CHiNT POWER

Installation and Operation Manual
For 3-Phase Grid-tied PV Inverter

Applicable to SCA15/20/25K-T-SA,
SCA25K-TM-EU and SCA(30,33,36,37.5,40)K-T-EU

Shanghai Chint Power System Co., Ltd.

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0 Preface

Thank you for choosing a Chint Grid-tied PV Inverter (hereinafter referred to as "PV Inverter" or "Inverter") developed by Shanghai Chint Power System Co., Ltd. (hereinafter referred to as "CHINT").

This PV Inverter is a high performance and highly reliable product specially designed for the Brazil market.

IMPORTANT!

Please read this manual carefully and make sure that you have understood all the contents thoroughly before you start any operation.

Main Contents

This Installation and Operation manual contains important information, safety guidelines, detailed planning and setup information for installation, as well as information about configuration, operation and troubleshooting. Be sure to read this manual carefully before using.

Target Readers

- Plant owner
- Project Engineer
- Installation engineer
- Maintenance engineer

Installation, commissioning, troubleshooting, and maintenance of the inverter must be done only by qualified personnel. If you encounter any problems during above-mentioned operation, please check the user manual carefully. You can also contact your local dealer or supplier for help if the problem still exists.

Manual Management

Please keep this user manual on hand for quick reference.

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Version

This manual is subject to change or modification without prior notice. Users can get the latest manual from our sales channel or our official website: www.chintpower.com.

1   IMPORTANT SAFETY INSTRUCTIONS
（SAVE THESE INSTRUCTIONS）
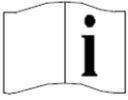
PLEASE READ THIS USER MANUAL CAREFULLY BEFORE THE INSTALLATION AND OPERATION OF THIS PV INVERTER. CPS RESERVES THE RIGHT TO REFUSE WARRANTY CLAIMS FOR EQUIPMENT DAMAGE IF USERS FAIL TO INSTALL THE EQUIPMENT ACCORDING TO THE INSTRUCTIONS IN THIS MANUAL.

FAILURE TO FOLLOW THESE INSTRUCTIONS AND OTHER RELEVANT SAFETY PROCEDURES MAY RESULT IN VOIDING OF THE WARRANTY AND/OR DAMAGE TO THE INVERTER OR OTHER PROPERTY!

1.1 Warnings and Symbols in this Document

Symbols	Meanings
	DANGER! DANGER indicates a hazardous situation with high level of risk which, if not avoided, will result in death or serious injury.
	WARNING! WARNING indicates a hazardous situation with medium level of risk which, if not avoided, could result in death or serious injury.
	CAUTION! CAUTION indicates a hazardous situation with low level of risk which, if not avoided, could result in minor or moderate injury.
	NOTICE! NOTICE indicates a hazardous situation which, if not avoided, could result in equipment working abnormally or property loss.
	IMPORTANT! INSTRUCTION indicates important supplementary information or provides skills or tips that can be used to help you solve a problem or save you time.

1.2 Markings on the Product

Symbols	Meanings
	HIGH VOLTAGE! This equipment works with high voltages. All works on the equipment must only be performed as described in this document.
	HIGH ENERGY! Risk of electric shock from energy stored in capacitor. Do not remove cover until 10 minutes after disconnecting all sources of supply.
	HOT SURFACE! Hot surfaces. To reduce the risk of burns. Do not touch.
	For more details please see the user manual.
	WARNING: For continued protection against risk of fire, replace only with same type and ratings of fuse. Refer to instruction manual for details.
	EARTH GROUND! This symbol marks the location of a grounding terminal, which must be securely connected to the earth through the PE (protective earthing) cable to ensure operational safety.
	RoHS SYMBOL In accordance with 2011/65/EU regulations, the inverter imposes restrictions on the use of specific hazardous substances in electrical and electronic equipment.
	Certification This inverter has passed certification of CE and TUV organization.
	Phase information of the inverter.

1.3 Safety Precautions of Operating the PV Inverter

WARNING!

All operations and connections please professional engineering and technical personnel!

To prevent the risk of electric shock during equipment maintenance or installation, please ensure that all DC and AC power has been separated from the equipment, and ensure that the equipment is reliably grounded.

DANGER!

Before opening the inverter housing for maintenance, you must first disconnect the grid-side AC power supply and PV-side DC power supply, and ensure that the high-voltage energy inside the equipment has been completely released!

Generally, you must cut off all connections to the inverter for at least 10 minutes before you can maintain and operate the equipment.

NOTICE!

The inverter is specially designed to integrate the generated AC power into the public grid. Do not directly connect the AC output terminal of the device to private AC power equipment. The inverter does not support battery panel grounding. If grounding is necessary, a transformer must be added to the AC side.

NOTICE!

After unpacking the inverter, keep all its interfaces sealed always, before and after connecting wires.

NOTICE!

Please do not install the inverter in a place exposed to direct sunlight, so as not to reduce the conversion efficiency due to high temperature and to ensure the long-term service life of the inverter.

CAUTION!

Please check the wall bracket again before hanging up to make sure that the wall bracket is firmly on the supporting surface.

For continued protection against risk of fire, replace only with same type and ratings of fuse. Disconnect supply before changing fuse.

IMPORTANT!

Before choosing a power grid code, please contact your local power supply company. If the inverter is set to work under the wrong grid regulations, the power supply company may cancel the operation permit of the equipment.

Please ensure that the entire system complies with national standards and applicable safety regulations before running the inverter.

2　General Introduction

2.1 Photovoltaic Grid-tied System

SCA15/20/25K-T-SA, SCA25K-TM-EU and SCA(30,33,36,37.5,40)K-T-EU series inverters are designed for using with residential PV grid-tied systems. The PV system is generally made up of PV modules, PV inverter and AC power distribution equipment, as shown in Figure 2-1. The solar energy is converted by PV modules to DC power, and then converted by the inverter to AC power with the same frequency and phase as the AC grid. Now the AC power can be supplied in all or in part to local loads, with the remaining power fed to the grid.
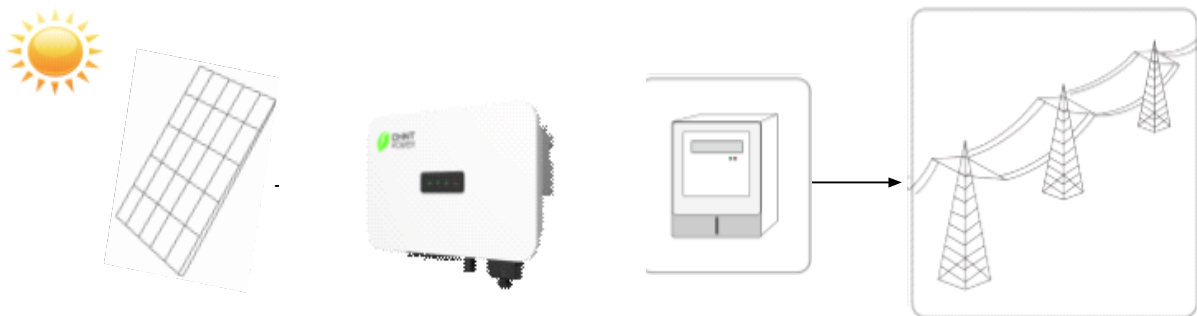
Figure 2-1 Grid-tied PV system

Item	Name	Description
A	PV Module	Monocrystalline, polycrystalline silicon components, non-ground batteries
B	PV Inverter	SCA15/20/25K-T-SA, SCA25K-TM-EU and SCA(30,33,36,37.5,40)K-T-EU inverter
C	Metering device	Standard metering device for inverter power generation
D	Public Grid	TT, TN, IT System

Table 2-1 Components of Grid-tied PV system

2.2 Product Dimensions and Appearance
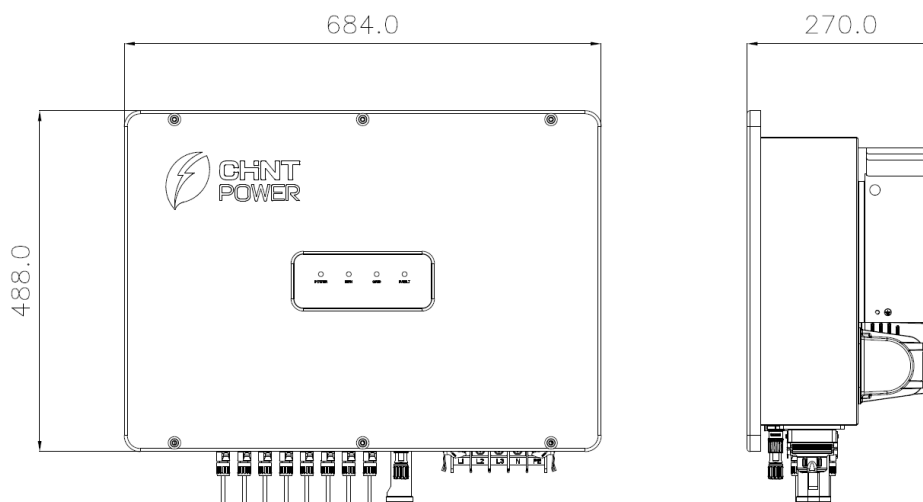
Figure 2-2 Inverter Dimensions
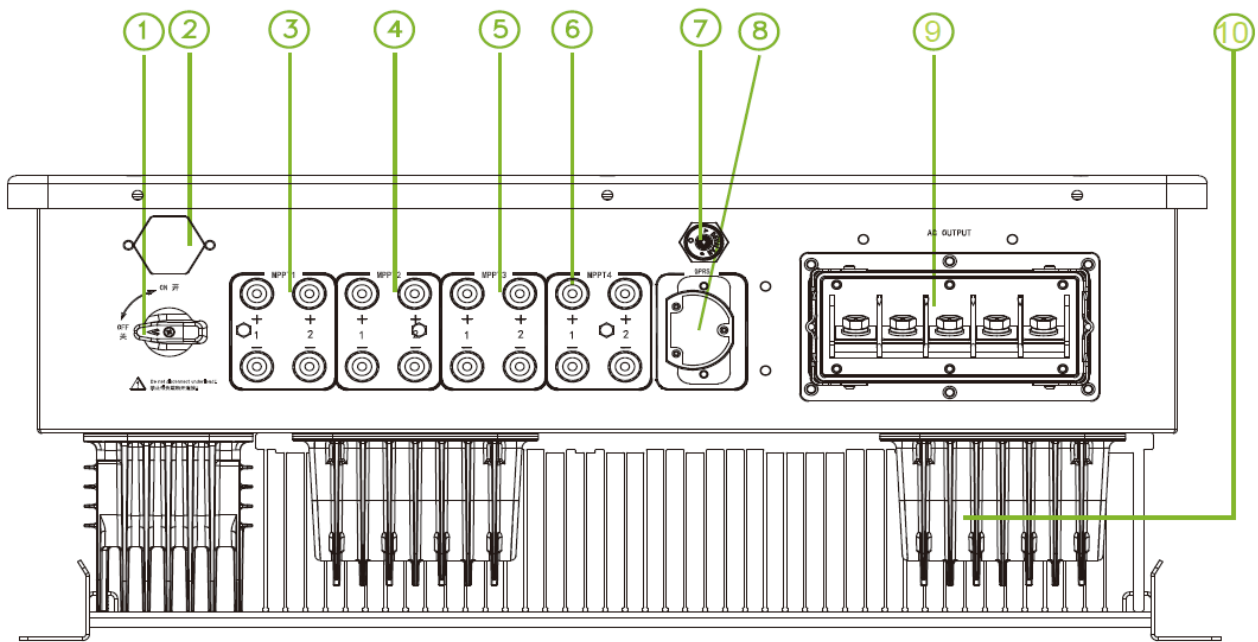
Figure 2-3 Product Appearances

No.	Name	Function
1	DC Switch	Cutoff DC power supply safely
2	Vent valve	Release pressure
3	DC MPPT 1	Connect to PV component
4	DC MPPT 2	Connect to PV component
5	DC MPPT 3	Connect to PV component
6	DC MPPT 4	Connect to PV component
7	Communication interface	For RS485 communication
8	WiFi Dongle interface	For local control and remote monitoring
9	AC outlet terminal	AC cable outlet port
10	Radiator	For cooling

Table 2-2 Product Components

IMPORTANT!

SCA25K-TM-EU & SCA(30,33)K-T-EU series inverters are equipped with 3 MPPT (6 inputs, the MPPT4 is plugged temporarily as reserve interface), SCA15/20/25K-T-SA and SCA36/37.5/40K-T-EU series inverters are equipped with 4 MPPT (8 inputs). Their mounting procedures and electrical connection methods are the very same, so we will just take the 4 MPPT inverter as instance, different points will be introduced separately.

2.3 LED Indicator

The LED display on the SCA15/20/25K-T-SA, SCA25K-TM-EU & SCA(30,33,36,37.5,40)K-T-EU inverter is as shown below.
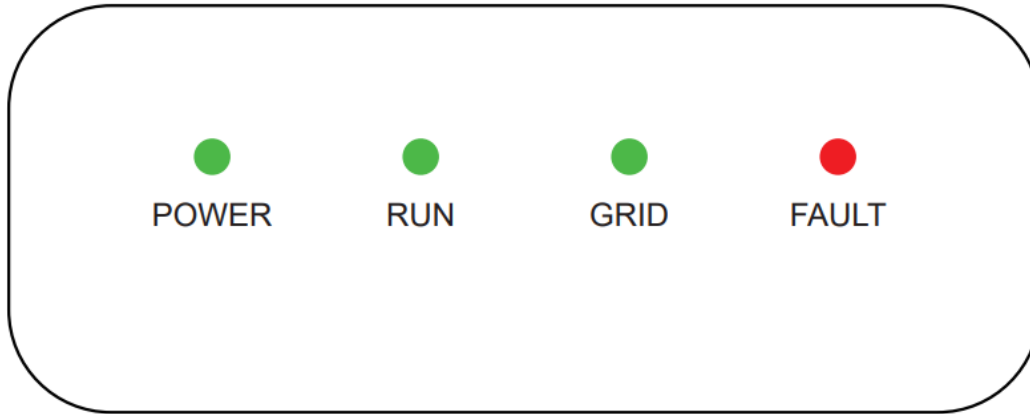
Figure 2-4 LED display of the inverter

Indicators and their indications are shown below:

LED Icon	Name	Status	Indication
POWER	Working power indicator	ON	Normal PV power supply (voltage is big enough to start up auxiliary power unit)
		OFF	Power supply not working
RUN	Grid operation indicator	ON	In grid-tied power generation state
		Flash	Derated running status (light up 0.5s, light off 1.6s)
		OFF	In other operation status or power supply not working
GRID	Grid status indicator	ON	Grid is normal
		OFF	Power supply not working or abnormal grid (red indicator flashes)
FAULT	Fault status indicator	ON	Indicates permanent faults
		Slow flash	Indicates alarms (light up 0.5s, light off 2s), device is running
		Fast flash	Protective action (light up 0.5s, light off 0.5s)
		OFF	No fault or power supply not working
All lights flash (light up 0.05s, light off 0.3s)			LCD or DSP upgrading

Table 2-3: Indicators and their indications

2.4 Product Protection Functions

- Short circuit protection

- Input to ground insulation resistance monitoring

- Output voltage and frequency monitoring

- Ground leakage current monitoring

- DC component monitoring of output current

- Anti-island protection

- Input and output overvoltage protection

- Input and output overcurrent protection

- Ambient temperature monitoring

- Module temperature monitoring

2.5 Schematic Diagram and Circuit Design

The electrical schematic diagram of inverter is as shown in Figure 2-5. PV input goes through the lightning protection circuit and DC EMI filter circuit and then through the previous BOOST circuit to achieve maximum power tracking and boost functions. The inverter uses three-level technology to convert the DC voltage into a three-phase AC voltage, filters out high frequency components through an output filter, and then outputs high-quality AC power through a two-stage relay and an EMI filter. In addition, a string detection function (optional) is added.
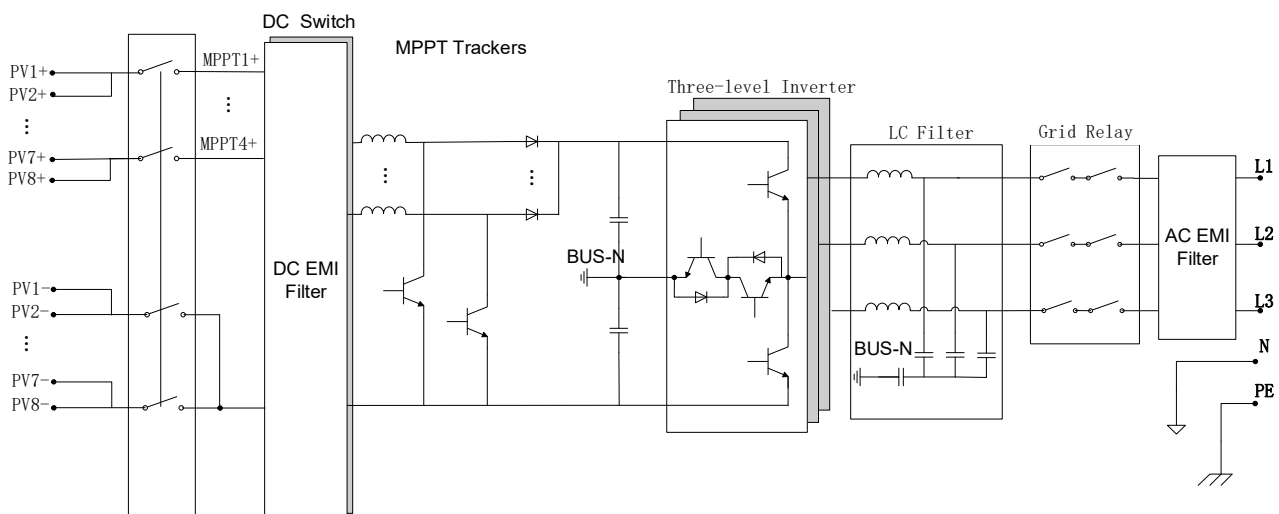
Figure 2-5a Schematic Diagram of SCA15/20/25K-T-SA and SCA36/37.5/40K-T-EU Inverter
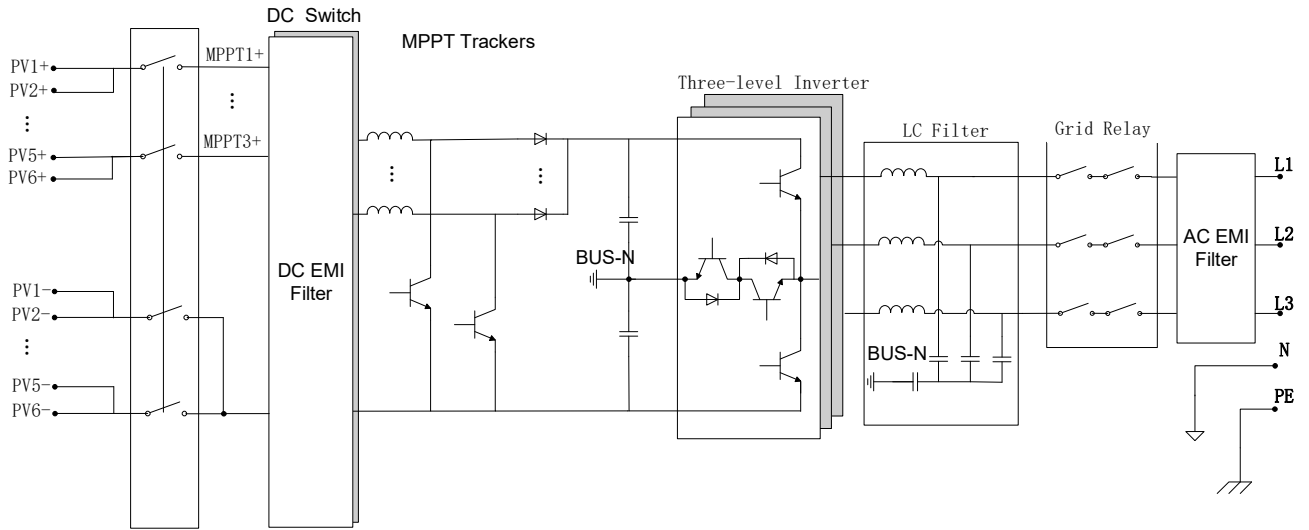
Figure 2-5b Schematic Diagram of SCA25K-TM-EU & SCA(30,33)K-T-EU Inverter

