Single-Phase Hybrid Inverter

User Manual



HI-1P10K-LV

HI-1P12K-LV

Version 1.0

Statement

Notice

Due to product version upgrades or other reasons, the content of the document may be subject to periodic updates, unless otherwise agreed, the document content cannot replace the safety precautions in the product label or user manual.

All descriptions in the documentation are intended solely as guidelines for usage.

About This Manual

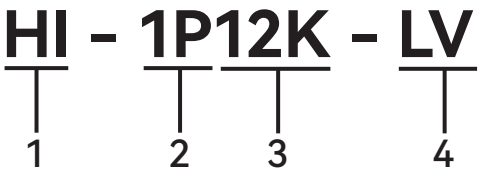
Scope of Validity

This manual is an integral part of Single-Phase Hybrid Inverter. It describes the installation, electrical connection, commissioning, maintenance and troubleshooting of the product. Please read it carefully before operating.

This manual is valid for the following inverter models:

- HI-1P10K-LV
- HI-1P12K-LV

Model Description



1	**Product Type**	"HI" refers to Hybrid Inverter.
2	**Grid Type**	"1P" refers to Single Phase.
3	**Rated Power**	"12K" refers to the rated output power of 12 kW.
4	**Battery Type**	"LV" refers to Low voltage battery.

Target Group

Only for professionals who are familiar with local regulations, standards and electrical systems, and who have received professional training and knowledge of this product.

Symbol Description

Different levels of warning messages in this manual are defined as follows:

DANGER!

Indicates a high-level hazard that, if not avoided, will result in death or serious injury.

WARNING!

Indicates a medium-level hazard that, if not avoided, could result in death or serious injury.

CAUTION!

Indicates a low-level hazard that, if not avoided, could result in minor or moderate injury.

NOTICE

Provide important operation information and techniques for high efficient, proper using and maintenance.

Change History

Version 1.0 (2025-08-12)

Initial release

Version 2.0 (2025-08-28)

Update LCD Screen display

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1 Safety

The safety information contained in this document must be followed at all times when operating the equipment.

NOTICE

- The inverter has been designed and tested in strict accordance with safety regulations. However, being an electrical equipment, it is crucial to adhere to the relevant safety instru3ctions before any operation. Failure to operate the equipment properly may result in severe injuries or property damage. Please ensure you follow all safety guidelines diligently.

1.1 General Safety

NOTICE

- Due to product version upgrades or other reasons, the document content will be subject to periodic updates, unless there is a special agreement, the document content cannot replace the label on the product. All descriptions in the documentation are intended solely as guidelines for usage.
- Please carefully read this document to fully understand the product and precautions before installing the appliance.
- All operations of the equipment must be conducted by professional and qualified electrical technicians who are familiar with the relevant standards and safety specifications of the project location.
- When operating the inverter, it is essential to use insulating tools and wear personal protective equipment to ensure personal safety. Contact electronic devices requires wearing electrostatic gloves, electrostatic bracelets, anti-static clothing, etc. to protect the inverter from electrostatic damage.
- Any equipment damage or personal injury caused by failure to install, use and configure the inverter in accordance with the requirements of this document or the corresponding user manual is not the responsibility of the equipment manufacturer.

1.2 PV String Safety

DANGER!

- Please use the DC terminal supplied with the box to connect the inverter DC cable. The use of other DC terminal can lead to serious consequences, and any resulting damage to the equipment will not be covered by the equipment manufacturer.

WARNING!

- Ensure that the PV modules and bracket system are well grounded.
- After the completing DC cable connection, please ensure that the cables are securely and correctly connected.
- Use a multi-meter to measure the positive and negative poles of the DC cable to verify correct polarity and no reverse connections. Ensure that the voltage is within the permissible range. Do not connect the same PV string to multiple inverters, otherwise it may cause damage to the inverter.

1.3 Inverter Safety

WARNING!

- Ensure that the voltage and frequency of the grid connection meet the inverter grid connection specifications.
- It is recommended to add protection devices such as circuit breakers or fuses on the AC side of the inverter, and the specifications of the protection devices should be greater than 1.25 times the rated current of the AC output of the inverter.
- The protective ground wire of the inverter must be securely connected to ensure that the impedance between the neutral wire and the ground wire is less than 10 Ω.
- Copper core cable is recommended for AC output cable, if aluminum wire is required, a copper aluminum transition terminal is required for wiring.
- In case a single inverter overloaded event, the inverter can be automatically restarted. If it happens multiple times, the inverter restart time will be extended, to restart the inverter promptly, you can restart the inverter immediately through the App.
- If the photovoltaic system is not equipped with batteries, do not use the BACK-UP function. Otherwise, the manufacturer shall not be liable for related risks.

DANGER!

- Avoid bearing any load on the bottom terminal of the inverter during installation to prevent terminal damage.
- After installation, ensure the labels and warning signs on the inverter are clearly visible, it is forbidden to cover, deface or damage them.

1.4 Battery Safety

WARNING!

- The battery used with the inverter must be approved by the inverter manufacturer. The lists of approved batteries can be obtained through the official website.
- Before equipment installation, carefully read the user manual corresponding to the battery to understand the products and precautions. Strictly follow the requirements outlined in the battery user manual.
- If the battery is fully discharged, ensure that you charge the battery following the guidelines specified in the corresponding model's battery user manual.
- Battery current may be affected by some factors such as temperature, humidity, weather conditions, etc., which could result in current limiting and affect the load capacity.
- When connecting the DC cable, use a multi-meter to verify correct polarity, and ensure that the voltage falls within the permissible range.
- Do not connect one battery pack to multiple inverters, as it may cause damage to the inverter.

1.5 Personal Requirements

NOTICE

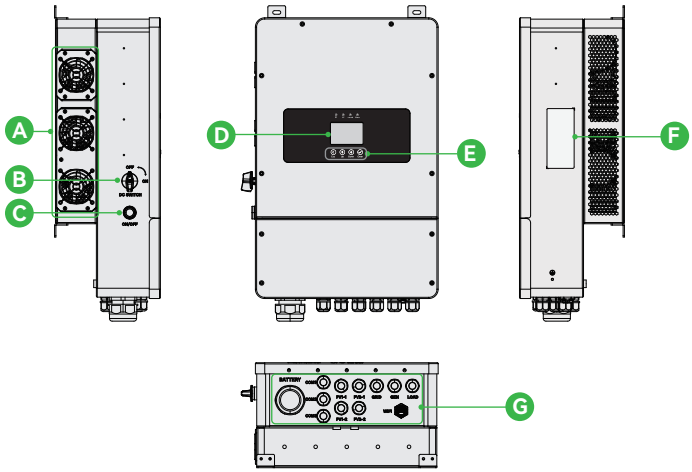
- The personnel responsible for equipment installation and maintenance must receive comprehensive training, understand all necessary safety precautions, and be capable of performing all operations correctly.
- Installation, operation, maintenance, replacement of equipment or parts is permitted to be conducted by qualified professionals or trained personnel only.

2 Product Overview

2.1 System Description

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

2.2 Appearance



No.	Item	Description
A	Fan	The external fans dissipate heat for the system.
B	DC Switch	Disconnect the DC circuit when necessary.
C	ON/OFF Button	Once the unit has been properly installed and the batteries are connected well, simply press On/Off button (located on the left side of the case) to turn on the unit. When system without battery connected, but connect with either PV or grid, and ON/OFF button is switched off, LCD will still light up. In this condition, when switch on ON/OFF button and select NO battery, system can still work.

No.	Item	Description
D	LCD Display	The LCD is a touchscreen, shows the overall information of the inverter.
E	Function Buttons	The four function buttons are Esc, Up, Down, Enter.
F	Nameplate	Nameplate clearly identifies the device type serial number, specific DC/AC parameters, certification, etc.
G	Electrical Connection Area	Including PV terminals, battery terminals, AC terminals, GEN terminals, LOAD terminals, communication terminals, etc.

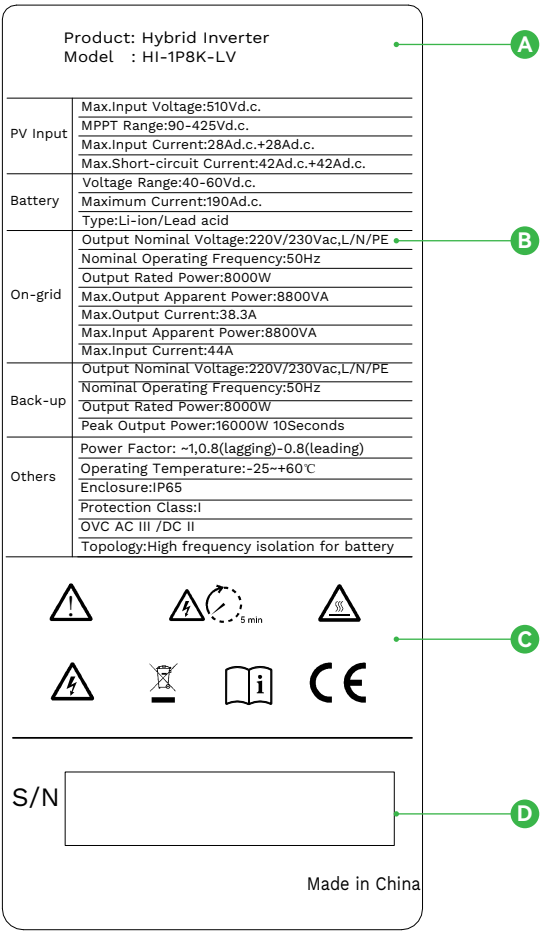
Figure 2-1 Appearance

2.3 Symbols on the Label and Inverter

Table 2-1 Symbols

Symbol	Description
CE	CE Mark.
	Grounding point.
	High-temperature hazard. Do not touch the product under operation to avoid being burnt.
	Hight voltage hazard. Disconnect all incoming power and turn off the product before working on it.
	Potential risks exist. Wear proper Personnel Protective Equipment before any operations.
	Read through the user manual before any operations.
	Do not dispose of the inverter as household waste Discard the product in compliance with local laws and regulations, or send it back to the manufacturer.
5 min	Delayed discharge. Wait 5 minutes after power off until the components are completely discharged.

2.4 Nameplate



No.	Description
A	Product type and product model
B	Technical data
C	Safety symbols and certification marks
D	Serial number and contact information

Figure 2-2 Nameplate

2.5 Working Principle

2.5.1 Circuit Diagram

The inverter unit converts DC into AC that meets the requirements of the power grid and feeds it into the power grid. The principle design of inverter is shown in the figure below:

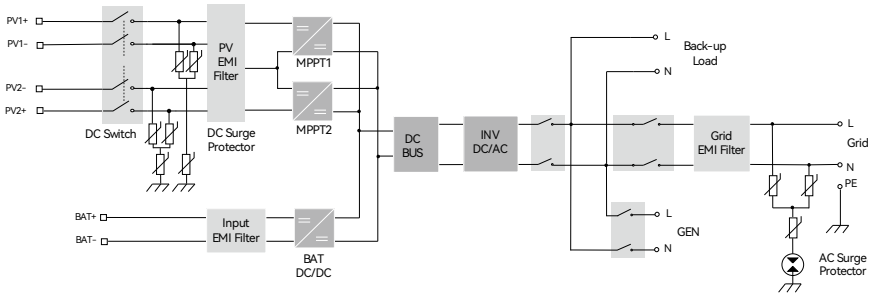


Figure 2-3 Circuit Diagram

2.5.2 Application Schemes

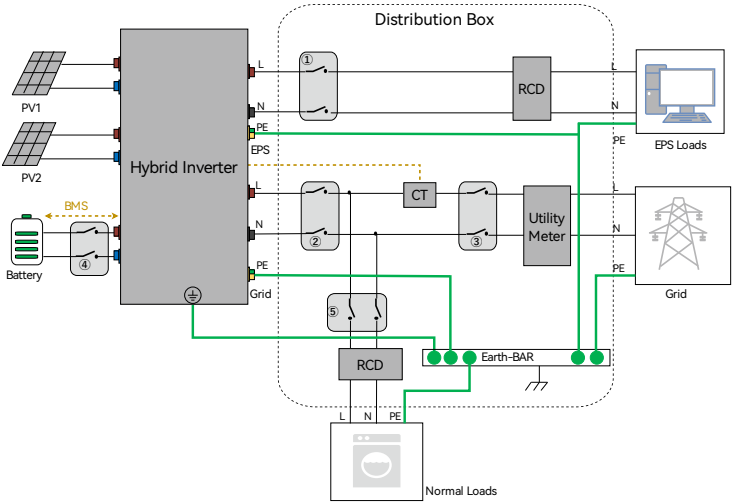


Figure 2-4 Application Scheme

2.6 Interfaces and Functions

The product is equipped with the following interfaces and functions:

WiFi-Dongle

WiFi-Dongle is optional, which provides a user interface for configuring and monitoring the product. The WiFi-Dongle can connect to the Internet via WLAN. If a dongle is needed, please contact the dealer.

RS485 Interface

This product is equipped with Meter-485 and EVC-485 interfaces, connects to external communication equipment through the RJ45 interface.

Meter-485: used for the communication between the inverter and external smart meters, and for smart meter to transmit information to the main inverter.

EVC-485: used for the communication between the inverter and external EV Charger, and for the smart charging station to transmit information to the main inverter.

The Meter-485 and EVC-485 communicate with external devices through two RJ45 interfaces. Only one of the communication interface can be used at a one time; the two interfaces cannot work simultaneously.

BMS_485 / BMS_CAN Interface

This product is equipped with two BMS interfaces, which connect to external communication devices through RJ45.

BMS-485 Interface: used to connect to RS485/CAN interface of the BMS (Battery management System). If the BMS communication interface is an RS485 interface, you can choose this connection option.

BMS-CAN Interface: used to connect to RS485/CAN interface of the BMS (Battery management System). If the BMS communication interface is a CAN interface, you can choose this connection option.

Export Active Power Control

The product is equipped with the export active power limit function, so as to meet the requirements of some national standards or grid standards for limiting the output power at the grid connection point. The export active power control solution measures the active power at the point where the customer's installation is connected to the distribution system (point of grid connection) and then uses this information to control the inverter's output active power in order to prevent the export active power to the distribution system from exceeding the agreed export capacity.

The product is delivered with the current transformers as standard. The current transformers can be used to measure the export active power. And the current transformer also can be replaced by the smart meter.

The smart meter that can be used with this product must be approved by manufacturer

Multifunction Relay

The product is equipped with three multifunction relays as standard. The multifunction relays can be configured for the operating mode used by a particular system.

Temperature Sensor Interface

The product is equipped with one temperature sensor interface. If the temperature of the battery need be monitored, the external sensor can be connected.

Current Transformer Interface

The current transformers can be used for the measurement and control of active power output. The active output at the grid connection point can be measured using current transformers. The terminals of the current transformer can be connected to the CT position on the terminal strip, and the current clips should be clamped onto the main power output line according to the wiring diagram.

Measure the export active power and control the export active power at the point of grid connection. The current transformers can be connected to terminal.

Back-up Function

The inverter is equipped with a back-up function which also called as an emergency power supply (EPS). The back-up function ensures that the inverter forms a single-phase back-up grid that uses energy from the battery and the PV system that is directly connected to the inverter to supply the critical load in the event of a utility grid failure.

In the event of a grid failure, the product disconnects from the grid. The product provides a standalone grid and the backup loads, which connect to EPS connector, continue to be supplied by the energy stored in the battery and the PV modules.

The charging of the battery is ensured by the existing PV system during back-up operation.

As soon as the utility grid is available again, the product will automatically connect to the grid and the loads are supplied with energy from the utility grid as needed.

