

# Three-phase On-Grid PV String Inverter

SCA75K-T-SA; SCA75-T-EU;  
SCA100K-T-EU; SCA120K-T-EU; SCA125K-T-EU;  
CPS SCA110KTL-DO/EU; CPS SCA110KTL-DO/EU2;

## Quick Installation Guide

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SHANGHAI CHINT POWER SYSTEM CO.,LTD

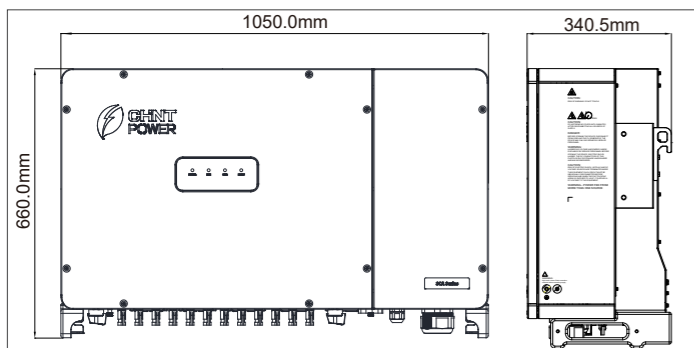
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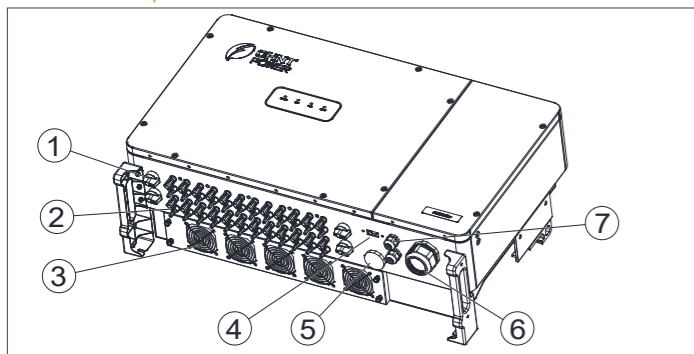
### 1 Product and Dimensions

#### 1.1 Outline Dimensions

All the inverter series have the same dimensions as shown below.



#### 1.2 Main Components

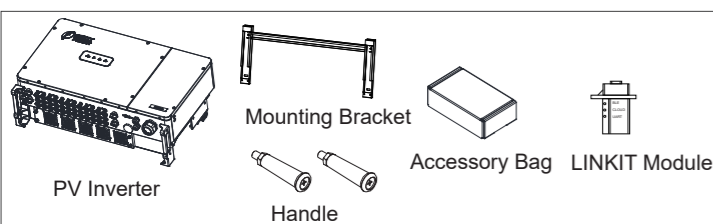


1. DC isolation breaker
2. PV strings connector
3. Fan
4. LINKIT communication interface
5. Vent valve
6. AC output connector
7. RS485 Communication interface

NOTE: 9 MPPT inverter: 75 Kw & 110 Kw(EU); 12 MPPT inverter:100 Kw, 110 Kw(EU2, 24 (12+&12-) reserved inputs), 120 Kw & 125 Kw .  
Main difference between 9 MPPT and 12 MPPT inverters is that they have different numbers of inputs. This quick guide takes 12 MPPT inverter as example. If any difference with 9 MPPT, it will be introduced separately.

### 2 Installation

#### 2.1 Scope of Delivery:



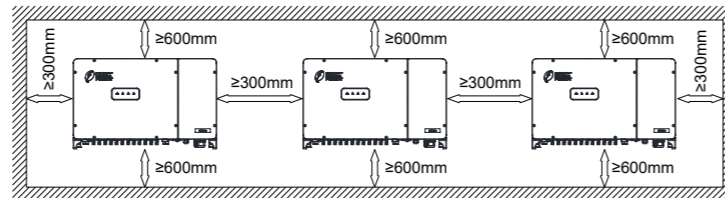
No.	Product	Name	Amt	Notes
1		Document	2	Quick guide&warranty card
2		M10 Nut	8	4 for AC terminal 4 for mounting bracket
3		M10 spring washer	4	For AC terminal
4		Screw M10X50	4	Fix mounting bracket

