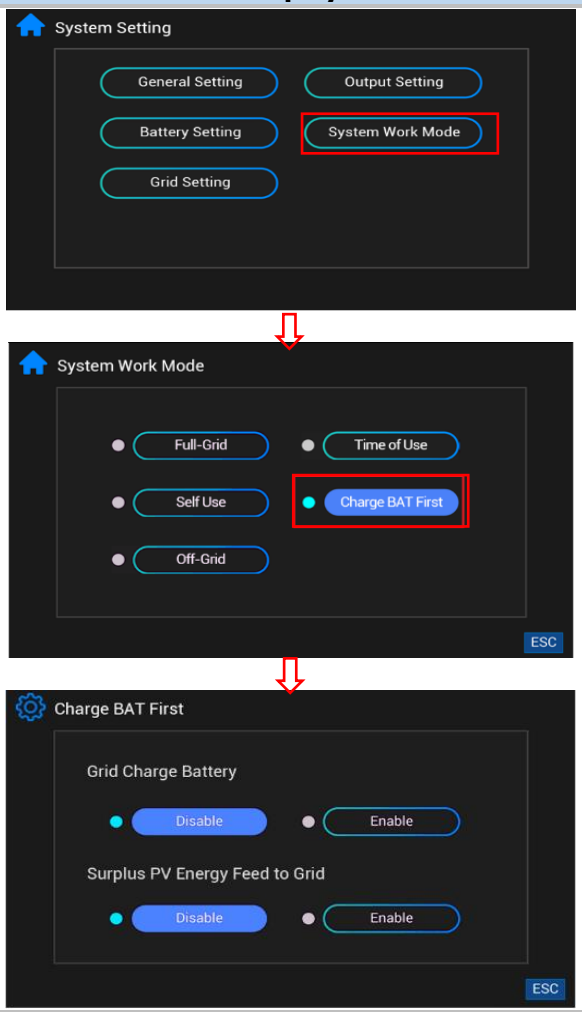
	Discharging: 08:00-14:00 23:30-08:00: Grid doesn't charge; battery doesn't discharge. 08:00-14:00: PV/Battery power load; excess PV charges battery. 14:00-19:00: Grid doesn't charge; battery doesn't discharge. 19:00-23:30: Grid charges battery; Grid/PV power the load.

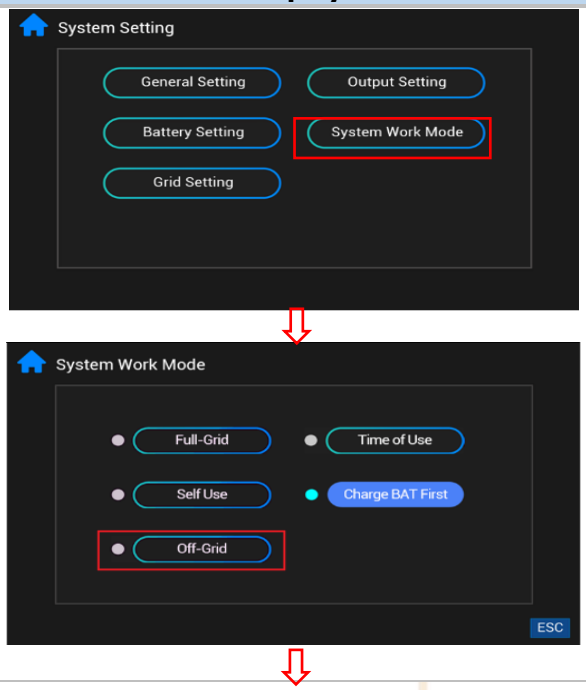
- **System setting – System Work Mode – Self Use**

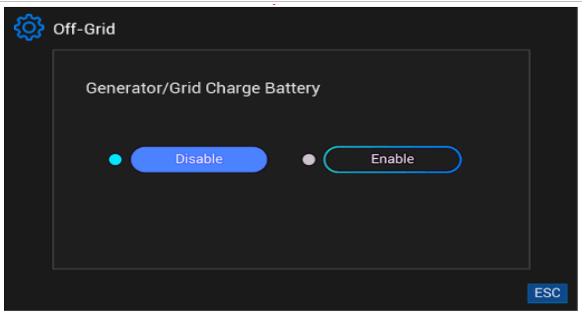
Display	Details
  	Self-Use Mode Powers household load first. Grid supplements if PV/battery is insufficient. No grid feed-in. Requires electricity meters & Modbus card to prevent grid feed-in, ensuring only backup, battery charging, and household loads are supplied. PV to Grid: Enabled: PV feeds excess to grid. Disabled: No grid feed-in. See "Application with Energy Meter" for installation.

System setting – System Work Mode –Charge BAT First

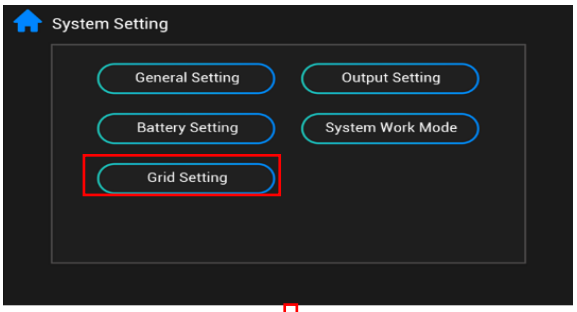
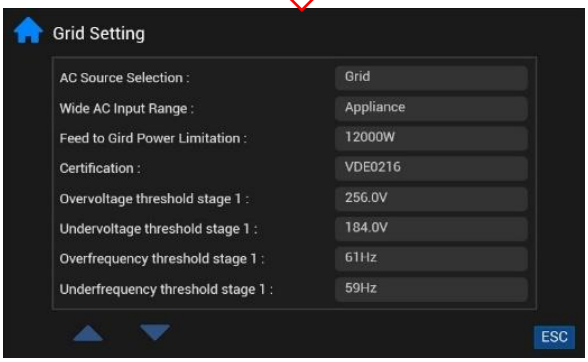
Display	Details
	Charge BAT First mode ● Grid charge battery enabled: PV charges battery first, then powers load. Grid charges battery and powers load if PV is insufficient. ● Grid charge battery disabled: PV charges battery first, then powers load. Grid powers load if PV is insufficient, but doesn't charge battery. PV charges battery.

System setting – System Work Mode –Off-Grid

Display	Details
	Off-Grid mode ● Generator/Grid charge battery Disabled: PV and battery power the load. If insufficient, grid powers the load. PV charges the battery. ● Generator/Grid charge battery Enabled: PV and battery power the load. If insufficient, grid powers the load. PV charges the battery. Grid charges battery when PV is unavailable.

- **System setting –Grid Setting**

Display	Details
 	Grid Settings: ① AC Source: Grid/Generator ② AC Input Range: Appliance/UPS ③ Feed-in Limit: 0~30kW (default 30kW, for WPII30K); 0~50kW (default 50kW, for WPII50K) ④ Certification:VDE0126 (default), VDE4105, NRS097, G99 ⑤ Overvoltage 1: 264.5V ⑥ Undervoltage 1: 184.0V ⑦ Overfrequency 1: 51.50Hz ⑧ Underfrequency 1: 47.48Hz ⑨ Overvoltage 2: 264.5V ⑩ Undervoltage 2: 184.0V ⑪ Overfrequency 2: 51.50Hz ⑫ Underfrequency 2: 47.48Hz

12. 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 DC breakers.
- 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.

13. 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.

13-1. Warning List

There are 20 situations that are defined as warnings. We can check warning code on "Main screen- Inverter Menu-Event" page. If there are several codes, it will display in sequences. Please contact your installer when you can't deal with the warning information.

Code	Warning Event	Description
01	Line voltage high loss	Grid voltage is too high.
02	Line voltage low loss	Grid voltage is too low.
03	Line frequency high loss	Grid frequency is too high.
04	Line frequency low loss	Grid frequency is too low.
05	Line voltage loss for long time	Grid voltage is higher than 253V.
06	Ground Loss	Ground wire is not detected.
07	Island detect	Island operation is detected.
08	Line waveform loss	The waveform of grid is not suitable for inverter.
09	Line phase loss	The phase of grid is not in right sequence.
10	EPO detected	EPO is open.
11	Overload	Load exceeds rating value.
12	Over temperature	The temperature is too high inside.
13	Batter voltage low	Battery discharges to low alarm point.
14	Battery under-voltage when grid is loss	Battery discharges to shutdown point.
15	Battery open	Battery is unconnected or too low.
16	Battery under-voltage when grid is OK	Battery stops discharging when the grid is OK.
17	Solar over voltage	PV voltage is too high.
b0	Stop discharging battery	Informs inverter to stop discharging battery.
b1	Stop charging battery	Informs inverter to stop charging battery
B2	Charge battery	Informs inverter to charge battery.