3 System Overview

New PV + ESS

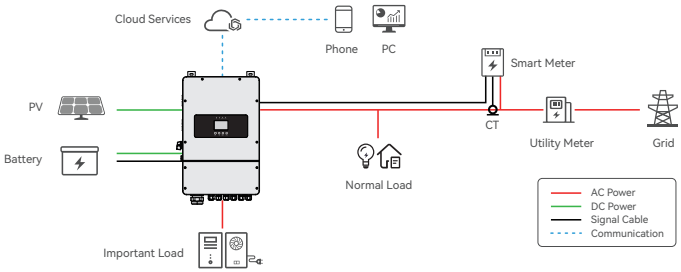


Figure 3-1 New PV + ESS

Retrofitting the Existing PV System

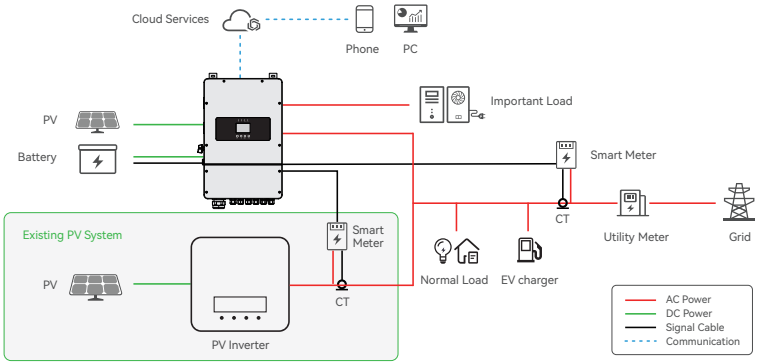


Figure 3-2 Retrofitting the Existing PV System

The AC terminal of the PV inverter and the GRID terminal of the hybrid inverter are to be connected in parallel. The smart meter of existing PV system and the smart meter in series with utility meter shall be connected to hybrid inverter to achieve system energy management. And PV inverter need to communicate with hybrid inverter to achieve anti-inverse flow function, otherwise, this function will be limited.

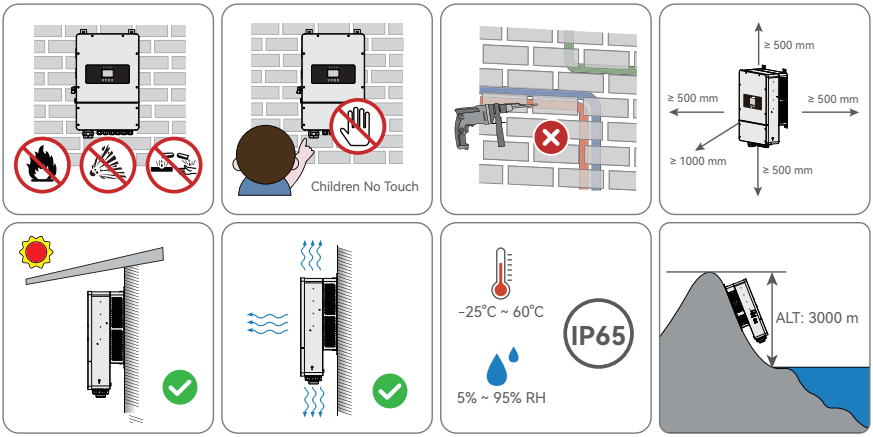
4 Preparation Before Installation

4.1 Selection of Installation Location

The installation location selected for the inverter is quite critical in the aspect of the guarantee of machine safety, service life and performance. It has the IP65 ingress protection, which allows it to be installed outdoor. The installation position shall be convenient for wiring connection, operation and maintenance.

4.2 Environment Requirement

- Do not install the equipment in a place near flammable, explosive, or corrosive materials.
- Do not install the equipment in a place that is easy to touch, especially within children's reach. High temperature exists when the equipment is working. Do not touch the surface to avoid burning.
- Avoid the water pipes and cables buried in the wall when drilling holes.
- Install the equipment in a sheltered place to avoid direct sunlight, rain, and snow. Build a sunshade if it is needed.
- The place to install the equipment shall be well-ventilated for heat radiation and large enough for operations.
- The equipment with a high ingress protection rating can be installed indoors or outdoors. The temperature and humidity at the installation site should be within the appropriate range.
- Install the equipment at a height that is convenient for operation and maintenance, electrical connections, and checking indicators and labels.
- The altitude to install the inverter shall be lower than the maximum working altitude 3000 m.
- Install the equipment away from electromagnetic interference.

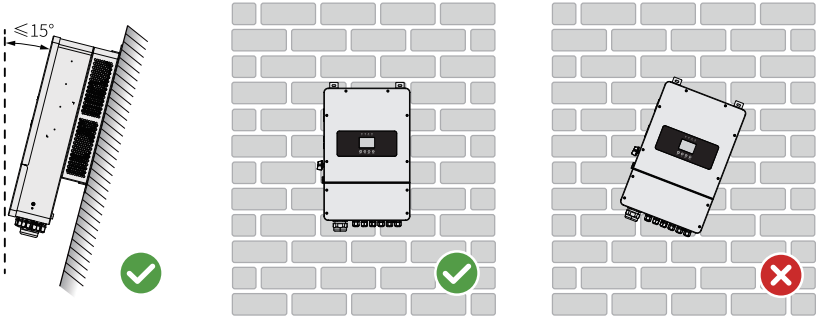


4.3 Installation Carrier Requirement

- The mounting structure must be non-flammable and fire resistance.
- Please ensure that the installation structure is solid enough to support the weight of inverter. The wall is required as a sturdy solid wall.
- When the equipment is running, it will emit vibration, please do not install it on a structure with poor sound insulation, so as to avoid disturbing the residents of the living area by the noise during the equipment working.

4.4 Installation Angle Requirement

- Install the inverter vertically or with a maximum back tilt of 15 degrees to facilitate heat dissipation.
- Do not install the inverter in forward tilted, excessive back tilted, side tilted, horizontal, or upside-down positions.



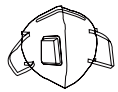
4.5 Tools Requirement

Installation tools include but are not limited to the following recommended ones. If necessary, use other auxiliary tools on site. The following tools must all comply with regulatory requirements.


Goggles

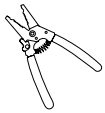

Safety shoes

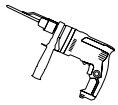

Safety gloves


Dust mask


RJ45 crimping tool

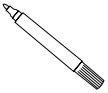

Diagonal pliers

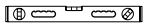

Wire stripper


Hammer drill


Heat gun

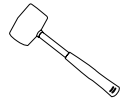

Vacuum cleaner

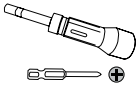

Marker

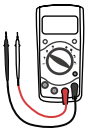

Level

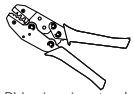

Heat shrink tube


Cable tie

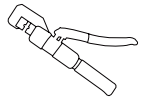

Rubber hammer

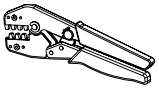

M2 M3 M4 M5
Torque wrench

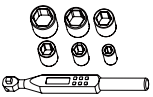

Multimeter

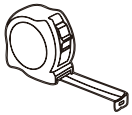

PV crimping tool


Tube type terminal crimping tool


YQK-70 hydraulic pliers


Crimping tool 4-6 m^2

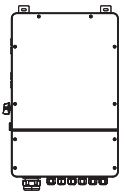

Hex socket


Measuring tape

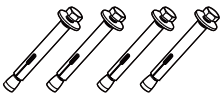
5 Unpacking and Inspection

WARNING!

- For electrical connections, please use the terminal provided with the package, any damage to the device caused by the use of connectors of incompatible models will not be covered under the warranty.



Inverter x1



Stainless steel anti-collision bolt M8×80 x4



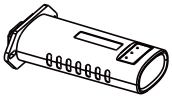
Parallel communication cable x1



L-type Hexagon wrench x1



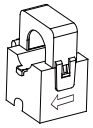
Quick Installation Guide x1



Datalogger (optional) x1



Battery temperature sensor x1



Sensor Clamp x1

6 Mechanical Installation

6.1 Dimensions of Mounting

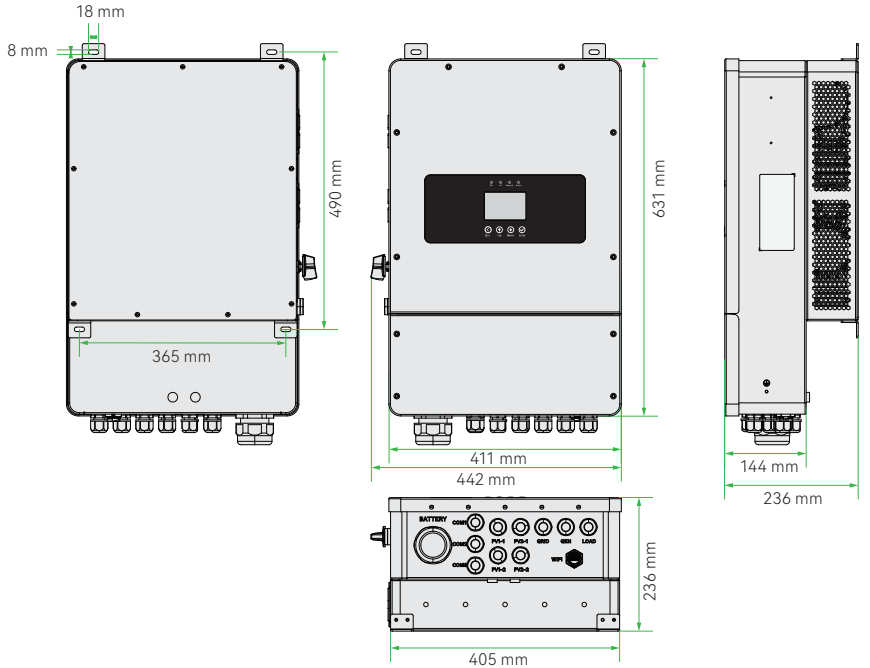


Figure 6-1 Dimensions

6.2 Installation Procedures

Step 1: Choose the recommend drill head to drill 4 holes on the wall.

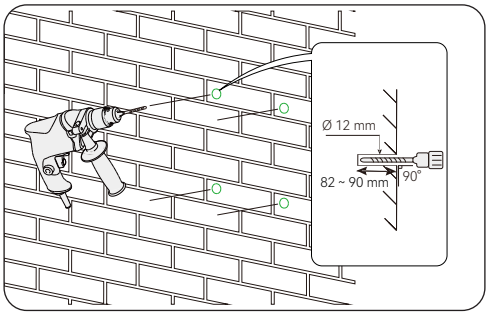


Figure 6-2 Drilling Holes

Step 2: Use a proper hammer to fit the expansion bolt into the holes. Carry the inverter and hold it, make sure the hanger aim at the expansion bolt, and fix the inverter on the wall.

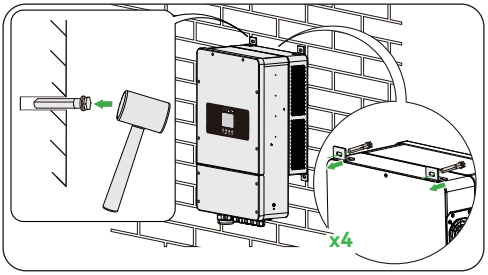


Figure 6-3 Drilling Holes

Step 3: Fasten the screw head of the expansion bolt to finish the mounting.

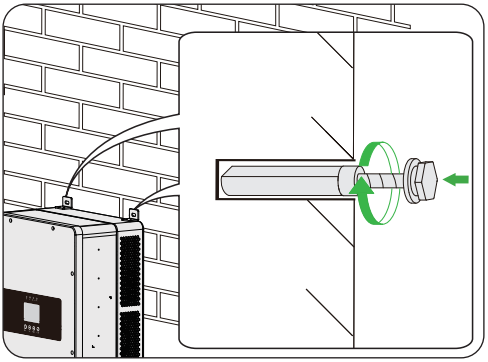


Figure 6-4 Hanging the Inverter

Step 4: Before connecting all wires, please take off the metal cover by removing screws.

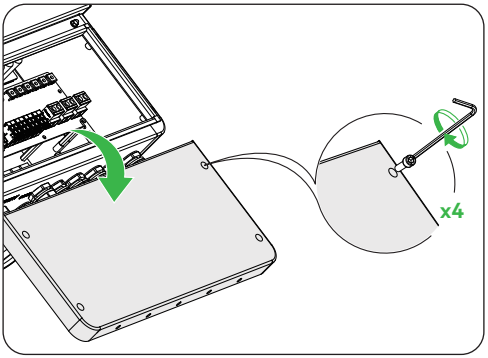
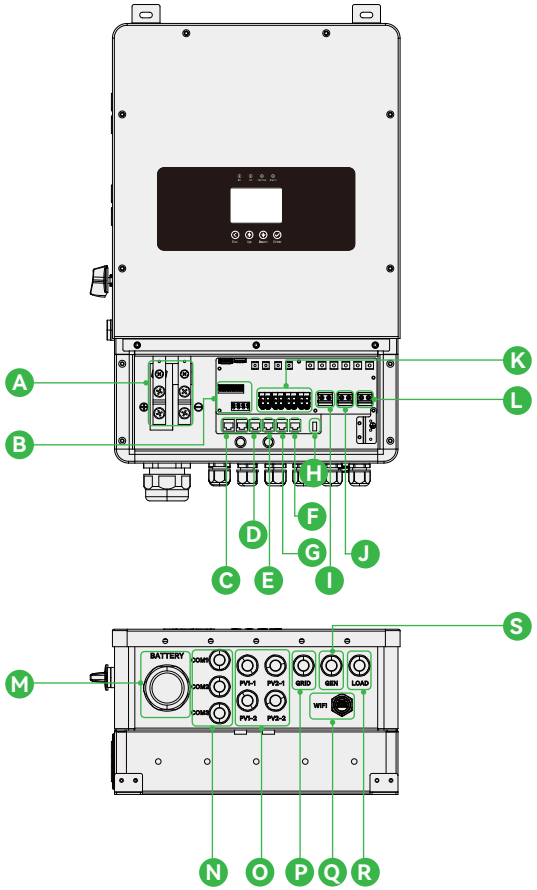


Figure 6-5 Opening the Cover

7 Electrical Connections

7.1 Terminals of Inverter



No.	Item	No.	Item
A	Battery Input Connectors	F	EVC_485 Port
B	Function Port	G	Meter_485 Port
C	Parallel Port	H	USB Port
D	BMS_485 Port	I	Grid Input Connetors
E	BMS_CAN Port	J	Generator Input Connectors

No.	Item	No.	Item
K	PV Input Connctors	P	GRID
L	Load Output Connectors	Q	WiFi Interface
M	Battery	R	LOAD
N	COM Port	S	GEN
O	PV Input with Two MPPT		

Figure 7-1 Terminals of Inverter

7.2 Function Port Definition

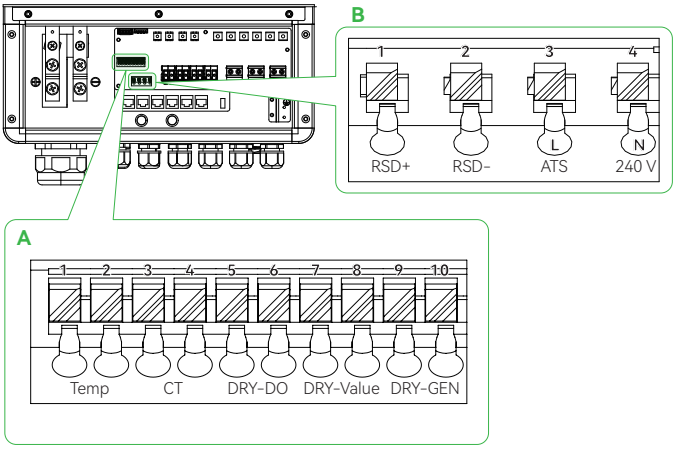
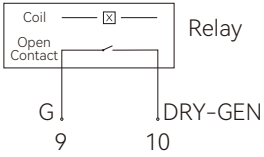
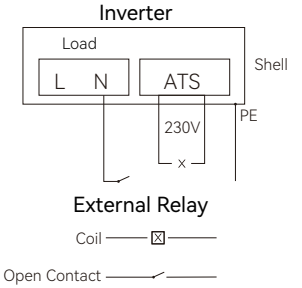


Figure 7-2 Function Port

Table 7-1 Function Port Definition

Part A		
Pin	**Function Port**	**Definition**
1, 2	Temp	Battery temperature sensor for lead acid battery.
3, 4	CT	Current transformer for "zero export to CT" mode. White wire of the CT is connected to Pin3, Black wire of the CT is connected to Pin4
5, 6	DRY-DO	Dry contact signal for startup the peripheral equipment. When the "DRY-DO signal" is active, the open contact (DRY-DO (5, 6)) will switch on (no voltage output).
7, 8	DRY-Value	Dry contact signal for startup the peripheral equipment. When the "DRY-Value signal" is active, the open contact (DRY-Value (7, 8)) will switch on (no voltage output).
9, 10	DRY-GEN	Dry contact signal for startup the diesel generator. When the "DRY-GEN signal" is active, the open contact (DRY-GEN (9, 10)) will switch on (no voltage output). If the “Signal is LAND MODE” is ticked, the DRY-GEN port will be the dry contact signal for startup the diesel generator. If “Signal is LAND MODE” is not ticked, the DRY-GEN port will be the dry contact signal for startup the diesel generator.  (Diesel Generator Startup Signal)

Part B

Function Port	Definition
RSD (RSD+, RSD-)	When the On / Off button (located on the left side of the case) to turn on the unit, the RSD will provide 12 Vdc, RSD+ (12 V+), RSD- (12 V_GND); When the On/Off button to turn off the unit, the 12 Vdc will shut down immediately.
ATS 240 V	"DRY-GEN signal" dry contact signal for startup the diesel generator. When the "DRY-GEN signal" and the “Signal is LAND MODE” is ticked, the conditions are met, it will output 230 Vac. When the "DRY-GEN signal" and the “Signal is LAND MODE” is not ticked, then the output voltage of ATS port will be bot active. With this feature and outside NO type relay, it can realize N and PE disconnection or bond. 

