

Three-Phase Grid-tied PV Inverter

User Manual

Applicable to

SCA15K-T-SA, SCA20K-T-SA, SCA25K-T-SA

SCA30K-T-EU, SCA37.5K-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”).



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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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

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

1.3. Safety Precautions of Operating the PV Inverter

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.

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.

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.

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.

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, SCA30/37.5K-T-EU series inverters are designed for using with grid-tied PV systems. The PV system is generally made up of PV modules, PV inverter, and AC power distribution equipment, as shown in figure below. 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.

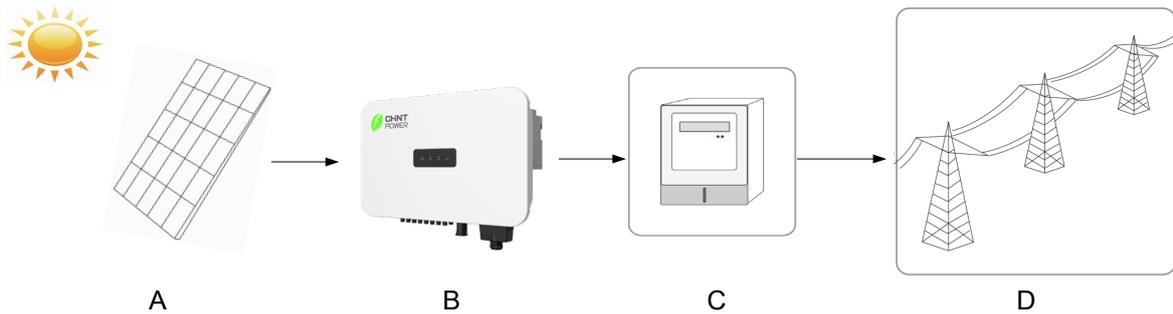


Figure 2-1 Grid-tied PV system

Item	Name	Description
A	PV Module	Monocrystalline silicon, polycrystalline silicon, non-ground PV module
B	PV Inverter	SCA15/20/25K-T-SA SCA30/37.5K-T-EU
C	AC distribution system	Device such as AC circuit breaker, AC combiner box, metering device
D	Public Grid	Isolation transformer and power grid: support TT, IT, TN-S, TN-C, and TN-C-S system

Table 2-1 Components of Grid-tied PV system

2.2. Product Dimensions and Appearance

SCA30K-T-EU inverter has 3 MPPTs (6 inputs) and no external fans. SCA15K-T-SA inverter has 4 MPPTs (8 inputs) and no external fans. SCA20K-T-SA, SCA25K-T-SA, and SCA37.5K-T-EU inverters have 4 MPPTs (8 inputs) and are equipped with external fans. Apart from these differences, the installation and electrical connection procedures are the same for all models. The following instructions will use the SCA25K-T-SA inverter as an example, with the differences highlighted where applicable.

Model	Number of MPPT	External Fan
SCA15K-T-SA	4	No
SCA20K-T-SA	4	Yes
SCA25K-T-SA	4	Yes
SCA30K-T-EU	3	No
SCA37.5K-T-EU	4	Yes

Table 2-2 Main differences between SCA15K/20K/25K-T-SA and SCA30K/37.5K-T-EU

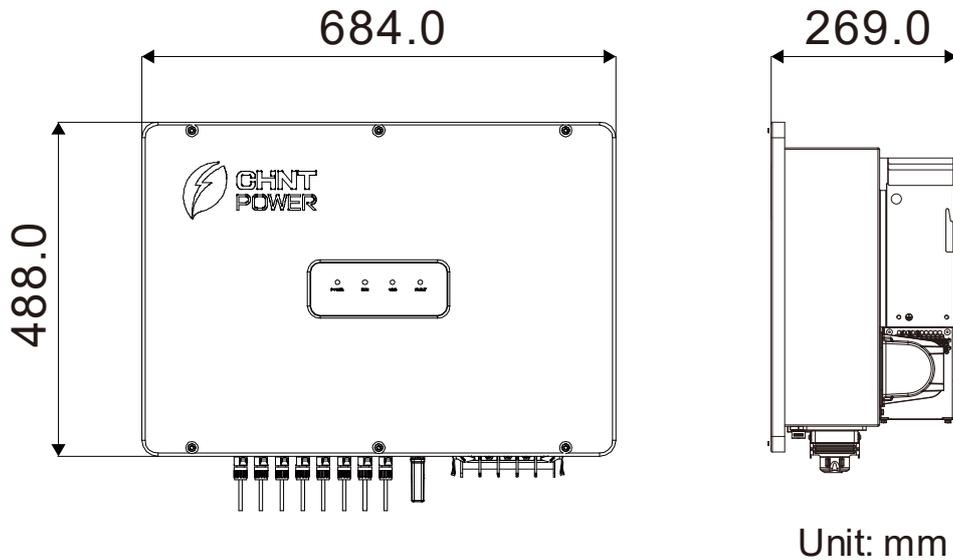


Figure 2-2 Inverter Dimensions

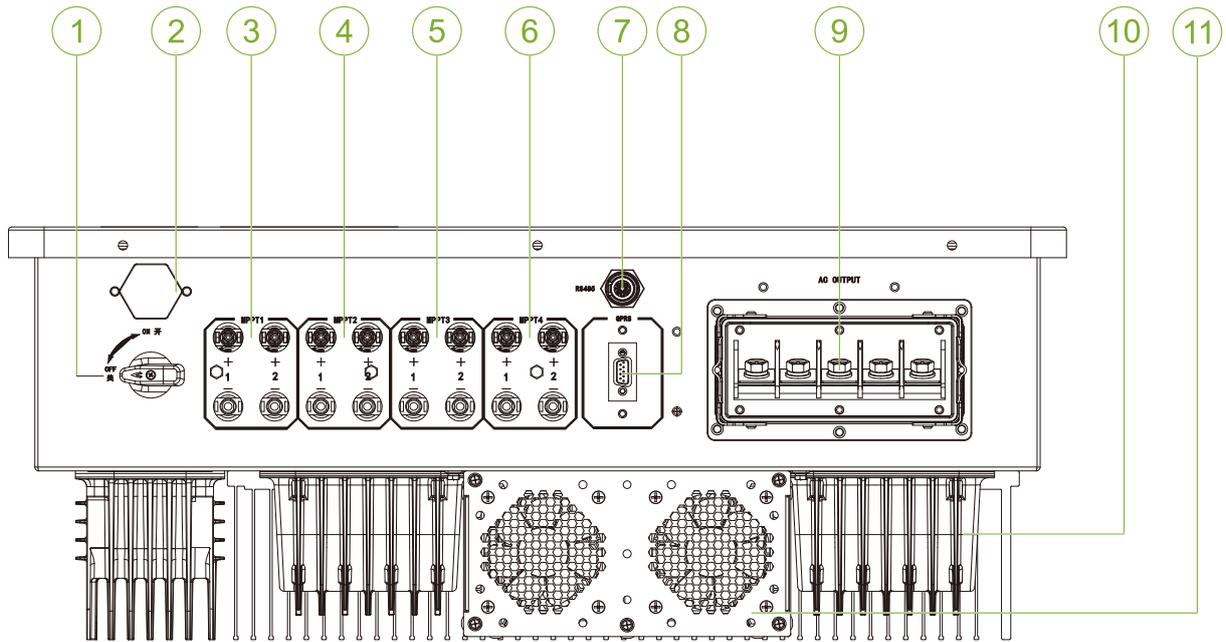


Figure 2-3 Product Appearances

No.	Name	Function
1	DC Switch	Cut off DC power supply safely
2	Vent valve	Release pressure
3	DC MPPT 1	Connect to PV modules
4	DC MPPT 2	Connect to PV modules
5	DC MPPT 3	Connect to PV modules
6	DC MPPT 4	Connect to PV modules
7	Communication interface	For RS485 communication
8	Wi-Fi Dongle interface	For local control and remote monitoring
9	AC outlet terminal	AC cable outlet port
10	Radiator	Lowering the operating temperature of the inverter
11	External Fan	Cooling of the temperature of the radiator (Applicable only to SCA20K-T-SA, SCA25K-T-SA, and SCA37.5K-T-EU)

Table 2-3 Product Components

2.3. LED Indicator

The LED display on the inverter is as shown below.

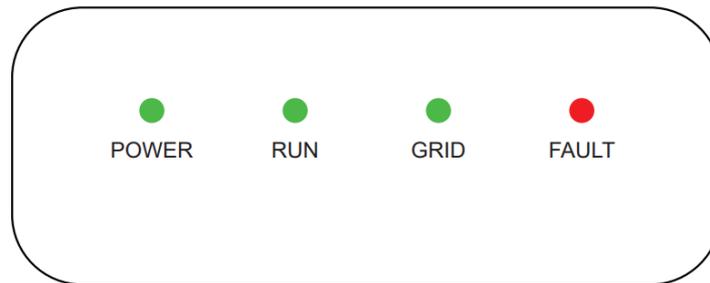


Figure 2-4 LED display of the inverter

Indicators and their indications are shown below:

LED Indicator	Name	Status	Indication
POWER	Working power indicator	ON	Normal PV power supply (voltage is high 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
		Quick flash	Protective action (light up 0.5s, light off 0.5s)
		Slow flash	Indicates alarms (light up 0.5s, light off 2s), device is running
		OFF	No fault or power supply not working
All lights flash			ARC, LCD or DSP upgrading

Table 2-4 LED indicator description

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
- Arc protection
- Power limitation

2.5. Night Power Supply Function

This function enables the inverter to be upgraded at night without affecting the daytime power supply. It's crucial to maintain uninterrupted communication during nighttime. This helps prevent communication failures or shutdowns caused by faults or a lack of PV power at night. Additionally, it facilitates 24-hour monitoring of grid and load data.

2.6. ARC Detection Protection

This inverter arc detection protection conforms to IEC 63027 standard, arc protection device type is as table 2-5, and the detail explanation is as table 2-6.

Inverter Type	ARC protection device type
SCA30K-T-EU	F-I-AFPE-1-4/2-2
SCA37.5K-T-EU	F-I-AFPE-1-4-2
SCA15K-T-SA	F-I-AFPE-1-4-2
SCA20K-T-SA	F-I-AFPE-1-4-2
SCA25K-T-SA	F-I-AFPE-1-4-2

Table 2-5 ARC protection device type

Letter	Meaning
F	Full covered
I	Integrated
AFPE	Provide detection and interruption function
1	Each input string port connects to one PV array
x (x=4, 4/2)	x=4: Each detection channel has four input ports x=4/2: One detection channel has four input ports, the other channel has two input ports.
2	Two detection channels

Table 2-6 Arc protection device letter meanings

- ARC Protection:** This function detects if arcing is occurring on the DC side of the inverter. When an ARC fault is detected, the inverter will shut down immediately. If the number of recordings is less than 5 times in 24 hours, wait for 5 minutes, the inverter will restart automatically and grid connection. If it reaches 5 times, check whether the DC cables or connections have proper insulation. If the insulation is normal, the fault alarm must be manually cleared.
- ARC Clear:** This function is used to clear the “ARC protection-Occurring” fault manually. The “ARC protection-Occurring” fault alarm needs to be cleared via the MatriCloud App or the monitoring platform.
- ARC Self-test:** This function is used to detect whether there is any fault in the ARC board. The inverter automatically performs the ARC self-test every day before normal operation, and if there is a fault, the alarm “ARC board fault-Occurring” appears.

2.7. Schematic Diagram and Circuit Design

The electrical schematic diagram of inverter is as shown in figures below. 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.

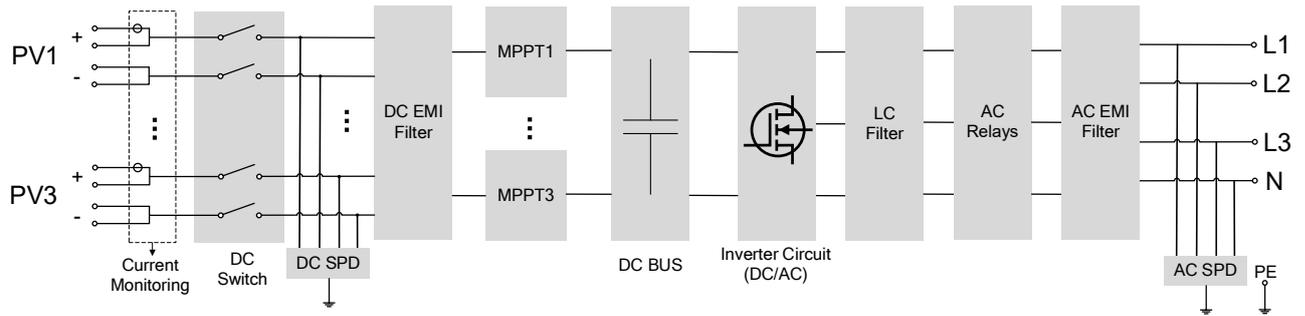


Figure 2-5 Schematic Diagram of SCA30K-T-EU

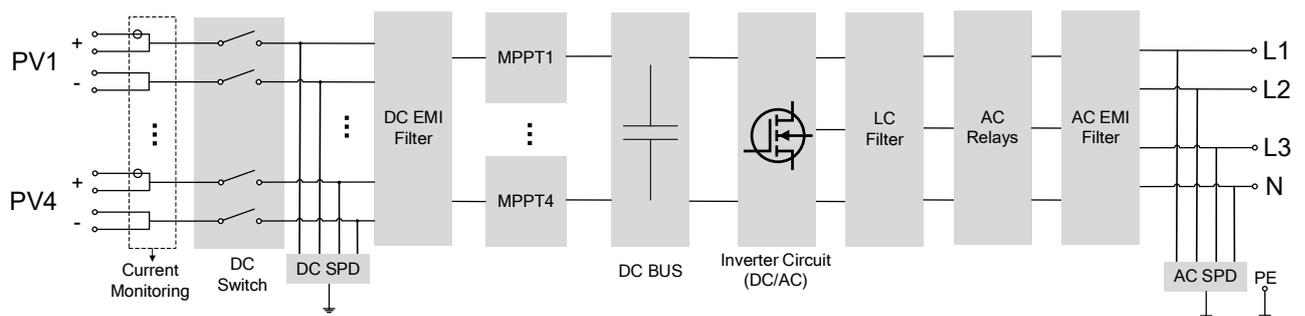


Figure 2-6 SCA37.5K-T-EU & SCA15/20/25K-T-SA

3. Mechanical Installation

3.1. Inverter Storage

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

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

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

3.2. 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:

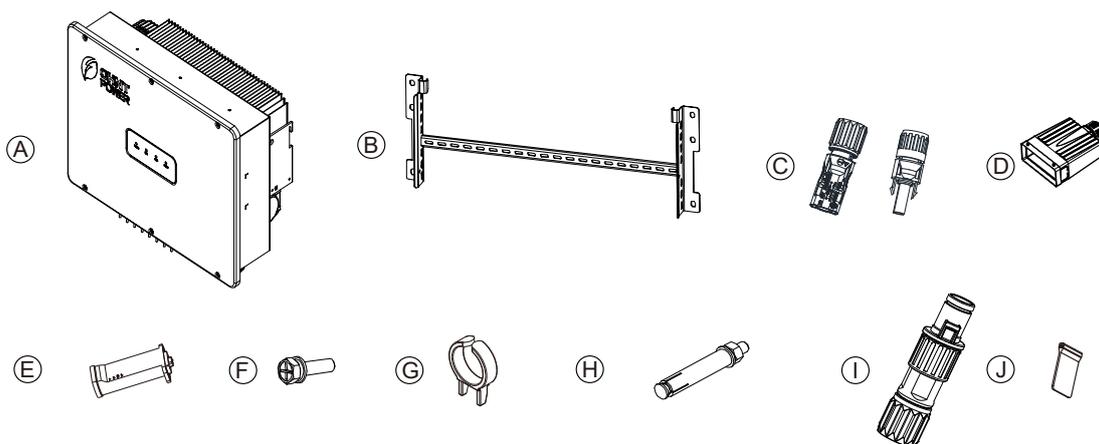


Figure 3-1 Delivery list

No.	Accessories	QTY	Remark
A	Inverter	1	/
B	Mounting bracket	1	Hang inverter
C	DC connector	6+6	SCA30K-T-EU: 6 (+) & 6 (-)
		8+8	SCA15/20/25K-T-SA, SCA37.5-T-EU: 8 (+) & 8 (-)
D	AC connector cover	1	Route and protect AC cable
E	Wi-Fi Dongle	1	For communication and monitoring
F	M6X16 Screw	3	Two for fastening inverter and mounting bracket; one for grounding terminal.
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
J	Spacer	4	Separate the phases of AC output terminal
	Documents	1	Quick guide

Table 3-1 Delivery list description

IMPORTANT!



