

Three-phase Grid-tied PV Inverter SCH320K-T-EU/SCH333K-T-EU/SCH350K-T-EU

Quick Installation Guide

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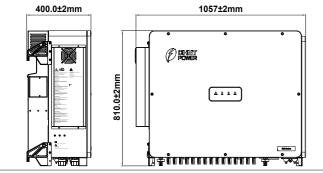
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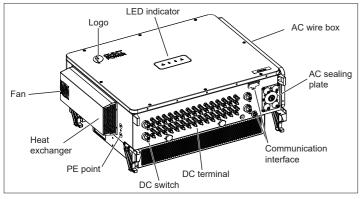
1 Product Dimensions and Main Components

1.1 Dimension



1.2 Main Component

SCH320~350K-T-EU inverter with 15 MPPT (Maximum Power Point Trackers)



NOTE: Main difference between the 12 MPPT inverter and 15 MPPT inverter is that the former has 24 inputs and the latter has 30 inputs. Their mounting and electrical connection procedures are almost the same, so inverter with 15 MPPTs will be taken as instance in the following contexts. Different points will be introduced separately.

2 Installation

2.1 Scope of Supply

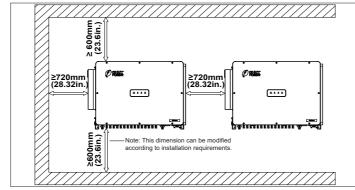


No.	Images	Accessories	Amt	Usage	
1		Quick guide	1	For quick guidance	
2		M10 Nut	6		
3		M10 Spring washer 6 For mounting b		For mounting bracket	
4	0				

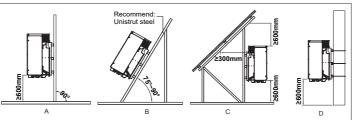
5		Screw M10X50	6	For mounting bracket
6		Screw M6X16	5	2 for mounting bracket; 3 for grounding
7	Handle		4	Carry the inverter
8		Screw M6X18 with plastic flat washer	1	Spare for front cover
9		Unlock tool for DC connector	1	Unlock connector
10		M12 Tapered washer combination nut	3	
11		M12 flat washer	3	For AC output terminal
12		8 PIN connector	1	RS485/CAN communication
40		DC Input Male (+) Connector	24(30)	PV DC quick connector
13		DC Input Female (-) Connector	24(30)	12 MPPTs: 24+ &24- 15 MPPTs: 30+ &30-
14		Plug rod	2	Plug seal ring of 8 PIN connector

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.

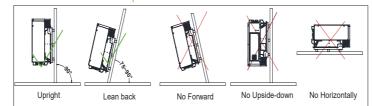


2.3 Installation Scenarios



- A. Install inverter vertically on mounting bracket if installation conditions permit.
- B.The inverter can be installed at an angle of ≤15° leaning back while its back shall not be shielded to ensure good ventilation.
- C. The inverter can be installed under the panel, while its back and top shall not be blocked to ensure good ventilation.
- D. The inverter can be installed on a single column holding rod and shall be checked to confirm a secure installation.

2.4 Installation Mode Requirements



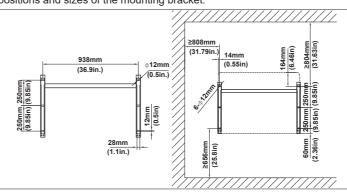
2.5 Installation Environment Requirements

It is recommended to install inverter under a shelter or Chint shade cover (optional) to avoid direct sunlight, rain and snow accumulation. Otherwise, it may trigger power derating or reduce service life.

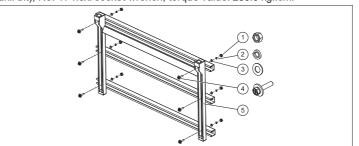


2.6 Install the Inverter onto Bracket

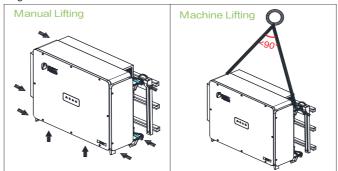
 Mark the hole positions on the installation structure according to the hole positions and sizes of the mounting bracket.