7.3 Battery Connection

For safe operation and compliance, a separate DC over-current protector or disconnect device is required between the battery and the inverter. In some applications, switching devices may not be required but over-current protectors are still required. Refer to the typical amperage in the table below for the required fuse or circuit breaker size.

Table 7-2 Battery Cables

Model	Wire Size	Cable	Torque (Max.)
10 / 12 kW	0 AWG	55 mm^2	20 N·m

WARNING!

- All wiring must be performed by a professional person.
- Connecting the battery with a suitable cable is important for safe and efficient operation of the system. To reduce the risk of injury, refer to Table 7-2 Battery Cables for recommended cables.

Step 1: Please choose a suitable battery cable with correct connector which can well fit into the battery terminals.

Step 2: Use a suitable screwdriver to unscrew the bolts and fit the battery connectors in, then fasten the bolt by the screwdriver, make sure the bolts are tightened with torque of 20 N.m in clockwise direction.

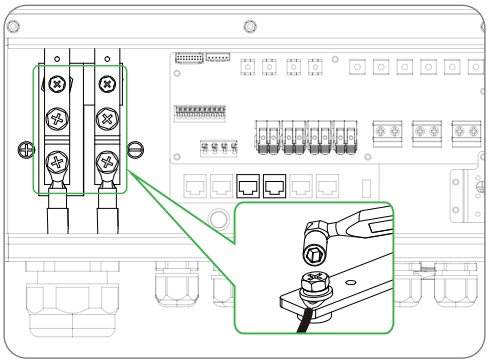


Figure 7-3 Tightenting the Bolts

Step 3: Make sure polarity at both the battery and inverter is correctly connected.

Step 4: In case of children touch or insects go into the inverter, Please make sure the inverter connector is fasten to waterproof position by twist it clockwise.

WARNING!

- Before making the final DC connection or closing DC breaker/disconnector, be sure positive(+) must be connect to positive(+) and negative(-) must be connected to negative(-). Reverse polarity connection on battery will damage the inverter.

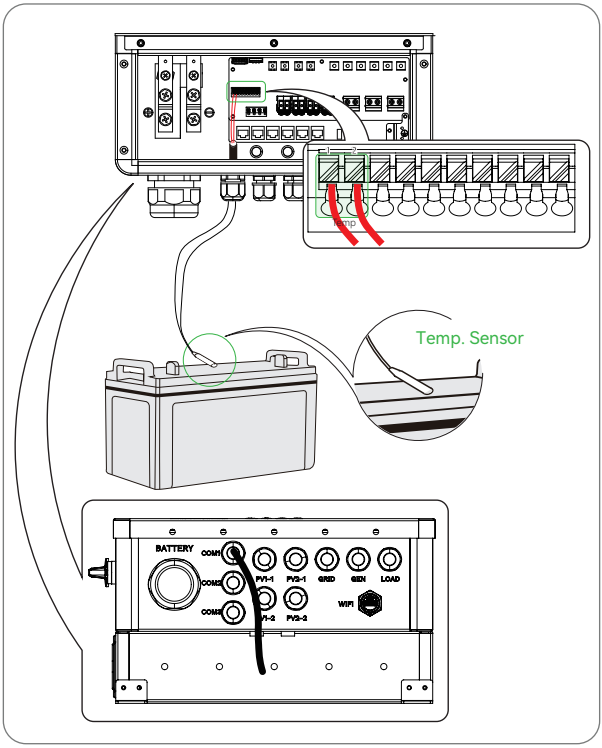


Figure 7-4 Temperature Sensor Connection for Lead-Acid Battery

7.4 Grid Connection and Backup Load Connection

Before connecting to the grid, a separate AC breaker must be installed between the inverter and the grid, and also between the backup load and the inverter. This will ensure the inverter can be securely disconnected during maintenance and fully protected from over current. The recommended AC breaker for backup load is 60 A for 10 / 12 kW model. The recommended AC breaker for grid is 100 A for 10 / 12 kW.

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

Table 7-3 AC Cables

Model	Wire Size	Cable	Torque
10 / 12 kW	4 AWG	21.1 mm^2	1.2 N·m

NOTICE

- In final installation, breaker certified according to IEC 60947-1 and IEC 60947-2 shall be installed with the equipment.
- All wiring must be performed by a qualified personnel. It is very important for system safety and efficient operation to use appropriate cable for AC input connection. To reduce risk of injury, please use the proper recommended cable as below.

WARNING!

- Before making Grid, Load and Gen port connection, be sure to turn off AC breaker or disconnector first.

Step 1: Remove insulation sleeve 10 mm length, unscrew the bolts. Insert the wires into the terminals according to polarities indicated on the terminal block. Tighten the terminal screws and make sure the wires are completely and safely connected.

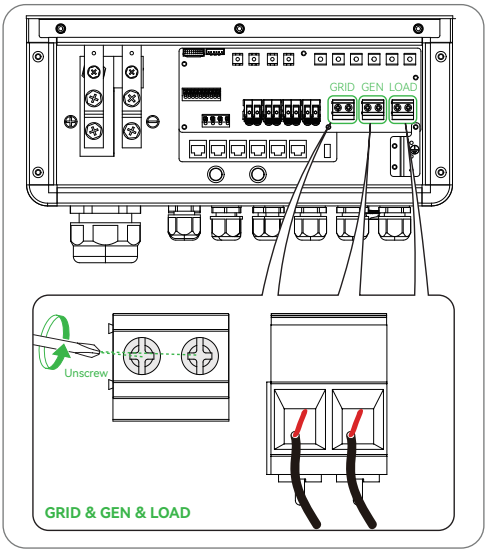


Figure 7-5 Connecting AC Wires

Step 2: Then, insert AC output wires according to polarities indicated on the terminal block and tighten terminal. Be sure to connect corresponding N wires to related terminals as well.

Step 3: Make sure the wires are securely connected.

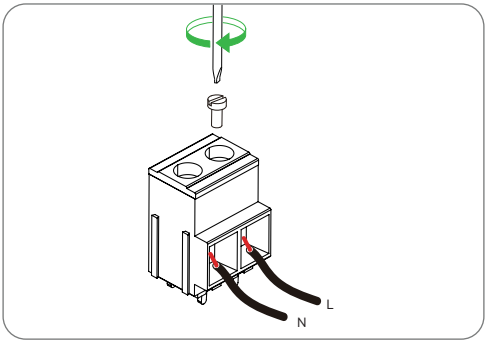


Figure 7-6 Connecting N Wires

CAUTION!

- 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.

7.5 PV Connection

Before connecting to PV modules, please install a separately DC circuit breaker between inverter and PV modules. It is very important for system safety and efficient operation to use appropriate cable for PV module connection. To reduce risk of injury, please use the proper recommended cable size as below.

Table 7-4 PV Cables

Model	Wire Size	Cable
10 / 12 kW	12 AWG	4.0 mm^2

WARNING!

- 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 PV modules, please ensure the PV+ & PV- of solar panel is not connected to the system ground bar.
- It is requested to use PV junction box with surge protection. Otherwise, it will cause damage on inverter when lightning occurs on PV modules.

Step 1: Remove insulation sleeve 10 mm for positive and negative conductors.

Step 2: Suggest to put bootlace ferrules on the end of positive and negative wires with a proper crimping tool.

Step 3: Check correct polarity of wire connection from PV modules and PV input connectors. Then, connect positive pole (+) of connection wire to positive pole (+) of PV input connector. Connect negative pole (-) of connection wire to negative pole (-) of PV input connector. Close the switch and make sure the wires are tightly fixed.

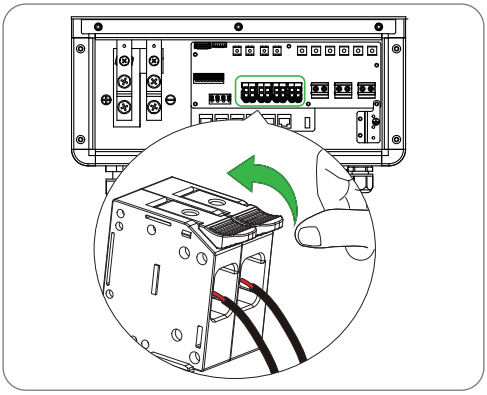


Figure 7-7 PV Connection

7.6 Grounding Connection

Ground cable shall be connected to ground plate on grid side, this prevents electric shock if the original protective conductor fails.

Table 7-5 Grounding Cables

Model	Wire Size	Cable	Torque (Max.)
10 / 12 kW	4 AWG	21.1 mm^2	3 N·m

Step 1: Strip the insulation of conductor by wire stripper. Stripping length of 8 ~ 13 mm² wire is L1+2 mm.

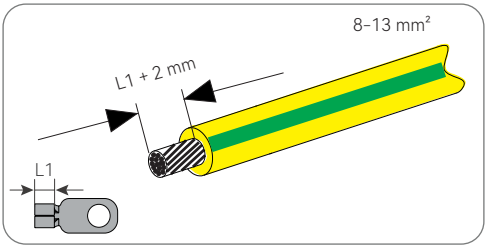


Figure 7-8 Striping the PE Cable

Step 2: Insert the stripped section into the OT terminal.

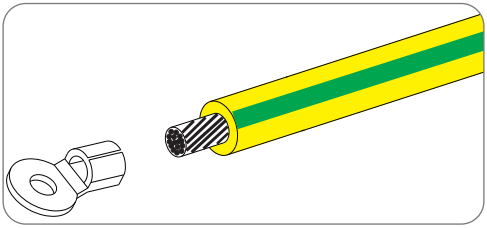


Figure 7-9 Inserting the Cable

Step 3: Crimp it with crimping tool.

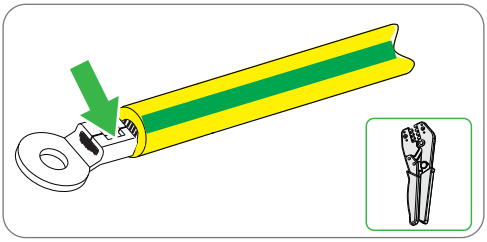


Figure 7-10 Crimping the Cable

Step 4: Loosen the PE screw on the inverter with cross screwdriver.

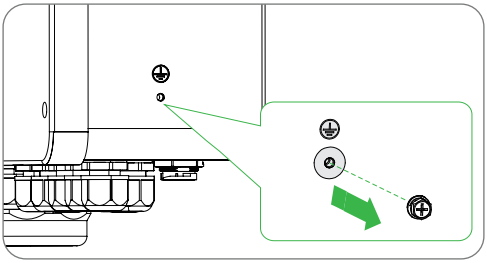


Figure 7-11 Uninstalling the Screw

Step 5: Connect the PE cable to the inverter and secure it with the original screw (Torque: 3 N·m).

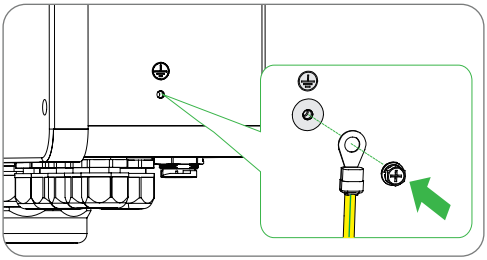


Figure 7-12 Securing the PE Cable

7.7 CT Connection

The primary side of the CT needs to be clamped on the Grid live line.

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

WARNING!

- Connect CT according to the pointing direction of the meter. It will display CT reverse fault on the inverter if it is the opposite direction.

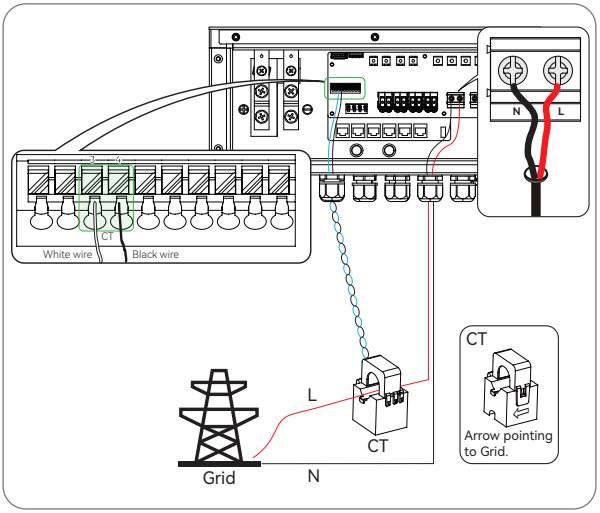


Figure 7-13 CT Connection

8 System Commissioning

8.1 Check Before Power-on

Table 8-1 Checklist Before Power-on

No.	Checklist
1	The inverter installed firmly that easily for operation and maintenance.
2	All lines, including PE, PV, Battery, AC and communication, are connected correctly and firmly.
3	The cable bundling complies with the wiring requirements, is properly distributed, and free from damage.
4	Ensure that a waterproof cover is installed for unused wire holes.
5	Ensure that the used wire holes have been sealed.
6	Verify that the voltage and frequency of installed location meet the grid-tied requirement.

8.2 Powering on the System

Before turning on the AC switch between the inverter and the grid, use a multimeter to check that the AC voltage is within the allowed range.

Step 1: Turn on the AC circuit breaker on the ON-GRID side of the inverter.

Step 2: Turn on the AC circuit breaker on the BACK-UP side of the inverter.

Step 3: Turn on the energy storage circuit breaker between the inverter and the battery.

Step 4: Turn on the DC switch of the inverter.

NOTICE

- Please set the inverter parameters first via Yinergy Cloud app to ensure its normal operation. For details, please refer to 10.3.7 Setting Parameters via Yinergy Cloud.

Step 5: Send a system check command on the APP (optional).

Step 6: Observe the LEDs to check the inverter operating status.

