

# USER MANUAL

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## Three-phase Grid-tied PV String Inverter



**75K/100K/110K/125K/125K-H**

## HISTORY

VERSION	ISSUED	COMMENTS
1.0	23-Nov.-22	First release
1.1	30-Jan.-23	Update the warning code; update the LED description; update the APP section and update the specifications.
1.2	27-Mar.-23	Update troubleshooting; update the structure of whole manual; update Chapter 5 and update the details of description.
1.3	12-Apr.-23	Update installation modes.

# Preface

## About This Manual

This manual describes the installation, connection, the use of APP, commissioning and maintenance etc. of Three-phase Grid-tied PV String Inverter. Please first read the manual and related documents carefully before using the product and store it in a place where installation, operation and maintenance personnel can access it at any time. The illustration in this user manual is for reference only. This user manual is subject to change without prior notice. (Specific please in kind prevails.)

## Target Group

Three-phase Grid-tied inverters must be installed by professional electrical engineers who have obtained relevant qualifications.






## Scope

This manual is applicable to following inverters:

- 75K/100K/110K/125K/125K-H

## Conventions

The following safety instructions and general information are used within this user manual.

 <b>DANGER</b>	Indicates an imminently hazardous situation which, if not correctly followed, will result in serious injury or death.
 <b>WARNING</b>	Indicates a potentially hazardous situation which, if not correctly followed, will result in serious injury or death.
 <b>CAUTION</b>	Indicates a potentially hazardous situation which, if not correctly followed, could result in moderate or minor injury.
 <b>NOTICE</b>	Indicates a potentially hazardous situation which, if not correctly followed, could result in equipment failure to run, or property damage.
 <b>NOTE</b>	Call attention to important information, best practices and tips: supplement additional safety instructions for your better use of the Three-phase Grid-tied inverter to reduce the waste of you resource.

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## 1. Safety

Before using the inverter, please read all instructions and cautionary markings on the unit and manual. Put this manual to a place where you can take it easily. Ours Three-phase Grid-tied PV String Inverter strictly conforms to related safety rules in design and test. Please follow the local laws and regulations during installation, operation and maintenance. Incorrect operation may cause injury or death to the operator or a third party, and damage to the inverter and other properties belonging to the operator or a third party.

### 1.1 Safety Instructions

	<p><b>Risk of electric shock</b></p> <p>The device contains high voltages, both alternating and direct, and high leakage currents may be generated during operation. To avoid risk of electric shock during maintenance or installation, make sure that all DC and AC connection terminals are disconnected. First connect the grounding wire to grounding and disconnect it for maintenance. Check proper phase and neutral connection. If the unit is used without following the specifications of the manufacture, the protection provided by the equipment may be impaired. Disconnect the inverter from the grid and from the photovoltaic generator before cleaning PV strings. An unexpected capacitive current from the surface of the strings may surprise operator and cause them to fall from the roof.</p>
 	<p><b>Hanging the PV inverter</b></p> <p>The PV inverter must only be handled by qualified service personnel. When the PV generator is exposed to sufficient light intensity, it generates a DC voltage and, when connected to the device, it charges the bulk capacitor. After having disconnected the PV inverter from the grid and the PV generator, an electric charge may remain in the bulk capacitor. Please wait at least 10 minutes after disconnecting from the grid before handing.</p>
	<p><b>Exclusively for the grid</b></p> <p>The PV inverter is designed for the sole purpose of converting from PV strings and injecting it into the grid. This inverter is not designed to be powered by sources of primary energy other than PV strings or to be connected to different loads other than the public grid.</p>
	<p><b>Hot surfaces</b></p> <p>Although it has been designed in accordance with international safety standards, the PV inverter may become hot during operation.</p>

## 1.2 Safety Precaution

**a.** Installation, maintenance and connection of inverters must be performed by qualified personnel, in compliance with local electrical standards, wiring rules and requirements of local power authorities and/or companies.

**b.** To avoid electric shock, DC input and AC output of the inverter must be terminated at least 10 minutes before performing any installation or maintenance.

**c.** The temperature of some parts of the inverter may exceed 60°C during operation. Do not touch the inverter during operation to avoid being burnt.

**d.** Ensure children are kept away from inverters.

**e.** Take appropriate measures to avoid electric shock.

**f.** Don't open the front cover of the inverter. Apart from performing work at the wiring terminal, touching or changing components without authorization may cause injury to people, damage to inverters and annulment of the warranty.

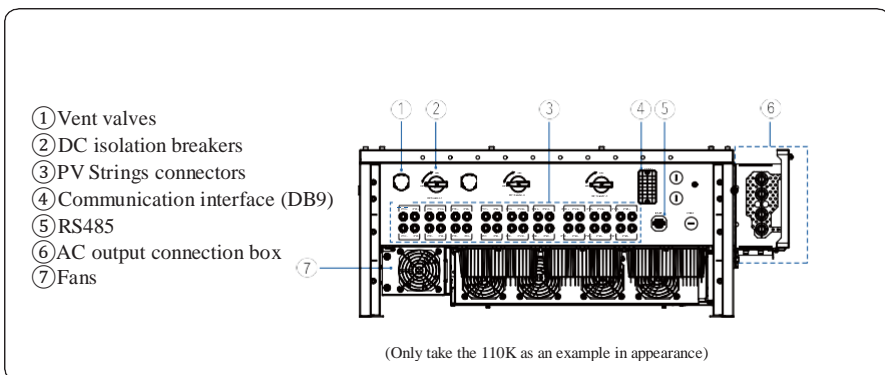
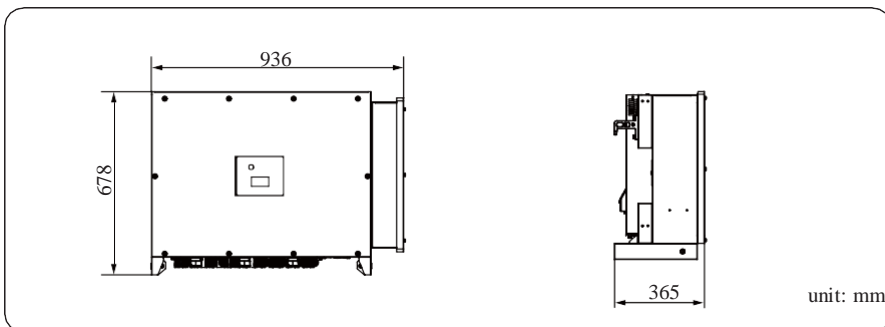
**g.** Ensure the output voltage of the proposed PV array is lower than the maximum rated input voltage of the inverter; otherwise the inverter may be damaged and the warranty annulled.

**h.** When exposed to sunlight, the PV array generates dangerous high DC voltage. Please operate according to our instructions, or it will result in danger to life.

