

User Manual for PV Grid-tied Inverter

Applicable to: SCA75K-T-EU



Shanghai CHINT Power Systems Co., Ltd.

Rev:1.3 Date: June, 2025 Doc No.: 9.0020.0817A0

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0 Preface

Before starting installation and operation



This manual contains important information about product installation and safe operation, please read it carefully before use.

Thank you for choosing a photovoltaic Grid-tied inverter for Chint Power Systems (hereinafter referred to as "PV Inverter" or "Inverter" in this manual). Relying on innovative design and perfect quality control, Chint power system Grid-tied photovoltaic inverters have high reliable quality and are widely used in high-standard photovoltaic Grid-tied systems.

If you encounter any problems during installation or operation, please refer to this manual first. The instructions in it can solve most of the problems for you.

If the problem persists, you can contact your local dealer or representative again.

Please keep this manual in a safe place for easy reference at any time.

1 IMPORTANT SAFETY INSTRUCTIONS (SAVE THESE INSTRUCTIONS)

PLEASE READ THIS USER MANUAL CAREFULLY BEFORE THE INSTALLATION AND OPERATION OF THIS PV INVERTER. CHINT 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



DANGER!

DANGER indicates a situation that has a high degree of potential hazard which may cause death or serious injury.



WARNING!

Indicates that there is a moderate potential hazard, which may cause death or serious injury if not avoided.



CAUTION!

Indicates that there is a low-level potential hazard, which may cause moderate or light injury to personnel.



NOTICE!

Indicates that there is a potential risk, which may cause the equipment to fail to operate normally or cause property damage.



IMPORTANT!

Indicates additional information in the manual, emphasizes and supplements the content, and may also provide tips or tricks for optimizing the use of the product, which can help you solve a problem or save your time.

1.2 Markings on the Product

**Risk of Electric Shock:**

This mark indicates that there is high voltage inside the product and you must follow the instructions in the user manual when operating

**High Temperature DANGER**

This logo indicates that this product complies with international safety standards, but it will generate heat during operation, so please do not touch the heat sink and the metal surface of the inverter during the operation of the inverter.

**Dangerous Energy:**

Pay attention to the danger of electric shock, please release the internal energy of the device according to the stipulated time.

**Protection Grounding:**

This mark indicates that this is a Protection ground (PE) terminal, which needs to be firmly grounded to ensure the safety of operators.

**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 MARK:**

This inverter has passed CE Certification.



For more details please see the user manual.
Attention: check the equipment manual for the proper way to carry out the electrical installation and if there is a need for additional electrical protection devices.

1.3 Safety Precautions of Operating the PV Inverter

	<p>DANGER!</p> <p>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!</p> <p>Generally, you must cut off all connections to the inverter for at least 5 minutes before you can maintain and operate the equipment.</p>
	<p>WARNING!</p> <p>All operations and connections please professional engineering and technical personnel!</p> <p>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.</p>
	<p>CAUTION!</p> <p>Please check the wall bracket again before hanging up to make sure that the wall bracket is firmly on the supporting surface.</p> <p>For continued protection against risk of fire, replace only with same type and ratings of fuse. Disconnect supply before changing fuse.</p>
	<p>NOTICE!</p> <p>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.</p>
	<p>NOTICE!</p> <p>After unpacking the inverter, keep all its interfaces sealed always, before and after connecting wires.</p>
	<p>NOTICE!</p> <p>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, in order to ensure the long-term service life of the inverter.</p>
	<p>NOTICE!</p> <p>External protection device required: During the installation of the inverter, it is necessary to install a circuit breaker on the AC side as an external protection device. The current carrying capacity of the circuit breaker must be 1.2 to 1.5 times the maximum output current of the inverter.</p>

The use of rapid shutdown methods, systems, or devices in the DC circuit is strongly recommended to ensure safety in fire-fighting situations. The inverter continuously monitors the status of the input connection in real-time. When an electrical arc occurs at the input connection (photovoltaic string), the inverter immediately shuts down, stops power generation, and enters standby mode, preventing energy from the photovoltaic panels from being transmitted to the inverter.

**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

The inverters are suitable for various commercial and large-scale photovoltaic Grid-tied systems. Photovoltaic systems generally consist of solar cell components (PV Modules), grid-tied inverters and AC power distribution equipment (Figure 2-1). The solar energy is converted into DC power by PV Modules, then the DC power is converted into AC power with the same frequency and phase as the grid through the Grid-tied inverter. The whole or part of the power is supplied to the local load and the remaining power will be fed to the grid.

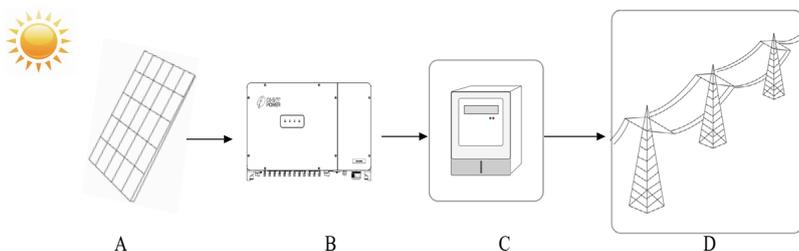


Fig. 2-1 Grid-tied PV Power Generation System

Item	Name	Description
A	PV Modules	Monocrystalline, polycrystalline silicon components, thin film batteries that do not require grounding
B	PV Inverter	SCA75K-T-EU
C	AC power distribution equipment	Device such as AC circuit breaker, AC combiner box and metering device
D	Public Grid	TT, TN, IT System

Table 2-1 Components of Grid-tied PV system

2.2 Product Dimensions and Main Components

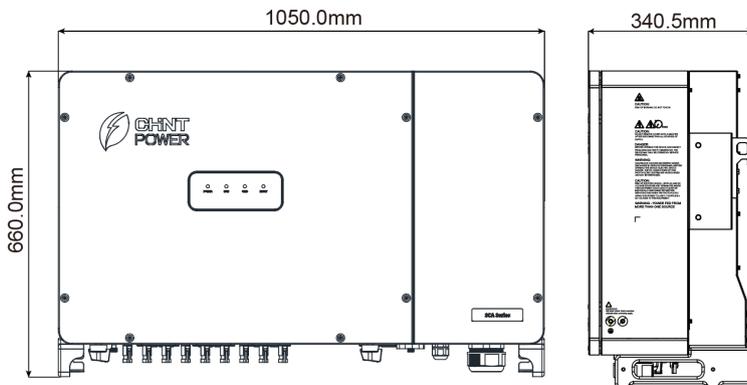


Fig. 2-2 Inverter Dimensions

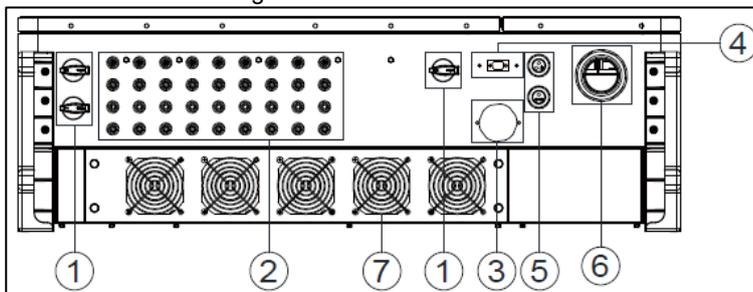


Fig. 2-3 Main components

No.	Name	Function
1	DC switch	Turn on/off DC power supply
2	PV strings connectors	Insert male/female connectors
3	Vent valve	Balance pressure difference
4	LINKIT communication interface	Insert LINKIT module
5	RS485 communication interface	RS485 communication line outlet port
6	AC output connector	AC cable outlet port
7	Fans	Cooling the inverter

Table 2-2 Product Components

2.3 LED Display Panel



Fig. 2-4 LED Display Panel

The specific meaning of each indicator status is shown in table 2-3.

LED Logo	Name	Status	Meaning
POWER (Green)	Power Supply Indicator Light	On	Power on (control board starts to work)
		Off	No working power
RUN (Green)	Grid Operation Indicator Light	On	Grid-tied power generation
		Flash	Derating operation status (on for 0.5s, off for 1.6s)
		Off	In other running state or no working power
GRID (Green)	Grid Status Indicator Light	On	Grid is normal
		Flash	Grid is abnormal (on for 0.5s, off for 1.6s)
		Off	No working power
FAULT (Red)	Fault Status Indicator Light	On	Permanent failure
		Slow Flash	Alarm failure (on for 0.5s, off for 2s)
		Fast Flash	General failure (on for 0.5s, off for 0.5s)
		Off	No fault or no working power
ALL	Upgrade status	Flash	Upgrade firmware (on for 0.05s, off for 0.3s)

Table 2-3 LED Indicators and their indications

2.4 Product Circuit Structure Design

Refer to the pictures below, you can see the schematic diagram of the main circuit of the CHINT inverter. 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 is added.

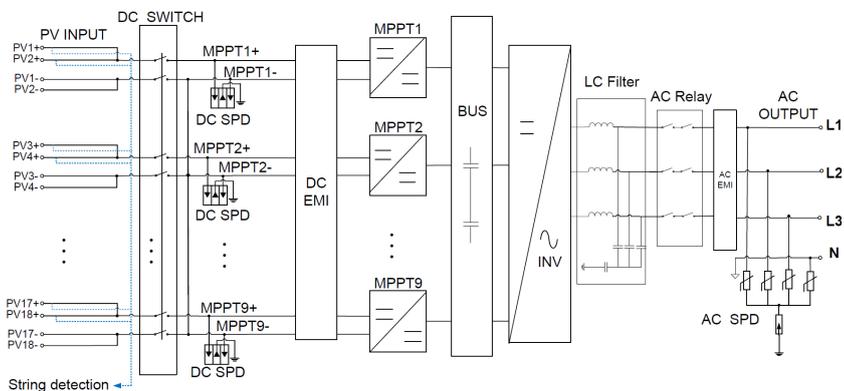


Fig. 2-5 Main circuit diagram

2.5 Product Protection Functions

- Input polarity reverse protection
- 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 overcurrent protection
- Ambient temperature monitoring
- Module temperature monitoring
- DC arc detection and interruption

3 Mechanical Installation

3.1 Storage before Unpacking

If the inverter is not immediately installed upon arrival, the following requirements should be met when storing the inverter:

- Do not remove the outer packing of the inverter.
- Store it in a clean, dry place to prevent dust and moisture intrusion.
- During the storage period, regular inspections are necessary (it is recommended to check at least once every three months). If packing damage is detected, replace the packing materials promptly.
- Keep the packing away from corrosive substances to avoid damaging the inverter casing.
- If the inverter has been stored for more than 1 year, perform a comprehensive inspection and test by professional personnel before putting it into operation.
- Do not stack multiple inverters beyond the "Stacking Limit" indicated on the outer packing.

Note: Any damage to the inverter caused by improper storage is not covered by the warranty.

3.2 Unpacking for Inspection

The following content is the installation instructions of the inverter, please read carefully and follow the steps to install this product. Before installation, please check whether the following items are included in the box.

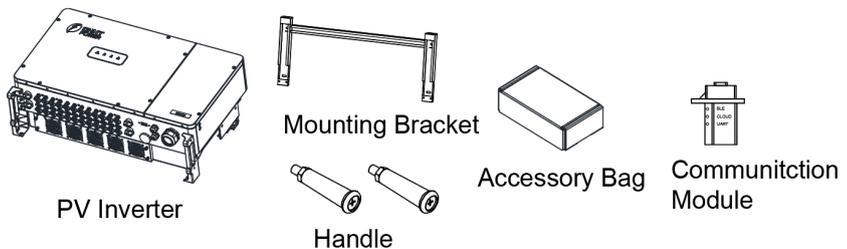


Fig. 3-1 Scope of Supply

No.	Image	Description	QTY	Function
1		Document	1	Quick guide
2		M10 Nut	8	4 for AC terminal 4 for mounting bracket

No.	Image	Description	QTY	Function
3		M10 Spring washer	4	For AC terminal
4		M10 Flat washer	4	For AC terminal
5		Screw M10X50	4	Fixing mounting bracket
6		Screw M6X16	4	Fixing inverter & Grounding
7		6-pin signal connector	1	RS485 communication
8		Hexagon socket head cap screw M6X18	1	Fixing cover (spare)
9		Unlock tool for DC connector	1	Remove quick connector
10		DC input male connector & female connector	36	75 Kw: 18+ & 18-

Table 3-1 Packing list

3.3 Installation Precautions

- 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.
- 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.
- 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.
- The bottom power and communication interfaces of the inverter should not bear any weight, and should not be directly in contact with the ground.
- Static electricity may damage the electronic components of the inverter, so anti-static measures should be taken during the replacement or installation process.
- Each inverter must be equipped with an AC circuit breaker and should not be shared among multiple inverters.
- Under no circumstances should the device structure, installation sequence, or any other aspect be modified without the permission of the manufacturer.

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

3.4 Installation Requirements

3.4.1 Installation Method

Before installing the inverter, please confirm whether the supporting structure can bear the weight of the inverter, and install the inverter according to the following instructions:

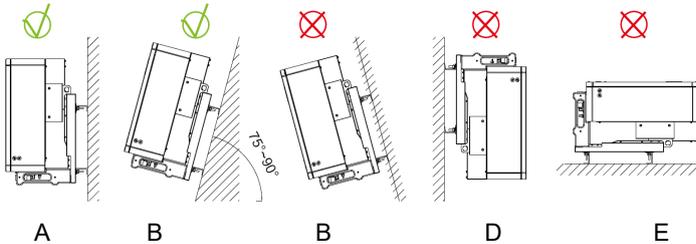


Fig. 3-2 Inverter rack mounting method

No.	Explanation
A	If the installation location allows, install the inverter vertically;
B	If the vertical installation cannot be guaranteed, it may be tilted backward 0 to 15 degrees from vertical direction;
C	The inverter does not allow forward installation;

D	The inverter is not allowed to be installed backwards;
	The inverter is not allowed to be installed horizontally;

3.4.2 Installation Environment Requirements

If installation environment allows, avoiding direct sunlight, rain and snow can reduce power derating and extend the life of the inverter. It is recommended that the inverter is installed under a roof or sunshade. However, installation outdoors with direct sunlight, rain and snow doesn't impact warranty.

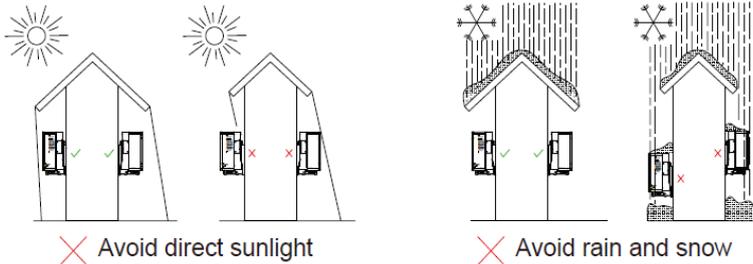


Fig. 3-3 Installation Environment Requirements

3.4.3 Installation Space Requirements

The distance between the inverter and surrounding objects should meet the following conditions:

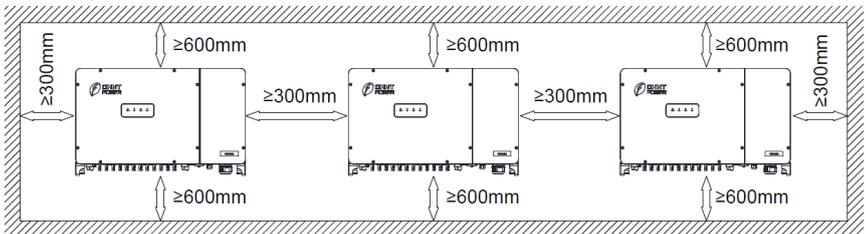


Fig. 3-4 Installation space requirements

NOTICE!



The distance between two parallel inverters must be ≥ 300 mm, and good ventilation should be ensured. If the surroundings are relatively closed, please increase this distance Appropriately.