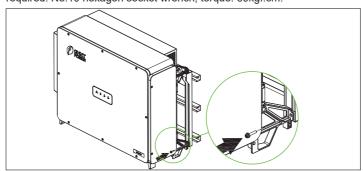
2. Drill holes with Φ12mm drill at marked position, then fix the bracket (5) with screws M10X50 (4), M10 flat washer (3), M10 spring washer (2), and M10 nut (1) included in accessory box. Tools: Electric drill (with Φ12mm drill bit), No. 17 hex. socket wrench, torque value: 230.0 kgf.cm.



- 3. Hang inverter onto mounting bracket by manual lifting or machine llifting.
- Manual Lifting: install four handles into the screw holes as indicated. Four people are needed to properly lift the inverter by the four handle positions and bottom surface, and hang the inverter onto the mounting bracket.
- Machine Lifting: Screw two M12 lifting eyebolts (offered by customer) to the screw holes as indicated. Use slings or bar (inserted through both lifting eyebolts) to lift the inverter and hang it onto the mounting bracket. The minimum angle between the two slings should be less than 90 degrees.



4. Use two M6X16 screws to fasten inverter on mounting bracket. Tools required: No.10 hexagon socket wrench, torque: 60kgf.cm.



3 Electrical Connection



The cables shall be connected in accordance with the National Electrical Code and all other applicable local codes or jurisdictions.

3.1 Tools and Torques

No.	Tool	Usage	Torque
1	5mm hex. wrench	Fixing side cover of wire box	30 kgf.cm
2	4mm hex. wrench	Fixing AC sealing plate	14 kgf.cm
3	No.19 hex. socket wrench	Fixing AC output terminal	320 kgf.cm
4	No.10 hex. socket wrench	Fixing external grounding terminal & internal grounding terminal	60 kgf.cm
5	1.5mm flat-blade screwdriver	Fixing RS485 and CAN terminal	2.0 kgf.cm
6	Diagonal pliers, wire stripper, crimping tool	Handle cables	-

3.2 Cable Specification

Cable	Туре	Outer dia. (mm)	Conductor CSA (Cross- sectional area) (mm²)	
DC cable	PV cables that meet 1500V standard	5.0~7.2*	4~6	
	Outdoor single-core copper/ aluminum wire	16~36	• L1, L2, L3: 120~400	
AC cable	Outdoor three-core copper/ aluminum wire	36~75	• PE: ≥ CSA of phase conductor/2	
	Outdoor four-core copper/ aluminum wire	30~75		
Grounding cable	External grounding	/	Same with PE above.	
СОМ	Communication cable UTP CAT-5e	4.5~6	3*0.2~0.75	
COIVI	Shielded twisted pair	4.5 0	3*1~1.5	

* For selection exceeds the given range, please consult Chint for feasibility.

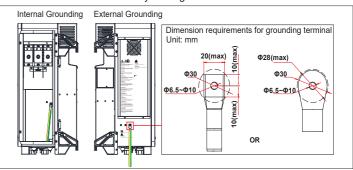
3.3 Cable Connection

1. Grounding (Protection earthing)

There are two kinds of grounding methods for this inverter: internal grounding and external grounding. You shall choose at least one way:

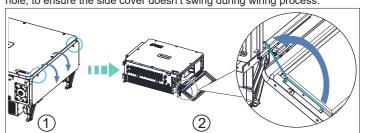
- Internal: Connect PE wire to internal grounding stud located on the lower right side of the AC terminal;
- External: Connect PE cable to external PE point located at the bottom of the machine next to the AC port.

NOTE: ① After wiring, the external PE point needs to be coated with glue or paint. ② Other sizes of grounding cables that meet local standards and safety regulations can also be used for grounding connections. But Chint Power shall not be liable for any damage caused.

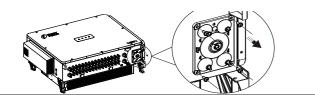


2. AC wiring

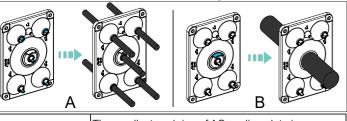
(1) Loosen the two captive screws to open the side cover of wire box. Then, pull out the free end of support rod, rotate and insert it into fixing hole, to ensure the side cover doesn't swing during wiring process.



(2) Loosen four screws to remove the AC sealing plate from the inverter.



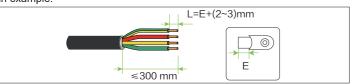
- (3) According to cable types, pull off ring tab with hand or plier, and then route cable through the seal ring.
- · For single-core outdoor wire, refer to figure A.
- NOTE. When using the middle seal ring for routing, route grounding wire through it rather than L1, L2, or L3 wire.
- · For 3-core and 4-core outdoor wire, refer to figure B.





