Three Phase Grid-tied PV Inverter

User Manual

Applicable to

SCA (5 / 6 / 8 / 10 / 15 / 20 / 25) K-T-EU

Shanghai Chint Power System Co., Ltd.

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0. Preface

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

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.

Copyrights

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!** IMPORTANT indicates important supplementary information or provides skills or tips that can be used to help you solve a problem or save you time.

1.2. Markings on the Product

Symbols	Meanings
	**HIGH VOLTAGE!** This equipment works with high voltages. All works on the equipment must only be performed as described in this document.
	**HIGH ENERGY!** Risk of electric shock from energy stored in capacitor. Do not remove cover until 5 minutes after disconnecting all sources of supply.
	**HOT SURFACE!** Hot surfaces. To reduce the risk of burns. Do not touch.
	For more details please see the user manual.
	**WARNING:** For continued protection against risk of fire, replace only with same type and ratings of fuse. Refer to instruction manual for details.
	**EARTH GROUND!** This symbol marks the location of a grounding terminal, which must be securely connected to the earth through the PE (protective earthing) cable to ensure operational safety.
	**RoHS SYMBOL** In accordance with 2011/65/EU regulations, the inverter imposes restrictions on the use of specific hazardous substances in electrical and electronic equipment.
	**Certification** This inverter has passed the certification of CE and TUV organization.
	Phase information of the inverter.

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, in order 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

SCA(5 / 6 / 8 / 10 / 15 / 20 / 25)K-T-EU series inverters are designed for using with residential PV grid-tied systems. The PV system is generally made up of PV modules, PV inverter and AC power distribution equipment, as shown in figure 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.

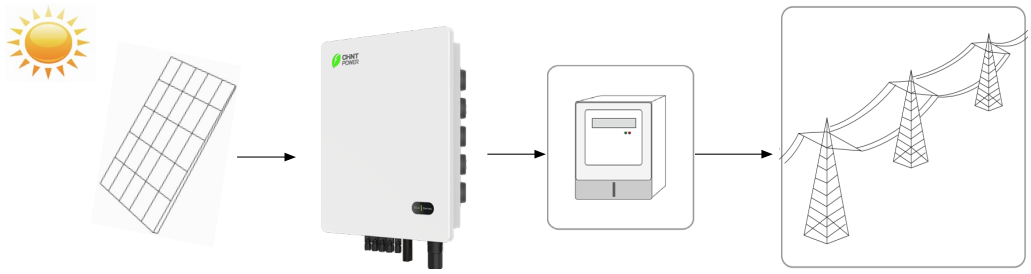


Figure 2-1 Grid-tied PV system

Item	Name	Description
A	PV Module	Monocrystalline silicon, polycrystalline silicon, non-ground PV module
B	PV Inverter	SCA(5 / 6 / 8 / 10 / 15 / 20 / 25)K-T-EU inverter
C	Metering device	Standard metering device for inverter power generation
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

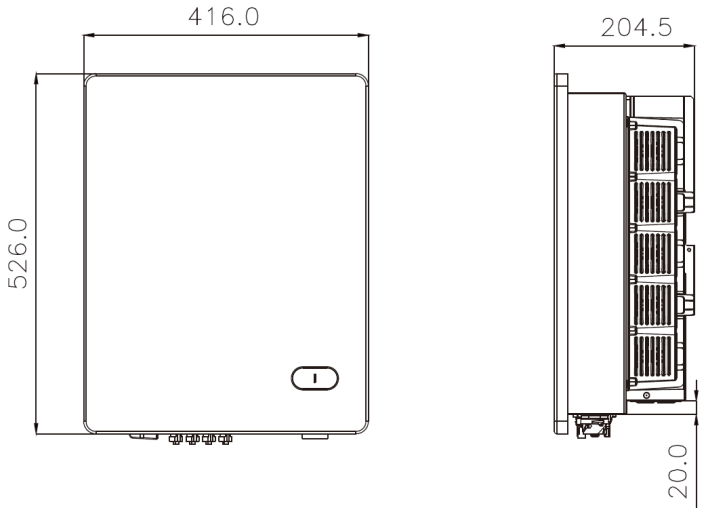


Figure 2-2 Inverter Dimensions(unit: mm)

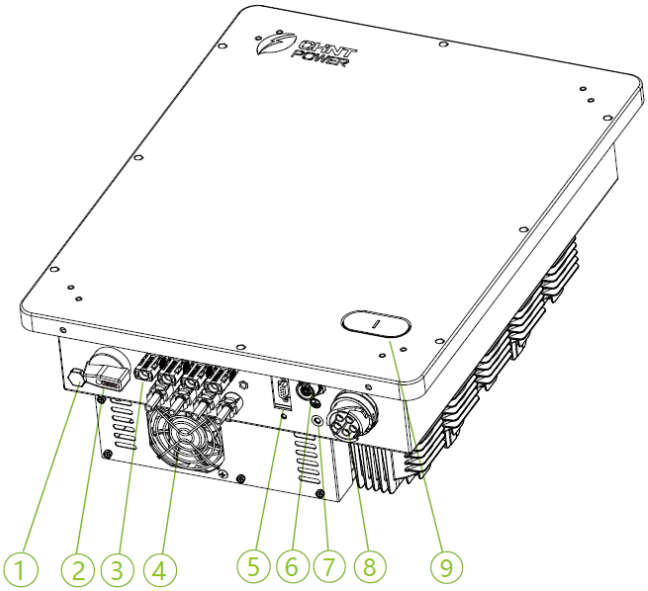


Figure 2-3 Inverter Dimensions(unit: mm)

No.	Name	Function
1	Vent valve	Release pressure
2	DC Switch	Cut off DC power supply safely
3	DC input interface	Connect to PV modules
4	Fan	For cooling
5	Wi-Fi dongle interface	For local control and remote monitoring
6	Communication interface	For RS485 communication
7	External protection earthling	Grounding
8	AC outlet terminal	AC cable outlet port
9	LED indicator	Indicate the running status

Table 2-2 Product Components

2.3. LED Indicator

The LED display on the SCA(5 / 6 / 8 / 10 / 15 / 20 / 25)K-T-EU inverter is as shown below.

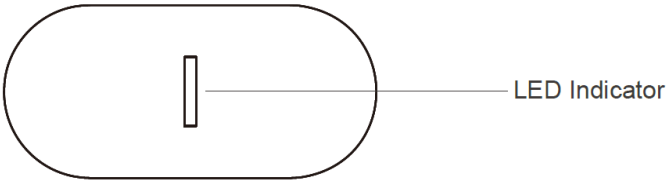


Figure 2-4 LED display of the inverter

Indicators and their indications are shown below:

LED	Indication	Status
Red	Warning	Slow flash (light up 0.5s, light off 2s)
	General failure (Recoverable)	Quick flash (light up 0.5s, light off 0.5s)
	Permanently failure (unrecoverable)	Always on
	Runs properly	Light off
Green	(Derate) power generation	Flash (light up 0.5s, light off 1.6s)
	Regular (Rated) operating power generation	Always on
	Standby	Flash (light up 2s, light off 2s)
	Firmware upgrading	Quick Flash (light up 0.05s, light off 0.3s)

Table 2-3 Indicators and their indications

2.4. Product Protection Functions

- Short circuit protection
- Input to ground insulation resistance monitoring
- Output voltage and frequency monitoring
- Ground leakage current monitoring
- DC component monitoring of output current
- Anti-island protection
- Input and output overvoltage protection
- Input and output overcurrent protection
- Ambient temperature monitoring
- Module temperature monitoring
- Night power supply
- Arc protection
- Zero export to grid function

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

Arc detection protection functions of the inverter conform to IEC 63027 standard, arc protection device type is and the detailed explanation are as tables below.

Inverter Type	ARC protection device type
SCA5K-T-EU	F-I-AFPE-1-1-2
SCA6K-T-EU	
SCA8K-T-EU	
SCA10K-T-EU	
SCA15K-T-EU	
SCA20K-T-EU	F-I-AFPE-1-2-2
SCA25K-T-EU	

Table 2-4 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=1, 2)	Each detection channel has one or two input ports
2	Two detection channels

Table 2-5 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.

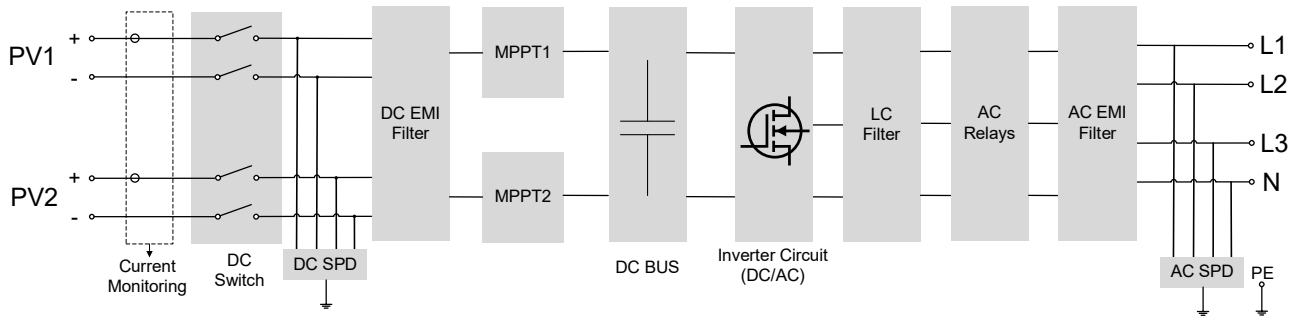


Figure 2-5 Schematic Diagram of SCA(5/6/8/10/15)K-T-EU Inverter

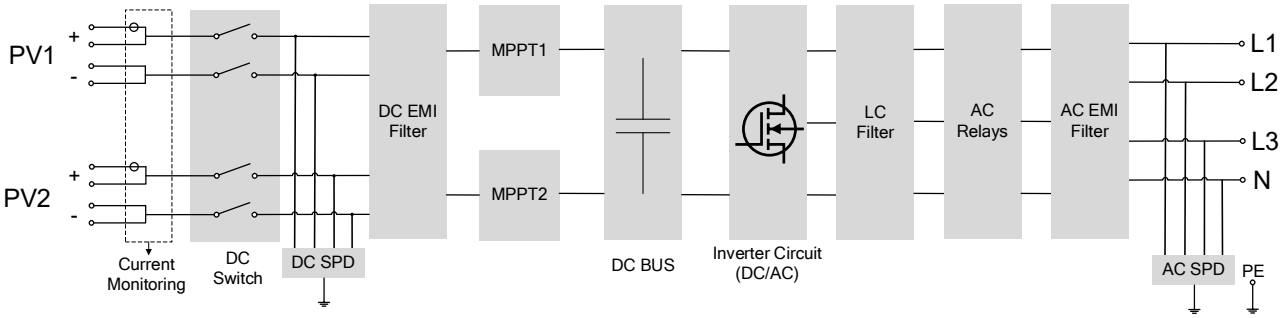


Figure 2-6 Schematic Diagram of SCA20/25K-T-EU Inverter

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:

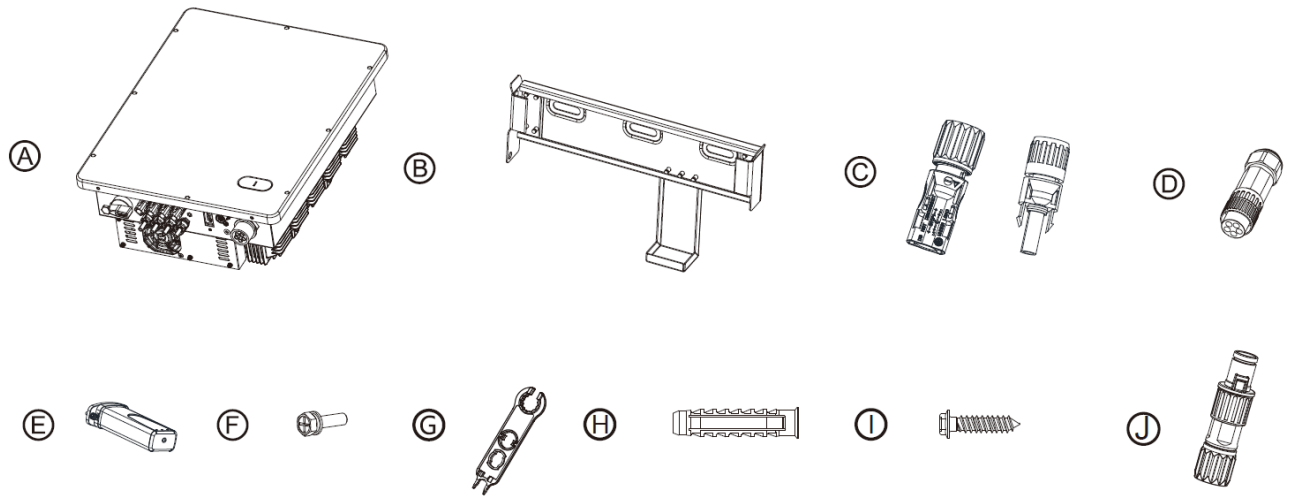


Figure 3-1 Delivery list

No.	Accessories	Amt	Remark
A	Inverter	1	/
B	Mounting Bracket	1	Hang inverter
C	DC Input Connector	2+2 Or 4+4	PV DC cable quick connector: 5-15kW: 2 (+) & 2(-) 20-25kW: 4 (+) & 4(-)
D	AC Output Connector	1	Connect AC cables and protect AC terminals
E	Wi-Fi Dongle	1	For communication and monitoring
F	M5x12 Screw	1	For fastening inverter and mounting bracket.
G	Unlock tool for DC connector	1	To unlock DC input connectors
H	Nylon expansion bolts	3	For attaching mounting bracket to wall
I	ST6.3X55 screw	3	
J	RS485 Connector	1	Connect RS485 cable
	Document	1	Quick guide

Table 3-1 Delivery List Description

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 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.

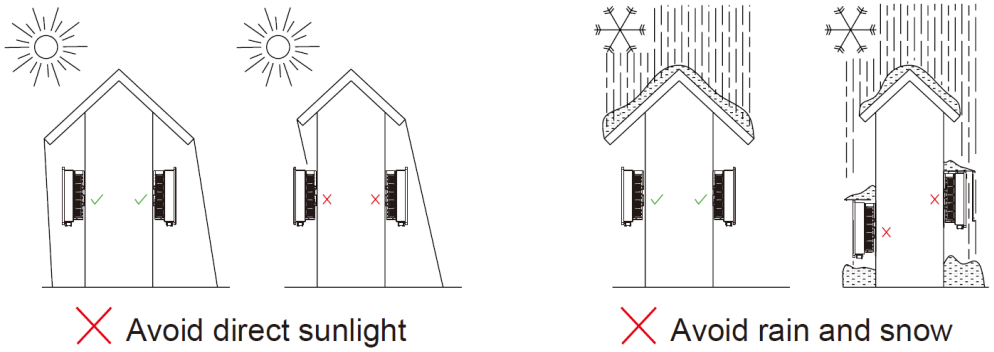


Figure 3-2 Environment requirements

3.4.2. Installation Modes

The inverter shall be installed following the modes as below:

a) If the location permits, install the inverter vertically.

b) If the inverter cannot be mounted vertically, it may be tilted backward by lower than 15 degrees from vertical direction.

c) Do not mount the inverter leaning forward.

d) Do not mount the inverter horizontally.

e) Do not mount the inverter upside down.

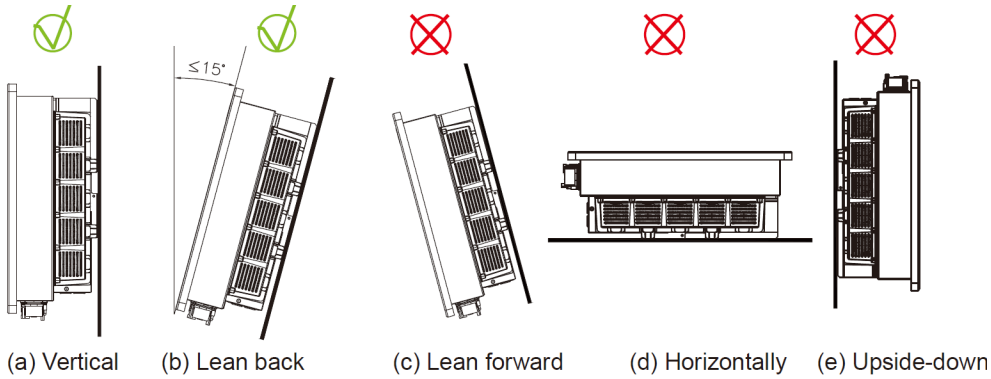


Figure 3-3 Installation modes

NOTICE!

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

3.4.3. Space Requirements

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

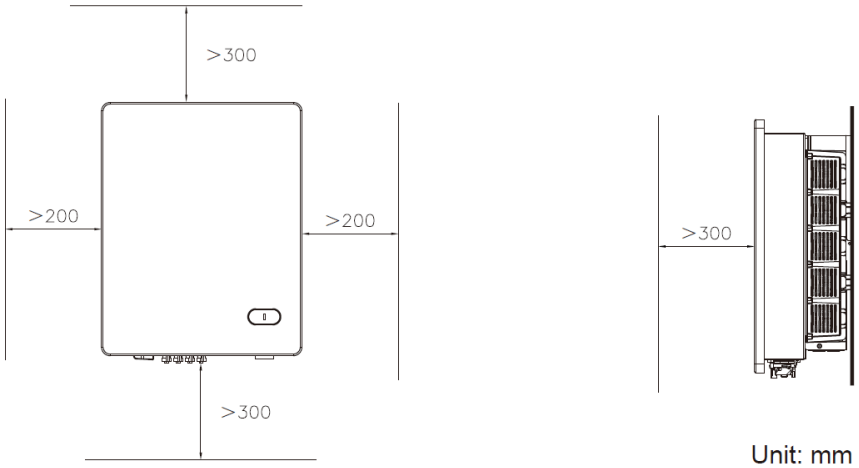


Figure 3-4 Installation space requirements for inverter

NOTICE!

The distance from inverter to its left and right hand objects shall be ＞200 mm, to objects above, below and on the front shall be ＞300 mm.
If the surroundings are relatively closed, please increase this distance appropriately.
If multiple inverters are used in the same time, no objects that avoid heat dissipation shall be put in-between.

3.5. Installation Procedures

1. Mark the positions of mounting holes on the installation structure (wall, shelter, steel rack, etc.) according to the size of the mounting brackets. Drill 3 holes with a depth of 70mm with a Φ10mm drill at the marked position and then knock three nylon expansion bolts into mounting holes, as shown below.

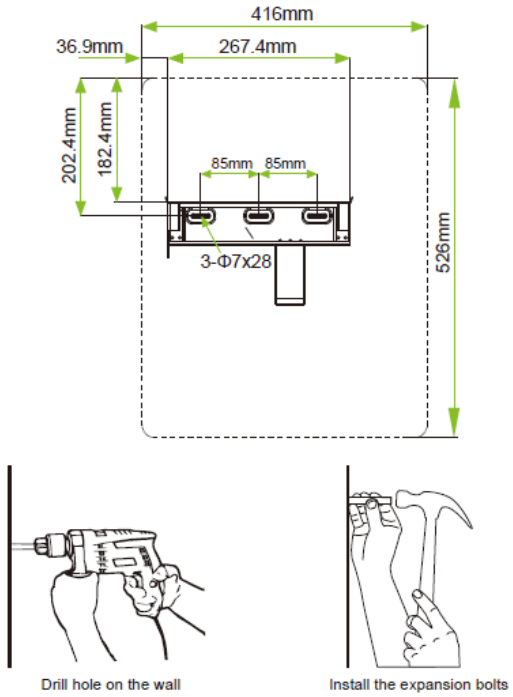


Figure 3-5 Drill hole and knock nylon expansion bolts

2. Insert three screws (ST6.3x55) through reserved holes of the mounting bracket and then lock them into the expansion bolts with a torque value of 115.2 kgf.cm.

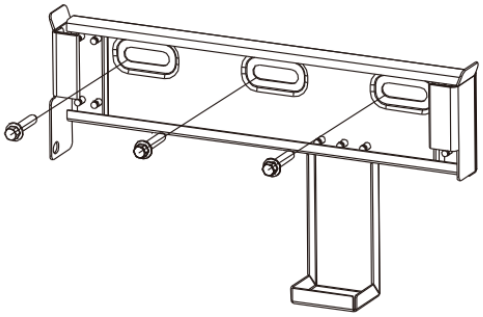


Figure 3-6 Fasten the mounting bracket

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. Hang the inverter onto the mounting bracket.

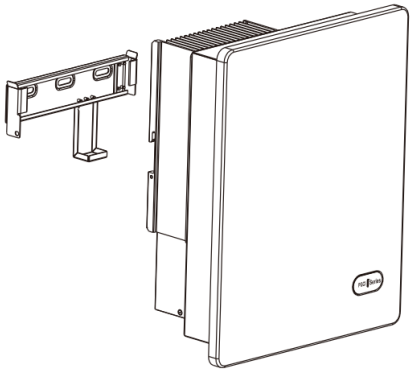


Figure 3-7 Hang the inverter

CAUTION!
The weight of SCA(5/6/8/10/15)K-T-EU inverter is about 17 kg (≈37.5 pounds). The weight of SCA(20/25)K-T-EU inverter is about 21 Kg (≈46.3 pounds). Ensure the mounting bracket is properly installed before hanging the inverter on the bracket.

4. Use one M5 combination screw to fasten inverter on mounting bracket.
   Tools required: PH2 screw driver, torque: 25.5 kgf.cm.

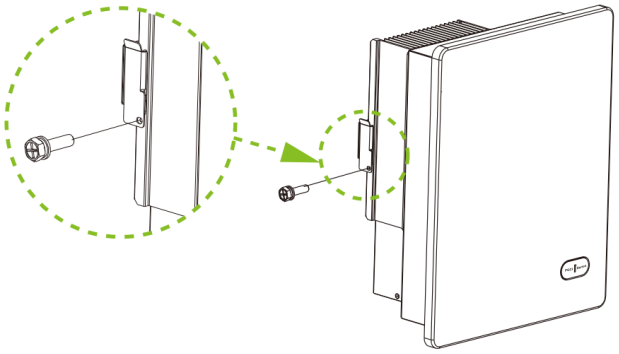


Figure 3-8 Fasten inverter on mounting bracket

3.6. Installation Check

1. Ensure that the three supporting points (on the rear side of the inverter) align with the three holes of the mounting bracket.
2. Ensure that the inverter is well fixed.
3. Ensure that the inverter is locked on the mounting bracket and an antitheft lock is installed.

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	Conductor CSA (mm^2)		OD (mm)
		Range	Recommended	Range
DC	Industry common PV cables (Type: PV1-F)	4~6	4	5.0~7.2*Note1
AC	Multi-core cables specialized for outdoor use	6~16	5~15 kw: 10 20~25 kw: 12	13~21
PE	Cables specialized for outdoor use	6~12	12	NA
RS485	4-core cables specialized for outdoor use	0.21~0.32	0.21	5~6

Table 4-1 Cable Specifications

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

4.2. Tools Required and Torque Values

No.	Tools	Usages	Torque
1	No.17 hex. socket wrench	Fixing AC output terminal block	8.2 – 12.2 kgf.cm
2	No.10 hex. socket wrench	Fixing External ground terminal	61.2 kgf.cm
3	No.2 Philips screwdriver	Fixing communication module	16.3 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.
- Please read carefully and refer to Chapter 9 Technical Data before wiring.

