



Three-phase Grid-tied PV String Inverter:

CPS SCA16/18KTL-T/SA

Quick Installation Guide

Version: 1.0

Date: 28/08/2018

SHANGHAI CHINT POWER SYSTEMS CO.,LTD

Official site: www.chintpower.com

Customer Service line: 021-37791222-866300

Quality Guarantee

Where otherwise agreed to in a contract, quality warranty period of the inverter is 60 months. The PV inverter defective or damaged within its quality warranty period shall be repaired or replaced for free. However, warranty or liability will be void if damage is caused from below operations/situations:

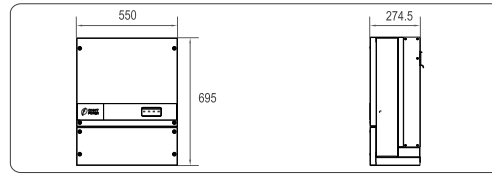
1. The warranty period expired;
2. The damage caused during transit;
3. The damage caused by force majeure including, but not restricted to the following: earthquake, flood, fire, explosion, debris flow etc;
4. Operation in adverse environments beyond that described in User Manual;
5. Any installation and operation environment beyond the relevant national standards;
6. Any installing, reconfiguring, or using faulty;
7. Any revising the product or modifying its software code without authorization;
8. Maintenance faulty caused by the technician personnel unauthorized;
9. Any operation ignoring the safety precautions stipulated in User Manual;

Symbol Conventions

Read through the safety symbols used in this manual, which highlight potential safety risks and important >600;

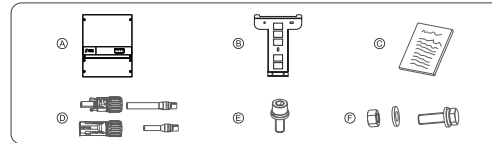
Symbol	Description
	Indicates an imminently hazardous situation which, if not correctly followed, will result in serious injury or death.
	Indicates a potentially hazardous situation which, if not correctly followed, could result in serious injury or death.
	Indicates a potentially hazardous situation which, if not correctly followed, could result in moderate or minor injury.
	Indicates a potentially hazardous situation which, if not correctly followed, could result in equipment failure to run, or property damage.
	Calls attention to important information, best practices and tips: supplement additional safety instructions for your better use of the PV inverter to reduce the waste of your resource.

Outline and Dimensions



Installation

The Deliverables in the Fittings of Inverter



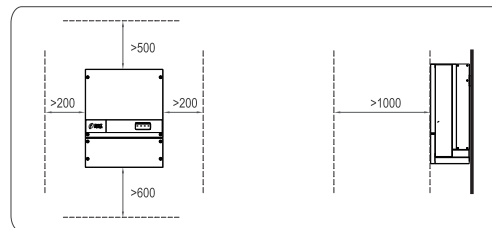
Items	Deliverables
A	The inverter
B	Rear panel
C	File package
D	DC terminal connector group (6x2)
E	M6 Screw
F	Bolt group (reserved for tightening the support and rear panel)

Determining the Installation Position

The inverter must be installed on the place where is free from direct exposure to sunlight, rain, and snow to extend its service life.

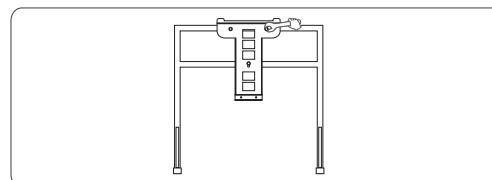
Installation Space Requirements

Reserve enough clearance around the inverter to ensure sufficient space for installation and heat dissipation, as shown in below Figure. When installing multiple inverters, ensure 200mm distance between inverters' lateral sides, 500mm-600mm between inverters' top and/or bottom sides, and 1000mm clearance between inverters' front sides.