**i.** Prohibit inserting or pulling the AC and DC terminals when the inverter is running.

## 2. Product Introduction

### 2.1 Outline and Dimensions



### 2.2 Route connection for PV strings installation

Route connecting for the installation of PV strings per inverter model is shown in below table:

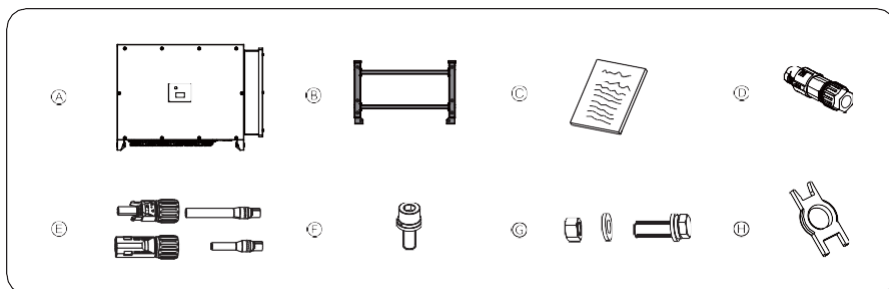
100K totally 16 routes; 75/110K/125K/125K-H totally 18 routes.

Model	MPPT1	MPPT2	MPPT3	MPPT4	MPPT5	MPPT6	MPPT7	MPPT8	MPPT9
SE-TH 100.0TL3	2routes	2routes	2routes	2routes	2routes	2routes	2routes	2routes	
SE-TH 75.0TL3 / 110.0TL3 / 125.0TL3 / SE-TH-H 125.0TL3	2routes	2routes	2routes	2routes	2routes	2routes	2routes	2routes	2routes



## 3. Installation

### 3.1 Packing list

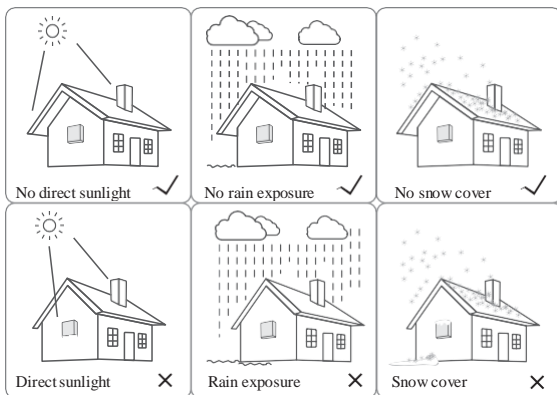


Items	Deliverables
A	The inverter
B	Mounting bracket
C	File package
D	RS485 connector
E	PV terminal connector group
F	M8 screws
G	M12 Bolt group (including screw, nut) *4 (reserved for tightening the support and mounting bracket)
H	Removal tool for DC connectors

## 3.2 Selecting the Mounting Location

### 3.2.1 Installation Environment Requirements

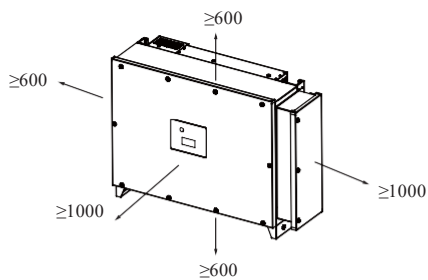
- a. With an IP65 protection rating, the inverter can be mounted indoors or outdoors.
- b. The mounting location must be inaccessible to unrelated personnel since the enclosure and heat sinks are extremely hot during operation.
- c. Do not install the inverter in areas containing highly flammable materials or gases.
- d. To ensure optimum operation and long service life, the ambient temperature must be below 50°C.
- e. The inverter must be mounted in a well-ventilated environment to ensure good heat dissipation.
- f. To ensure long service life, the inverter must not be exposed to direct solar irradiation, rain, or snow. It is recommended that the inverter be mounted in a sheltered place.
- g. The carrier where the inverter is mounted must be fire-proof. Do not mount the inverter on flammable building materials.
- h. Do not install the inverter in a rest area since it will cause noise during operation.
- i. The installation height should be reasonable, and please make sure it is easy to operate and view the display.
- j. Product label and warning symbols shall be clear to read after installation.
- k. Please avoid direct sunlight, rain exposure, snow cover.



### 3.2.2 Installation Space Requirements

Reserve enough clearance around the inverter to ensure sufficient space for installation and heat dissipation. Different mounting modes and their space requirements are shown as below.

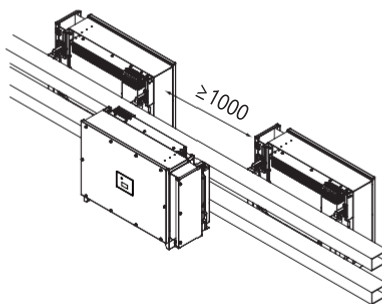
**Mode A: non-back-to-back installation**



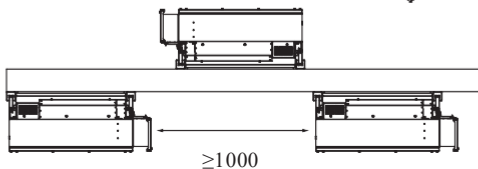
Unit: mm

Note: the maintenance area of this inverter is on the right side. Therefore, its clearance requirement must be no less than 1000mm.


**Mode B: back-to-back staggered installation**



Unit: mm

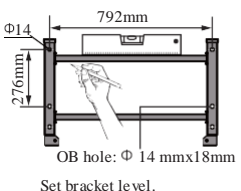
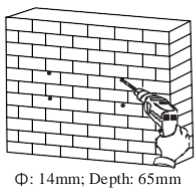
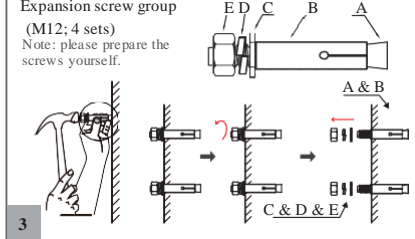
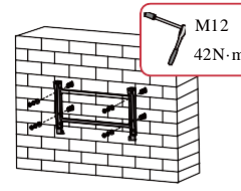
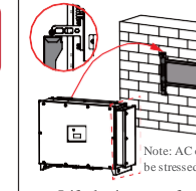
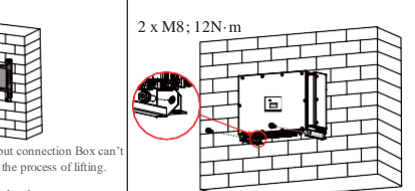


### 3.2.3 Support-mounting Inverter

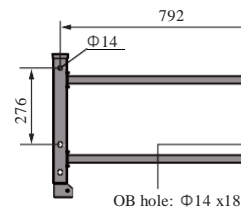
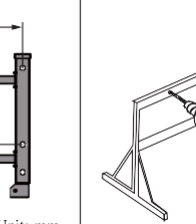
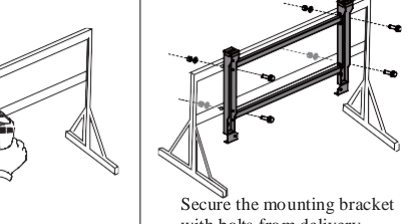
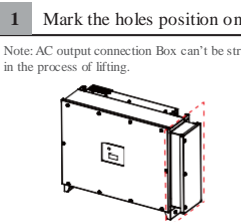
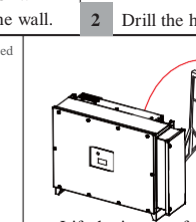
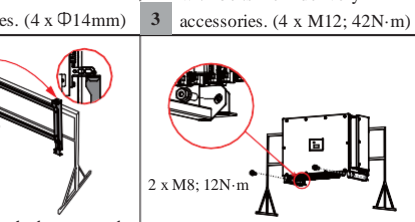
 <p><b>DANGER</b></p>	<ol style="list-style-type: none"> <li>The walls must be fire-proof and non-flammable materials, otherwise there is a fire risk.</li> <li>Before drilling holes, check whether there are electrical pipes or other pipes buried in the walls to avoid risks.</li> </ol>
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Inverter is installed on the wall or support by means of mounting bracket. If the inverter is installed on the wall, the load-bearing capacity of the wall must be greater than 10KN/m<sup>2</sup>. M12 x 60mm stainless steel pressure-burst expansion bolts are recommended in wall-mounted installation.