3.4.4 Installation Scenarios

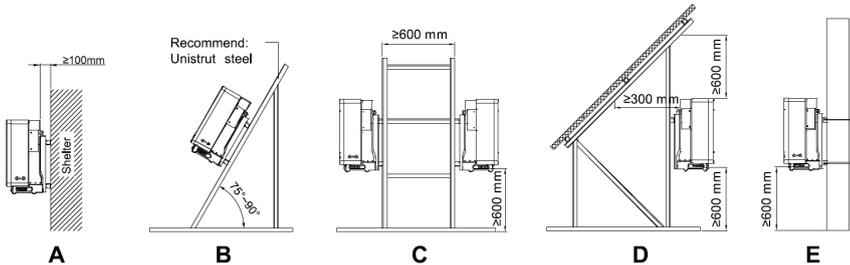


Fig. 3-5 Installation Scenarios

- A Keep a distance between the inverter and the shade on its back to ensure good ventilation.
- B The inverter can lean back $\leq 15^\circ$ while its back shall not be shielded to ensure good ventilation.
- C Two inverters can be installed back to back, and proper distance shall be kept to ensure good ventilation.
- D The inverter can be installed under the panel, while its back and top shall not be blocked to ensure good ventilation.
- E The inverter can be installed on a single column holding rod and shall be checked to confirm a secure installation.

3.5 Installation Procedures

1. Mark the hole positions on the mounting structure according to the hole positions and sizes of the mounting bracket.

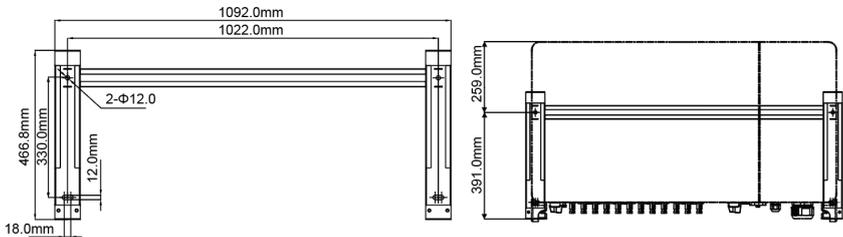


Fig. 3-6 Mark mounting holes

2. Drill holes with a $\Phi 12\text{mm}$ drill at the marked position, and then fix the bracket④ with the equipped M10X50 screws ⑤, M10 flat washer③, M10 spring washer ②, and M10 nuts ①.
Tools: Electric drill (with $\Phi 12\text{mm}$ drill bit), No. 17 wrench, torque: 22.6 N.m.

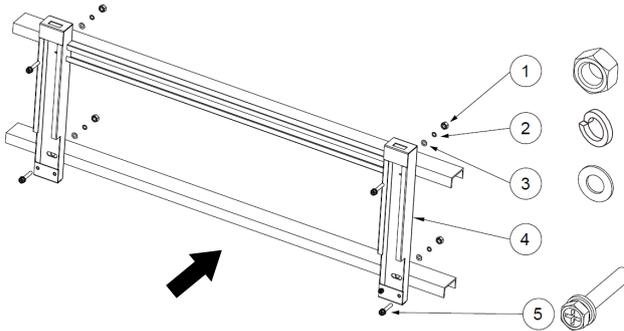


Fig. 3-7 Fixed mounting bracket

CAUTION!



To prevent dust from entering the respiratory system or getting into the eyes during drilling, operators should wear protective goggles and dust masks.

3. Install the inverter on the mounting bracket. There are two installation methods.

- **Manual hanging:** Two people hold the handles; two people hold the bottom surface and side holders. Hang the inverter on the mounting bracket together by four people.

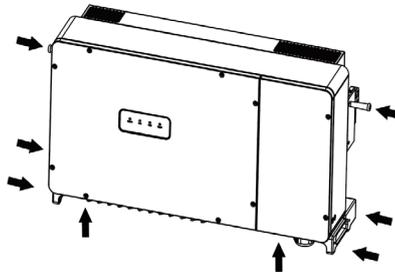


Fig. 3-8 Hanging the inverter manually

- **Hoisting mounting:** Tighten two M10 lifting eyebolts (prepared by customer) into screw holes on the both sides of inverter, and use a sling or a hanging rod (inserted through two lifting eyebolts) to lift the inverter onto the mounting bracket. The angle between the two slings must be less than 90 degrees.

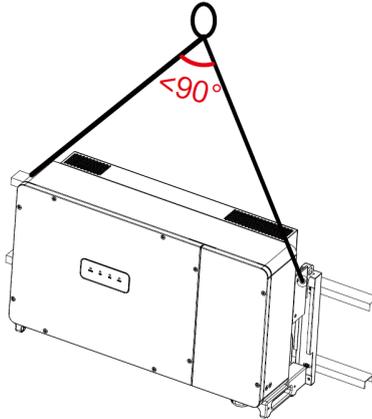


Fig. 3-9 Hoisting the inverter

CAUTION!

The host of the inverter weighs Approximately 86 kg (≈ 189.6 lbs.), Please check the mounting bracket again before hanging up, to confirm that the mounting bracket is firmly on the supporting surface.

4. Use two M6X16 screws to fix inverter on mounting bracket. Tool: No.10 hexagon socket wrench, torque value: 5.9 N.m.

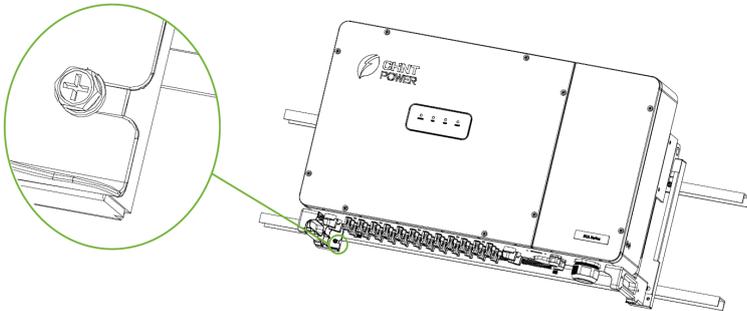


Fig. 3-10 Inverter fixed on backplane bracket

4 Electrical Connection

**DANGER!**

- The cables shall be connected in accordance with the National Electrical Code and all other Applicable local codes or jurisdictions.
- Before connecting all cables, ensure the equipment is free from any damage. Otherwise, it may cause electric shock or fire.
- High-temperature environments may result in insulation aging or damage of cables. The distance between the cables and heat-generating devices or the surrounding area of the heat source should be at least 30mm.
- Before performing any electrical connection, make sure both DC and AC switches are OFF. Otherwise, fatal injury can occur due to high voltage.

**NOTICE:**

- Please read carefully and refer to Chapter 8 Technical Data before wiring.
 - Pay attention to watertight during construction.
 - Cables of the same type should be bundled together, and different types of cables should be arranged separately, with no intertwining or crossing allowed.
 - Close covers of AC & DC wire box in time after wiring process to avoid water condensation in wire box.
 - Before the first power-on operation, or before running it again after long time (6-12 months) shutdown, check if any water-sensitive label in the bottom left corner of AC & DC wire box and that on the capacitive plate turns red. Never power on the inverter once any label turns red.
 - Never damage or tamper with vent valve.
-

4.1 Internal and external interface

Refer to the figures below, you can see the internal and external interface of the all the inverter modules.

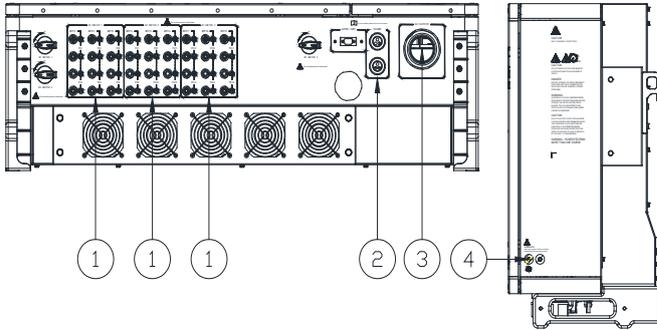


Fig. 4-1 External Interface

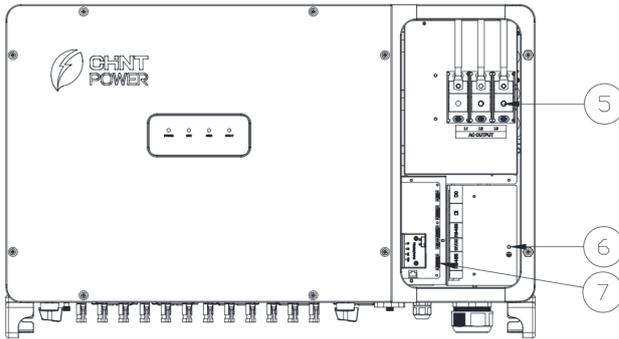


Fig. 4-2 Internal Wiring Point

No.	Description	No.	Description
1	DC Input quick plug terminal	5	AC Output terminal block
2	RS485 communication interface	6	Internal ground stud
3	AC Output wiring gland	7	RS485 communication terminal P170 (for external communication)
4	External ground screw hole		

4.2 Cable Specifications

The inverter external cable must be equipped with the specifications in the table below:

Name	Type	O.D. (Unit: mm)	Conductor cross-sectional area (CSA) (unit: mm ²)
DC Cable	PV cables that meet 1500V standard	5.0~7.2*	4~6
Grounding cable	Outdoor copper core wire	/	Phase wire diameter/2
AC cable	Outdoor four-core copper/ aluminum wire	40~46	<ul style="list-style-type: none"> • L1, L2, L3, (N): <ul style="list-style-type: none"> ○ Copper core cable: 95~120 ○ Aluminum alloy cable: 95~120 • PE: CSA of phase wire conductor / 2
	Outdoor three-core copper/ aluminum wire		
Communication cable	Communication cable UTP CAT-5e	4.5~6	3 x 0.2~0.75
	Shielded twisted pair		3 x 1~1.5
Note: *For selection exceeds the given range, please consult CHINT for feasibility.			

Table 4-1 Cable specifications

4.3 Tools and Torque

Tools and torque are as follows:

No.	Tools	Usage	Torque (Unit: N.m)
1.	5mm hex wrench	Tighten upper cover of combiner box	2.9
2.	No.16 hexagon socket wrench	Tighten AC output terminals	13.7
3.	No.10 hexagon socket wrench	Tighten grounding terminals	5.9
4.	1.5mm flat-blade screwdriver	Tighten RS485 communication terminals	0.2
5.	Diagonal pliers	Making cables	-
6.	Wire stripper	Making cables	-
7.	Crimping Tool	Making cables	-

Table 4-2 Tools & Torque required for wiring

4.4 AC and Ground Connection

Connect the PV inverter to the AC grid through the AC output cable and grounding cable.

4.4.1 Grounding

The grounding wire of the inverter has 2 ways to connect:

- Internal Grounding: The inverter has an internal grounding pole located on the right side of the AC busbar, as shown in Fig. 4-4 on the left
- External Grounding: the external grounding hole is located at the bottom of the device Next to the AC port on the right.

Note: After wiring, external grounding position needs to be coated with glue or paint, to improve corrosion resistance).

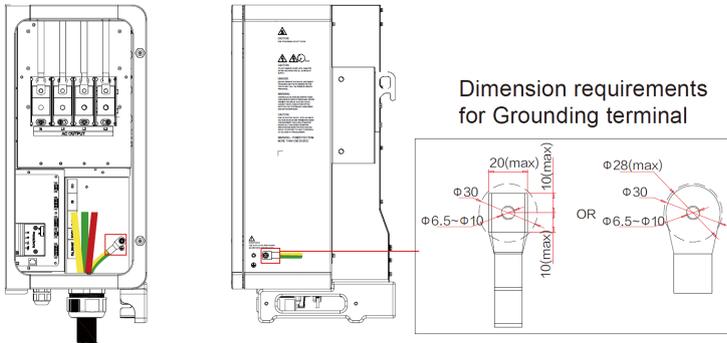


Fig. 4-3 Grounding Method

NOTICE!

- Depending on the grounding method, the wiring method is different.
 - After the internal grounding wire is connected, the compression nut of the cable fastening head must be tightened.
 - After external grounding, the external grounding position needs to be coated with glue or paint, to improve corrosion resistance.
- Other sizes of grounding cables that meet local standards & safety regulations can also be used for grounding connections. But Chint Power shall not be liable for any damage caused.



4.4.2 AC Cable Connection

1. Loosen the 2 captive screws fixing the upper cover of the combiner box with a 5mm hex wrench, and open the upper cover.

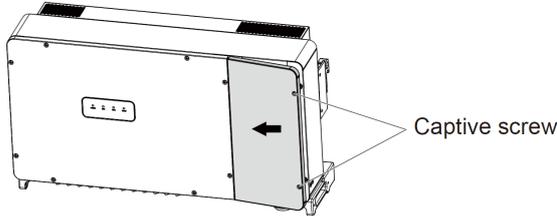


Fig. 4-4 Open upper cover of combiner box

2. Loosen the locking cap from the AC output watertight cable connector at the bottom of the inverter and remove watertight plug from the locking cap as required.
3. Pass the AC cable through the locking cap and the AC output connector.
4. Strip an appropriate length of the jacket and insulation layer from the AC output cable. Insert the exposed core wires into crimp area of compression lugs, wrap the crimp areas with heat shrink tubing or insulation tape, and crimp them using hydraulic plier.

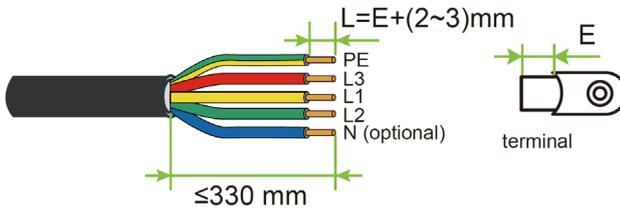


Fig. 4-5 Crimp cables

NOTICE!



Use copper compression lugs to match L1, L2, L3 copper wires.
 Use Cu-Al bimetallic compression lug or aluminum compression lugs to match L1, L2, L3 aluminum wires.
 No washer is required, just select different compression lugs according to different cable materials.

5. Connect compression lugs to L1, L2, L3, N, and PE wiring studs on the AC terminal block, tighten them with M10 flat washers, spring washers and

nuts. (the inverter N wire is optional).

- Adjust cable length, and then retighten the locking cap.

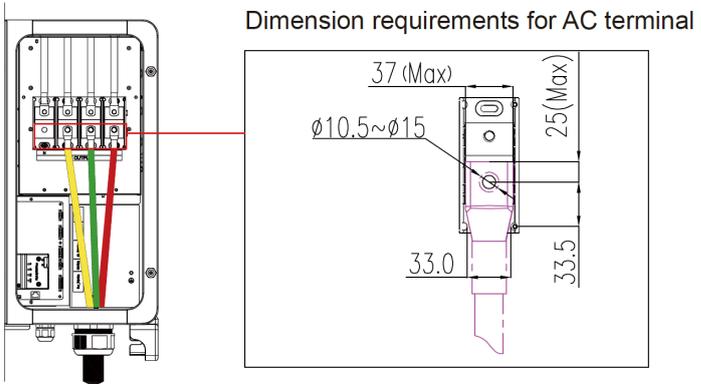


Fig. 4-6 AC Output Line Connection

AC output (L1/L2/L3/N) cables of every inverter are connected to AC grid through the 4 pole AC breaker to make sure the inverter can be safely disconnected from AC grid. Please choose the AC breaker referring to the Table 3-4:

Table 4-3 Specification of AC Breaker Selection

Inverter	Inverter AC breaker current parameter
SCA75K-T-EU	200A



NOTICE!

Leakage current > 1a or without leakage current function.

4.5 DC Connection

4.5.1 PV Module Configuration

In order to get the best results from your PV inverter, please follow the following guidelines:

1. Please refer to Fig. 4-7 to confirm the DC input configuration and ensure that the maximum open circuit voltage of each photovoltaic module is lower than 1100 Vdc under any conditions (considering the negative temperature coefficient of the battery panel, special attention should be paid to the lowest ambient temperature. The open circuit voltage of the photovoltaic array is lower than 1100V);
2. Before DC connection, it is necessary to make sure that the photovoltaic modules of the same input area should be the same, including the same model, the same number of panels, the same inclination angle, and the same azimuth;
3. The short-circuit current of each string is less than 30A (less than 26A for 110kw series).