13-2. Fault Reference Codes

When a fault occurs, error icon will be displayed, and the buzzer will sound continuously. Please refer to following fault codes

Situation			Solution
Fault Code	Fault Event	Possible Cause	
01	Bus voltage over	Surge	1. Restart the inverter. 2. If the error message still remains, please contact your installer.
02	BUS voltage under	PV or battery disconnect suddenly	1. Restart the inverter 2. If the error message still remains, please contact your installer.
03	BUS soft start time out	Internal components failed.	Please contact your installer.
04	INV soft start time out	Internal components failed.	Please contact your installer.
05	R phase INV over current	Surge	1. Restart the inverter. 2. If the error message still remains, please contact your installer.
06	Over temperature	Internal temperature is too high.	1. Check the ambient temperature and fans. 2. If the error message still remains, please contact your installer.
07	Relay fault	Internal components failed.	Please contact your installer.
08	DC CT sensor fault	Internal components failed.	Please contact your installer.
09	Solar input power abnormal	1. Solar input driver damaged. 2. Solar input power is too much when voltage is more than 850V.	1. Please check if solar input voltage is higher than 850V. 2. Please contact your installer.
11	Solar over current	Surge	1. Restart the inverter. 2. If the error message still remains, please contact your installer.
12	GFCI fault	Leakage current excceds the limit.	1. Check the wire and panels which may cause the leakage. 2. If the error message still remains, please contact your installer.
13	PV ISO fault	The resistance between PV and ground is too low.	
14	R phase INV DC current over	Utility fluctuates.	1. Restart the inverter. 2. If the error message still remains, please contact your installer.
16	GFCI sensor fault	GFCI sensor failed.	Please contact your installer.
22	Battery high voltage fault	Battery voltage exceeds the limit.	1. Check the battery voltage. 2. If the error message still remains, please contact your installer.
23	Over load	The inverter is loaded with more than 110% load and time is up.	Reduced the connected load by switching off some equipment.
24	S phase INV over current	Surge	1. Restart the inverter. 2. If the error message still remains, please contact your installer.
25	T phase INV over current	Surge	1. Restart the inverter. 2. If the error message still remains, please contact your installer.
26	INV line voltage short	Output short circuited(RN,SN,TN)	Check if wiring is connected well and remove abnormal load.
27	Fan lock	Fan failure	Please contact your installer.
29	INV CT sensor	Internal components	Please contact your installer.

	fault	failure	
30	S phase INV DC current over	Utility fluctuates.	1. Restart the inverter. 2. If the error message still remains, please contact your installer.
31	T phase INV DC current over	Utility fluctuates.	1. Restart the inverter. 2. If the error message still remains, please contact your installer.
32	DC/DC over current	Battery voltage fluctuates.	1. Restart the inverter. 2. If the error message still remains, please contact your installer.
33	R phase INV voltage low	Internal components failed.	Please contact your installer.
34	R phase INV voltage high	Internal components failed.	Please contact your installer.
36	OP voltage fault	Grid connects to output terminal	Don't connect the grid to the ouput terminal.
38	Short circuited on PV input	Short circuited on PV input	Please contact your installer.
39	S phase INV voltage low	Internal components failed.	Please contact your installer.
40	T phase INV voltage low	Internal components failed.	Please contact your installer.
41	S phase INV voltage high	Internal components failed.	Please contact your installer.
42	T phase INV voltage high	Internal components failed.	Please contact your installer.
47	INV phase voltage short	Output short circuited(RS,ST,RT)	Check if wiring is connected well and remove abnormal load.
52	P1 over temperature	Temperature is too high on P1.	1. Check the ambient temperature and fans. 2. If the error message still remains, please contact your installer.
53	P2 over temperature	Temperature is too high on P2.	1. Check the ambient temperature and fans. 2. If the error message still remains, please contact your installer.
55	R phase INV over temperature	R phase INV temperature is too high.	1. Check the ambient temperature and fans. 2. If the error message still remains, please contact your installer.
56	S phase INV over temperature	S phase INV temperature is too high.	1. Check the ambient temperature and fans. 2. If the error message still remains, please contact your installer.
57	T phase INV over temperature	T phase INV temperature is too high.	1. Check the ambient temperature and fans. 2. If the error message still remains, please contact your installer.

Note: When the display screen goes black and a 32 fault code occurs, refer to below table to solve problem.

Situation			Solution
Fault Code	**Fault Event**	**Possible Cause**	
32	Internal communication error of inverter	Short circuit in internal power supply of inverter and loose internal wiring.	Please contact your installer.

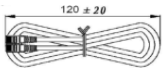
Appendix I: Parallel Installation Guide

Introduction

This inverter can be used in parallel with maximum 4 units.

Parallel cable

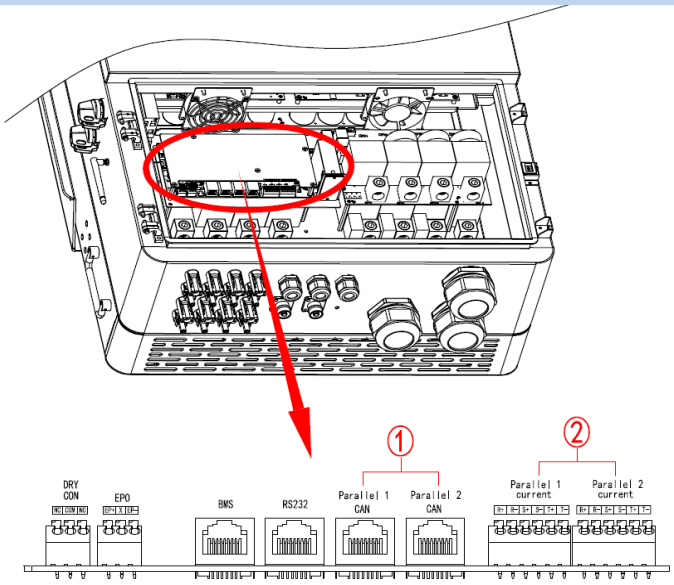
You will find the following items in the package:



Parallel CAN cable

Share current cable

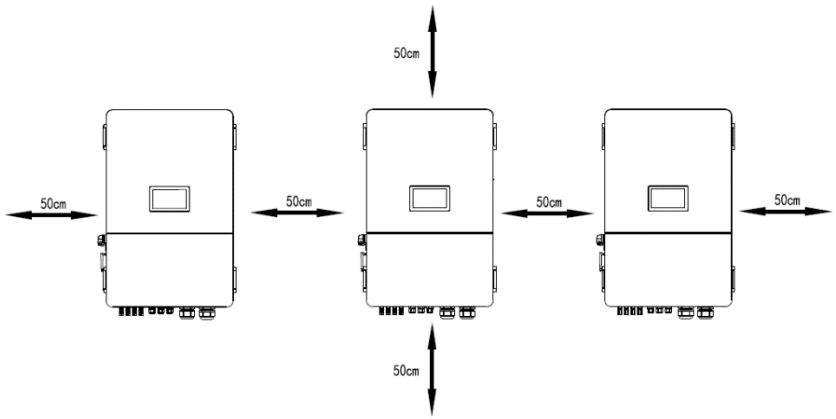
Overview



1. Parallel communication can port
2. Current sharing 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.

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20 cm to the side and approx. 50 cm above and below the unit. Be sure to install each unit in the same level.

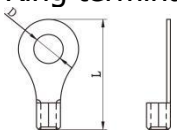
Wiring Connection

The cable size of each inverter is shown as below:

Recommended battery cable and terminal size for each inverter:

Model	SIZE
WPII 30K	25 mm^2 or 2AWG
WPII 50K	35 mm^2 or 1AWG

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:
Nominal Grid Voltage @230VAC per phase

Model	Wire cross-section (mm^2) or AWG	Torque
WPII 30K	25 mm^2 or 2AWG	10Nm
WPII 50K	35 mm^2 or 1AWG	20Nm

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 GRID AC breaker rating for each inverter:

Model	specification
30KW	150A/230VAC
50KW	240A/230VAC

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

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.