4.3.1. AC Wiring and Grounding

Perform wiring steps as follows：

1. Hold the adaptor (1) of the AC connector and loosen the gland nut (2) and plug shell (3).

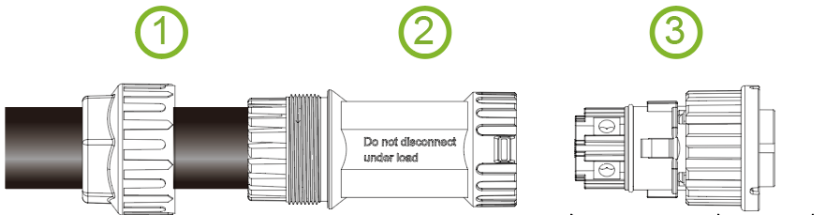


Figure 4-1 Loosen AC connector

2. Route the AC cable through the gland nut and adaptor. And then strip the cable insulation layer.

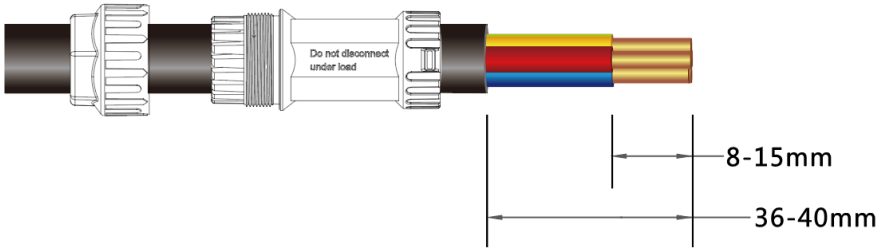


Figure 4-2 Connect wires to AC terminals

3. Connect the AC wires to crimping ports of AC connector, with grounding wire connected to the port PE, neutral wire to the port N, and live wire to port L1, L2, L3.

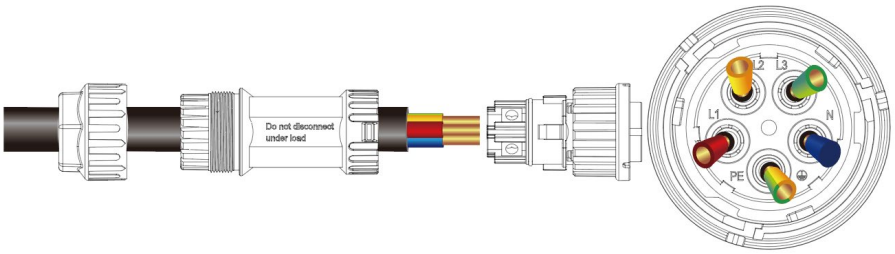


Figure 4-3 Connect wires to AC terminals

NOTICE!

Connect grounding wire to PE, neutral wire to N and live wires to L1/L2/L3 correspondingly. If connect them incorrectly, the inverter may work abnormally.

4. Use the standard hex wrench to tighten each crimping screw and secure the cables with a torque of 8.2 kgf.cm ~ 12.2 kgf.cm.

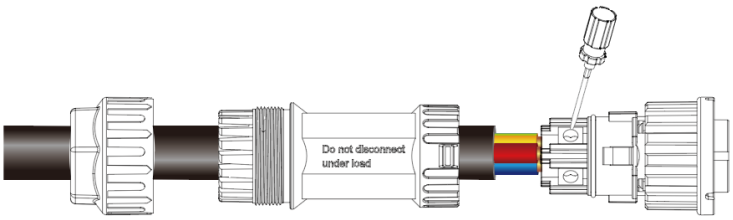


Figure 4-4 Secure the AC cable

5. Tighten the locking nut (1) by hand with a torque of 30.6 ~ 40.8 kgf.cm. Then connect the sleeve (2) and connector (3) until you hear a “click” sound.

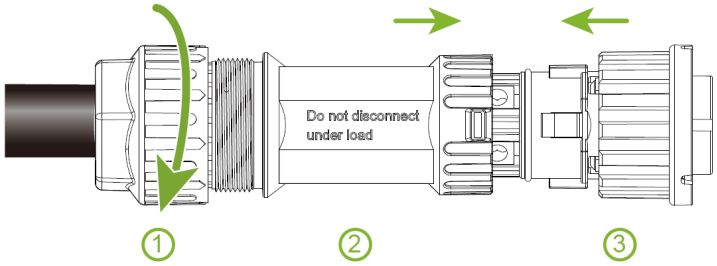


Figure 4-5 Tighten both ends of the AC connector

6. Align the five grooves (1) of the plug shell with the five protrusions (2) of the AC output terminal one by one. Then rotate the coupling nut and slide the connector into the end of groove, till the longer pointer points (3) to the limit position.

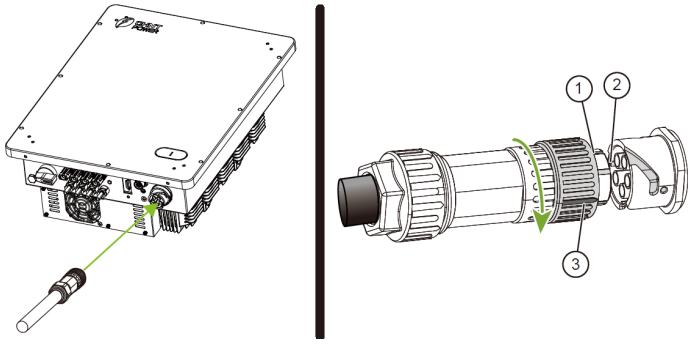


Figure 4-6 Fasten the AC connector to the AC output terminal

NOTICE!

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

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 of AC circuit breaker
SCA(5 / 6 / 8 / 10 / 15 / 20 / 25)K-T-EU	15A / 15A / 25A / 25A / 40A / 50A / 60A

Table 4-3 Specifications of AC circuit breaker

7. Use one M5 screw to connect and tighten the secondary protection ground wire.

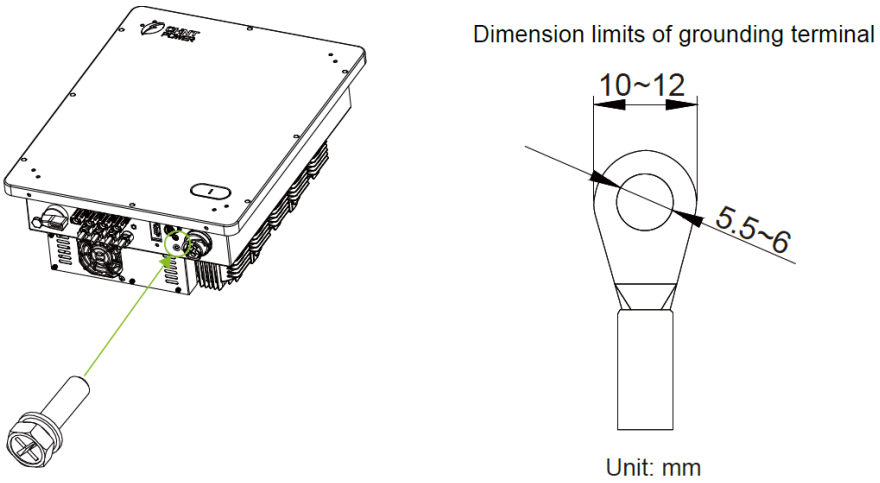


Figure 4-7 Tighten the secondary ground wire

NOTICE!

- 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.

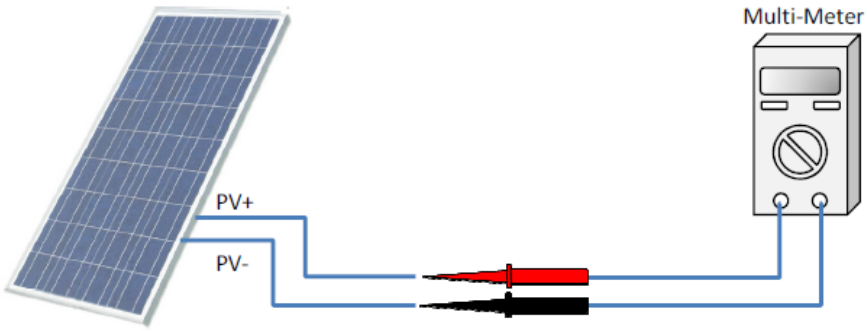


Figure 4-8 Polarity Check

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.

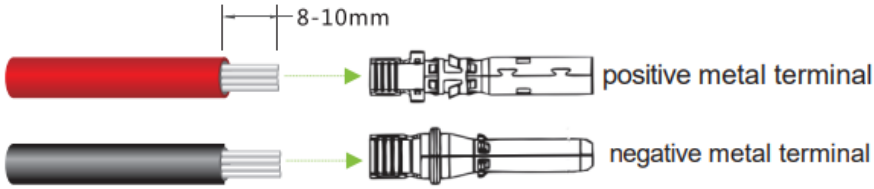


Figure 4-9 DC Wire Stripping

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

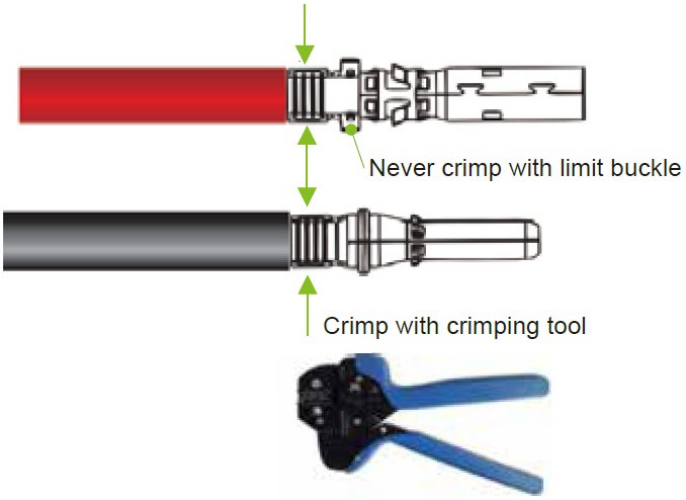


Figure 4-10 Crimp power cables

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.

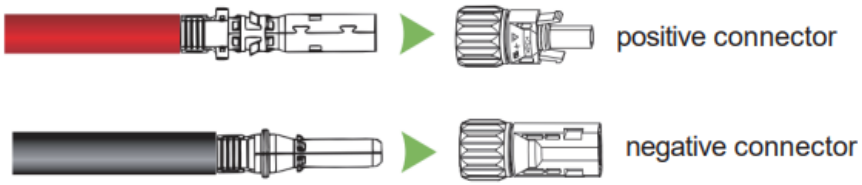


Figure 4-11 Insert power cables to connectors

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.

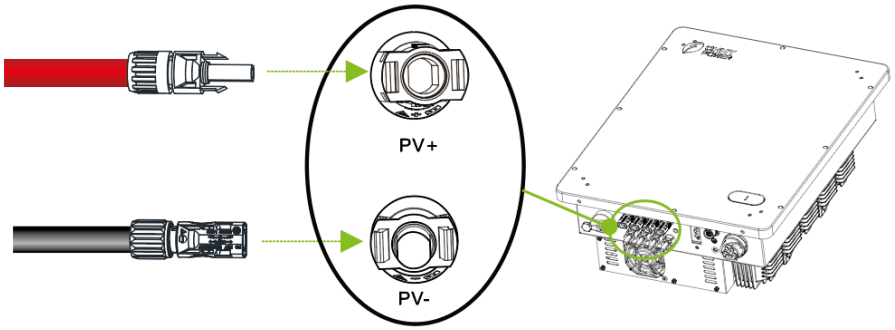


Figure 4-12 Insert the connectors into corresponding terminals

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 mm to 350 mm away from the DC connectors and AC connector (refer to the figure below). This can help prevent swaying or movement of the cables, which may loosen the connectors and potentially affect the protection degree of the inverter.