4.5.2 DC Connection Process

Before connecting the PV module cable to the inverter:

- i. Use a multi-meter to measure both ends of the photovoltaic module cable to determine the positive and negative poles;
- ii. Connect the positive (+) cable of the photovoltaic module to the positive (+) input terminal of the inverter;
- iii. Connect the negative (-) cable of the photovoltaic module to the negative (-) input terminal of the inverter;

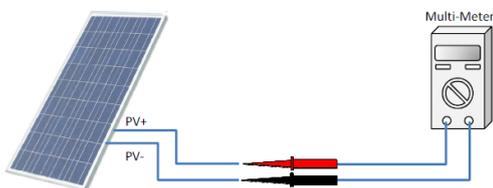


Fig. 4-7 DC Cable Polarity Detection

**NOTE:**

To avoid reverse connection of the cables, please use a multimeter to check the positive and negative polarity of the DC input cables.

Perform cable connection as the following steps:

1. Remove an Appropriate length of the jacket and insulation layer from the DC input cable of PV strings.

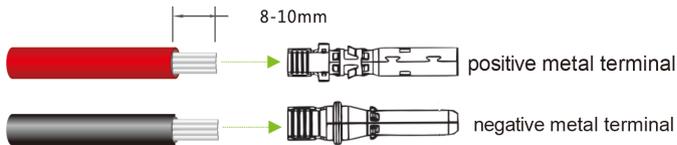


Fig. 4-8 DC Wire stripping

2. Insert the exposed areas of the positive and negative power cables into the metal terminals of the male and female connectors respectively and crimp them using a crimping tool (Amphenol H4TC0002 or Devalan D4ZCY001).

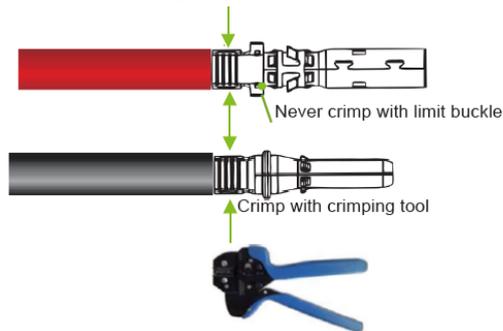


Fig. 4-9 Crimp power cables

NOTICE!

The DC input connectors and metal terminals must be supplied randomly, or the same model of the same manufacturer. Otherwise, poor contact may occur, affecting normal use.

3. Insert the crimped positive and negative power cables into the corresponding male and female connectors until a "click" sound is heard.

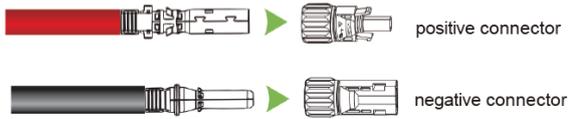


Fig. 4-10 Insert power cables to connectors

NOTICE!

- The grounding wire must be connected well.
- When PV array is exposed to light, it supplies a DC voltage to inverter, so DC switch should be in the OFF state.

4. Measure the cable ends of PV strings using a multi-meter. Ensure that the polarities of the DC input power cables are correct.

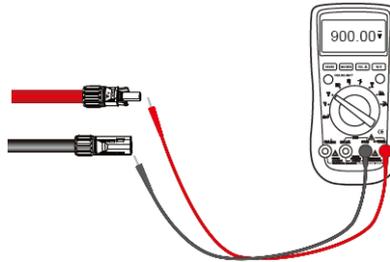


Fig. 4-11 Measure the cable ends of PV strings

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

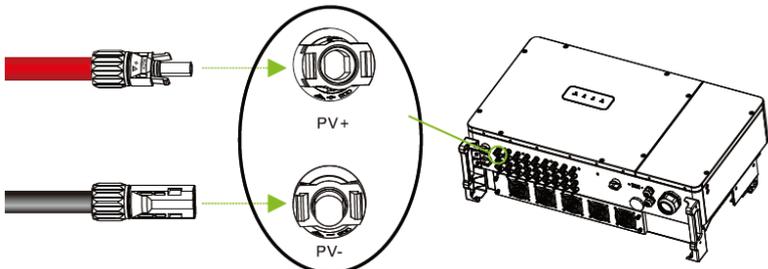


Fig. 4-12 Insert the positive and negative connectors

**NOTICE!**

Make marks on all positive and negative power cables to identify their

correct strings (such as PV1+, PV1-, PV2+, PV2-). Make sure all strings are connected to corresponding ports according to port names printed on the device, to avoid wrong connection. Otherwise, it may result in device damages or property loss.

4.6 Communication Connection

4.6.1 RS485 Wiring

Currently, RS485, Wi-Fi and PLC communication methods are supported, among which RS485 and Wi-Fi are standard and PLC is optional.

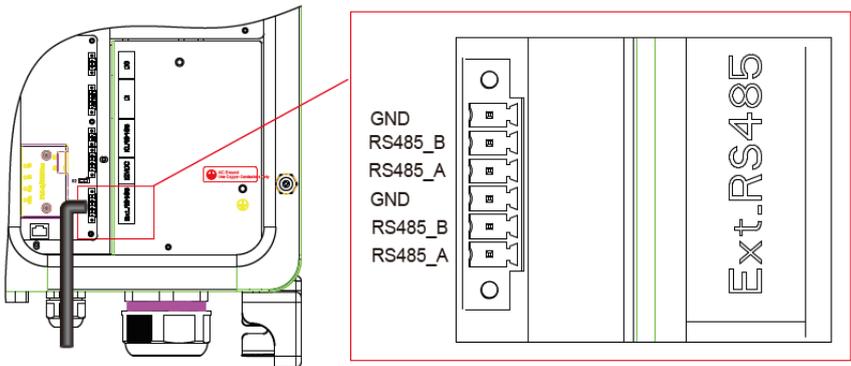
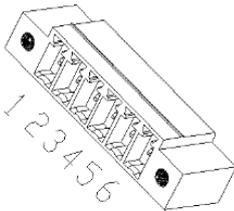
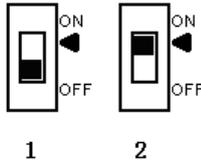


Fig. 4-13 Communication Board

Name	Picture	Configuration Description	
RS485 port (6pin connector) P170		1 -- 485GND	4 -- GND
		2 -- RS485-	5 -- RS485-
		3 -- RS485+	6 -- RS485+

RS485

 Communication 120Ω
 Terminal resistance
 selection switch s2

 1 -- Terminal resistance prohibited
 2 -- Use of terminal resistor

4.6.2 RS485 Communication Network

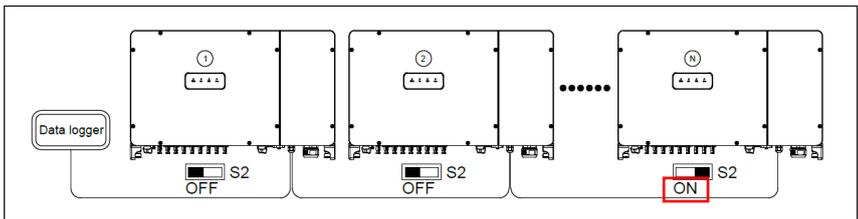


Fig. 4-14 RS485 Communication Network in Daisy chain

When the number of inverters in the network is large and the last inverter is more than 200m and less than 1000m from data logger, in order to improve the communication quality, it is recommended to turn the DIP switch S2 on, which is the 120ohm terminal resistance on the communication board of the terminal inverter, and keep DIP switch S2 of other inverters as OFF.

NOTE: If there is only one inverter and it's more than 200m and less than 1000m distant from data logger, the Modbus termination switch should also be set to ON, otherwise, it can be set as OFF.

WARNING!



- Make sure all DC and AC power has been disconnected before opening the wire box and ensure that hazardous high voltage and power has been discharged to avoid risk of electric shock.
- Wait at least 5 minutes before opening the wire box.

The detailed steps to perform RS485 wiring are as below:

1. Open the wire box.
2. Loosen the compression nut of tightening head and remove stoppers as required by cable thickness.

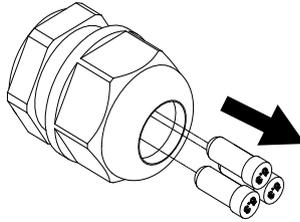
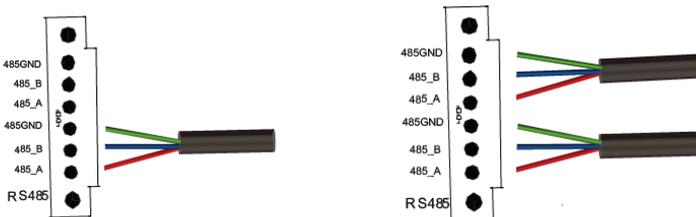


Fig. 4-15 Remove stopper

3. Pass communication cables through entrance hole into the wire box.
4. Remove an Appropriate length of the jacket and insulation layer from the communication cable. Insert the exposed areas into 6-pin terminal holes respectively, ensuring correct polarity and using a shielded twisted pair cable, and then fasten them with screwdriver. At last, insert the crimped 6-pin terminal onto the corresponding RS485 connectors on the communication board as shown in Fig. 4-16.

Note: The shield of the individual cables must be open (not connected to ground) on one end – the other end of the shield must be grounded.



RS485 communication of single inverter

RS485 Communication Network of multiple inverters

Fig. 4-16 RS485 wiring of single inverter & RS485 network of multiple inverters

5. Adjust the cable length and then tighten the compression nut of tightening head. Note: Conduit and tightening head must be sealed and water-tight to

maintain its protection rating.

After completing all the wiring steps, fix the 2 screws on the upper cover of the combiner box with a 5mm hex wrench, and close the upper cover.

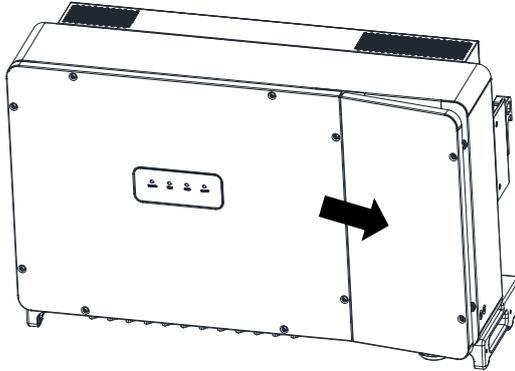


Fig. 4-17 Close upper cover of wire box

IMPORTANT!



- It is important to use hand tools (e.g. hex wrench) instead of power drivers or other types of screw drivers.
- During installation, it is recommended the cover is in alignment with balanced force to avoid thread damage.
- Partially engage the screws into the threaded inserts before tightening.

4.6.3 Install LINKIT

1. Remove two screws on the LINKIT cover, and rotate the cover to its opposite side.
2. Fasten LINKIT module onto LINKIT port with its original two screws. Note: indicators face towards front cover of the inverter.

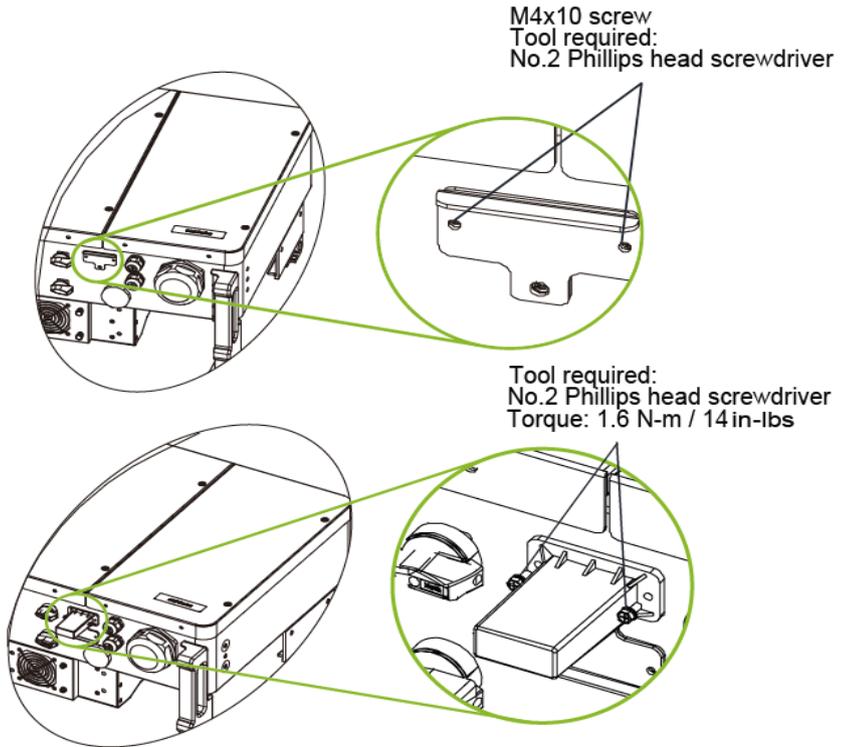


Fig. 4-18 Install the LINKIT module

4.7 Zero Export for Single Inverter

Zero Export is a standard function of these inverters, which can be enabled or disabled based on user requirements. Please connect correct ports of the meter to CT (Current Transformer), RS485 ports of inverter, Grid and install CT onto Grid in accordance with the following wiring diagrams.

Follow the diagrams below to perform the Zero Export wiring for single inverter:

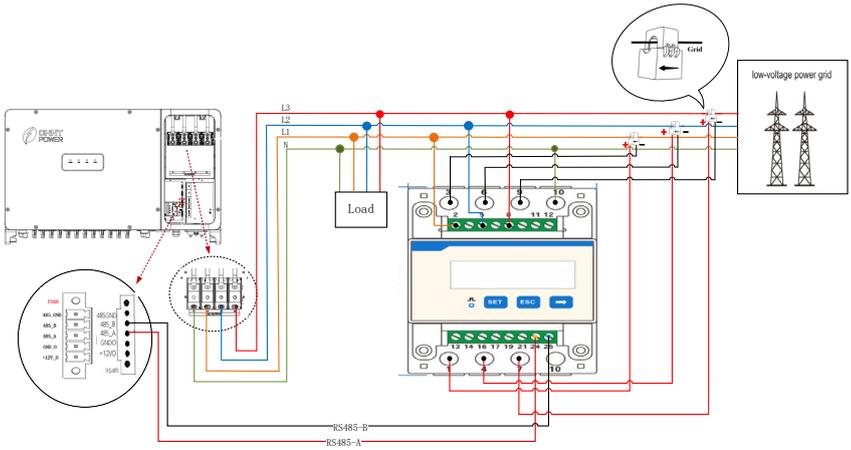


Fig. 4-19 Zero Export wiring diagram for three phase four wire

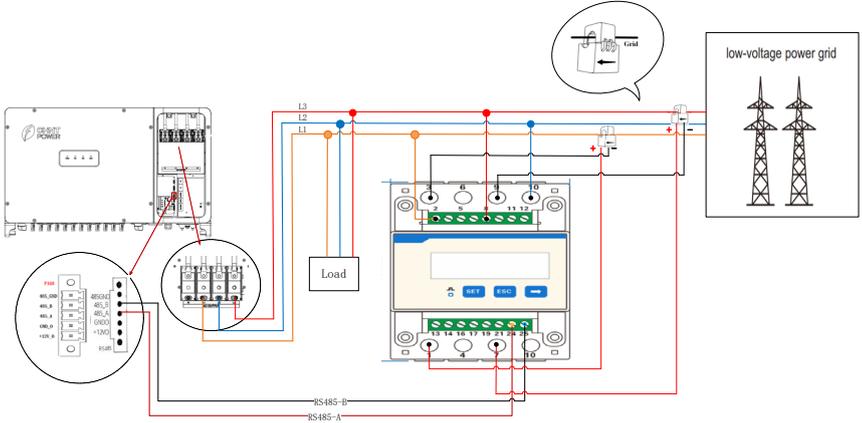


Fig. 4-20 Zero Export wiring diagram for three phase three wire

After completing the wiring procedures, the relevant configuration needs to be set in the Chint Connect App, please see section 6.5.3.6.