PV Connection

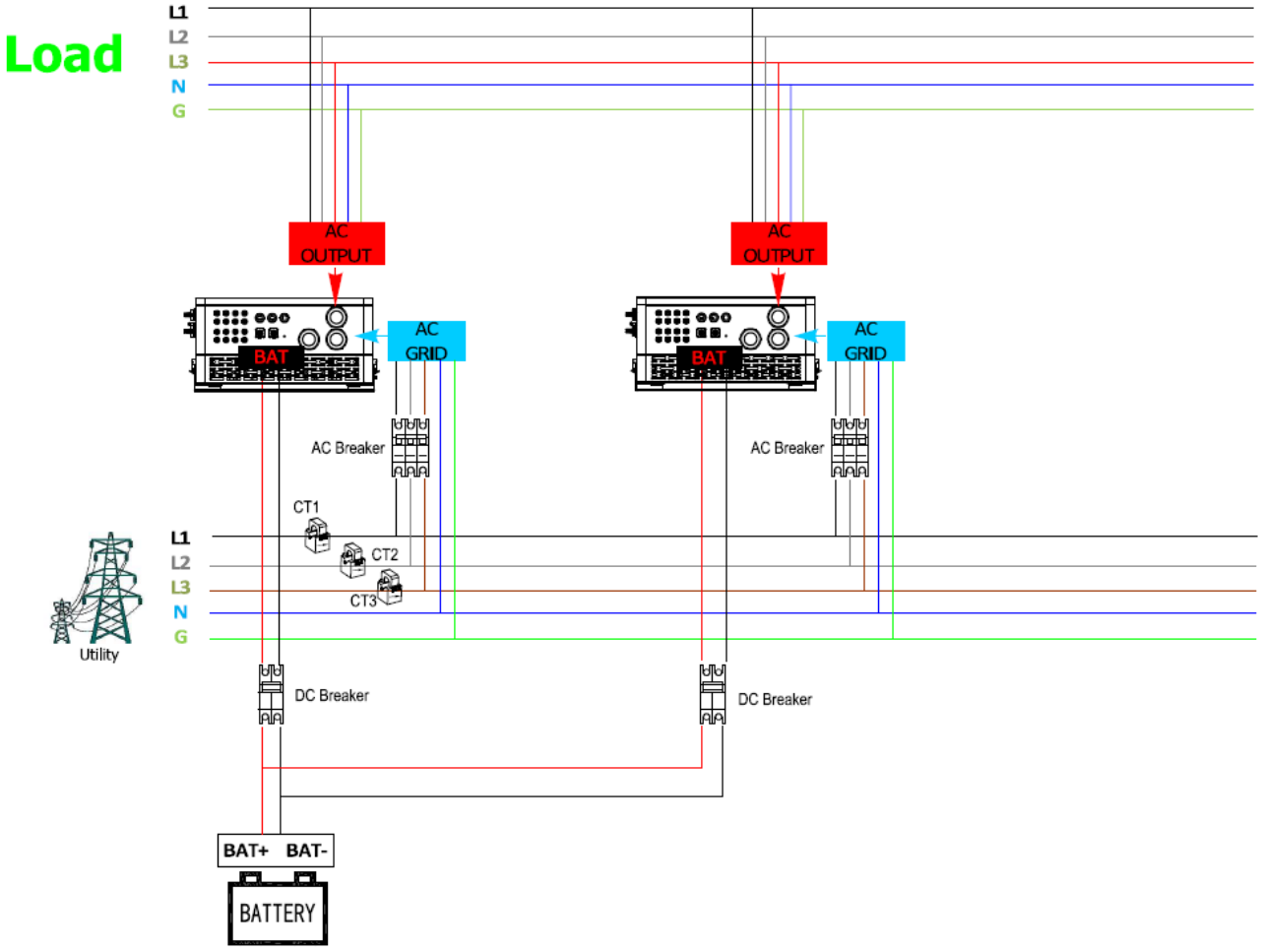
Please refer to user manual of single unit for PV Connection.

CAUTION: Each inverter should connect to PV modules separately.

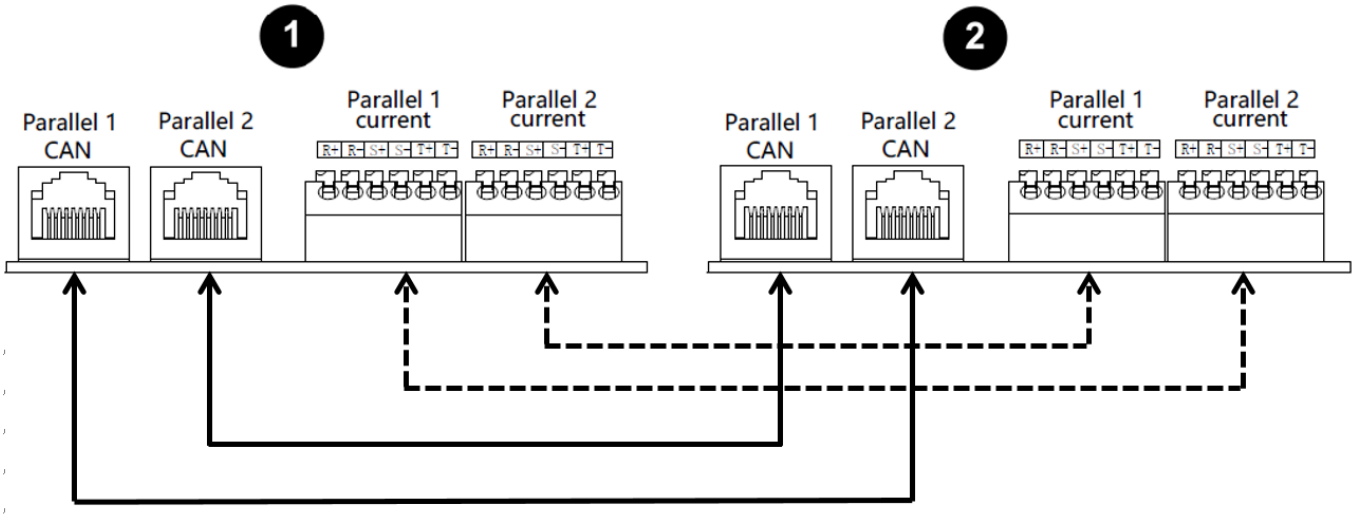
Inverters Configuration

Two inverters in parallel:

Wiring Connection

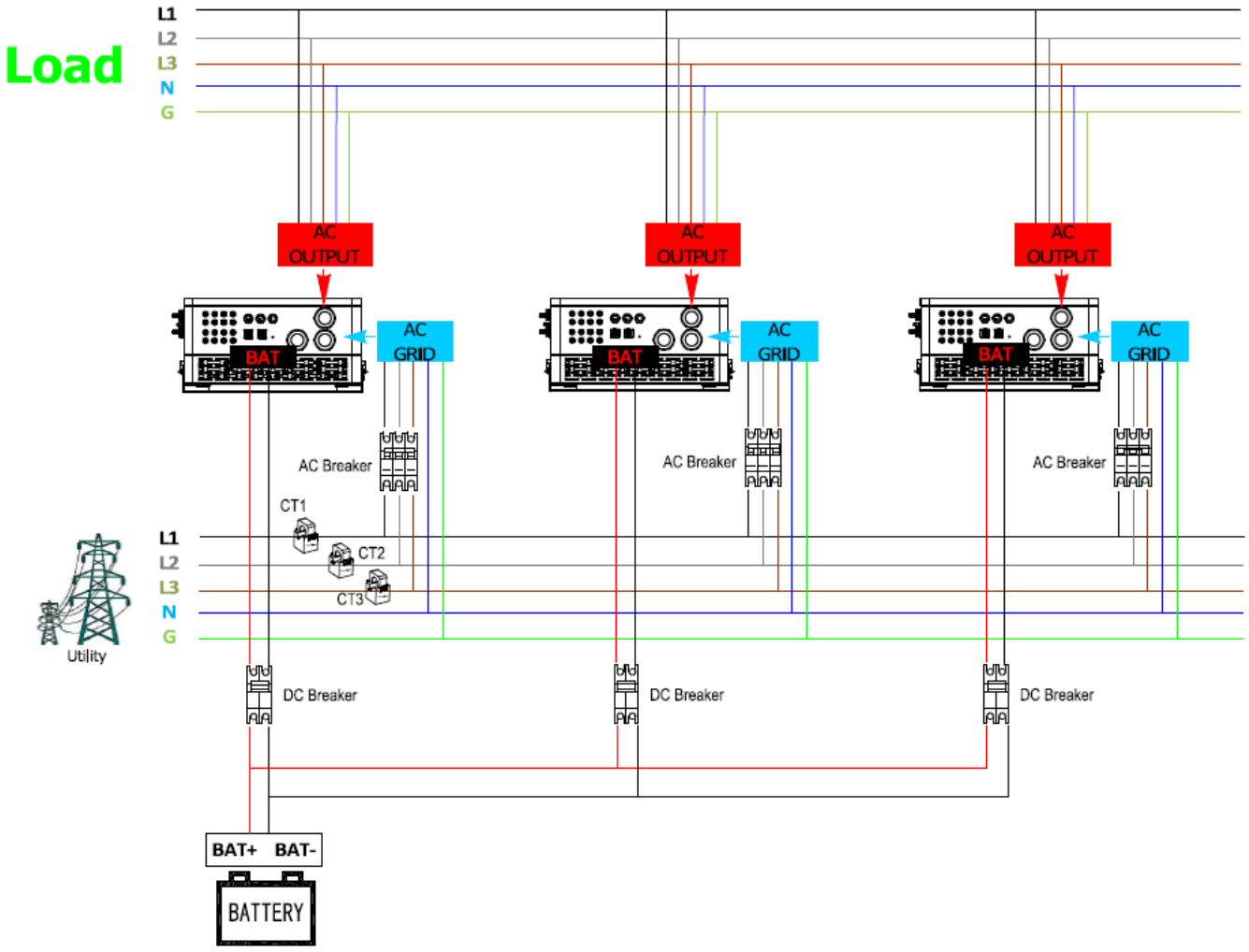


Communication Connection

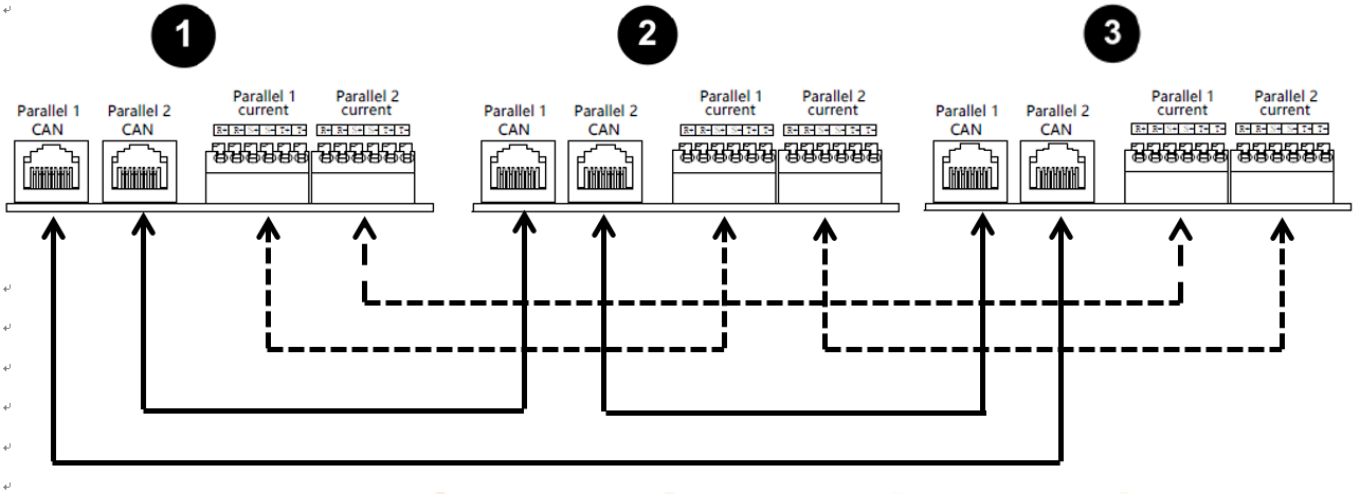


Three inverters in parallel:

Wiring Connection



Communication Connection



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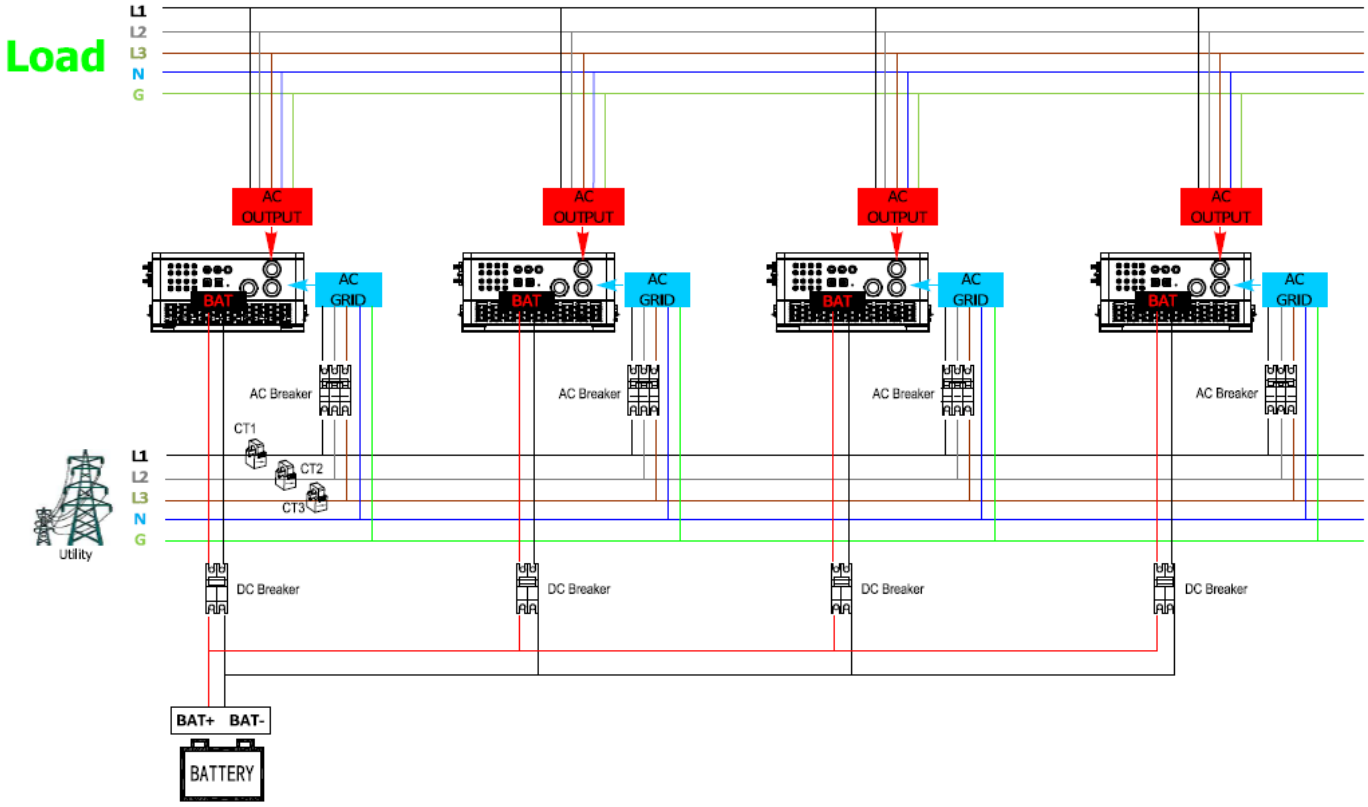
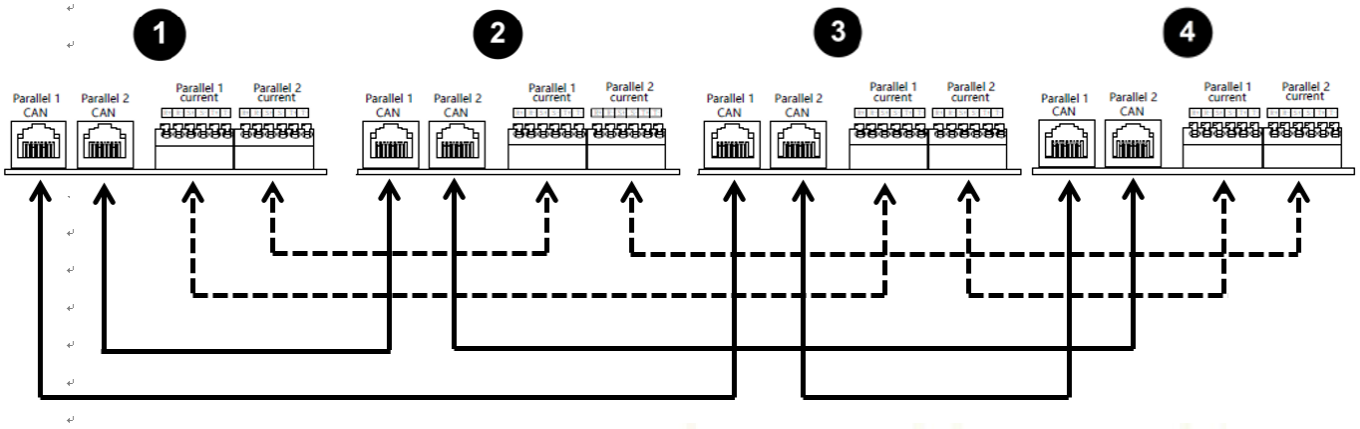
Four inverters in parallel:

Wiring Connection



Communication Connection



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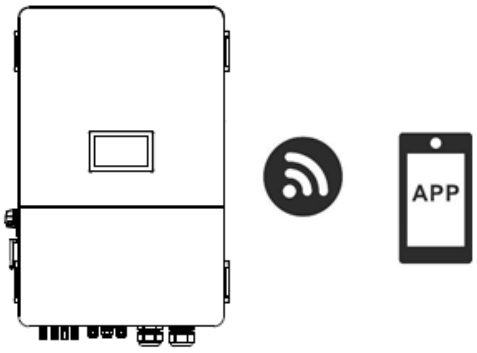
Parallel operation Trouble shooting

Situation		Solution
Fault Code	**Fault Event**	
60	Current feedback into the inverter is detected.	1. Restart the inverter. 2. Check if L1/L2/L3/N cables are not connected with wrong sequence in all inverters. 3. Make sure the sharing cables are connected in all inverters. 4. If the problem remains, please contact your installer.
61	Relay board driver loss,	1. Disconnect all of power source. 2. Only connect AC input and press Enter key to let it working in bypass mode. 3. Check if the problem happens again or not and feed back the result to your installer.
62	Relay board communication loss,	
71	The firmware version of each inverter is not the same.	1. Update all inverter firmware to the same version. 2. After updating, if the problem still remains, please contact your installer.
72	The output current of each inverter is different.	1. Check if sharing cables are connected well and restart the inverter. 2. If the problem remains, please contact your installer.
80	CAN data loss	1. Check if communication cables are connected well and restart the inverter. 2. If the problem remains, please contact your installer.
81	Host data loss	
82	Synchronization data loss	

Appendix II: The Wi-Fi Operation Guide

1. Introduction

Wi-Fi module can enable wireless communication between hybrid inverters and the monitoring platform. Users can remotely monitor and control their inverters when they combine the Wi-Fi module with **Energy-Mate** 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. Energy-Mate App

2-1. App Download and Installation

Operating system requirement for your s

iOS system supports iOS 12.0 and above

Android system supports Android 10.0 and above

The download method for Android users is to search for Energy Mate on Google Play or scan the QR code to download;
The download method for iOS users is to search for Energy Mate on the AppStore or scan the QR code to download.