3 Mechanical Installation

3.1 Unpacking for Inspection

Before performing installation, check the product for any obvious damages or if the items on the delivery list are complete. Contact your supplier if any problem is found. The delivery list is as below:
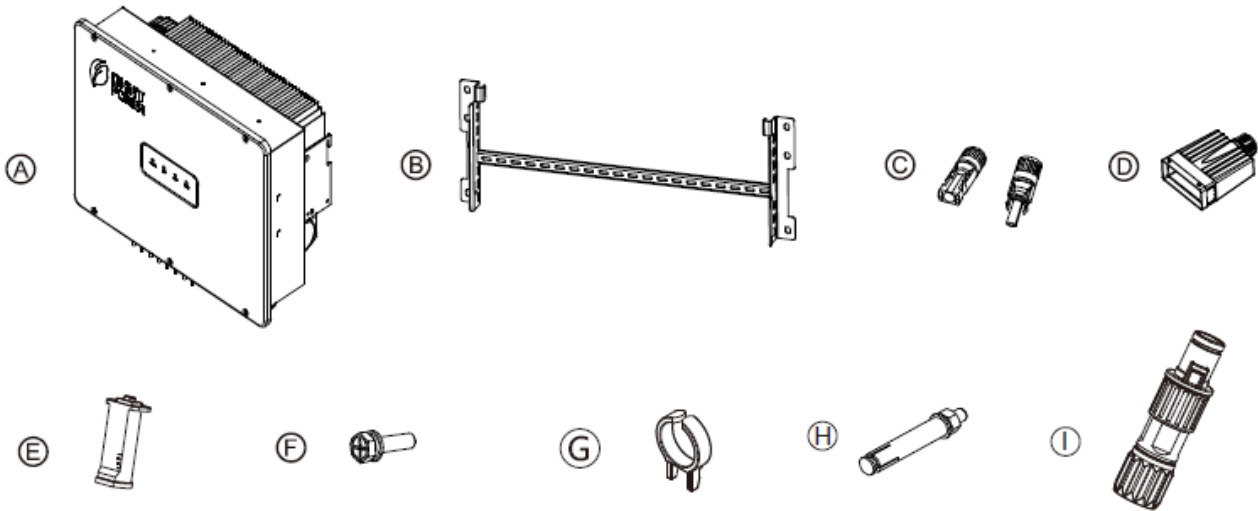
Figure 3-1 Delivery list

No.	Accessories	QTY	Remark
A	Inverter	1	
B	Mounting bracket	1	Install inverter
C	DC connector	6+6 or 8+8	PV DC cable quick connector: 6 (male) + 6 (female) for SCA25K-TM-EU & SCA(30,33)K-T-EU inverter; 8 (male) + 8 (female) for SCA15/20/25K-T-SA, SCA36/37.5/40K-T-EU inverter.
D	AC connector cover	1	Connect AC cables and protect AC terminals
E	Wifi Dongle	1	For communication and monitoring
F	Screw M6X16	3	Two for fastening inverter and mounting bracket; one for installing external GND cable.
G	Unlock tool for DC connector	1	To unlock DC input connectors
H	Expansion bolts	6	For attaching mounting bracket to wall
I	RS485 Connector	1	Connect RS485 cable
	Documents	2	Quick guide, warranty card

Table 3-1 Accessories included in accessory bag

IMPORTANT!

The items on the delivery list above are for the standard configuration. The accessories provided may vary if optional parts are purchased.

Before unpacking, check whether the packaging box and all safety signs, warning labels, and nameplates on the packaging box and the product are intact. These signs must always be clearly visible and cannot be removed or covered until the product is scrapped.

If the packaging box, various labels, nameplates are damaged or the accessories are incomplete, please contact the dealer.

3.2 Installation Precautions

- Check that the product environmental specifications (protection degree, operating temperature range, humidity and altitude, etc.) meet the requirements of the specific project location.
- Make sure that the power grid voltage is within the normal range of the Grid Code chosen.
- Ensure that you have been authorized by the local electricity supply authority to connect to the grid.
- Installation personnel must be qualified electricians or those who have received professional training.
- Wear and use proper PPE (personal protective equipment) during installation.
- Enough space must be provided to allow the inverter cooling system to operate normally.

- Install the inverter away from flammable and explosive substances, and prohibit old, sick, disabled people and children from approaching.

- The equipment should be installed in an area far away from liquids; It is strictly prohibited to install it below water pipes, air vents, and other locations that are prone to condensation; It is strictly prohibited to install below the air conditioning outlet, ventilation outlet, machine room outlet window, and other locations that are prone to water leakage, to prevent liquid from entering the equipment and causing equipment malfunction or short circuit.
- When installing, if drilling is required, please make sure to avoid the water and electricity wiring inside the wall.
- Install the inverter away from flammable and explosive substances.
- Salt spray settlement is related to the characteristics of seawater, sea wind, precipitation, air humidity, topography and forest cover in adjacent seas. Therefore, the inverter cannot be installed outdoors in salt-damaged areas (mainly refer to coastal areas within 500m of the coast).
- Inverter generates noise during operation. Do not install it in a place that affects daily life.

- The installation height of the inverter should be easy to observe the LED indicator panel, as well as facilitate electrical connection, operation, and maintenance.
- Make sure the installation condition doesn't exceed the temperature limits specified for the inverter, to prevent undesirable power loss.
- Do not install the inverter near an electromagnetic source which can compromise the normal operation of electronic equipment
- The PV Array is not grounded.

For detailed specification ranges and limits, see **Chapter 9**.

3.3 Installation Requirements

3.3.1 Installation Environment

It'd better to install inverter in accordance with following environment requirements.
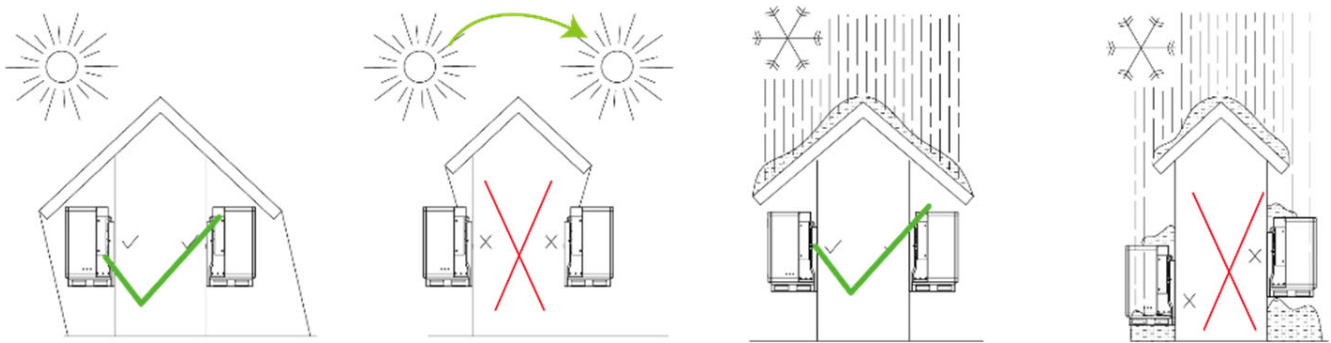
Figure 3-2 Environment requirements

NOTICE!

In order to reduce power derating and extend service life, avoid direct sunlight, rain and snow wherever possible. It is recommended that inverter is installed under a roof or sunshade. However, outdoor installation is also acceptable, which does not diminish warranty rights.

3.3.2 Installation Modes

The inverter shall be installed following the modes as below:
a) If the location permits, install the inverter vertically.
b) If the inverter cannot be mounted vertically, it may be tilted backward by lower than 15 degrees from vertical direction.
c) Do not mount the inverter leaning forward.
d) Do not mount the inverter horizontally.
e) Do not mount the inverter upside down.
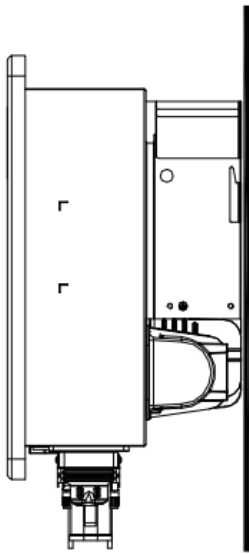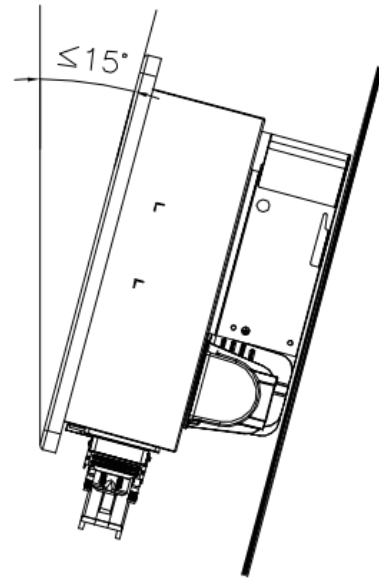
a) Vertical   b) Tilted backward
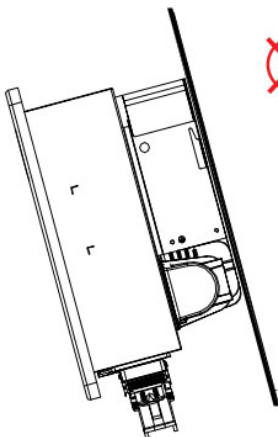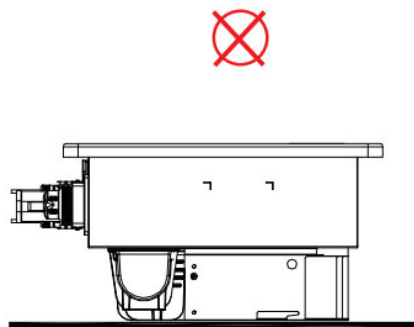
c) Leaning forward   d) Horizontally   e) Upside down
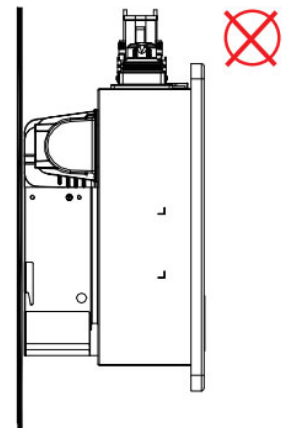
Figure 3-3 Installation modes

NOTICE!
Make sure that the mounting structure (bearing wall, rack, etc.) is capable to bear the weight of the inverter.

3.3.3 Space Requirements

The distance between the inverter and surrounding objects should meet the following conditions:
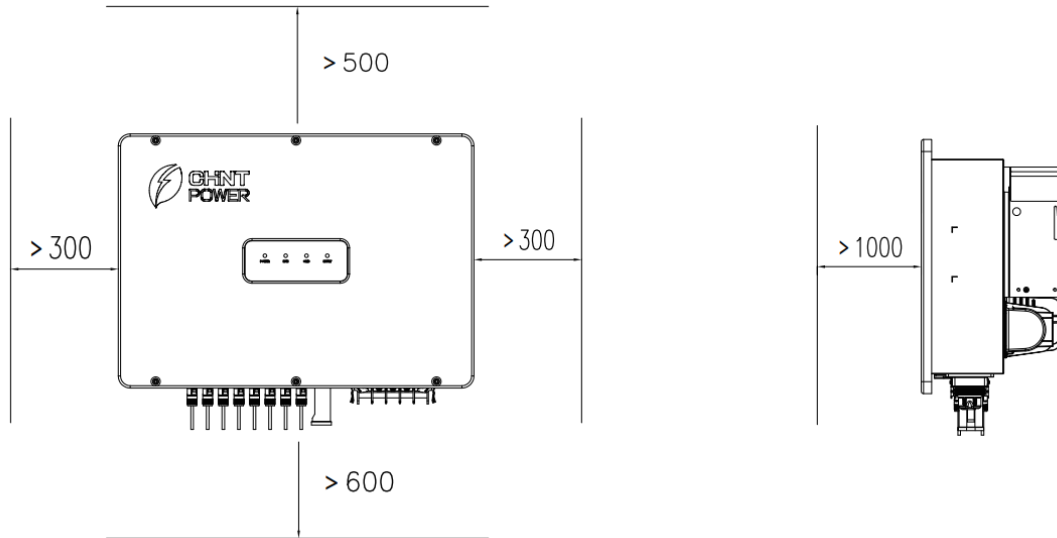
Figure 3-4 Installation space requirements for inverter racks

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NOTICE:
If the surroundings are relatively closed, please increase this distance appropriately.

3.4 Installation Procedures

1. Mark positions of mounting holes on wall according to the size of the mounting brackets.
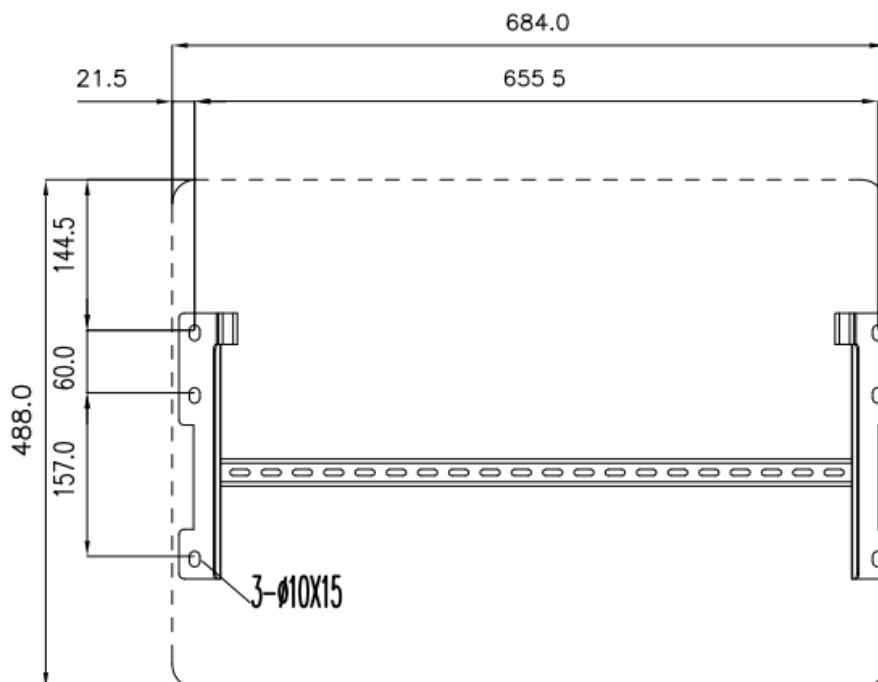
Figure 3-5 Mark positions of mounting holes

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2. Drill six holes with a depth of 65mm with a Φ12mm drill at the marked position. Knock all the six expansion bolts into mounting holes, remove nuts (E), spring washers (D) and flat washers (C), leaving their tubes (B) and bolts (A) in the wall.
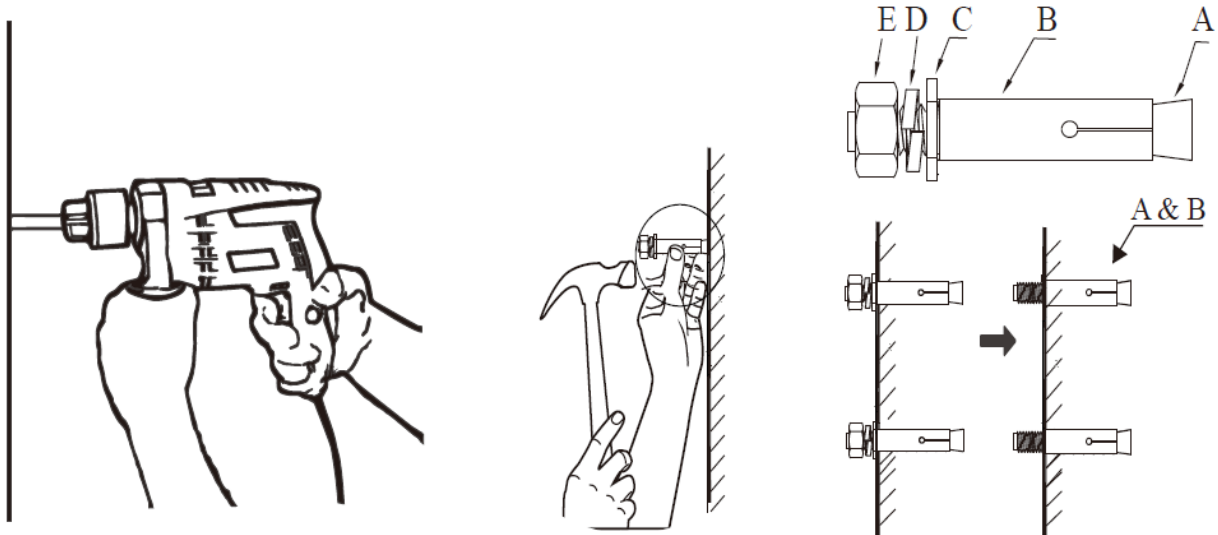
Drill holes on marked position   Install expansion bolt

Figure 3-6 Drill holes and drive expansion bolts into holes

3. Route the six pairs of flat washers (C), spring washers (D) and nuts (E) through reserved holes of mounting bracket. Lock the nuts with a torque value of 15 N.m.
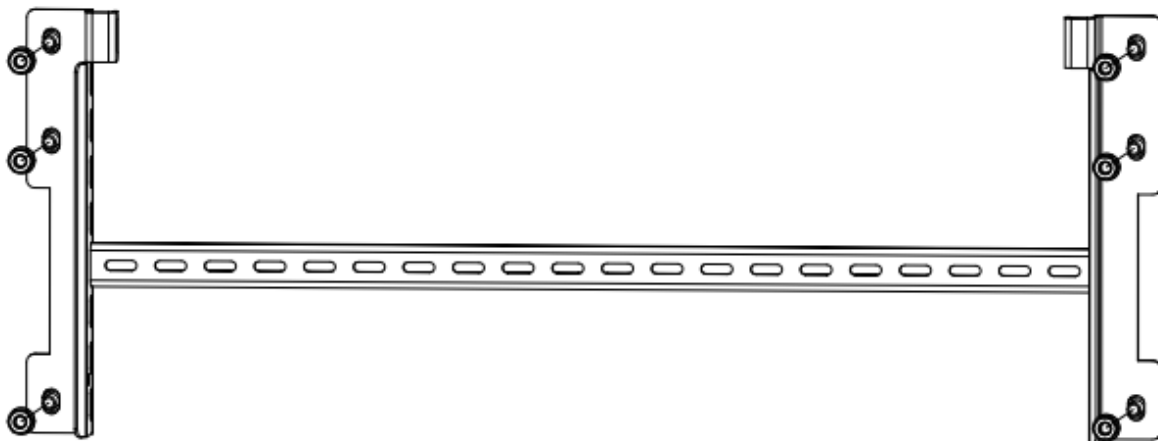
Figure 3-7 Fasten the mounting bracket

4.   Hang the inverter host on the mounting bracket according to Figure 3-8.
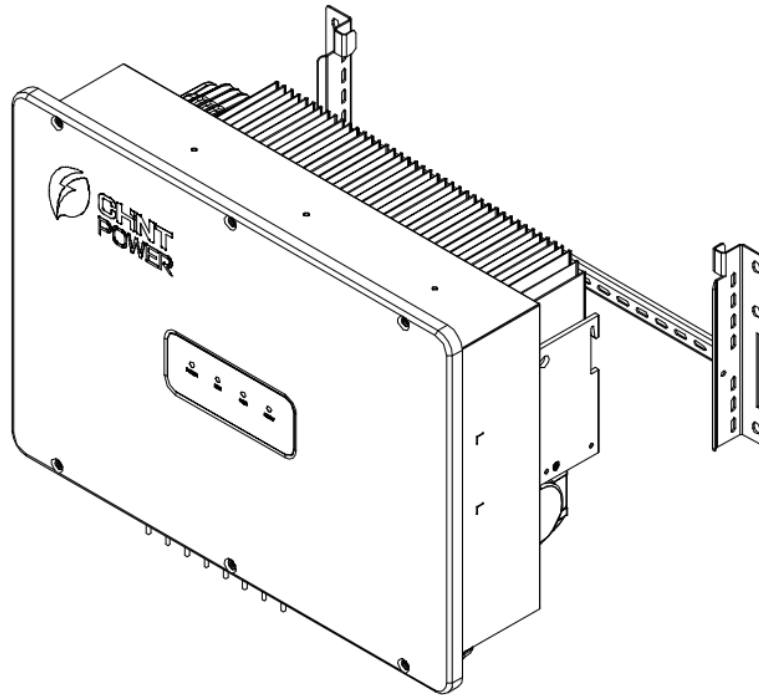
Figure 3-8 Hang the inverter host

⚠ **CAUTION!**
Ensure the mounting bracket is properly installed before hanging the inverter on the bracket.