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.

3.3. 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 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 Environment

It is recommended to install inverter under a shelter to avoid direct sunlight, rain and snow accumulation, to prevent from triggering power derating, increasing inverter failures or reducing its service life.

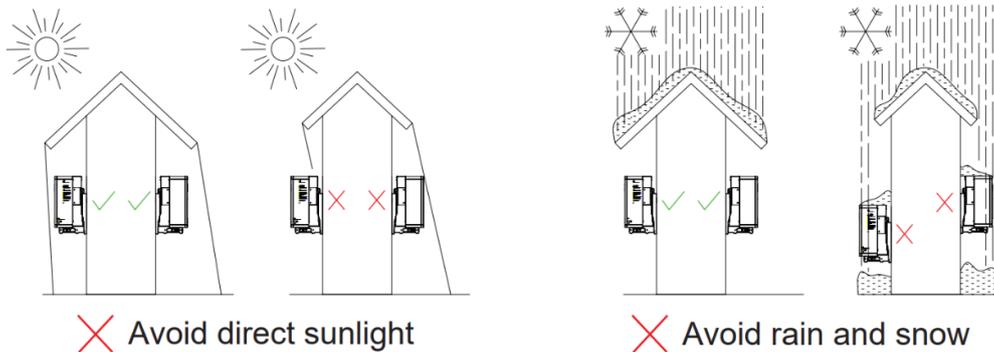


Figure 3-2 Installation environment requirements

3.4.2. Installation Space Requirements

During planning and installing the inverter, appropriate clearances shown as below shall be reserved to ensure sufficient ventilation and heat dissipation. The inverter shall be more than 300mm distant from its left or right objects, 500 mm from upper objects, 600mm from lower objects, and 1000 mm from its front objects. In addition, no objects shall be put between two inverters to prevent any influences on heat dissipation.

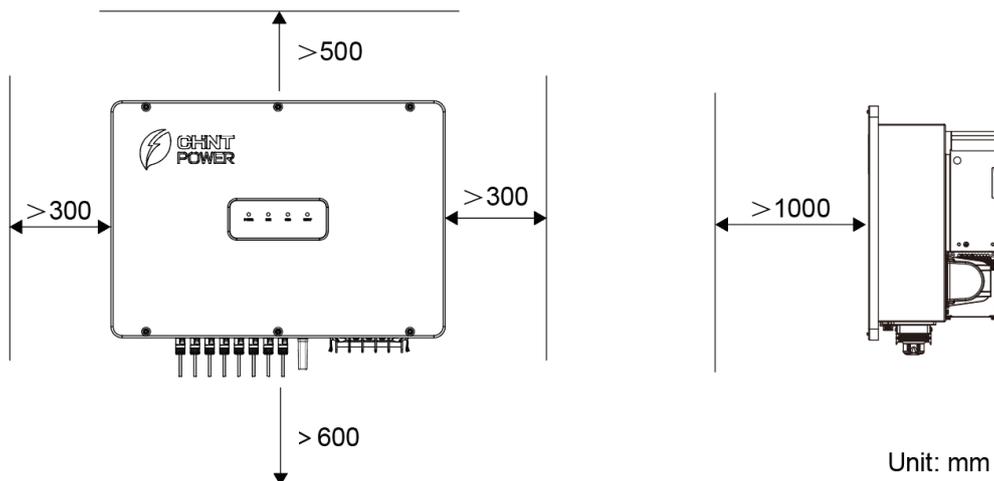


Figure 3-3 Installation space requirements



NOTICE!

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

3.4.3. Installation Modes

The inverter shall be installed following the modes as below:

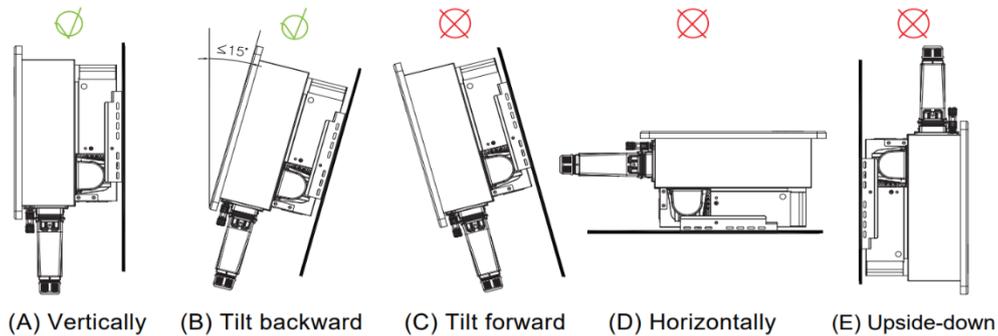


Figure 3-4 Installation modes

- (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 the vertical direction.
- (C). Do not mount the inverter leans forward.
- (D). Do not mount the inverter horizontally.
- (E). Do not mount the inverter upside down.



NOTICE!

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

3.5. Installation Procedures

Follow the steps below to install the inverter:

1. Mark positions of mounting holes on wall according to the size of the mounting brackets.

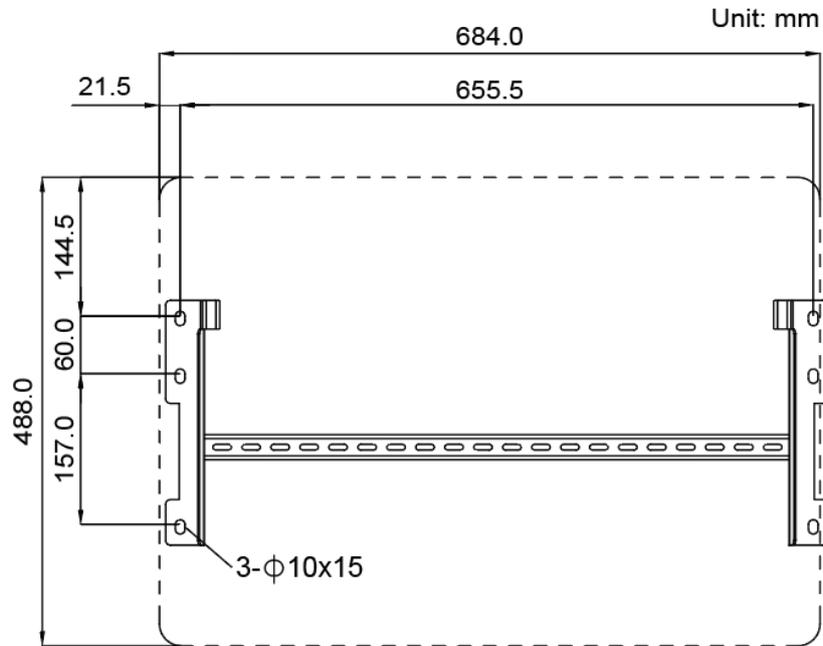
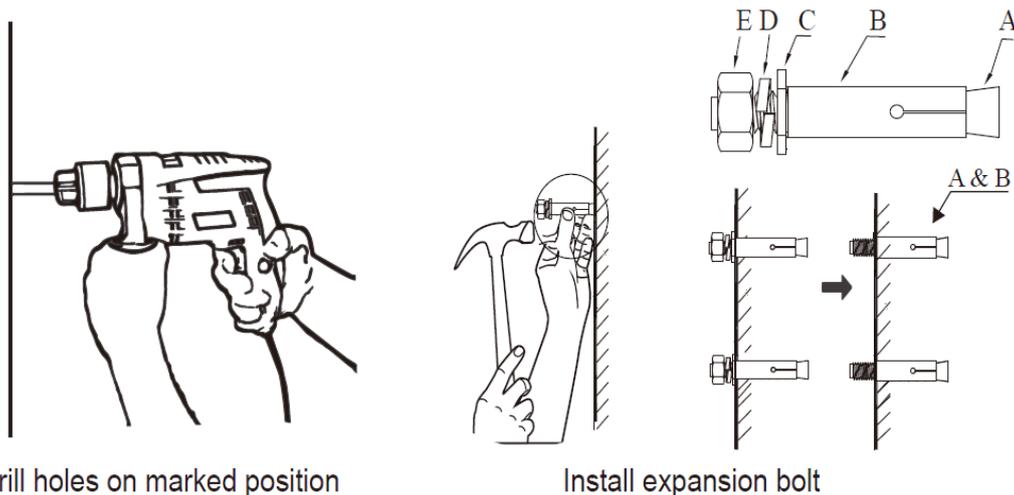


Figure 3-5 Mark positions of mounting holes (unit: mm)

2. Drill six holes with a depth of 65 mm with a $\Phi 12$ mm 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



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. Lead the said six pairs of nuts (E), spring washers (D) and flat washers (C) through screw holes of mounting brackets and lock them to fasten mounting brackets onto wall with a torque value of 153 kgf.cm

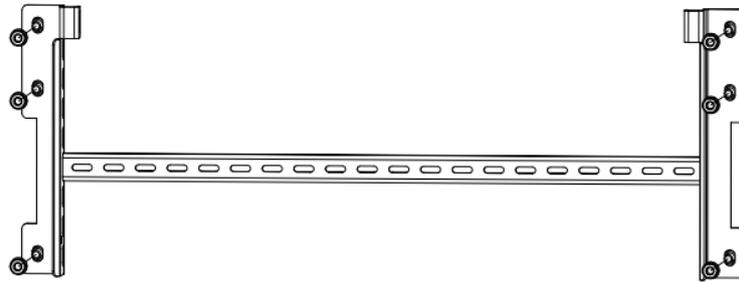


Figure 3-7 Fasten the mounting bracket

4. Hang the slots of the inverter onto the hooks of the mounting bracket according to the figure below.

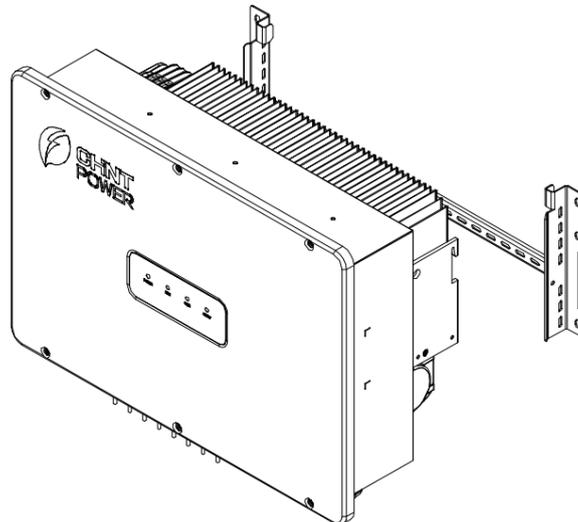


Figure 3-8 Hang the inverter host

**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: 51 kgf.cm.

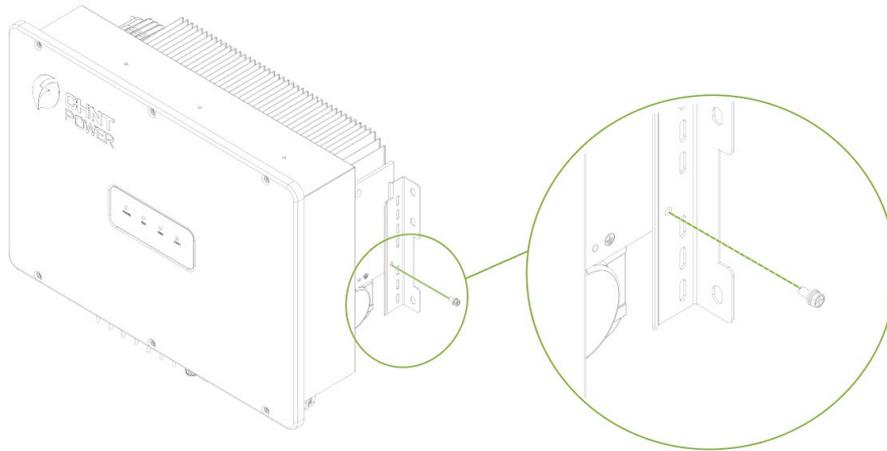


Figure 3-9 Inverter fixed on backplane bracket

3.6. Installation Check

1. Ensure slots of the inverter is aligned with hooks of mounting bracket.
1. Ensure the inverter is hung steadily on the mounting bracket.
2. Ensure the inverter is locked on the mounting bracket with M6 screws

4. Electrical Connection

DANGER!



- The cables shall be connected in accordance with the National Electrical Code and all other applicable local codes or jurisdictions.
- All cable connections must be made while ensuring that the equipment is free from any damage. Otherwise, it may cause electric shock or fire.
- The use of cables in high-temperature environments may result in insulation aging or damage. The distance between the cables and heat-generating devices or the surrounding area of the heat source should be at least 30mm.

4.1. Cable Specification

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

Cable	Type	Outer dia. (mm)	Conductor CSA (mm ²)
AC	Multi-core cables specialized for outdoor use	16~38	<ul style="list-style-type: none"> • Copper core cable: 16~50 • Aluminum alloy cable: 35~50
DC	Industry common PV cables (Type: PV1-F)	5.0~7.2 ^{*1}	4~6
PE ^{*2}	Cables specialized for outdoor use	NA	<ul style="list-style-type: none"> • 16 for (Phase wire CSA16 - 35) • Phase wire CSA/2 (Phase wire CSA>35)
RS485	4-core cables specialized for outdoor use	5~6	0.21~0.32

Table 4-1 cable specifications of inverters

Note 1: For selection exceeds the given range, please consult Chint for feasibility.

Note 2 The specifications are valid only when the phase wire and PE wire use the same material. If otherwise, ensure that the cross section of the PE wire produces a conductance equivalent to that of the wire specified in the table.

Other sizes of grounding cables that meet local standards and safety regulations can also be used for grounding connections. But Chint Power shall not be held liable for any damage caused.

4.2. Tools Required and Torque Values

No	Tools	Usages	Torque
1	No.17 hex. socket wrench	Fixing AC output terminals, PE&N terminals	61.18 kgf.cm
2	No.10 hex. socket wrench	Fixing external ground terminal	50.99 kgf.cm
3	No.2 Philips screwdriver	Fixing WIFI Dongle	10.20 kgf.cm
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 Cable Connection

NOTICE!

- 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.



- During installation of PV string and inverter, if positive or negative PV string is short to the ground because the distribution cable is not connected or routed according to relevant requirements, the AC/DC short circuit may be caused during the operation of the inverter, resulting in device damage. The resulting equipment damage is not covered by the equipment warranty.
- 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 spacers into baffle gaps between different phases.