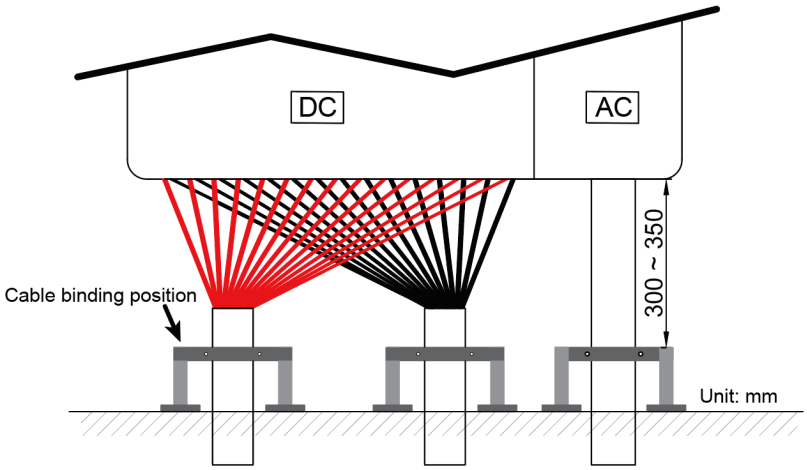


Figure 4-13 Bind cables

4.3.3. Communication Connection

4.3.3.1. Connect RS485 Cable

Perform RS485 cable connection as per the following steps:

1. Loosen the gland nut of the RS485 connector by hand.

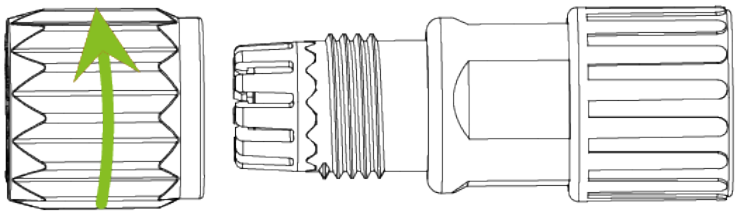


Figure 4-14 Loosen the gland nut

2. Route a four-core RS485 communication cable through the gland nut and adapter of the RS485 connector, and then strip off cable insulation layer.

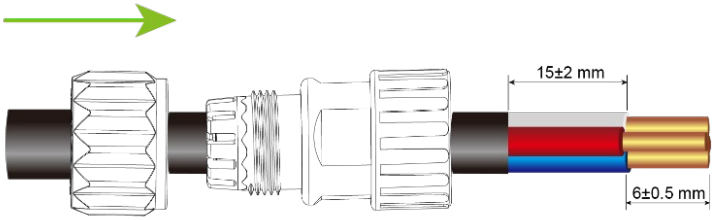


Figure 4-15 Route a foure-core RS485 communication cable

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.

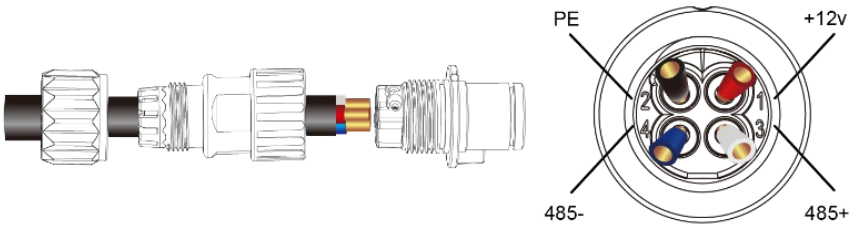


Figure 4-16 Crimp communication wires

   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 crimping screws with a screwdriver, torque value: 4.1~6.1 kgf.cm.

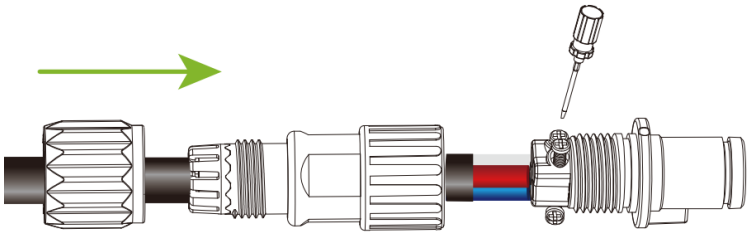


Figure 4-17 Tighten the screws

5. Tighten the wiring plug by hand with a torque of 12.2~15.3 kgf.cm. Then adjust the cable length, tighten the gland nut by hand with a torque of 26.5 kgf.cm~29.6 kgf.cm.

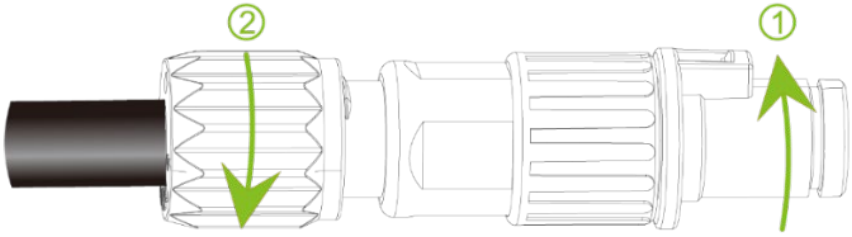


Figure 4-18 Tighten the RS485 connector

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

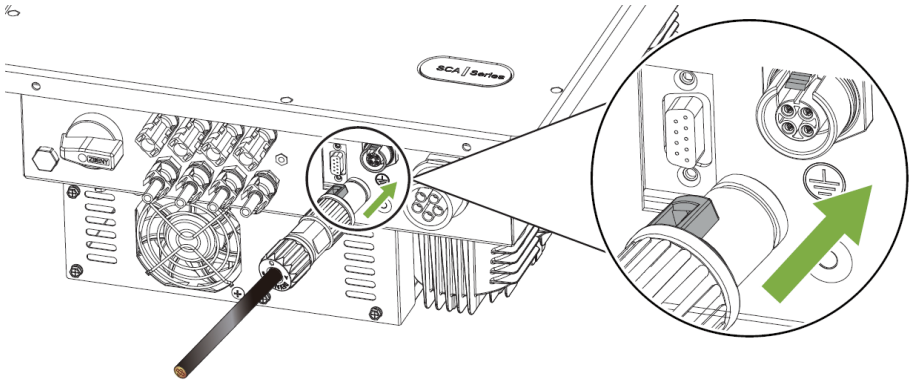


Figure 4-19 Insert RS485 connector

4.3.3.2. Install Wi-Fi Dongle

Install the Wi-Fi dongle as shown below:

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

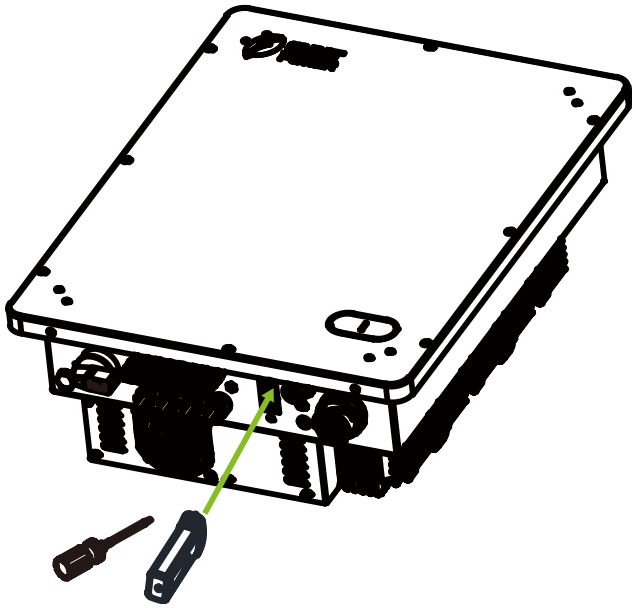


Figure 4-20 Install the Wi-Fi Dongle

4.3.4. Anti-Backflow for Single Inverter

Note: Anti-Backflow is a standard function of SCA(5 / 6 / 8 / 10 / 15 / 20 / 25)K-T-EU Inverter, 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 Connect RS485 Cable*.

After completing the wiring procedures, the relevant configuration need to be set in the MatriCloud App, please see *6.2.1* Anti-Backflow Parameter Configuration in MatriCloud.

For anti-backflow for multiple inverters, please see *Smart Power Controller User Manual*.

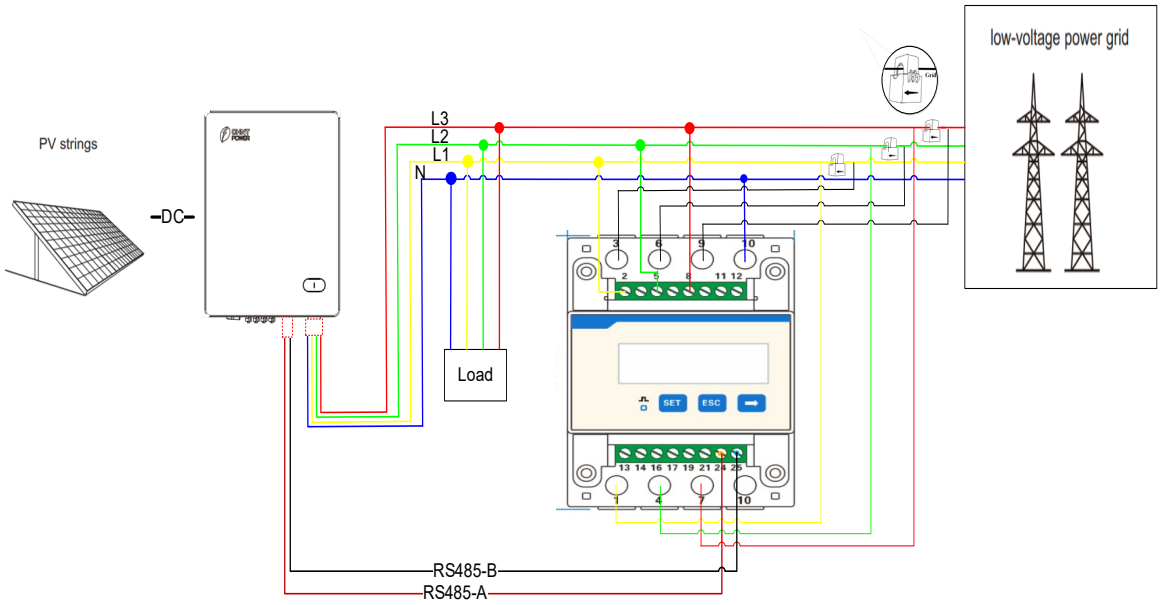


Figure 4-21 Three phase four wire: via current transformer

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 disconnector.
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 mobile device should remain within a visible distance of 5 m from the inverter; otherwise, the communication signal quality between the App and the inverter cannot be guaranteed.
- The following contents are applicable to SCA(5/6/8/10/15/20/25)K-T-EU series inverters, we just take SCA25K-T-EU as instance. This interface is for your reference only. The specific information varies with device.
- This section provides a brief introduction to MatriCloud App operations. For more detailed steps about MatriCloud App, please refer to the *MatriCloud App Local Operation Guide.*

6.1. App Download

The inverter conducts human-computer interaction through the MatriCloud mobile App.

Users can download the App from Apple store (iOS) or Google Play (Android), or scan the QR code. (Support Android 8.0+ and iOS 13+).

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 the App.