Inverter is installed on the wall.

 <p>Set bracket level. 1 Mark the holes position on the wall.</p>	 <p>2 Drill the holes. (4x Φ4mm)</p>	<p>Expansion screw group (M12; 4 sets) Note: please prepare the screws yourself.</p>  <p>3</p>
 <p>4 4 × M12 Expansion screw; 42N·m</p>	 <p>5 Lift the inverter from the bottom and place it on the bracket.</p> <p>Note: AC output connection Box can't be stressed in the process of lifting.</p>	 <p>6 Fix the inverter.</p>

Inverter is supported by means of mounting bracket.



 <p>1 Mark the holes position on the wall.</p>	 <p>2 Drill the holes. (4 x Φ14mm)</p>	 <p>3 Secure the mounting bracket with bolts from delivery accessories. (4 x M12; 42N·m)</p>
<p>Note: AC output connection Box can't be stressed in the process of lifting.</p>  <p>4 Lift the inverter from the bottom.</p>	 <p>5 Lift the inverter from the bottom and place it on the bracket.</p>	 <p>6 Fix the inverter.</p>

#### Installation Self-check

- Ensure that the inverter is well fixed.
- Ensure that the inverter is locked on the support with an anti-theft lock installed.

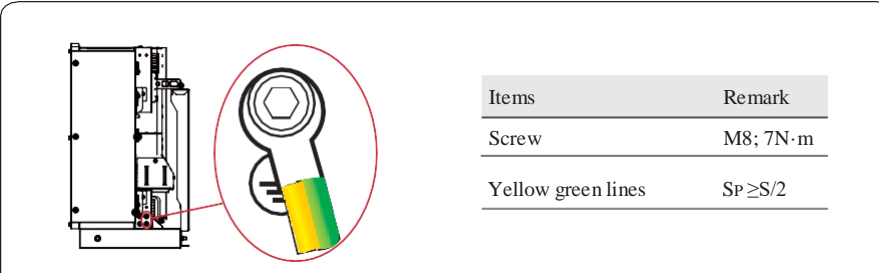
## 4. Electrical Connection

### 4.1 Safety Caution

 <b>DANGER</b>	<p>Before performing any electrical connections, ensure that both DC and AC switches are OFF. Otherwise, fatal injury can occur due to the high voltage.</p>
 <b>CAUTION</b>	<p>Grounding the PV strings needs below prerequisites.</p>
<p>An isolation transformer must be installed on the AC side of each inverter. Ensure that the neutral wire of the isolation transformer must be disconnected from the PGND cable.</p>	
<p>One isolation transformer is with one PV inverter: do not install a single isolation transformer for multiple inverters. Otherwise, circulating current generated by the inverters will lead to operation failure.</p>	

### 4.2 Electrical Connections

#### 4.2.1 Connecting External PGND Cables




Items	Remark
Screw	M8; 7N·m
Yellow green lines	$SP \geq S/2$

#### NOTE

S: cross-sectional area of AC cable

SP : cross-sectional area of PE cable

The SP value is valid only when the PE cable and the AC cable are of the same material.

 <b>NOTICE</b>	<p>Connecting External Protection Ground (PGND) Cables can not substitute the PE of connecting the AC power cables. Ensure that both connecting are grounding well. Otherwise, warranty will be void if damage is caused by electrical connection faults.</p>
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## 4.2.2 Connecting AC Output Cables

### AC circuit breaker

Connect the inverter with the power grid through installing one AC circuit breaker whose rated current is no less than 250A. Residual current protection function of square matrixes internally installed in the inverter and you can set leakage current protection value no less than the corresponding value in below table, if local utility department require leakage current protection function for AC circuit breaker. That set can save the inverter from its performance failure.

Inverter Model	Residual current
100K	$\geq 1110\text{mA}$
75K/110K	$\geq 1230\text{mA}$
125K/125K-H	$\geq 1390\text{mA}$

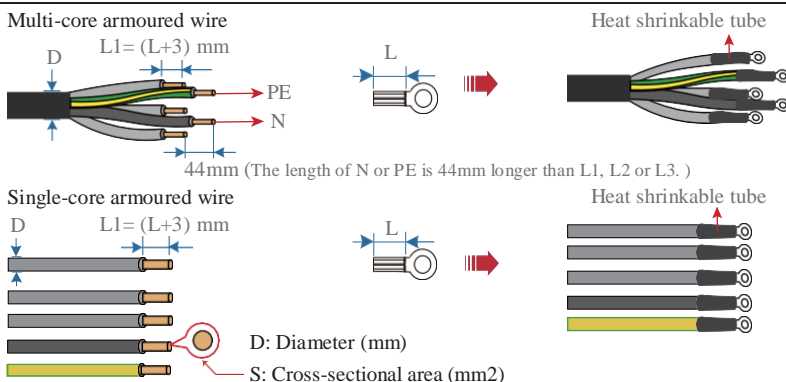
### AC Cable Requirements:

Cable	Type	S (mm <sup>2</sup> )	D (mm)
AC cable (Multi-Core)	Outdoor triple-core cable (L1, L2, L3)	<ul style="list-style-type: none"> <li>• Copper wire cable -S: 70mm<sup>2</sup>-240mm<sup>2</sup> -SP <math>\geq S/2</math></li> <li>• Aluminum wire cable -S: 95mm<sup>2</sup>-240mm<sup>2</sup> -SP <math>\geq S/2</math></li> </ul>	24mm-69mm
	Outdoor four-core cable (L1, L2, L3, PE) Outdoor five-core cable (L1, L2, L3, PE, N)		
AC cable (Single-Core)	Five single-core outdoor cables	<ul style="list-style-type: none"> <li>• Copper wire cable -S: 70mm<sup>2</sup>-240mm<sup>2</sup> -SP <math>\geq S/2</math></li> <li>• Aluminum wire cable -S: 95mm<sup>2</sup>-240mm<sup>2</sup> -SP <math>\geq S/2</math></li> </ul>	14mm-32mm