9 Operation on LCD

9.1 Introduction of Control Panel

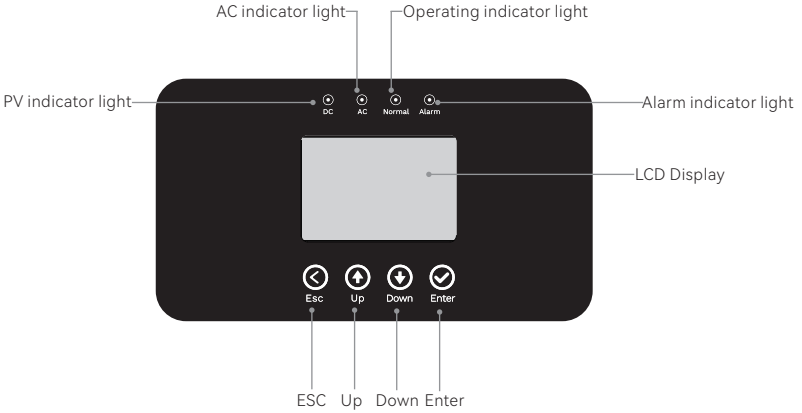


Figure 9-1 Control Panel

Table 9-1 Definition of Indicators

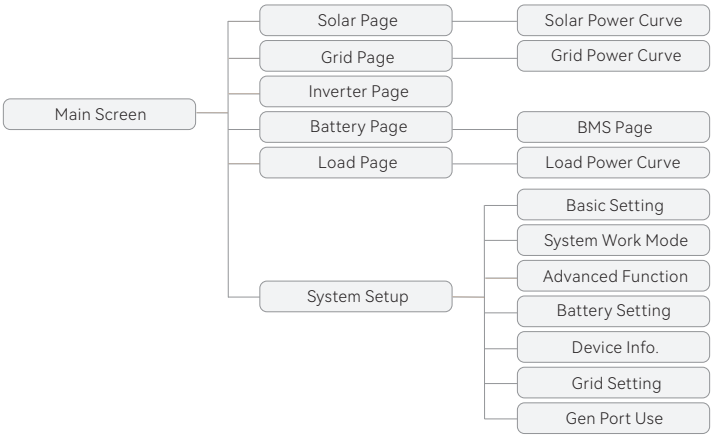
Item	Status	Definition	Explanation
DC		Green LED solid light	PV Connection normal.
AC		Green LED solid light	Grid Connection normal.
Normal		Green LED solid light	Inverter operating normal.
Alarm		Red LED solid light	Malfunction or warning.

Table 9-2 Definition of Keys

Key	Definition
ESC key	Exit from the current interface or function.
Up key	Increase the value.
Down key	Decrease the value.

Key	Definition
Enter key	Confirm the selection.

9.2 Introduction of Menu Interface



9.3 Main Screen

- This is the main screen page.

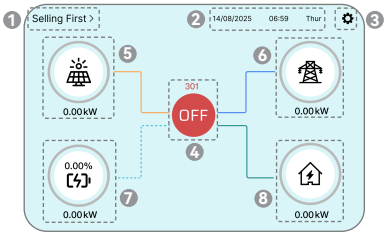


Figure 9-2 Main Screen

» ❶ Current work mode, turning to **System Work Mode** page.

» ❷ Date and Time.

» ❸ Setting icon, turning to **System Setup** icon.

» ❹ Inverter status icon, turning to **Inverter** page. When the inverter works normally, it displays **ON**; when the inverter doesn't start or fails, it displays **OFF**.

» ❺ PV icon, turning to **Solar** page.

» ❻ Grid icon, turning to **Grid** page.

» ❼ Battery icon, turning to **BATT** page.

» ❽ Load icon, turning to **Load** page

» **Display is Upgrading!!! Please Wait** means the LCD screen is under remote control and upgrading.

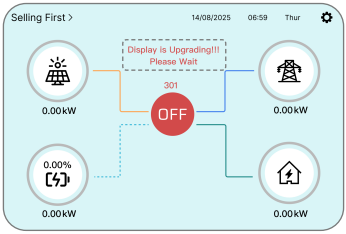


Figure 9-3 Upgrading Status

» **Wait for connection.....** means the inverter is waiting for communication connection or there is internal communication fault in the inverter.

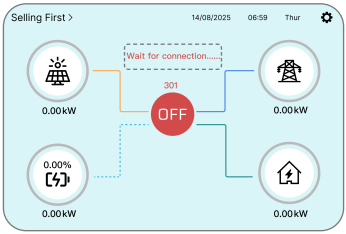


Figure 9-4 Waiting Status

9.4 Solar Panel Data

- This is the Solar Panel detail page. Press the **Energy** button will enter into the power curve page.

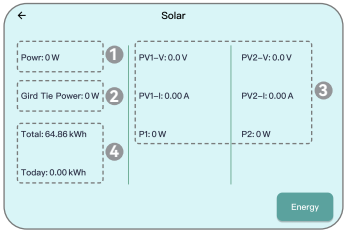


Figure 9-5 Solar Page

» ❶ **Power:** Solar Panel Generation.

» ❷ **Grid Tie Power:** When there's a string inverter AC couple at the grid or load side of hybrid inverter and there's a meter installed for the string inverter, the hybrid inverter LCD will show the string inverter output power on its PV icon. Please make sure the meter can communicate with the hybrid inverter successfully.

» ❸ Voltage, Current, Power for each MPPT.

» ❹ Solar Panel energy for Day and Total.

» **Energy**: Press **Energy** to view solar power curve for daily, monthly, yearly and total. For more accurate power generation, please check monitoring system data on Yinergy Cloud. Click the up and down arrow to check power curve of different period.

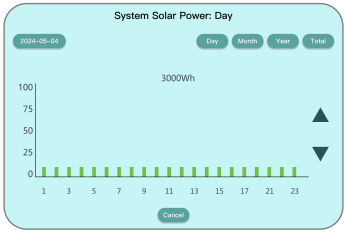


Figure 9-6 Solar Power Curve

9.5 Grid Data

- This is the Grid detail page.

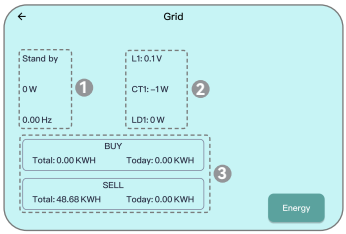


Figure 9-7 Grid Page

» ❶ Status, Power, Frequency.

» ❷ **L1**: Voltage. **CT1**: Power detected by the external current sensors. **LD1**: Power detected using internal sensors on AC grid in/out breaker.

» ❸ **BUY**: Energy from grid to inverter. **SELL**: Energy from inverter to grid.

» **Energy**: Press **Energy** to view grid power curve for daily, monthly, yearly and total. For more accurate power generation, please check monitoring system data on Yinergy Cloud. Click the up and down arrow to check power curve of different period.

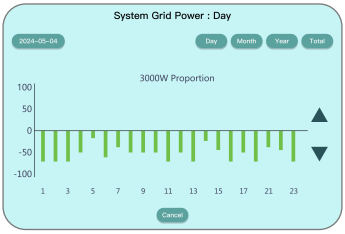


Figure 9-8 Grid Power Curve

9.6 Inverter Data

- This is the Inverter detail page.

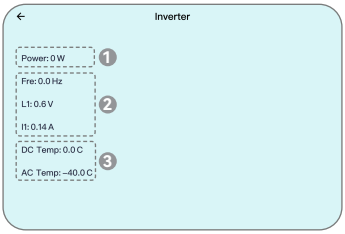


Figure 9-9 Inverter Page

» ❶ **Power**: Inverter power.

» ❷ **Fre**: Frequency after DC/AC. **L1**: Voltage. **I1**: Current.

» ❸ **DC Temp**: DC-DC temperature. **AC Temp**: Heat-sink temperature.

9.7 Battery Data

- This is the Battery detail page. If you use lithium battery, you can enter **Li-BMS** page. Click **Sum Data** to enter **Li-BMS-SUM** page and click **Details Data** to enter **Li-BMS-Details** page.

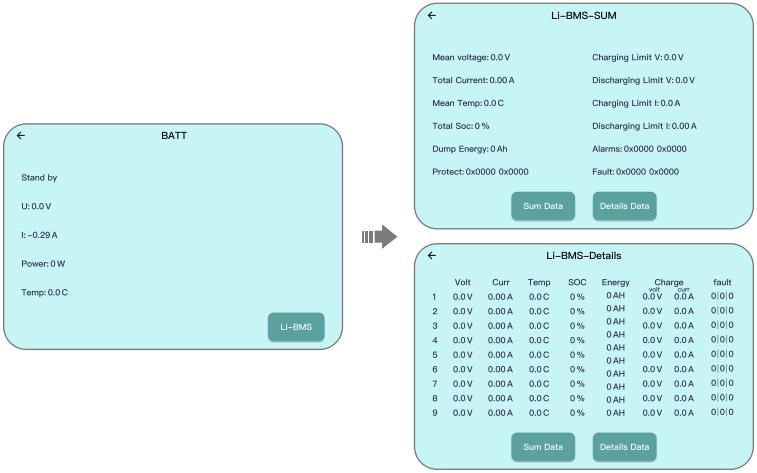


Figure 9-10 BATT & LI-BMS Page

9.8 Load Data

- This is Load detail page.

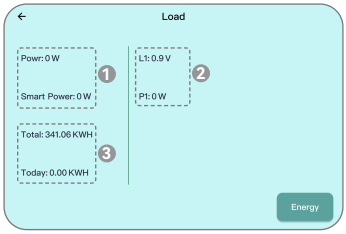


Figure 9-11 Load Page

» ❶ **Power**: Load Power. **Smart Power**: Smart Load Power.

» ❷ **L1**: Voltage. **P1**: Power.

» ❸ **Total/Today:** Load consumption for total and Today.

» When you check **Selling First** or **Zero export to Load** on system work mode page, the information on this page is about backup load which connect on Load port of hybrid inverter. When you check **Zero export to CT** on system work mode page, the information on this page is including backup load and home load.

» **Energy**: Press **Energy** to view load power curve for daily, monthly, yearly and total. For more accurate power generation, please check monitoring system data on Yinergy Cloud. Click the up and down arrow to check power curve of different period.

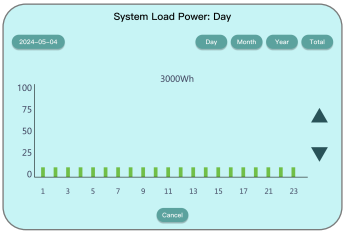


Figure 9-12 Load Power Curve

9.9 System Setup

- This is the **System Setup** page.

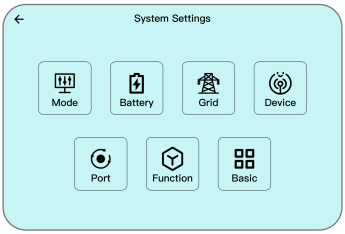


Figure 9-13 System Setup

9.9.1 Basic Setting

- This is the Basic Setting page.

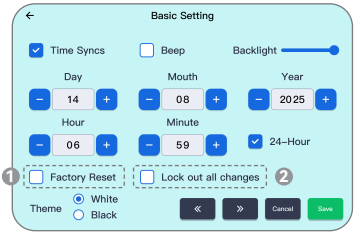


Figure 9-14 Basic Setting

» ❶ **Factory Reset**: Reset all parameters of the inverter.

» ❷ **Lock out all changes**: Enable this menu for setting parameters not allowed to be set up.

» Before performing a successful factory reset or locking out all changes, type in a password (**777777**) to enable settings.

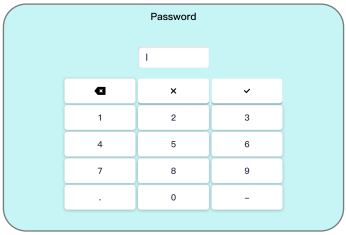


Figure 9-15 Basic Setting Login

9.9.2 System Work Mode

- This is the Work Mode page.

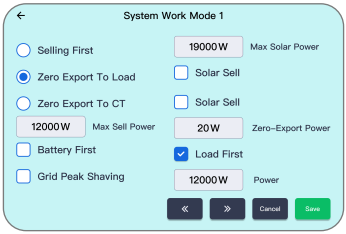


Figure 9-16 System Work Mode 1

» **Selling First**: This Mode allows hybrid inverter to sell back any excess power produced by the solar panels to the grid. If time of use is active, the battery energy also can be sold into grid.

The PV energy will be used to power the load and charge the battery and then excess energy will flow to grid. Power source priority for the load is as follows:

a. Solar Panels.

b. Grid.

c. Batteries (until programable % discharge is reached).

» **Max Solar Power**: Allowed the maximum DC input power.

» **Zero Export To Load**: Hybrid inverter will only provide power to the backup load connected. The hybrid inverter will neither provide power to the home load nor sell power to grid. The built-in CT will detect power flowing back to the grid and will reduce the power of the inverter only to supply the local load and charge the battery.

» **Zero Export To CT**: Hybrid inverter will not only provide power to the backup load connected but also give power to the home load connected. If PV power and

battery power is insuffcient, it will take grid energy as supplement. The hybrid inverter will not sell power to grid. In this mode, a CT is needed. The installation method of the CT please refer to "7.7 CT Connection". The external CT will detect power flowing back to the grid and will reduce the power of the inverter only to supply the local load, charge battery and homeload.

» **Solar Sell**: For **Zero Export To Load** or **Zero Export To CT**: when this item is active, the surplus energy can be sold back to grid. When it is active, PV Power source priority usage is as follows: load consumption and charge battery and feed into grid.

» **Max Sell Power**: Allowed the maximum output power to flow to grid.

» **Zero-Export Power**: For **Zero Export To Load** or **Zero Export To CT**, it tells the grid output power. Recommend to set it as 20-100W to ensure the hybrid inverter won't feed power to grid.

» **Battery First**: PV power is firstly used to charge the battery and then used to power the load. If PV power is insufficient, grid will make supplement for battery and load simultaneously.

» **Load First**: PV power is firstly used to power the load and then used to charge the battery. If PV power is insufficient, grid will make supplement for battery and load simultaneously.

» **Grid Peak Shaving**: When it is active, grid output power will be limited within the set value. If the load power exceeds the allowed value, it will take PV energy and battery as supplement. If still can't meet theload requirement, grid power will increase to meet the load needs.

» **Power**: Power of Grid Peak Shaving.

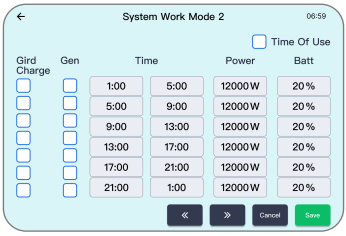


Figure 9-17 System Work Mode 2

» **Time Of Use**: It is used to program when to use grid or generator to charge the battery, and when to dischargethe battery to power the load. Only **Time Of Use** is ticked, the following items (Grid Charge, Time, Power, Batt) will take effect.

NOTICE

- When in **Selling First** Mode and **Time Of Use** is ticked, the battery power can be sold into grid.

» **Grid Charge**: Utilizes grid to charge the battery in a time period.

» **Gen**: Utilizes diesel generator to charge the battery in a time period.

» **Time**: Real time, range of 01:00-24:00.

» **Power**: Max. discharge power of battery allowed.

» **Batt** (V or SOC %): battery SOC % or voltage at when the action is to happen.

For example:

During 01:00~05:00, when battery SOC is lower than 80%, it will use grid to charge the battery until battery SOC reaches 80%.

During 05:00~08:00 and 08:00-10:00, when battery SOC is higher than 40%, hybrid inverter will discharge the battery until the SOC reaches 40%.

During 10:00~15:00, when battery SOC is higher than 80%, hybrid inverter will discharge the battery until the SOC reaches 80%.

During 15:00~18:00, when battery SOC is higher than 40%, hybrid inverter will discharge the battery until the SOC reaches 40%.

During 18:00~01:00, when battery SOC is higher than 35%, hybrid inverter will discharge the battery until the SOC reaches 35%.

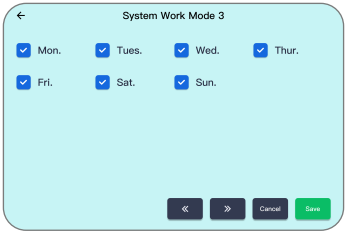


Figure 9-18 System Work Mode 3

» It allows users to choose which day to execute the setting of **Time Of Use**. For example, the inverter will execute **Time Of Use** on Mon/Tues/Wed/Thur/Fri/Sat/Sun only.

9.9.3 Advanced Function

- This is the Advanced Function page.

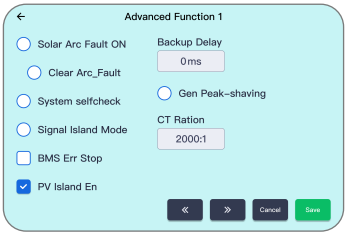


Figure 9-19 Advanced Function 1

» **Solar Arc Fault ON**: This is an optional function.

» **System selfcheck**: Disable. This is only for manufacturer.