Energy-Mate

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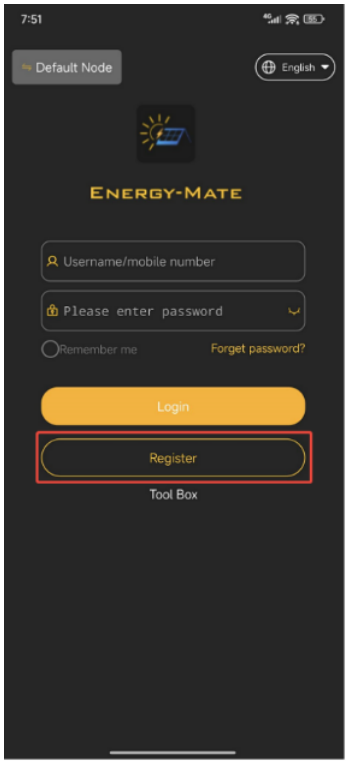
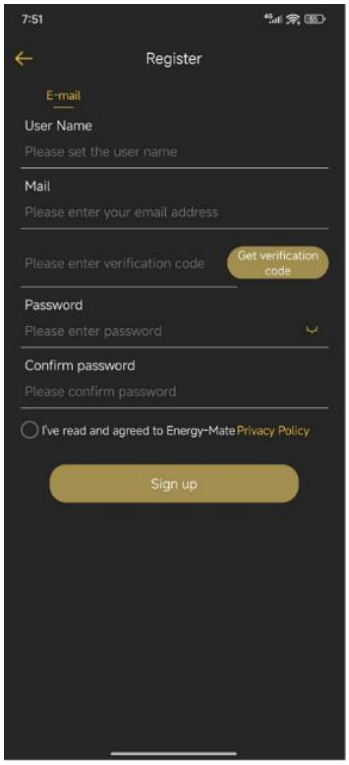
Registration

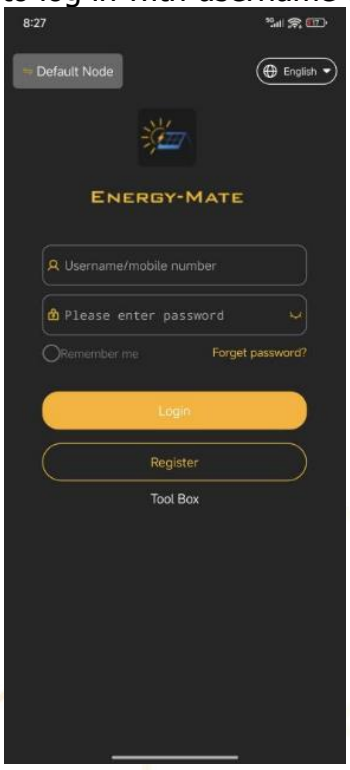
After opening the app, click [Register] button and fill in User Name, Mail, Password on the registration page. Click the [Sign up] button to complete the account registration process, it will automatically to login page.





Login

On the login page, users can choose to log in with username & password or email & password.

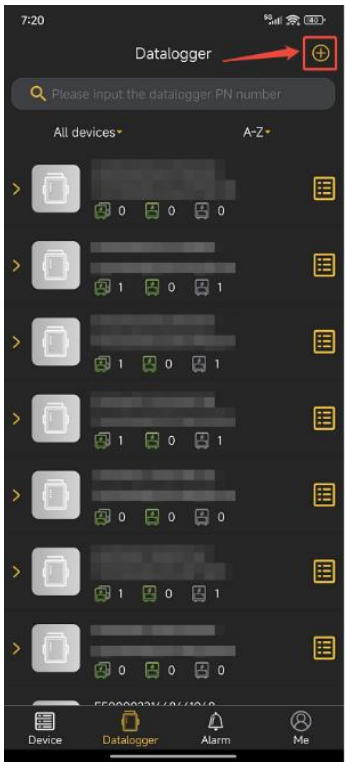


Explanation of nouns

Noun	Explain
Equipment	The APP monitors the object, such as your inverter/storage unit
Datalogger	It refers to the Datalogger connected to the device, through which the device data can be transported to the cloud for display.

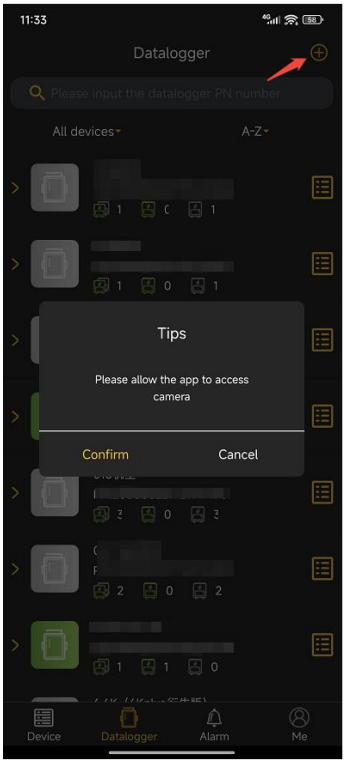
Quick start to add Datalogger

Enter the datalogger list interface and click the  icon in the upper right corner.

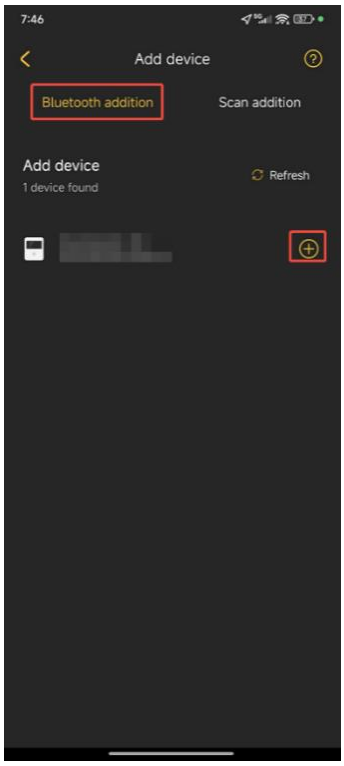


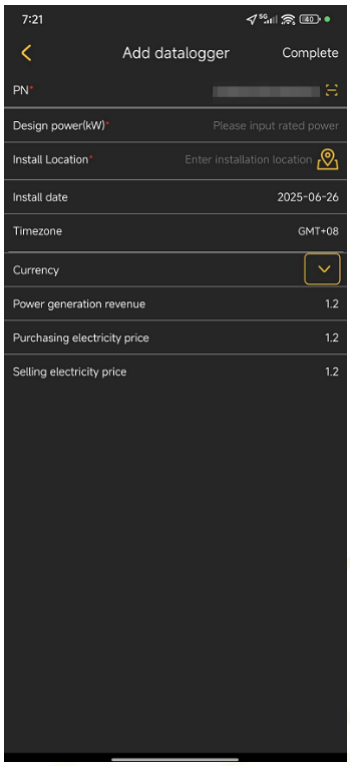
- **Use Bluetooth to add Datalogger**

  To use the datalogger with Bluetooth, follow these steps:
  The app requires permission to access your phone's camera and enable Bluetooth. After scanning for nearby Bluetooth devices, locate the device's serial number (SN). Tap the icon  to automatically go to the "Add Datalogger" page, enter the required information, and select [Complete].