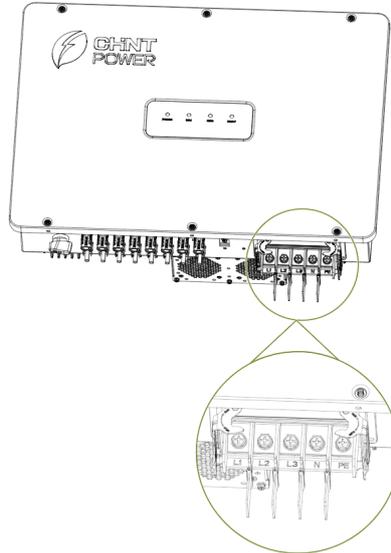


Figure 4-1 AC Output terminals and buckles

2. Remove an appropriate length of the jacket and insulation layer from the cable.

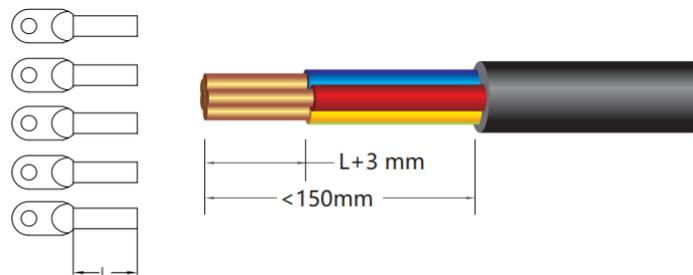


Figure 4-2 AC Wire stripping

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 and crimp them using hydraulic pliers. Wrap the crimped area with heat shrink tubing or insulation tape, then use a hot air gun to shrink it. (Note: If using heat shrink tubing, slide it on the cable before crimping.)

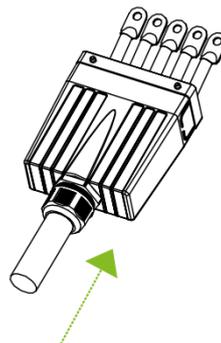


Figure 4-3 Crimp OT terminal

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

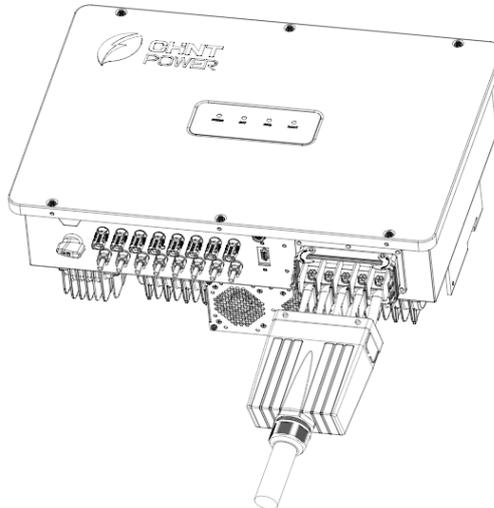


Figure 4-4 Connect wires to AC terminals


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.

- 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.

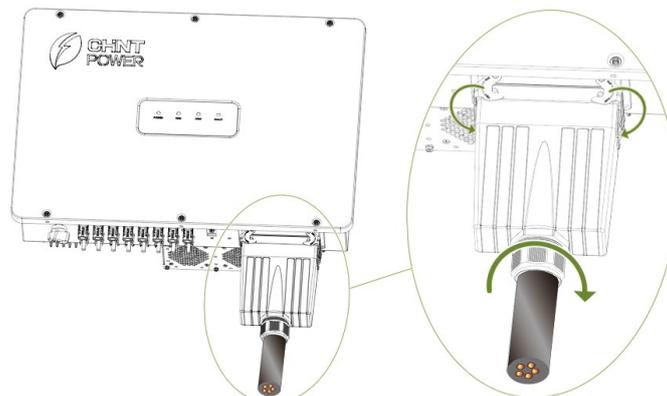


Figure 4-5 Tighten connector cover

The L1/L2/L3/N output cables of the PV inverter shall be connected to power grid via independent 3-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
SCA30/37.5K-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 external protection ground wire. Tools: No. 10 socket wrench, torque: 51 kgf.cm.

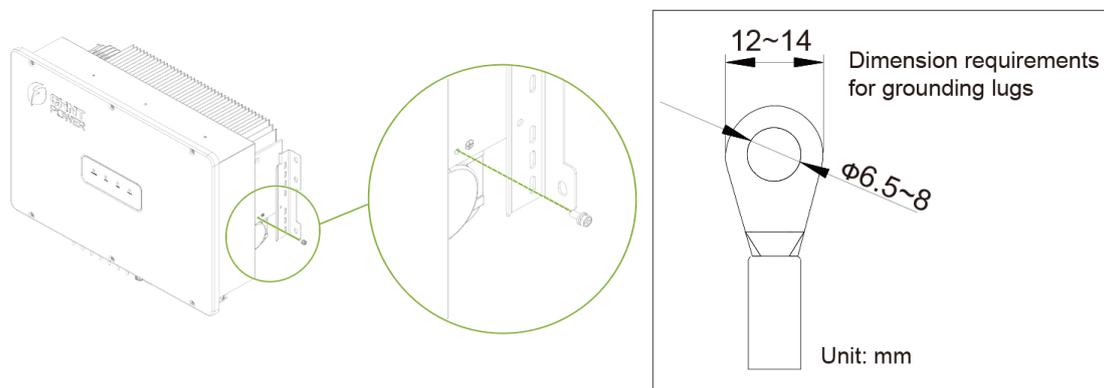


Figure 4-6 Tighten the external ground wire

NOTICE!



- The connection of 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.
- To enhance the corrosion resistance of the terminal, it is recommended to apply silicone or paint externally to the grounding terminal after the installation of the protective ground connection.
- During installation, try to keep the AC output cables close together, and during installation, keep the AC output cables close to the protective ground cables.
- Additionally, during installation, endeavor to keep the AC output cables close to the DC input cables. Failure to seal the gaps in the output terminals as required, leading to machine malfunctions, will result in our company not providing a warranty and assuming no responsibility.

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 module 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 modules 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 below:

1. Use a multi-meter to measure the PV strings' cable ends and check the polarity.
2. The positive (+) terminal of cable should match the positive (+) terminal of inverter's DC input.
3. The negative (-) terminal of cable should match the negative (-) terminal of inverter's DC input.

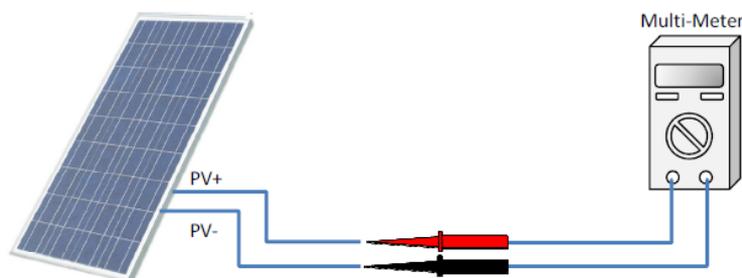


Figure 4-7 Polarity Check



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.

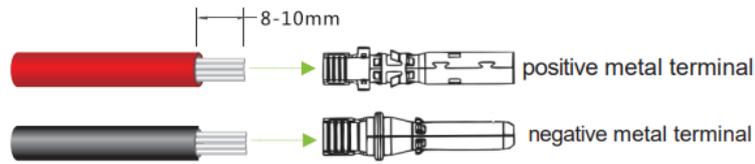


Figure 4-8 Strip DC wire

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.

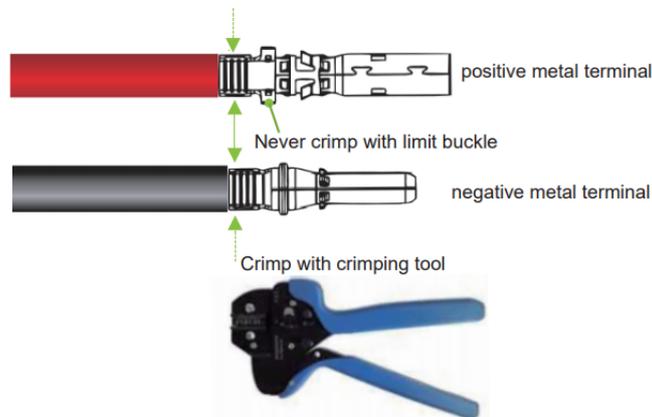


Figure 4-9 Crimp power cables

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.

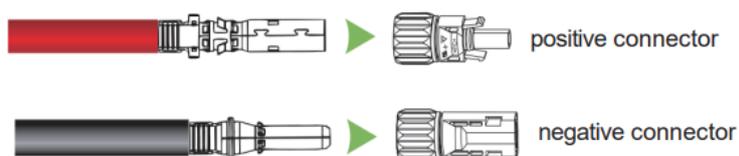


Figure 4-10 Insert power cables to connectors

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.

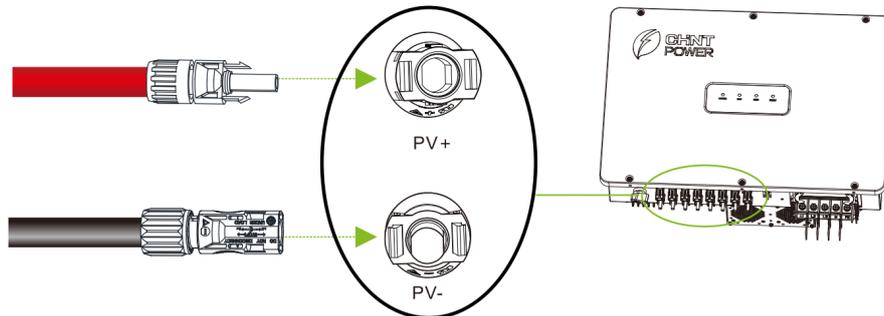


Figure 4-11 Insert the connectors into corresponding terminals

NOTICE!



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

After completing all wiring steps, it is recommended to bind the cables approximately 300 to 350 mm away from the DC connectors and AC connector (refer to Fig. 4-12). This can help prevent swaying or movement of the cables, which may loosen the connectors and potentially affect the protection degree of the inverter.

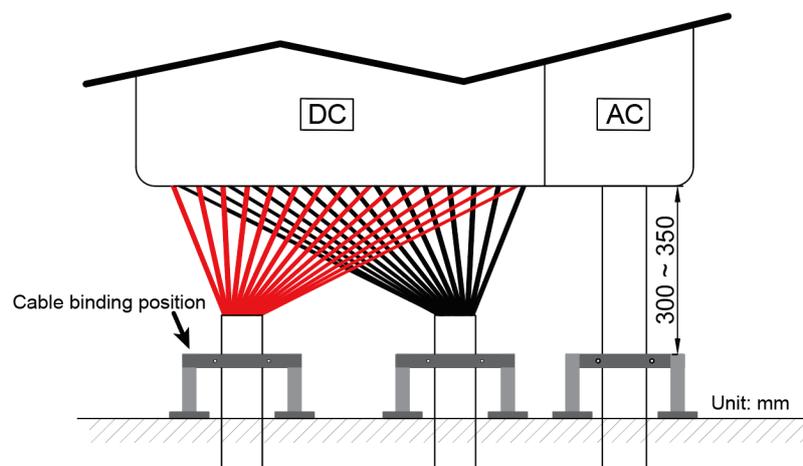


Figure 4-12 Bind cables

4.3.3. Communication Connection

4.3.3.1. Connect RS485 cable

1. Strip off RS485 wire by referring to AC cable stripping. Loosen the tightening nut of the RS485 connector by hand.

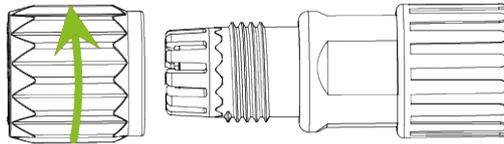


Figure 4-13 Loosen the tightening nut

2. Route a 4-core RS485 communication cable through the tightening nut and adapter sleeve of the RS485 connector. Strip off the cable insulation layer according to the figure below.

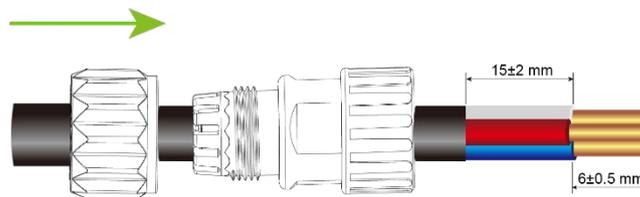


Figure 4-14 Route a 4-core RS485 communication cable

3. 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 RS484-wire to port 4.

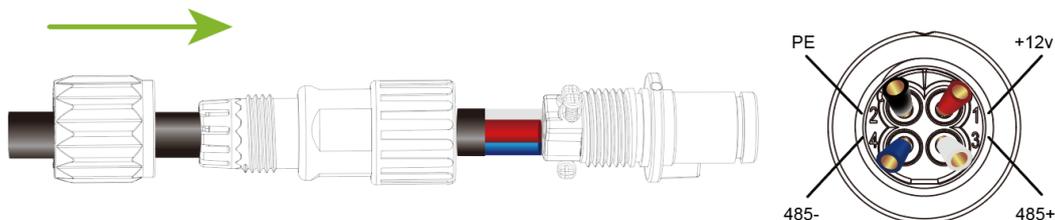


Figure 4-15 Crimp communication wires

- 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 RS484-wires to port 4.



NOTICE!

If connecting to incorrect port, the inverter may operate abnormally

4. Tighten the screws with a screwdriver, torque value: 0.4-0.6 N.m.



Figure 4-16 Tighten the screws

5. First, tighten the wiring plug by hand, torque value: 1.2-1.5 N.m. Then adjust the cable length, tighten the tightening nut by hand, torque value: 2.5-2.9 N.m.

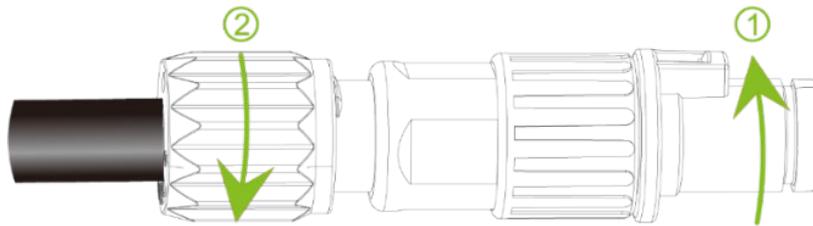


Figure 4-17 Tighten the RS485 connector

6. Align the raised positioning bar on the RS485 connector with the slot on the RS485 communication interface of the inverter, and fully insert. When you hear a "click" sound, it indicates a successful connection.

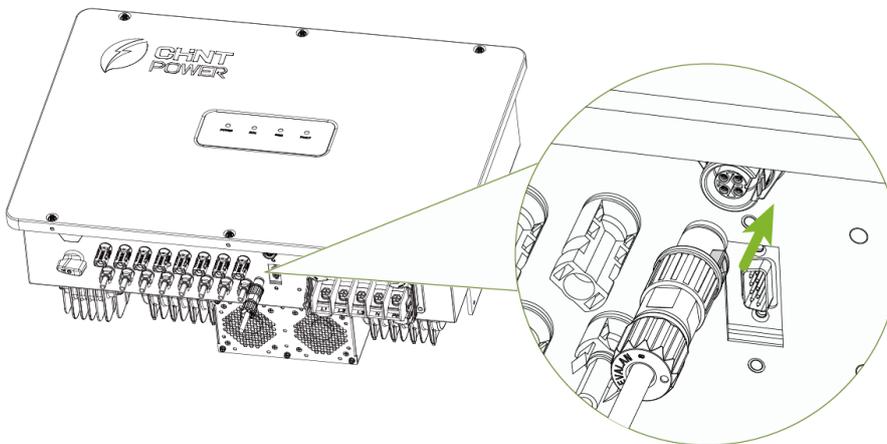


Figure 4-18 Insert RS485 connector

4.3.3.2. Install Wi-Fi Dongle

Follow the steps below to install the Wi-Fi dongle:

1. Insert the Wi-Fi dongle into the matching communication interface on the inverter.
2. Tighten the screws on both sides of the WiFi dongle using a No. 2 Phillips screwdriver, torque value: 10 kgf.cm.