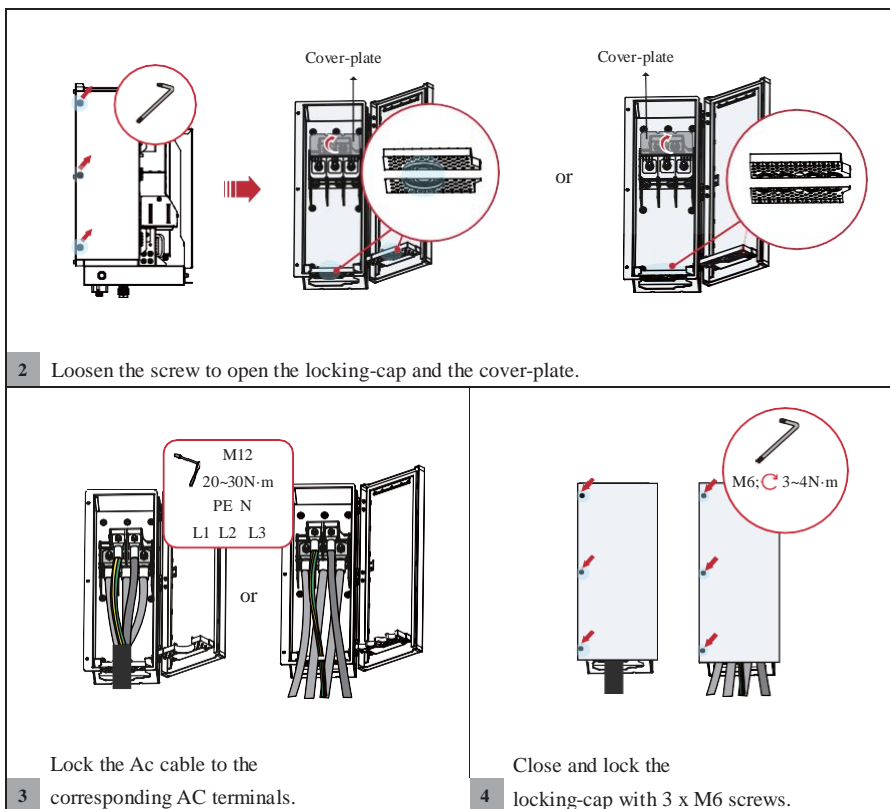


### NOTICE

For your operation and safety sake, please prepare multi-stranded wire, crimping terminals and a proper crimping tool before AC wiring.

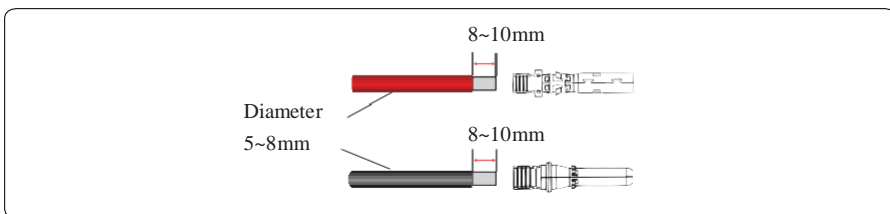


### 1 Wires making.



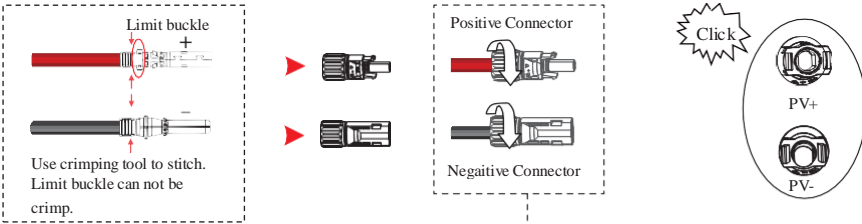
### 4.2.3 Connecting the PV Strings

Step 1 Remove an appropriate length of the insulation layer from the positive and negative power cables using a wire stripper, as shown in below image.

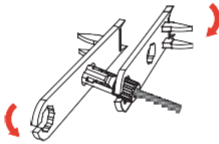


Step 2 Insert the exposed areas of the positive and negative cables into the metal terminals of the positive and negative connectors respectively and crimp them using a them using a crimping tool. Then insert the crimped positive and negative cables into the corresponding corresponding positive and negative connectors.

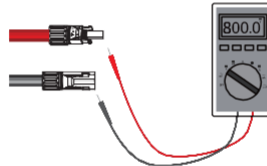
Step 3 Insert the positive and negative connectors into the PV+/PV-port until a “click” sound is heard.



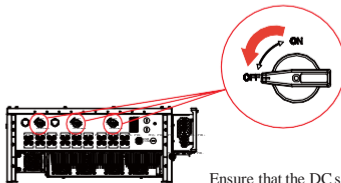
Please do the following operations before step 3.



Tighten the waterproof nuts on each connector with a tool to avoid loosening.



Test string voltage and confirm string polarity.



Ensure that the DC switch is OFF.

(Only take the 110k as an example in appearance)



**WARNING**

When taking out DC connectors, please ensure that PV Strings are disconnected. Otherwise, a fire can occur.



## 4.3 Connecting RS485 Communication Cables

### 4.3.1 RS485 Terminal Installation

1 Wires making.

2 Wires threading and crimping.

4 Open the dust cap and insert the RS485 terminal into RS485 port.

Tighten nut to avoid loosening.

3 Install the terminal.

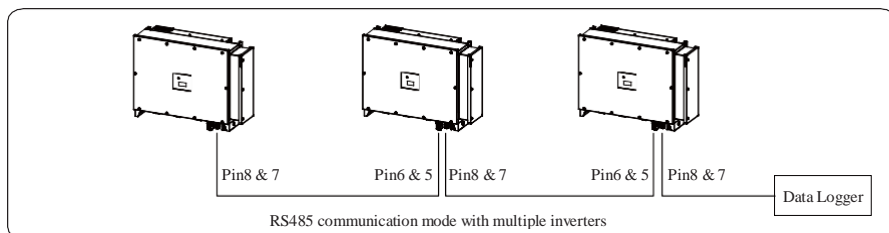
Tighten screws and ensure each screw does not exceed the surface

0.7~1.1N·m

Pin	Functions
1	NA
2	GND_S
3	RS485_B2 (Digital Meter)
4	RS485_A2 (Digital Meter)
5	RS485_B
6	RS485_A
7	RS485_B
8	RS485_A

### 4.3.2 RS485 communication mode with multiple inverters

Connect the differential positive and negative signal wires of the first RS485 cable from the data logger to Pin8 and Pin7 of the 8-Pin terminal respectively. If there is more than one inverter, connect Pin6 and Pin5 to Pin8 and Pin7 of another inverter.