11:33
Datalogger
Please input the datalogger PN number
All devices
A-Z
Tips
Please allow the app to access camera
Confirm
Cancel
Device
Datalogger
Alarm
Me

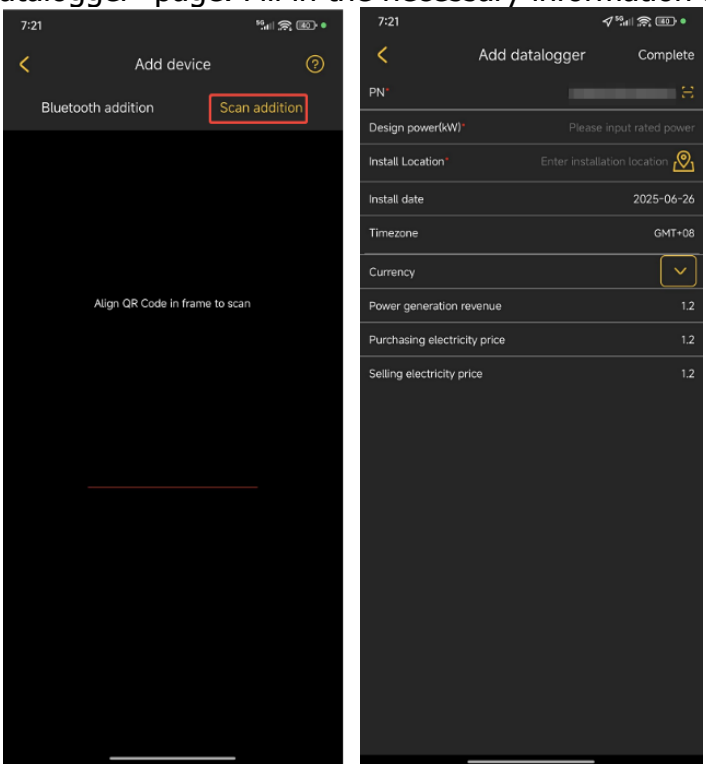

Add device
Bluetooth addition
Scan addition
Add device
Please hold your phone close to the device
Energy-Mate wants to turn on Bluetooth
Deny
Allow


7:46
Add device
Bluetooth addition
Scan addition
Add device
1 device found
Refresh


7:21
Add datalogger
Complete
PN*
Design power(kW)*
Please input rated power
Install Location*
Enter installation location
Install date
2025-06-26
Timezone
GMT+08
Currency
Power generation revenue
1.2
Purchasing electricity price
1.2
Selling electricity price
1.2

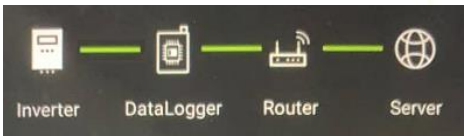
- **Scan to add Datalogger**

To add a datalogger that doesn't support Bluetooth via scanning:
Scan the datalogger's barcode or QR code. After a successful scan, you'll automatically be redirected to the "Add Datalogger" page. Fill in the necessary information and select [Complete].



Datalogger Network Configuration

After adding the device, ensure its data can be uploaded to the cloud. If the datalogger lacks a network connection, it won't be able to upload data. The datalogger must be connected to a Wi-Fi network (see device networking instructions for more information).

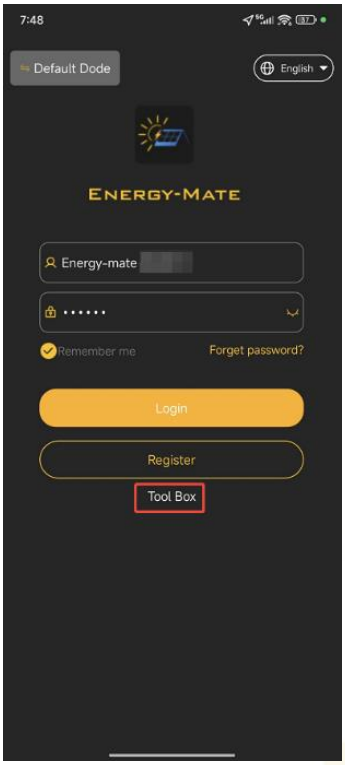


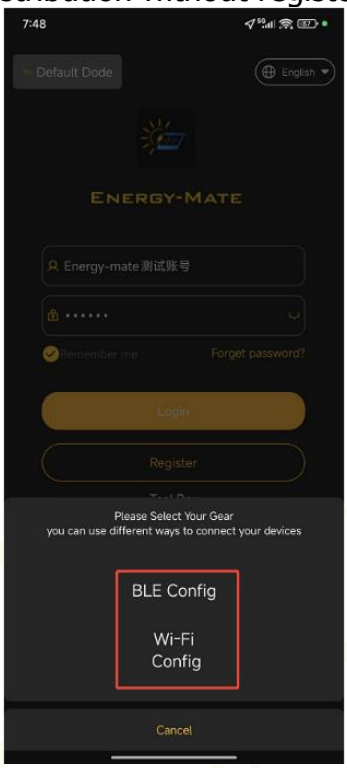
The app supports two networking modes, allowing users to choose based on their datalogger model:

- Bluetooth Networking: For use with dataloggers equipped with a Bluetooth module.
- Wi-Fi Networking: For use with dataloggers without a Bluetooth module.

Distribution network method 1: Click [Me]→ [BLE Config/Wi-Fi Config].

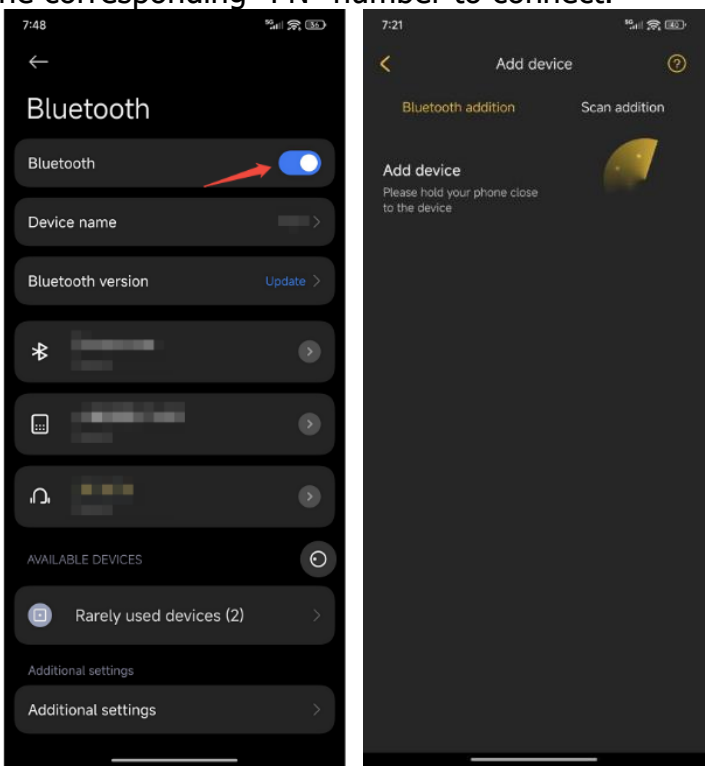
Distribution network method 2: [Login page] → [Toolbox] → [BLE Config/Wi-Fi Config].
Note: You can choose this method for network distribution without registering an account.



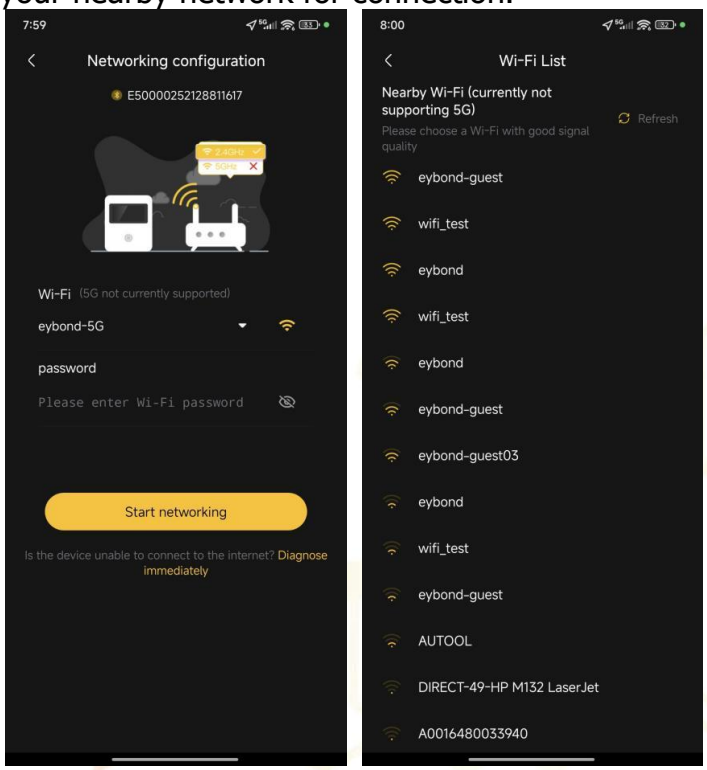


- **To pair via Bluetooth (Bluetooth networking)**

The app will scan for nearby Bluetooth devices (ensure Bluetooth is enabled on your phone). Select the device with the corresponding "PN" number to connect.



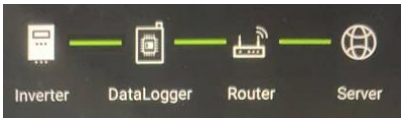
Enter the name and password of the router you want to connect to, or click the signal icon to view the best router in your nearby network for connection.