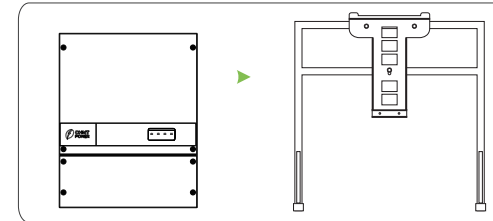


Inverter Fixation

1. Holder is recommended: using M12 screws fixes the holder and bracket, torque: 45N.m.



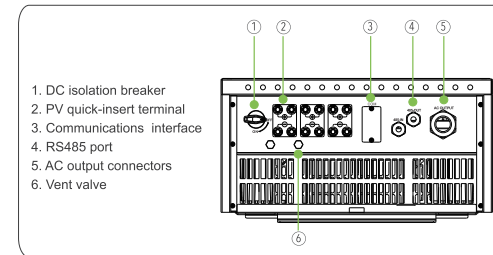
2. Fix the inverter on the holder, and tight the connection point between machine and bracket using screws.



Installation Self-check

1. Ensure that the supporting points (on the rear side of the inverter) align with the holes of the support
2. Ensure that the inverter is well fixed
3. Ensure that the inverter is locked on the support

Preparation before wiring



Electrical Connections

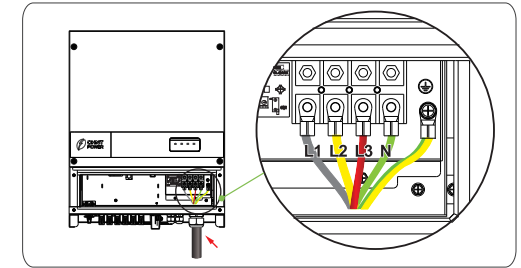
	DANGER Before performing any electrical connections, ensure that both DC and AC Switches are OFF. Otherwise, fatal injury can occur due to the high voltage caused from AC and DC cables.
	CAUTION If PV module need to connect to the ground, please ensure to meet the following conditions: Please connect transformer on the AC side, and the neutral line of transformer must be separate from the ground wire.
	One inverter need to equip one transformer, two or more inverters cannot be connected to one transformer. Otherwise, inverters will generate circulation which cannot work as normal.

Cable Specifications (Recommended)

Cable	Cable type	Cross-sectional Area(mm ²)		Cable Outer Diameter(mm)
		Range	Recommended Value	Range
AC cable	Multi-core outdoor cable	16-25	16	24-32
DC cable	Common PV cables in the industry (model PV1-F)	4-6	4	5-8
External PGND cable	Multi-core outdoor cable	16-25	16	NA

AC Wiring

Open the removable plate which is at the bottom of the inverter, and pay attention to dismantling the plate & connecting ground shown as the figure below. In order to ensure the device and personal safety, please do electrical connection following the step shown below.



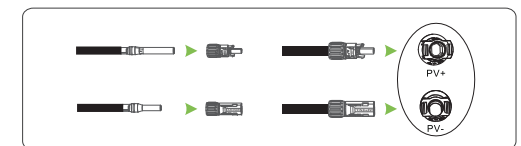
Connect AC cable

1. Strip the insulating layer of AC wire and protect jacket, make the wire across the OT terminal creasing area. Use hydraulic claw to compress it and then do the insulation protection by heat-shrinkable tube or insulating tape.
2. Screw off AC waterproof plug which is at the bottom of the inverter and dismantle its seal pin.
3. Make AC wire across the plug and seal pin one by one. And then connect the AC wire to the internal terminal & ground bar. Tight the screw, torque: 4N.m;
4. Tight the waterproof plug, torque: 3N.m;
5. Connect the ground wire of wirebox, and then tight the four screws of the cover, torque: 3N.m.

	Attention For convenience and safety, terminal wiring is recommended to use stranded wire, matching with the crimp terminal, use the correct tool to tighten it and do the wiring.
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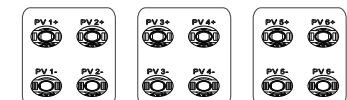
DC Wiring

1. Strip the insulation and protective sleeve of the cable. Insert the contact into the corresponding socket or pin solid contact (positive or negative) and crimping the contact terminal;
2. Insert contact cable assembly into back of male and female connector then tighten the connector body.
3. Remove the protection plug of DC terminal of the inverter then connect the assembled DC connectors with the respective mating positive and negative connectors on the inverter.