The smallest seal ring of AC sealing plate is reserved. Remember its orientation before removing AC sealing plate and ensure it returns to the original position when recovering the sealing plate.

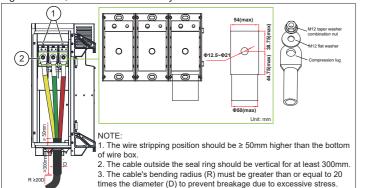
(4) Remove an appropriate length of the jacket and insulation layer from the AC output cable. Insert the exposed core wires into crimping area of the OT terminal, crimp them using hydraulic plier, then wrap the wire crimp area with heat shrink tubing or insulation tape. Here takes 4-core wire as an example.



(5). Unplug the rubber plug (1) of transparent protection cover above the AC terminal block, to remove the transparent protection cover.

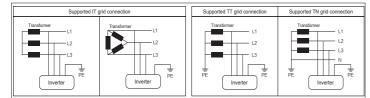
Connect the OT terminals (2) of AC wires to L1, L2, L3 terminal and fasten them with M12 flat washer and M12 tapered washer combination nut. Note 1: Use copper compression lugs to match L1, L2, L3 copper wires. Use Cu-Al bimetallic compression lug or aluminum compression lugs to match L1, L2, L3 aluminum wires.

Note 2: M12 flat washer shall be used if inner hole diameter of compression lug is >14mm; while it's unnecessary if inner hole diameter is ≤14mm.



- (6). Plug the rubber plug to fix the transparent protective cover to prevent accidental contact with the AC busbars.
- (7). Secure the AC sealing plate to inverter using its original screws.

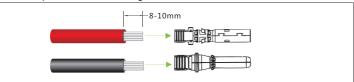
After completing all wiring steps, restore the support rod of side cover to its original position, and recover the side cover of wire box and tighten its captive screws.



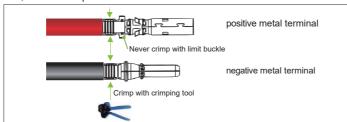
For IT power grid, neutral point at transformer low-voltage side can be ungrounded. PID and SVG functions can be enabled, but PidNight and SVG functions can't be enabled at the same time. For TT or TN power grid, neutral point at transformer low-voltage side shall be grounded. Only SVG function can be enabled, PID can't be enabled.

3. DC wiring

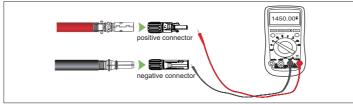
(1) Remove an appropriate length of the jacket and insulation layer from the DC input cable of PV strings



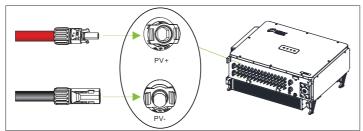
(2) Insert the exposed areas of positive and negative power cables into the metal terminals respectively and crimp them using a professional crimping tool, such as Amphenol H4TC0002 or Devalan D4ZCY001.



(3) Insert the crimped positive and negative power cables into corresponding positive and negative connectors until a "click" sound is heard. Tighten the locking nuts of the positive and negative connectors. Measure the cable ends of PV strings with a multi-meter. Make sure the polarities of the DC input power cables are correct.



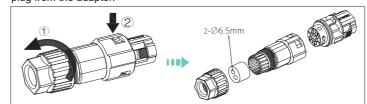
(4) Insert the positive and negative connectors into their corresponding terminals of the inverter until a "click" sound is heard.



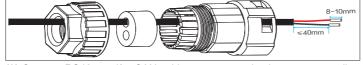
3.4 Communication Connection (optional)

The inverter supports industry standard PLC, Modbus RS485, as well as CAN communication modes. We will introduce most commonly used RS485 and CAN communication methods in detail.

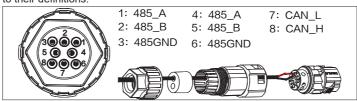
- 1. Install the 8-pin connector
- (1) Unscrew the locking nut (1) of 8-pin connector and press down both buckles (2) of connector to separate the cable seal ring and the crimping plug from the adaptor



(2) Route cable through locking nut, seal ring and adaptor. Remove an appropriate length of the jacket and insulation layer from communication



(3) Connect RS485 and/or CAN cables to correct crimping ports according to their definitions.