5.   Use two M6X16 screws to fasten inverter on mounting bracket.
      Tools required: No.10 hexagon socket wrench, torque: 5N.m.
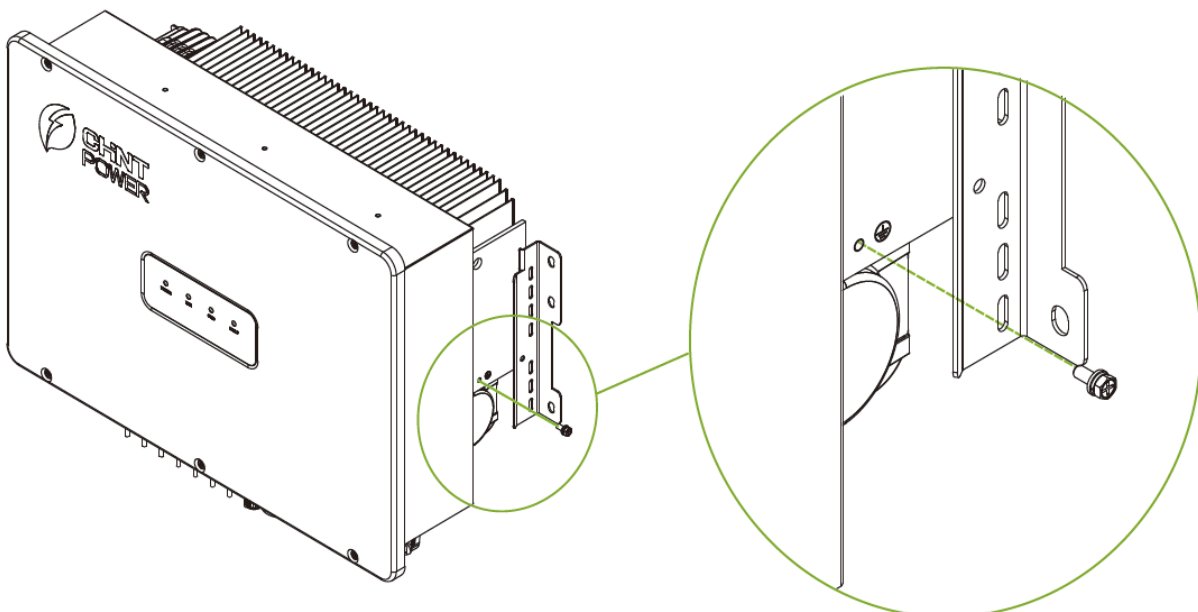
Figure 3-9 Inverter fixed on backplane bracket

4 Electrical Connection

⚠️ **CAUTION!**

The cables shall be connected in accordance with the National Electrical Code and all other applicable local codes or jurisdictions.

4.1 Cable Specification

All the cables shall be connected in accordance with the following specifications.

Cable	Type	Outer dia. (mm)	Conductor CSA (mm2)
AC	Multi-core cables specialized for outdoor use	16-38	Copper core cable: 16-50 Aluminum alloy cable: 35-50
DC	Industry common PV cables (Type: PV1-F)	6-7	4~6
PE Ground	Cables specialized for outdoor use	NA	≥16
RS485	4-core cables specialized for outdoor use	5~6	0.21-0.32

Table 4-1 cable specifications of inverters

4.2 Tools Required and Torque Values

No	Tools	Usages	Torque
1	No.17 hex. socket wrench	Fixing AC output terminal block	3 N.m
2	No.10 hex. socket wrench	Fixing External ground terminal	5 N.m
3	No.2 Philips screwdriver	Fixing Wifi Dongle	1 N.m
4	Diagonal pliers	Making cables	-
5	Wire stripper	Making cables	-
6	Crimping Tool	Making cables	-

Table 4-2 Tools Required and Torque Values

4.3 Electrical Connection

NOTICE!

Pay attention to watertight during construction.

Please read carefully and refer to Chapter 9 Technical Data before wiring.

4.3.1 AC Wiring and Grounding

Perform wiring procedures as follows:

1. Insert the four partitions into baffle gaps between different phases.
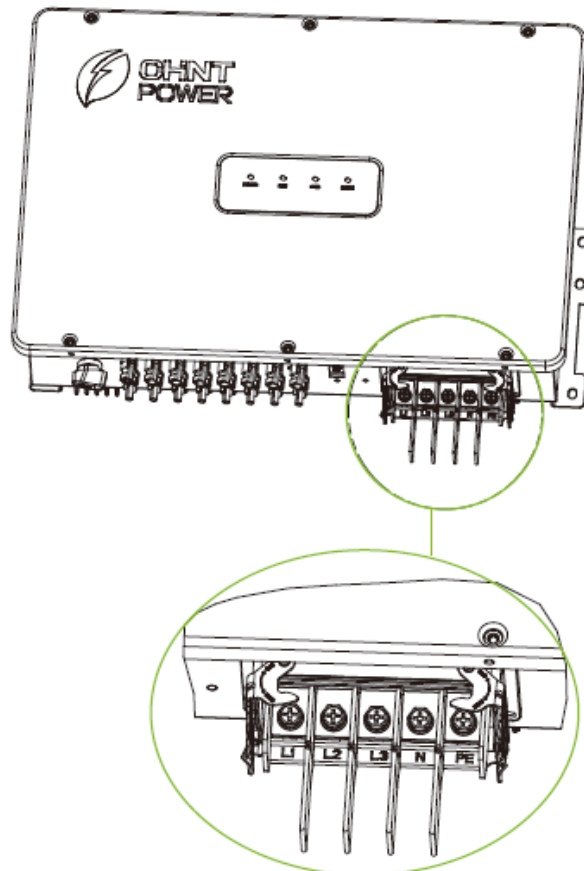
Figure 4-1 AC Output terminals and buckles

2. Remove an appropriate length of the jacket and insulation layer from the cable.
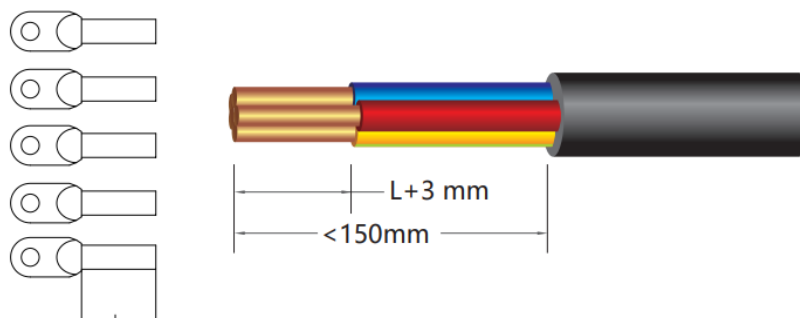
Figure 4-2 AC Wire stripping

3. Loosen the locking cap from the connector, route the power cable through the locking cap of the connector and reserve appropriate wiring length. Insert the exposed core wires into the crimp area of the OT terminal, wrap the wire crimp area with heat shrink tubing or insulation tape, and crimp them using hydraulic pliers.
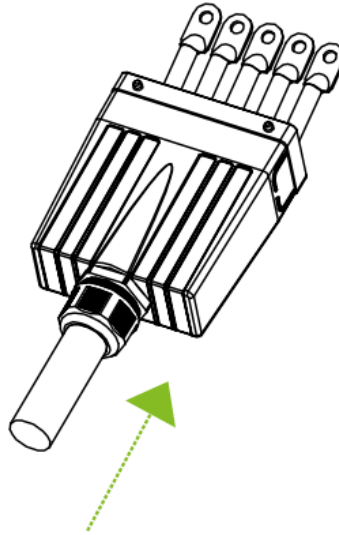
Figure 4-3 Crimp OT terminal

4. Connect ground wire to PE terminal, neutral wire to N terminal, and live wire to L1, L2, L3 terminal, tighten them using screw driver.
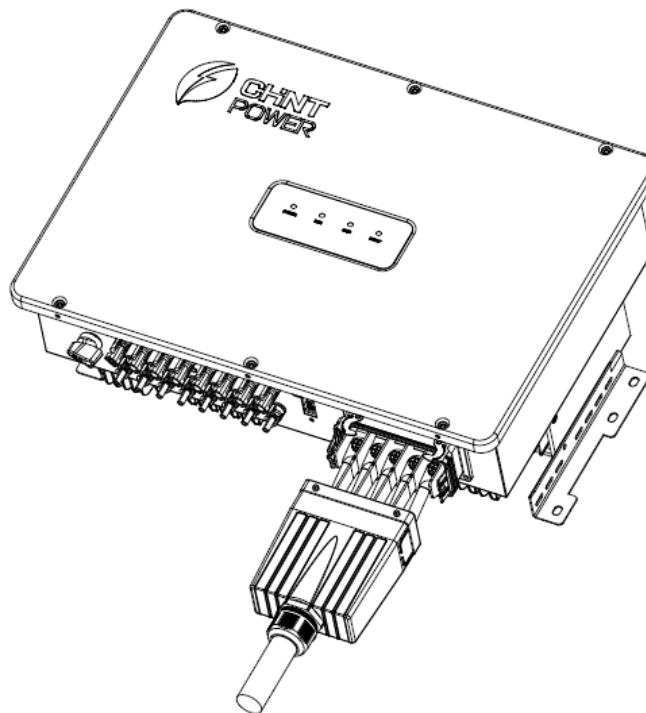
Figure 4-4 Connect wires to AC terminals

NOTICE!

Ground wire, neutral wire and live wires shall be corresponding to PE, N, L1/L2/L3 terminals. If connect them incorrectly, the inverter may work abnormally.

5. After adjusting cable length, insert the connector cover into base slot. Pull the two buckles on the two sides of the terminal base to the lugs on the two sides of the connector cover. Finally, tighten the locking nut on the connector cover.
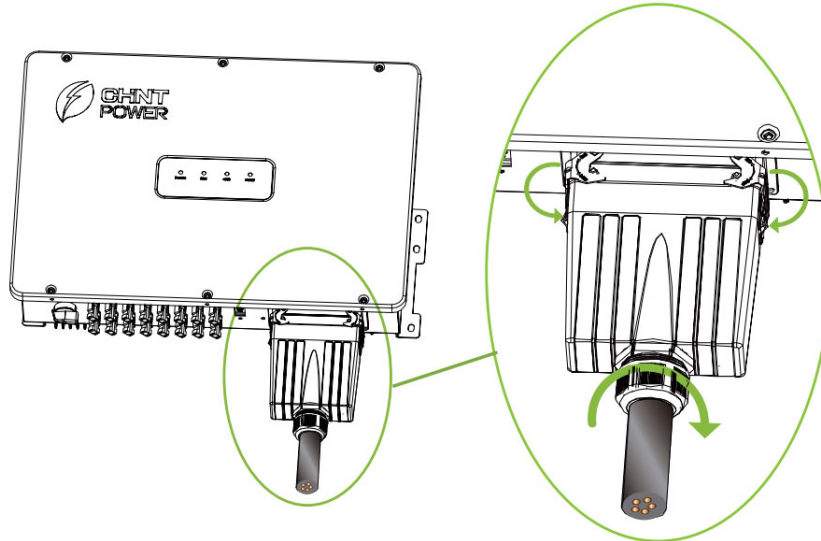
Figure 4-5 Tighten connector cover

The L1/L2/L3/N output cables of the PV inverter shall be connected to power grid via independent 4-pole AC circuit breaker, to make sure the inverter can be disconnected safely from the power grid should an overcurrent event occur. In addition, you can choose the AC circuit breaker as per the following specifications.

Inverter	Current value of AC circuit breaker
SCA15/20/25K-T-SA	60A/70A/80A
SCA25K-TM-EU	60A
SCA(30,33,36,37.5,40)K-T-EU	60A/70A/80A/87A/87A

Table 4-3 Specifications of AC circuit breaker

6. Use one M6 screw to connect and tighten the secondary protection ground wire. Tools: No. 10 socket wrench, torque: 5 N.m.
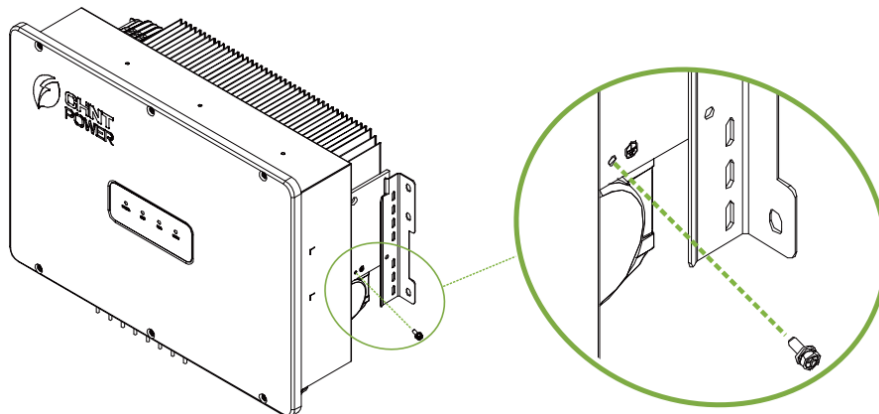
Figure 4-6 Tighten the secondary ground wire

NOTICE!

⚠️ The connection of secondary protection ground wire cannot be replaced by that of PE terminal among the AC connection. Both shall be grounded correctly. CHINT will not bear any responsibility for the possible consequences caused by the omission.

4.3.2 DC Wiring

To deliver on the optimum performance of the PV inverter, please read the following guidelines before performing any DC connections.

- Confirm DC input configuration and make sure the maximum DC open voltage of each PV component shall be lower than 1100Vdc in any condition. (Pay attention that the open voltage of the PV arrays is lower than 1100V in the lowest ambient temperature, considering the negative voltage temperature coefficient of the battery plate.)
- Before connecting DC cables, make sure the PV components in the same input area shall be consistent, including type, the number of battery plates, dip and azimuth.
- The short circuit current from each PV string shall be lower than 45A.

4.3.2.1 DC Cable Connection

Check the polarity before terminating the DC cables of PV strings according to the following steps, as shown in figure 4-7:

i. Use a multi-meter to measure the PV strings' cable ends and check the polarity.
ii. The positive (+) terminal of cable should match the positive (+) terminal of inverter's DC input.
iii. The negative (-) terminal of cable should match the negative (-) terminal of inverter's DC input.
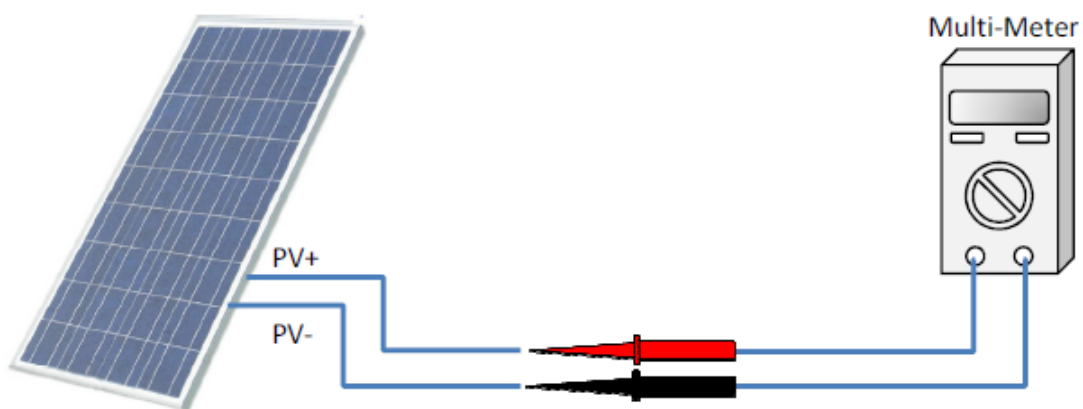
Figure 4-7 Polarity Check

NOTICE!

⚠️ It is important to use a multi-meter to check the polarity of the DC input cables to avoid any risk of reverse polarity.