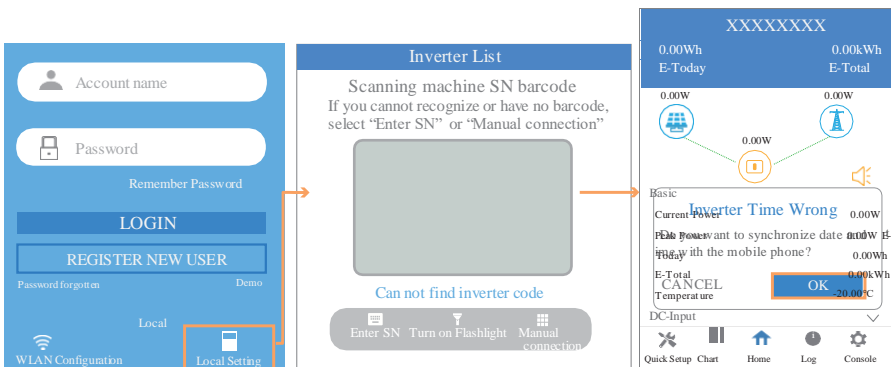
### 4.3.3 RS485 communication mode with multiple inverters

① Download the APP in either of the following ways

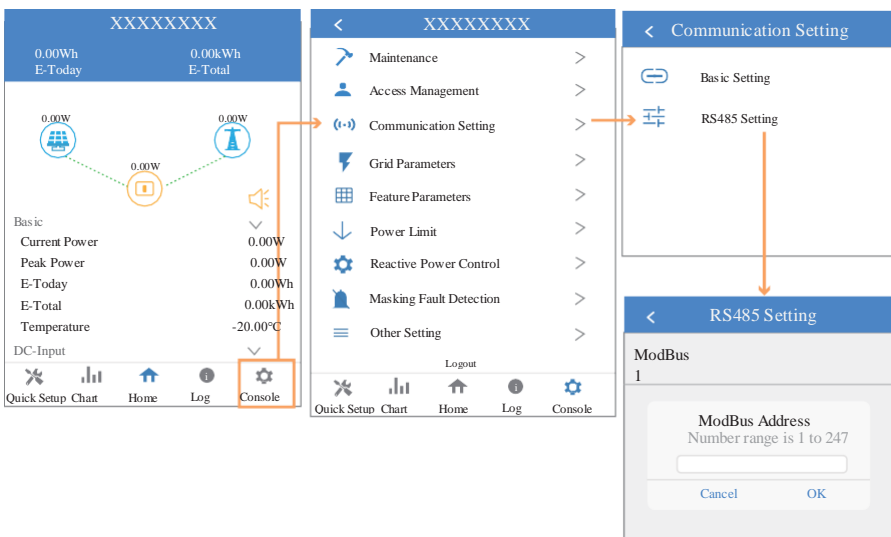
- Scan the QR code on the inverter to download the APP
- Download the APP from the App Store or Google Play.

Note: You need to grant all access rights in all pop-up windows when installing the APP or setting your phone.

- ② Power on the inverter.
- ③ Connect the Inverter. Open the Bluetooth on your own phone, then open the APP. Then follow the instructions below.

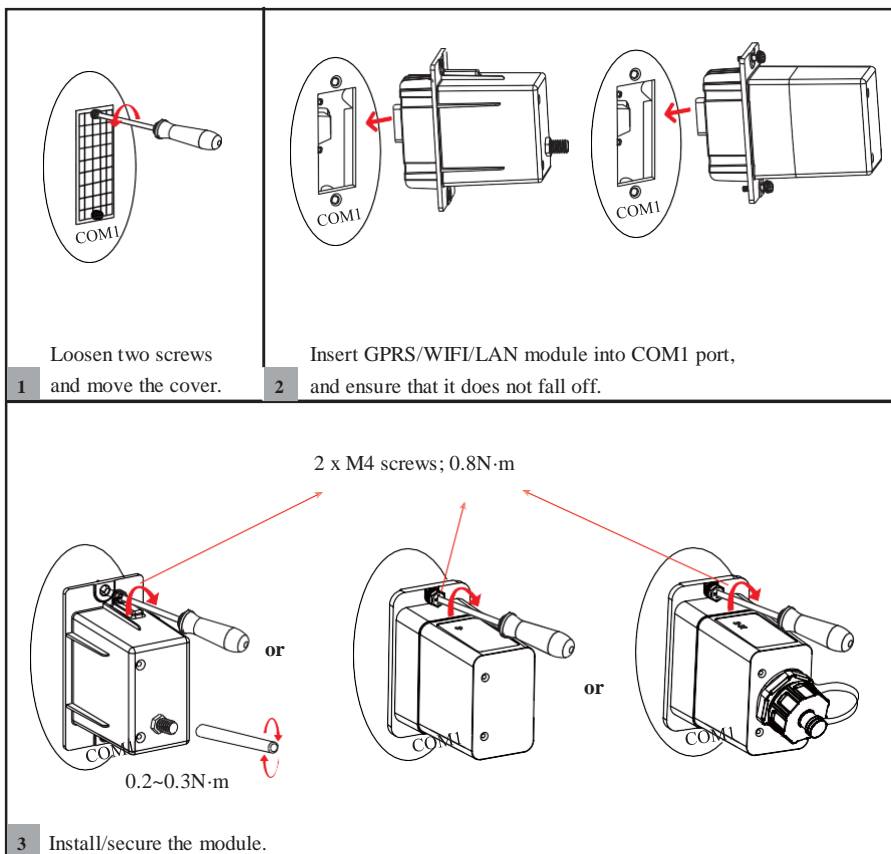


- ④ Go to Console > Communication Setting > RS485 Setting > Modbus Page, check the Modbus address (the default value is 1), and click to modify the address as required if necessary.



## 4.4 WIFI/GPRS/LAN Module Installation (Optional)

For details, please refer to the corresponding Module Installation Guide in the packing. The appearance of modules may be slightly different. The figure shown here is only for illustration.




## 5. System Operation

### 5.1 System Operation

Switch ON the AC circuit breaker and set the DC SWITCH of the inverter to ON. Observe statuses of grid-connecting light on the inverter for a while. If the lights display that the inverter has entered grid-connecting, it means the inverter is operating well. Any query during operating the PV inverter, call your dealer.


To power OFF the Inverter, switch off the circuit breaker at AC terminal, and set the DC SWITCH to OFF.

 <b>WARNING</b>	<p>After the inverter power is off, the remaining electricity and heat may still cause electrical shock and burns. Please only begin servicing the inverter 10 minutes after the power off.</p>
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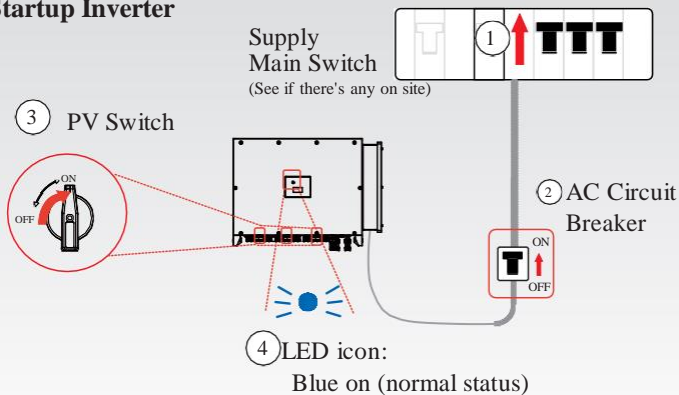
### 5.2 Startup/Shutdown the System

Inspection

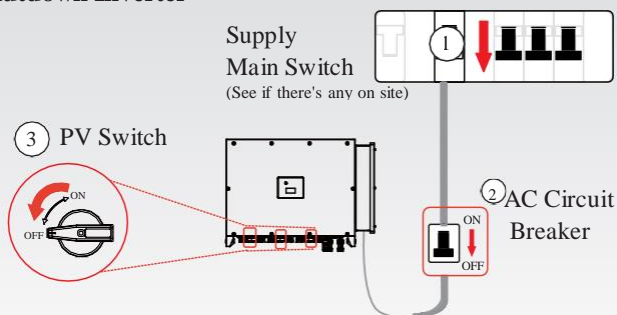
No.	Items
1	The inverter is firmly installed.
2	There is enough heat dissipation space, no external objects or parts left on the inverter.
3	It is convenient for operation and maintenance.
4	The wiring of the system is correct and firm.
5	Check whether the DC and AC connections are correct with a multimeter, and whether there is a short circuit, break, or wrong connection.
6	Check whether the waterproof nuts of each part are tightened.
7	The vacant ports have been sealed; all gaps at the cable inlet and outlet holes have been plugged with fireproof/waterproof materials, such as fireproof mud.
8	All safety labels and warning labels on the inverter are complete and without occlusion or alteration.