4.8 Cable Connection Notices for Joints and Seals



IMPORTANT!

Pay attention to the following notices when routing cables and sealing the joints.

All the electrical cables and communication cables shall be jointed and sealed properly according to the following requirements to ensure their excellent performance and good water tightness.

- The cable must be vertical to prevent excessive cable stress.

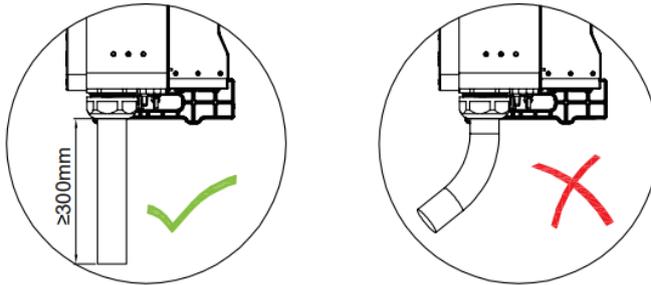


Fig. 4-21 Cable must be vertical

- After the cable passes through the fastening head, fireproof putties shall be Applied to seal the joint tightly to prevent water vapor from entering.

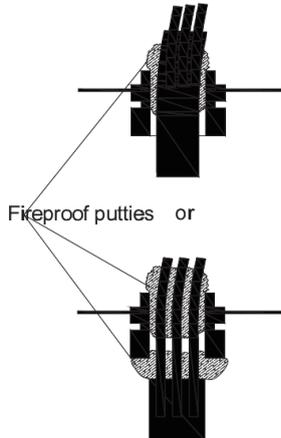


Fig. 4-22 Apply fireproof putties

- After tightening the fastening head, watertight sealants shall be Applied on its inner surface and outer surface to avoid loosening or prevent water from entering.

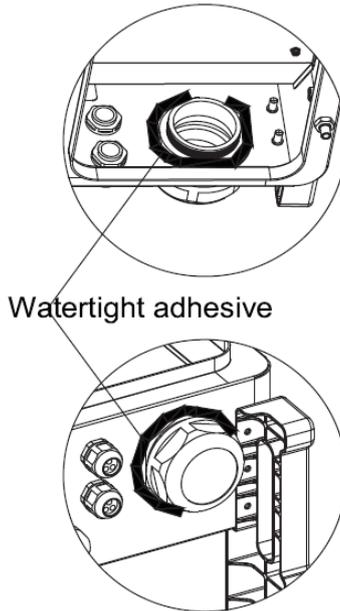


Fig. 4-23 Apply watertight sealants

- Before and after tightening the fastening head, check carefully to ensure the watertight cushion is in good condition, i.e. its surface is uniform and unbroken.

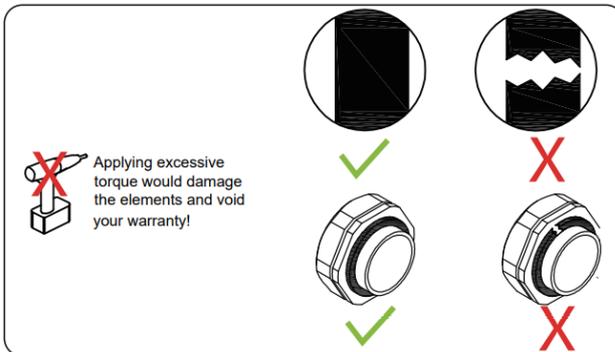


Fig. 4-24 Check watertight cushion

5 Commissioning

5.1 Inverter Installation Inspection



WARNING

Before connecting to the grid, please follow the following guidelines to eliminate hidden dangers and ensure safety.

When the equipment is powered on for the first time, it is imperative that professionals correctly configure the parameters.

Confirm that the supporting structure is firm and reliable, and the mounting screws are fastened.

(Refer to 3 Mechanical Installation)

5.2 Inverter Connection Cable Inspection

- 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, and turn the DC Switch to the "OFF" position. (Refer to 3.3 Electrical Connection)

5.3 Electrical Inspection

- Confirm that the AC side circuit breaker selection is reasonable.
- Test whether the AC side voltage is normal.
- Test whether the open circuit voltage on the DC side is $\leq 1100V$.

5.4 Commissioning Steps

Complete the test and inspection before operation. Confirm that there is no error. Follow the steps below to test run the inverter.

- 1.) Close the AC side circuit breaker
- 2.) Close the DC side circuit breaker (Skip this step if no breaker).
- 3.) 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.

6 App Setup

IMPORTANT!



- Complete above commissioning and inspection before operation, to confirm that there is no error.
 - Both AC and DC sides of the inverter shall have been powered on.
 - Viewing distance between mobile phone and inverter shall be kept within 5m, to ensure good communication quality.
 - Open the Bluetooth function on your phone at first and the inverter can only pair with one Bluetooth at a time, which means only mobile phone can connect with the inverter successfully at one time.
 - When updating inverter through the App, the inverter will stop generating power for 3-5 minutes.
-

6.1 App Download

The inverter conducts human-computer interaction through the mobile App. Apple users can download the iOS version in the Apple store, and Android users can download the App called "Chint Connect" in the Google store, or directly scan the QR code below to download. (Support Android 4.4 and IOS 11.0 system or higher version system).



6.2 App Setting

After power on, follow the steps below to set the App.

1. Ensure Bluetooth is enabled on your device, then open the Chint Connect App. **Note:** If necessary, tap App Setting at the bottom green bar to change the language.
2. Tap the Smart Link icon to enter the Connect to the Adapter interface. **Note:** When the App prompts for Bluetooth permissions, tap the warning area to access the phone's settings interface and enable Bluetooth.

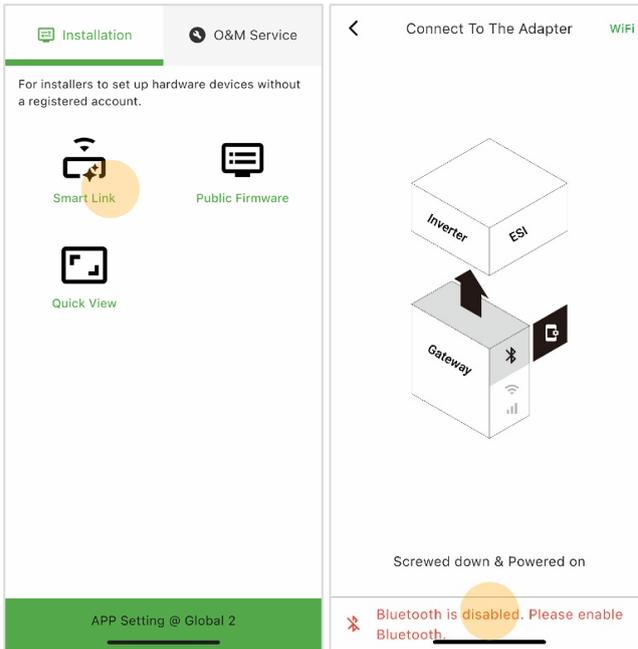


Fig. 6-1 App Setting

3. Enable the wireless connection on the device using one of the following methods:
 - a. Tap the wireless network named CPLK-XXXXXXX (X can be found on the LINKIT label) shown in the Bluetooth List.
 - b. Tap the QR icon on the right of the search bar to scan the LINKIT barcode and connect to the network.
 - c. Tap the Wi-Fi Mode in the top right corner to set up Wi-Fi, then enter “Password” (Capital P) as the password to connect to the network.

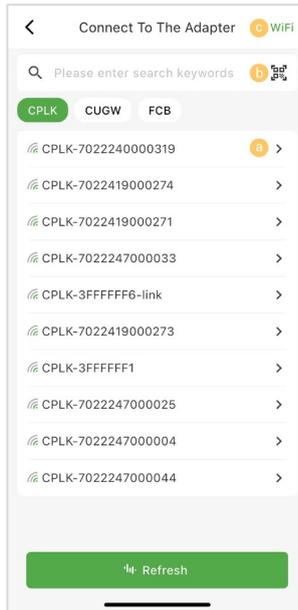


Fig. 6-2 Connect to the adapter

4. Tap the Config icon at the bottom, enter the password "1111". Select the Inverter Parameters submenu to access the inverter parameter interface.

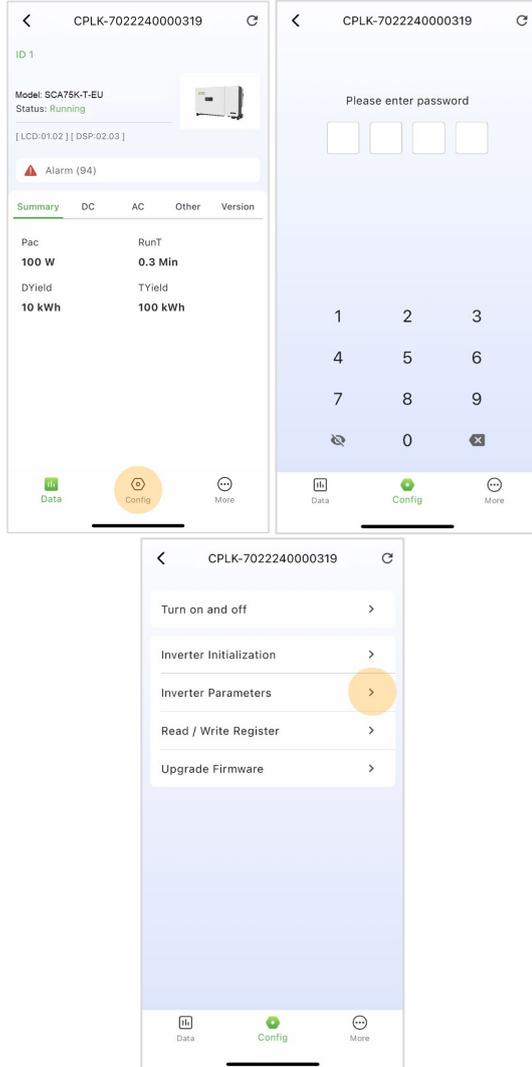


Fig. 6-3 Inverter Parameters

5. Set the correct inverter parameters:

Grid Connection Rule	Select the appropriate grid code as required by your local authority.
PV Input Mode	The DC input connection and MPPT must be configured in "Independent" mode.
Neutral Line Setting	Choose whether a neutral is connected or not.
RS485	Set the Modbus address and baud rate (9600) for communication.
Time Set	Set the system clock

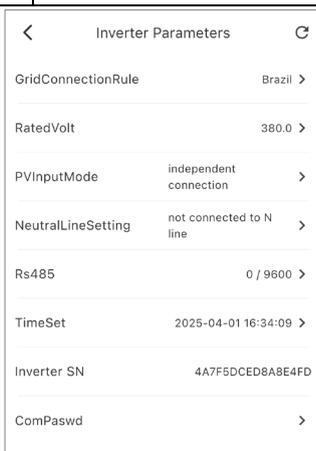


Fig. 6-4 Set the correct Inverter parameters

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.
- The inverter can only be paired with one mobile phone via Bluetooth at the same time.
- The distance between the phone and the inverter shall be within 5m and there is no obstruction.

6. Tap < icon in the top left corner twice back to the Data interface.

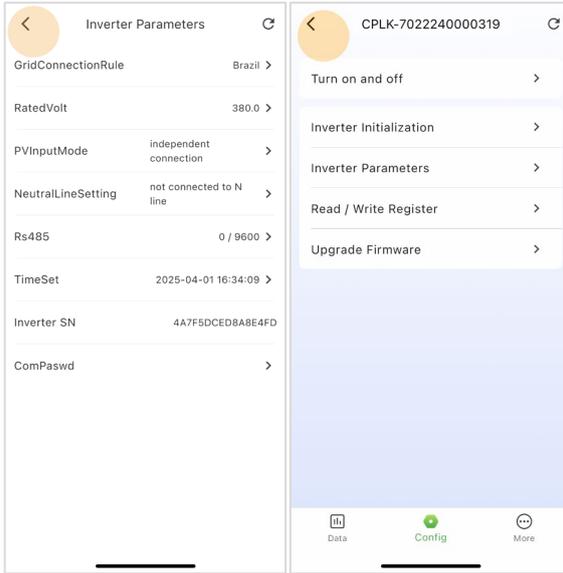


Fig. 6-5 Back to the Data interface

- When the device screen displays the "Running" status and the RUN light on the inverter LED panel is illuminated, it indicates that the grid connection and power generation are successful. You can now view real-time data in the App. Swipe left or right on the interface to navigate through the Summary, DC, AC, Other and Version pages.

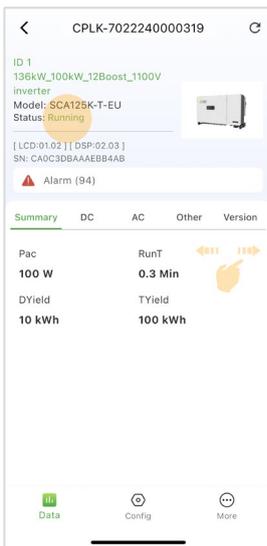
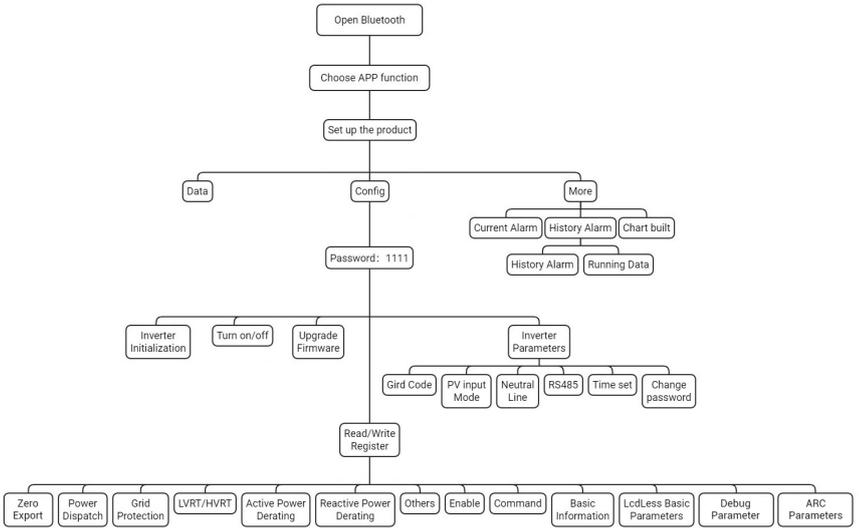


Fig. 6-6 Normal Operation Status

6.3 Structure Overview



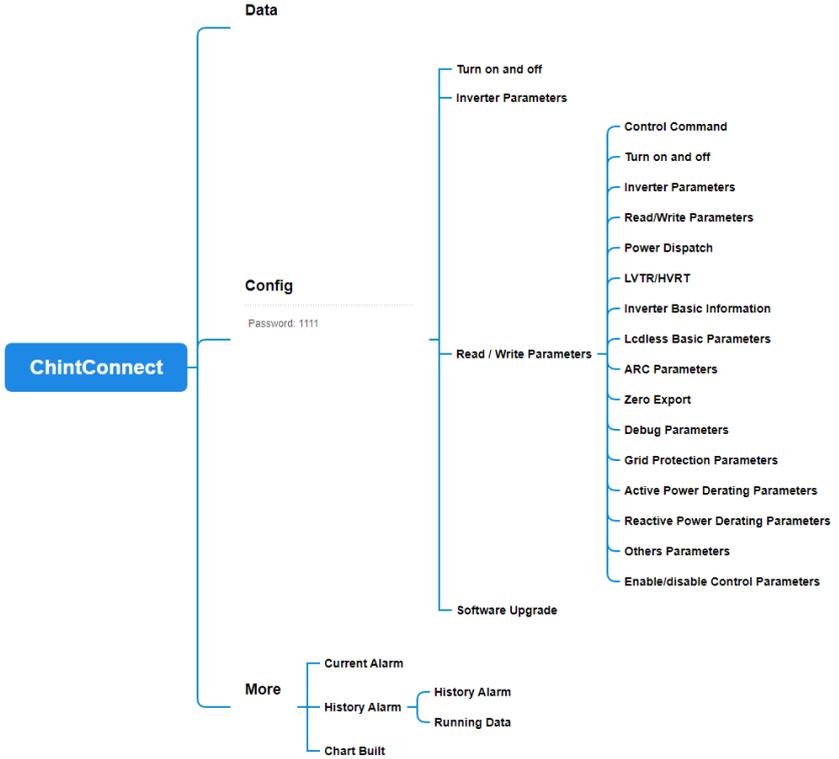


Fig. 6-7 Structure of App interface

6.4 Data

In the Data interface, you can view the primary status details of the inverter. Further information is available in the Summary, DC, AC, Others and Version tabs. Additionally, the bottom menu bar includes three icons: Data, Config and More.