Perform cable connection as per the following steps:

1. Remove an appropriate length of the jacket and insulation layer from the DC input cable of PV strings.
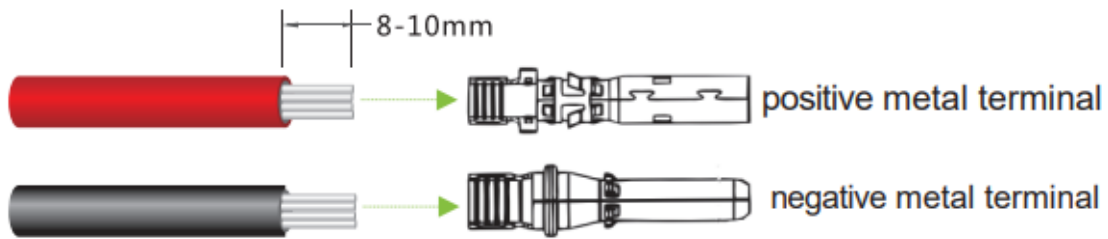
Figure 4-8 DC Wire stripping

2. Insert the exposed areas of the positive and negative power cables into metal terminals of the positive and negative connectors respectively. Crimp the metal terminals using Amphenol H4TC0002 or Devalan D4ZCY001 crimping tool.
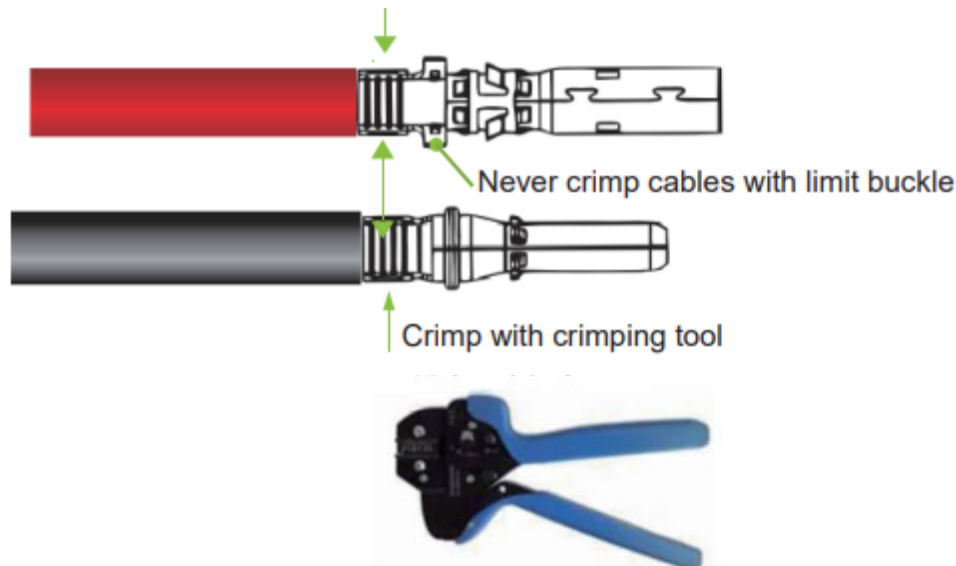
Figure 4-9 Crimp power cables

3. Insert the crimped positive and negative power cables into the corresponding positive and negative connectors until a "click" sound is heard. Tighten the locking nuts of the positive and negative connectors.
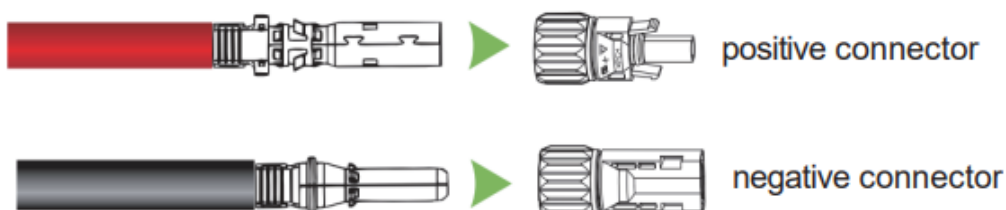
Figure 4-10 Insert power cables to connectors

NOTICE!

The connector used for the DC input shall be standard accessory comes with the inverter, or the same model from the same manufacturer. Otherwise, poor contact may occur, affecting normal use.

4. Insert the positive and negative connectors into their corresponding terminals of the inverter until a "click" sound is heard.
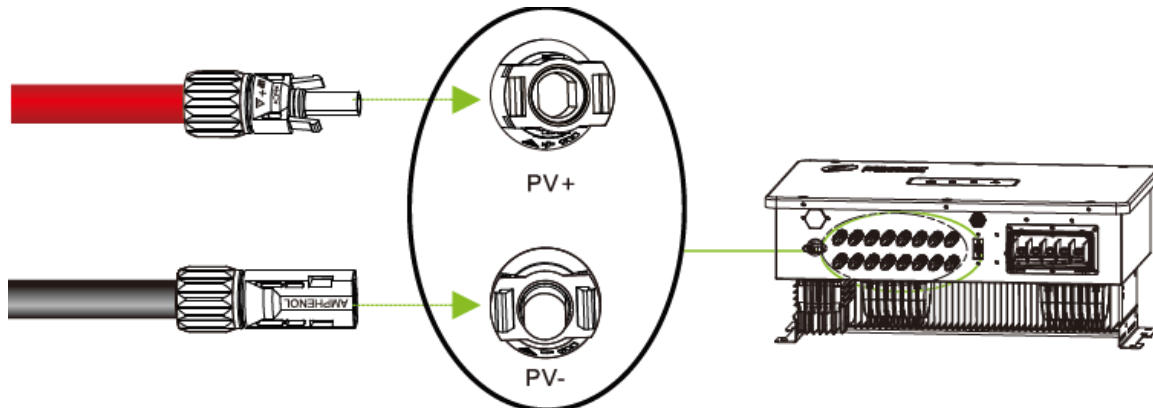
Figure 4-11 Insert the connectors into corresponding terminals

NOTICE!

The grounding wire must be connected well.
The DC switch should be in the OFF state.

4.4 Communication Connection

4.4.1 Connect RS485 cable

1. Strip off RS485 wire by referring to AC cable stripping.
2. Crimp communication wires to correct ports of RS485 connector.

   (a). For single inverter: lead one 4-core RS485 COM cable through RS485 connector, connect +12V wire to port 1, GND wire to port 2, RS485+ wire to port 3, and RS485- wire to port 4.
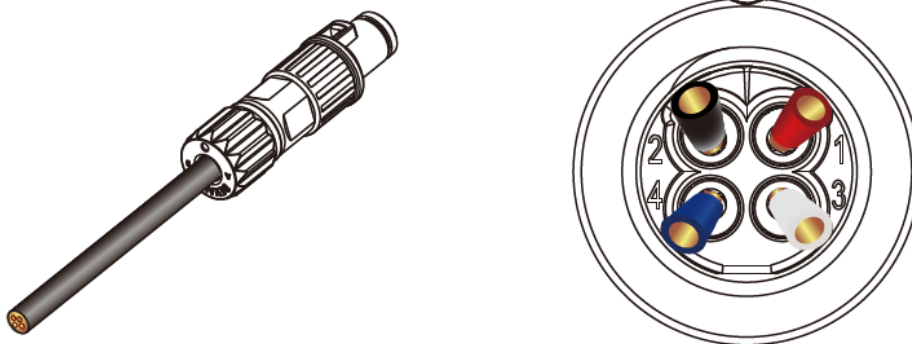
Figure 4-12 Crimp communication wires

(b). For multiple inverters: when multiple inverters connect in daisy-chain, lead RS485 COM cables through RS485 connector. Strip 60mm cable insulation layer, connect two RS485+ wires to port 3, and two RS485-wires to port 4.

NOTICE!

If connecting to incorrect port, the inverter may operate abnormally

3. Insert RS485 connector into RS485 interface.
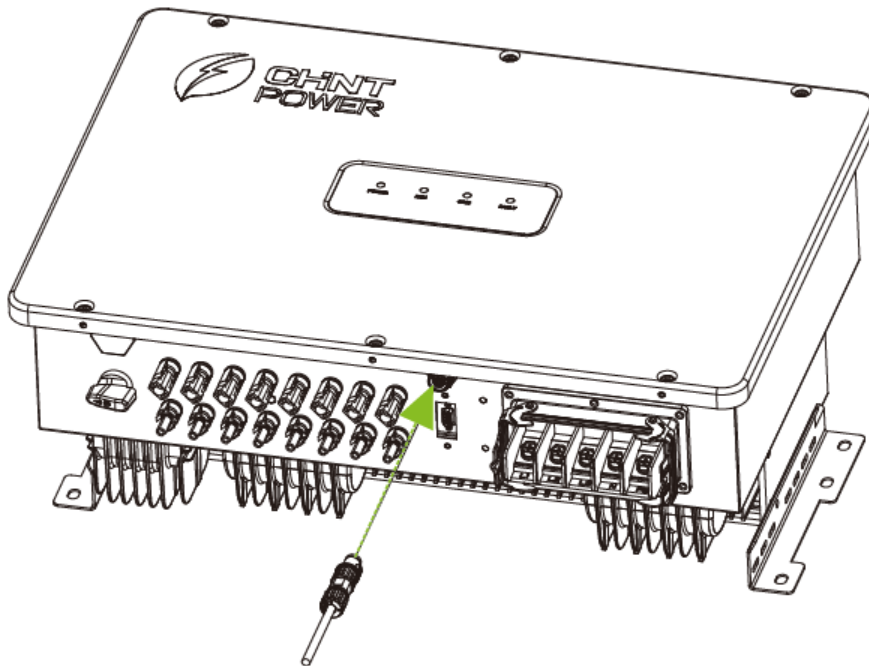
Figure 4-13 Insert RS485 connector

4.4.2 Install Wifi Dongle

Install the Wifi Dongle as shown below.

1. Remove two fixing screws on the communication cover with a No.2 Philips screwdriver to expose the communication interface.
2. Install Wifi Dongle onto the communication interface and fasten the Wifi Dongle firmly with No.2 philps screwdriver, torque value: 1.0 N.m.
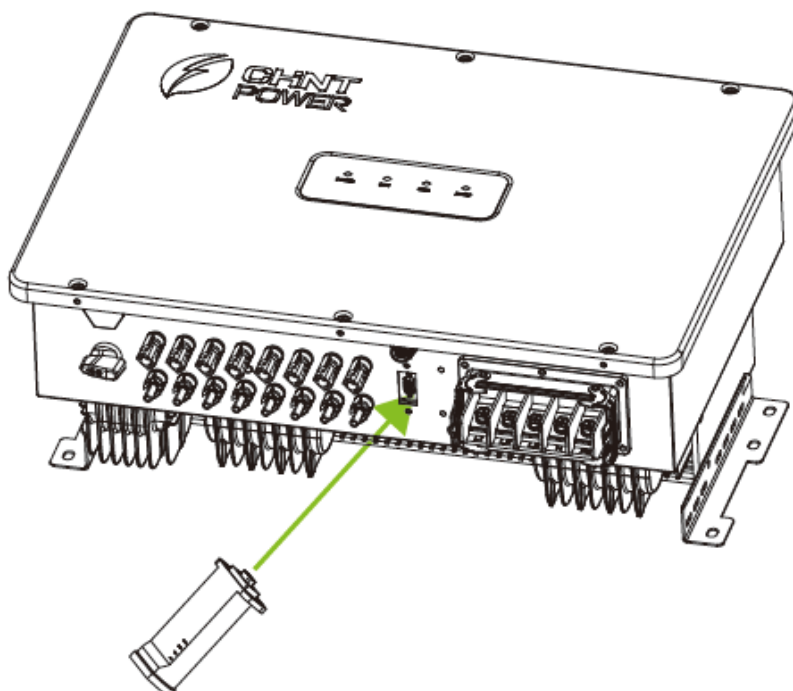
Figure 4-14 Install Wifi Dongle

5 Inverter Commissioning

⚠️	**WARNING!**
	Please follow the guidelines below before performing any on-grid operation to eliminate possible dangers.

5.1 Pre-commissioning Checks and Preparation

5.1.1 Mechanical Installation

Perform the following inspections by referring to chapter 3 Mechanical Installation.

- Make sure all the mounting brackets are secure.
- Make sure all the screws have been tightened to the specified torque values.

5.1.2 Electrical Connections

Perform the following inspections by referring to chapter 4 Electrical Connection.

- Confirm that all cables are connected firmly and reliably and there are no wrong or missing connections.
- The cables are placed reasonably and will not be mechanically damaged.
- Pay special attention to whether the positive and negative polarity of the DC cable on the input side is correct.
- Turn the DC Switch to the "OFF" position.
- Test and check that the AC voltage is within the normal operating range.
- Make sure the DC open circuit voltage of input strings is less than 1050V.

5.1.3 APP Download

The inverter conducts human-computer interaction through the "Chint Connect" APP.

Users can download the iOS version in the Apple store or Android version in the Google store, or directly scan the QR code to download. (Support Android 4.4 and IOS 11.0 system or higher version system).

5.2 Inverter Commissioning

Set the inverter DC switch to the "ON" position. When the solar array produces enough power, the inverter LED POWER indicator will be lit, and the inverter will enter the self-check state in turn.

IMPORTANT!

Complete the test and inspection before operation, to confirm that there is no error.

The following contents are applicable to SCA15/20/25K-T-SA, SCA25K-TM-EU & SCA(30,33,36,37.5,40)K-T-EU series inverters, we just take SCA40K-T-EU as instance.

Once powered, the inverter will automatically create a wireless network that can be visible as an Access Point from the user communication devices (tablet, smartphone, etc.). Users can perform the following procedures to set the APP easily. First of all, open the Bluetooth function on your phone, then open Chint Connect APP.

1. Touch **Smart Link** icon to enter smart link interface.
    Note: If it's necessary, you can click "APP Settings" in the bottom green bar to set language & APP platform, synchronize cloud data or check its version.

2. Click **Next** to enter the Connect to the adapter interface.
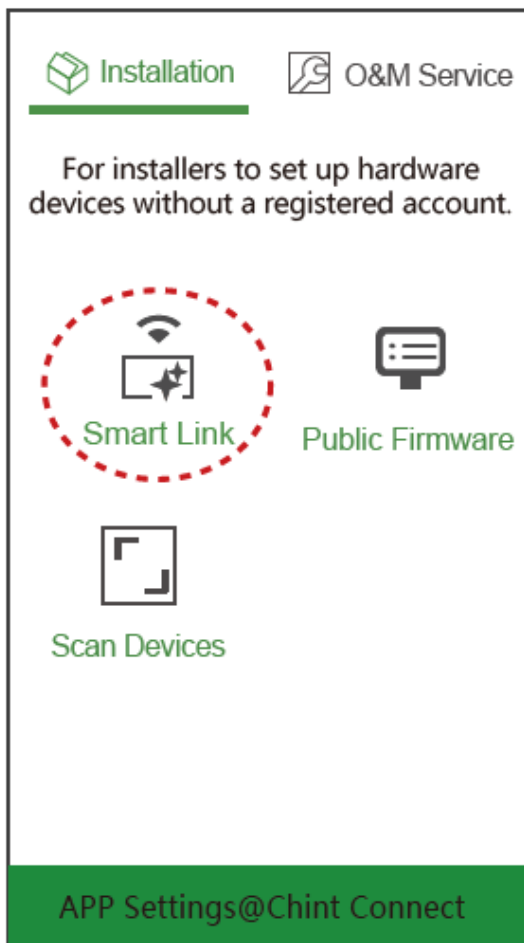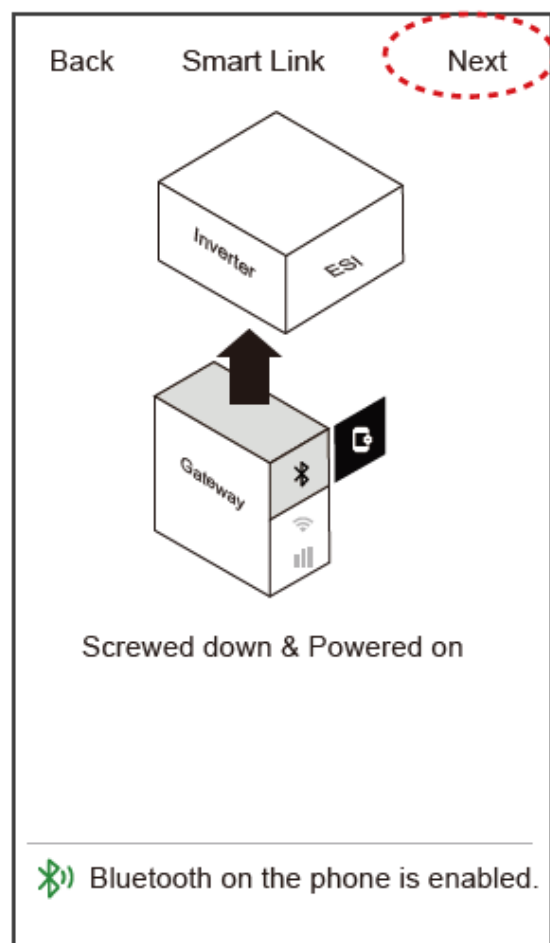
3. Touch the wireless network named CUGW-XXXXXXX (the last four numbers can be found on the label of Wifi Dongle), or touch the green QR icon under the list to scan the bar code of Wifi Dongle to connect network; Or you can try WiFi Mode by touching the icon in the top right corner and inputting password "Password".

4. Touch the **Device settings** icon in the bottom, it will go to home page.

③	④

③ Screen content:

< Connect to the adapter 🛜

If connection of BLE fails, please try WIFI mode

Click 🔵)) Refresh

CUGW-XXXXXXX   >

Quick connect
Scan the barcode or QR code of the adapter

CAUTION:
The BLE with the changed name cannot be automatically scannned by scanning!

④ Screen content:

< CUGW-5032136006365

-> Refresh : 2023-08-15 10:31:19 GMT +8
Model : DG-4G-CEB
SN : 5032136006365
Firmware version : 2.0017
Cloud server : solar.chintpower.com 1883
Status : Online
Internet : LTE
LTE Status : Ready
Baud Rate : 4800 NONE 1 (AUTO)
Device ID range : 1~1
Device online status : 1/1

Device settings   Refresh
Internet Settings   More...

5. Touch "Setting" icon and input password "1111", go to "Settings" and then "Inverter parameter" page.

6. Set Grid Code, PV Link Type, Neutral line, RS485 and other parameters if necessary.
    -   Grid Code: Choose the Grid Code according to the requirements of your local authority.
    -   PV Link Type: DC input connection and working mode of MPPT tracker can be configured as Independent or parallel according to the connection modes of inverter.
    -   Neutral Line: used to choose if the neutral line is connected or not.

- RS485: Choose the communication data Modbus Address and Baud Rate.
- Inverter Clock: Set the system clock.
- Change Password: You can change the password according to the system prompt if necessary or as required.

IMPORTANT!

Please check with your local electricity supply company before selecting a Grid Code. If the inverter is operated with a wrong Grid Code, the electricity supply company may cancel the interconnection agreement.

Placing the inverter into operation before the overall system complies with the national rules and safety regulations of the application is not permitted.

⑤   ⑥

7. When the device screen shows the normal operation status and the RUN light on the LED panel is illuminated, it indicates that the grid connection and power generation are successful. You can now browse through the real-time data in the APP. If the inverter fails to operate normally, the FAULT light will illuminate and the fault information will be shown on the interface. You can touch the **Event** icon to check the detailed fault information. Touch the icon in the top right corner to check detailed current and history event information. Troubleshoot related problems and restart. Contact our after-sale department if necessary.