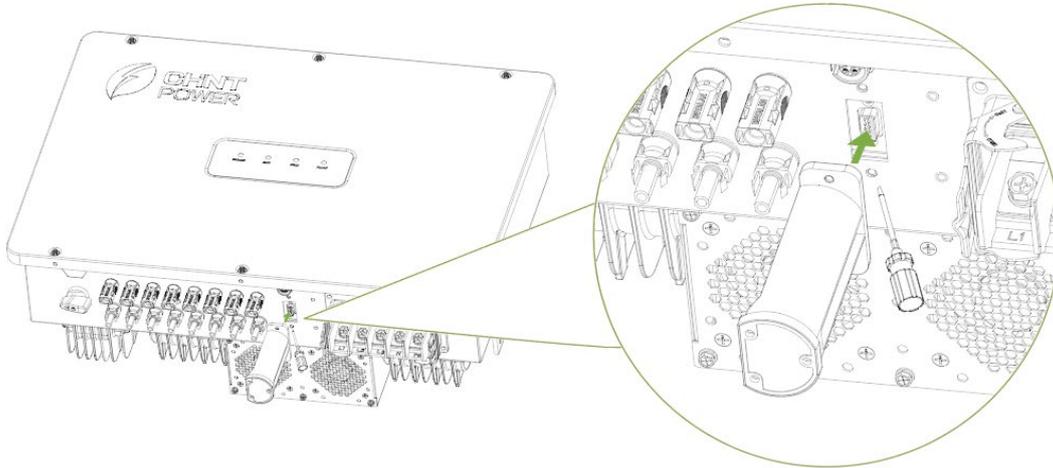


Figure 4-19 Install Wi-Fi Dongle

4.3.4. Anti-Backflow for Single Inverter

Note: Anti-Backflow is a standard function of SCA15/20/25K-T-SA and SCA30/37.5K-T-EU Inverters, which can be enabled or disabled based on user requirements.

Follow the diagram below to perform the single anti-backflow wiring:

1. Before performing any electrical connections, ensure the meter is intact and all cables are de-energized.
2. Connect the L1, L2, L3, N lines from the grid side to the meter.
3. Connect the CT (Current Transformer) to the meter.
4. Install the CT onto the corresponding phase line in the direction of current flow.
5. Connect the RS485 communication cable to the inverter, refer to **Section 4.3.3.1 Connect RS485 Cable.**

After completing the wiring procedures, the relevant configuration need to be set in the Chint Connect App, please see **6.3.2.4.11.1 Anti-Backflow Parameter Configuration in Chint Connet.**

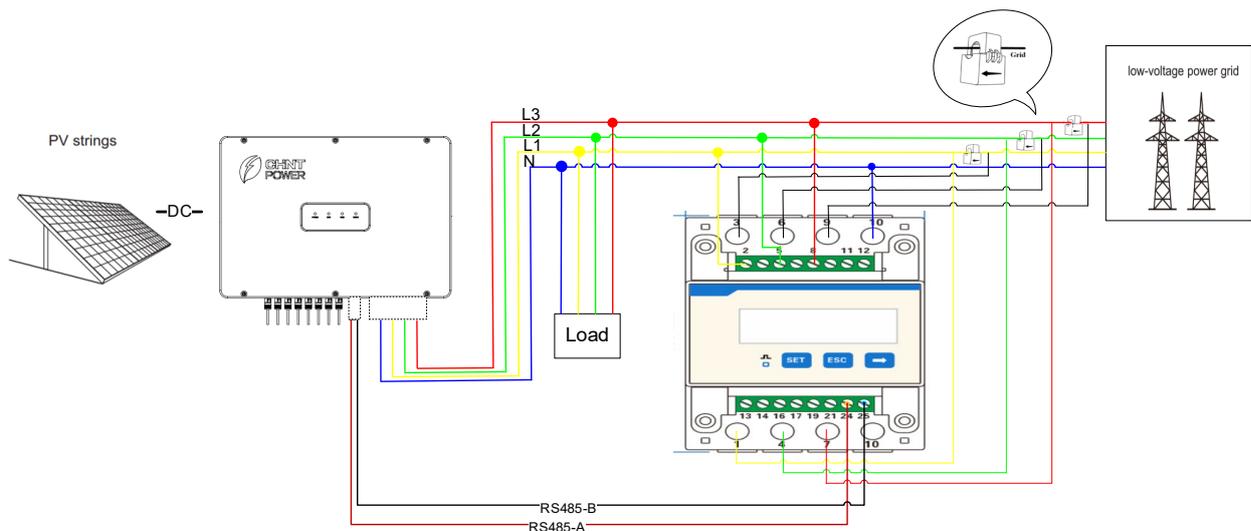


Figure 4-20 Three phase four wire: via current transformer

5. Inverter Commissioning

WARNING!



- Please follow the guidelines below before performing any on-grid operation to eliminate possible dangers.
 - When the equipment is powered on for the first time, it is imperative that professionals correctly configure the parameters.
 - Before operating in grid-connected mode, adhere to the following guidelines to identify and eliminate potential hazards, ensuring safety.
-

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.

5.2. Inverter 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. Turn on the AC side circuit breaker or fuse switch disconnecter.
2. Turn on the DC side circuit breaker. (Start from step 3 if no circuit breakers are available.)
3. Set the inverter DC switch to the "ON" position. When the PV array produces enough power, the inverter LED POWER indicator will be lit, and the inverter will enter the self-check state in turn.
4. Set up App initializing in sequence according to the procedures introduced in chapter 6 to ensure the inverter can work smoothly.

6. App Interface and Setting

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, SCA30/37.5K-T-EU series inverters, we just take SCA30K-T-EU as instance.

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

6.1. 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).



6.2. App Connection and Quick Configuration

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.

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. Open Chint Connect App, click **App Setting** at the bottom to set the language, APP platform, synchronize cloud data or check its version.

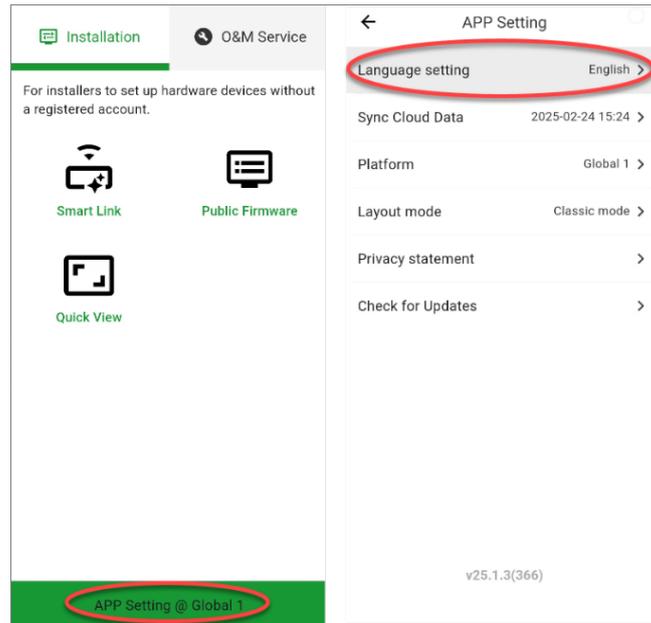


Figure 6-1 App Settings

2. Back to landing page, click **Smart Link** to enter the **Connect to The Adapter** interface.

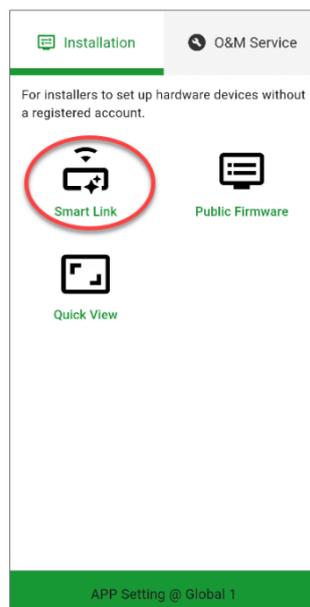


Figure 6-2 Click Smart Link

3. Click the wireless network named CUGW-XXXXXXX (the last four numbers can be found on the label of Wi-Fi Dongle), or click the green QR icon under the list to scan the bar code of Wi-Fi Dongle to connect network; Or you can try WiFi Mode by touching the icon in the top right corner and inputting password "Password".

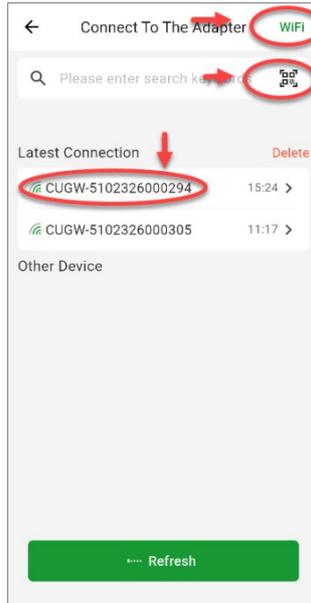


Figure 6-3 Connect to adapter

4. If the connection is successful, you will be redirected to the adapter information interface. Click **Device Settings** to access to the main interface.

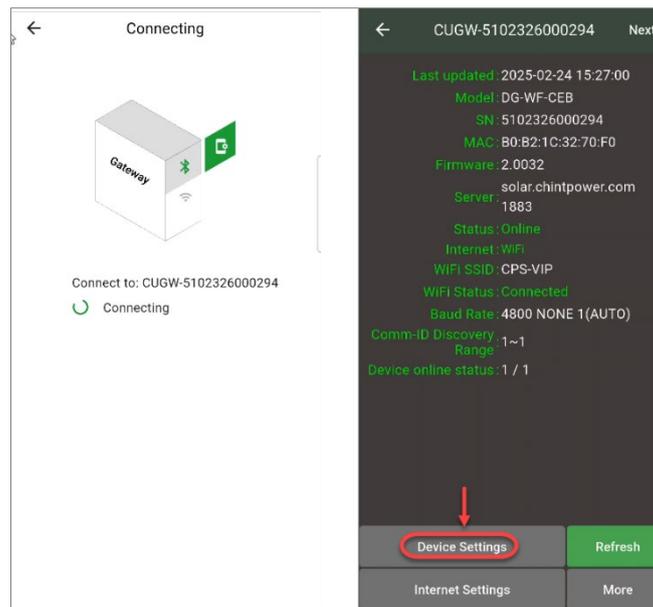


Figure 6-4 Adapter information

5. The main interface is displayed as shown below, providing real-time information about the inverter.

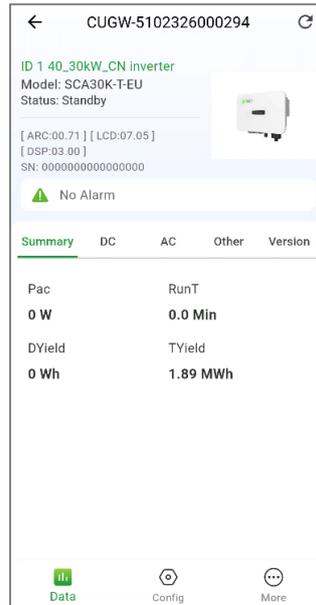


Figure 6-5 Main interface

- Click Config icon and input password “1111”, go to inverter parameters configuration interface.

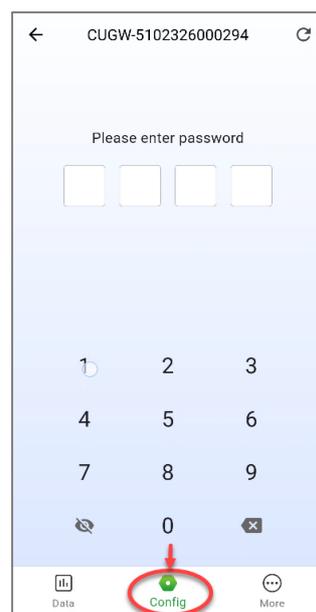


Figure 6-6 Input configuration password

- Click **Turn on and off** to turn on the inveter.

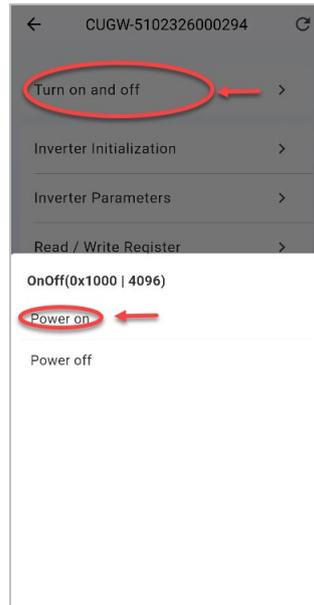


Figure 6-7 Turn on/off the inverter

8. Click **Invertr Initialization** to set Grid Code, PV Link Type, Neutral line, RS485 and other parameters if necessary.
 - Grid Connection code: Choose the Grid Code according to the requirements of your local authority.
 - PV Input Mode : 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 Setting: Used to choose if the neutral line is connected or not.
 - RS485: Choose the communication data Modbus Address and Baud Rate.
 - TTL: Configure the TTL.
 - Time Set: Configure the system time.

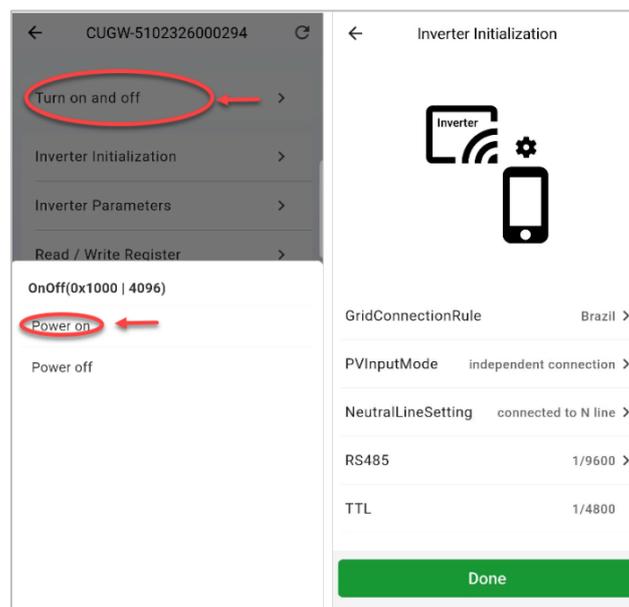


Figure 6-8 Initiallize Inverter

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.

- If the inverter fails to operate normally, the FAULT light will illuminate and the fault information will be shown on the interface. You can click on the **More** 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.

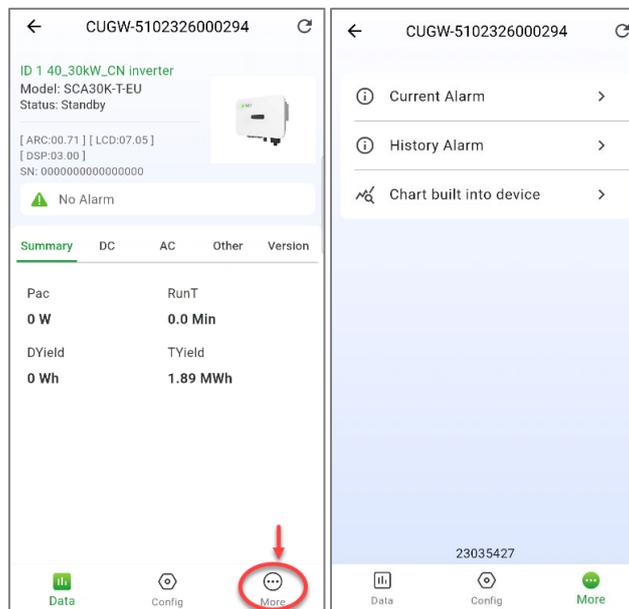


Figure 6-9 View Alarm

6.3. Main Interface Overview and App Setting

The main interface is displayed as shown below, providing real-time information about the inverter.