1. Open the MatriCloud APP, click Europe to select right server, and click English to select the language.

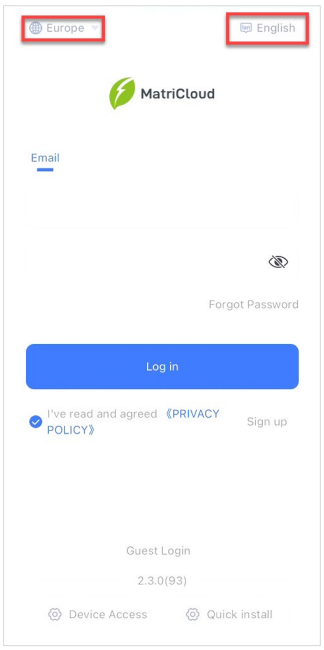


Figure 6-1 Server and Language Configuration

2. Click **Device Access** and then **Bluetooth Connect** button to open the device name list. Choose the correct device name and then you will be directed to the Home interface.
The device name "XXXXXXXX" is the last 8 digits of SN on the communication module label.
Note: NFC function is now unavailable.

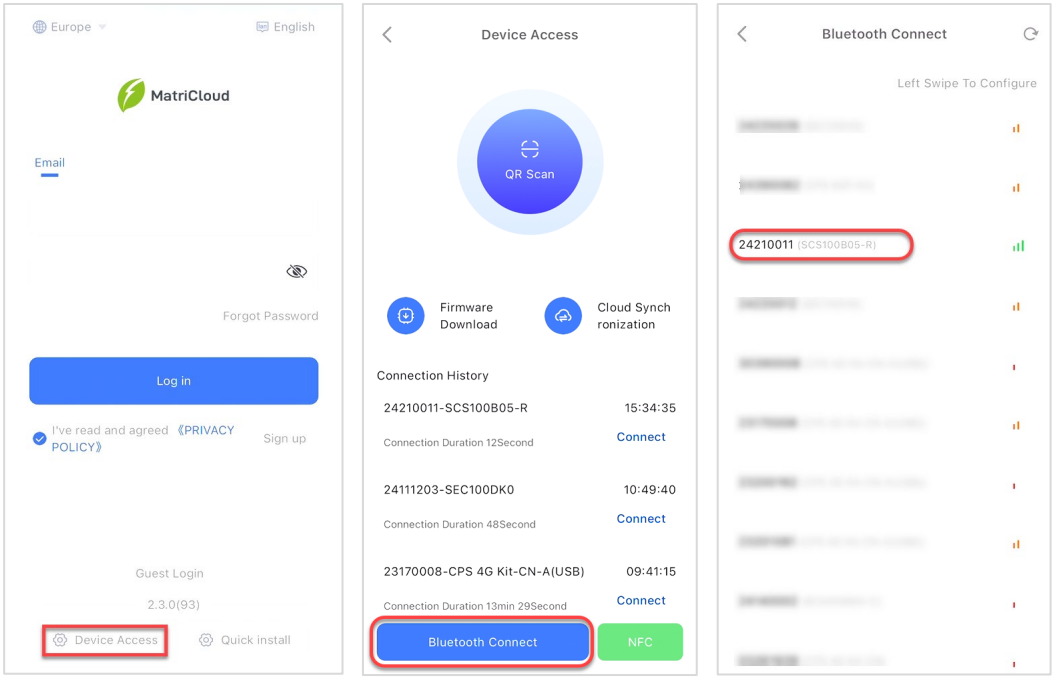


Figure 6-2 Connect to Inverter

3. After connected successful, you will be directed to the **Home** interface. The Home interface displays the basic information of the inverter, such as model, S/N, energy flow chart, and the real-time data (Summary of the day, DC, AC, Other, version, etc.).

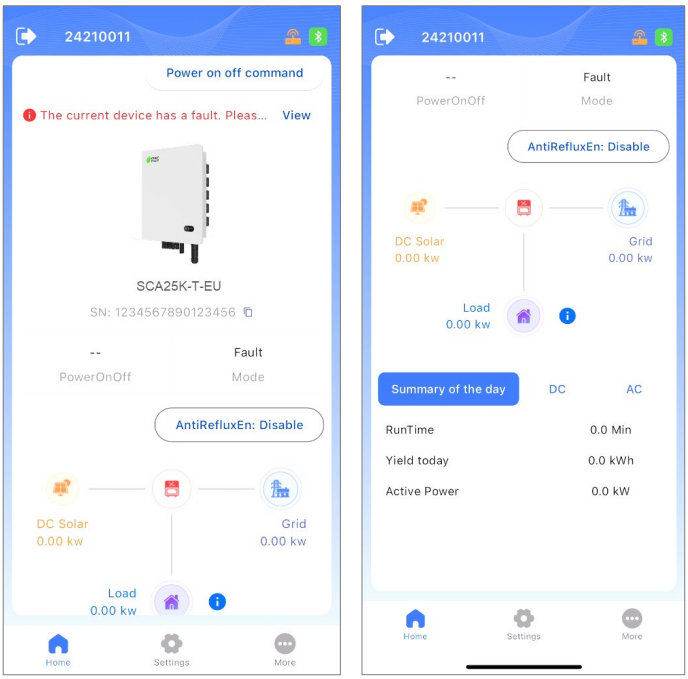


Figure 6-3 Home Interface

4. Click **Settings** on the main inteface to access the register configuration interface. (If passoword needed, enter “1111”).

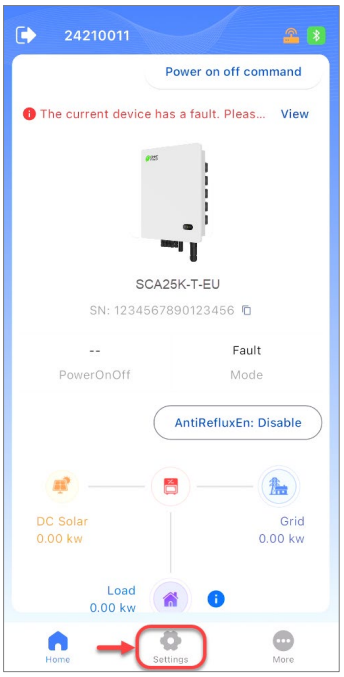


Figure 6-4 Click Settings

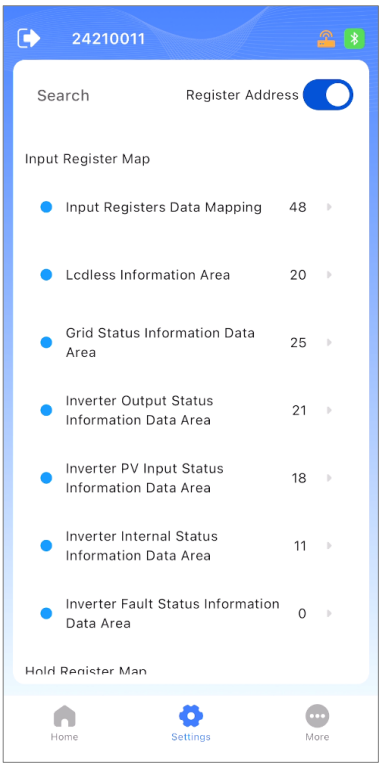
The register parameters include Input Register Map (Only Read) and Hold Register Map (Read and Write).

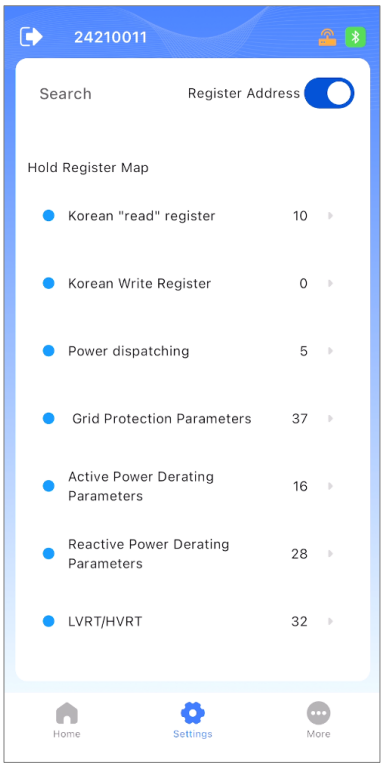
Note: Register parameters must be modified according to the communication protocol under the guidance of the technical engineer.

- **Input Register Map (Only “READ”)**
  - Input Register Data Mapping
  - Lcdless Information Area

- Grid Status Information Data Area
- Inverter Output Status Information Data Area
- Inverter PV Input Status Information Data Area
- Inverter Internal Status Information Ddta Area
- Inverter Fault Status Information Data Area

- **Hold Register Map (READ and WRITE)**
  - Power dispatching
  - Grid Protection Parameters
  - Active Power Derating Parameters
  - Reactive power Derating Parameters
  - LVRT/HVRT
  - Other Parameters
  - Enable/disable control Parameters
  - Contorl Commands
  - Inverter Basic Information
  - LcdLess Basic Parameters
  - LcdLess Basic Parameters 2





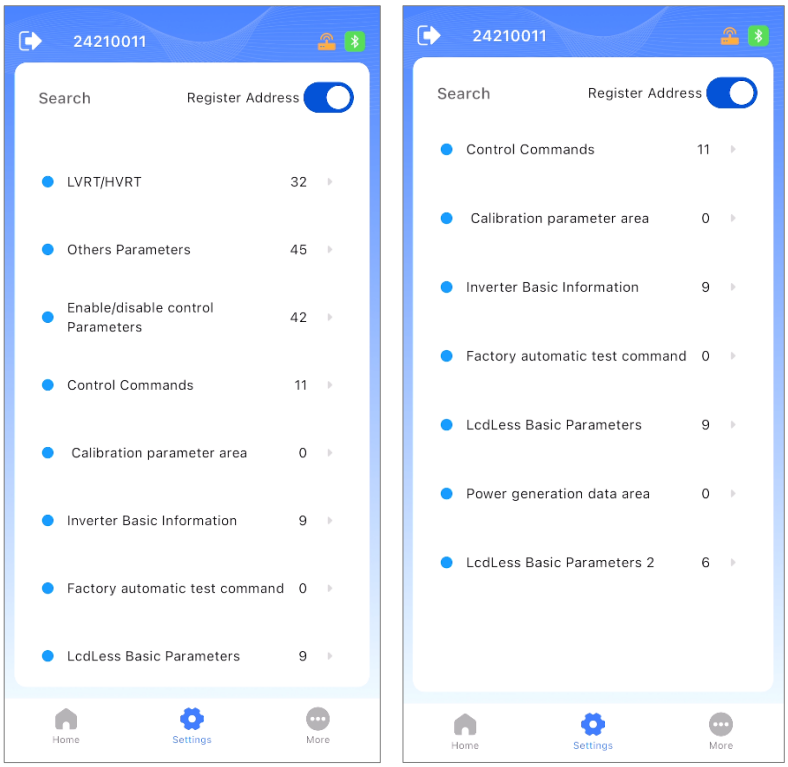


Figure 6-5 Register Parameters

5. Click **Settings** -> **Inverter Basic Inforamtion** to set the Standard Value, Netural Line Setting, PV Input Mode, Rated Voltage inforamtion. Alternatively, you can configure Netural Line Setting and Rated Voltage in the “More” interface (refer to Step 7-8).