8. If turn on/off is necessary, touch **More** icon and input password "1111" to power on/off device.
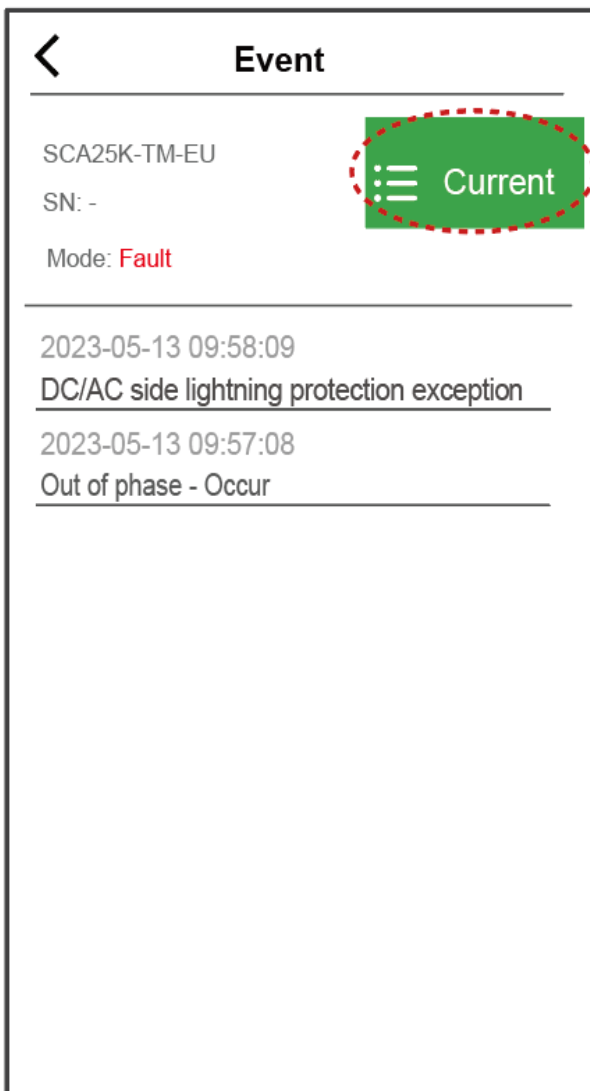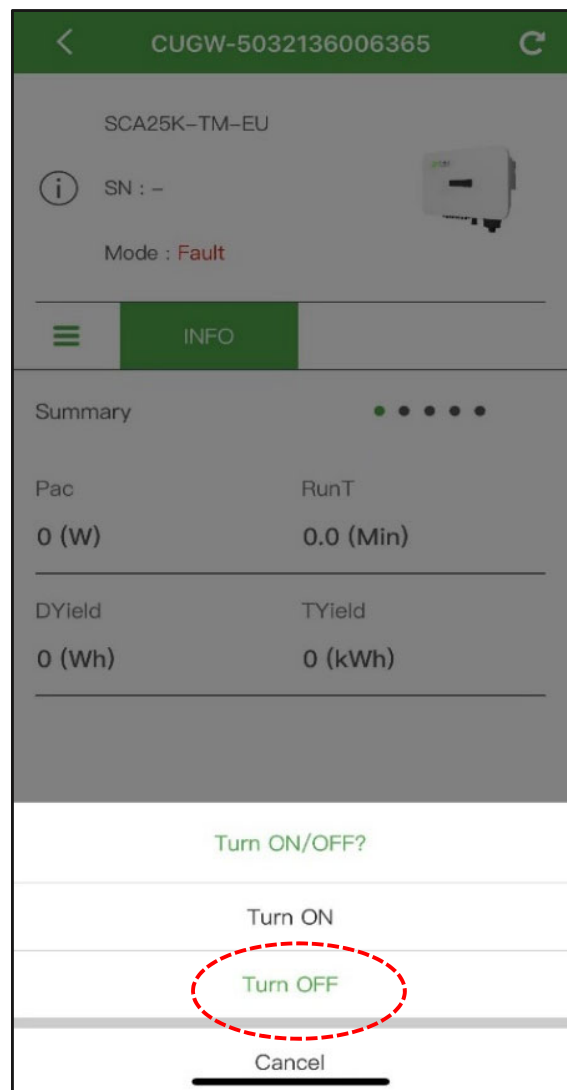
⑦	⑧

IMPORTANT!

For operation methods of monitoring management system, pls refer to "Monitoring Platform & Application user manual".

6 Main menus

IMPORTANT!

The following contents are applicable to SCA15/20/25K-T-SA, SCA25K-TM-EU & SCA(30,33,36,37.5,40)K-T-EU series inverters, we just take SCA40K-T-EU as instance.

Structure tree of App interface is as below:
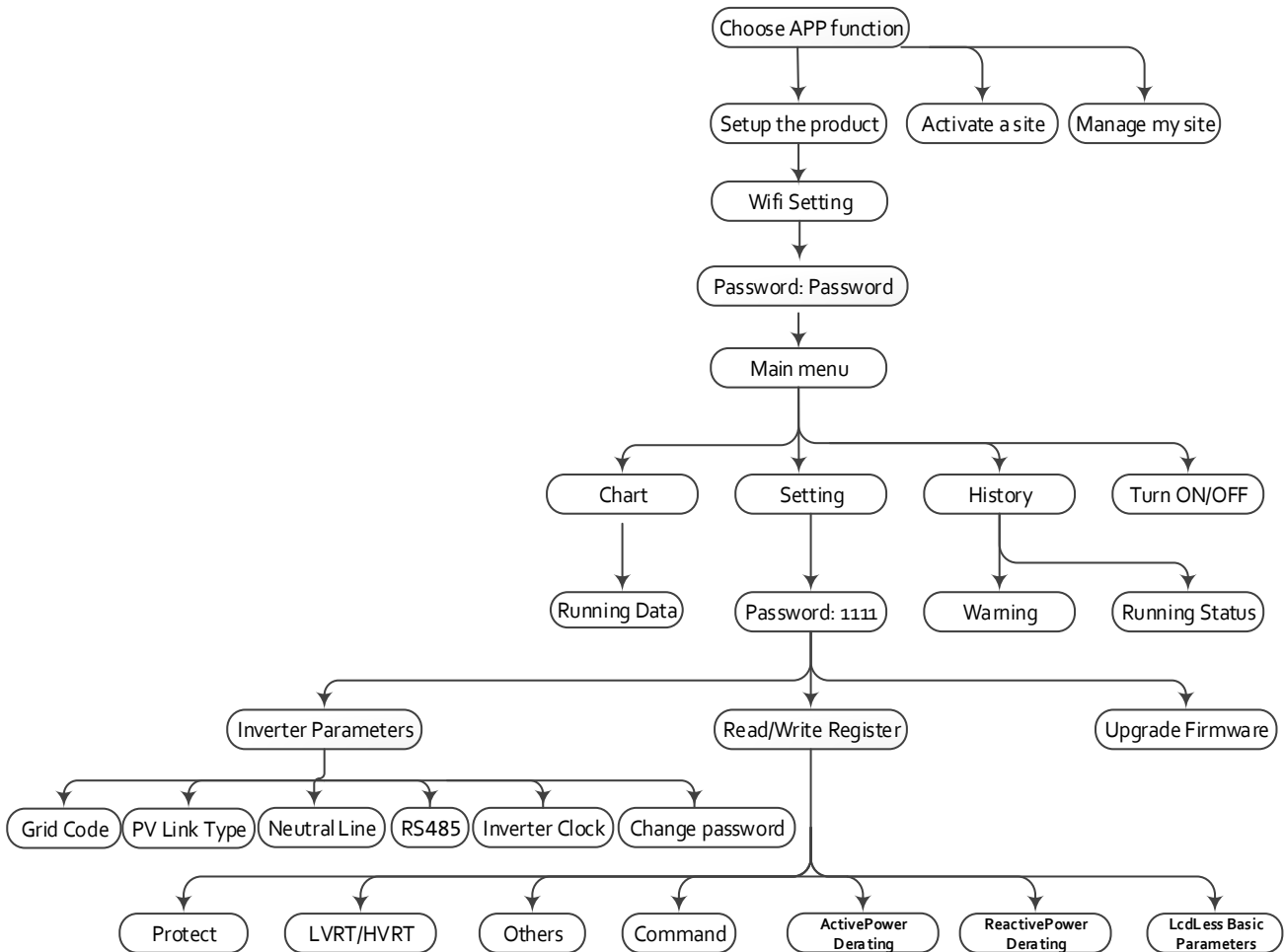
Figure 6-1 Structure tree of App Interface

In the Main interface, you can access the DC, AC, other and Version information as shown below.

In addition, you can see the following submenus:

- Chart
- Setting
- Event
- More

Screen 1 (DC)

CUGW-5032136006365

SCA25K–TM–EU
SN : –
Mode : Fault

≡ | INFO

DC • • • • •

PVInputMode		independent connection	
Pdc(kW)		0.0	
		U(V)	I(A)
MPPT1	PV1	1225.3	0.0
	PV2		0.0
MPPT2	PV3	1225.3	0.0
	PV4		0.0
MPPT3	PV5	1225.3	0.0
	PV6		0.0

Chart · Setting · Event · More…

Screen 2 (AC)

CUGW-5032136006365

SCA25K–TM–EU
SN : –
Mode : Fault

≡ | INFO

AC • • • • •

	L1–N	L2–N	L3–N
U(V)	0.1	0.1	0.1
I(A)	0.0	0.0	0.0
Freq(Hz)	0.0	0.0	0.0
Voltage harmonics(%)	0.00	0.00	0.00
Current harmonics(%)	0.00	0.00	0.00
P Ref(%)	100.0		
PF Ref	1.000		

Chart · Setting · Event · More…

Screen 3 (Other)

CUGW-5032136006365

SCA25K–TM–EU
SN : –
Mode : Fault

≡ | INFO

Other • • • • •

RS485	1/4800
Tmod(℃)	0.0
Boost Temp(℃)	0.0
Tinter(℃)	0.0

Chart · Setting · Event · More…

Screen 4 (Version)

CUGW-5032136006365

SCA25K–TM–EU
SN : –
Mode : Fault

≡ | INFO

Version • • • • •

GridConnectionRule	IEC61727
PmaxLim(kW)	25
SmaxLim(KVA)	25
LCD Ver	03.05
LCD Boot	01.00
DSP Ver	1.03.60
DSP Boot	01.00
miniMCU Firmware Version	00.00
CPLDVersion	00.00

Chart · Setting · Event · More…

Figure 6-2 Main information on Main Interface

6.1 Chart Menu

In the **chart** sub-menu, you can view the power generation situation at different times, such as Current, Today and Total. These data can also be displayed in Day, Month, Year, shown as below in Figure 6-6.

Figure 6-3 power generation situation

6.2 Setting Menu

Touch the **Setting** icon and input the password "1111", you will go to the setting interface.

Then it's possible to access the following sub-menus on the setting interface.

- Inverter Parameters
- Read/Write Register
- Upgrade Firmware
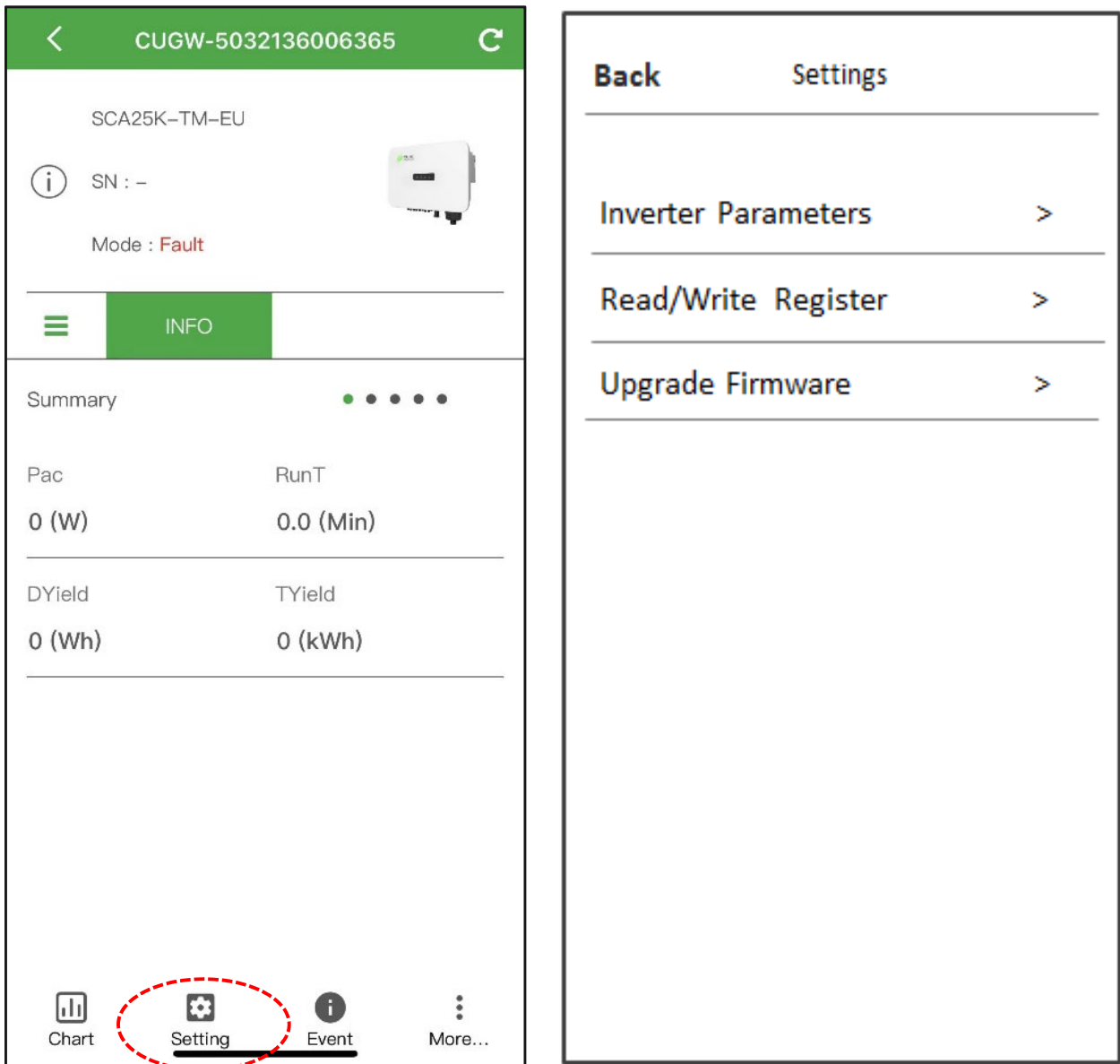
Figure 6-4 Setting interface

6.2.1 Inverter Parameters

Touch the **Inverter Parameters** tab, you can find the set and readjust the following parameters, including Grid Code, PV Link Type, Neutral line, RS485 etc., referring to section 5.2.1.

IMPORTANT!

Please check with your local electric supply company before selecting a grid code. If the inverter operates with a wrong grid code, the electric supply company may cancel the interconnection agreement.

6.2.2 Read/Write Register

In the **Read/Write Register** interface, you can find the following sub-menus:
- Protection Grid Parameters
- Other Parameters
- Parameter Dispatch
- Active Power Derating Parameters
- Reactive Power Derating Parameters
- LVRT/HVRT
- Enable/disable Control Parameters
- Control Commands
- Inverter Basic Information
- LcdLess Basic Parameters

```
┌──────────────────────────────────────┐
│  Back        Read / Write redister    │
├──────────────────────────────────────┤
│                                        │
│  Grid Protection      Other Parameters │
│  Parameters                            │
│                                        │
│                          ActivePower   │
│  Power Dispatch          Derating      │
│                          Parameters    │
│                                        │
│  ReactivePower        LVRT / HVRT      │
│  Derating                              │
│                                        │
│  Enable/disable       Control Command  │
│  Control Parameters                    │
│                                        │
│  Inverter Basic       LcdLess Basic    │
│  Information           Parameters      │
│                                        │
└──────────────────────────────────────┘
```
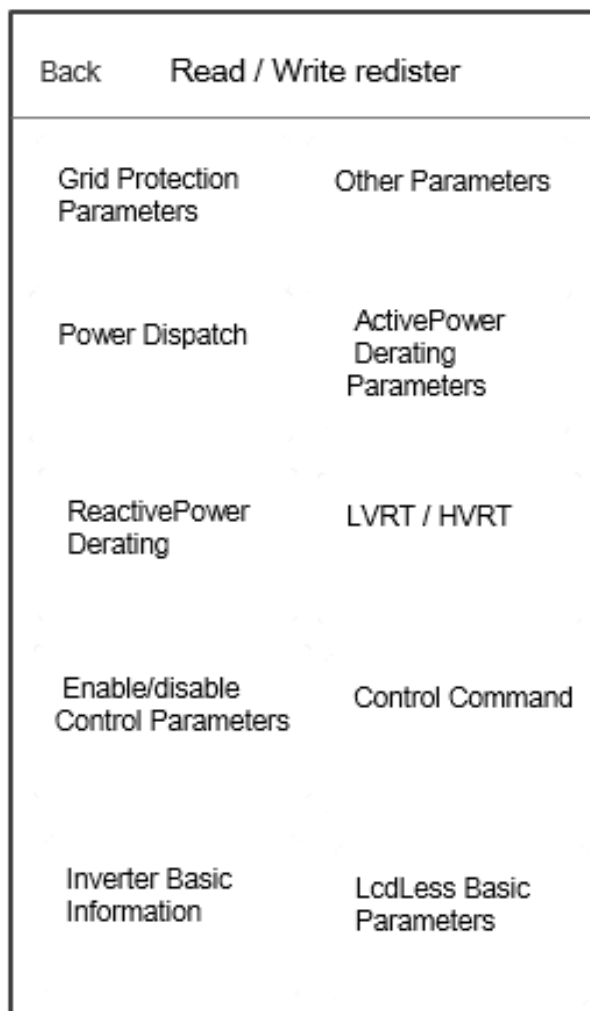
Figure 6-5 Read/Write Register

6.2.2.1 Protection Grid Parameters

The **Protection Grid Parameters** interface displays the protect parameters of the AC grid voltage, frequency and recovery, etc.