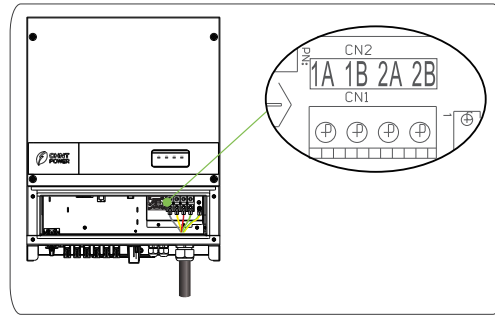


	Alarm Make sure the PV module was disconnected before you pull out the DC terminals.
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Refer to the order of DC terminals which are at the bottom of the inverter, there are 6 inputs. If the quantity of PV strings is less than the one of inverter available inputs, please connect referring the table shown below.



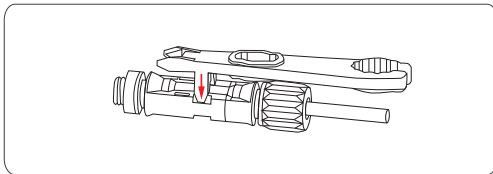
Quantity	Connection Solution
1	Connect anyone
2	Connect PV 1, 3
3	Connect PV 1, 3, 5
4	Connect PV 1, 2, 3, 5
5	Connect PV 1, 2, 3, 4, 5
6	Connect PV 1, 2, 3, 4, 5, 6



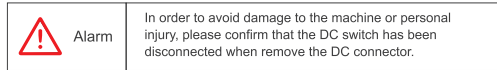
Remove the inverter

If the inverter needs to be disassembled, please follow the steps below.:

1. Disconnect all electrical connections from the inverter, including communication, DC input, AC output and Grounding cables



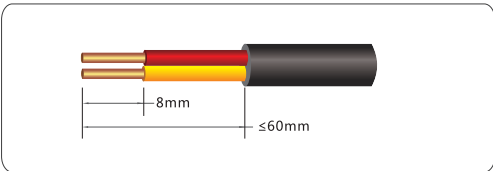
- When removing the DC input connector, insert the tool into the bayonet as shown in the figure and press down to remove the connector carefully.
2. Remove the inverter from the bracket.
3. Remove the bracket.



RS485 communication

RS485 port is located in the wire box, in order to ensure the device and personal safety, please connect wires following the step shown below.

1. Stripping the cable as follow:

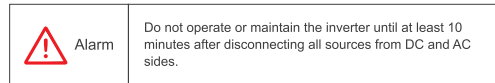


2. Open the wirebox, screw off "485 IN" and "485 OUT" waterproof plug which is at the bottom of the inverter, and then dismantle the seal pin on the plug.
3. Make the finished wires across the plug and "485 IN"&"485 OUT" one by one.
4. Connect the RS485 difference positive and negative signal wires of data collector to 1A and 1B of RS485 port separately. Connect 2A and 2B to 1A and 1B of RS485 port on another inverter. Tight the screws and then install the cover.

Operation

Commissioning: Turn on the AC circuit breaker then switch the Inverter' s DC Switch to the "ON" position. When the energy supplied by the PV array is sufficient the RUN LED indicator will light up means it' s operation normally. Checking all of the electric connection are correct then restart the inverter if it fails to operate normally. Please contact after-sales service if the problem persists.

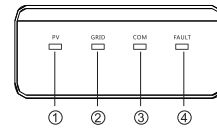
Shut down: Disconnect the AC circuit breaker then switch the Inverter' s DC Switch to the "OFF" position.



Display

LED Indicator

- 1.PV Indicator
- 2.Grid Indicator
- 3.COM Indicator
- 4.Warning Indicator



Description of LED Indicator

LED Indicator	Status	Descriptions
PV	On	PV power energized
	Flash	Power supply not working
RUN	Flash	Power grid abnormal, and can't meet the requirements for inverter grid-connecting to generate power.
	On	When grid-on, the blink (every cycle last 30s) of Grid Indicator means loading amounts: quantity of blink means power size, and after that the Indicator keeps ON. When less than 20% rated power, blink one time; 20%~40% rated power, blink twice every 30s; 40%~60% rated power, blink three times every 30s; 60%~80% rated power, blink four times every 30s; 80%~100% rated power, blink five times every 30s.
COM	Flash	Communications data transmission is underway.
	Off	No external communications is connected or no communications data transmission.
FAULT	On/Flash	Refer LED status in warning table.
	Off	No warning.