» **Signal Island Mode**: When **Signal Island Mode** is ticked and the inverter connects to the grid, the ATS port voltage is 0. If the inverter disconnects to the grid, the ATS port voltage will output 230Vac voltage. With this feature and outside NO type relay, it can realize N and PE disconnection or connection.

» **BMS Err Stop**: When it is ticked, the inverter will stop working and report fault if the battery BMS failed to communicate with inverter.

» **PV Island En**: PV is allowed to supply power to load when the inverter is off-grid and without battery.

» **Backup Delay**: When the grid cuts off, the inverter will output power after the setting time.

For example, set **Backup Delay** as 3ms. The inverter will output power after 3ms when the grid cuts off.

» **Gen Peak-shaving**: Enable. When the power of the generator exceeds the rated value of it, the inverter will provide the redundant part to ensure that the generator will not over load.

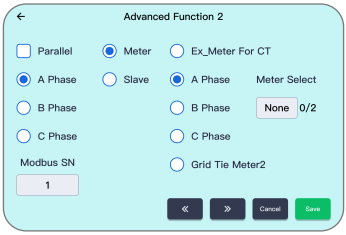


Figure 9-20 Advanced Function 2

» **Ex_Meter For CT**: When in three-phase system with CHNT three-Phase energy meter (DTSU666), tick corresponding phase where hybrid inverter is connected. For example, when the hybrid inverter output connects to A phase, please tick **A Phase**.

» **Modbus Select**: Select the corresponding meter type according to the installed meter.

» **Grid Tie Meter2**: When there's string inverter AC couple at the grid or load side of hybrid inverter and meter installed, the hybrid inverter LCD will show the string inverter output power under the PV icon on the main screen. Please make sure the meter can communicate with hybrid inverter successfully.

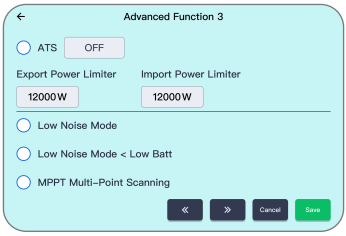


Figure 9-21 Advanced Function 3

» **ATS**: It is related with ATS port voltage. It is better in "uncheck" position.

» **Export Power Limter**: It is used to setup the allowed the maximum output power to flow to grid.

» **Import Power Limiter**: When it is active, the grid output power will be limited. Its priority is lower than "grid peak shaving" if the "grid peak shaving" is selected.

» **Low Noise Mode**: In this mode, inverter will work in "low noise mode".

» **Low Power Mode < Low Batt**: If it is selected and when battery SOC is less than **Low Batt** value, the self-consumption power of inverter will be from grid and battery simultaneously. If it is unselected, the self-consumption power of inverter will be mainly from grid.

» **MPPT Multi-Point Scanning**: It will check whether the I/V of PV is working on its Max. power point. If not, then it will adjust I/V to the Max. power point.

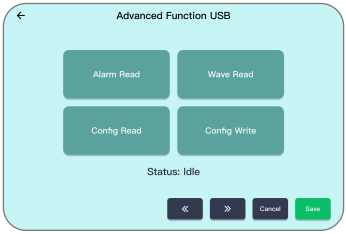


Figure 9-22 Advanced Function USB

» **Alarm Read**: Read alarm and fault information from the inverter to USB flash drive.

» **Wave Read**: Read wave data from the inverter to a USB flash drive.

» **Config Read**: Read parameter settings from the inverter to a USB flash drive.

» **Config Write**: Write file content of parameter settings from the USB flash drive to the inverter.

9.9.4 Battery Setting

- This is the **Battery Setting** interface.

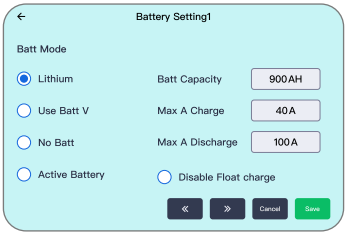


Figure 9-23 Battery Setting 1

» **Use Batt V**: Apply battery voltage to all the settings (V)

» **Batt Capacity**: Battery bank size.

» **Max A Charge/Discharge**: Maximum battery charge/discharge current.

For AGM and flooded battery, we recommend battery capacity * 20% = Charge/ Discharge amps.

For Gel, follow Manufacturer's user manual.

» **No Batt**: Tick this item if no battery is connected to the system.

» **Active Battery**: It helps recover the battery that is over discharged by slowly charging from the solar array or grid.

» **Disable Float Charge**: For the lithium battery with BMS communication, the inverter will keep the charge voltage at the current voltage when the BMS charging current is set as 0. It is used to help prevent battery from being overcharged.

- After select the battery mode and press **»**, you can enter the detailed battery setting interface.

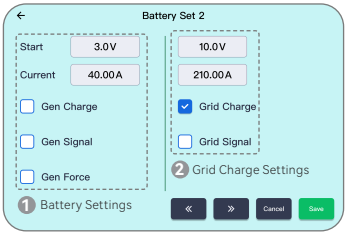


Figure 9-24 Battery Set 2

» ❶ Battery Settings:

Start=50.10%: When the battery volume is under 50.10%, the system will automatically start a connected generator to charge the battery bank.

Current=47.00A: Charge rate of 47.00A from the attached generator in Amps.

Gen Charge: Enable the gen input of the system to charge battery bank from an attached generator.

Gen Signal: When the Gen Start signal state is active, enable relay.

Gen Force: When the generator is connected, it is forced to start the generator without meeting other conditions

» ❷ Grid Charge Settings:

Start=25.30%: For customization only.

Current=19.00A: Current that the Grid charges to the Battery.

Grid Charge: Enable grid to charge to the battery.

Grid Signal: Disable.

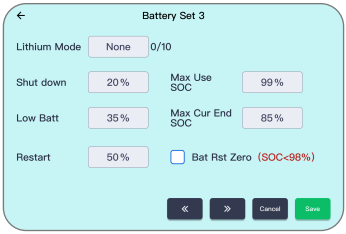


Figure 9-25 Battery Set 3 for Lithium Mode

» **Lithium Mode**: This is BMS protocol. Please reference the user manual of the battery.

» **Shutdown**: The inverter will shutdown if the SOC below this value.

» **Low Batt**: The inverter will alarm if the SOC below this value.

» **Restart**: Battery SOC at 50% AC output will resume.

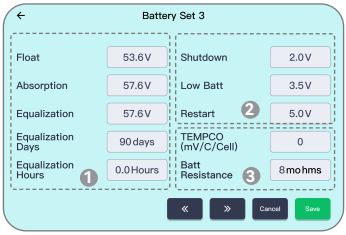


Figure 9-26 Battery Set 3 for Other Modes

» ❶ There are 3 stages of charging the battery.

» ❷ **Shutdown**: The inverter will shutdown if the SOC below this value.

Low Batt: The inverter will alarm if the SOC below this value.

Restart: Battery SOC at 50% AC output will resume.

» ❸ This is only for professional installers.

Table 9-3 Recommended Battery Settings

Battery Type	Absorption Stage	Float Stage	Equalization Voltage (Every 30 days 3 hrs)
AGM (or PCC)	14.2V (57.6V)	13.4V (53.6V)	14.2V (57.6V)
Gel	14.1V (56.4V)	13.5V (54.0V)	
Wet	14.7V (59.0V)	13.7V (55.0V)	14.7V (59.0V)
Lithium	Follow its BMS voltage parameters		

9.9.5 Device Information

- This is the device information page, which shows inverter SN, Inverter version and alarm codes.

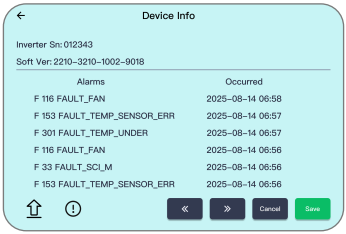


Figure 9-27 Device Info

» **Soft Ver**: Software Version.

» **Inverter Sn**: Inverter SN number.

» **Model Type**: Model type of the inverter.

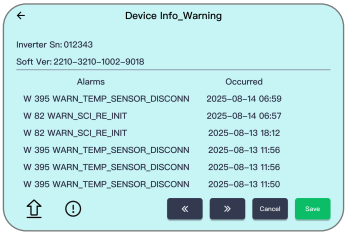


Figure 9-28 Device Info_Warning

9.9.6 Grid Setting

- This is the **Grid Setting** page.

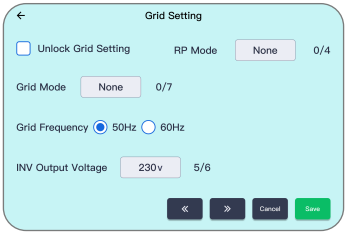


Figure 9-29 Grid Setting

» **Unlock Grid Setting**: Before changing the grid parameters, please enable this with password of **111111**.

» **Grid Mode**: Please select corresponding grid mode according to local regulations.

» **RP Mode**: Reactive power control mode, default mode is fixeds power factor (RP_SPF).

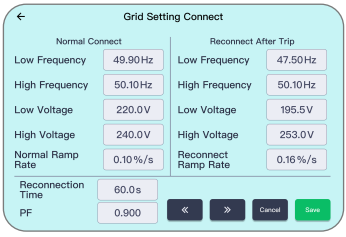


Figure 9-30 Grid Setting Connect

» **Normal Connect**: The allowed grid voltage/frequency range when the inverter first time connects to the grid.

» **Normal Ramp rate**: Startup power ramp.

» **Reconnect After Trip**: The allowed grid voltage/frequency range when the inverter connects to the grid after the inverter trip from the grid.

» **Reconnect Ramp rate**: Reconnection power ramp.

» **Reconnection**: The waiting time period during the inverter connects to the grid again.

» **PF**: Power factor which is used to adjust inverter reactive power.

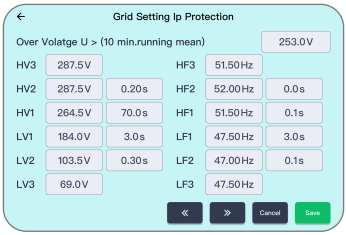


Figure 9-31 Grid Setting Ip Protection

» **HV1**: Level 1 overvoltage protection point;

HV2: Level 2 overvoltage protection point;

HV3: Level 3 overvoltage protection point.

» **LV1**: Level 1 undervoltage protection point;

LV2: Level 2 undervoltage protection point;

LV3: Level 3 undervoltage protection point.

» **HF1**: Level 1 over frequency protection point;

HF2: Level 2 over frequency protection point;

HF3: Level 3 over frequency protection point.

» **LF1**: Level 1 under frequency protection point;

LF2: Level 2 under frequency protection point;

LF3: Level 3 under frequency protection point.

» **0.20s**: Trip time.

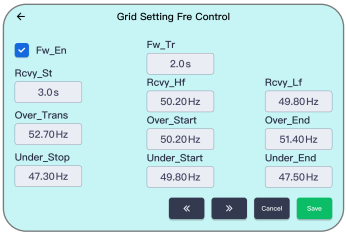


Figure 9-32 Grid Setting Fre Control

» **Fw_En**: Enable frequency power control.

» **Fw_Tr**: Power response time (reserved, no effect).

» **Rcvy_St**: Recovery judgment time.

» **Rcvy_Hf**: Recovery frequency upper limit.

» **Rcvy_Lf**: Recovery frequency lower limit.

» **Over_Trans**: Crossover frequency when overfrequency.

» **Over_Start**: Start frequency when overfrequency.

» **Over_End**: End frequency when overfrequency.

» **Under_Stop**: Crossover frequency when underfrequency.

» **Under_Start**: Start frequency when underfrequency.

» **Under_End**: End frequency when underfrequency.

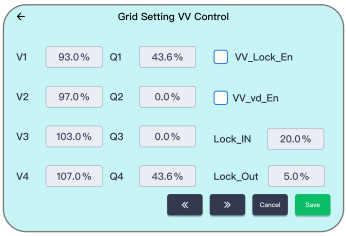


Figure 9-33 Grid Setting VV Protection

» **VV_Func_En**: Reactive power - Enable voltage control.

» **V1~V4**: Voltage set point.

» **Q1~Q4**: Reactive power set point.

» **Lock_IN**: Hysteresis loop entry point (active).

» **Lock_Out**: Hysteresis loop exit point (active).

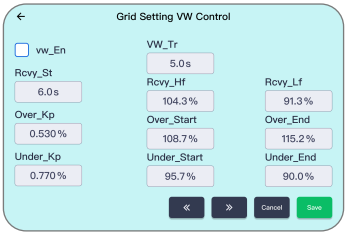


Figure 9-34 Grid Setting VW Control

» **VW_En**: Enable Voltage Power Control.

» **VW_Tr**: Power Response Time.

» **Rcvy_Hv**: Upper limit of stable voltage range.

» **Rcvy_Lv**: Lower limit of stable voltage range.

» **Rcvy_St**: Stable recovery time.

» **Over_Start**: (Over voltage) Start Voltage.

» **Over_End**: (Over voltage) End Voltage.

» **Over_Kp**: (Over voltage) Drop ratio.

» **Under_Start**: (Under voltage) Start Voltage.

» **Under_Min**: (Under voltage) End Voltage.

» **Under_Kp**: (Under voltage) Drop ratio.

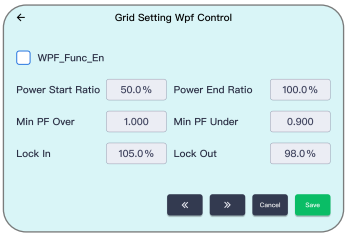


Figure 9-35 Grid Setting Wpf Control

» **WPF_Func_En**: Power factor - Enable active power control.

» **Power Start Ratio**: Active power start ratio.

» **Power End Ratio**: Active power end ratio.

» **Min PF Over**: Capacitive power factor.

» **Min PF Under**: Inductive power factor.

» **Lock In**: Hysteresis loop entry point (voltage).

» **Lock Out**: Hysteresis loop exit point (voltage).

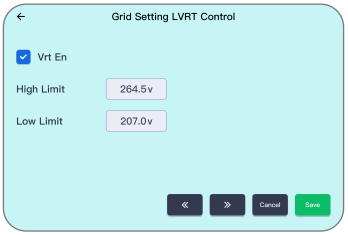


Figure 9-36 Grid Setting LVRT Control

» **Vrt_En**: Enable Voltage crossover.

» **High Limit**: High ride-through start voltage.

» **Low Limit**: Low ride-through start voltage.

9.9.7 Gen Port Use

- This is the **Gen Port Use** page.

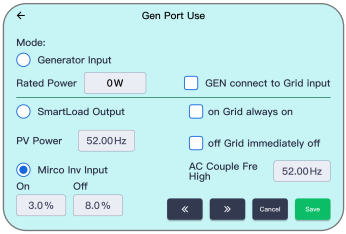


Figure 9-37 Gen Port Use

» **Generator input rated power**: Allowed Max. power from diesel generator.

» **GEN connect to Grid input**: Connect the diesel generator to the grid input port.

» **SmartLoad Output**: This mode utilizes the Gen input connection as an output which only receives power when the battery SOC and PV power is above a user programmable threshold.

Power=300W, On=30%, Off=50%: When the PV power exceeds 300W, and battery bank SOC reaches 30%, Smart Load Port will switch on automatically and power the load connected. When the battery bank SOC < 50% or PV power < 300W, the Smart Load Port will switch off automatically.

Smart Load OFF Batt: Battery SOC at which the Smart load will switch off.

Smart Load ON Batt: Battery SOC at which the Smart load will switch on. Also, the PV input power should exceed the setting value (Power) simultaneously and then the Smart load will switch on.

» **On Grid always on**: When click **on Grid always on**, the smart load will switch on when the grid is present.

» **Off grid immediately off**: The smart load will stop working immediately when the grid is disconnected if this item is active.

» **Micro inv input**: To use the Generator input port as a micro-inverter on grid inverter input (AC coupled), this feature will also work with grid-tied inverters.

Micro inv input Off: When the battery SOC exceeds setting value, microinveter or grid-tied inverter will shut down.

Micro inv input On: When the battery SOC is lower than setting value, microinveter or grid-tied inverter will start to work.