No.	Product	Name	Amt	Notes
5		M10 flat washer	4	For AC terminal
6		Screw M6X16	4	For fixing inverter & grounding
7		6 Pin terminal	1	Connect 485 COM cable
8		Pan head screw M6X18 with plastic washer	1	Spare for front cover
9		DC input male connector & female connector	36	75Kw: 18+ & 18-
			48	100Kw: 24+ & 24-
			36	110Kw(EU): 18+ & 18-
			24	110Kw(EU2): 12+ & 12-
			48	120Kw: 24+ & 24-
48	125Kw: 24+ & 24-			
10		Unlock tool for DC connector	1	Remove quick connector

**NOTICE** After unpacking the inverter, keep all its interfaces well sealed before and after connecting cables, to prevent water from entering.

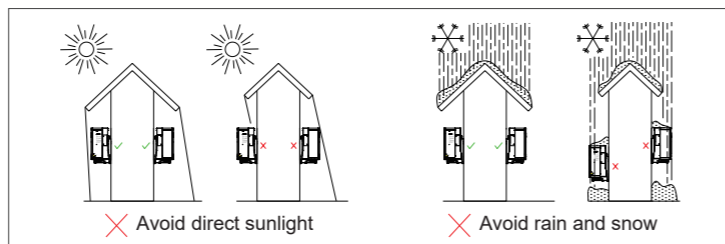
#### 2.2 Recommended Clearances

During planning and installing the inverter, appropriate clearances shown as below shall be reserved to ensure sufficient ventilation and heat dissipation. If the inverters are installed in relatively enclosed space, this clearance shall be increased properly to maintain well ventilated condition. In addition, no objects shall be put in-between two inverters to prevent any negative influences on heat dissipation.

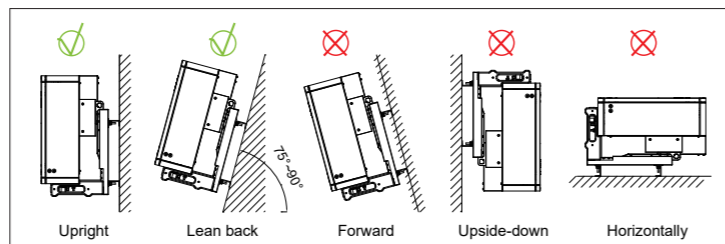


#### 2.3 Installation Environment Requirements

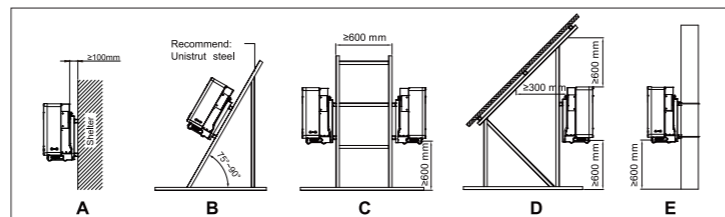
If installation environment allows, avoiding direct sunlight, rain and snow can reduce power derating and extend the life of the inverter. It is recommended that the inverter is installed under a roof or sunshade. However, installation outdoors with direct sunlight, rain and snow doesn't impact warranty.