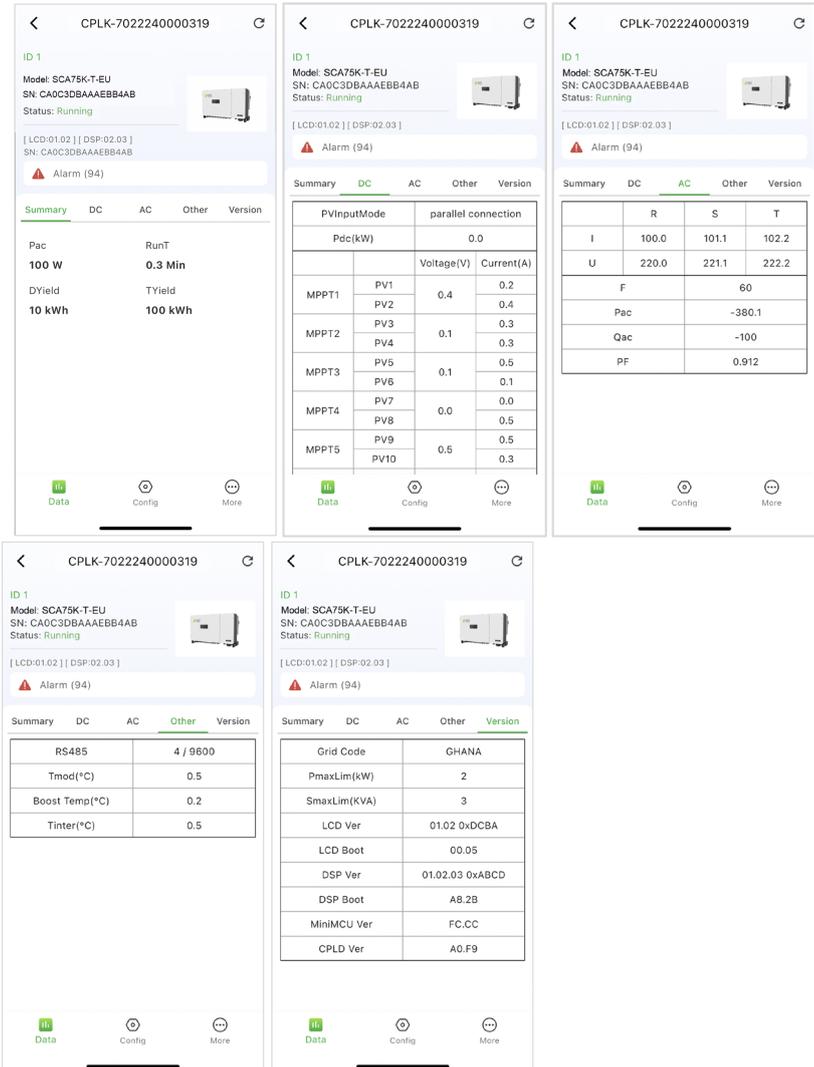


Fig. 6-8 Data Interface

6.5 Config

Tap the Config icon and enter password “1111” to access the Config interface. This interface has five submenus: Turn on and off, Inverter Initialization, Inverter Parameters, Read/Write Register and Upgrade Firmware.

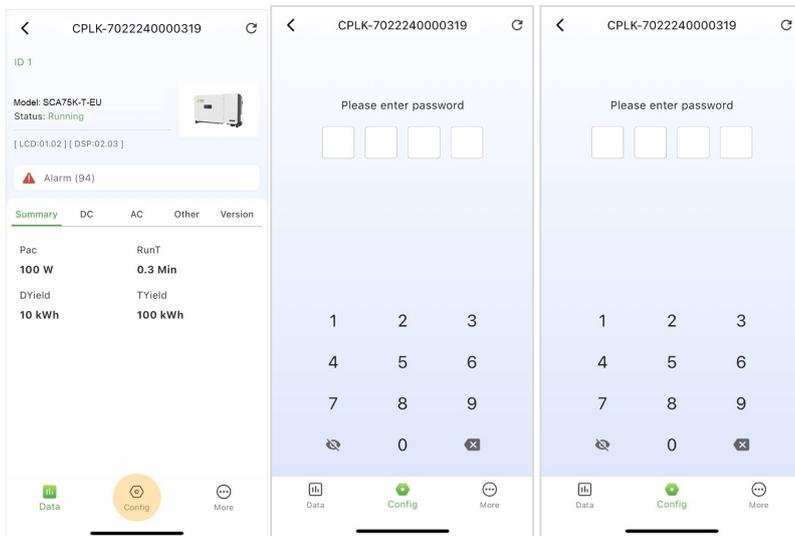


Fig. 6-9 Config interface

6.5.1 Turn on and off

- Manual Turn ON/OFF:**
 After adjusting the Grid Code settings or performing a manual (fault) shutdown, you need to manually restart the inverter. Tap the “Turn on and off” submenu and select “Power on” to start the inverter. It will operate normally if the start-up conditions are met; otherwise, it will enter stand-by mode.
 Normally, it is not necessary to turn off the inverter. However, you can manually shut it down if required for Grid Code adjustments or maintenance. Tap the “Turn on and off” submenu and select “Power off” to shut down the inverter.
- Automatic Turn ON/OFF:**
 The inverter will start automatically when the PV array output voltage and power meet the set values, the AC grid is normal, and the ambient temperature is within the allowable operating range.
 The inverter will shut down automatically when the PV module output

voltage and power fall below the set values, AC grid fails, or the ambient temperature exceeds normal range.

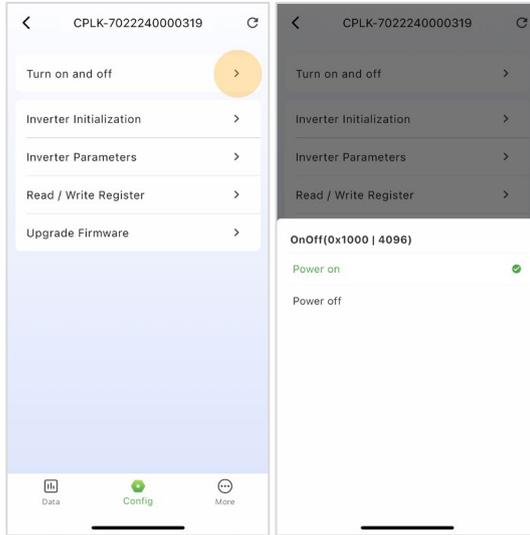


Fig. 6-10 Manual Turn on/off

6.5.2 Inverter Parameters

In the Inverter Parameters interface, you can adjust the following parameters as necessary.

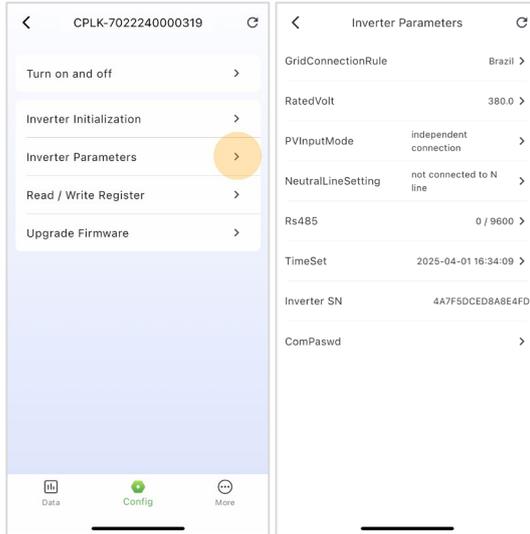


Fig. 6-11 Inverter Parameters

6.5.3 Read/Write Registers

In the Read/Write Register interface, the following submenus are available: Power Dispatch, LVRT/HVRT, Inverter Basic Information, LcdLess Basic Information, ARC Parameters, Zero Export, Debug Parameter, Grid Protection Parameters, Active Power Derating Parameters, Reactive Power Derating Parameters, Others Parameters, Enable/disable control Parameters, Control Command.

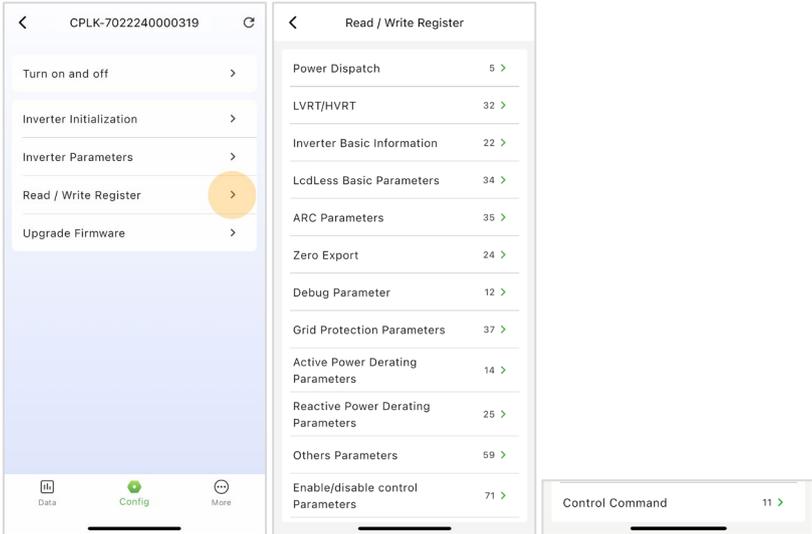


Fig. 6-12 Read/Write Register

6.5.3.1 Power Dispatch

The Power Dispatch interface is used to set the parameters as below.

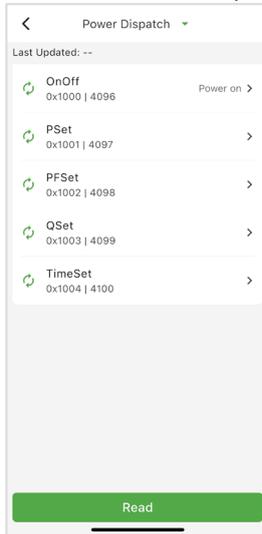


Fig. 6-13 Power Dispatch

6.5.3.2 LVRT/HVRT

“LVRT / HVRT” is used to set LVRT (low penetration) and HVRT (high penetration) parameters.

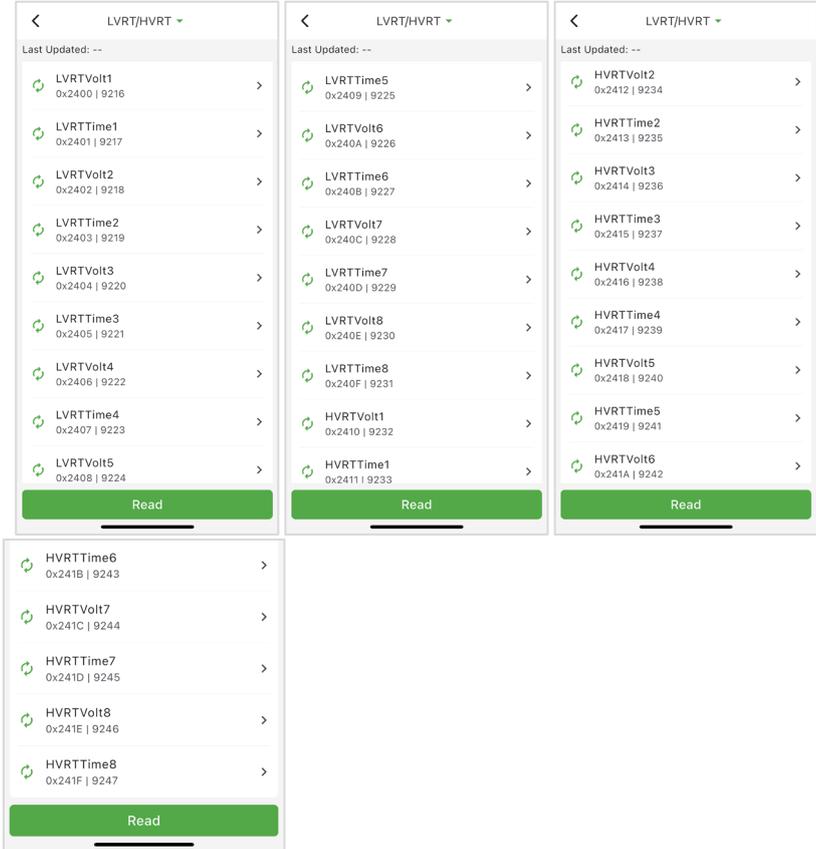


Fig. 6-14 LVRT/HVRT

6.5.3.3 Inverter Basic Information

The Inverter Basic Information interface is used to set the parameters as below.

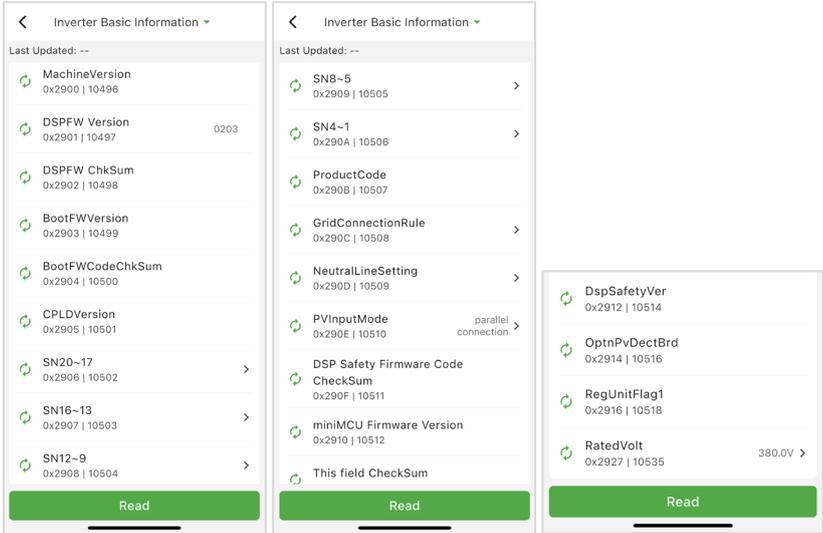
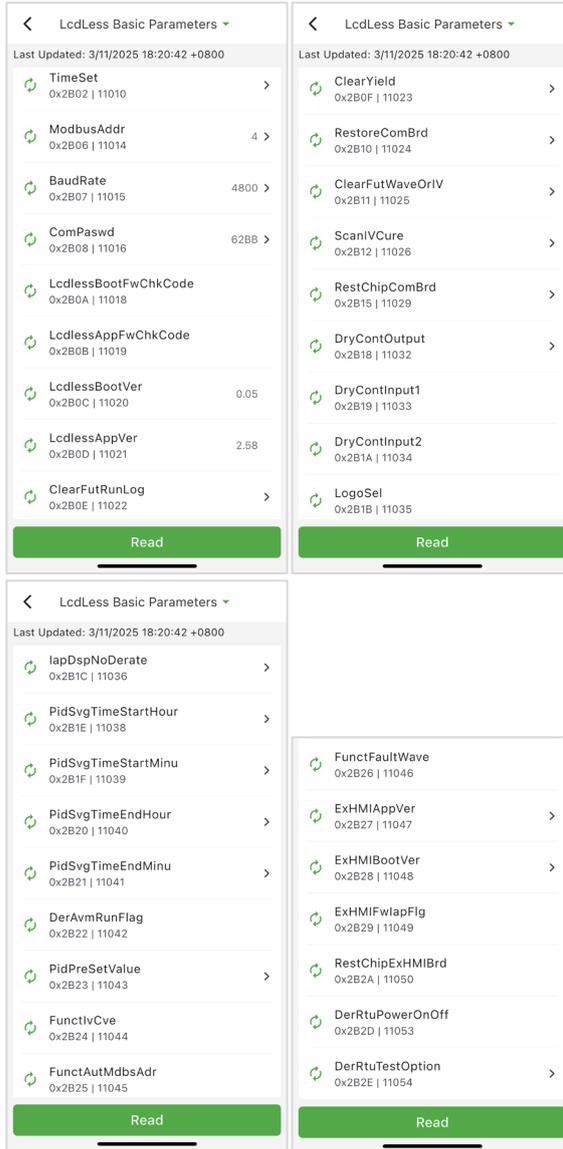


Fig. 6-15 Inverter Basic Information

6.5.3.4 LcdLess Basic Parameters

The LcdLess Basic Parameters interface is used to set the parameters as below.