In the main interface, there are three navigation menus:

- **Data:** Displays the real-time information of the inverter.
- **Config:** Config the parameters of the inverter.
- **More:** View alarm and power yield data.

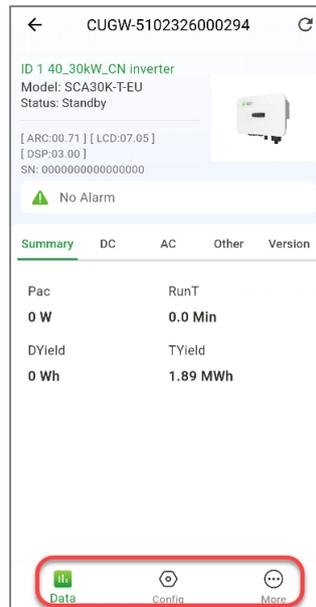


Figure 6-10 Main Interface

6.3.1. Data Menu

The **Data** interface displays the real-time information of the inverter that includes the following sections:

- **Summary:** Summary of Power AC (Pac), running time (RunT), daily yield (DYield), total Yield (TYield).
- **DC:** The DC section displays the information of PV input mode, total DC power output (Pdc), voltage and current of each MPPT.
- **AC:** The DC section displays the information of each phase line.
- **Other:** The other section displays the information of RS485, module temperature(Tmod), and internal temperature (Tinter).
- **Version:** The version section displays the information of grid code , PmaxLim (Power Maximum Limit), SmaxLim (Apparent Power Maximum Limit), the LCD firmware version, LCD boot version, DSP version, MiniMCU (Microcontroller Unit) version, CPLD (Complex Programmable Logic Device) version, ARC version, and ARC boot version.

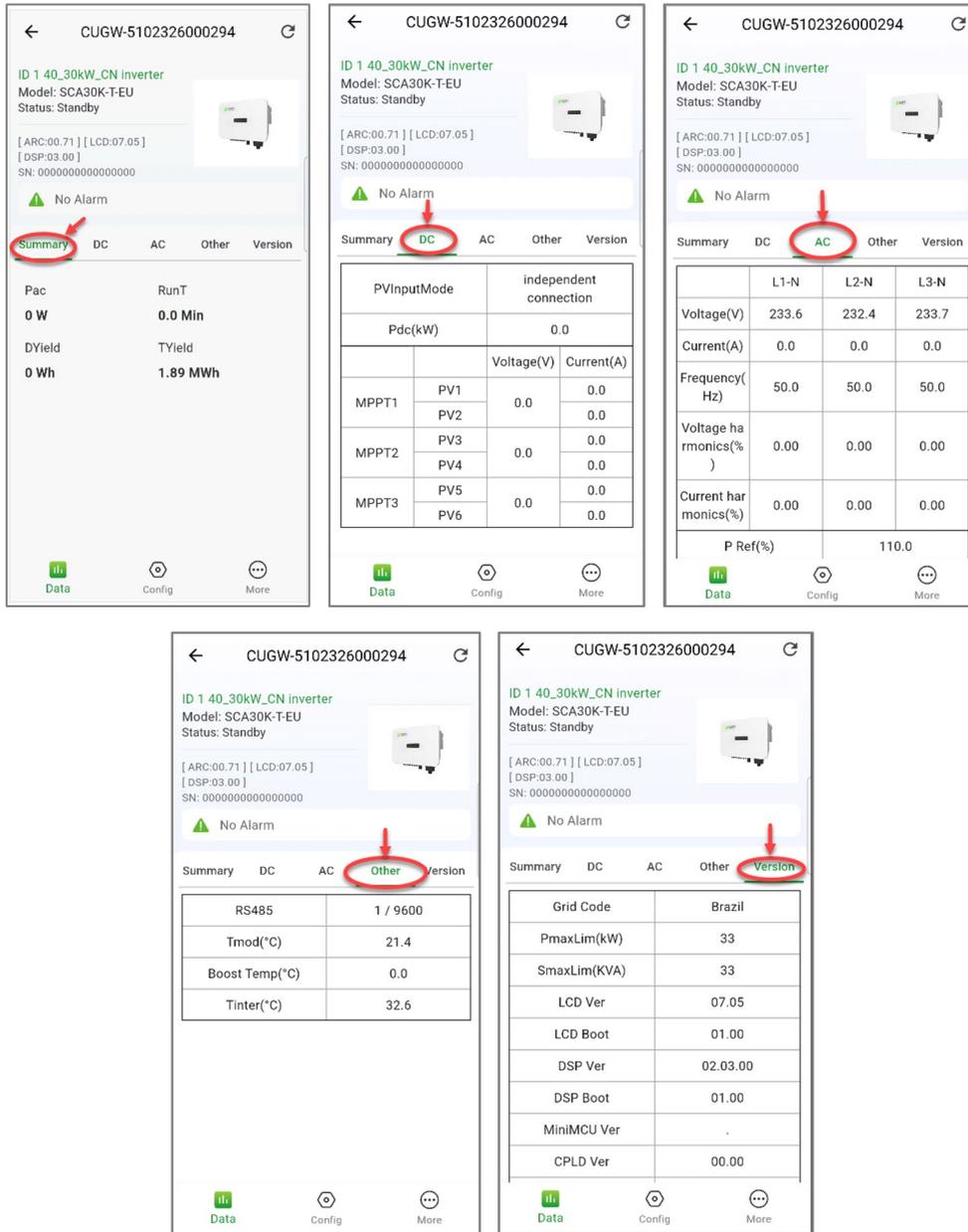


Figure 6-11 Real-time Data

6.3.2. Config Menu

Click the **Config** icon and input the password “1111”, you will go to the config interface.

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

- Turn on and off: Controls the device's power state.
- Inverter Initialization: Sets up or prepares the inverter for operation (e.g., configuring basic settings).
- Inverter Parameters: Adjusts or views the inverter's working values (e.g., voltage, frequency, power limits).
- Read/Write Register: Accesses or modifies internal device settings for advanced configuration or troubleshooting.
- Upgrade Firmware: Updates the device's internal software to improve performance or fix issues.

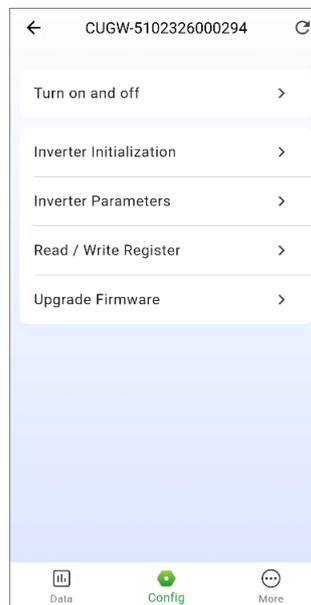


Figure 6-12 Configure Options

6.3.2.1. Turn on and off

Turn on and off option Control the device's power state (startup or shutdown).

- 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.

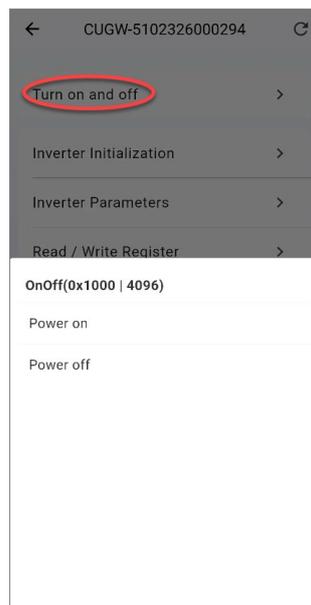


Figure 6-13 Turn on and turn off the inveter

6.3.2.2. Inverter Initialization

Inverter Initialization configures critical startup parameters to ensure safe and compliant operation. Which includes:

- Grid Connection Rule:** Selects regional standards (e.g., Brazil) for voltage, frequency, and grid synchronization.
- PV Input Mode:** Defines solar array connections (e.g., Independent Connection for separate MPPT channels).
- Neutral Line Setting:** Configures grounding (e.g., Connected to N Line for safety).

- **RS485 and TTL:** Communication Parameters: Sets RS485/TTL addresses for device communication.
- **TimeSet:** Configure system time.

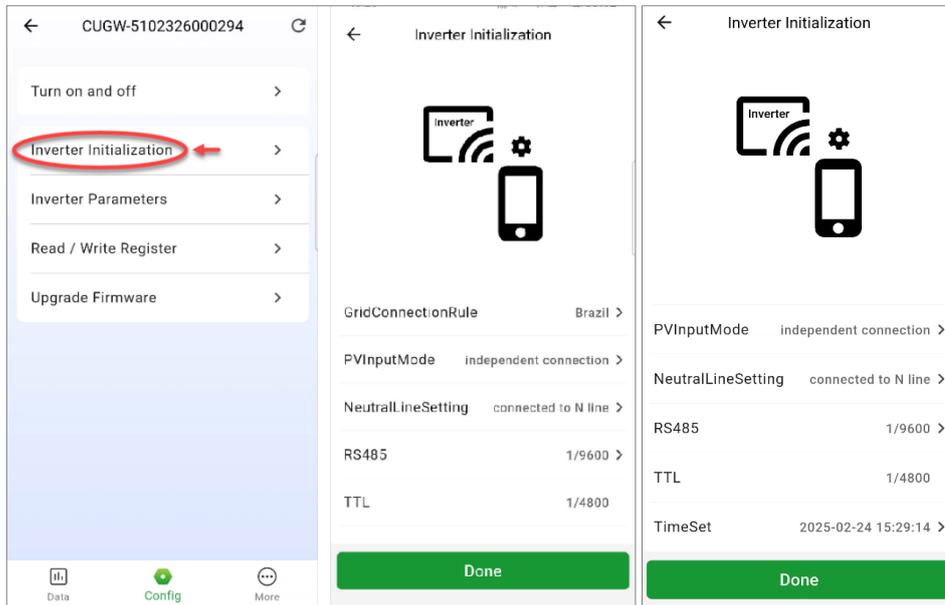


Figure 6-14 Inverter Initialization

6.3.2.3. Inverter Parameters

Inverter Parameters configures essential parameters to ensure the inverter operates safely and complies with regional grid standards. The configurable parameters are as follows:

- **GridConnectionRule:** Selects grid compliance standards (e.g., "Brazil" for local voltage/frequency requirements).
- **RatedVolt:** Defines the system's nominal voltage (e.g., "400.0" volts).
- **PVInputMode:** Configures solar panel connections (e.g., "Independent Connection" for MPPT optimization).
- **NeutralLineSetting:** Specifies grounding mode (e.g., "Connected to N Line" for safety).
- **RS485 and TTL:** Communication interfaces, sets addresses and baud rates for RS485 ("1/9600") and TTL ("1/4800").
- **TimeSet:** Synchronizes the device clock (e.g., "2025-02-24 15:29:11").
- **Inverter SN:** The inverter's serial number
- **Common Password:** communication password ("ComPaswd").

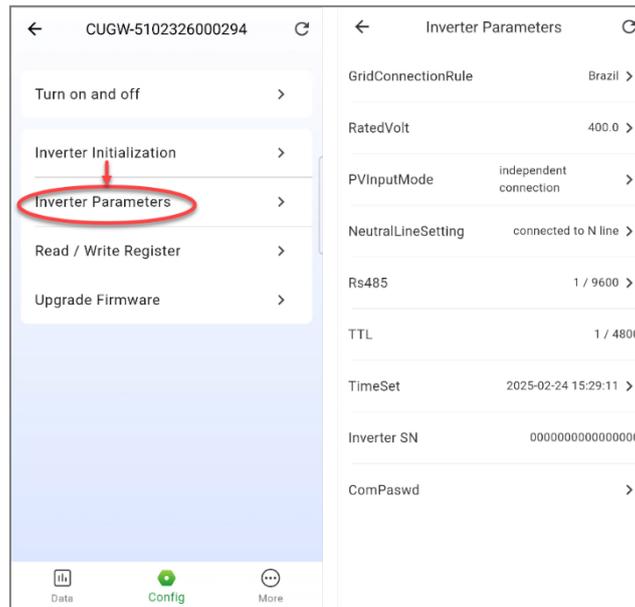


Figure 6-15 Inverter parameters

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.

6.3.2.4. Read/Write Register

In the **Read/Write Register** interface, you can configure the register parameters as follows:
Power Dispatch

- Grid Protection Parameters
- Active Power Derating Parameters
- LVRT/HVRT
- Other Parameters
- Enable/disable control Parameters
- Control Command
- Inverter Basic Information
- LcdLess Basic Parameters
- LcdLess Information Area

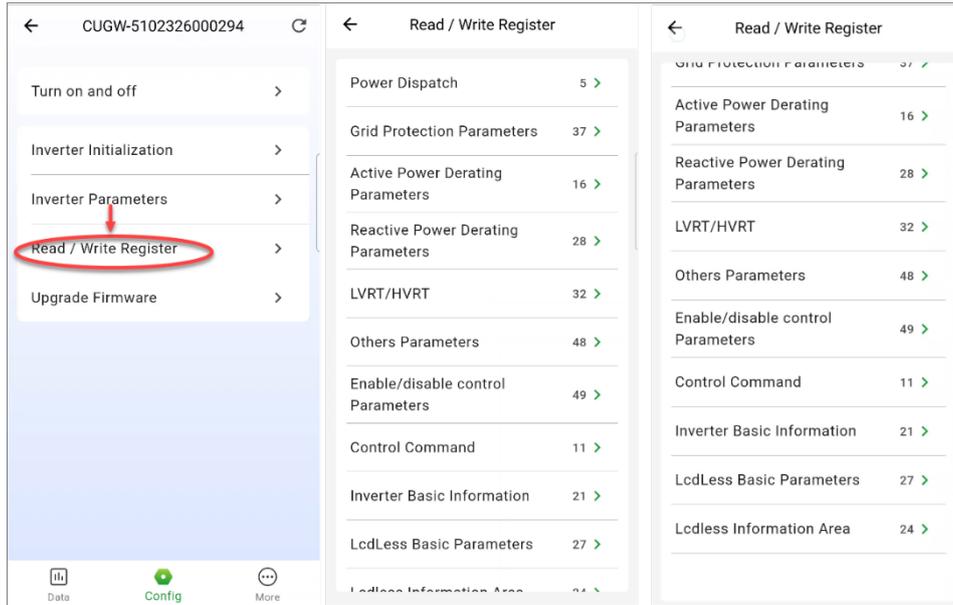


Figure 6-16 Read/Write Register

6.3.2.4.1 Power Dispatch

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

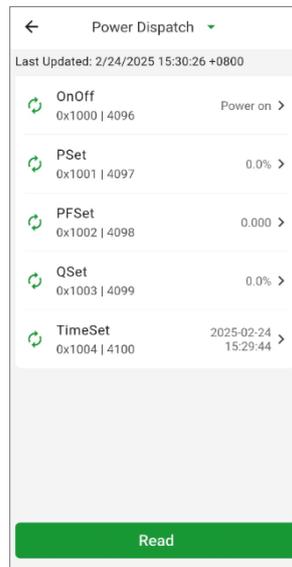


Figure 6-17 Power Dispatch interface

6.3.2.4.2 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.