#### 2.4 Installation Mode Requirements



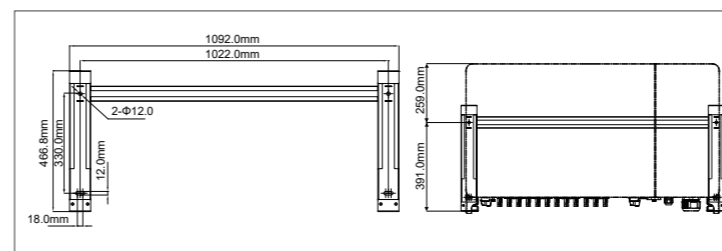
#### 2.5 Installation Scenarios



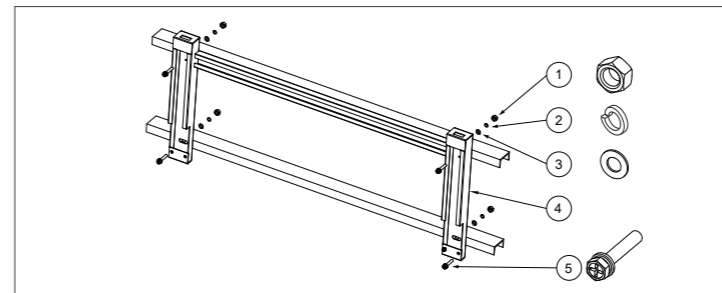
**A:** Keep proper distance between inverter and shelter to ensure good ventilation. **B:** The inverter can lean back  $\leq 15^\circ$  while its back shall not be shielded to ensure good ventilation. **C:** Two inverters can be installed back to back, and proper distance shall be kept to ensure good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

#### 2.6 Install the Inverter onto Bracket

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



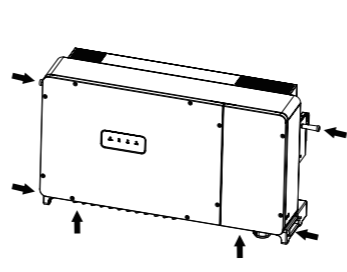
2. Drill holes with a  $\Phi 12\text{mm}$  drill at the marked position, and then fix the mounting bracket ④ with the equipped screws M10X50 ⑤, M10 flat washer ③, M10 spring washer ②, and M10 nut ①. Tools: Electric drill (with  $\Phi 12\text{mm}$  drill bit), No. 17 wrench, torque value: 230.0 kgf.cm.



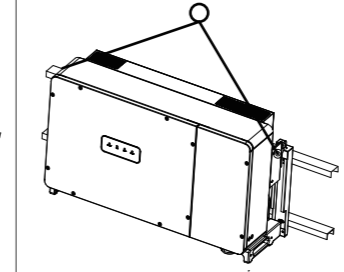
3. Hang inverter on the mounting bracket in either way.

- Manual lifting: two people hold the handles, two people hold the bottom surface and side holders. Hang the inverter onto mounting bracket together.
- Rope lifting: Tighten two M10 lifting eyebolts (offered by customer) in screw holes on both sides of inverter, and use a sling rope or bar (inserted through the lifting eyebolts) to lift the inverter onto the mounting bracket. The angle between the two sling ropes must be less than 90 degrees.

#### Lifting the inverter by hand



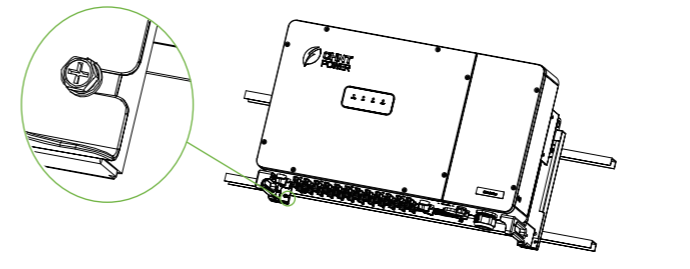
#### Lifting the inverter by rope



**CAUTION** Total weight of the inverter is approx.90kg. Ensure the mounting bracket is properly installed before hanging the inverter on the bracket. It is recommended to have four people in total to hang the inverter.

4. Use two M6X16 screws to fix inverter on mounting bracket with No.10 hexagon socket wrench, torque value: 60.0 kgf.cm.

#### Inverter fixed on mounting bracket



#### 2.7 Installation Self-check

- Ensure that supporting points (on the rear side of the inverter) are aligned with holes of mounting bracket.
- Ensure that the inverter is well fixed.
- Ensure that the inverter is locked on the mounting bracket and an antitheft lock is installed.

### 3 Electrical Connection

**DANGER** Before performing any electrical connections, make sure both DC and AC switches are OFF. Otherwise, fatal injury can occur due to high voltage.