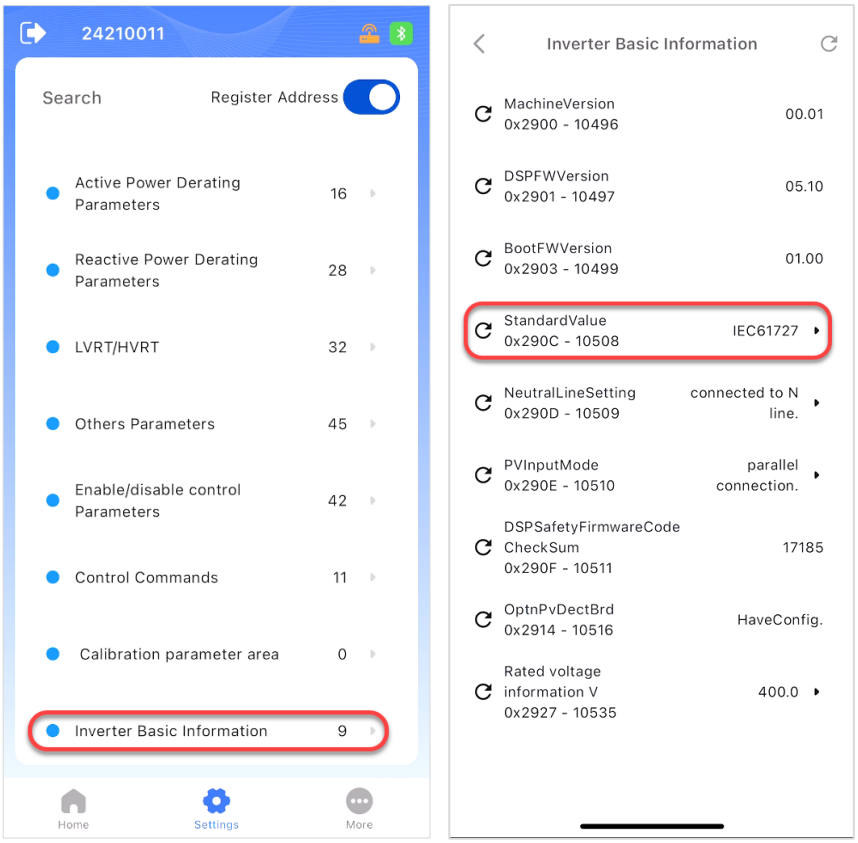


Figure 6-6 Configure Inverter basic informtaion

6. You can enable/disable or configure the following parameters in the **Control Commands**

group: Power on/off the device, force restart, recover to fatory defaults, AutoTest(CEI), MPPT scan, ARC detection, ARC clean, PFSetValueRemote, PSetPercentRemote, QSetPercent Remtoe.

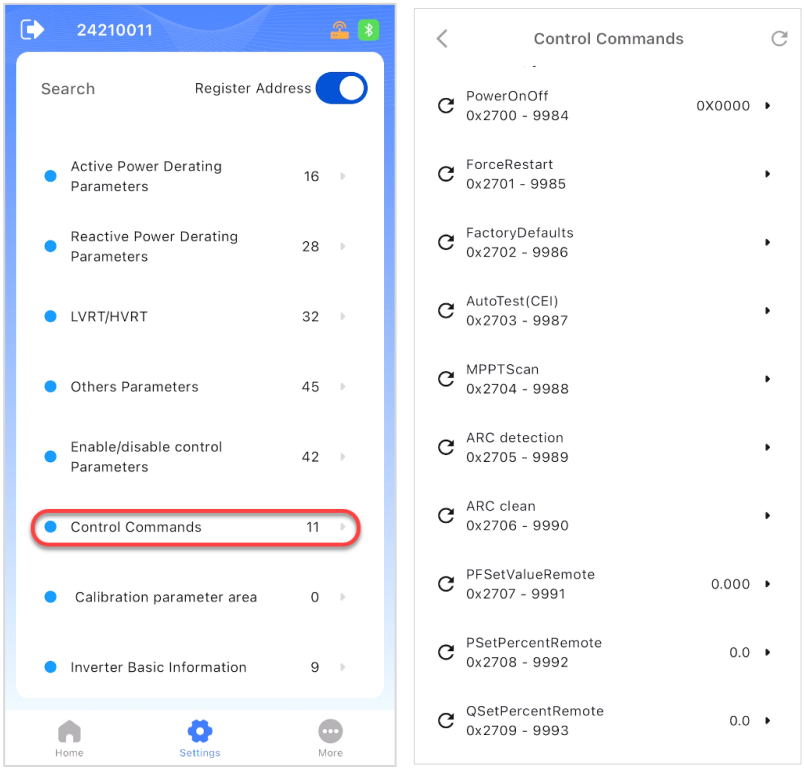


Figure 6-7 Configure control commands

7. Click **More**, then click Basic Settings.(If password needed, enter **1111**).

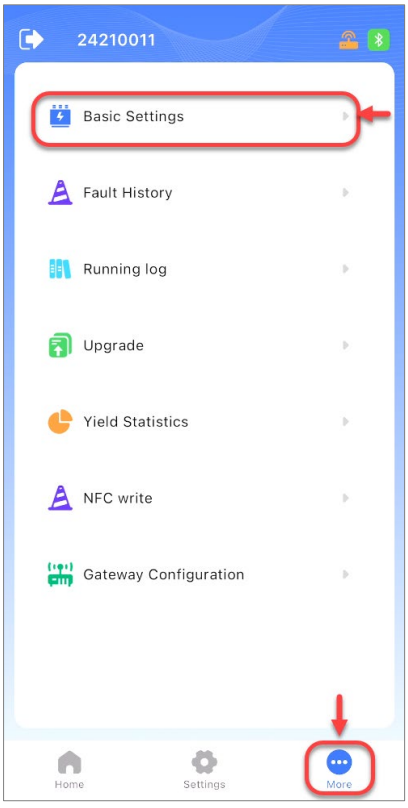


Figure 6-8 Click More > Basic Settings

8. Configure the basic parameters, such as rated voltage information, neutral line setting, RS485 external communication address and baud rate configuration, time setting, password setting, and, etc.

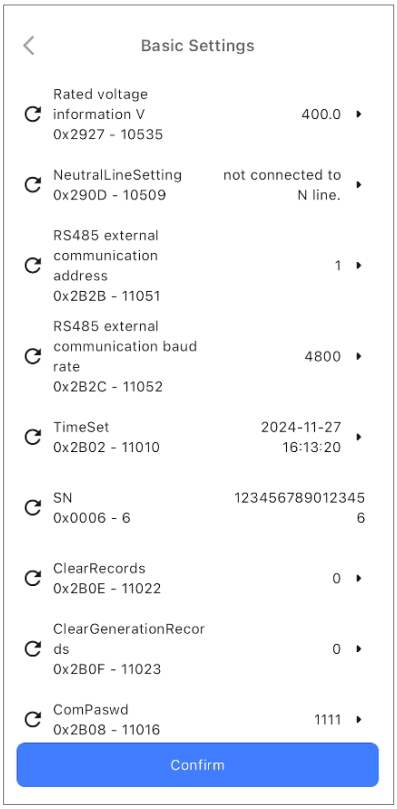


Figure 6-9 Main interface

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.

9. If a fault occurs, click the red text on the main interface to view the fault details. Follow the troubleshooting list in Chapter 8 Troubuleshooting to resovle the issue. Then restart the inverter. If the issue persists, please contact customer service for assistance .

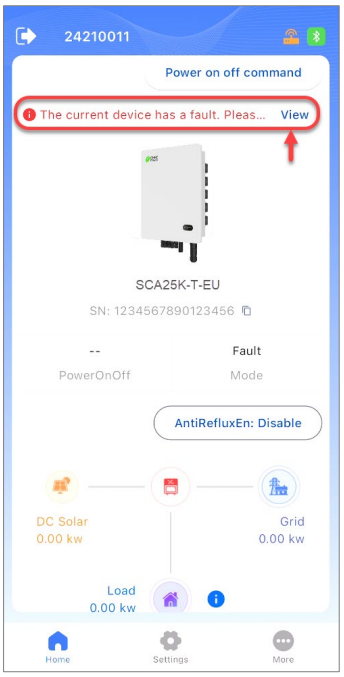


Figure 6-10 View fault information

10. Additionally, in the Home interface, you can click the **Power on off command** in the top-right corner to power on or power off the inverter.

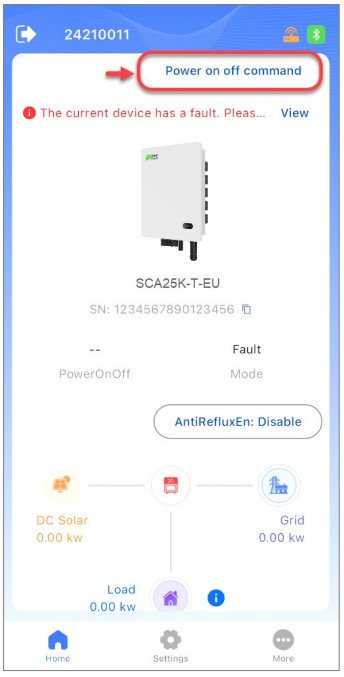


Figure 6-11 Power on or power off

6.2.1. Anti-Backflow Parameter Configuration in MatriCloud

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

1. There are two access points to enable the anti-backflow function, you can access from either one:

   - Go to **Home**, click **AntiRefluxEn** button, select ***Single Anti-refluxEn***.

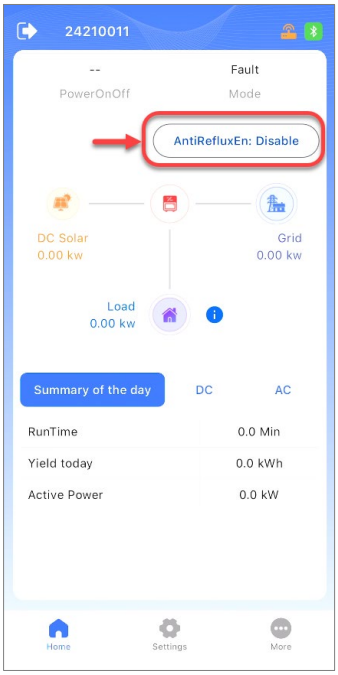


Figure 6-12 Eanble anti-backflow through Home interface

   - Alternatively, go to **Settings** > **Enable/disable control parameters**,set the **AntiRefluxEn** parameter to ***Single anti-refluxEn***.

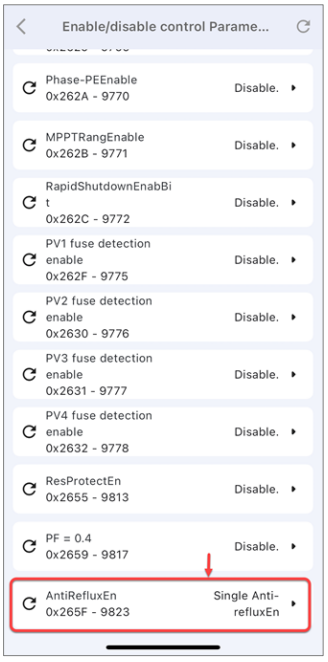


Figure 6-13 Enable anti-backflow through Settings > Enable/disable control parameters

2. Select meter type: navigate to “Setting > LcdLess Basic Parameter2”, set “MeterType” parameter to “DTSU666”.

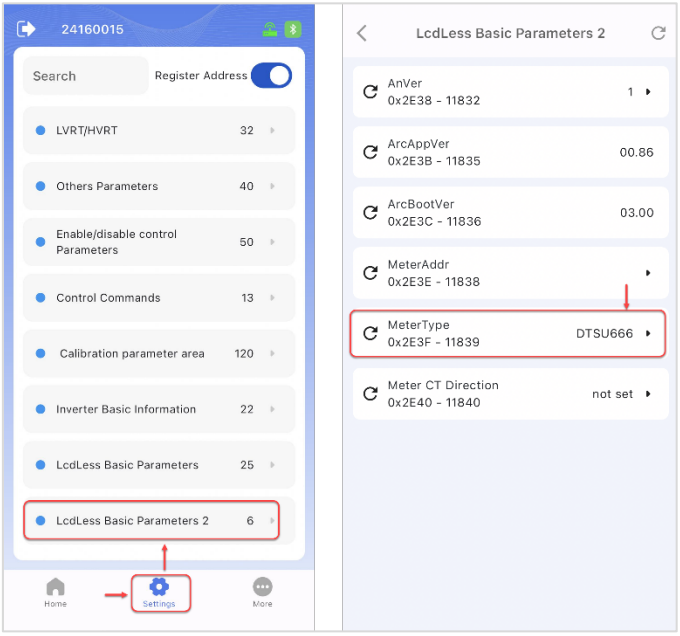


Figure 6-14 Configure meter type

3. Disable the anti-backflow function: There are two access points to disable the anti-backflow function:
   - Go to **Home,** click **AntiRefluxEn** button, select ***Disable***.
   - Alternatively, go to **Settings** > **Enable/disable control parameters**, set the **AntiRefluxEn** parameter to ***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 **Setting** > **Power dispatching**, and set the **PSet** parameter to ***100.0***.