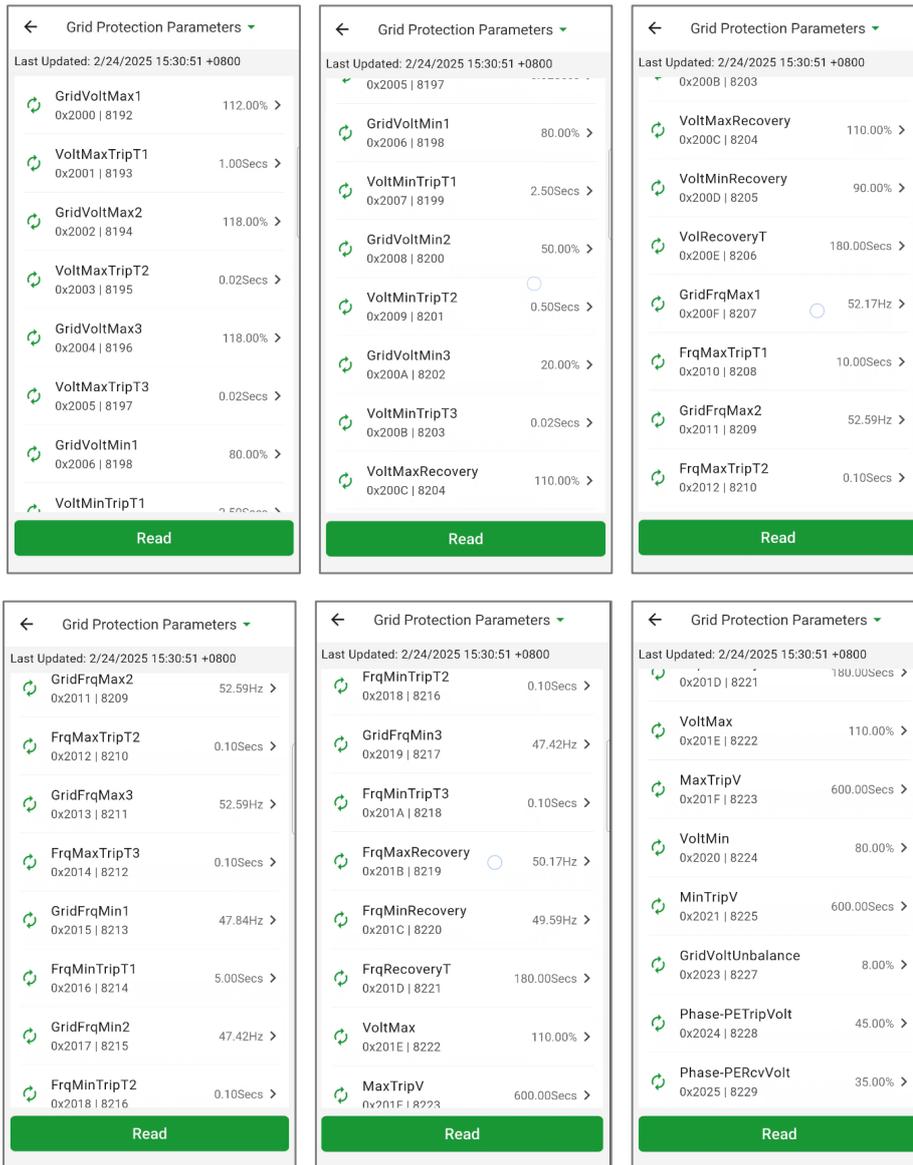


Figure 6-18 Grid Protection Parameters

6.3.2.4.3 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.

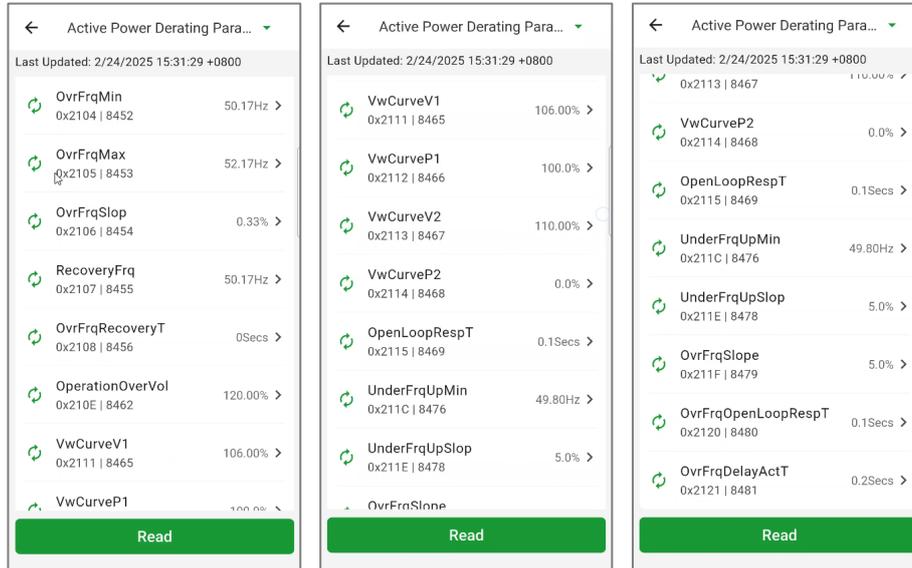


Figure 6-19 ActivePower Derating Parameters

You can see the curve of over voltage derating and curve of over frequency derating in figures below.

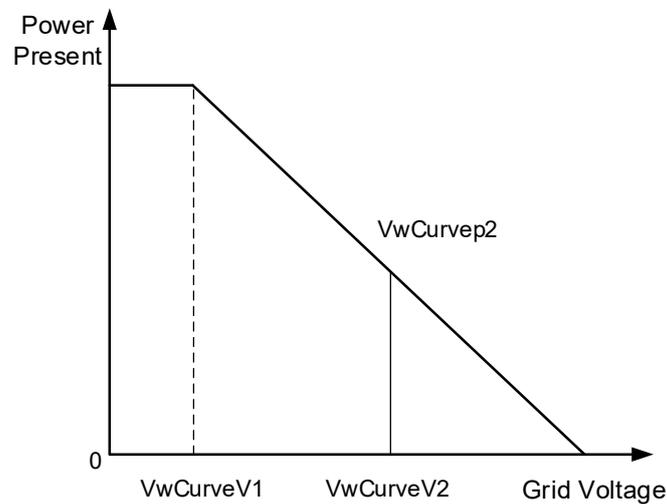


Figure 6-20 Curve of over voltage derating

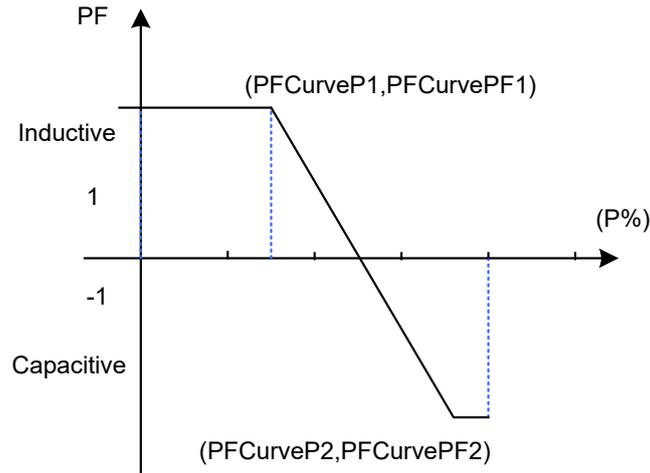


Figure 6-23 PF(P) Curve Mode

Q(u) Curve: Q(u) curve mode.

Note: The reactive compensation changes according to the grid voltage change, as shown in figure below.

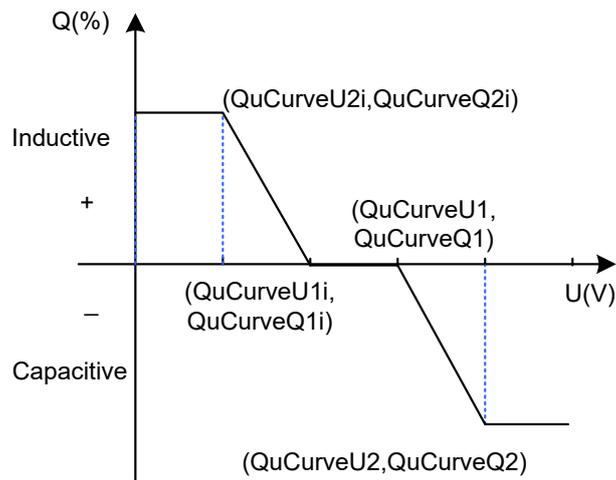


Figure 6-24 Q(u) Curve Mode

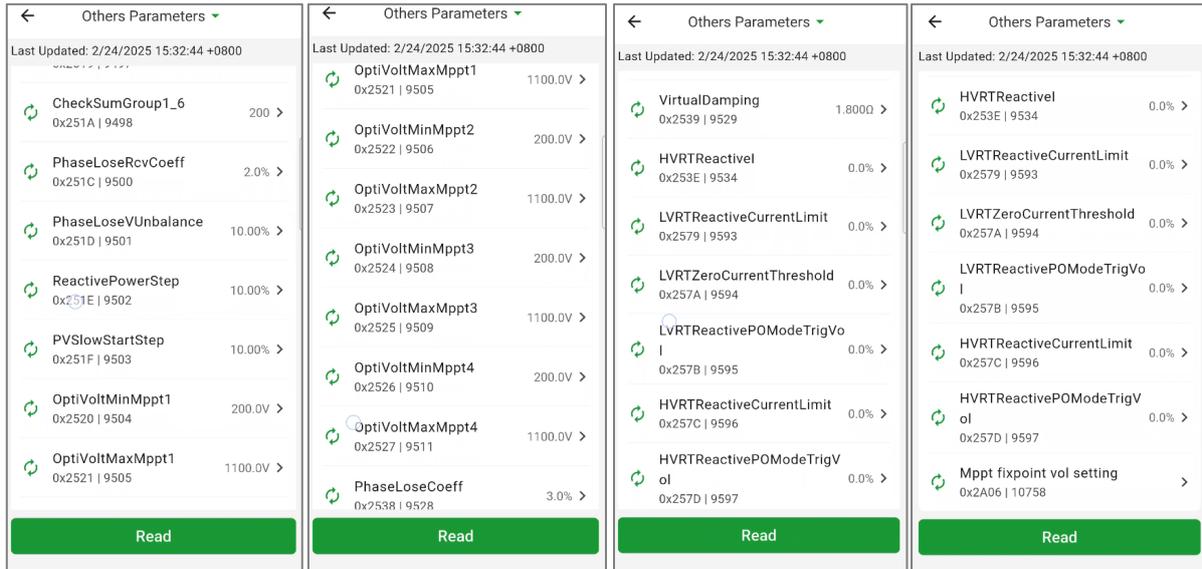
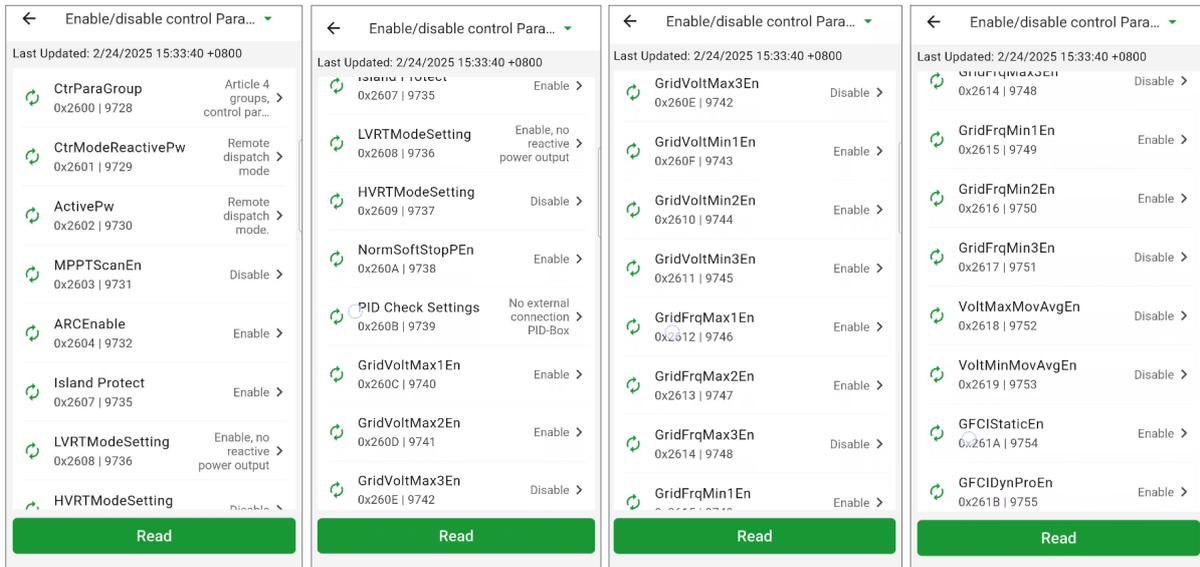


Figure 6-26 Other Parameters

6.3.2.4.7 Enable/disable Control Parameters

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



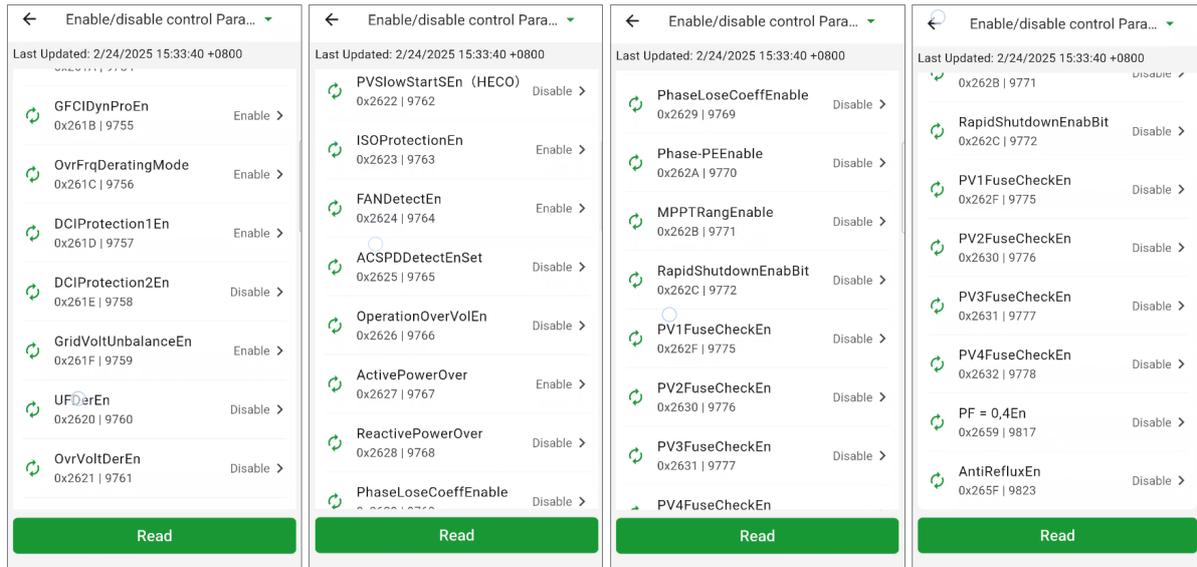


Figure 6-27 Enable/disable Control interface

6.3.2.4.8 Control Command

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

- **Powe OnOff:** This function can be used to control remotely the turn on/off status of the device.
- **Force Restart:** When a permanent failure occurs, you have the option to re-energize the inverter. After re-energizing, the fault will be restored. Alternatively, you can perform a forced restart through the APP or web interface, and the fault will also be restored. There are no limitations on the number of times these procedures can be carried out.
- **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.
- **ARC Detect:** This function is used to manually detect whether the ARC board is faulty (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 "ARCDetect" item will display "Error" and the "ARC protection-Occur" is shown in "History Faults", wait for 5 minutes and the inverter can reconnect automatically; If there are no faults, the "ARCDetect" 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-Occur" fault of the machine (if 4G network card is connected, this function can be used remotely on web page). The device is preset to automatically reconnect 5 times within 24 hours by default (the automatic reconnection time can be set in parameter area of ARC interface). When ARC protection is triggered for the fifth time, it is necessary to manually clear the ARC fault. Then the device will resume the automatic reconnection function – reconnect five times within 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.