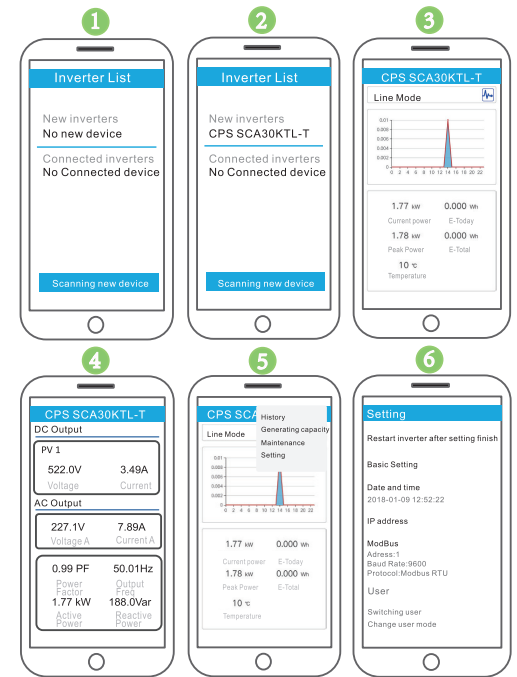
Inverter Common Warning List

	PV Indicator	Grid Indicator	COM Indicator	Warning Indicator
Grid over voltage				
Grid under voltage				
Grid absent	◎	★	○	○
Grid over frequency				
Grid under frequency				
Grid unbalance				
PV over voltage				
PV under voltage		★	◎	○
PV irradiation weak				
PV string abnormal				
Inverter over temperature	◎	◎	◎	★
PV insulation abnormal	●	○	○	●
Leakage current abnormal	○	●	○	●
PV string reverse	○	○	●	●
Control power low	○	★	○	●
DCI too high	★	●	★	●
Inverter relay abnormal	○	●	●	●
Leakage current HCT abnormal	●	●	○	●
System type error	★	★	★	●
Fan lock	★	○	★	●
Bus voltage unbalanced	●	○	●	●
Bus over voltage	○	★	★	●
Internal communication abnormal	○	○	★	●
Software incompatibility	★	●	○	●
EEPROM error	★	○	●	●
Consistent warning	★	●	●	●
Inverter abnormal	●	●	●	●
Boost abnormal	★	○	○	●

Comment: ● LED is on, ○ LED is off, ★ LED flash, ◎ keep the status

Bluetooth Connection Setting

Inverter parameters can be configured with APP through bluetooth connection, User can scan below QR code to download APP.



1. Open APP ChintHome, click "Scanning new devices..." button.
2. Click new device for connection.
3. APP display inverter status after connection.
4. Scroll screen to see DC & AC meters.
5. Click top right button for parameter setting.
6. Click "Setting", setup date & time. (Note: If you want to configure inverter internal parameter, click "Switching user" button to switch to administration mode. Contact service engineer to get administration password. Non-dedicated users do not arbitrarily change related parameters)

Maintenance

Check periodically that the heat sink is free from dust and blockage. If necessary, clean periodically the heat sink to ensure its good heat dissipation.

The 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	1. Check DC switch of inverter is on or off 2. If there is PV combiner box, check fuse, terminal, wires
No generation	1. Check AC breaker is on or off 2. Wait stronger sunshine 3. Check the number of PV panel 4. To operate according to inverter's manual
Inverter abnormal	1. Disconnect both AC and DC breakers 2. Wait as less 10 minutes and switch on AC and DC breaker 3. Check whether inverter run normally or not
Power generation is less than expected	1. Ensure that inverter is free from direct sun exposure and good ventilation 2. Check that inverter isn't dust clogging, fans run normally 3. Ensure enough installation distance between inverters