**NOTICE** 1. Close cover of AC wire box in time after wiring process to avoid water condensation in wireboxes.  
2. Before the first power-on operation, or before running it again after long time (6-12 months) shutdown, check if water-sensitive label in bottom left corner of AC wirebox turns red. Never power on the inverter once it turns red.  
3. Never damage or tamper with vent valve.

#### 3.1 Tools required & Torque

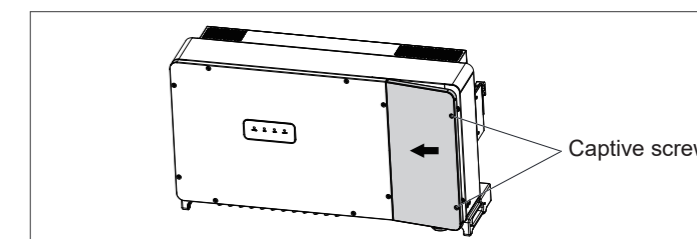
No.	Tools	Use	Torque
1	5mm hex wrench	Upper cover of wire box	30.0kgf.cm
2	No.16 hexagon socket wrench	AC output terminal	140.0kgf.cm
3	No.10 hexagon socket wrench	Ground terminal	60.0kgf.cm
4	1.5mm flat-blade screwdriver	RS485 communication terminal	2.0kgf.cm
5	Diagonal pliers	Making cables	-
6	Wire stripper	Making cables	-
7	Crimping Tool	Making cables	-

#### 3.2 Cable Specifications (recommended)

Name	Type	Cable outer diameter(mm)	Conductor cross-sectional area (mm <sup>2</sup> )
DC Cable	PV cables that meet 1500V standard	6~9	4~6
Ground Cable	Outdoor copper core wire	/	Phase wire diameter /2
AC Cable	Outdoor three-core copper/ aluminum wire	40~46	Copper/Aluminum alloy wire: L1,L2,L3 (N):95~120 mm <sup>2</sup> PE: Phase wire diameter/2
	Outdoor four-core copper/ aluminum wire		
Communication cable	Communication cable UTP CAT-5e	4.5~6	3*0.2~0.75
	Shielded twisted pair		3*1~1.5

#### 3.3 Cable Installation

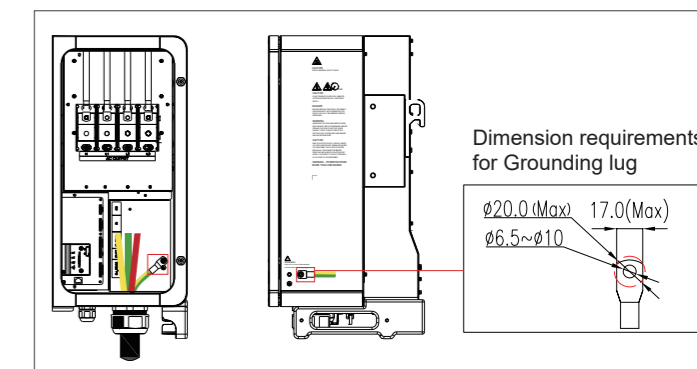
(1) Loosen two captive screws on upper cover of AC wire box with a 5mm hex wrench, and then pull right to open the upper cover.



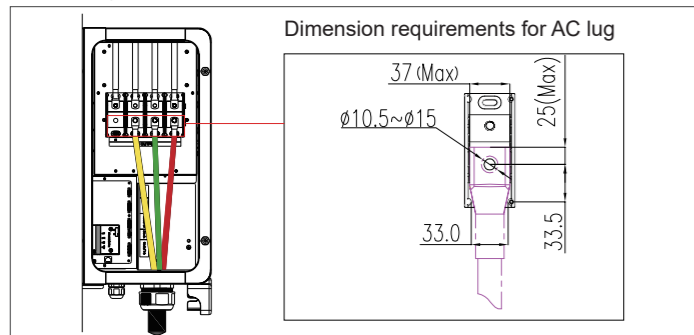
NOTE: In order to avoid missing the screws, the captive screws can not be removed from the upper cover.