The figure displays four panels of the 'LcdLess Basic Parameters' configuration screen. Each panel shows a list of parameters with their addresses and values, and a 'Read' button at the bottom. The 'Last Updated' timestamp is 3/11/2025 18:20:42 +0800 for all panels.

Parameter Name	Address	Value
TimeSet	0x2B02 11010	
ModbusAddr	0x2B06 11014	4
BaudRate	0x2B07 11015	4800
ComPaswd	0x2B08 11016	62BB
LcdlessBootFwChkCode	0x2B0A 11018	
LcdlessAppFwChkCode	0x2B0B 11019	
LcdlessBootVer	0x2B0C 11020	0.05
LcdlessAppVer	0x2B0D 11021	2.58
ClearFutRunLog	0x2B0E 11022	
ClearYield	0x2B0F 11023	
RestoreComBrd	0x2B10 11024	
ClearFutWaveOrlV	0x2B11 11025	
ScanlVCure	0x2B12 11026	
RestChipComBrd	0x2B15 11029	
DryContOutput	0x2B18 11032	
DryContInput1	0x2B19 11033	
DryContInput2	0x2B1A 11034	
LogoSel	0x2B1B 11035	
lapDspNoDerate	0x2B1C 11036	
PidSvgTimeStartHour	0x2B1E 11038	
PidSvgTimeStartMinu	0x2B1F 11039	
PidSvgTimeEndHour	0x2B20 11040	
PidSvgTimeEndMinu	0x2B21 11041	
DerAvmRunFlag	0x2B22 11042	
PidPreSetValue	0x2B23 11043	
FuncIvCve	0x2B24 11044	
FuncAutMdbasAdr	0x2B25 11045	
FuncFaultWave	0x2B26 11046	
ExHMIAppVer	0x2B27 11047	
ExHMIBootVer	0x2B28 11048	
ExHMIFwlapFlg	0x2B29 11049	
RestChipExHMIbrd	0x2B2A 11050	
DerRtuPowerOnOff	0x2B2D 11053	
DerRtuTestOption	0x2B2E 11054	

Fig. 6-16 Lcd Less Basic Parameters

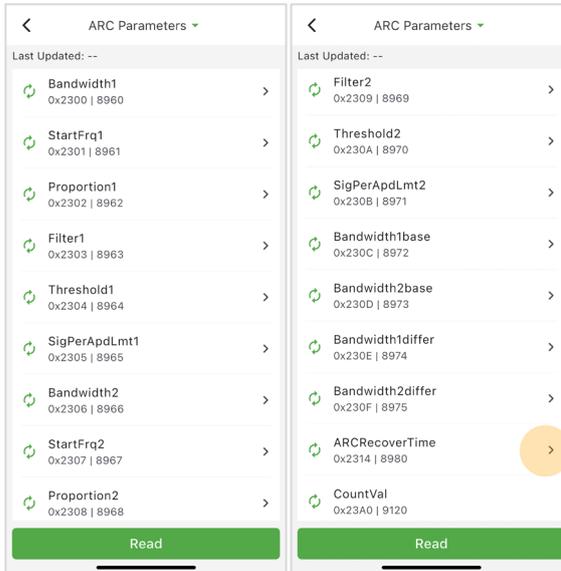
6.5.3.5 ARC Parameters

In the ARC Parameter interface, parameters such as bandwidth, start frequency, proportion, filter, threshold, single period amplitude limit and the base amplitude for each frequency band are preset as system defaults and cannot be altered by the user. The default ARC enable setting is also fixed. However, users can set the ARC fault recovery time within a range of 5 to 600 minutes according to their own requirements.

IMPORTANT!



The ARC Fault detection parameters should **ONLY** be adjusted by CHINT or Qualified representatives.



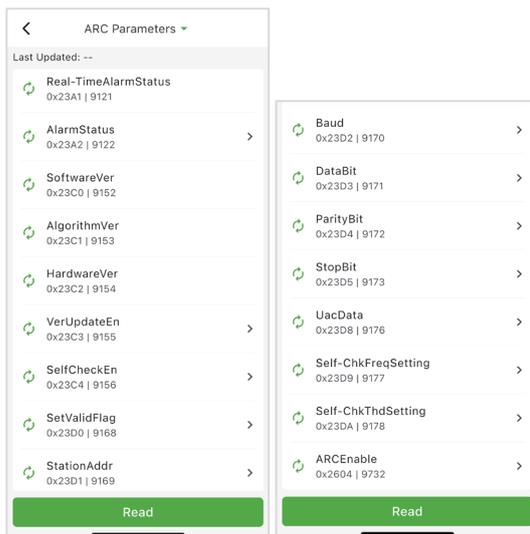


Fig. 6-17 ARC Parameters

When ARC protection is triggered, the device will perform automatic reconnection functions five times within 24 hours. The duration between these reconnection attempts can be set in the "ARC Recover Time" item (as shown in Fig. 6-21). If ARC protection is triggered for the fifth time, you must manually clear the ARC fault (see Fig. 6-33 in section 6.3.3.3.13). Then the device will resume the automatic reconnection function – reconnect five times within 24 hours, and manual startup is required.

The ARC function is in accordance with the IEC 63027 standard. The product categories and their specifications are as follows:

SCA75K-T-EU inverter: F-I-AFPE-1-6-3

- Full coverage
- Integrated
- AFPE (Arc fault protection equipment)
- 1 monitored strings per input port
- 6 input ports per channel
- 3 monitored channel

6.5.3.6 Zero Export

The Zero Export interface is used to set the parameters as below. Enable the Zero Export function at first and then set relevant parameters as required. For example, you can set meter address, meter type and meter/CT direction at the Zero Export interface.

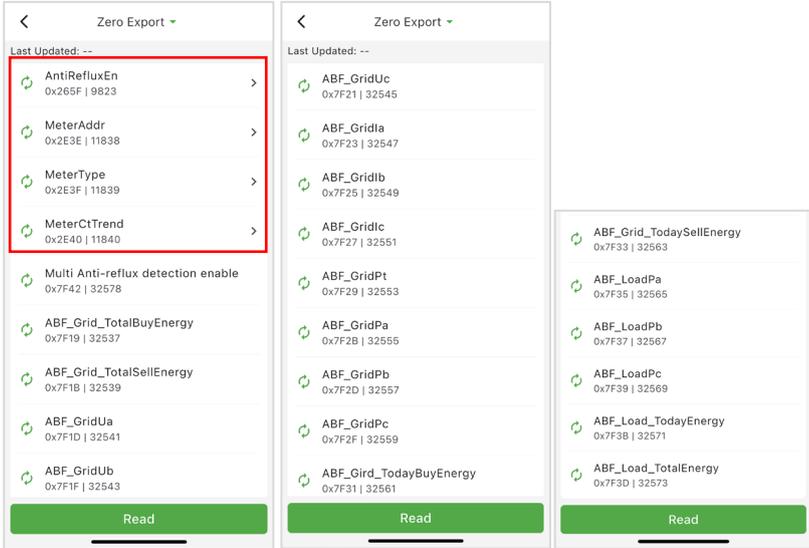


Fig. 6-18 Zero Export

6.5.3.7 Debug Parameter

The Debug Parameter interface is used to set the parameters as below.

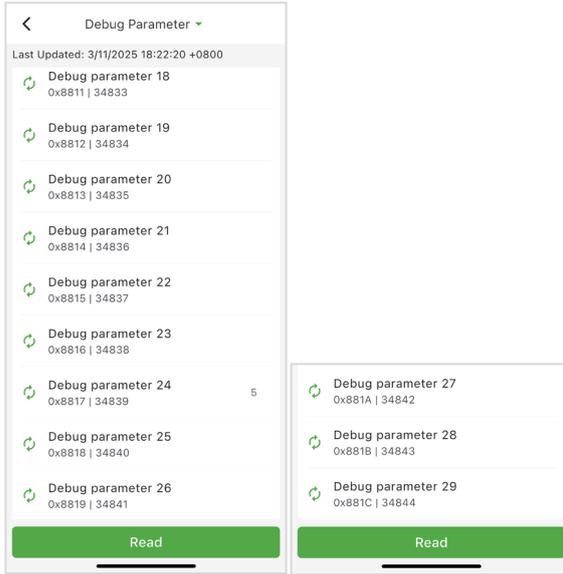


Fig. 6-19 Debug Parameter

6.5.3.8 Gird Protection Parameters

This interface is used to display and set protection the parameters of AC grid voltage, frequency and recovery, as shown below.

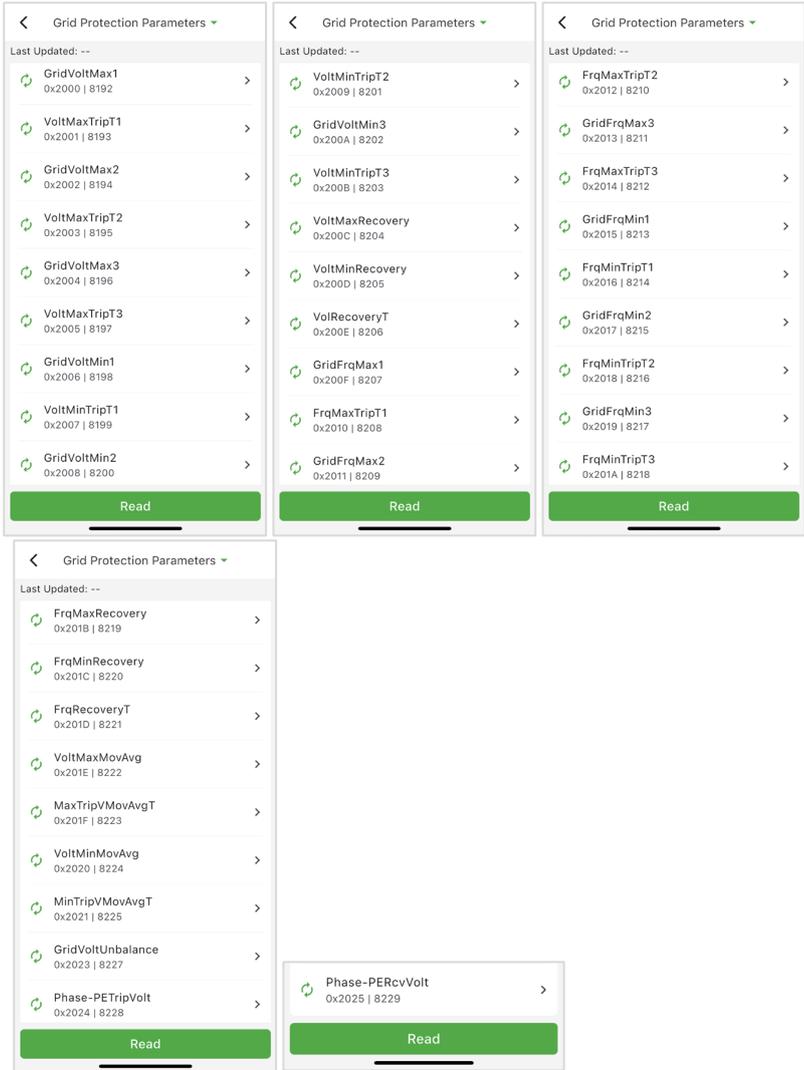


Fig. 6-20 Grid Protection Parameters

6.5.3.9 Active Power Derating Parameters

This interface is used to set active power derating parameters, including active power derating, over frequency derating and high temperature

frequency derating.

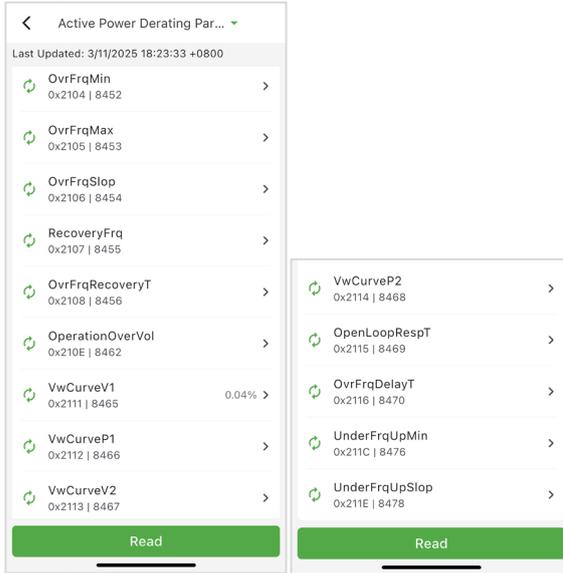


Fig. 6-21 Active Power Derating Parameters

You can see the Curve of over voltage derating in Fig. 6-25 and Curve of over frequency derating in Fig. 6-26.

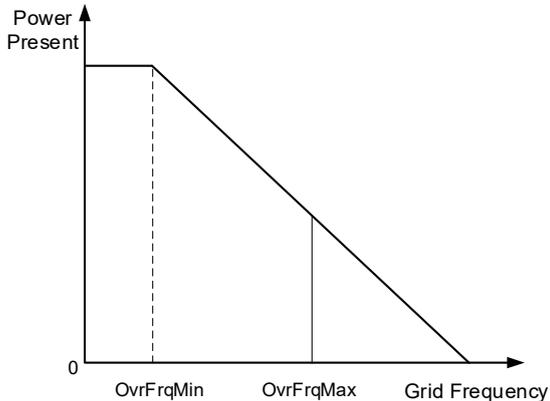


Fig. 6-22 Curve of over voltage derating

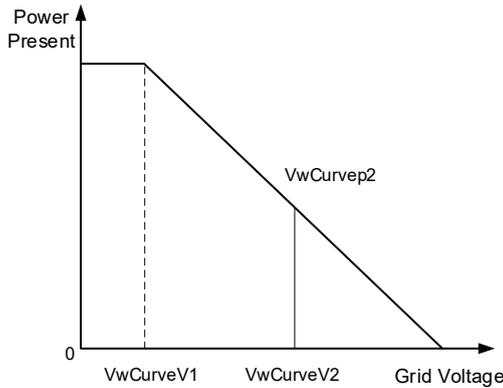


Fig. 6-23 Curve of over frequency derating

6.5.3.10 Reactive Power Derating Parameters

This interface is used to set the grid reactive power derating parameters, including PF parameters, Qu parameters, and so on.