Important Notes:

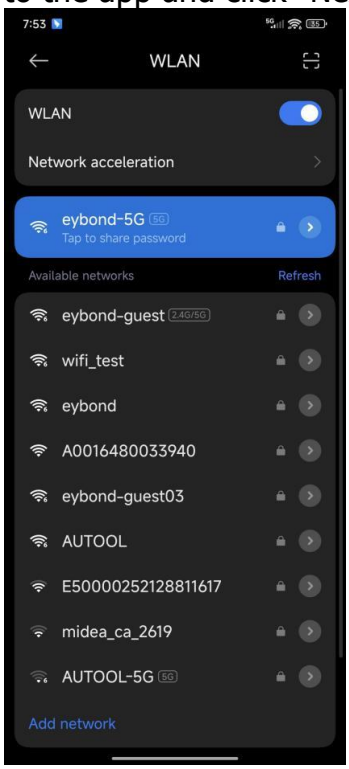
1. Ensure a strong and stable network connection.
2. The router must use a 2.4G band; 5G is not currently supported.
3. Verify that the router password is correct.

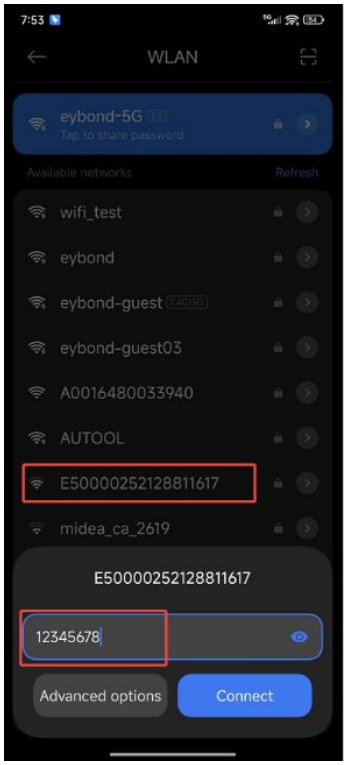
4. Check the network configuration results.
5. If the network configuration is successful, device data should appear within approximately 5 minutes.
6. If the configuration fails, troubleshoot the issue using the suggestions provided on the page



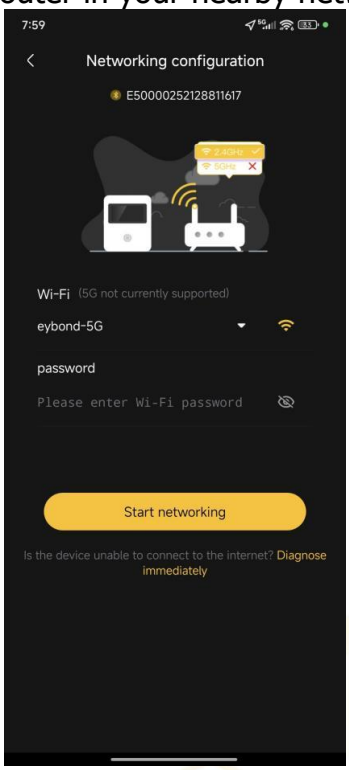
- **To pair via Wi-Fi (Wi-Fi networking)**

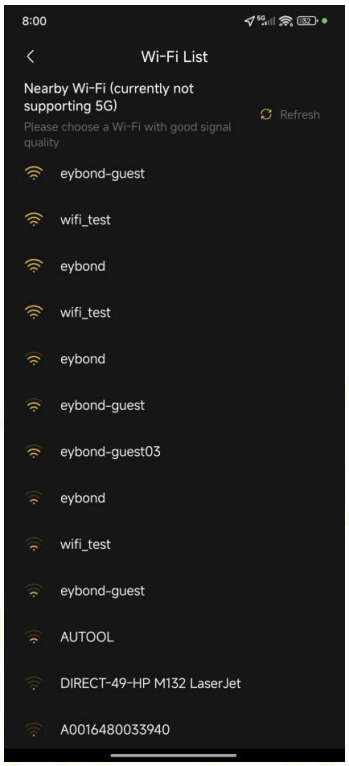
On your mobile phone, go to "Settings" and open "Wi-Fi." Select the Wi-Fi network that matches your datalogger's PN (serial) number (refer to the quick installation guide for the password). Once connected, return to the app and click "Next."



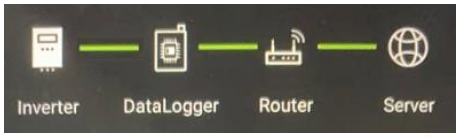


Enter the name and password of the router you want to connect to, or click the signal icon to view the best router in your nearby network for connection.



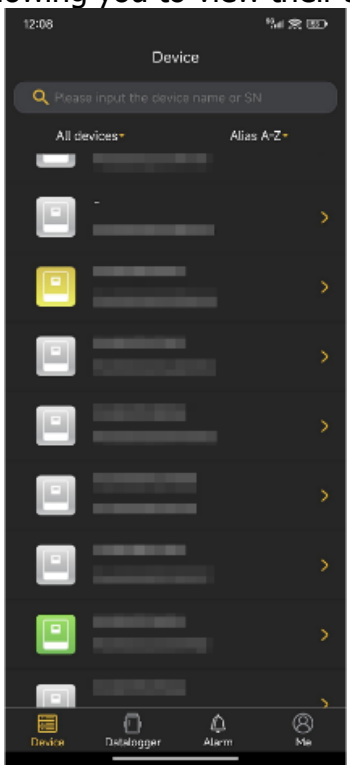


Important Notes:
1. Ensure a strong and stable network connection.
2. The router must use a 2.4G band; 5G is not currently supported.
3. Verify that the router password is correct.
4. Check the network configuration results.
5. If the network configuration is successful, device data should appear within approximately 5 minutes.
6. If the configuration fails, troubleshoot the issue using the suggestions provided on the page.



Monitoring the equipment

- **Devices List:** The device list displays all devices associated with the current account, allowing you to view their status and basic parameters.



Green	Indicates the equipment is functioning normally
Gray	Indicates the device is offline.
Red	Indicates equipment failure.
Yellow	Indicates a device warning.
Blue	Indicates the device is in standby mode.

- **Energy flow diagram:** view the equipment's working status and real-time power output. Key parameters are displayed below. Click the equipment icon to view detailed parameters for the equipment itself, the photovoltaic panels, the power grid, the battery, and the load.

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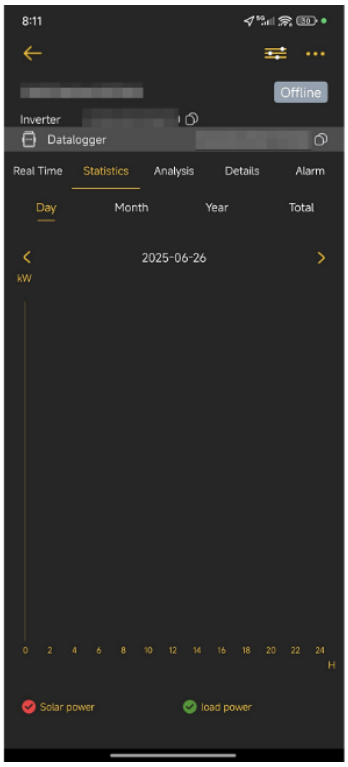
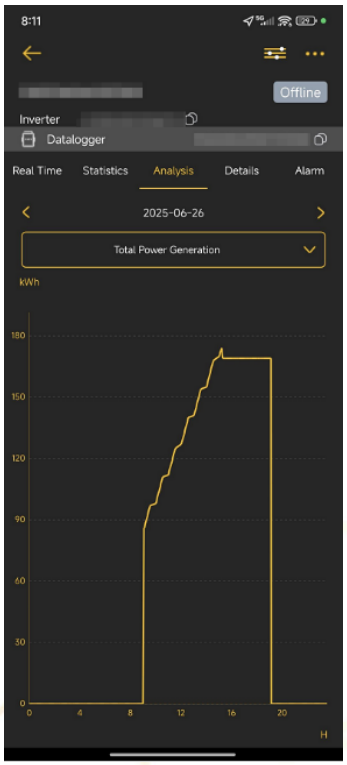
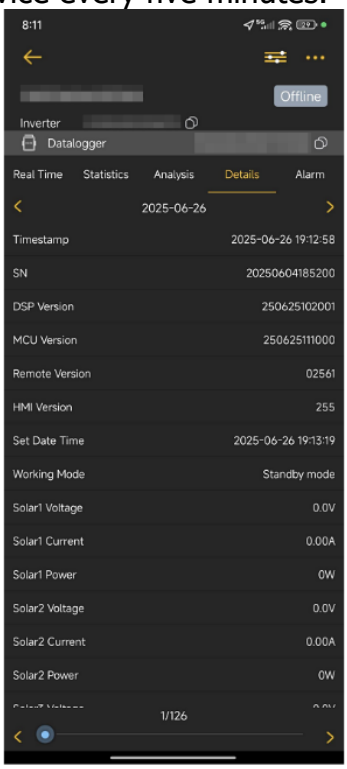
- **Data drawing list:** view the total data chart of the device by month and year.
  Daily: real-time power area map for 24 hours. (Data is updated every 5 minutes)
  Month: A bar chart showing the daily electricity consumption of the month.
  Year: A bar chart of monthly electricity consumption for the year.
  Total: A bar chart of the power situation over the life of the device.