#### 1. Grounding

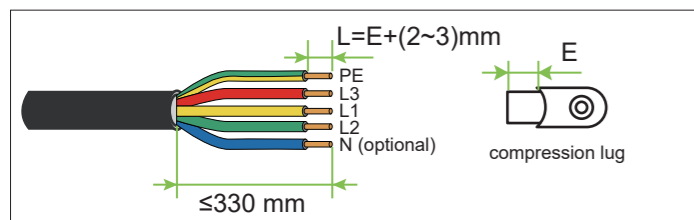
- Connect grounding wire in either way and tighten with M6x16 screws:
  - by internal grounding pole located on the lower right corner of the AC busbar,
  - by external grounding hole located at the bottom of the machine, next to the AC port on the right.



## 2. AC Wiring



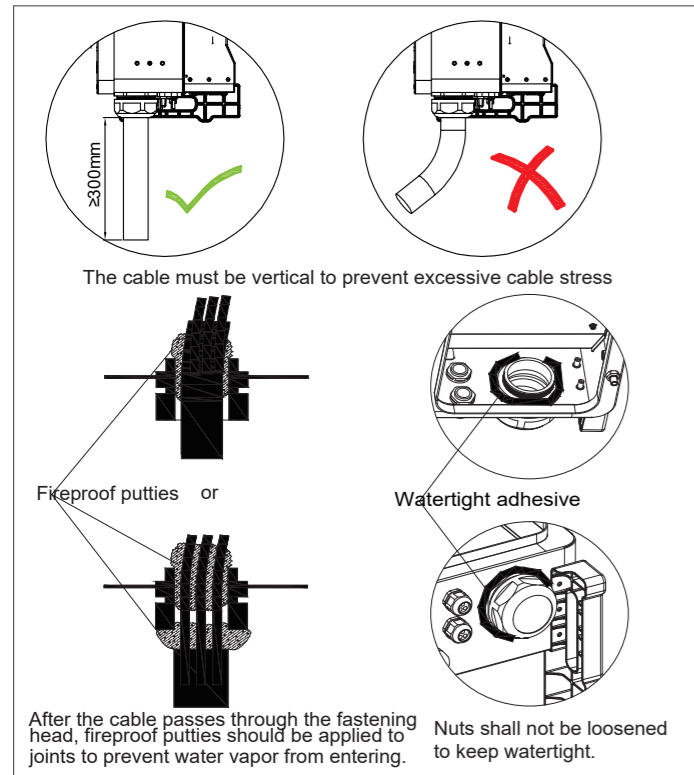
- Loosen the locking cap from the AC output watertight cable connector at the bottom of the inverter and remove watertight plug from the locking cap as required.
- Route AC output power cable through the locking cap and the AC output connector.
- Remove an appropriate length of the jacket and insulation layer from the AC output cable. Insert the exposed core wires into crimp area of compression lugs, wrap the crimp areas with heat shrink tubing or insulation tape, and crimp them using hydraulic plier.  
Note: Use copper compression lugs to match L1, L2, L3 copper wires. Use Cu-Al bimetallic compression lug or aluminum compression lugs to match L1, L2, L3 aluminum wires.



- Connect compression lugs to L1, L2, L3, N, and PE wiring studs on the AC terminal block, tighten them with M10 flat washers, spring washers and nuts.
- Tighten the locking cap on the AC output watertight cable connector.

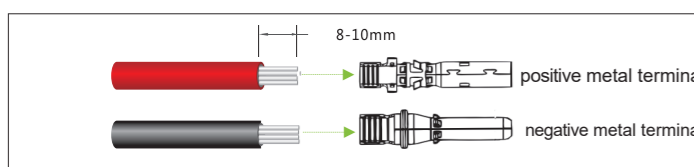


**NOTICE** To ensure convenience and safety, it is recommended to use multi-core cables, terminals and proper crimping tool to crimp the cables before wiring.