In addition, you can find and set the protection levels of over voltage, under voltage, over frequency and under frequency.
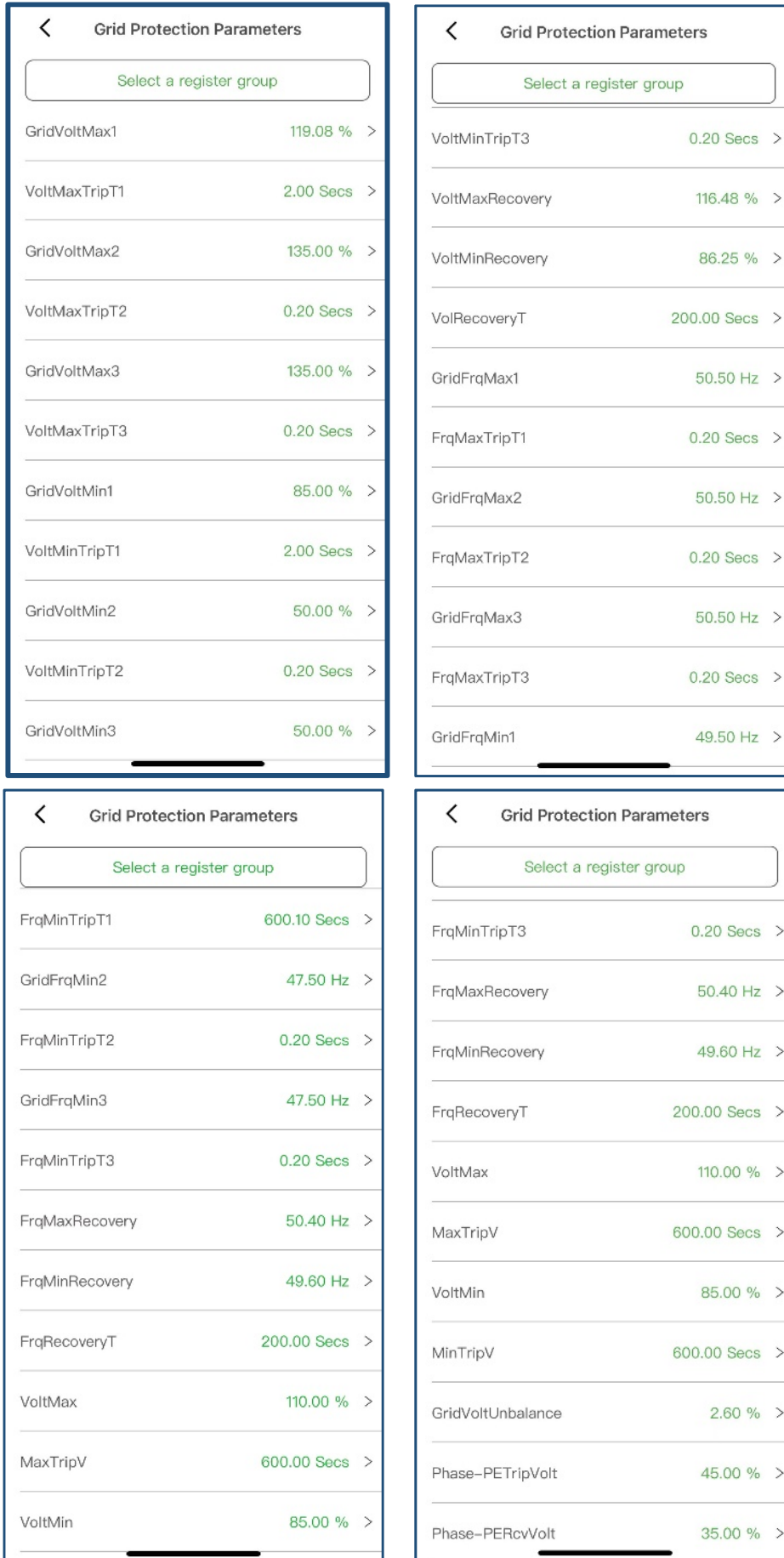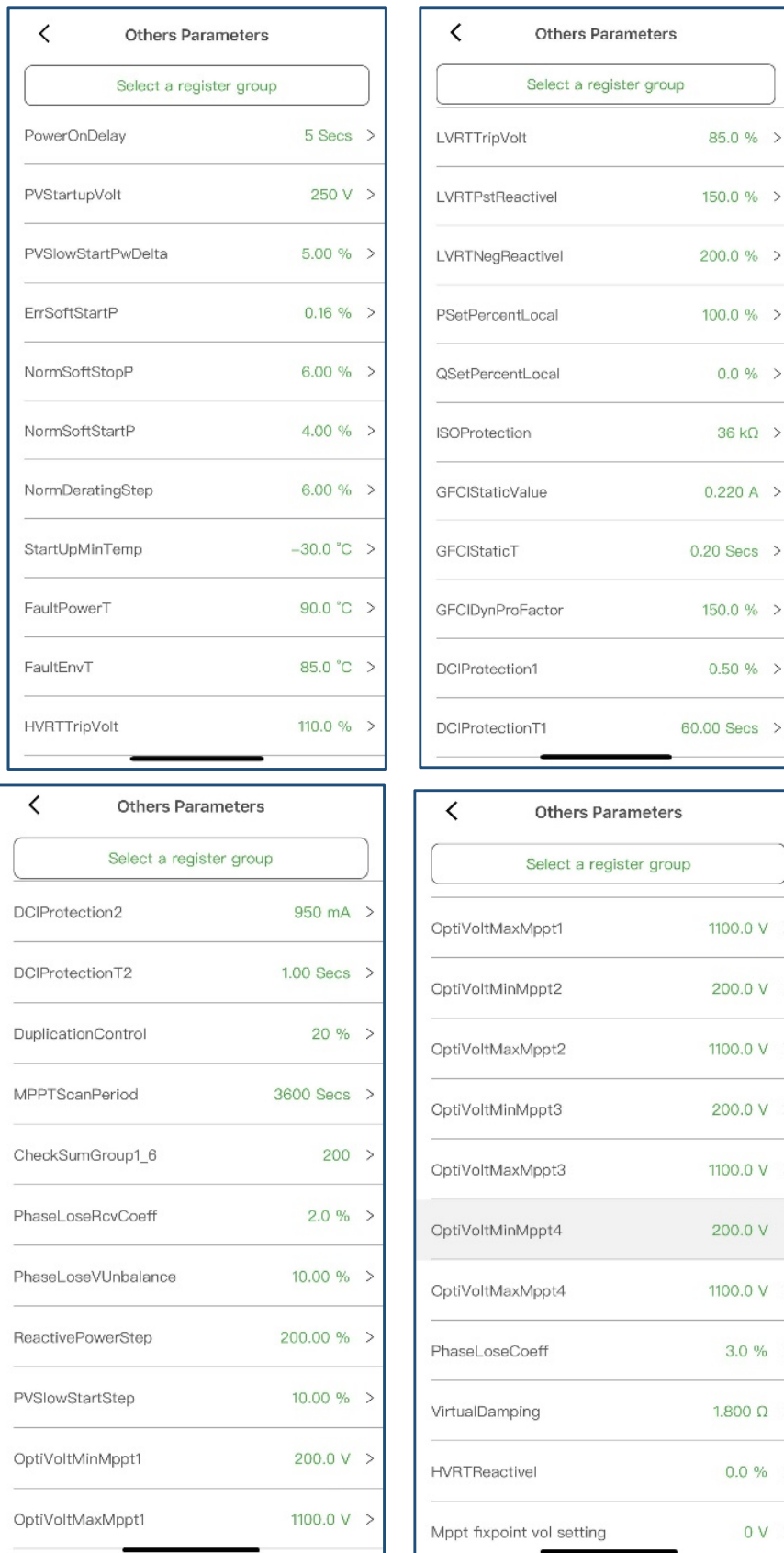
Grid Protection Parameters

Select a register group

GridVoltMax1	119.08 %	>
VoltMaxTripT1	2.00 Secs	>
GridVoltMax2	135.00 %	>
VoltMaxTripT2	0.20 Secs	>
GridVoltMax3	135.00 %	>
VoltMaxTripT3	0.20 Secs	>
GridVoltMin1	85.00 %	>
VoltMinTripT1	2.00 Secs	>
GridVoltMin2	50.00 %	>
VoltMinTripT2	0.20 Secs	>
GridVoltMin3	50.00 %	>

Grid Protection Parameters

Select a register group

VoltMinTripT3	0.20 Secs	>
VoltMaxRecovery	116.48 %	>
VoltMinRecovery	86.25 %	>
VolRecoveryT	200.00 Secs	>
GridFrqMax1	50.50 Hz	>
FrqMaxTripT1	0.20 Secs	>
GridFrqMax2	50.50 Hz	>
FrqMaxTripT2	0.20 Secs	>
GridFrqMax3	50.50 Hz	>
FrqMaxTripT3	0.20 Secs	>
GridFrqMin1	49.50 Hz	>

Grid Protection Parameters

Select a register group

FrqMinTripT1	600.10 Secs	>
GridFrqMin2	47.50 Hz	>
FrqMinTripT2	0.20 Secs	>
GridFrqMin3	47.50 Hz	>
FrqMinTripT3	0.20 Secs	>
FrqMaxRecovery	50.40 Hz	>
FrqMinRecovery	49.60 Hz	>
FrqRecoveryT	200.00 Secs	>
VoltMax	110.00 %	>
MaxTripV	600.00 Secs	>
VoltMin	85.00 %	>

Grid Protection Parameters

Select a register group

FrqMinTripT3	0.20 Secs	>
FrqMaxRecovery	50.40 Hz	>
FrqMinRecovery	49.60 Hz	>
FrqRecoveryT	200.00 Secs	>
VoltMax	110.00 %	>
MaxTripV	600.00 Secs	>
VoltMin	85.00 %	>
MinTripV	600.00 Secs	>
GridVoltUnbalance	2.60 %	>
Phase−PETripVolt	45.00 %	>
Phase−PERcvVolt	35.00 %	>

Figure 6-6 Protection Parameters

6.2.2.2 Other Parameters

On the **Other Parameters** interface, you can find following common parameters shown as below.

Others Parameters		Others Parameters	
Select a register group		Select a register group	
PowerOnDelay	5 Secs >	LVRTTripVolt	85.0 % >
PVStartupVolt	250 V >	LVRTPstReactiveI	150.0 % >
PVSlowStartPwDelta	5.00 % >	LVRTNegReactiveI	200.0 % >
ErrSoftStartP	0.16 % >	PSetPercentLocal	100.0 % >
NormSoftStopP	6.00 % >	QSetPercentLocal	0.0 % >
NormSoftStartP	4.00 % >	ISOProtection	36 kΩ >
NormDeratingStep	6.00 % >	GFCIStaticValue	0.220 A >
StartUpMinTemp	–30.0 ℃ >	GFCIStaticT	0.20 Secs >
FaultPowerT	90.0 ℃ >	GFCIDynProFactor	150.0 % >
FaultEnvT	85.0 ℃ >	DCIProtection1	0.50 % >
HVRTTripVolt	110.0 % >	DCIProtectionT1	60.00 Secs >

Others Parameters		Others Parameters	
Select a register group		Select a register group	
DCIProtection2	950 mA >	OptiVoltMaxMppt1	1100.0 V >
DCIProtectionT2	1.00 Secs >	OptiVoltMinMppt2	200.0 V >
DuplicationControl	20 % >	OptiVoltMaxMppt2	1100.0 V >
MPPTScanPeriod	3600 Secs >	OptiVoltMinMppt3	200.0 V >
CheckSumGroup1_6	200 >	OptiVoltMaxMppt3	1100.0 V >
PhaseLoseRcvCoeff	2.0 % >	OptiVoltMinMppt4	200.0 V
PhaseLoseVUnbalance	10.00 % >	OptiVoltMaxMppt4	1100.0 V >
ReactivePowerStep	200.00 % >	PhaseLoseCoeff	3.0 % >
PVSlowStartStep	10.00 % >	VirtualDamping	1.800 Ω >
OptiVoltMinMppt1	200.0 V >	HVRTReactiveI	0.0 % >
OptiVoltMaxMppt1	1100.0 V >	Mppt fixpoint vol setting	0 V >

Figure 6-7 Other Parameters interface

6.2.2.3 Power Dispatch

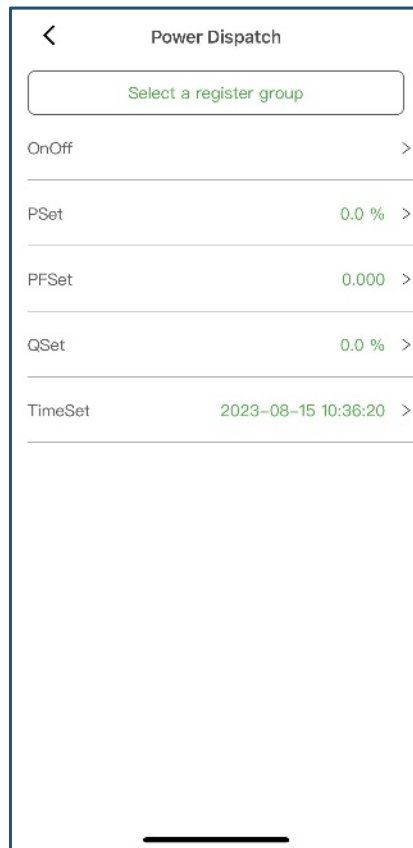On the **Power Dispatch** interface, you can find following common parameters shown as below.

Figure 6-8 Power Dispatch interface

6.2.2.4 Active Power Derating Parameters

The ActivePower Derating Parameters menu is used to set the active power derating parameters, including Active Power Derating, Over Voltage Derating, Over Frequency Derating, etc.

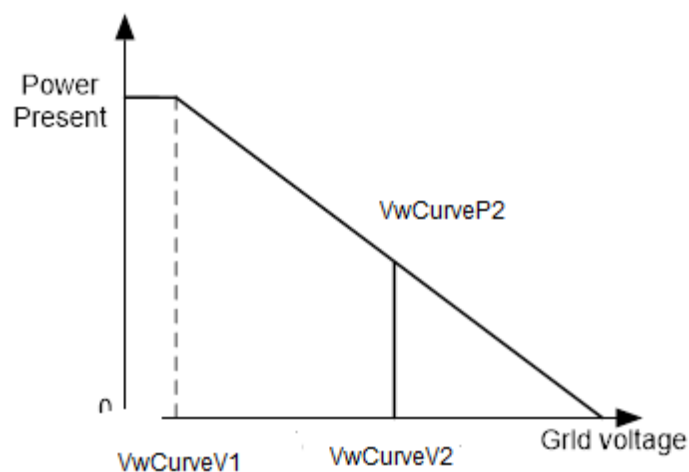You can see the Curve of over voltage derating in Figure 6-10 and Curve of over frequency derating in Figure 6-9.

Figure 6-9 Curve of over voltage derating
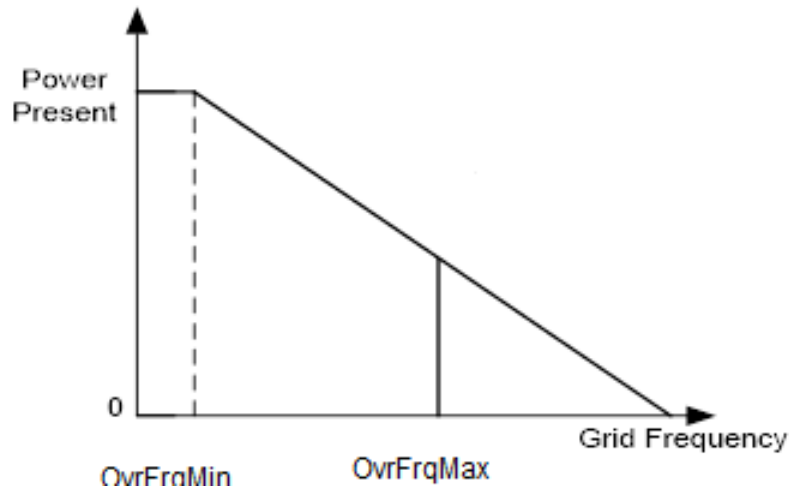
Figure 6-10 Curve of over frequency derating

Figure 6-11 ActivePower Derating Parameters interface

6.2.2.5 Reactive Power Derating Parameters

The ReactivePowerDerating interface is used to set the Grid reactive power derating parameters, including PF parameters and Qu parameters, etc.
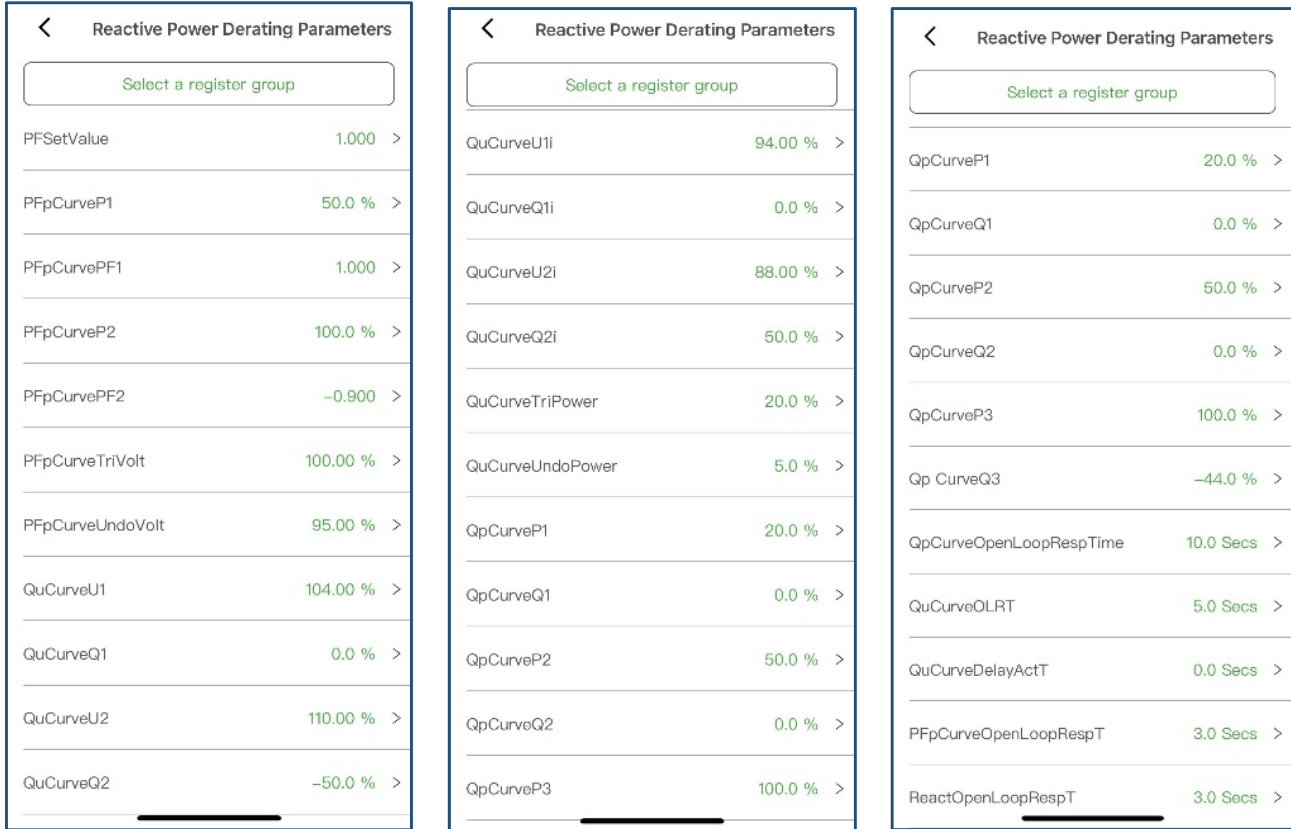

< Reactive Power Derating Parameters	
Select a register group	
PFSetValue	1.000 >
PFpCurveP1	50.0 % >
PFpCurvePF1	1.000 >
PFpCurveP2	100.0 % >
PFpCurvePF2	−0.900 >
PFpCurveTriVolt	100.00 % >
PFpCurveUndoVolt	95.00 % >
QuCurveU1	104.00 % >
QuCurveQ1	0.0 % >
QuCurveU2	110.00 % >
QuCurveQ2	−50.0 % >

< Reactive Power Derating Parameters	
Select a register group	
QuCurveU1i	94.00 % >
QuCurveQ1i	0.0 % >
QuCurveU2i	88.00 % >
QuCurveQ2i	50.0 % >
QuCurveTriPower	20.0 % >
QuCurveUndoPower	5.0 % >
QpCurveP1	20.0 % >
QpCurveQ1	0.0 % >
QpCurveP2	50.0 % >
QpCurveQ2	0.0 % >
QpCurveP3	100.0 % >

< Reactive Power Derating Parameters	
Select a register group	
QpCurveP1	20.0 % >
QpCurveQ1	0.0 % >
QpCurveP2	50.0 % >
QpCurveQ2	0.0 % >
QpCurveP3	100.0 % >
Qp CurveQ3	−44.0 % >
QpCurveOpenLoopRespTime	10.0 Secs >
QuCurveOLRT	5.0 Secs >
QuCurveDelayActT	0.0 Secs >
PFpCurveOpenLoopRespT	3.0 Secs >
ReactOpenLoopRespT	3.0 Secs >

Figure 6-12 The ReactivePowerDerating interface

Note: The PF and Q value can be adjusted by remote software if the "Remote" is selected.