 <b>DANGER</b>	<p>After the inverter is powered off, the remaining electricity and heat may still cause electrical shock and body burns. If need to disconnect the inverter cables, please wait at least 10 minutes before touching these parts of inverter.</p>
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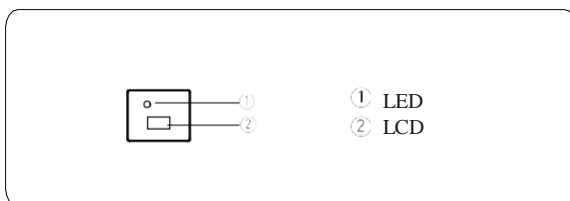
## Startup Inverter



## Shutdown Inverter



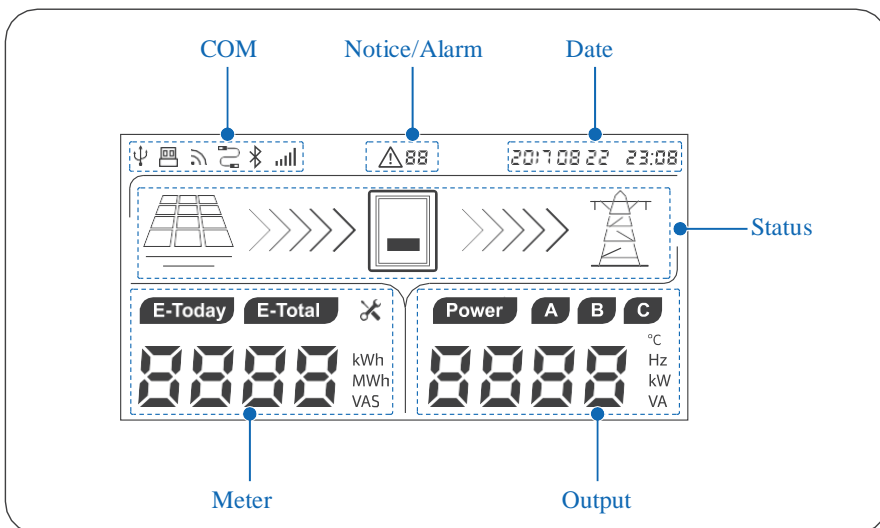
## 6. Interface



## 6.1 LED Indicator

LED status	Descriptions
Blue led blink slowly 1s/time	Standby or startup state (not connected to the grid)
Blue led on	Grid-tied status
Green led on	Power limited status
Red led blink slowly 1s/time	Output side fault
Red led blink quickly 0.25s/time	Input side fault
Red led on	System internal fault
Red/Green/Blue light alternately (1 color /0.25s)	Burning code(Master/Slave) Control power set up (lasts 1 second) LED self-check status
White led (three leds all on) blink quickly 0.25s/time	CSB and DSP communication abnormal (only AC power on)

## 6.2 LCD Screen



### 6.3 LED status and Warning code

Status	Details	Warning code
	Grid over voltage	A0
	Grid under voltage	A1
Red	Grid absent	A2
blink slowly	Grid over frequency	A3
1s/time	Grid under frequency	A4
	Grid abnormal	A6
	Grid high average voltage	A7
	Grid N abnormal	A8
	PV over voltage	B0
Red	PV Insulation resistance abnormal	B1
blink	Leakage current abnormal	B2
quickly	PV Strings reverse	B7
0.25s/time	PV under voltage	B4
	Control power abnormal	C0
	Arc fault	C1
	High DC component of output current	C2
	Inverter relay abnormal	C3
	Inverter over temperature	C5
	Leakage current HCT abnormal	C6
	System type error	C7
Red on	DC link voltage unbalanced	C9
	DC link over voltage	CA
	Internal communication error	CB
	Software incompatibility	CC
	EEPROM error	CD
	Consistent warning	CE
	Inverter abnormal	CF
	Boost abnormal	CG
	Master Lost	CH
	Meter lost	CJ
Blue	Fan abnormal	C8
blink slowly	Remote off	CN
1s/time		

Note: If you select a machine with a LCD screen, the warning code will be displayed on the LCD screen. Non-lcd screen models need to enter the app to view the corresponding warning code.

## 7. Maintenance

Check periodically heat sink and the inlet/outlet of external FAN, clean them, and ensure that they are free dust and blockage. If any abnormal with the FAN, please replace it.

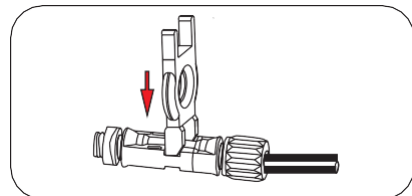
### 7.1 Routine Maintenance

Items	Check Content	Maintain Content	Maintenance Interval
Inverter output status	Statistically maintain the status of electrical yield, and remotely monitor its abnormal status.	N/A	Weekly
PV inverter cleaning	Check periodically that the heat sink is free from dust and blockage.	Clean periodically the heat sink.	Yearly
PV inverter running status	Check that the inverter is not damaged or deformed. Check for normal sound emitted during inverter operation. Check and ensure that all inverter communications are running well.	If there is any abnormal phenomenon, replace the relevant parts.	Monthly
PV inverter electrical connections	Check that all AC, DC and communication cables are securely connected; Check that PGND cables are securely connected; Check that all cables are intact and free from aging.	If there is any abnormal phenomenon, replace the cable or re-connect it.	Semiannually

### 7.2 Inverter Uninstall

Inverter uninstall requires below procedures:

Step1 Disconnect all electric connections including these of communications cables, DC input cables, AC output cables and the PGND cables.



When uninstalling DC input connectors, insert removal wrench into the bayonet shown in the Figure, press the wrench down, and take out the connector.

Step 2 Remove the inverter from its rear panel.

Step 3 Remove the rear panel.



**WARNING**

Before uninstalling DC input connector, please ensure that the DC SWITCH is set to OFF to avert equipment damage or personal injury.



### 7.3 Inverter troubleshooting

If any abnormal phenomena occur, refer to below table for trouble shooting. If failed, call your dealer for help.