- **Parameter analysis:** You can select a single parameter from the device or multiple parameters of the same type (dimension) to view a line graph for data analysis and comparison purposes.

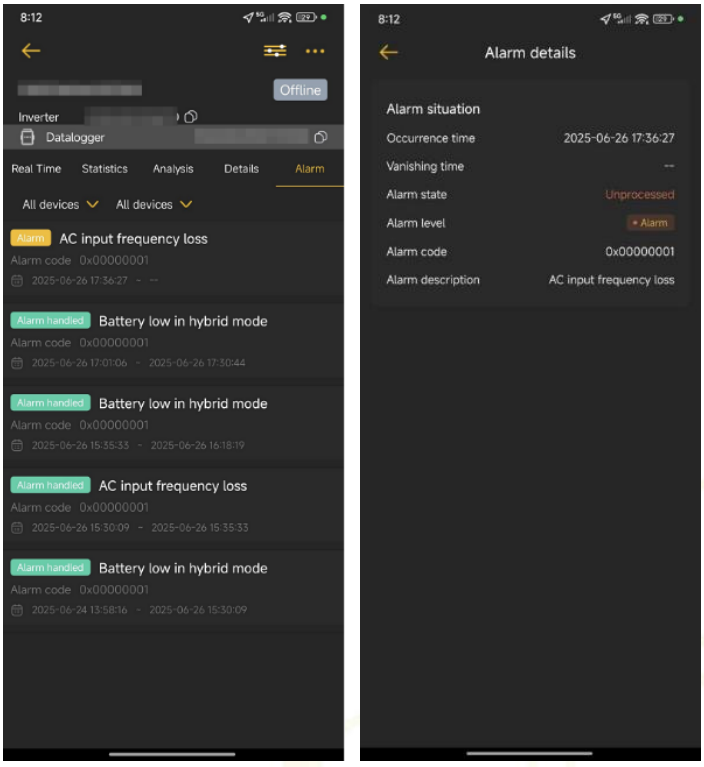


The data details recorded by the device every five minutes.



- **Equipment alarm**

  You can monitor alarm information of all devices under the account and filter it by time.



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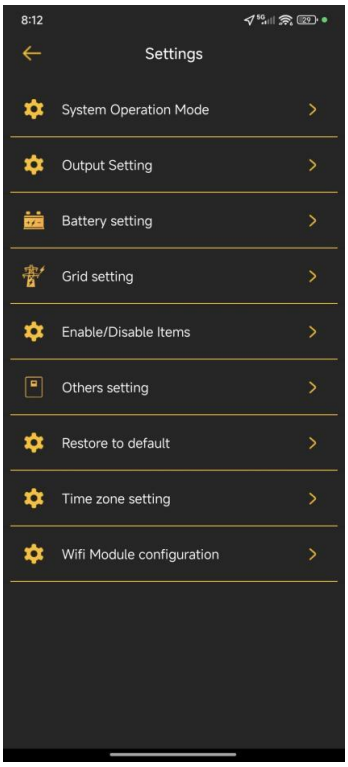
- **Device control**

  Click the  icon in the upper right corner to issue instructions and read the current parameters of the device.

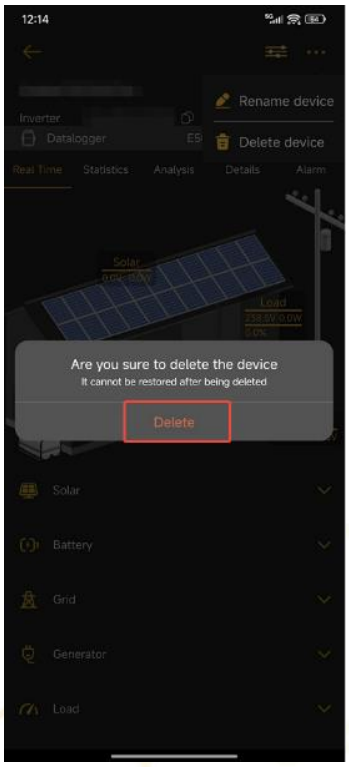


- **Edit the device name and delete the device:** Click the icon  in the upper right corner. Click  icon, modify device name.

- **View the number of Dataloggers**

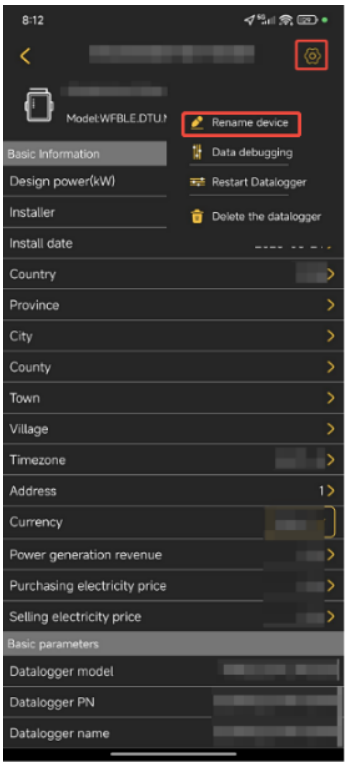
Click the Datalogger PN to view the Datalogger connected to the device and the Datalogger information.

Click  icon to delete device.



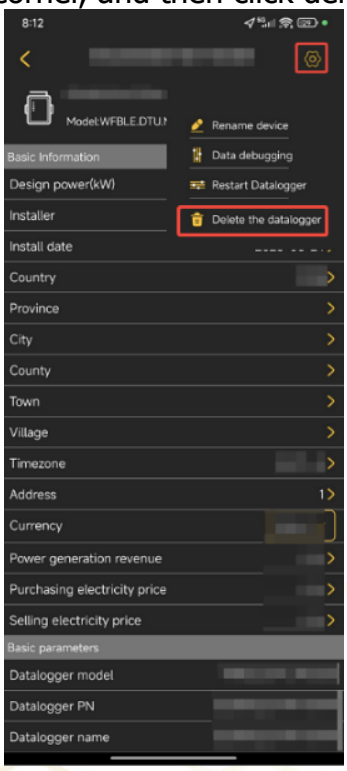
- **Edit the Datalogger name**

Click the icon in the upper right corner, and then click Edit Name to customize the Datalogger name.



- **Delete the Datalogger**

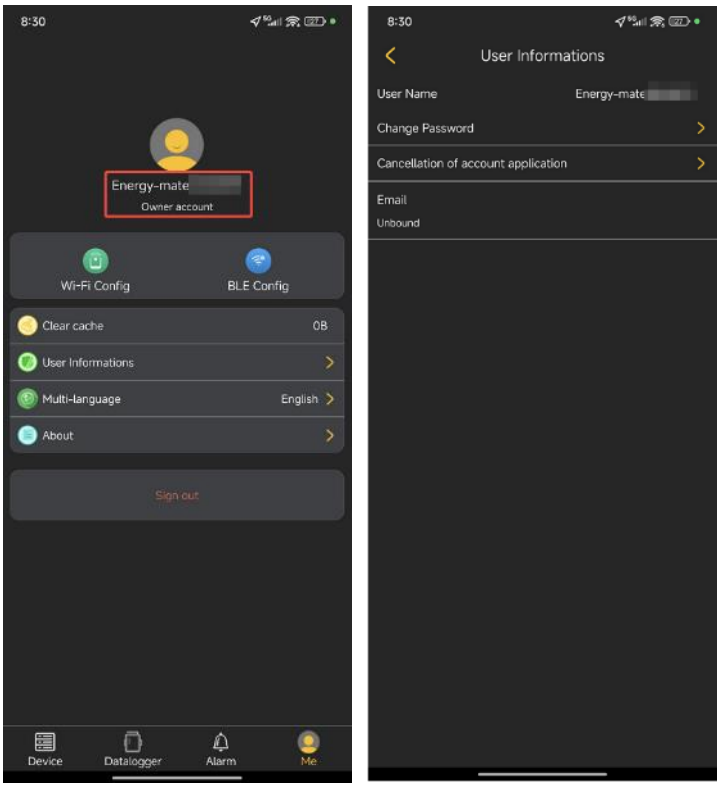
Click the icon in the upper right corner, and then click delete device to delete the datalogger.



- **Account security**

To ensure that your account cannot be recovered due to loss, it is recommended that you bind at least one email/mobile phone number to your account.

Click "Account Name" -- "Personal Information" to bind your mobile phone/email address to improve the security of your account, or you can change your password.



- **Forget the password**

  If you forget your password when logging in, you can click the "Forget password" button on the login page of the APP. The APP supports two ways to retrieve your password through your email address.