» **AC Couple Fre High**: If ticking **Micro Inv input**, as the battery SOC reaches the

setting value (OFF). During the process, the microinverter output power will decrease linear. When the battery SOC reaches the setting value (OFF), the system frequency will be set as the setting value (AC couple Fre high) and the Microinverter will stop working. Stop exporting power produced by the microinverter to the grid.

NOTICE

- **Micro inv input Off** and **On** is valid for some certain FW version only.

10 Operation on Yinergy Cloud

10.1 Introduction of Yinergy Cloud

Yinergy Cloud provides customers with a platform that can monitor inverter data and set it remotely. You can log in to your user account at any time through a personal computer, IOS or Android device to view real-time monitoring data or historical data, and perform remote settings as needed.

10.2 Operation on Yinergy Cloud Web

Open a browser and enter https://yinergy.eslink.com/ to complete registration, login, adding plant and other operations according to the user guide.

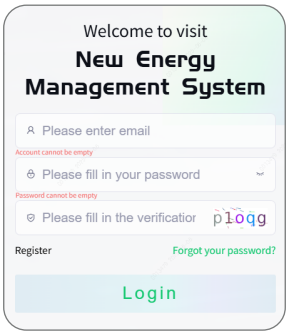


Figure 10-1 Yinergy Cloud Web

10.3 Operation on Yinergy Cloud App

10.3.1 Downloading and Installing App

Select and scan the OR code below to download Yinergy Cloud APP. In addition, you can search with the key word **Yinergy** in App Store or Google Play to download it.

Figure 10-2 QR Code

10.3.2 Registration

Step 1: Click **Register account** on the homepage.

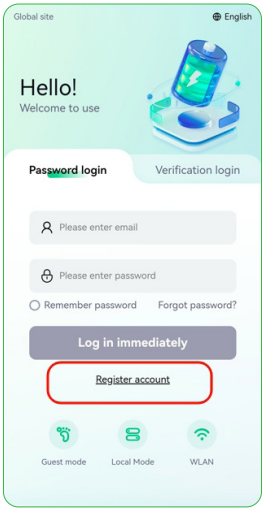


Figure 10-3 Register Account

Step 2: Select **Global site** and select **Organizational User** to register as an organizational user.

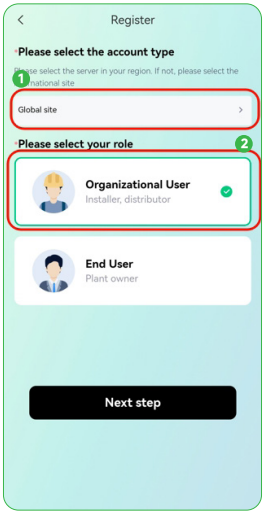


Figure 10-4 Select Organizational User

NOTICE

- Account types are divided into End Users (plant owners) and Organizational Users (dealers/installers).
- End users can check some information about the power stations and devices.
- Organizational users can assist end users in creating power stations, managing installed/operating power stations, devices, as well as managing users and organizations.

Step 3: Fill in the registration information.

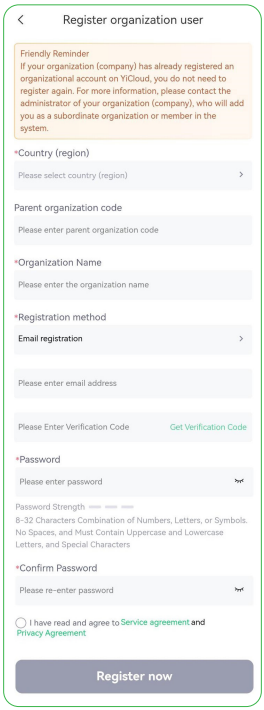


Figure 10-5 Register Organizational User

Table 10-1 Organizational User Configuration

Item	Explanation
*Country (region)	Select the country (region) where the organization is located.
Parent organization code	• Enter the parent organization code to indicate that the newly created organization is a subsidiary of that organization. If no parent organization code is entered, the newly created organization will be considered as a parent organization. • End users do not need a parent organization code and have no organization information. The rest of the process is the same as registering as an organizational user.
*Organization Name	Customize the organization name.
*Registration method	Please select **Email registration** to register an account.
*Password	Set the account password.
*Confirm Password	Confirm the password again.

NOTICE

- The icon * indicates the item is mandatory.
- Registering end users do not need to fill in the parent organization code.

Step 4: Tick the box **I have read and agree to the Privacy Agreement**.

Step 5: Click **Register now** to complete the account registration.

10.3.3 Login

YiCloud APP supports password login and verification login.

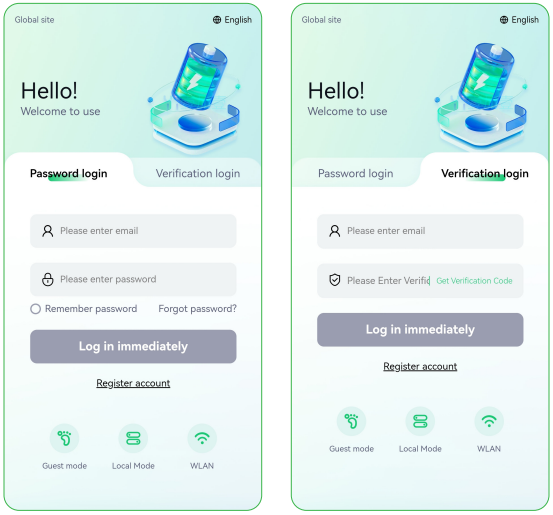


Figure 10-6 Password & Verification Login

Password Login

Step 1: Enter the Email on the login interface.

Step 2: Enter the password.

Step 3: Click **Log in immediately** to enter the overview page.

Verification Login

Step 1: Click **Verification Login** to enter the verification code login interface.

Step 2: Enter the email.

Step 3: Click **Get Verification Code**, and then enter the obtained verification code. The verification code is valid for 10 minutes, and you can request a new verification code after 60 seconds.

Step 4: Click **Log in immediately** to enter the overview page.

10.3.4 Create New Plant

NOTICE

- Different types of plants may result in slight differences in the **Create a New Plant** interface. Please refer to the actual interface.

Step 1: Click **Monitoring** on the homepage to enter the monitoring page.

Step 2: Click + to enter the **Create New Plant** page.

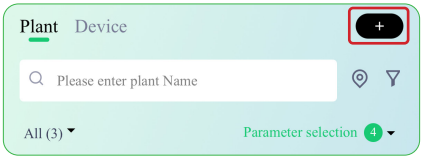


Figure 10-7 Creat New Power Station

Step 3: Fill in the information of the plant.

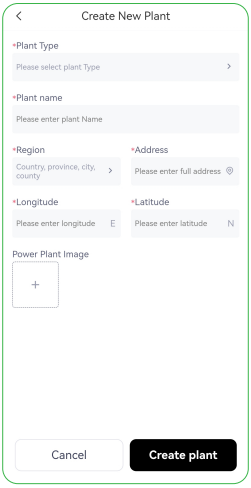


Figure 10-8 Information of Creating New Plant

Table 10-2 Parameters for Creating New Plant

Item	Explanation
*Plant Type	Select **Residential** for solar plant or **Commercial** for energy storage plant.
*Plant name	Enter the name of the plant.
*Region	Select the province, city, and district.
*Address	The location of the plant, which can be added in two ways: • Manual input: Manually enter the location in the input box. • Automatic acquisition: The system automatically acquires the address of the location of the plant.
*Longitude/Latitude	After obtaining the address, the longitude and latitude will be automatically filled. You can also fill in the longitude and latitude manually.
Power Plant Image	Click **+** to upload images.

NOTICE

- The icon ***** indicates the item is mandatory.

Step 4: After completing the parameter settings, click **Create plant**.

Step 5: After the plant is created, click **Add a collector** to add a new device and click **Add authorization** to authorize users.

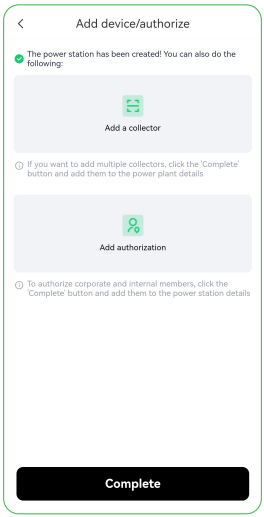


Figure 10-9 Successfully Creating

NOTICE

- Details of the plant can be viewed after five minutes of creation.
- Different plant types may result in different parameters displayed on the interface. Please refer to the actual interface.

10.3.5 Add a Device

Step 1: Click **Add a collector** after creating a new plant.

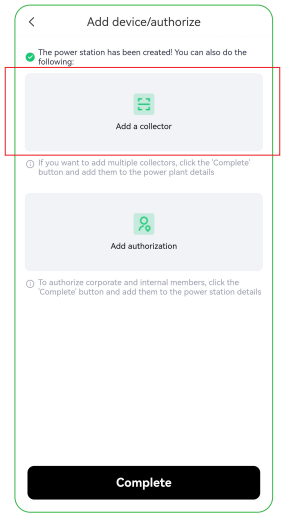


Figure 10-10 Add a Collector

Or click ··· on the plant details page and then click **Add Device**.

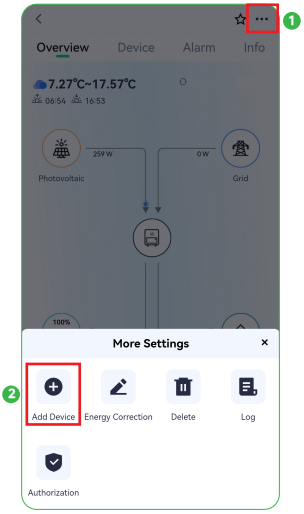


Figure 10-11 Add Device

Step 2: Click **Add**.

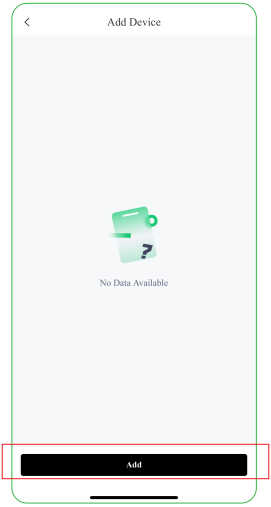


Figure 10-12 Click Add

Step 3: Enter the Series number.

» Scan the QR code to add device

Click to add device and click Confirm to accept the permission request. Scan the QR code on the communication device. After confirming that the

software has recognized it correctly. Click **Confirm** to add the device.

Or click **Import from gallery** to import the QR code image. After confirming that the software has recognized the device correctly, click **Confirm** to add the communication device.

When the current environment is too dark to recognize the QR code, click **Tap to light up** to turn on the flashlight.

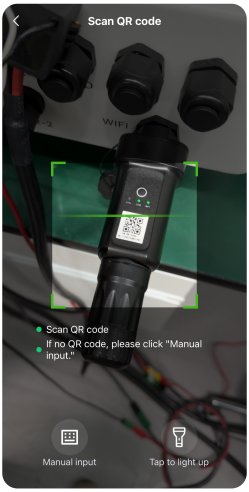


Figure 10-13 Scan QR Code

» Manually input

Enter the serial number of the device directly. Only numbers or letters are allowed to be entered.

Step 4: Click **Save**. After the device is successfully added, wait for the device to report data, and then data from Overview, Maintenance, and Monitoring can be managed.

10.3.6 WLAN Configuration

Step 1: Click **WLAN Configuration** on the login interface or **Services** on the bottom after login.

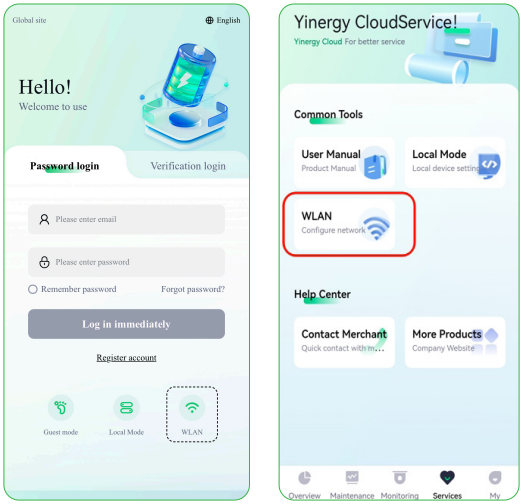


Figure 10-14 WLAN Configuration

Step 2: Enter the QR Code scanning page, allow camera access permission, scan the QR code of the device SN, or type the device SN number.

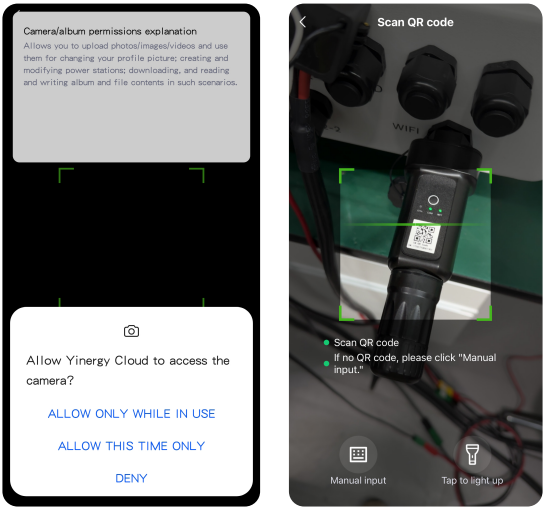


Figure 10-15 Scan QR Code of the Device SN

Step 3: Connect to the Wi-Fi at your home. By default, a password is required. If there is no password, turn off **Do you need a password** and click **Next step (2/3)**.

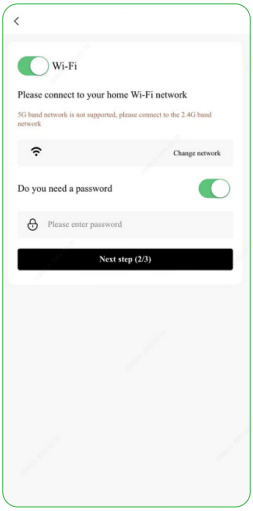


Figure 10-16 Connect to Home WiFi

Step 4: A prompt will appear to connect to the device network. The SSID of the device network is **YINERGY-XXXXXXXX** (last eight digits of SN), and the password is **12345678**.



Figure 10-17 Connect to the Device WiFi

Step 5: After connecting to the device network, click **Start Configuration**.

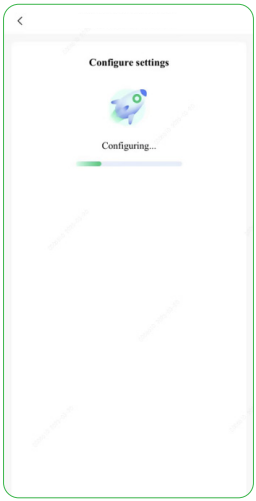


Figure 10-18 Configuring

Step 6: Configuration is completed successfully.

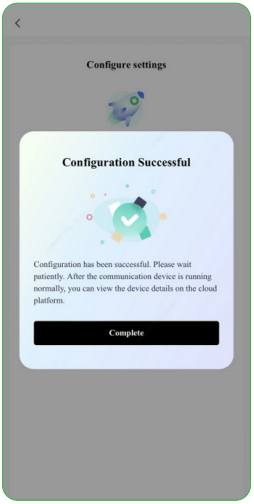


Figure 10-19 Configuration Completed

NOTICE

- If it is necessary to switch to Ethernet configuration, turn off the Wi-Fi switch in the first step, and then it will be switched to Ethernet. Click **Next step** for configuration. When configuring Ethernet, it is also necessary to connect to the device network. The SSID and the password of the device is the same.

10.3.7 Setting Parameters via Yinergy Cloud

Inverter can be remote controlled by Yinergy Cloud.

Step 1: After login, find your own power plant on the **Monitoring** page.

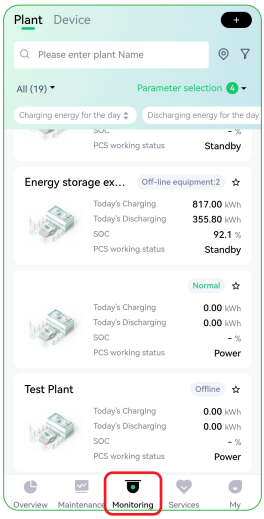


Figure 10-1 Plant list

Step 2: Select **Device**, choose **Distributed inverter** in the drop-down list and find your inverter.