Issue	Solution
No display	<ol style="list-style-type: none"> <li>1. Check DC switch of inverter is on or off</li> <li>2. If there is PV combiner box, check fuse, terminal, wires</li> </ol>
No generation	<ol style="list-style-type: none"> <li>1. Check AC breaker is on or off</li> <li>2. Wait stronger sunshine</li> <li>3. Check the number of PV panel</li> <li>4. To operate according to inverter's manual</li> </ol>
Inverter abnormal	<ol style="list-style-type: none"> <li>1. Disconnect both AC and DC breakers</li> <li>2. Wait as less 10 minutes and switch on AC and DC breaker</li> <li>3. Check whether inverter run normally or not</li> </ol>
Power generation is less than expected	<ol style="list-style-type: none"> <li>1. Ensure that inverter is free from direct sun expose and good ventilation</li> <li>2. Check that inverter isn't dust clogging, fans run normally</li> <li>3. Ensure enough installation distance between inverters</li> </ol>

Alarm Information	Measures Recommended
A0-Grid over voltage	<ol style="list-style-type: none"> <li>1. If the alarm occurs accidentally, possibly the power grid is abnormal accidentally. No extra action is needed.</li> <li>2. If the alarm occurs repeatedly, contact the local power station. After receiving approval of the local power bureau, revise the electrical protection parameters setting on the inverter through APP.</li> <li>3. If the alarm persists for a long time, please confirm:               <ol style="list-style-type: none"> <li>1) The AC circuit breaker does not jump frequently (the instantaneous high pressure);</li> <li>2) If the line of communication is followed by the user manual, the cable impedance will cause the power grid to rise;</li> <li>3) The three-phase machine measures whether the voltage between the zero line and the ground line exceeds 30V; More than the wiring of the grid;</li> </ol> </li> </ol> <p>If there is no problem, please contact the customer service center.</p>
A1-Grid under voltage	<ol style="list-style-type: none"> <li>1. If the alarm occurs accidentally, possibly the power grid is abnormal accidentally. No extra action is needed.</li> <li>2. If the alarm occurs repeatedly, contact the local power station. After receiving approval of the local power bureau, revise the electrical protection parameters setting on the inverter through APP.</li> <li>3. If the alarm persists for a long time, please confirm:               <ol style="list-style-type: none"> <li>1) AC circuit breaker is disconnect or not;</li> <li>2) Whether the AC circuit breaker is damaged (whether the voltage in the closed state is consistent with the voltage of the outlet);</li> <li>3) The AC terminals are in good contact.</li> </ol> </li> </ol> <p>If the actual measuring voltage is within the specification range, please contact the customer service report repair.</p>
A2-Grid absent	<ol style="list-style-type: none"> <li>1. If the alarm occurs accidentally, possibly the power grid is abnormal accidentally. No extra action is needed.</li> <li>2. If the alarm occurs repeatedly, contact the local power station. After receiving approval of the local power bureau, revise the electrical protection parameters setting on the inverter through APP.</li> <li>3. If the alarm persists for a long time, please confirm:               <ol style="list-style-type: none"> <li>1) AC circuit breaker is disconnect or not;</li> <li>2) Whether the AC circuit breaker is damaged (whether the voltage in the closed state is consistent with the voltage of the outlet);</li> <li>3) The AC terminals are in good contact;</li> <li>4) Whether the power supply line failure.</li> </ol> </li> </ol> <p>If exclude all possibility, please contact the customer service report repair.</p>
A3-Grid over frequency	<ol style="list-style-type: none"> <li>1. If the alarm occurs accidentally, possibly the power grid is abnormal accidentally. No extra action is needed.</li> <li>2. If the alarm occurs repeatedly, contact the local power station. After receiving approval of the local power bureau, revise the electrical protection parameters setting on the inverter through APP.</li> </ol>
A4-Grid under frequency	<ol style="list-style-type: none"> <li>1. If the alarm occurs accidentally, possibly the power grid is abnormal accidentally. No extra action is needed.</li> <li>2. If the alarm occurs repeatedly, contact the local power station. After receiving approval of the local power bureau, revise the electrical protection parameters setting on the inverter through APP.</li> <li>3. If the alarm persists for a long time, please contact the customer service center.</li> </ol>
A6-Grid abnormal (Only for three-phase inverter)	<ol style="list-style-type: none"> <li>1. If the alarm occurs accidentally, possibly the power grid is abnormal accidentally. No extra action is needed.</li> <li>2. If the alarm occurs repeatedly, please:               <ol style="list-style-type: none"> <li>1) Measuring three-phase voltages (L1-N, L2-N,L3-N) and check whether the inbalance is more than 30%. If yes, please contact energy company.</li> <li>2) Measuring three-phase voltages at input and output sides of AC circuit breaker to check whether breaker is damaged. If yes, please replace a new breaker.</li> <li>3) Short circuit input and output ports of neutral wire on AC breaker, then check the alarm status. If it returns normal, please replace a 3-pole breaker and keep neutral wire shorting. If not, please contact service center.</li> </ol> </li> </ol>

A7-Grid over mean voltage	<ol style="list-style-type: none"> <li>1. If the alarm occurs occasionally, the inverter can be automatically recovered. No action is required.</li> <li>2. If the alarm occurs repeatedly, the inverter cannot work properly. Please contact the customer service center.</li> </ol>
A8-Grid N abnormal	<ol style="list-style-type: none"> <li>1. If the alarm occurs occasionally, the inverter can be automatically recovered. No action is required.</li> <li>2. If the alarm occurs repeatedly, the inverter cannot work properly. Please contact the customer service center.</li> </ol>
B0-PV over voltage	Check whether the maximum voltage of a single string of input PV modules exceeds the MPPT voltage range. If the maximum voltage is higher than the standard voltage, modify the number of PV module connection strings.
B1-PV insulation abnormal	<ol style="list-style-type: none"> <li>1. If the alarm occurs accidentally but the inverter can generate power, check the component and the installation environment of wires are wet or not. Please improve the installation environment.</li> <li>2. If the alarm occurs repeatedly and the inverter can generate electricity occasionally, check whether the positive and negative polarity of the PV component are short circuit or not. And check if the component is damaged or the connection line is broken.</li> <li>3. If the alarm continues and equipment cannot generate power, please contact customer service repair.</li> </ol>
B2-Leakage current abnormal	<ol style="list-style-type: none"> <li>1. If the alarm occurs accidentally but the inverter can generate power, probably the power grid causes. The inverter can be automatically recovered. No extra action is needed.</li> <li>2. If the alarm occurs frequently and is accompanied by an insulation impedance alarm. Check the abnormal alarm of the insulation.</li> <li>3. If the alarm continues and the equipment cannot generate electricity, please contact customer service report repair.</li> </ol>
B4-PV under voltage	<ol style="list-style-type: none"> <li>1. If occurs when the light is weak (such as the early morning or evening, rainy weather and dust storms), the component voltage is lower than normal. No extra action is needed.</li> <li>2. If there is a weak condition of light, please check whether the group to have a short circuit and open circuit or not.</li> </ol>
B7-PV string reverse	Check and modify the positive and negative polarity of the input of the circuit string.
C0-Internal power supply abnormal	<ol style="list-style-type: none"> <li>1. If the alarm occurs occasionally, the inverter can be automatically recovered. No action is required.</li> <li>2. If the alarm occurs repeatedly, the inverter cannot work properly. Please contact the customer service center.</li> </ol>
C1-Electric arc abnormal	If the alarm occurs, the inverter cannot work properly. Please contact the customer service center.
C2-Inverter over dc bias current	<ol style="list-style-type: none"> <li>1. If the alarm occurs occasionally, the inverter can be automatically recovered. No action is required.</li> <li>2. If the alarm occurs repeatedly, the inverter cannot work properly. Please contact the customer service center.</li> </ol>
C3-Inverter relay abnormal	<ol style="list-style-type: none"> <li>1. If the alarm occurs occasionally, the inverter can be automatically recovered. No action is required.</li> <li>2. If the alarm occurs repeatedly, the single-phase inverter check whether the live line and neutral line of the contact connection is reversed. The three-phase inverter check the voltage of the live line to neutral line and the voltage of the live line to the ground. If the grid side is normal, please contact the customer service report repair.</li> </ol>
C5-Inverter over temperature	<ol style="list-style-type: none"> <li>1. If the alarm occurs occasionally, the inverter can be automatically recovered. No action required.</li> <li>2. If the alarm occurs repeatedly, please check whether the installation site for direct sunlight, good ventilation, and high ambient temperature (such as installed on the parapet) or not. If the ambient temperature is lower than 45° C and the heat dissipation is good, please contact the customer service center.</li> </ol>
C6-GFCI abnormal	<ol style="list-style-type: none"> <li>1. If the alarm occurs occasionally, it could have been an occasional exception to the external wiring. The inverter can be automatically recovered. No action required.</li> <li>2. If it occurs repeatedly or cannot be recovered for a long time, please contact the customer service center.</li> </ol>
C7-System type error	If the alarm occurs, the inverter cannot work, please restart the inverter. If the alarm continues, please contact the customer service center.
C9-Unbalance De-link voltage	<ol style="list-style-type: none"> <li>1. If the alarm occurs occasionally, the inverter can be automatically recovered. No action is required.</li> <li>2. If the alarm occurs repeatedly, the inverter cannot work properly. Please contact the customer service center.</li> </ol>