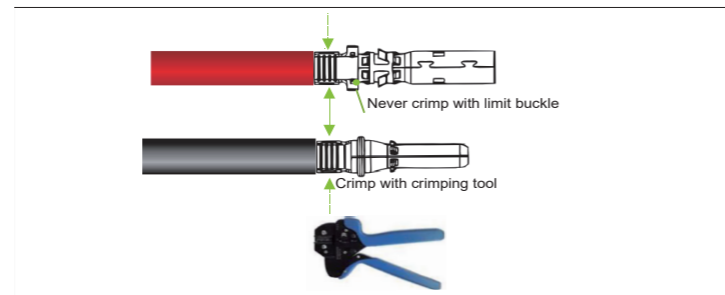


## 3. DC wiring

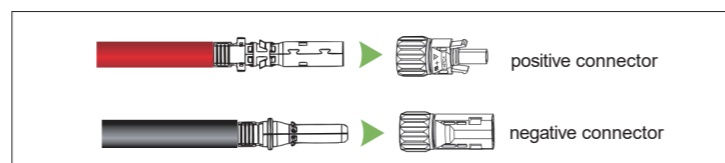
- Remove an appropriate length of the jacket and insulation layer from the DC input cable of PV strings.



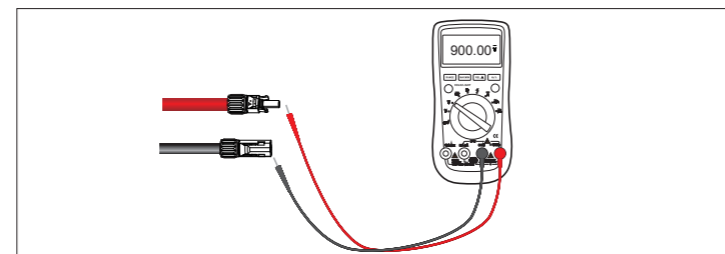
- Insert the exposed areas of the positive and negative power cables into the metal terminals of the positive and negative connectors respectively and crimp them using a crimping tool, such as Amphenol H4TC0002 or Devalan D4ZCY001.



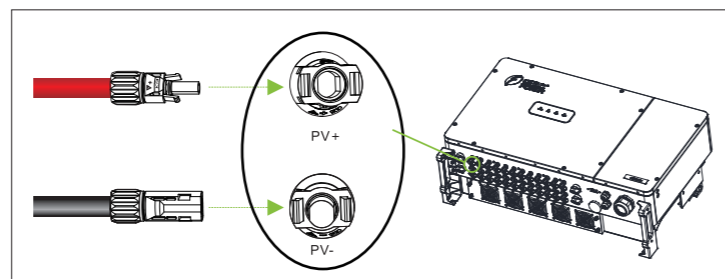
- Insert the crimped positive and negative power cables into the corresponding positive and negative connectors until a "click" sound is heard. Tighten the locking nuts of the positive and negative connectors.



- Measure the voltage of every route Strings using a multimeter. Ensure that the polarities of the DC input power cables are correct.



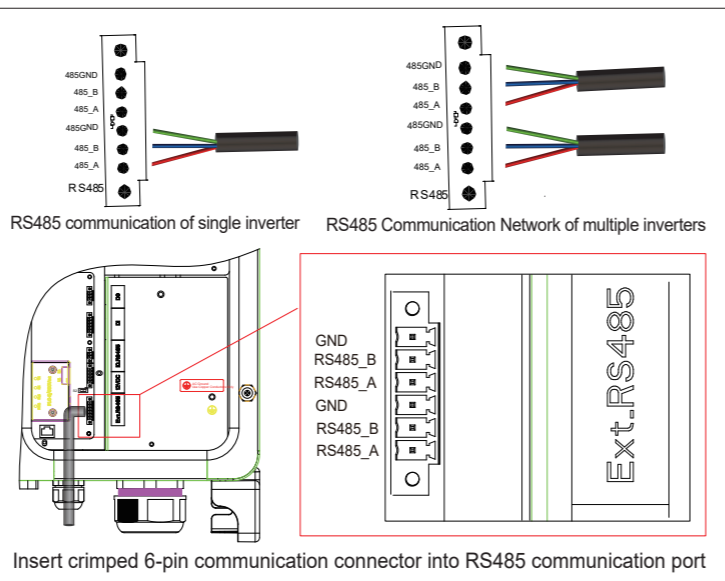
- Insert the positive and negative connectors into their corresponding terminals of the inverter until a "click" sound is heard.