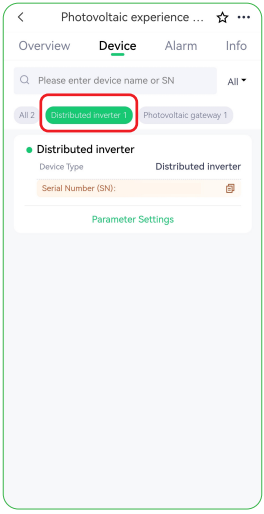


Figure 10-2 Distributed Inverter

Step 3: Select certain Inverter, then Click on the ··· in the upper right corner. Click **Remote control**.

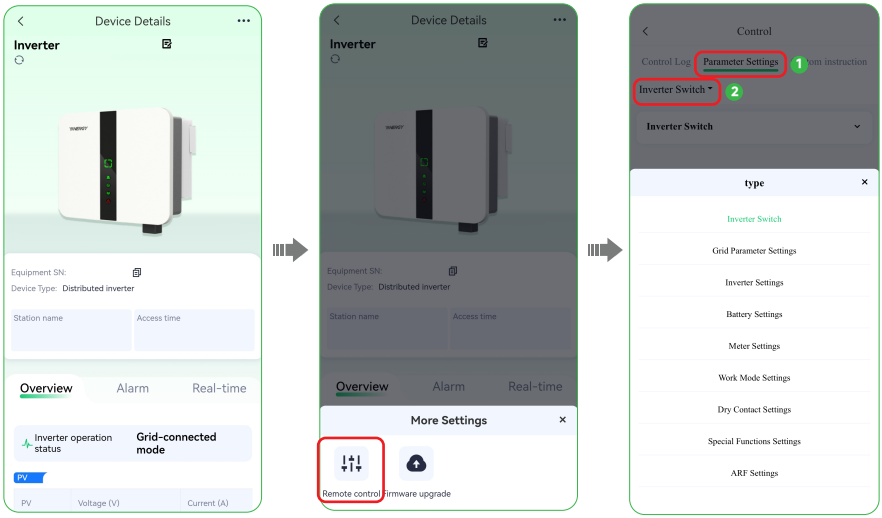


Figure 10-3 Select Remote Control

Grid Parameter Settings

In this interface, user can set **Grid Code**, **Mains Voltage**, **Mains Frequency**, **Soft Start**, **Short Disconnection** and **DC Component** through selecting the corresponding commands in the list.

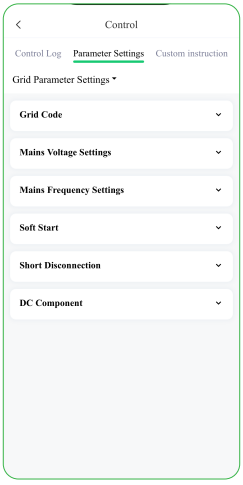


Figure 10-4 Grid Parameter Settings

Take **Grid Code** as an example:

Step 1: Select **Grid Parameter Settings**, click **Grid Code** and select the corresponding Country's name or Country Code.

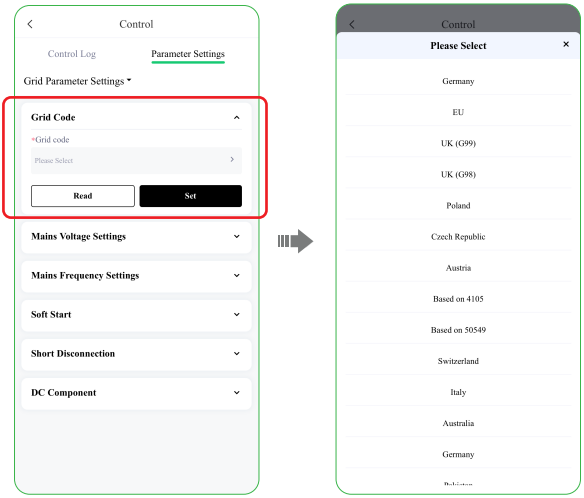


Figure 10-5 Set Grid Code

NOTICE

- **Grid Code** should be chosen at this step. And the parameters also should be set if the grid company has the different requirements.

Step 2: Click **Set**.

Inverter Settings

In this interface, user can set **Time Settings**, **Active Power Control**, **Power Factor Settings**, **Reactive Power Control**, **Voltage Power Control**, **Frequency Power Control** and **First Reconnection Settings**.

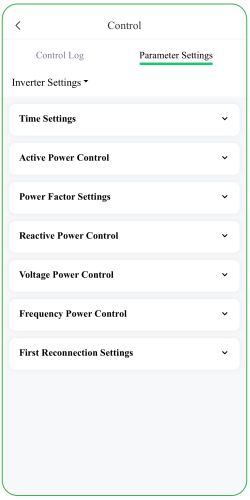


Figure 10-6 Inverter Settings

Take **Time Settings** as an example:

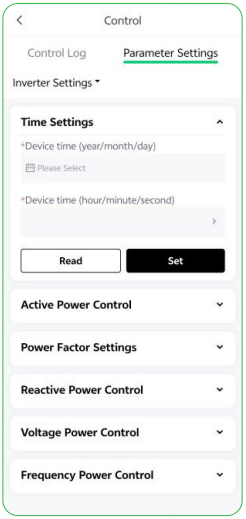


Figure 10-7 Time Settings

Table 10-3 Device Time Settings

Item	Descrition
Device time (year/ month/day)	Set the year/month/day of the device time
Device time (hour/ minute/second)	Set the hour/minute/second of the device time

Battery Settings

In this interface, user can set **Battery Mode**, **Lead Aicd Battery Settings** and **Battery Charge and Discharge Settings**.

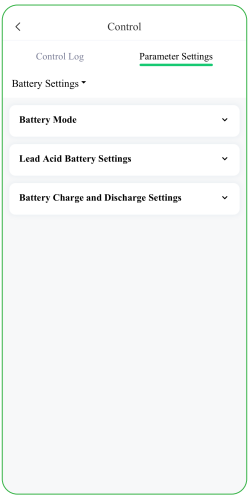


Figure 10-8 Battery Settings

Take **Battery Mode** as an example:

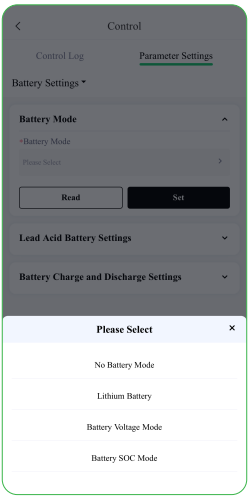


Figure 10-9 Select Battery Mode

EMS

In this interface, user can set **EMS Parameters Settings** and **TOU Parameters Settings**.

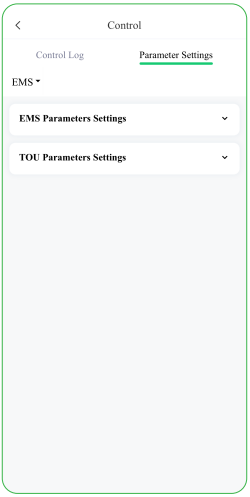


Figure 10-10 EMS

Take **EMS Work mode** as an example:

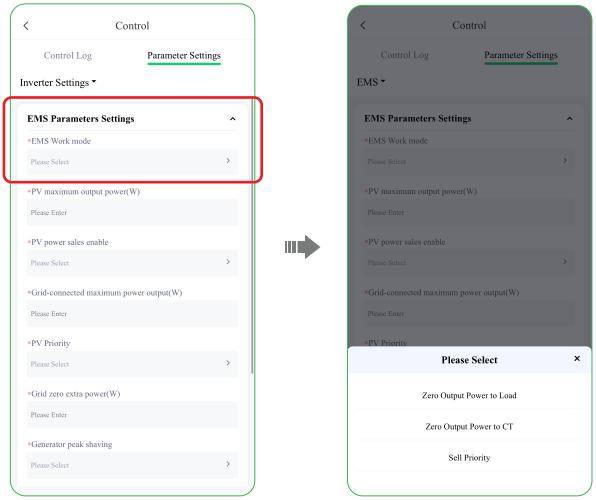


Figure 10-11 Set EMS Work Mode

NOTICE

- For detailed information for Work Mode, please refer to 9.9.2 System Work Mode.

CHP Port Settings

In this interface, user can set **Port Mode**, **CHP Settings**, **Load Settings** and **Mirco Inverter Settings**.

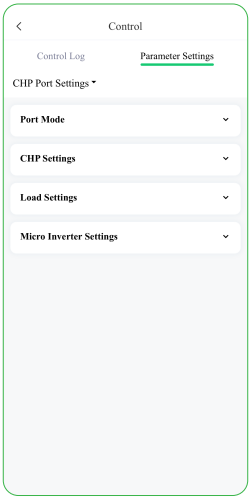


Figure 10-12 CHP Port Settings

Parallel Settings

In this interface, user can set **Parallel Parameter Settings** and **AC Coupling**.

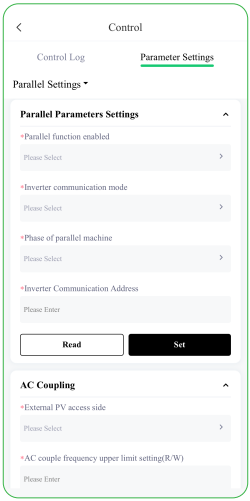


Figure 10-13 Parallel Settings

Meter Settings

In this interface, user can set **Meter Settings**, including **Electric meter model**, **External 3-phase meter enable**, **Inverter phase**, **External CT transformation ratio** and **External meter enable**.

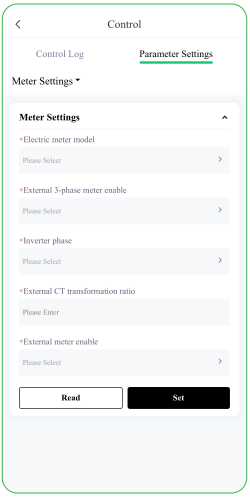


Figure 10-14 Meter Settings

Special Functions Settings

In this interface, user can set **Leakage Current Protection**, **Insulation Impedance**, **Safety Special** and **Settings**.

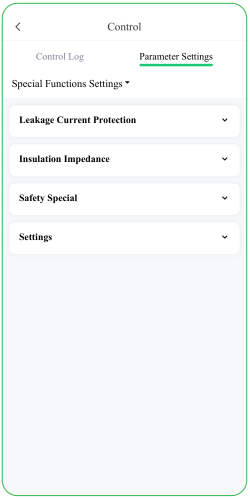


Figure 10-15 Special Functions Settings

ARF Settings

In this interface, user can set ARF Settings.

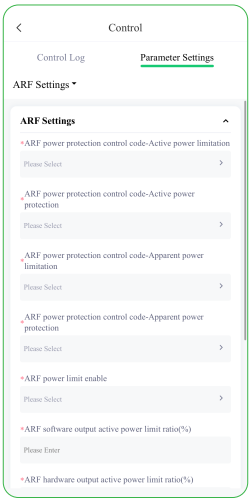


Figure 10-16 ARF Settings

10.3.8 Plant Interface

On the plant list, click the plant name to enter the overview page by default, and you can view the plant's data and the device information.

Energy Storage Plant Interface

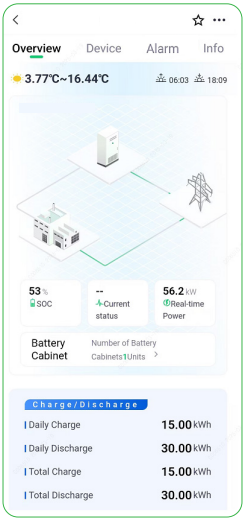


Figure 10-17 Energy Storage Plant Interface

Photovoltaic Plant Interface

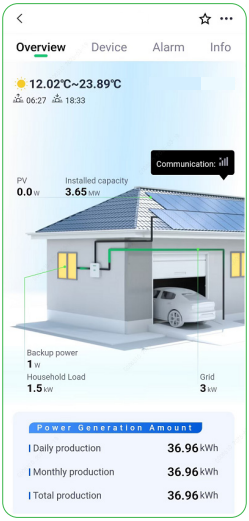


Figure 10-18 Photovoltaic Plant Interface

NOTICE

- Details of the power station can be viewed after five minutes of creation.
- Different power station types may result in different parameters displayed on the interface. Please refer to the actual interface.

11 Troubleshooting and Maintenance

11.1 Power off

DANGER!

- While operating and maintaining the inverter, please turn it off for processing. Operating the equipment with power may cause damage to the inverter or cause a risk of electric shock.
- After the inverter is powered off, it will take a certain amount of time for internal components to discharge. Please wait until the equipment is fully discharged according to the required label time requirements. Do not connect one PV array to multiple inverter, it may cause damage of inverter.

Step 1: Send a shutdown command on the App.

Step 2: Turn off the AC circuit breaker on the ON-GRID side of the inverter.

Step 3: Turn off the AC circuit breaker on the BACK-UP side of the inverter.

Step 4: Turn off the energy storage circuit breaker between the inverter and the battery.

Step 5: Turn off the DC switch of the inverter.

11.2 Troubleshooting

Please follow the methods below for troubleshooting. If the troubleshooting method cannot solve the issue, please contact the after-sales service center.

When contacting the after-sales service center, please collect the following information for quick resolution of the problem.

- Inverter information, such as serial number, software version, equipment installation time, fault occurrence time, fault occurrence frequency, etc.
- The installation environment of the equipment, such as weather conditions, presence of obstructed or shadows on the components, etc. It is recommended to provide photos, videos, and other files as auxiliaries to assist in analyzing problems.

No.	Fault Name	Diagnosis and Solutions
1	Grid off	Fault Reason: • Power grid outage. • The AC line or AC switch is disconnected. Solutions: • The alarm will automatically disappear after the power supply of the power grid is restored. • Check if the AC circuit or AC switch is disconnected.
2	Grid over voltage protection	Fault Reason: The grid voltage is higher than the allowable range, or the duration of high voltage exceeds the set value for high voltage crossing Solutions: • If it occurs accidentally, it may be due to a short-term abnormality in the power grid. After detecting that the power grid is normal, the inverter will resume normal operation without manual intervention. • If it occurs frequently, please check if the grid voltage is within the allowable range. » If the grid voltage exceeds the allowable range, please contact the local power operator. » If the grid voltage is within the allowable range, it is necessary to modify the inverter grid over voltage protection point, HVRT, or turn off the grid over voltage protection function with the consent of the local power operator. • If it cannot be restored for a long time, please check whether the AC side circuit breaker and output cable are connected properly.
3	Grid under voltage protection	Fault Reason: The grid voltage is below the allowable range, or the duration of low voltage exceeds the set value of low voltage crossing. Solutions: The cable bundling complies with the wiring requirements, is properly distributed, and free from damage.

No.	Fault Name	Diagnosis and Solutions
4	Grid over frequency protection	Fault Reason: The power grid is abnormal, and the actual frequency of the power grid is higher than the local power grid standard requirements. Solutions: • If it occurs accidentally, it may be due to a short-term abnormality in the power grid. After detecting that the power grid is normal, the inverter will resume normal operation without manual intervention. • If it occurs frequently, please check if the grid frequency is within the allowable range. » If the grid frequency exceeds the allowable range, please contact the local power operator. » If the grid frequency is within the allowable range, it is necessary to modify the inverter grid over frequency protection point or turn off the grid over frequency protection function with the consent of the local power operator.
5	Grid under frequency protection	Fault Reason: The power grid is abnormal, and the actual frequency of the power grid is lower than the local power grid standard requirements. Solutions: • If it occurs accidentally, it may be due to a short-term abnormality in the power grid. After detecting that the power grid is normal, the inverter will resume normal operation without manual intervention. • If it occurs frequently, please check if the grid frequency is within the allowable range. » If the grid frequency exceeds the allowable range, please contact the local power operator. » If the grid frequency is within the allowable range, it is necessary to modify the inverter grid under frequency protection point or turn off the grid under frequency protection function with the consent of the local power operator.