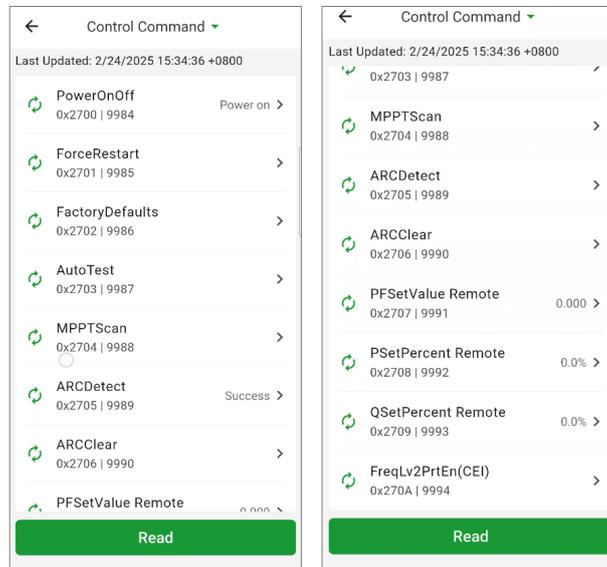


Figure 6-28 Commands interface

6.3.2.4.9 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.

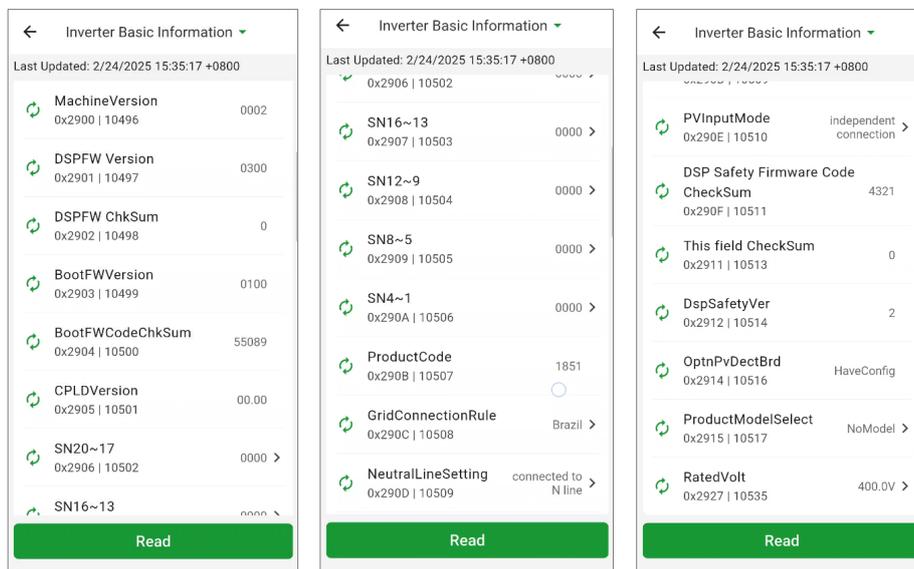


Figure 6-29 Inverter basic information interface

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.

6.3.2.4.10 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.

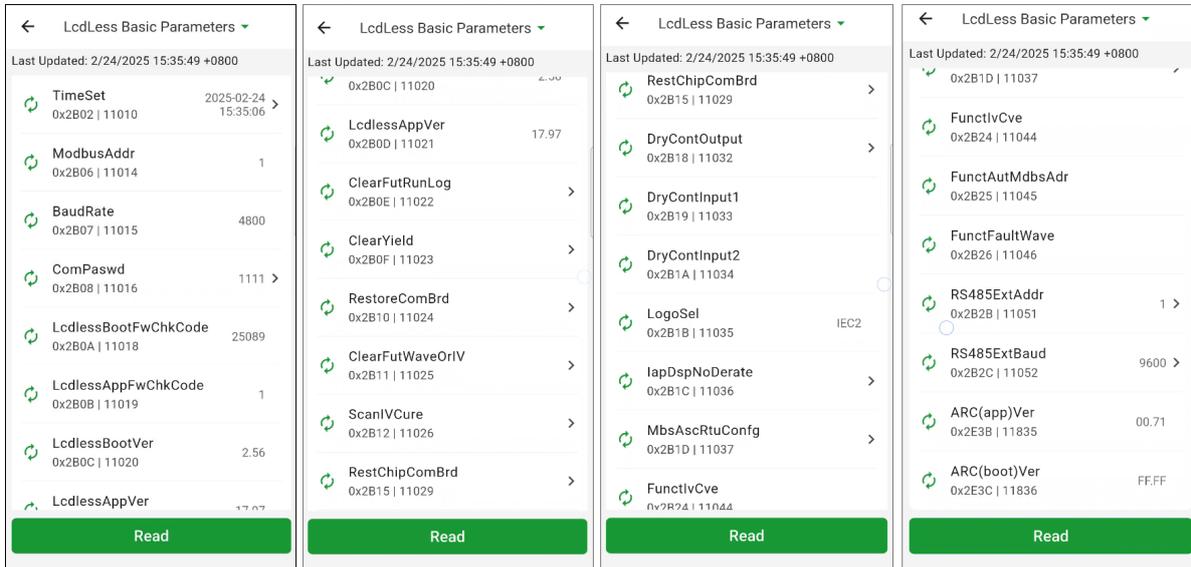


Figure 6-30 LcdLess Basic Parameters interface

6.3.2.4.11 Lcdless Information Area

The **Lcdless Information Area** provides real-time monitoring and configuration of critical system parameters, including anti-backflow protection status (**AntiRefluxEn**), meter communication settings (**MeterAddr**, **MeterType**), anti-backflow data (ABF grid, ABF load).

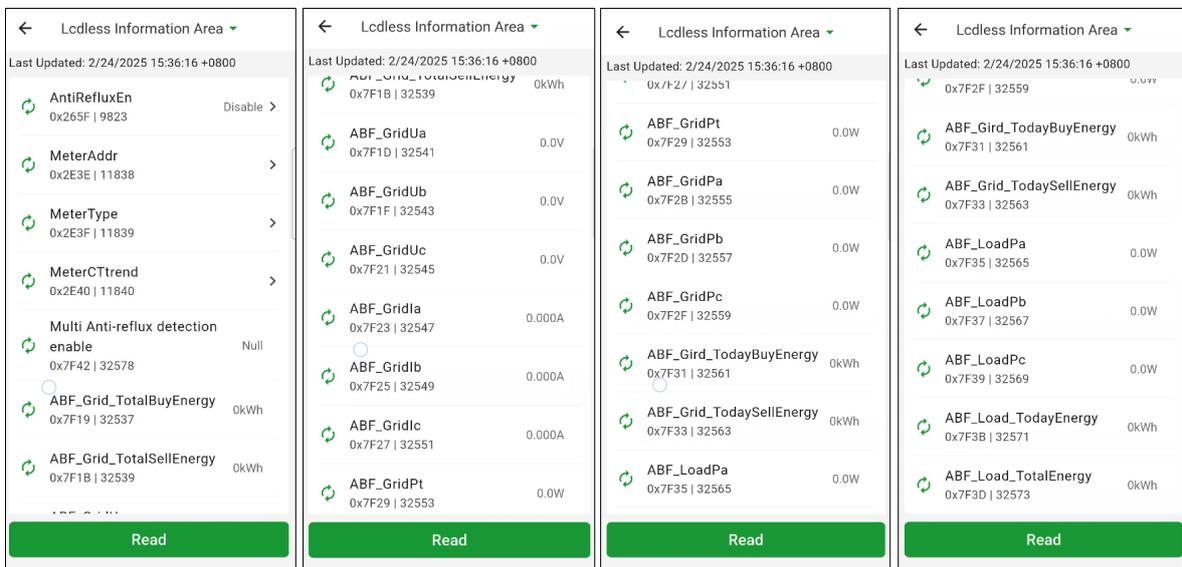


Figure 6-31 Lcdless Information Area

6.3.2.4.11.1 Anti-Backflow Parameter Configuration in Chint Connect

After completing the anti-backflow wiring as per **4.3.4 Anti-Backflow for Single Inverter**, the following configurations need to be set in the Chint Connect App.

1. Navigate to Config > Lcdless Information Area, click AntiRefluxEn button, select Single Anti-refluxEn.

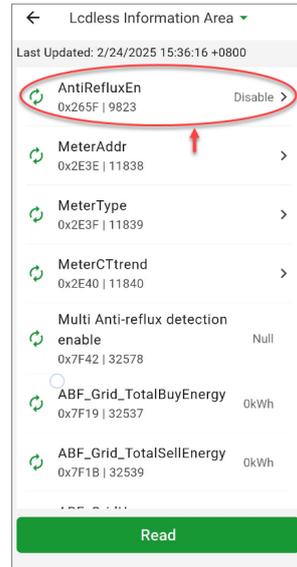


Figure 6-32 Enable anti-backflow

2. Select meter type: navigate to **Config > Lcdless Information Area**, set **MeterType** parameter to **DTSU666**.

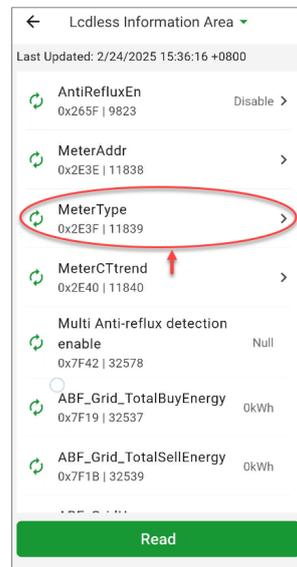


Figure 6-33 Configure meter type

3. Disable the anti-backflow function: Navigate to **Config > Lcdless Information Area**, click **AntiRefluxEn** button, select **Disable**.
4. After disabling the anti-backflow function, the active power dispatching value must be set to achieve full power output of the inverter: navigate to **Config > Power Dispatch**, and set the **PSet** parameter to **100.0**.

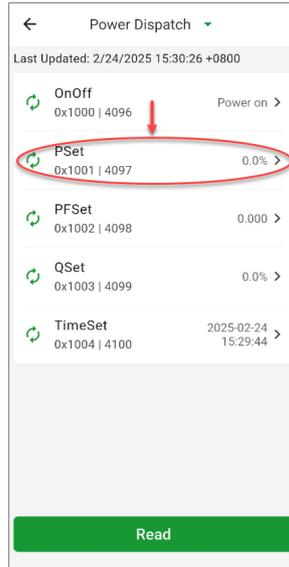


Figure 6-34 Reset the value of PSet

6.3.2.5. Firmware Upgrade

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

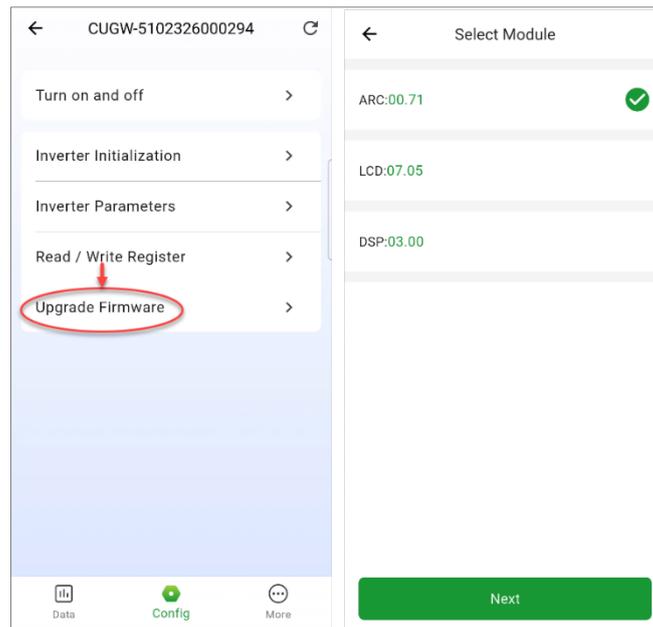


Figure 6-35 Firmware Upgrade

6.3.3. More Menu

More menu includes the following options:

- Current Alarm: View active alerts or issues in real-time.
- History Alarm: View history alarm and running status.
- Chart built into device: Explore visual data of power generation situation at different times period.

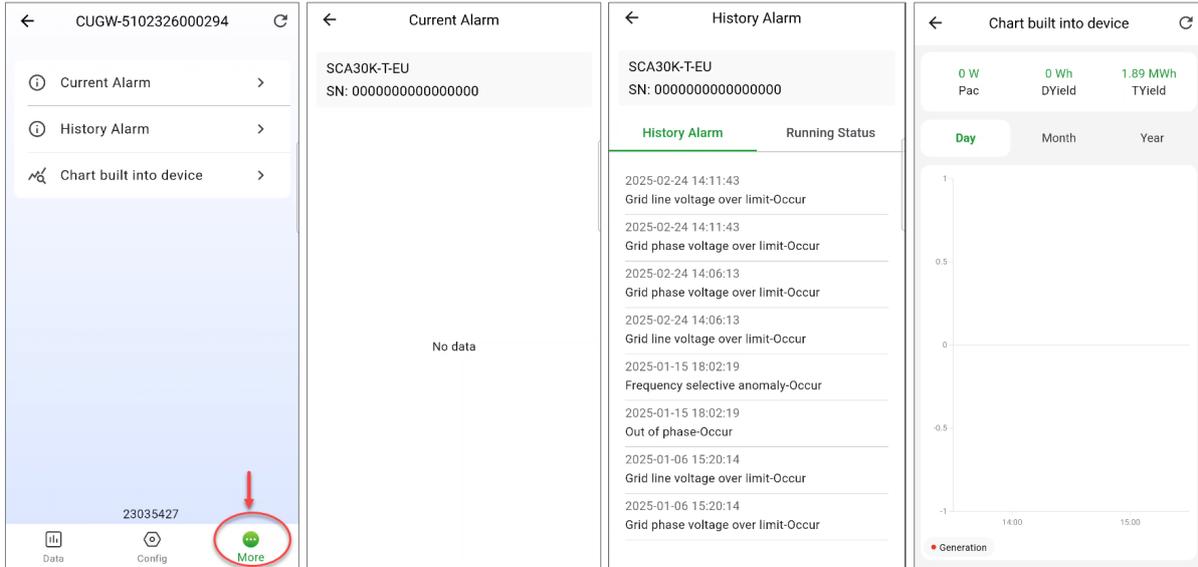


Figure 6-36 More interface

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 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 3.5 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 below.

LED status	Solutions
Warnings	<ol style="list-style-type: none"> 1. Turn off the external AC breaker. 2. Switch the DC switch to OFF position. 3. Check the PV input voltage and polarity.
Common (restorable) faults	<ol style="list-style-type: none"> 1. Turn off the external AC breaker. 2. Switch the DC switch to OFF position. 3. Check if the grid voltage is normal. 4. 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 Indicator

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 connectors 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)	<ol style="list-style-type: none"> 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)	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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)	<ol style="list-style-type: none"> 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)	<ol style="list-style-type: none"> 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)	<ol style="list-style-type: none"> 1. Raise limit of DCI_{max} (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)	<ol style="list-style-type: none"> 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)	<ol style="list-style-type: none"> 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)	<ol style="list-style-type: none"> 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)	<ol style="list-style-type: none"> 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 PVx electrode (x=6/8)	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 1. Check if its input voltage is within 1100V; 2. Turn off DC switches and external AC breaker.