- PF Set: Set the PF value. Note: Change the reactive power by adjusting the power factor.
- PF(P) Curve： PF curve mode. Note: The power factor changes according to the power change, as shown in Figure 6-13.
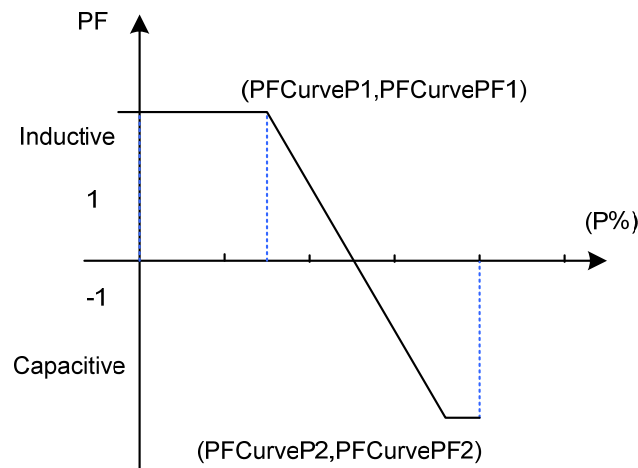

Figure 6-13 PF(P) Curve Mode

- Q(u) Curve： Q(u) curve mode.

Note: The reactive compensation changes according to the grid voltage change, as shown in Figure 6-14.
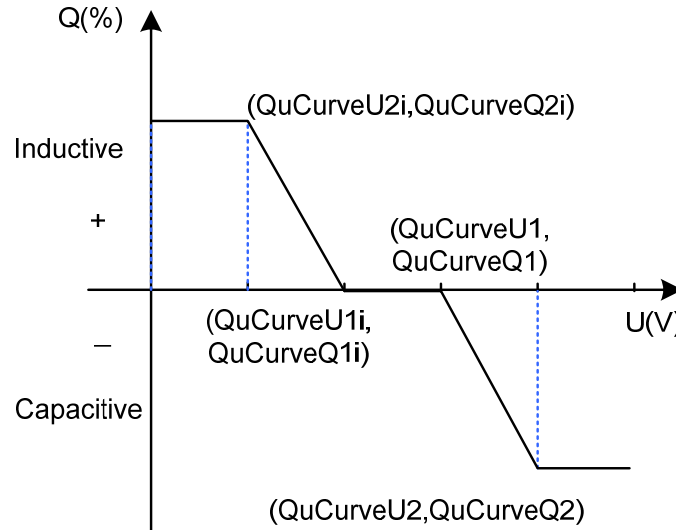

Figure 6-14 Q(u) Curve Mode

6.2.2.6 LVRT/HVRT

The LVRT/HVRT interface is used to set the LVRT (Low voltage ride through) and HVRT (High voltage ride through) parameters as shown in the following interfaces:
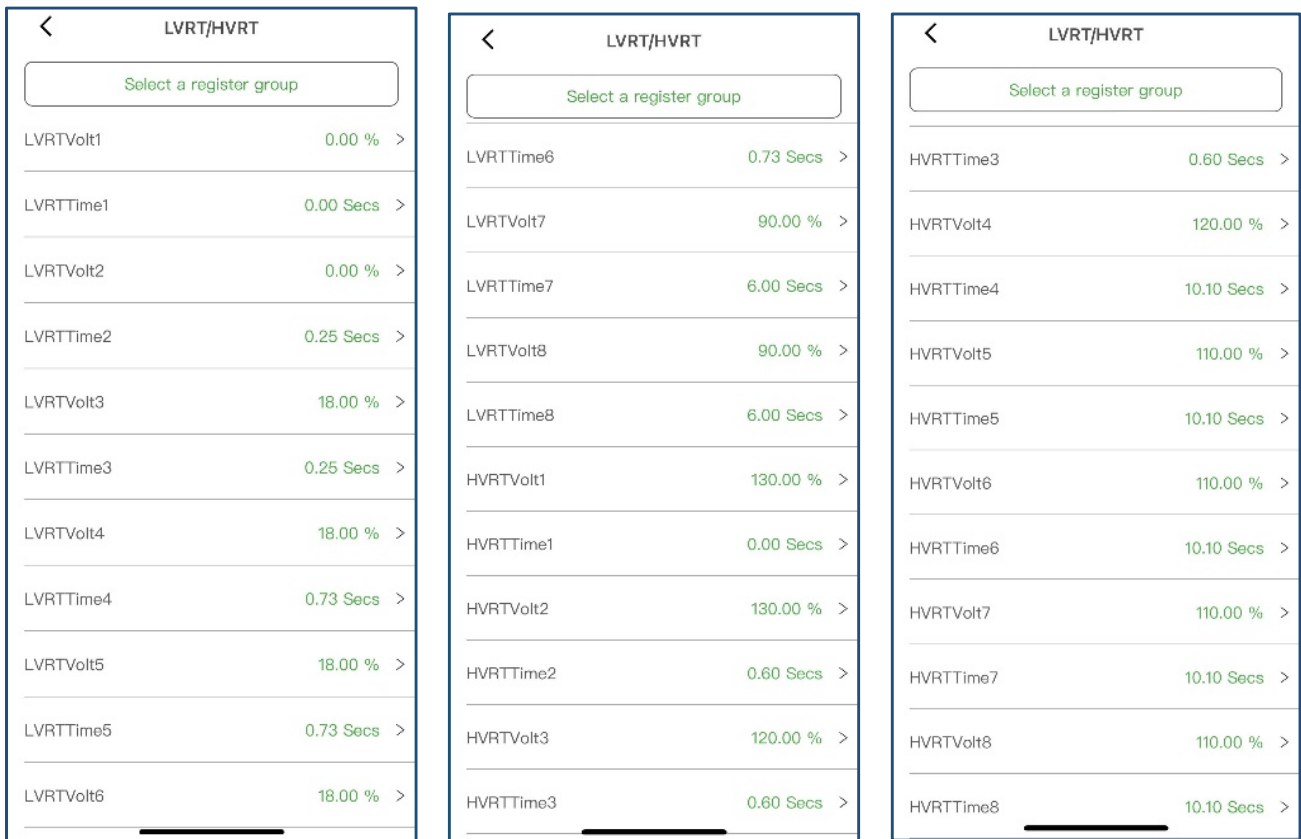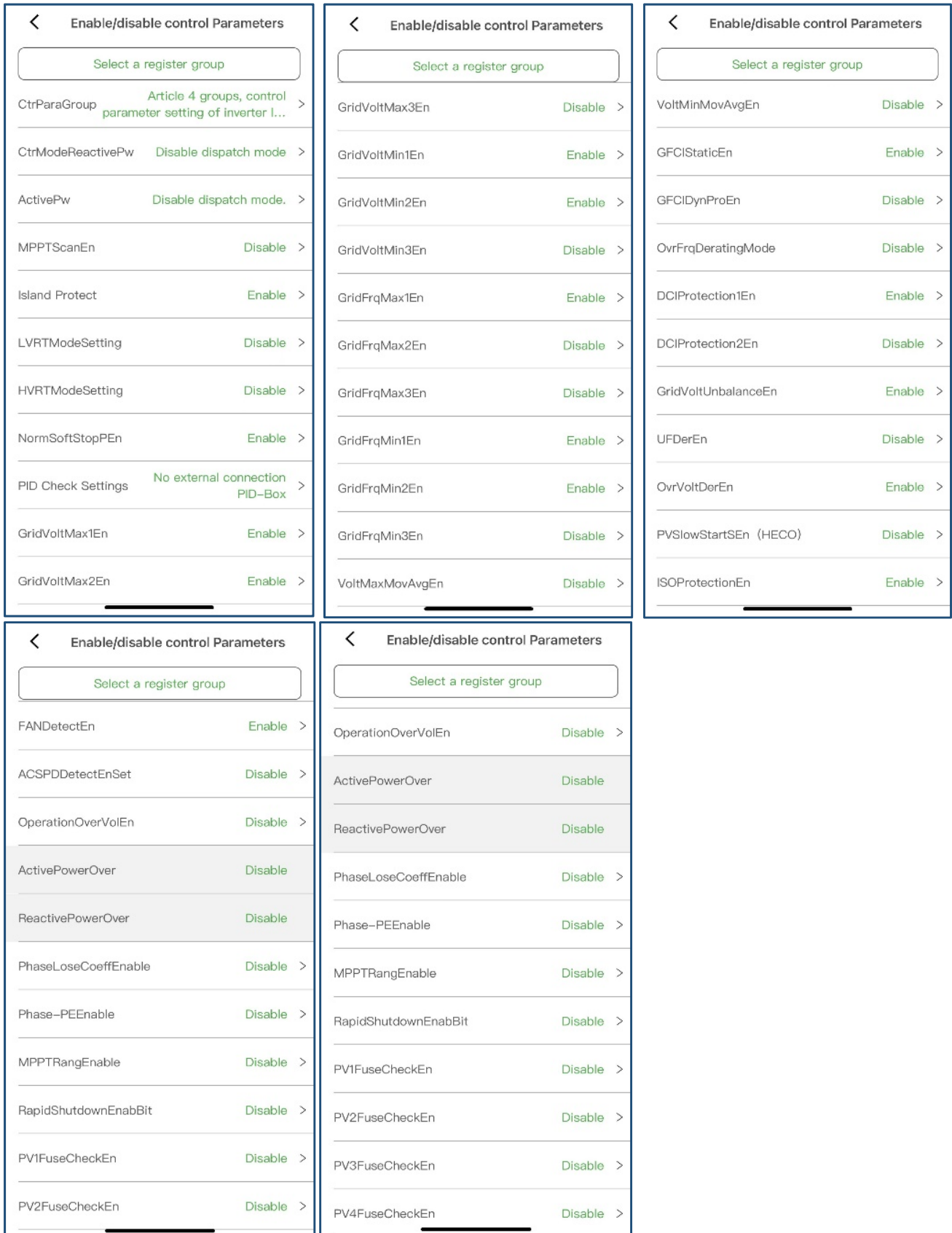

Figure 6-15 LVRT/HVRT interface

6.2.2.7 Enable/disable Control Parameters

In the **Enable/disable Control** interface, you can find following common Enable/disable parameters shown as below.

Figure 6-16 Enable/disable Control interface

6.2.2.8 Control Command

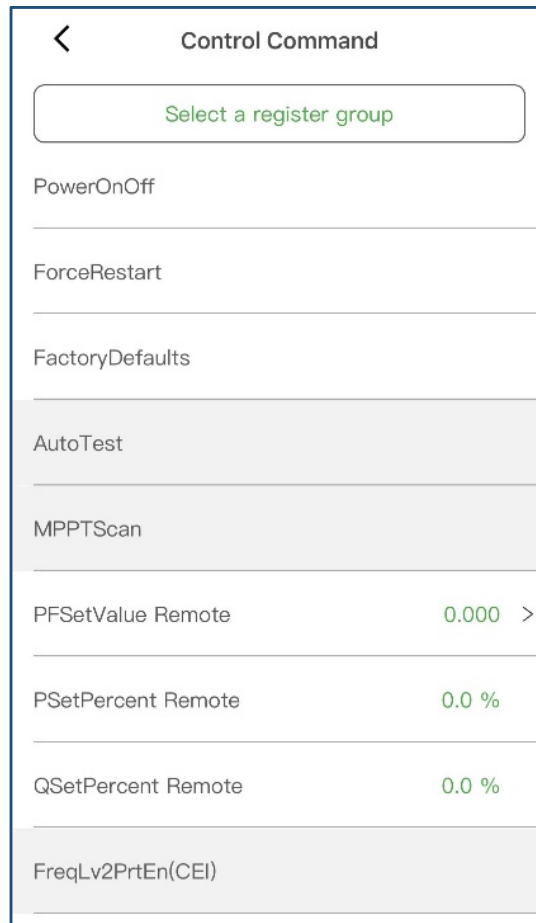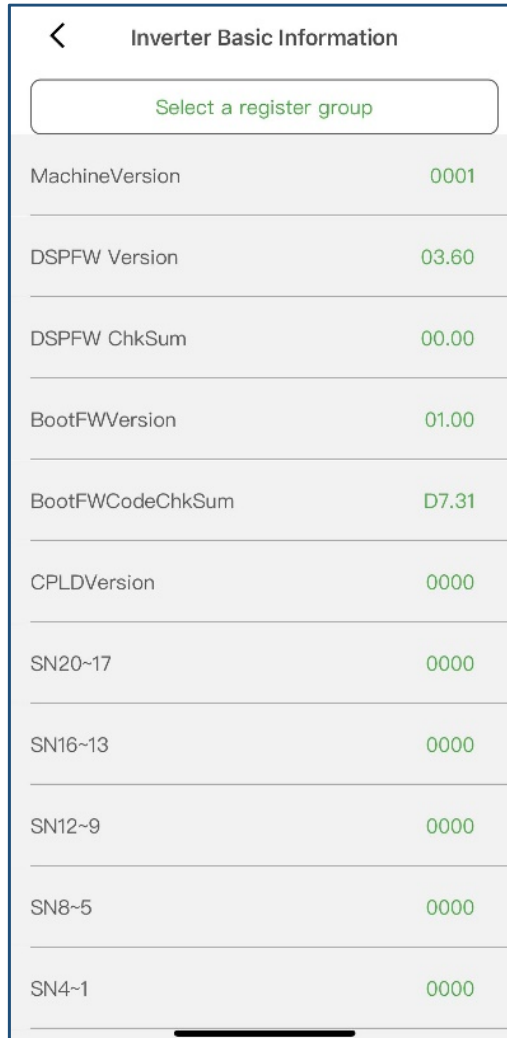In the **Control Command** interface, you can access the following submenus:

Figure 6-17 Commands interface

- **Powe OnOff:** This function can be used to control remotely the turn on/off status of the device.
- **Force Restart**: If a fault shutdown happens, a severe fault may have occurred inside the inverter. The user can perform a force reboot for one time per Power on in this menu if the user needs to restart the inverter.
- **FactoryrDefaults**: The manufacturer's parameter default values can be restored when the inverter is not in operation mode. Otherwise "Fault Operated" will be reported.
- **AutoTest**: Not available to this device.
- **MPPTScan**: Not available to this device.
- **PFSetValue Remote**: Users can use this function to set the PF value remotely.
- **PSetPercent Remote**: Users can use this function to set the active power percent remotely.
- **QSetPercent Remote**: Users can use this function to set the reactive power percent remotely.
- **FreqLv2PrtEn (CEI):** Not available to this device.

6.2.2.9 Inverter Basic Information

On the interface, you can see the basic information about the inverter, such as type, DSP version number, series number, grid code, N line setting, PV connection mode, etc.

Inverter Basic Information	
Select a register group	
MachineVersion	0001
DSPFW Version	03.60
DSPFW ChkSum	00.00
BootFWVersion	01.00
BootFWCodeChkSum	D7.31
CPLDVersion	0000
SN20~17	0000
SN16~13	0000
SN12~9	0000
SN8~5	0000
SN4~1	0000

Figure 6-18 Inverter basic information interface

If you need some after-sale service, you can also find useful information on this interface conveniently, thus getting a full range of after-sales support and service as soon as possible.

IMPORTANT!

This interface is for your reference only. The specific information varies with device.

6.2.2.10 LcdLess Basic Parameters

On the LcdLess Basic Parameters interface, you can find some basic information related to LCD module, such as LCD version number, Modbus address, Baud rate, etc.
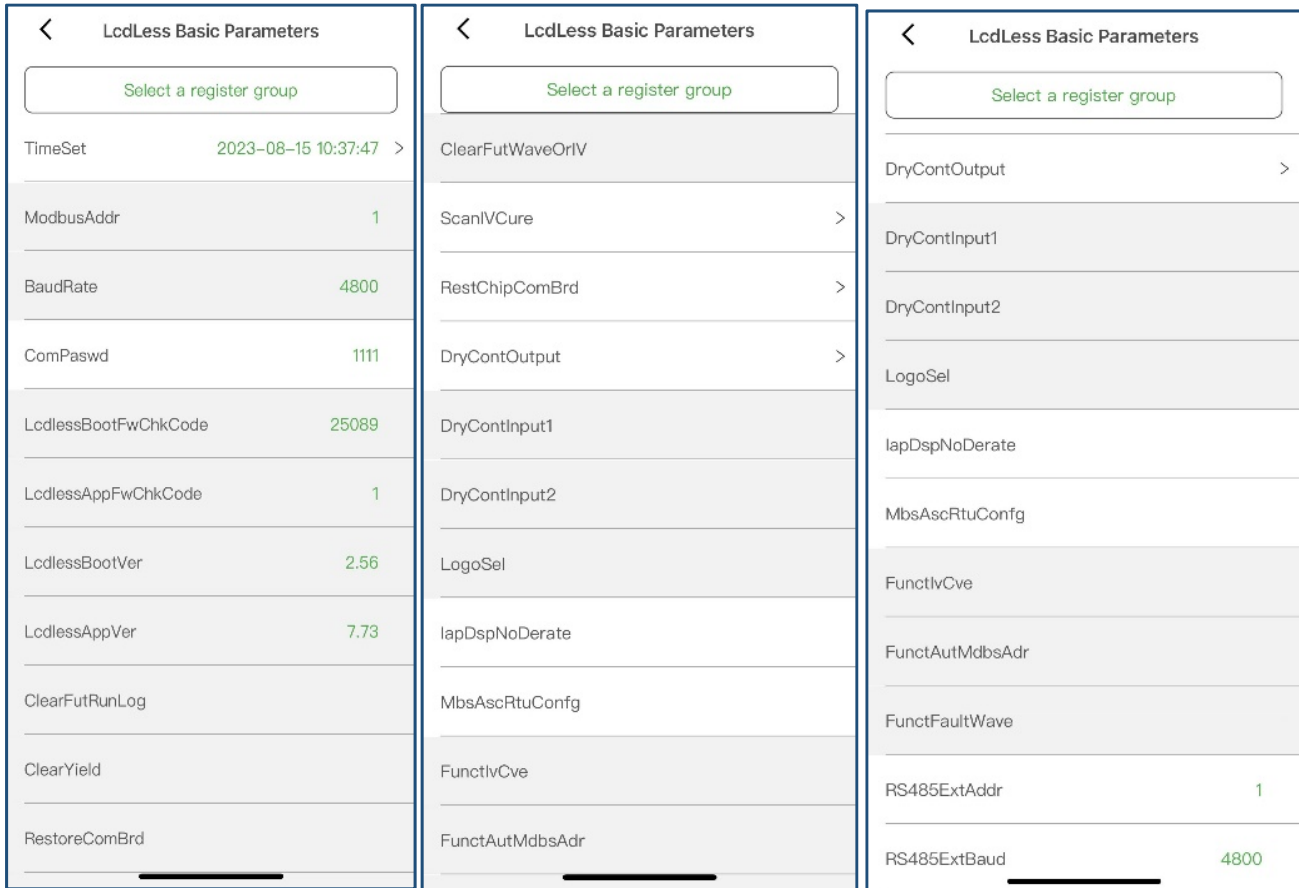

Figure 6-19 LcdLess Basic Parameters interface

All these three registers are configured as standard, and all these parameters are read-only, that means you cannot change them randomly.