No.	Fault Name	Diagnosis and Solutions
6	Grid frequency shift protection	Fault Reason: The power grid is abnormal, and the actual frequency change rate of the power grid does not comply with local power grid standards.
		Solutions: • If it occurs accidentally, it may be due to a short-term abnormality in the power grid. After detecting that the power grid is normal, the inverter will resume normal operation without manual intervention. • If it occurs frequently, please check if the power grid frequency is within the allowable range. » If the grid frequency exceeds the allowable range, please contact the local power operator. » If the power grid frequency is within the allowable range, please contact your dealer or after-sales service center.
7	Anti-island protection	Fault Reason: The power grid has been disconnected, and due to the presence of loads, the grid voltage has been maintained. According to safety regulations and protection requirements, the grid connection has been stopped.
		Solutions: • Confirm if the power grid is disconnection. • Contact your dealer or after-sales service center.
8	Low voltage ride through (LVRT) fault	Fault Reason: The power grid is abnormal, and the time for abnormal power grid voltage exceeds the time specified by LVRT.
		Solutions: • If it occurs accidentally, it may be due to a short-term abnormality in the power grid. After detecting that the power grid is normal, the inverter will resume normal operation without manual intervention. • If it occurs frequently, please check whether the power grid frequency is within the allowable range. If not, please contact the local power operator; If so, please contact your dealer or after-sales service center.

No.	Fault Name	Diagnosis and Solutions
9	High voltage ride through (HVRT) fault	Fault Reason: The power grid is abnormal, and the time for abnormal power grid voltage exceeds the time specified by HVRT. Solutions: • Please refer to the No.8.
10	Ground fault circuit interrupter (GFCI) protection	Fault Reason: The input insulation impedance to ground decreases during the operation of the inverter. Solutions: • If it occurs accidentally, it may be caused by an accidental abnormality in the external circuit. After the fault is cleared, normal operation will resume without manual intervention. • If it occurs frequently or cannot be restored for a long time, please check if the insulation impedance of the photovoltaic string to the ground is too low.
11	Direct current injection (DCI) protection	Fault Reason: The DC component of the inverter output current is higher than the safety regulations or the machine's default allowable range. Solutions: • If the abnormality is caused by an external fault (such as power grid abnormality, frequency abnormality, etc.), the inverter will automatically resume normal operation after the fault disappears, without manual intervention. • If the alarm occurs frequently and affects the normal power generation of the power plant, please contact your dealer or after-sales service center.

No.	Fault Name	Diagnosis and Solutions
12	Low insulation impedance	Fault Reason: • The photovoltaic string is short circuited to the protective ground. • The installation environment of the photovoltaic string is relatively humid for a long time and the insulation of the line to the ground is poor. Solutions: • Check the impedance of the photovoltaic string to the protective ground. If the resistance value is greater than 50 kΩ, it is normal. If the resistance value is less than 50 kΩ, please investigate the short circuit point and rectify it. • Check if the protective ground wire of the inverter is correctly connected. • If it is confirmed that the impedance is indeed lower than the default value in a rainy and cloudy environment, please reset the "insulation impedance protection point" via APP.
13	Abnormal system grounding	Fault Reason: • The protective ground wire of the inverter is not connected. • When the output of the photovoltaic string is grounded, the AC output cables L and N of the inverter are reversed. Solutions: • Please confirm if the protective ground wire of the inverter is not connected properly. • If the output of the photovoltaic string is grounded, please confirm whether the AC output cables L and N of the inverter are reversed.
14	Internal communication disconnection	Fault Reason: Frame format error • Parity error • Can bus offline • Hardware CRC verification error • When sending (receiving), the control bit is set to receive (send) • Transfer to units that are not allowed Solutions: Disconnect the AC output side switch and DC input side switch, after 5 minutes, connect the AC output side switch and DC input side switch. If the fault persists, please contact your dealer or after-sales service center.

No.	Fault Name	Diagnosis and Solutions
15	Abnormal AC sensor	Fault Reason: Abnormal sampling of AC sensor. Solutions: Disconnect the AC output side switch and DC input side switch, after 5 minutes, connect the AC output side switch and DC input side switch. If the fault persists, please contact your dealer or after-sales service center.
16	Abnormal Leakage current sensor	Fault Reason: Abnormal sampling of leakage current sensor Solutions: Disconnect the AC output side switch and DC input side switch, after 5 minutes, connect the AC output side switch and DC input side switch. If the fault persists, please contact your dealer or after-sales service center.
17	Abnormal relay	Fault Reason: • Abnormal relay (relay short circuit) • Abnormal control circuit • Abnormal AC measurement wiring (i.e. virtual connection or short circuit phenomenon) Solutions: Disconnect the AC output side switch and DC input side switch, after 5 minutes, connect the AC output side switch and DC input side switch. If the fault persists, please contact your dealer or after-sales service center.
18	Chamber over temperature	Fault Reason: • The installation position of the inverter is not ventilated • The ambient temperature is too high and exceeds 60 °C • Abnormal operation of internal fan Solutions: • Check whether the ventilation at the installation location of the inverter is good and whether the ambient temperature exceeds the maximum allowable ambient temperature range. • If there is no ventilation or the ambient temperature is too high, please improve its ventilation and heat dissipation conditions. • If the ventilation and ambient temperature are normal, please contact your dealer or after-sales service center.

No.	Fault Name	Diagnosis and Solutions
19	Bus over voltage	Fault Reason: • PV voltage is too high • Abnormal inverter BUS voltage sampling Solutions: Disconnect the AC output side switch and DC input side switch, and after 5 minutes, close the AC output side switch and DC input side switch. If the fault persists, please contact your dealer or after-sales service center.
20	PV input over voltage	Fault Reason: The photovoltaic array configuration is incorrect, too many photovoltaic panels in series. Solutions: Check the series configuration of the corresponding photovoltaic array string to ensure that the open circuit voltage of the string is not higher than the maximum working voltage of the inverter.
21	PV continuous hardware over current	Fault Reason: • Incorrect photovoltaic array configuration. • Hardware damage Solutions: Disconnect the AC output side switch and DC input side switch, after 5 minutes, connect the AC output side switch and DC input side switch. If the fault persists, please contact your dealer or after-sales service center.
22	PV continuous software over current	Fault Reason: • Incorrect photovoltaic array configuration • Hardware damage Solutions: Disconnect the AC output side switch and DC input side switch, after 5 minutes, connect the AC output side switch and DC input side switch. If the fault persists, please contact your dealer or after-sales service center.

11.3 Maintenance

Regular maintenance is required for the inverter. The table below lists the operational maintenance for expressing the optimum device performance. More frequent maintenance service is needed in the worse work environment. Please make records of the maintenance.

DANGER!

- Only qualified person can perform the maintenance for the inverter.
- Only use the spare parts and accessories approved by manufacturer for maintenance.

11.3.1 Removing the Inverter

WARNING!

- Ensure that the inverter is powered off before operation.
- When operating the inverter, please wear personal protective equipment.

Step 1: Disconnect all electrical connections of the inverter, including DC line, AC line, communication line, communication module, and protective ground wire.

Step 2: Remove the inverter from the mounting bracket.

Step 3: Remove the mounting bracket.

Step 4: Properly store the inverter. If the inverter will be used in the future, ensure that the storage conditions meet the specified requirements.

11.3.2 Scrap Inverter

When the inverter cannot continue be used and needs to be scrapped, please dispose of the inverter according to the electrical waste disposal requirements of the country/region where the inverter is located.

The inverter cannot be treated as household waste.

11.3.3 Maintenance Routines

Maintaining Item	Maintaining Method	Maintaining Period
System Clean	Check the heat sink, air intake, and air outlet for foreign matter or dust.	Once 6~12 months
Electrical Connection	Check whether the cables are securely connected. Check whether the cables are broken or whether there is any exposed copper core.	Once 6~12 months
Sealing	Check whether all the terminals and ports are properly sealed. Reseal the cable hole if it is not sealed or too big.	Once a year
General status of inverter	Check if there is any damage on the inverter. Check if there is any abnormal sound when the inverter is running.	Once 6 months

11.4 Recycling and Disposal

Dispose of the packaging and replaced parts according to the rules applicable in the country where the device is installed.

NOTICE

- Do not dispose of the product together with the household waste but in accordance with the disposal regulations for electronic waste applicable at the installation site.

11.5 Service and Warranty

If you have any technical problems concerning our products, please contact after-sales service. We require the following information in order to provide you with the necessary assistance:

- Inverter device type
- Inverter serial number
- Type and number of connected PV modules
- Error code
- Mounting location
- Installation date
- Warranty card

When the customer needs warranty service during the warranty period, the customer must provide a copy of the invoice, factory warranty card, and ensure the electrical label of the inverter is legible. If these conditions are not met, Yinergy has the right to refuse to provide with the relevant warranty service.

12 Technical Data

	HI-1P10K-LV	HI-1P12K-LV
PV INPUT		
Max. Input Power [W]	16000	19200
Max. Input Voltage [V]	510	
Rated Input Voltage [V]	360	
Start-up Input Voltage [V]	80	
MPPT Operating Voltage Range [V]	90 ~ 425	
Max. Input Current Per MPPT [A]	28 + 28	
Max. Short Circuit Current Per MPPT [A]	42 + 42	
No. of MPP Trackers / No. of String Per MPP Tracker	2 / 2 + 2	
ON GRID		
Rated Output Power [W]	10000	12000
Max. Output Power [W]	11000	13200
Max. Input Power [W]	11000	13200
Grid Type	220 / 230 Vac, L / N / PE, 50 / 45 - 55, 60 / 55 - 65 Hz, 0.85 Un - 1.1 Un	
Max. Output Current [A]	43.5	52.2
Max. Input Current [A]	45.5	54.6
Max. Continuous AC Passthrough [A]	95	
Power Factor	~ 1 (-0.8 lagging ~ 0.8 leading)	
THDi	< 3%	
OFF GRID		
Rated Output Power [W]	10000	12000
Max. Output Power [W]	10000	12000
Output Type	220 / 230 Vac, L / N / PE, 50 / 45 - 55, 60 / 55 - 65 Hz, 0.85 Un - 1.1 Un	
Peak Power (Off-grid) [W]	2 times of rated power, 60 s; 1.5 times of rated power 30 min	
On / Off Grid Switching Time [ms]	< 4	
BATTERY		
Battery Type	Lead acid / Li-ion	
Rated Voltage [V]	48	
Battery Voltage Range [V]	40 ~ 60	
Max. Current [A]	200	210
Power [W]	10000	12000
Communication	CAN, RS485, Temperature	
Charging Strategy for Lead-Acid Battery	3 Stages Curve	
Charging Strategy for Li-ion Battery	Self-adaption to BMS	
EFFICIENCY		
Peak Efficiency	97.60%	
MPPT Efficiency	> 99%	
STANDARDS		
Grid Regulation	NRS 097-2-1, IEC61727, IEC62116, PEA, MEA	
Safety Regulation	IEC62109-1, IEC62109-2	
EMC	IEC61000-6-1, IEC61000-6-3	
BASIC PARAMETERS		
Dimensions (W x H x D Bare Machine) [mm]	411 * 631 * 236	
Weight [kg]	≤ 28.6	
INTERFACE		
Communication Interface	RS485 / CAN	
Monitor Mode	WIFI / (4G, LAN optional)	
Cooling Method	Intelligent Air Cooling	
GENERAL DATA		
Operation Temperature [℃]	-25 ~ +60, > 45 Derating	
Storage Temperature [℃]	-25 ~ +70	
Permissible Ambient Humidity	5 ~ 95% (No condensing)	

	HI-1P10K-LV	HI-1P12K-LV
GENERAL DATA		
Permissible Altitude [m]	3000	
Ingress Protection	IP65	
Noise Emission [dB]	< 45	
Inverter Topology	Transformerless for PV Side / HF for Battery Side	
Overvoltage Category	Type II (DC), Type III (AC)	
Surge Protection Level	Type II (DC), Type III (AC)	
Type of Cooling	Intelligent redundant fan-cooling	
Warranty [Years]	5 The Warranty period depends the final Installation site of inverter. More info please refer to Warranty Policy	
PROTECTION & FEATURES		
DC Polarity Reverse Connection Protection	Yes	
AC Output Overcurrent Protection	Yes	
Thermal Protection	Yes	
AC Output Overvoltage Protection	Yes	
AC Output Short Circuit Protection	Yes	
DC Component Monitoring	Yes	
Overvoltage Load Drop Protection	Yes	
Ground Fault Current Monitoring	Yes	
Arc Fault Circuit Interrupter	Optional	
Power Network Monitoring	Yes	
Island Protection Monitoring	Yes	
Earth Fault Detection	Yes	
DC Input Switch	Yes	
DC Terminal Insulation Impedance Monitoring	Yes	
Residual Current Detection (RCD)	Yes	
Surge Protection Level	Type II (DC), Type III (AC)	
Rapid Shutdown, RSD	Optional	

13 Appendix I

Definition of RJ45 Port Pin for BMS 485

No.	BMS 485 Pin Definition
1	BMS_485B
2	BMS_485A
3	GND_485
4	BMS_CANH
5	BMS_CANL
6	GND_485
7	BMS_485A
8	BMS_485B

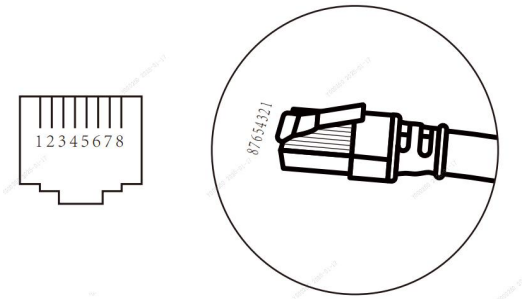


Figure 13-1 RJ45 Port Pin for BMS 485

Definition of RJ45 Port Pin for BMS CAN

No.	BMS CAN Pin Definition
1	--
2	--
3	GND
4	BMS_CANH
5	BMS_CANL
6	--
7	--
8	--

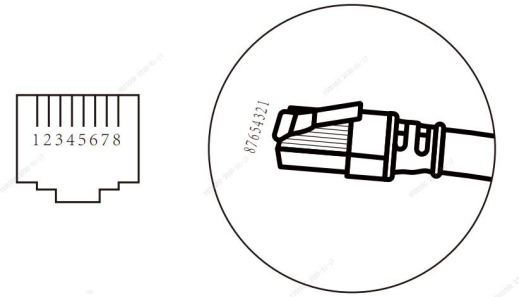


Figure 13-2 RJ45 Port Pin for BMS CAN

Definition of RJ45 Port Pin for Meter 485

No.	Meter 485 Pin Definition
1	METER_485B
2	METER_485A
3	--
4	--
5	--
6	--
7	METER_485A
8	METER_485B

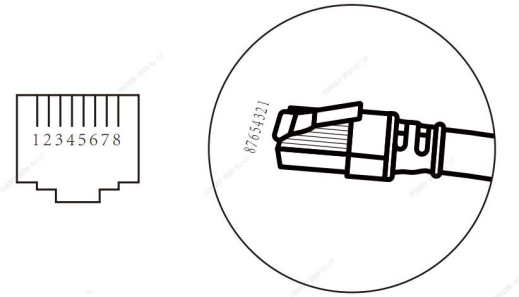


Figure 13-3 RJ45 Port Pin for Meter 485

Definition of RJ45 Port Pin for EVC 485

No.	EVC 485 Pin Definition
1	EVC_485B
2	EVC_485A
3	--
4	--
5	--
6	--
7	EVC_485A
8	EVC_485B

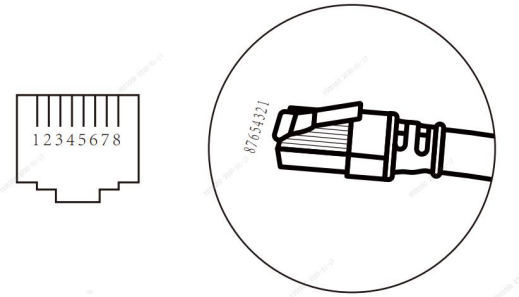


Figure 13-4 RJ45 Port Pin for EVC 485

14 Appendix II

- Split Core Current Transformer (CT) dimension (mm):
- Secondary output cable length is 4m.