CA-Dc-link over voltage	<ol style="list-style-type: none"> <li>1. If the alarm occurs occasionally, the inverter can be automatically recovered. No action is required.</li> <li>2. If the alarm occurs repeatedly, the inverter cannot work properly. Please contact the customer service center.</li> </ol>
CB-Internal communication error	<ol style="list-style-type: none"> <li>1. If the alarm occurs occasionally, the inverter can be automatically recovered. No action is required.</li> <li>2. If the alarm occurs repeatedly, the inverter cannot work properly. Please contact the customer service center.</li> </ol>
CC-Software incompatibility	<ol style="list-style-type: none"> <li>1. If the alarm occurs occasionally, the inverter can be automatically recovered. No action is required.</li> <li>2. If the alarm occurs repeatedly, the inverter cannot work properly. Please contact the customer service center.</li> </ol>
CD-Internal storage error	<ol style="list-style-type: none"> <li>1. If the alarm occurs occasionally, the inverter can be automatically recovered. No action is required.</li> <li>2. If the alarm occurs repeatedly, the inverter cannot work properly. Please contact the customer service center.</li> </ol>
CE-Data inconsistency	<ol style="list-style-type: none"> <li>1. If the alarm occurs occasionally, the inverter can be automatically recovered. No action is required.</li> <li>2. If the alarm occurs repeatedly, the inverter cannot work properly. Please contact the customer service center.</li> </ol>
CF-Inverter abnormal	<ol style="list-style-type: none"> <li>1. If the alarm occurs occasionally, the inverter can be automatically recovered. No action is required.</li> <li>2. If the alarm occurs repeatedly, the inverter cannot work properly. Please contact the customer service center.</li> </ol>
CG-Boost abnormal	<ol style="list-style-type: none"> <li>1. If the alarm occurs occasionally, the inverter can be automatically recovered. No action is required.</li> <li>2. If the alarm occurs repeatedly, the inverter cannot work properly. Please contact the customer service center.</li> </ol>
CH-Grid N abnormal	<ol style="list-style-type: none"> <li>1. If the alarm occurs occasionally, the inverter can be automatically recovered. No action is required.</li> <li>2. If the alarm occurs repeatedly, the inverter cannot work properly. Please contact the customer service center.</li> </ol>
CJ-Meter lost	If the alarm occurs, please check the RS485 connection. If it is abnormal, please revise the connection; if it is normal, please contact the customer service center.
C8-Fan abnormal	<ol style="list-style-type: none"> <li>1. If the alarm occurs occasionally, please restart the inverter.</li> <li>2. If it occurs repeatedly or cannot be recovered for a long time, check whether the external fan is blocked by foreign objects. Otherwise, please contact the customer service center.</li> </ol>

## 8. Technical Specification

MODEL	SE-TH01 100.0TL3	SE-TH01 110.0TL3	SE-TH01 125.0TL3	SE-TH01H 125.0TL3	SE-TH01 75.0TL3
Input(PV)					
Max. PV power voltage (V)	1100V				800V
Rated input voltage (V)	600V			720V	360V
Max. input current (A)	40A*3+ 32A*5	40A*3+ 32A*6			
Max. short-circuit current (A)	50A*3+ 45A*5	50A*3+ 45A*6			
Starting voltage/Min. operating voltage	250V/200V				
MPPT operating voltage range	200V-1000V				200V-750V
Max. numbers of input strings	16(2*8)	18(2*9)			
Numbers of MPPT input	8	9			
Output (Grid)					
Rated output power	100kW	110kW	125kW	125kW	75kW
Max. apparent power	111kVA	123kVA	139kVA	139kVA	82.5kVA
Max. output current	168.8A	187A	181A	167.3A	197A
Rated output voltage (V)	380/400/415V/3W+N+PE		400V/3W+N+PE	480V/3W+N+PE	
AC voltage range	187V-300V/322V-520V			236V-319V/408V-552V	
Rated grid frequency	50Hz/60Hz				
Grid frequency range	45Hz-55Hz/55Hz-65Hz				
THDI	<3% Rated power				
DC current injection	<0.5%In				
Adjustable power factor range	>0.99@full load power (adjustable 0.8LG-0.8LD)				
Protection					
DC switch	Support				
Anti-islanding protection	Support				
AC Overcurrent protection	Support				
AC short circuit protection	Support				
DC reverse connection	Support				
Overvoltage category	DC TypeII; AC Type II				
Insulation impedance detection	Support				
Leakage current protection	Support				
General					
Topology	Non-transformer				
Protection grade	IP66				
Power consumption at night	<5W				
Cooling type	Air-cooling				
Operating temperature range	-25°C-60 °C (Maximum 45°C derating)				
Operating relative humidity range	0~100%				
Max. operation altitude	4000m				
Noise emission (Typical)	65dB(air-cooling)				
Dimensions (W*H*D)	936*678*365				
Weight (kg)	91.5Kg	92Kg			
Display & Communication					
Display	LED/LCD(Optional)				
Communication	Bluetooth&WiFi, RS485/GPRS/4G (Optional)				