> **IMPORTANT!**
>
> This interface is for your reference only. The specific information varies with device.

6.2.3 Firmware Upgrade

As to the detailed procedures for firmware upgrade, refer to specific instructions or consult our after-sale support personnel.

6.3 Event Menu

Touch the Event icon, it will go to the Event interface. There are 2 submenus in the Event menu: "Current" and "History", you can touch the submenu icon to switch between current and history events, as shown below.
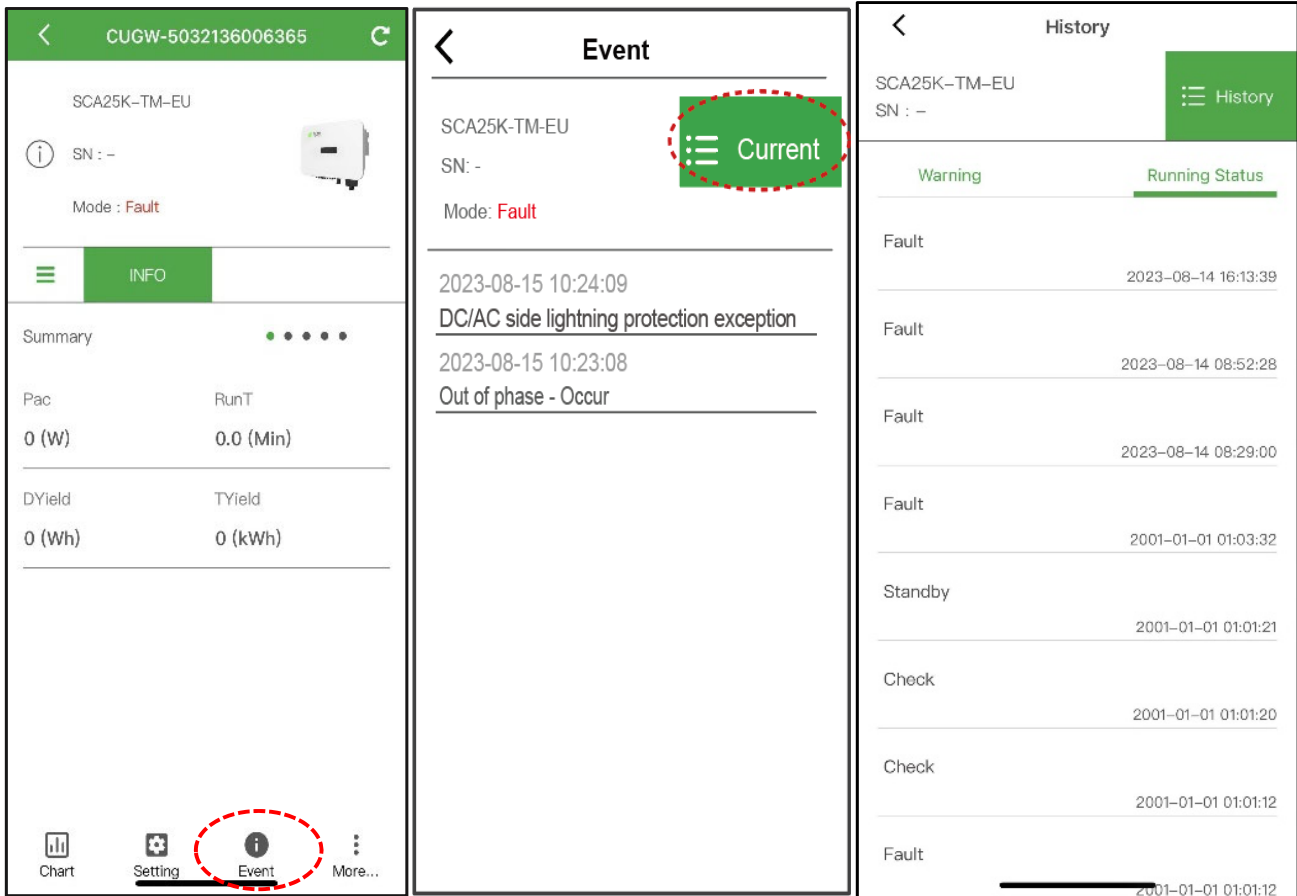
Figure 6-20 Event interface

6.4 More Menu

If turn on/off operation is necessary, touch **More** icon and input password "1111" to power on/off device.
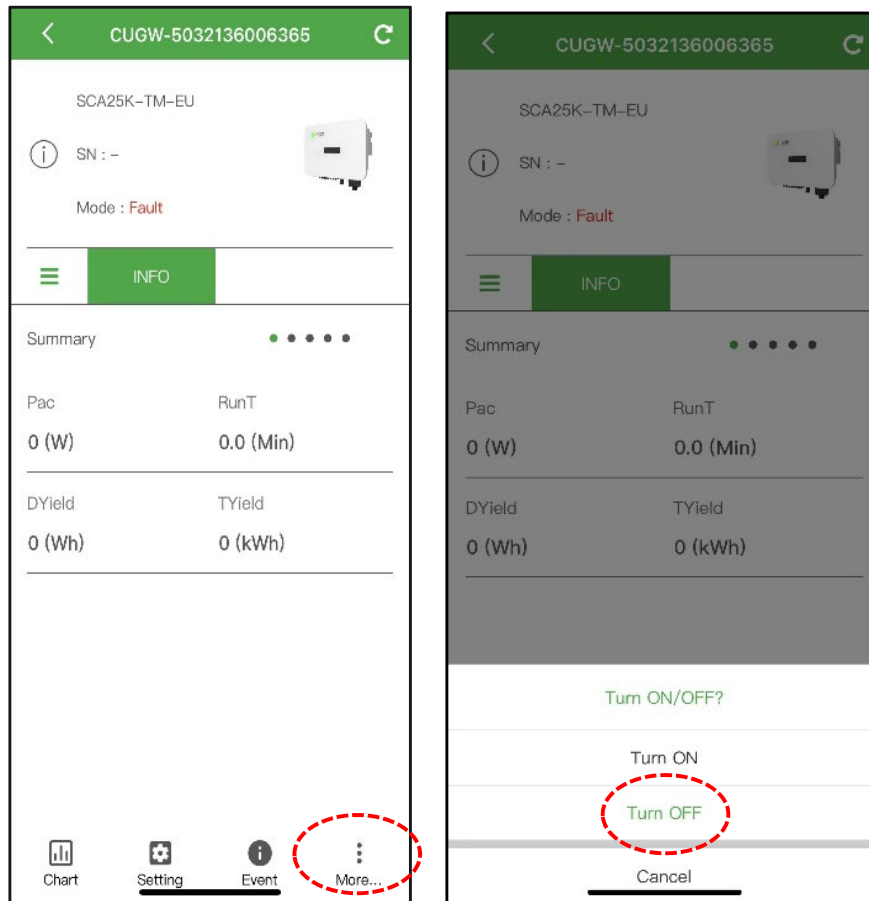

Figure 6-21 More interface

- **Manual Turn ON/OFF**: Manual Power ON/OFF is required after Grid Code setting or manual (fault) shut-down. Touch to submenu **"Turn ON/OFF"**. Then move the cursor to "Turn ON" to start the inverter, the inverter will start up and operate normally if the start-up condition is met. Otherwise, the inverter will go to stand-by mode.
  Normally, it is not necessary to Turn OFF the inverter, but it can be shut down manually if Grid Code setting or maintenance is required.
  Move the cursor to submenu "Turn ON/OFF". Move the cursor to "Turn OFF" and ensure, then the inverter will be shut down.

- **Automatic Turn ON/OFF**: The inverter will start up automatically when the output voltage and power of PV arrays meet the set value, AC power grid is normal, and the ambient temperature is within allowable operating range. The inverter will be shut down automatically when the output voltage and power of PV modules are lower than the set value, or AC power grid fails; or the ambient temperature exceeds the normal range.

7 Maintenance and Replace

WARNING!

Before starting any product maintenance, the inverter should be stopped running, the AC circuit breaker connected to the grid and the PV input on the DC side shall be all disconnected, and then wait at least 10 minutes before starting any operation.

These servicing instructions are for use by qualified personnel only.

To reduce the risk of electrical shock, do not perform other servicing other than those specified in the operation instructions unless you are qualified to do so.

7.1 Check Electrical Connections

- Check all the cable connections as a regular maintenance inspection every 6 months or once a year.
- Check the cable connections. If loose, please tight all the cables acc. to section 4.5 Electrical Connection.
- Check for cable damage, especially whether the cable surface is scratched or smooth. Repair or replace the cables if necessary.

7.2 Clean radiator

To ensure good heat dissipation of the radiator, it is necessary to check the inverter or its surrounding regularly.

Ensure the radiator is not dirty heavily and not covered by other objects. If any, remove it immediately.

7.3 Replace the Inverter

IMPORTANT!

Make sure the external AC breaker and DC switch of inverter are turned off.

Replace the inverter in reverse order relative to the installation steps in section 3.4 Installation Procedures.

1. Use a #3 Philips head screwdriver to remove the two M6X16 screws.
2. Remove the inverter from its mounting bracket.
3. Replace the new inverter on the mounting bracket and fasten it.

8 Troubleshooting

8.1 LED Indicator Troubleshooting

If the LED light indicates any faults, please perform troubleshooting according to the Table 8-1.

LED status	Solutions
Warnings	Turn off the external AC breaker. Switch the DC switch to OFF position. Check the PV input voltage and polarity.
Common (restorable) faults	Turn off the external AC breaker. Switch the DC switch to OFF position. Check if the grid voltage is normal. Check if the cable connection of AC side is correct and secure.
Unrecoverable fault	Refer to Table 8-2 to 8-4 for troubleshooting.

Table 8-1 Troubleshooting based on LED Lights

8.2 Common Fault and Troubleshooting

DANGER!

Please disconnect the inverter from AC grid and PV modules before opening the equipment. Make sure hazardous high voltage and energy inside the equipment has been discharged.

Do not operate or maintain the inverter until at least 10 minutes after disconnecting all sources of DC and AC.

The inverter will be shut down automatically if the PV power generation system fails, such as output short circuit, grid overvoltage/under voltage, grid over frequency/under frequency, high environmental temperature or internal malfunction of the machine. The fault information will be displayed on the APP interface.

The troubles can be identified and resolved based on the definitions, possible causes and recommended solutions listed in the following table. There are generally 3 types of fault: warning, protection and hardware fault. Proper analysis is recommended before contacting after-sales service.

Fault Codes	Solutions
CommErr	Definition: Communication inside inverter fails
	Possible causes: Terminal block connecters of internal communication wires have poor contact
	Recommended solutions: 1. Observe for 5 minutes and see whether the alarm will be eliminated automatically; 2. Switch off 3-phase working power supply and then reboot the system; 3. Contact after-sales service personnel.
IntFanErr	Recommended solutions: 1. Observe for 5 minutes and see whether the alarm will be eliminated automatically; 2. Check for foreign objects on radiator; 3. Switch off 3-phase work power supply and then reboot the system; 4. Contact after-sales service personnel.
Warn0030 (EepromErr)	Definition: Internal alarm
	Recommended solutions: 1. Observe for 5 minutes and see whether the alarm will be eliminated automatically; 2. Contact after-sales service personnel.
Warn0040 (DC SPD fault)	Recommended solutions: 1. Observe for 5 minutes and see whether the alarm will be eliminated automatically; 2. Check if DC SPD is damaged; 3. Contact after-sales service personnel.
Warn0050 (TempSensorErr)	Recommended solutions: 1. Observe temperature display; 2. Switch off 3-phase working power supply and then reboot the system; 3. Contact after-sales service personnel.

Table 8-2 Troubleshooting list of warning faults

Fault Codes	Solutions
Protect0090 (Bus over voltage)	1. Turn off DC switches and external AC breaker. 2. Wait for 1 minute between OFF and ON for all energy to discharge. 3. If inverter cannot clear fault, replace inverter.
Protect0070 (Bus under voltage)	1. Turn off DC switches and external AC breaker. 2. Wait for 1 minute between OFF and ON for all energy to discharge. 3. If inverter cannot clear fault, replace inverter.
GridV.OutLim	1. Make sure the grid connection is good. 2. Restart the inverter again. 3. If inverter cannot clear fault, replace inverter.
Protect0020 (Grid relay error)	1. Turn off DC switches and external AC breaker. 2. Wait for 1 minute between OFF and ON for all energy to discharge. 3. If inverter cannot clear fault, replace inverter.
TempOver (Over-temperature protection)	1. Confirm that external ambient temperature is within the specified range of operating temperature; 2. Check whether radiator is covered by other objects; 3. Check whether the location of installation is appropriate or not; 4. Observe for 30 minutes and see whether the alarm will be eliminated automatically; 5. Contact after-sales service personnel.
Protect0170 (DCI high)	1. Raise limit of DCImax (for example, 400mA) to allow inverter more room to adjust in transient condition to cope with imbalance of impedance and voltage between Grid phases 2. After raising limit, if inverter cannot clear fault, replace inverter.
IsolationErr (Insulation resistance low)	1. Check wires of PV and ground: 2. Restart to see if inverter can clear fault. 3. Contact after-sales service personnel.
GFCIErr (leakage current high)	1. Check wires of PV and ground: 2. Restart to see if inverter can clear fault. 3. Contact after-sales service personnel.
Protect0150 (Mini MCU Fault)	1. Turn off DC switches and external AC breaker. 2. Wait for 1 minute between OFF and ON for all energy to discharge. 3. If inverter cannot clear fault, replace inverter.
Protect0100 (The sensor fault of leakage current)	1. Turn off DC switches and external AC breaker. 2. Wait for 1 minute between OFF and ON for all energy to discharge. 3. If inverter cannot clear fault, contact after-sales service personnel.

Reverse electrode PVx (x=6/8)	1. Turn DC Switch OFF 2. Use meter to find out which PV string is connected in reverse polarity. Correct PV string connection if necessary. 3. Contact after-sales service personnel.
High PVx Input voltage (x=6/8)	1. Check if its input voltage is within 1100V; 2. Turn off DC switches and external AC breaker. 3. Wait for 1 minute between OFF and ON for all energy to discharge. 4. Contact after-sales service personnel.
Protect0230 (Inverter open-loop self-test fault)	1. Turn off DC switches and external AC breaker. 2. Wait for 1 minute between OFF and ON for all energy to discharge. 3. If inverter cannot clear fault, replace inverter.

Table 8-3 Troubleshooting list of Protection faults

Fault Codes	Solutions
Fault 0010~0150	1. Turn off DC switches and external AC breaker. 2. Wait for 1 minute between OFF and ON for all energy to discharge. 3. If inverter cannot clear fault, replace inverter.

Table 8-4 Troubleshooting list of hardware faults

9 Technical Data

Model (SCA xx)	SCA15 K-T-SA	SCA20 K-T-SA	SCA25 K-T-SA	25K-TM-EU	30K-T-EU	33K-T-EU	36K-T-EU	37.5K-T-EU	40K-T-EU
DC Input									
Max DC input voltage	1100Vdc								
MPPT voltage range	200 - 1000Vdc								
Start Voltage/Power	250Vdc / 80W								
Rated DC Voltage	350Vdc			600Vdc					
Number of MPPTs	4			3			4		
Number of input strings per MPPT	2			2			2		
Max operating PV input Current	30A								
Max input short current (ISC) Per MPPT	45A								
DC Disconnection Type	Integrated Switch								
AC Output									
Norminal AC Power	15kW	20kW	25KW	25kW	30 kW	33 kW	36 kW	37.5kW	40kW
Maximum AC output active power	16.5kW	22kW	25kW	27.5kW	33kW	36.3kW	39.6kW	41.3kW	44kW
Rated AC voltage	208V/220V/240V			380V / 400V					
AC voltage range	150~300V			277 - 520V					

Grid Connection Type	3Φ (N) / PE								
Maximum AC current	43.3A	57.8A	65.6A	41.7A	50A	55A	60A	62.5A	66.7A
Grid Frequency	50/60Hz								
Grid Frequency Range	45-55 / 55-65Hz								
Power factor @ rated power	>0.99 (±0.8, adjustable)								
Current THD	<3%								
AC disconnect type	-								
System parameters									
Topology	Transformer-less								
Max. Efficiency	97.80%	97.82%	97.84%	98.06%	98.15%	98.76%	98.73%	98.59%	98.45%
Euro Efficiency	97.50%			98.00%					
Night Consumption	<5W								
Environmental parameters									
Ingress Protection	IP66								
Cooling Method	Natural Convection								
Operating temperature	-25℃ ~ +60℃								
Operating humidity	0-100%, Non-condensing								
Operating altitude	4000m								
Display and communication									
display	LED + APP (Bluetooth)								

Communication	RS485/WiFi (standard) & 4G(Optional)						
Structural parameters							
Dimensions (WxHxD) (mm)	684*488*270mm						
Weight (kg)	37kg	28kg	30kg	30kg	35kg	35kg	35kg
Safety							
Safety Standard	IEC/EN 62109-1/2						
EMC Standard	IEC/EN 61000-6-1/2/3/4, IEC/EN 62920, PORTARIA Nº 140						

Table 9-1 Datasheet

10 Quality Assurance

10.1   Liability Exemption

1.   Damage during transportation;
2.   Operate in an environment beyond the provisions of this manual;
3.   Incorrect or inappropriate use of the product (including installation and use);
4.   Unauthorized modification of the product or provided software;
5.   Ignore the safety warnings and relevant statutory safety regulations contained in the product and documentation;
6.   Unforeseen disasters or irresistible accidents occur.

10.2   Warranty Clauses

1.   For products that fail during the warranty period, our company will repair or replace new products free of charge;
2.   Customer shall present the invoice of the product and date of purchase. At the same time, the trademark on the product should be clearly visible, otherwise we have rights to refuse quality assurance.
3.   The unqualified product under replacement should be returned to our company;
4.   It is necessary to provide a reasonable time for the company to overhaul the equipment.
5.   For more warranty terms, refer to the applicable standard warranty policy in place at time of purchase

11 Recycling

Distributors or installers should contact the inverter manufacturer after removing the inverter from the photovoltaic module and follow the instructions.

The inverter cannot be disposed of as household waste.

When the inverter's service life expires, please dispose of it in accordance with the electrical waste disposal laws applicable to the installation location.

You can contact the inverter manufacturer or distributor for handling.

12 Appendix

12.1 Appendix A: Figure list

12.2 Appendix B: Table list

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