(x=6/8)	<ol style="list-style-type: none"> 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)	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	SCA15K-T-SA	SCA20K-T-SA	SCA25K-T-SA	SCA30K-T-EU	37.5K-T-EU
DC Input					
Max. DC Power	22.5 kW	30 kW	37.5 kW	45 kW	56 kW
Max. DC input voltage	1100Vdc				
MPPT Operation Voltage Range* ¹	200 - 1000Vdc				
MPPT Operation Voltage Range@full load	300 – 550 Vdc			430 – 850 Vdc	
Start Voltage	250 Vdc				
Rated DC Voltage	360Vdc			615Vdc	
Number of MPPTs	4			3	4
Number of input strings per MPPT	2				
Max. input current per MPPT	30A				
Max. input short-circuit current (ISC) Per MPPT	45A				
DC Disconnection Type	Integrated Switch				
AC Output					
Nominal AC Power	15 kW	20 kW	25 kW	30 kW	37.5 kW
Max. AC output active power	16.5 kVA	22 kVA	25 kVA	33 kVA	41.3 kVA
Rated AC voltage	208V/220V/240V			380V / 400V	
AC Voltage Range* ²	176 – 297 V			277 - 520V	
Grid Connection Type	3 / N / PE				
Max. AC current	43.3 A	57.8 A	65.6 A	50 A	62.5 A
Grid Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Grid Frequency Range	44-55 / 55-65Hz				
Power Factor (cos φ)	>0.99 (±0.8, adjustable)				
Current THD	<3%				
AC Disconnection Type	/				
System Data					
Topology	Transformer-less				
Max. Efficiency	97.61%	97.65%	97.70%	98.14%	98.20%
Euro Efficiency	97.01%	97.17%	97.21%	98.13%	98.18%
Night Consumption	<15W				
Protection					
DC reverse connection protection	Yes				
AC short-circuit protection	Yes				
Leakage current protection	Yes				

24h Grid connection	Yes		
Ground fault monitoring	Yes		
Surge Protection	DC Type II / AC Type II		
AFCI	Yes		
Environmental Data			
Ingress Protection	IP66		
Cooling Method	Cooling Fans		
Operating Temperature* ³	-25°C ~ +60°C		
Operating Humidity	0-100%, Non-condensing		
Operating Altitude* ⁴	4000m		
Display and Communication			
Display	LED + APP (Bluetooth)		
Communication	RS485/WIFI (standard) and 4G(Optional)		
Mechanical Data			
Dimensions (WxHxD)	684*488*269 mm		
Weight	37.5 kg	37 kg	37.5 kg
DC Connection Type	MC4 (Max. 6 mm ²)		
AC ConnectionType	OT/DT Terminal (Max. 35 mm ²)		
Safety			
Certifications	IEC 62109-1/2, IEC 61000-3-11/12, IEC/EN 61000-6-1/2/3/4, IEC 61727/62116, IEC 63027, PORTARIA N° 140&515		

Table 9-1 Datasheet

Note: The characteristic curves in this document are for reference only. Please refer to the actual situation.

1. Inverter full power operating range is 200-1000Vdc. Below and above this range there is a linear de-rating of the inverter output power. DC input voltage liner de-rating is illustrated in the figures below:

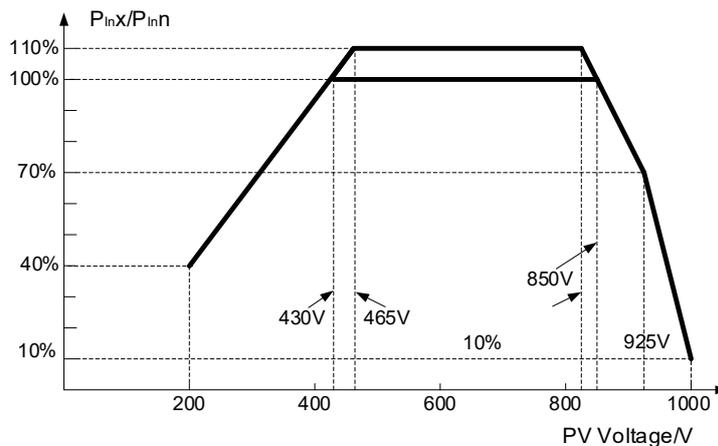


Figure 9-1 DC input voltage de-rating of SCA30/37.5K-T-EU

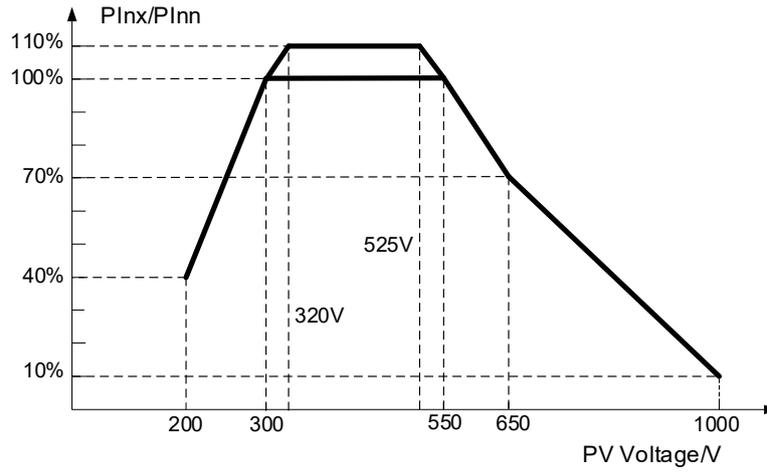


Figure 9-2 DC input voltage de-rating of SCA15/20K-T-SA @220Vdc

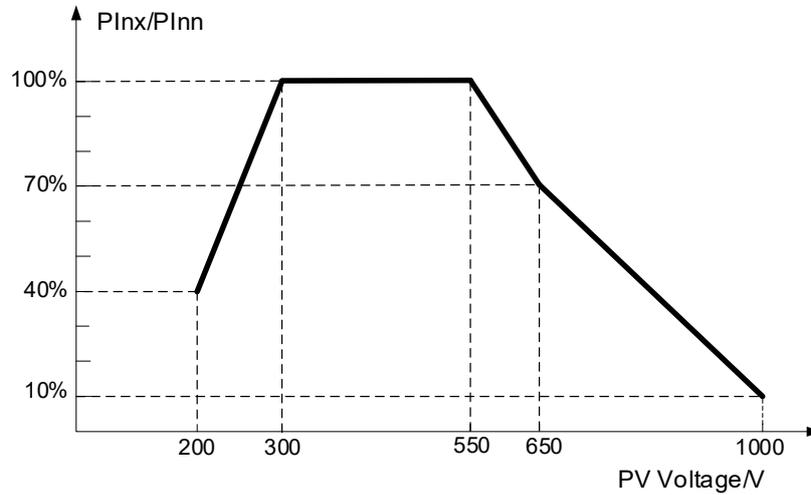


Figure 9-3 DC input voltage de-rating of SCA25K-T-SA @220Vac

- AC Output Voltage De-rating: Inverter AC output voltage operating range is from $0.8 \times U_n$ to $1.1 \times U_n$ (U_n : standard grid rated value). AC output voltage linear de-rating is illustrated in the figures below:

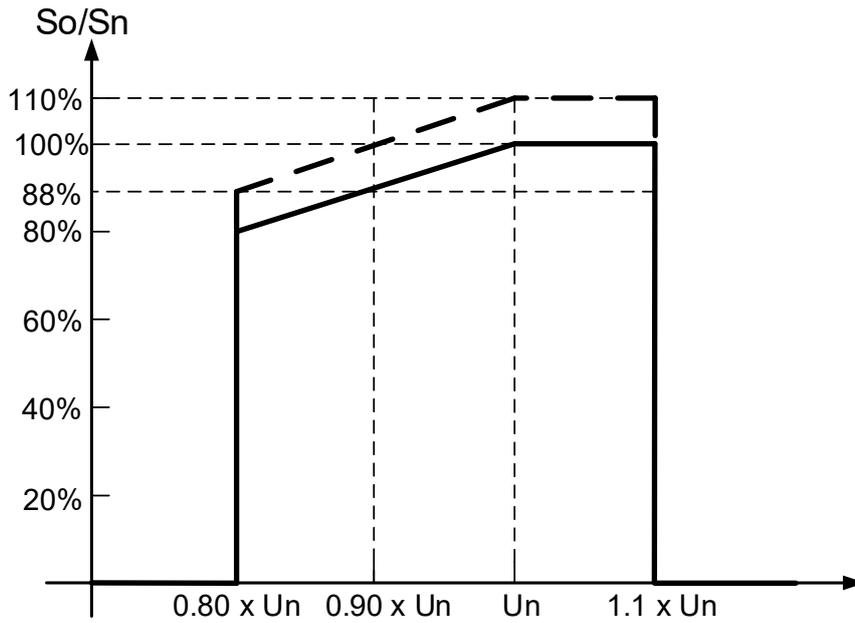


Figure 9-4 AC output voltage de-rating

3. Temperature De-rating: When the installation temperature rises, the inverter output power needs to be de-rated. De-rating needs to be performed according to the figures below:

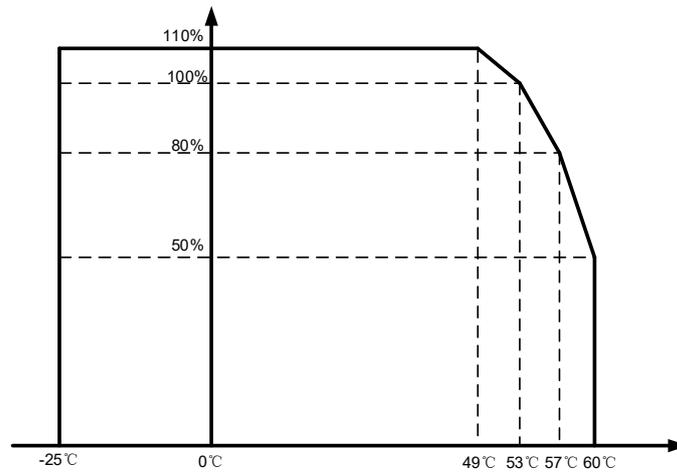


Figure 9-5 Temperature de-rating of SCA15K-T-SA @PV=360V

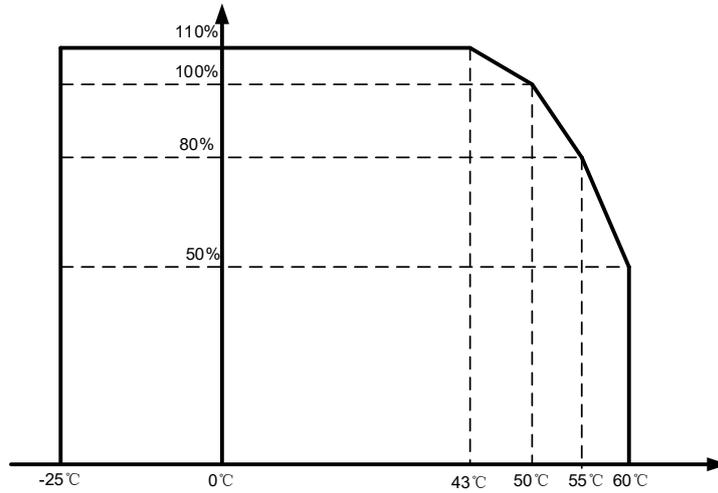


Figure 9-6 Temperature de-rating of SCA20K-T-SA @PV=360V

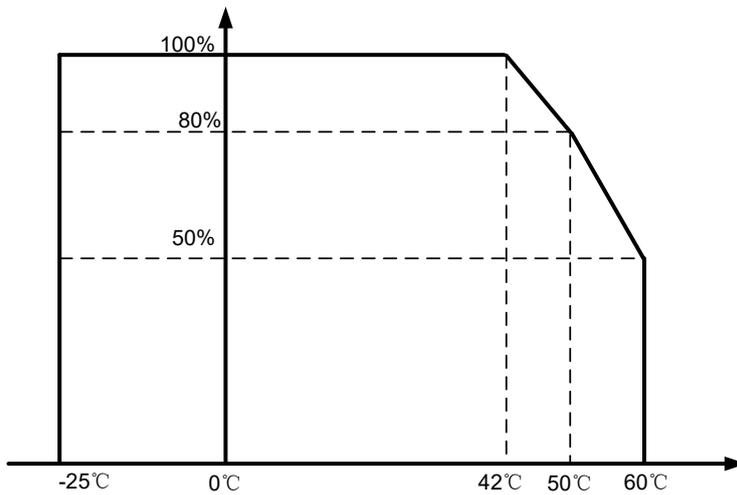


Figure 9-7 Temperature de-rating of SCA25K-T-SA @PV=360V

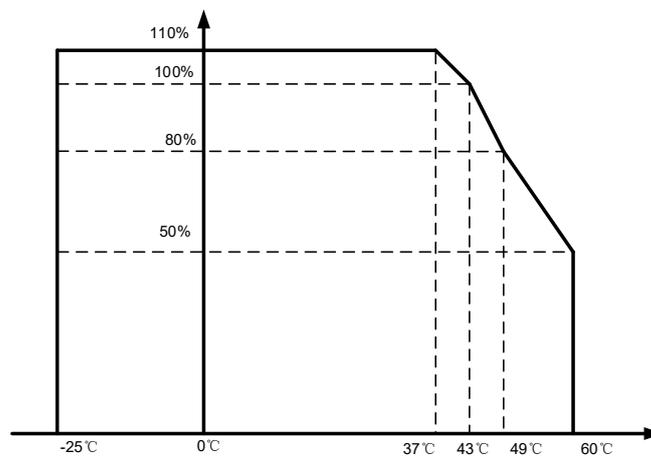


Figure 9-8 Temperature de-rating of SCA30K-T-EU @PV=615V

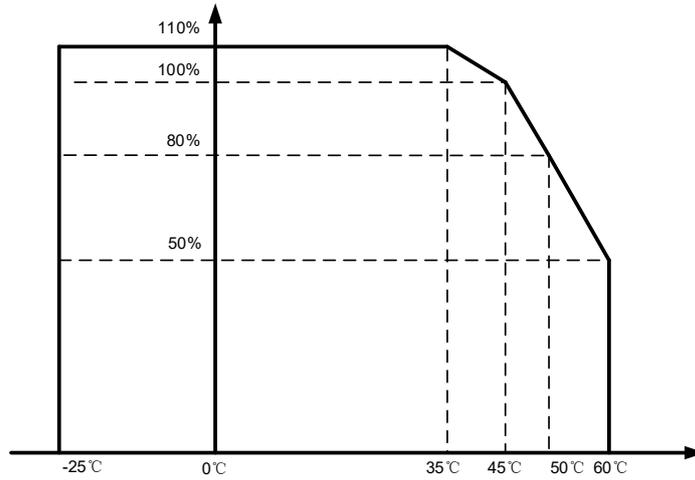


Figure 9-9 Temperature de-rating of SCA37.5K-T-EU @PV=615V

4. Altitude de-rating: The altitude and output power de-rating details are illustrated in the figure below.

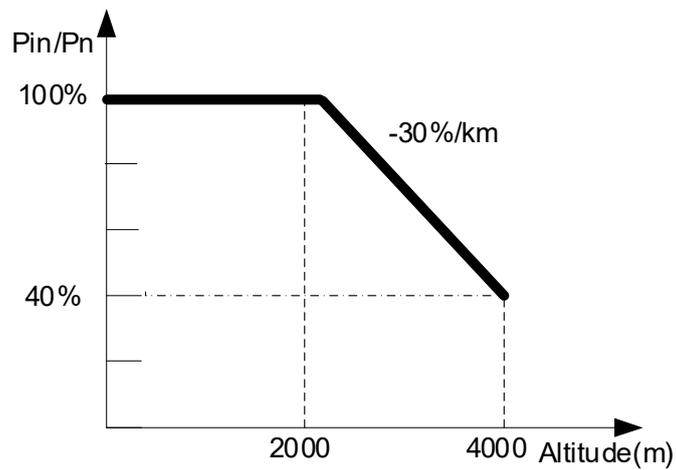


Figure 9-10 Altitude de-rating

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 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.

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

11. Recycling



The product cannot be disposed of as or together with household wastes.

When it is end of service life, please dispose in accordance with the local applicable regulation and standard, to prevent environment pollution, property losses or personal injury.

More information, please consult your distributors, installers, or product manufacturer.

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