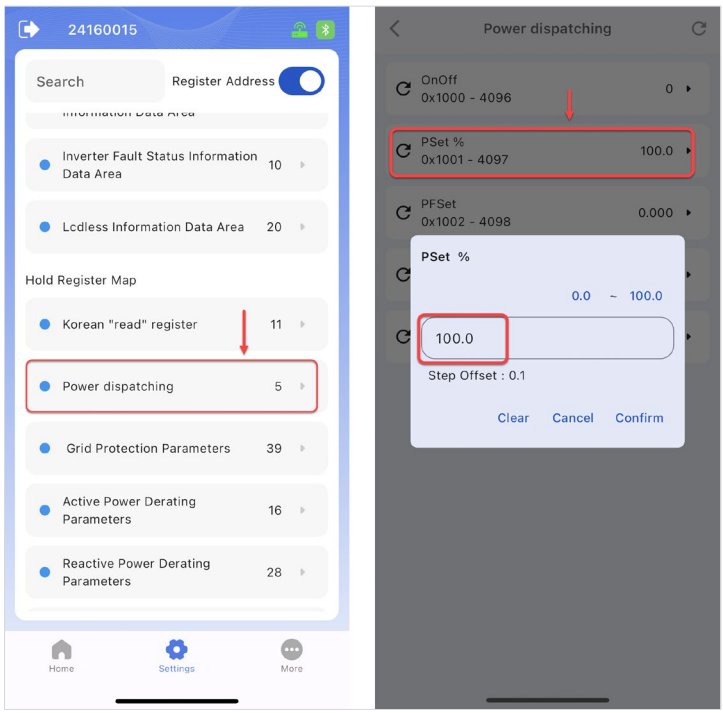


Figure 6-15 Reset the value of the PSet

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 5.3 Electrical Cable Connection.
- Check for cable damage, especially whether the cable surface is scratched or smooth. Repair or replace the cables if necessary.

7.2. Clean Wind Inlets and Outlets

The inverter produces lots of heats during running and uses forced air-cooling method to make sure its normal running. To ensure good heat dissipation of the inverter, it is necessary to check its wind inlets and outlets regularly to make sure they are not dirty heavily. If necessary, use a soft brush or vacuum cleaner to clean the wind inlets and outlets of the inverter.

7.3. Replace Fans

If wind inlets and outlets are all normal, while the inverter temperature is very high or the noise is abnormal, then the fans need to be replaced acc. to the following steps.

1. Remove six screws of fan bracket with No.2 Phillips screwdriver.

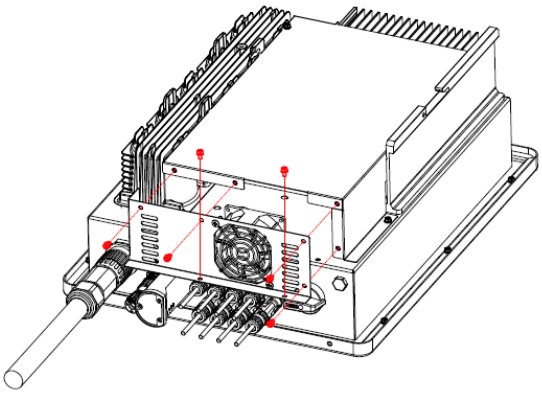


Figure 7-1 Remove the fastening screws of fan bracket

2. Disconnect the watertight cable connector from cooling fan.

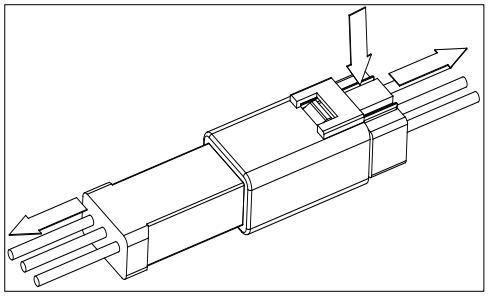


Figure 7-2 Disconnect watertight cable connector

3. Use a No.2 Phillips head screwdriver to remove two fastening screws.

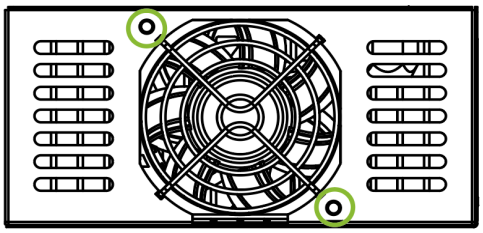


Figure 7-3 Replace cooling fans

4. Fasten new cooling fans on the fan tray. Tools required: No.2 Phillips head screwdriver, torque value: 14.2 kgf.cm ~ 18.4 kgf.cm.
5. Reinstall the assembled fans onto the inverter. Tools required: No.2 Phillips head screwdriver, torque value: 16.3 kgf.cm.

7.4. 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 4.4 Instalation Procedres.

1. Use a PH2 screwdriver to remove the M5 screws.
2. Remove the inverter from its mounting bracket.
3. Replace the new inverter on the mounting bracket and fasten it, torque value: 25.5 kgf.cm.

8. Troubleshooting

8.1. LED Indicator Troubleshooting

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

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

Table 8-1 Troubleshooting based on LED Lights

8.2. Common Fault and Troubleshooting

DANGER!

- Please disconnect the inverter from AC grid and PV modules before opening the equipment. Make sure hazardous high voltage and energy inside the equipment has been discharged.
- Do not operate or maintain the inverter until at least 10 minutes after disconnecting all sources of DC and AC.

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

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

Fault Codes	Solutions
CommErr	Definition: Communication inside inverter fails
	Possible causes: Terminal block connecters of internal communication wires have poor contact
	Recommended solutions:

	1. Observe for 10 minutes and see whether the alarm will be eliminated automatically; 2. Switch off DC power supply and then reboot the system; 3. Contact after-sales service personnel.
ExtFanErr	Recommended solutions: 1. Observe for 10 minutes and see whether the alarm will be eliminated automatically; 2. Check for foreign objects on radiator; 3. Switch off DC power supply and then reboot the system; 4. Contact after-sales service personnel.
IntFanErr	Recommended solutions: 1. Observe for 10 minutes and see whether the alarm will be eliminated automatically; 2. Check for foreign objects on radiator; 3. Switch off AC power supply and then reboot the system; 4. Contact after-sales service personnel.
Warn0030 (EepromErr)	Definition: Internal alarm
	Recommended solutions: 1. Observe for 10 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 10 minutes and see whether the alarm will be eliminated automatically; 2. Check if DC SPD is damaged; 3. Contact after-sales service personnel.
Warn0050 (TempSensorErr)	Recommended solutions: 1. Observe temperature display; 2. Switch off 3-phase working power supply and then reboot the system; 3. Contact after-sales service personnel.

Table 8-2 Troubleshooting list of warning faults

Fault Codes	Solutions
Protect0090 (Bus over voltage)	1. Turn off DC switches and external AC breaker. 2. Wait for 1 minute between OFF and ON for all energy to discharge. 3. If inverter cannot clear fault, replace inverter.
Protect0070 (Bus under voltage	1. Turn off DC switches and external AC breaker. 2. Wait for 1 minute between OFF and ON for all energy to discharge. 3. If inverter cannot clear fault, replace inverter.
GridV.OutLim	1. Make sure the grid connection is good. 2. Restart the inverter again. 3. If inverter cannot clear fault, replace inverter.
Protect0020 (Grid relay error)	1. Turn off DC switches and external AC breaker. 2. Wait for 1 minute between OFF and ON for all energy to discharge. 3. If inverter cannot clear fault, replace inverter.
TempOver	1. Confirm that external ambient temperature is within the specified range of operating temperature; 2. Check whether radiator is covered by other objects;

(Over-temperature protection)	3. Check whether the location of installation is appropriate or not; 4. Observe for 30 minutes and see whether the alarm will be eliminated automatically; 5. Contact after-sales service personnel.
Protect0170 (DCI high)	1. Raise limit of DCImax (for example, 400mA) to allow inverter more room to adjust in transient condition to cope with imbalance of impedance and voltage between Grid phases 2. After raising limit, if inverter cannot clear fault, replace inverter.
IsolationErr (Insulation resistance low)	1. Check wires of PV and ground: 2. Restart to see if inverter can clear fault. 3. Contact after-sales service personnel.
GFCIErr (leakage current high)	1. Check wires of PV and ground: 2. Restart to see if inverter can clear fault. 3. Contact after-sales service personnel.
Protect0150 (Mini MCU Fault)	1. Turn off DC switches and external AC breaker. 2. Wait for 1 minute between OFF and ON for all energy to discharge. 3. If inverter cannot clear fault, replace inverter.
Protect0100 (The sensor fault of leakage current)	1. Turn off DC switches and external AC breaker. 2. Wait for 1 minute between OFF and ON for all energy to discharge. 3. If inverter cannot clear fault, replace sensor or inverter.
Reverse PVx electrode (x=2/4)	1. Turn DC Switch OFF 2. Use meter to find out which PV string is connected in reverse polarity. Correct PV string connection if necessary. 3. Contact after-sales service personnel.
High PVx Input voltage (x=2/4)	1. Check if its input voltage is within 1100V; 2. Turn off DC switches and external AC breaker. 3. Wait for 1 minute between OFF and ON for all energy to discharge. 4. Contact after-sales service personnel.
Protect0230 (Inverter open-loop self-test fault)	1. Turn off DC switches and external AC breaker. 2. Wait for 1 minute between OFF and ON for all energy to discharge. 3. If inverter cannot clear fault, replace inverter.