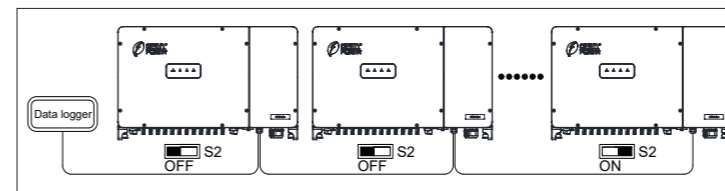
**NOTICE** Make marks on all positive and negative power cables to identify their correct strings (such as PV1+, PV1-, PV2+, PV2-). Make sure all strings are connected to corresponding ports according to port names printed on the device, to avoid wrong connection. Otherwise, it may result in device damages or property loss.

### 3.4 Communication connection (optional)

- Crimp communication cables into 6-pin connector according to the pin definition of communication board, as shown below.
- Insert the 6-pin connector to communication board.



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



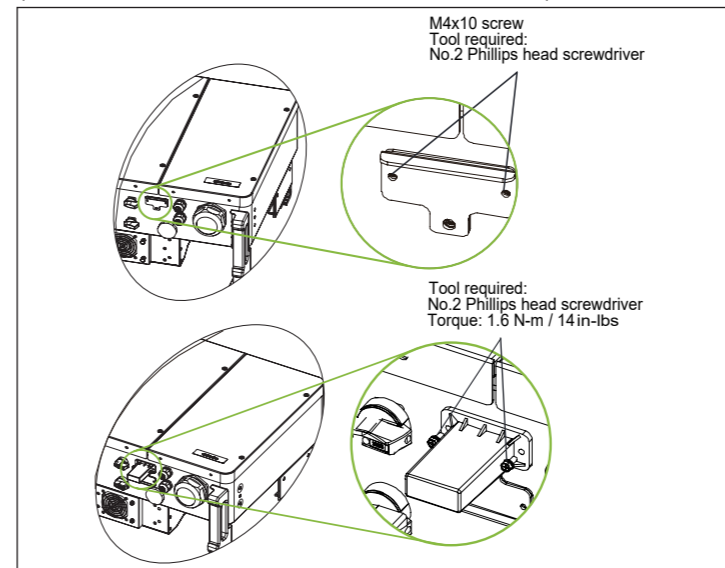
After completing all wiring steps, fix the two captive screws on the upper cover of the wire box with a 5mm hex wrench, and lock the upper cover.



**NOTICE** Screw must be tightened when fixing the cover to prevent water problem.

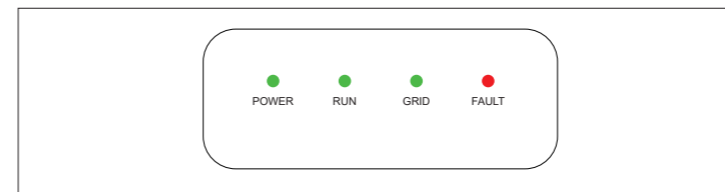
- Install LINKIT module as shown below.