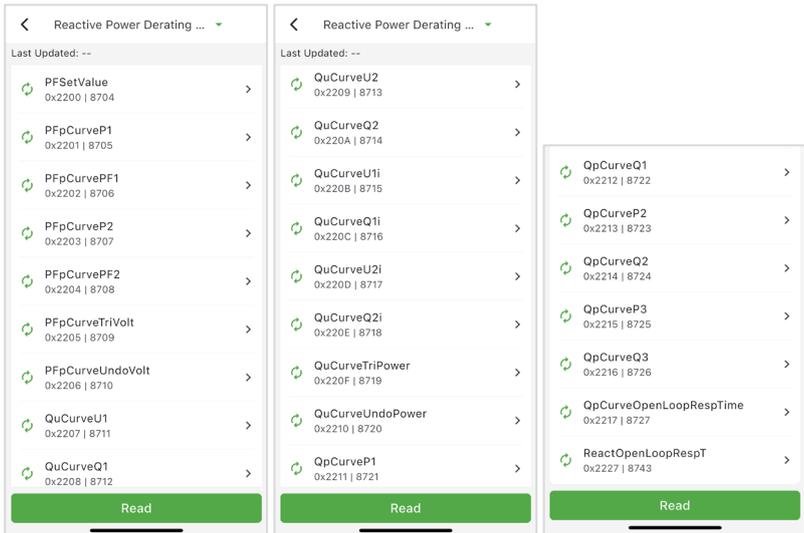


Fig. 6-24 Reactive Power Derating Parameters

NOTICE: If “Remote” is selected, PF and Q values can be adjusted through remote software.

(1) PF setting: set PF value

NOTICE: The reactive power can be changed by adjusting the power factor.

(2).PF(P) curve: PF curve mode

NOTICE: The power factor changes according to power changes, as shown in Fig. 6-29:

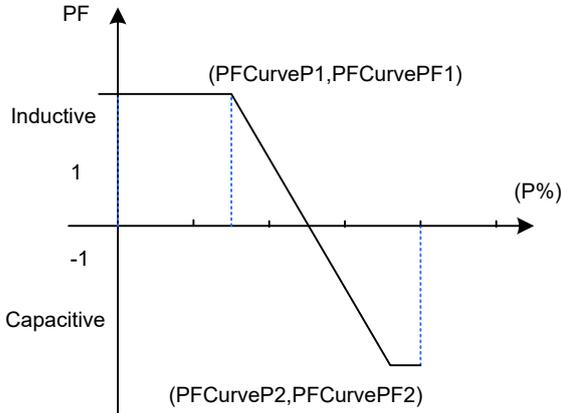


Fig. 6-25 PF(P) Curve Mode

(3). Q(U) curve: Q(U) curve mode

NOTICE: The reactive power compensation will change according to the change of the grid voltage, refer to the Fig. 6-30.

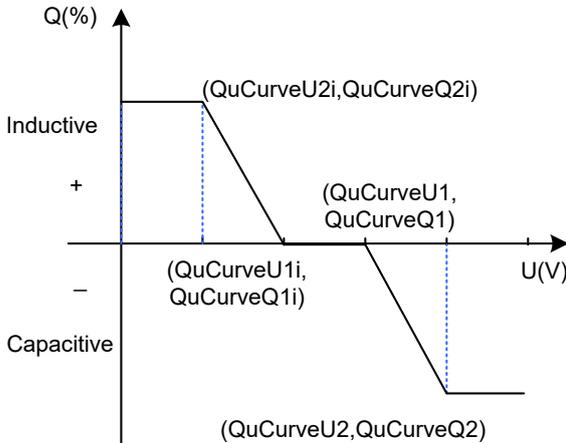


Fig. 6-26 Q(u) Curve Mode

6.5.3.11 Others Parameters

In the others interface, you can find the following common parameters shown as below.

Others Parameters	Others Parameters	Others Parameters
<p>Last Updated: --</p> <ul style="list-style-type: none"> PowerOnDelay 0x2500 9472 PVStartupVolt 0x2501 9473 PVSlowStartPwDelta 0x2502 9474 ErrSoftStartP 0x2503 9475 NormSoftStopP 0x2504 9476 NormSoftStartP 0x2505 9477 NormDeratingStep 0x2506 9478 StartUpMinTemp 0x2507 9479 FaultPowerT 0x2508 9480 <p>Read</p>	<p>Last Updated: --</p> <ul style="list-style-type: none"> FaultEnvT 0x2509 9481 HVRTTripVolt 0x250A 9482 LVRTTripVolt 0x250B 9483 LVRTPstReactiveI 0x250C 9484 LVRTNegReactiveI 0x250D 9485 PSetPercentLocal 0x250E 9486 QSetPercentLocal 0x250F 9487 ISOProtection 0x2510 9488 GFCIStaticValue 0x2511 9489 <p>Read</p>	<p>Last Updated: --</p> <ul style="list-style-type: none"> GFCIStaticT 0x2512 9490 GFCIDynProFactor 0x2513 9491 DCIProtection1 0x2514 9492 DCIProtectionT1 0x2515 9493 DCIProtection2 0x2516 9494 DCIProtectionT2 0x2517 9495 DuplicationControl 0x2518 9496 MPPTScanPeriod 0x2519 9497 CheckSumGroup1_6 0x251A 9498 <p>Read</p>
<p>Last Updated: --</p> <ul style="list-style-type: none"> PhaseLoseRcvCoeff 0x251C 9500 PhaseLoseVUnbalance 0x251D 9501 ReactiveStep 0x251E 9502 PVSlowStartStep 0x251F 9503 OptiVoltMinMppt1 0x2520 9504 OptiVoltMaxMppt1 0x2521 9505 OptiVoltMinMppt2 0x2522 9506 OptiVoltMaxMppt2 0x2523 9507 OptiVoltMinMppt3 0x2524 9508 <p>Read</p>	<p>Last Updated: --</p> <ul style="list-style-type: none"> OptiVoltMaxMppt3 0x2525 9509 OptiVoltMinMppt4 0x2526 9510 OptiVoltMaxMppt4 0x2527 9511 OptiVoltMinMppt5 0x2528 9512 OptiVoltMaxMppt5 0x2529 9513 OptiVoltMinMppt6 0x252A 9514 OptiVoltMaxMppt6 0x252B 9515 OptiVoltMinMppt7 0x252C 9516 OptiVoltMaxMppt7 0x252D 9517 <p>Read</p>	<p>Last Updated: --</p> <ul style="list-style-type: none"> OptiVoltMinMppt8 0x252E 9518 OptiVoltMaxMppt8 0x252F 9519 OptiVoltMinMppt9 0x2530 9520 OptiVoltMaxMppt9 0x2531 9521 OptiVoltMinMppt10 0x2532 9522 OptiVoltMaxMppt10 0x2533 9523 OptiVoltMinMppt11 0x2534 9524 OptiVoltMaxMppt11 0x2535 9525 OptiVoltMinMppt12 0x2536 9526 <p>Read</p>

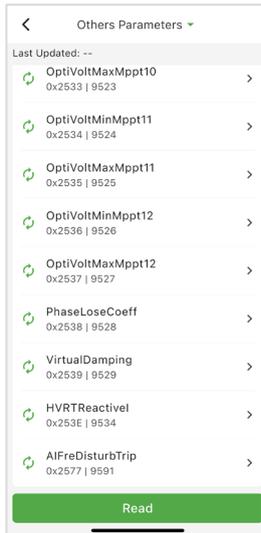


Fig. 6-27 Others Parameters

6.5.3.12 Enable/disable Control Parameters

Enable/Disable is used to enable or disable the function and protect parameters.

Enable/disable control Par... ▾

Last Updated: --

- ✔ CtrParaGroup
0x2600 | 9728 >
- ✔ CtrModeReactivePw
0x2601 | 9729 >
- ✔ CtrModeActivePw
0x2602 | 9730 >
- ✔ MPPTScanEn
0x2603 | 9731 >
- ✔ ARCEnable
0x2604 | 9732 >
- ✔ Island Protect
0x2607 | 9735 >
- ✔ LVRTModeSetting
0x2608 | 9736 >
- ✔ HVRTModeSetting
0x2609 | 9737 >
- ✔ NormSoftStopPEn
0x260A | 9738 >

Read

Enable/disable control Par... ▾

Last Updated: --

- ✔ PIDCheckEn
0x260B | 9739 >
- ✔ GridVoltMax1En
0x260C | 9740 >
- ✔ GridVoltMax2En
0x260D | 9741 >
- ✔ GridVoltMax3En
0x260E | 9742 >
- ✔ GridVoltMin1En
0x260F | 9743 >
- ✔ GridVoltMin2En
0x2610 | 9744 >
- ✔ GridVoltMin3En
0x2611 | 9745 >
- ✔ GridFrgMax1En
0x2612 | 9746 >
- ✔ GridFrgMax2En
0x2613 | 9747 >

Read

Enable/disable control Par... ▾

Last Updated: --

- ✔ GridFrgMax3En
0x2614 | 9748 >
- ✔ GridFrgMin1En
0x2615 | 9749 >
- ✔ GridFrgMin2En
0x2616 | 9750 >
- ✔ GridFrgMin3En
0x2617 | 9751 >
- ✔ VoltMaxMovAvgEn
0x2618 | 9752 >
- ✔ VoltMinMovAvgEn
0x2619 | 9753 >
- ✔ GFClStaticEn
0x261A | 9754 >
- ✔ GFClDynProEn
0x261B | 9755 >
- ✔ OvrFrgDeratingMode
0x261C | 9756 >

Read

Enable/disable control Par... ▾

Last Updated: --

- ✔ DCIProtection1En
0x261D | 9757 >
- ✔ DCIProtection2En
0x261E | 9758 >
- ✔ GridVoltUnbalanceEn
0x261F | 9759 >
- ✔ UFDerEn
0x2620 | 9760 >
- ✔ OvrVoltDerEn
0x2621 | 9761 >
- ✔ PVSlowStartSEn (HECO)
0x2622 | 9762 >
- ✔ ISOProtectionEn
0x2623 | 9763 >
- ✔ FANDetectEn
0x2624 | 9764 >
- ✔ ACSPPDDetectEnSet
0x2625 | 9765 >

Read

Enable/disable control Par... ▾

Last Updated: --

- ✔ OperationOverVolEn
0x2626 | 9766 >
- ✔ ActivePowerOver
0x2627 | 9767 >
- ✔ ReactivePowerOver
0x2628 | 9768 >
- ✔ PhaseLoseCoeffEnable
0x2629 | 9769 >
- ✔ Phase-PEEnable
0x262A | 9770 >
- ✔ MPPTRangEnable
0x262B | 9771 >
- ✔ RapidShutdownEnabBit
0x262C | 9772 >
- ✔ PV1FuseCheckEn
0x262F | 9775 >
- ✔ PV2FuseCheckEn
0x2630 | 9776 >

Read

Enable/disable control Par... ▾

Last Updated: --

- ✔ PV3FuseCheckEn
0x2631 | 9777 >
- ✔ PV4FuseCheckEn
0x2632 | 9778 >
- ✔ PV5FuseCheckEn
0x2633 | 9779 >
- ✔ PV6FuseCheckEn
0x2634 | 9780 >
- ✔ PV7FuseCheckEn
0x2635 | 9781 >
- ✔ PV8FuseCheckEn
0x2636 | 9782 >
- ✔ PV9FuseCheckEn
0x2637 | 9783 >
- ✔ PV10FuseCheckEn
0x2638 | 9784 >
- ✔ PV11FuseCheckEn
0x2639 | 9785 >

Read

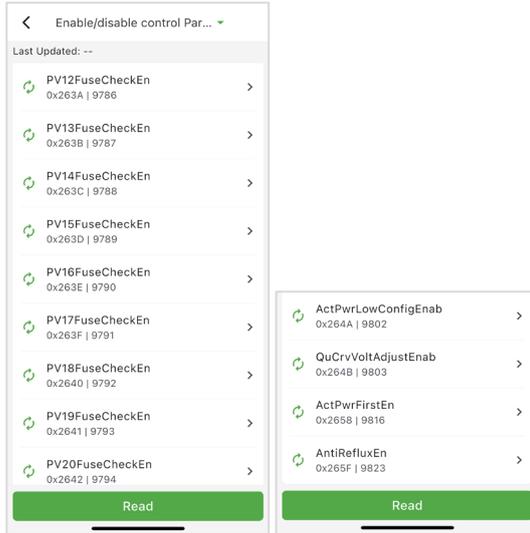


Fig. 6-28 Enable/disable Control Parameters

6.5.3.13 Control Command

In the Command interface, you can access the following submenus.

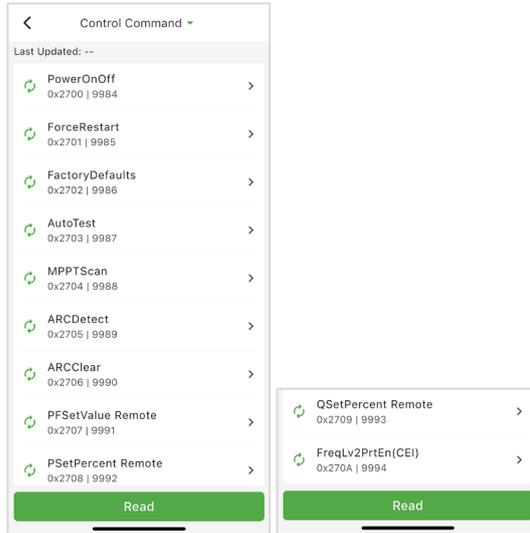


Fig. 6-29 Control Command

- **Power On/Off:** After adjusting settings or performing a manual (fault) shutdown, you will need to manually turn the power ON/OFF.
- **Force Restart:** When a permanent failure occurs, you can opt to re-energize the inverter to restore the fault. Alternatively, you can perform a forced restart via the App or web interface to achieve the same result. There is no limit to the number of times these actions can be performed.
- **Factory Defaults:** You can revert to the manufacturer's default parameter settings when the inverter is not in operation mode. Otherwise "Fault Operated" will be reported.
- **Auto Test:** Only for Italian Grid Code.
- **MPPT Scan:** This function is used to execute the MPPT scanning manually. If the scan is successful, the device screen will skip to the normal operation interface; if it fails, the device screen will remain on the interface.

The MPPT scan is designed for multi-MPP tracking and is particularly useful when PV panels are partially shaded or installed at varying angles. The default setting for MPPT scanning is <Enabled>, but it can also be set to Disabled. When the MPPT scan function is enabled, the scan period is 60 minutes. The inverter will search for the maximum power point within the MPPT range under the following condition: The total input power is less than 90% of the active power. Once activated,

the device will search for the maximum power point at a voltage step of 5V within the MPPT range for full load operation.

- **ARC Detect:** This function is used to manually check for faults in the ARC board (if 4G network card is connected, this function can be used remotely on web page). During normal operation, using this function will shut down the running device for ARC detection.
If there is a fault, the “ARC Detect” item will display "Error" and an ARC board fault record will show on the fault page under the "Current Alarm" interface (refer to section 6.3.4.1 to check fault information); If no faults are found, the “ARC Detect” item will display "successful".
Note: The device will automatically perform ARC board detection before normal operation every day. Therefore, it's unnecessary to perform this function when the device is running normally.
- **ARC Clear:** This function is used to manually clear the ARC protection of the machine (if 4G network card is connected, this function can be used remotely on web page). The device is preset to attempt automatic reconnection up to five times within 24 hours (this can be adjusted in the ARC interface's parameter area, refer to Fig. 6-21). If the ARC protection is triggered for the fifth time, you must manually clear the fault to re-enable the automatic reconnection feature, which will then attempt to reconnect up to five times within the next 24 hours.
- **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.

6.5.4 Software Upgrade

If the inverter firmware version needs to be updated, please contact the Chint service personnel.