Table 8-3 Troubleshooting list of Protection faults

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

Table 8-4 Troubleshooting list of hardware faults

9. Technical Data

Model	SCA5K-T-EU	SCA6K-T-EU	SCA8K-T-EU	SCA10K-T-EU	SCA15K-T-EU	SCA20K-T-EU	SCA25K-T-EU
DC Input							
Max. DC input Voltage	1100Vdc						
MPPT Operating Voltage Range*1	2000 - 1000Vdc						
Start Voltge/Power	250 Vdc						
Rated DC Voltage	600Vdc						
Number of MPPTs	2						
Number of input strings per MPPT	1					2	
Max. Input Current per MPPT	15 A					30 A	
Max. input short current (ISC)	23 A					45 A	
DC Disconnection Type	Integrated Switch						
AC Output							
Rated AC Power	5 kW	6 kW	8 kW	10 kW	15 kW	20 kW	25 kW
Max. AC output active power	5.5 kVA	6.6 kVA	8.8 kVA	11 kVA	16.5 kVA	22 kVA	27.5 kVA
Rated AC voltage	380 / 400 V						
AC Voltage Range*2	277 – 520 V						
Grid Connection Type	3 / N / PE						
Max. AC Current	8.4 A	10 A	13.4 A	16.7 A	25.1 A	33.4 A	41.8 A
Grid Frequency	50 / 60Hz						
Grid Frequency Range	44-55Hz /55-65Hz						
Power factor @ rated power	>0.99 (±0.8, adjustable)						
Current THD	<3%						
System Data							
Topology	Transformerless						
Max. Efficiency	97.82%	97.87%	97.69%	97.66%	97.87%	97.87%	98.12%
Euro Efficiency	96.93%	96.96%	97.41%	97.41%	97.13%	97.42%	97.87%
Protection							
DC Reverse Connection Protection	Yes						
AC Short Circuit Protection	Yes						
Leakage Current Protection	Yes						
24h Grid Monitoring	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%						
Operating altitude*4	2000 m						
Display and Communication							
Display	LED + APP (Bluetooth)						
Communication	RS485 /Wi-Fi (standard) & 4G (Optional)						
Mechanical Data							
Dimensions (WxHxD)	416 * 526 * 204.5 mm						

Weight	17 kg	21 kg
DC Connection Type	MC4 (Max. 6 $mm^{2)}$	
AC Connection Type	OT / DT Terminal (Max. 35 mm^2)	
Safety		
Certifications	IEC/EN 61000, IEC/EN 62109, IEC 61727, IEC 62116, IEC 63027, IEC 61683, IEC/EN 62920, EN 55011, C10/11, CEI 0-21, EN50549-1/2, NC RfG, PTPiREE, NTS V2.1, RD 647, RD 413, RD 1699, UNE 217002, UTE C15-712-1, DIN VDE 0126-1-1, VDE-AR-N 4105, DIN VDE V 0124, TOR Erzeuger Typ A/B	

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 200-1000 Vdc. 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:

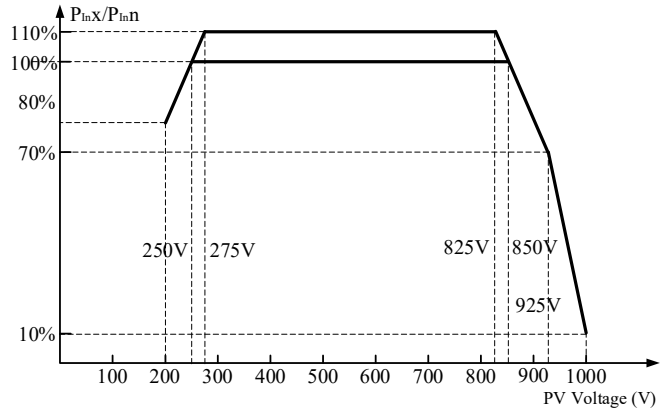


Figure 9-1 DC Input Voltage De-rating Curve of SCA5/6K-T-EU @400Vac

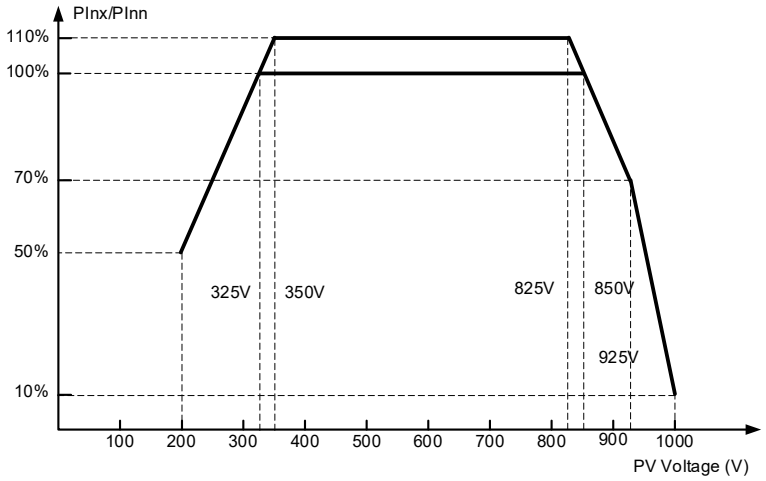


Figure 9-2 DC Input Voltage De-rating Curve of SCA8K-T-EU

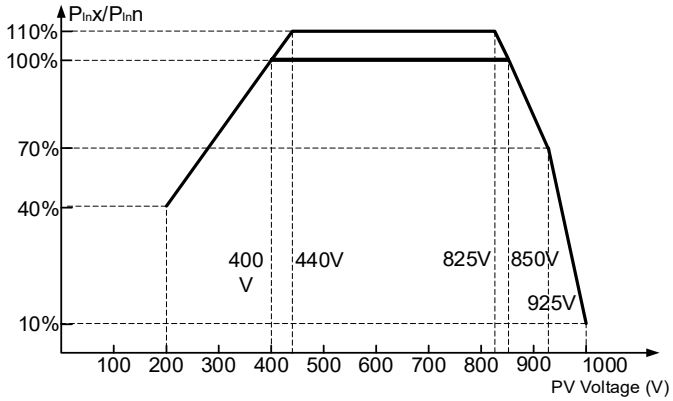


Figure 9-3 DC Input Voltage De-rating Curve of SCA10/20K-T-EU

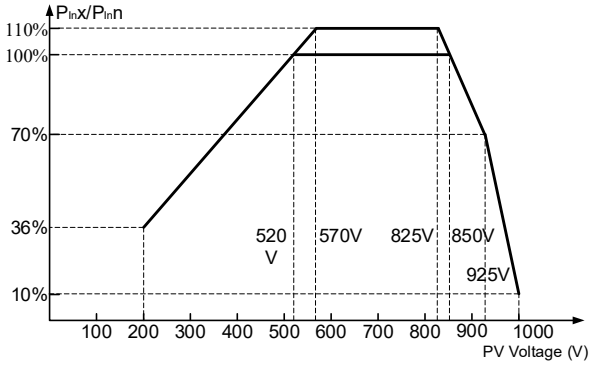


Figure 9-4 DC Input Voltage De-rating Curve of SCA15K-T-EU

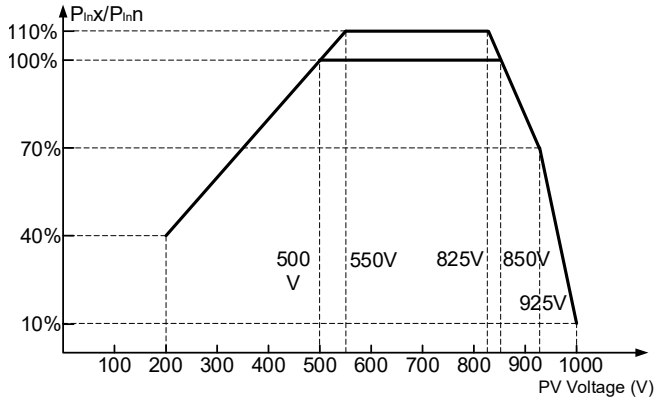


Figure 9-5 DC Input Voltage De-rating Curve of SCA25K-T-EU

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

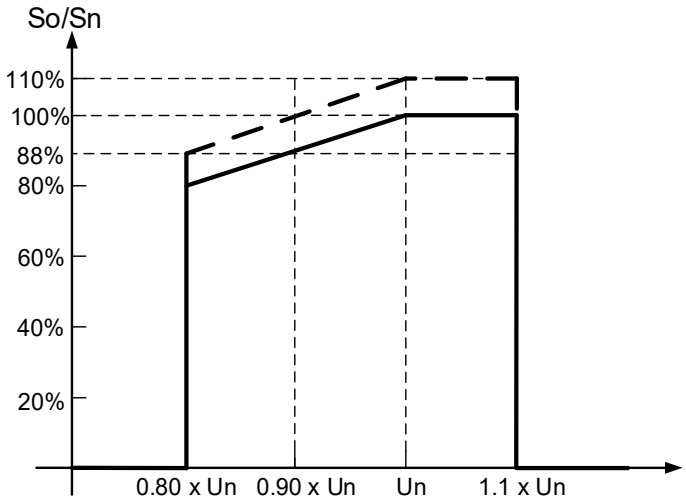


Figure 9-6 AC Output Voltage De-rating Curve

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 figure below:

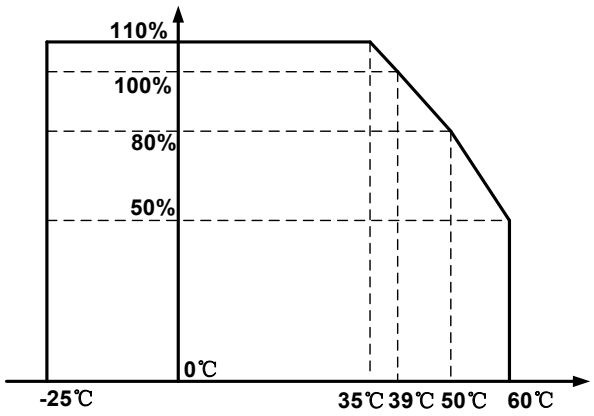


Figure 9-7 Temperature Dependency De-rating Curve of SCA5/6/8/10K-T-EU @PV=615V

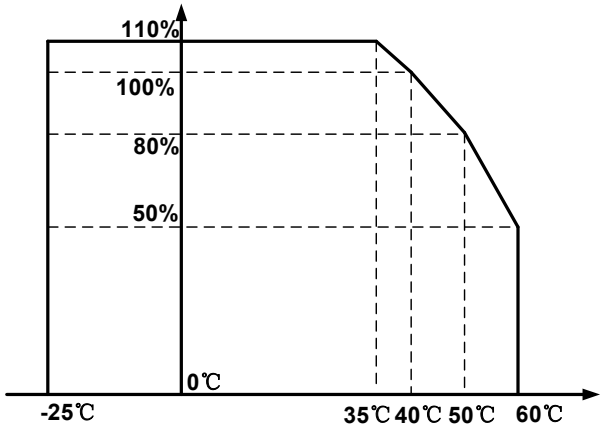


Figure 9-8 Temperature Dependency De-rating Curve of SCA15/20K-T-EU@PV=615V

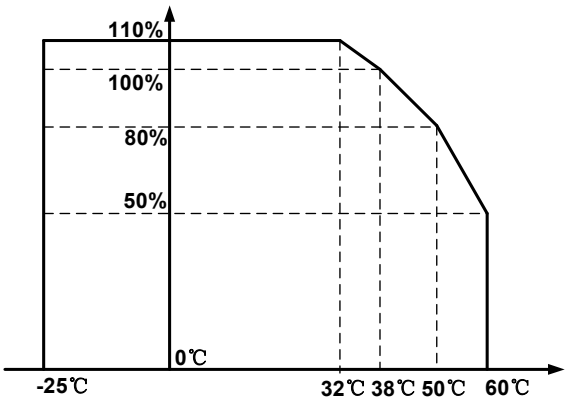


Figure 9-9 Temperature Dependency De-rating Curve of SCA25K-T-EU @PV=615V

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

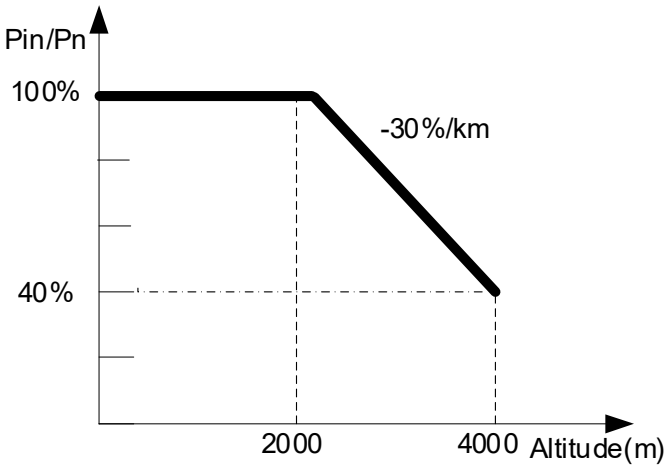


Figure 9-10 Altitude De-rating Curve

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. 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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