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



## 4 Display

### 4.1 LED Indicator



### 4.2 Description of LED Indicator

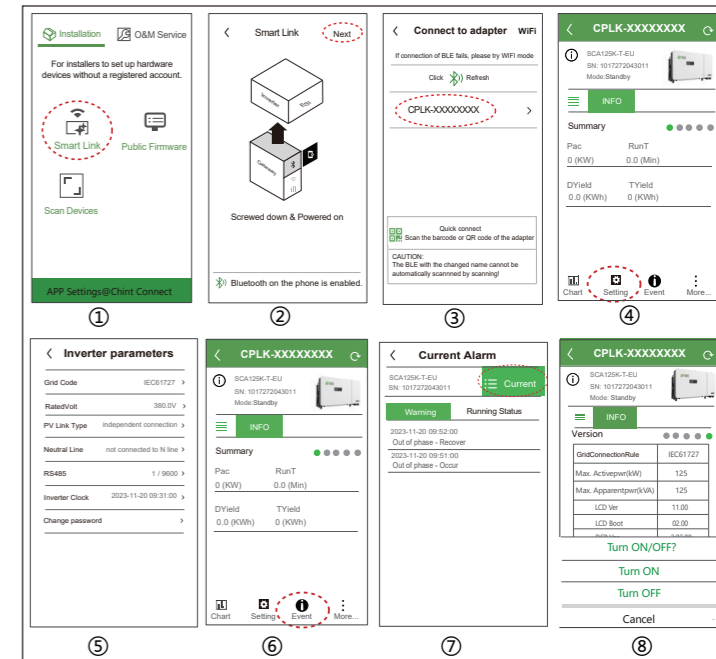
LED Icon	Name	Status	Meaning
POWER (Green)	Working Power Indicator	On	Has working power
		Off	No working power
RUN (Green)	Grid Operation Indicator	On	In the state of grid-connected power generation
		Flash	Derating operation status (on for 0.5 seconds, off for 1.6 seconds)
		Off	In other running state or no working power
GRID (Green)	Grid Status Indicator	On	Grid is normal
		Flash	The power grid is abnormal (on for 0.5 seconds, off for 1.6 seconds)
		Off	No power supply
FAULT (Red)	Fault Status Indicators	On	Permanent failure
		Quick Flash	General failure (on for 0.5 seconds, off for 0.5 seconds)
		Slow Flash	Alarm failure (on for 0.5 seconds, off for 2 seconds)
		Off	No fault or no working power supply
4 LEDs		Flash	Upgrade Firmware (on for 0.05 seconds, off for 0.3 seconds)

## 5 Commissioning



**WARNING** Before powering up the PV system, it is important to check the installation for any potential hazards.

- Turn on AC circuit breaker.
- 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.
- Download APP (users can directly scan the QR code to download APP which can only support Android 4.4 and IOS 11.0 system or higher version system).
- Set APP as shown in the flow charts below.



- Open Bluetooth function on mobile phone, then open "Chint Connect" APP. Touch "Smart Link" icon to enter smart link interface.  
Note: If it's necessary, click "APP Settings" in the bottom green bar to set language & APP platform, synchronize cloud data or check its version.
- Touch "Next" button to enter "Connect to the adapter" interface.
- Touch wireless network named CPLK-XXXXXXX (Find its last four numbers on LINKIT label), or touch the green QR to scan LINKIT bar code, inverter begins to connect network.

- Touch "Setting" icon in the bottom and input password "1111", it will skip to inverter parameter setting page.
- Set or change inverter parameters, such as Grid Code, PV Link Type, RS485.
- When the RUN indicator lights up, it indicates that the device is running. Sliding the interface left and right can browse through DC, AC, Other and Version pages.

- If the inverter cannot run normally, the FAULT indicator will light up and fault information will be shown on the APP. Touching "Event" icon in the bottom can skip to "Current Alarm" page.
- Touch the top-right icon to check the detailed current alarm and history fault information. Troubleshoot related problems and restart. Contact service personnel if there are still some faults.
  - Touch "More" icon and input password "1111" to power on/off device.

## 6 Troubleshooting



**CAUTION** External fans are provided for the inverter. Periodically check and clean the inlets/outlets of the fans to ensure good dissipation. If any abnormal with a fan, replace it immediately.

Issue	Solution
No display	1. Check if the DC switch is in ON or OFF position. 2. If there is PV wire box, check the fuses and wire connections.
No feed-in power	1. Check if AC breaker is on. 2. Wait for strong sunlight. 3. Check if the number of PV strings is correct. 4. Operate as required by the inverter.
Inverter abnormal	1. Disconnect both AC and DC breakers. 2. Wait at least 10 minutes, then switch on AC and DC breakers. 3. Check if inverter is working properly.
Less feed-in power	1. Check if the inverter is exposed to direct sunlight or in an environment with poor ventilation. 2. Check if the heatsink is dusty or blocked or fan abnormal. 3. Check if there is enough installation distance between inverters.