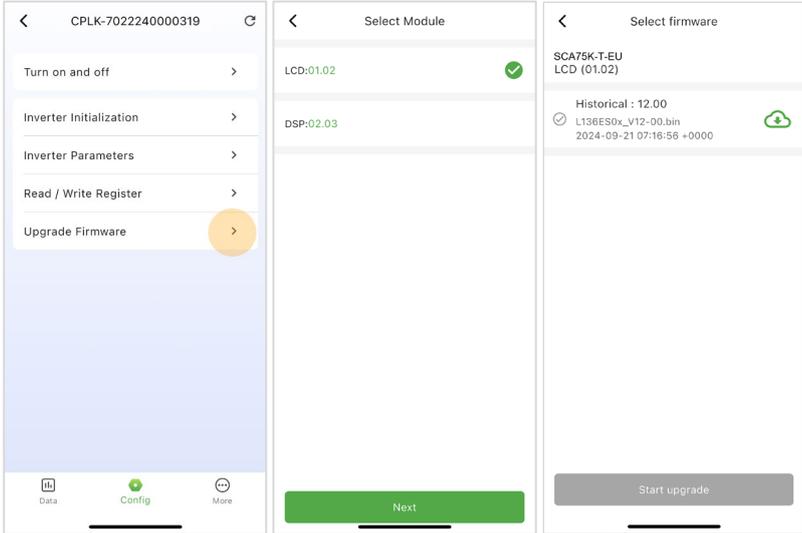


Fig. 6-30 Software Upgrade

6.5.5 More

Tap the More icon to access the More interface, which includes three submenus: Current Alarm, History Alarm and Chart built into device



Fig. 6-31 More

6.5.5.1 Current Alarm

In the Current Alarm interface, you can view the current alarm.

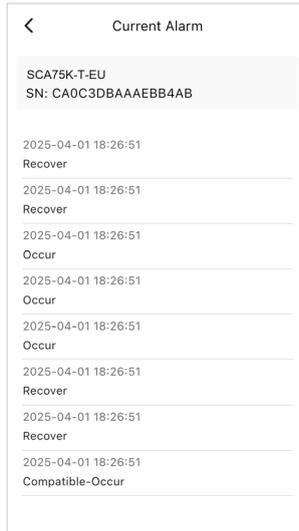


Fig. 6-32 Current Alarm

6.5.5.2 History Alarm

In the History Alarm interface, you can view History Alarm and Running Status.

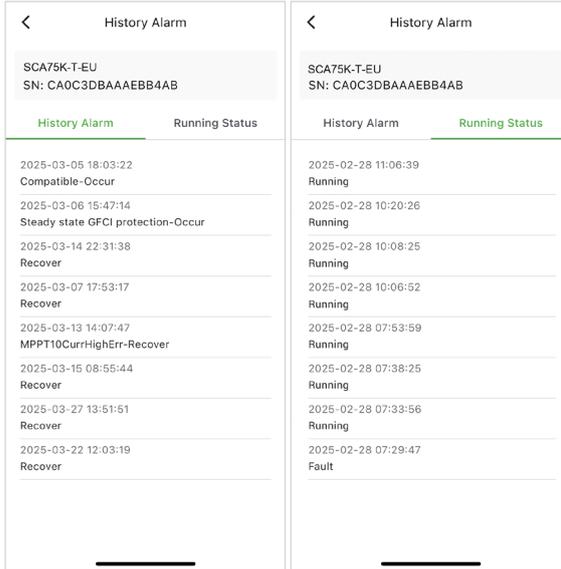


Fig. 6-33 History Alarm

6.5.5.3 Chart built into device

In the Chart built into device interface, you can view power generation at different times, such as Current, Today and Total. This data can also be displayed by Day, Month and Year.



Fig. 6-34 Chart built into device

7 Maintenance

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 5 minutes before starting any operation.
 - Maintenance operations can be performed by qualified personnel only.
 - To reduce the risk of electrical shock, please do not perform other servicing other than those specified in the operation instructions unless you are qualified to do so.
-

7.1 Check Electrical Connection

- 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 3.3 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 the Air Vent Filter

The inverter can become hot during normal operation. So, the inverter uses built-in cooling fans to provide sufficient air flow to help in heat dissipation. In order to ensure good ventilation and heat dissipation of the inverter, it is necessary to check the air inlet and outlet regularly.

Ensure that air inlets and outlets are not blocked and clean the vent with soft brush or vacuum cleaner if necessary.

7.3 Replace the Cooling Fans

If the internal temperature of the inverter is too high or abnormal noise is heard assuming the air vent is not blocked and is clean, it may be necessary to replace the external fans.



IMPORTANT!

Please disconnect the AC & DC power before replacing the fans.

Refer to the following procedures for replacing the cooling fans.

1. Use a No.2 Phillips head screwdriver to remove the 4 screws fixing the fan tray.

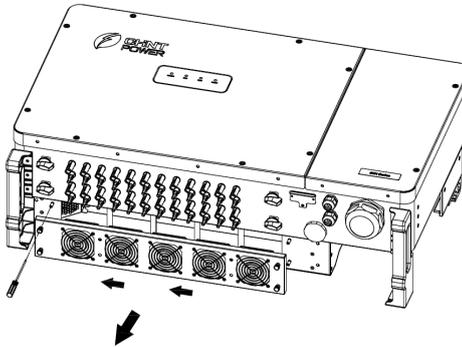


Fig. 7-1 Remove the fan tray and fan

2. Disconnect the watertight cable connector from cooling fan.

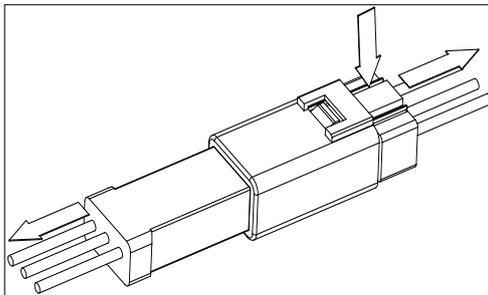


Fig. 7-2 Disconnect the watertight cable connector

3. Use a No.2 Phillips head screwdriver to remove the 4 screws fixing every fan.

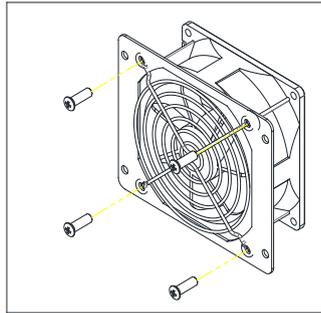


Fig. 7-3 Replace cooling fans

4. Place the new cooling fans on the fan tray, and fasten the cable on the fan tray with cable ties. Tools required: No.2 Phillips head screwdriver, torque value: 14~18kgf.cm
5. Reinstall the assembled fans onto the inverter. Tools required: No.2 Phillips head screwdriver, torque value: 16kgf.cm.

7.4 Replace the Inverter



IMPORTANT!

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

Replace the inverter in reverse order relative to the installation steps in section 3.2 Mechanical Installation.

1. Use a #3 Philips head screwdriver to remove the two M6X16 screws.
2. Remove the inverter from its mounting bracket with the coordination of 4 people.
3. Replace the new inverter on the mounting bracket and fasten it.

8 Troubleshooting

8.1 LED Lamp Troubleshooting

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

Table 8-1 LED Light Troubleshooting

LED Lamp Failure State	Troubleshooting Method
"Power" light not on	<ol style="list-style-type: none"> 1. Disconnect the external AC circuit breaker 2. Turn the DC switch to the "OFF" position 3. Check PV input voltage and polarity
"GRID" light flashing	<ol style="list-style-type: none"> 1. Disconnect the external AC circuit breaker 2. Turn the DC switch to the "OFF" position 3. Check that the grid voltage and circuit breaker wiring are correct and firm
"RUN" light off or "FAULT" light on	Refer to Table 8-2 for troubleshooting

8.2 App Display 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 5 minutes after disconnecting all sources of DC and AC.

When the photovoltaic power generation system fails, such as: output short circuit, grid voltage overvoltage, undervoltage, grid frequency overfrequency, underfrequency, high ambient temperature, and device internal failure, the inverter will automatically stop and the fault information will be displayed on the App.

Before contacting the after-sales service, you can quickly locate the cause of the fault based on the faults listed in Table 8-2, and deal with it according to the recommended handling method. There are three main types of failures: alarm, protection, and failure.

Table 8-2 Fault Information Table

Warning	Internal Communication Failure	<ol style="list-style-type: none"> 1. Observe for 5 minutes to see if the inverter can automatically eliminate this alarm; 2. Disconnect the DC switch and let the system receive power again; 3. Contact after-sales service personnel
	External Fan Alarm	<ol style="list-style-type: none"> 1. Observe for 5 minutes to see if the inverter can automatically eliminate this alarm; 2. Check on the spot whether there are foreign objects on the fan blades; 3. Disconnect the DC switch and let the system receive power again; 4. Contact after-sales service personnel
	Internal Fan Alarm	<ol style="list-style-type: none"> 1. Observe for 5 minutes to see if the inverter can automatically eliminate this alarm; 2. Check on the spot whether there are foreign objects on the fan blades; 3. Disconnect AC power and let the system receive power again; 4. Contact after-sales service personnel
	Warning 0030 (Eeprom Failure)	<ol style="list-style-type: none"> 1. Observe for 5 minutes to see if the inverter can automatically eliminate this alarm; 2. Contact after-sales service personnel
	Warning 0040 DC Abnormal side lightning protection device	<ol style="list-style-type: none"> 1. Observe for 5 minutes to see if the inverter can automatically eliminate this alarm; 2. Check whether the DC lightning protector is damaged 3. Contact after-sales service personnel
	Warning 0050 Temperature Sensor Abnormal	<ol style="list-style-type: none"> 1. Check the temperature display value 2. Disconnect AC power and let system receive power again 3. Contact after-sales service personnel
	Warning 0100 AC MOV	<ol style="list-style-type: none"> 1. Observe for 5 minutes to see if the inverter can automatically eliminate this

	Abnormality	alarm
Protection		2. Contact after-sales service personnel
	Protection 0090 (Bus Voltage High)	1. Restart the inverter, disconnect the AC and DC connections, wait for 5 minutes to discharge and then turn it on 2. Contact after-sales service personnel
	Protection 0070 (Bus High Voltage Difference)	1. Restart the inverter, disconnect the AC and DC connections, wait for 5 minutes to discharge and then turn it on 2. Contact after-sales service personnel
	Grid voltage abnormality	1. Check whether the AC input voltage of the inverter is normal 2. Restart the inverter 3. Contact after-sales service personnel
	Protection 0020 (Grid-tied relay protection)	1. Restart the inverter, disconnect the AC and DC connections, wait for 5 minutes to discharge and then turn it on 2. Contact after-sales service personnel
	Over-temperature protection	1. Check whether the external ambient temperature is within the working range of the inverter 2. Check if the fan and air outlet are blocked 3. Check whether the installation environment and spacing meet the requirements, and whether the heat dissipation meets the requirements 4. Observe for 30 minutes to see if the fault is automatically eliminated 5. Contact after-sales service personnel
	Protection 0170 (DCI current is too high)	1. Set the maximum DCI to 400mA (refer to 5.11) 2. Restart the inverter to observe whether the fault is automatically eliminated 3. Contact after-sales service personnel
	Insulation Resistance is too low	1. Check whether the PV cable and ground cable are normal 2. Restart the inverter and observe whether the fault is automatically eliminated 3. Contact after-sales service personnel
Leakage Current is too high	1. Check whether the PV cable and ground cable are normal 2. Restart the inverter and observe whether the fault is automatically eliminated 3. Contact after-sales service personnel	

	Protection 0150 MCU Protection	<ol style="list-style-type: none"> Restart the inverter, disconnect the AC and DC connections, wait for 5 minutes to discharge and then turn it on Contact after-sales service personnel
	Protection 0100 The leakage current sensor is abnormal	<ol style="list-style-type: none"> Restart the inverter, disconnect the AC and DC connections, wait for 5 minutes to discharge and then turn it on Contact after-sales service personnel
	Reverse PVx Input (x=1,2...18/24)	<ol style="list-style-type: none"> Disconnect the AC and DC connections and swap the positive and negative poles of the reverse branch Restart the inverter to see if it is normal Contact after-sales service personnel
	PVx input overcurrent (x=1,2...18/24)	<ol style="list-style-type: none"> Check whether the PV input current is within the acceptable range Restart the inverter, disconnect the AC and DC connections, wait for 5 minutes to discharge and then turn it on Contact after-sales service personnel
	PVx input voltage is too high (x=1,2...18/24)	<ol style="list-style-type: none"> Check if the PV input voltage is within the range of 1100V Restart the inverter, disconnect the AC and DC connections, wait for 5 minutes to discharge and then turn it on Contact after-sales service personnel
	Protection 0230 Start-up inverter open loop self-check failure	<ol style="list-style-type: none"> Restart the inverter, disconnect the AC and DC connections, wait for 5 minutes to discharge and then turn it on Contact service personnel
Failure	Failure 0010~0150	<ol style="list-style-type: none"> Restart the inverter, disconnect the AC and DC connections, wait for 5 minutes to discharge and then turn it on Contact service personnel

9 Technical Data

Model Name	SCA75K-T-EU
DC Input	
Max. DC Voltage	1100Vdc
MPPT Voltage Range	200~950Vdc
MPPT Voltage Range (Full Load)	400-850Vdc
Start Voltage/Power	300Vdc/300W
Rated DC Voltage	615Vdc
Number of MPPT/Max. Number of DC Connection Sets	9/18
Max. DC Current	9 x 30
Max. DC short-circuit current per MPPT	45A
DC Disconnection Type	Integrated Switch
AC Output	
Rated AC Power	75kW
Max. AC Power	75 kVA
Rated AC Voltage	380 / 400V
AC Voltage Range	322~528Vac
Grid Connection Type	3 / (N) / PE
Max. AC Current	114A
Rated Frequency	50Hz / 60Hz
Grid Frequency Range	45 - 55Hz / 55-65Hz
Power Factor (cosφ)	±0.8 (adjustable)
Current THD	< 3%
AC Disconnection Type	-
System Data	
Topology	Transformerless
Max. Efficiency	98.64%

Euro Efficiency	98.4%
Consumption at Standby/Night	< 30W / < 6W
Environment Data	
Ingress Protection	IP66
Cooling Method	Cooling Fans
Operating Temperature Range	-30°C - +60°C
Ambient Humidity	0 - 100%
Altitude	4000m
Display and Communication	
Display	LED+ APP (Wi-Fi)
Communication	RS485 (Standard) / GPRS/ WIFI/PLC
Mechanical Data	
Dimensions (W*H*D) [mm]	1050 x 660 x 340
Weight [kg]	86
Safety	
Certifications	IEC 61000-6, IEC 62109-1/2, IEC 61727, IEC 62116, IEC63027 INMETRO PORTARIA N° 140

10 Quality Assurance

10.1 Liability exemption

1. Exceed the quality assurance period of the product.
2. Cannot provide product serial number or the SN is not clear/complete.
3. Damage during transportation/storage/handling.
4. Misuse, abuse, intentional damage, negligence or accidental damage.
5. Improper commissioning, testing, operation, maintenance or installation performed by customer, including but not limited to:
 - Failure to meet safe operating environment or system requirements of external electrical parameters provided in written document;
 - Failure to operate the covered product in accordance with the product's operating manual or user guide;
 - Relocate and reinstall systems not in accordance with the requirements of Chint power;
 - Unsafe electrical or chemical environment or other similar kind of conditions;
 - Direct failure caused by wrong voltage or faulty power system;
 - Unauthorized disassembly of the products, or unauthorized modification of the product or provided software;
6. Entrust installation, maintenance personnel not designated by the CHINT to install, repair and disassemble the products;
7. Damages caused by ignoring the safety warnings in the manual or break the rules in relevant statutory safety regulations;
8. Damages caused by operating environment beyond the requirements of the product user manual or failure to commissioning, install, use and maintain the equipment according to the requirements of the product user manual.
9. Unforeseen disasters or irresistible accidents (including but not limited to acts of public enemies, acts of government agencies or domestic or foreign institutions, vandalism, riots, fires, floods, typhoons, explosions or other disasters, epidemic or quarantine restrictions, labor disturbances or labor shortages, accidents, cargo embargoes or any other events beyond the control of CHINT).
10. The lightning protection measures have not been implemented or are

not in accordance with standards (Photovoltaic systems' lightning protection measures should comply with the relevant national and IEC standards; otherwise, it may result in damage to photovoltaic devices such as modules, inverters, distribution facilities, etc., due to lightning strikes).

11. Other circumstances that are not covered by the company's after-sales warranty agreement.

10.2 Quality clause (warranty clause)

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

If you have any questions about the photovoltaic Grid-tied inverter, please contact us, we will be very happy to help you.

11 Recycling

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



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.

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