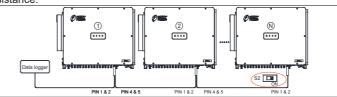
(4) Adjust the cable length, insert crimping plug (1) into adaptor and lock the locking nut (2). Plug any spare seal hole with watertight plug (3).

(5) Remove watertight cover from communication connector of inverter and connect 8-pin connector into communication connector of inverter.

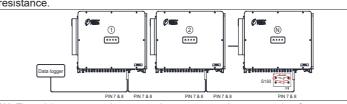


2. RS485/CAN Network Connection

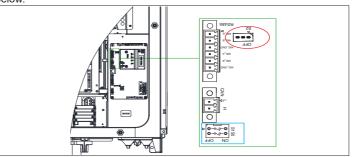
(1) If there are multiple inverters in the RS485 network (daisy chain) and the last inverter is more than 200m and less than 1000m distant from data logger the DIP switch S2 of the last inverter should be set to ON position to enable the 120ohm terminal resistance. While the DIP switches S2 of all other inverters should keep as OFF position to disable the terminal resistance.



(2) If there are multiple inverters in the CAN network (daisy chain) and the last inverter is more than 200m and less than 1000m distant from data logger, the left switch S150 of the last inverter should be set to ON position to enable the 120ohm terminal resistance. While the left switches S150 of all other inverters should keep as OFF position to disable the terminal resistance.



(3) To achieve network connection, you need to open the front cover of the inverter. Then find the DIP switch S2 or left switch S150 on the communication board in the lower right corner of the inverter, as showed as





Screw must be tightened when fixing the cover to prevent

2. Bind cables at positions 300 ~ 350mm away from DC connectors and AC sealing plates. Otherwise, sagging or swaying cables may loosen the connectors or sealing plates, which may affect the protection degree of the inverter

3. Install LINKIT

- (1) Remove two screws on the LINKIT cover, and rotate the cover to its opposite side.
- (2) Fasten LINKIT module onto LINKIT port with its original two screws (Indicators face front cover).

Tool: No.2 Phillips head screwdriver, Torque: 16.0 kgf.cm





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

5 Commissionina



WARNING Before PV system is powered on, it's important to check installation & wiring for any potential hazards.

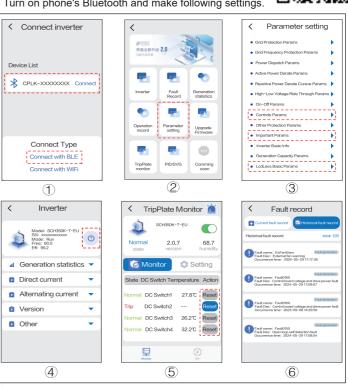
1. Turn on AC circuit breaker.

2. Set the DC switch to ON position. When the solar array generates enough power, the POWER indicator will light up and the inverter will enter the self-check process

3. Users can directly scan the QR code to download APP (Support Android 4.4 and IOS 11.0 or higher version

4 Turn on phone's Bluetooth and make following settings.





- Open APP and click "Connect inverter" to enter connect inverter interface. Select wireless network "CPLK-XXXXXXXX" created by system (see label on LINKIT module for "XXXXXXXX") and click the right-hand "Connect" button, and select connect type such as "Connect with BLE" to enter the main interface.
- 2 Click "Parameter setting" and input password 1111 to set key parameters.
- 3 Click "Important Params" to confirm the right grid regulations. Click "Lcdless Basic Params" to confirm the right system time, baud rate, ModbusAddr etc. You can also change other settings when necessary. Click "Controls Params", and then click "Power on"
- 4 When the "RUN" indicator is on, the inverter is successfully connected to grid and starts to generate power. Click "Inverter" in main menu to view generation statistics, DC, AC, version and other information. Click the "Generation Statistics" icon to see generation statistics interface and generation data by hour/day/month. Click "Running Record" icon to see running record and running status information. For "Firmware upgrade", please contact aftersales service personnel. Click the upper-right button can power on/off inverter.
- (5) When the DC switches trip, click "Trip Plate Monitor" for more information. If the DC switch state shows "Trip", do not reset the DC switch by yourself, please contact asfter-sales for support. Click "Setting" to set every tripping protection parameter. Click "PV" menu to view the current and voltage of every string.
- 6 If the inverter cannot run, the "FAULT" indicator will light up and the fault information will be displayed on APP. Click "Fault record" in main menu to view current fault records and historical fault records. After eliminate the fault, repeat inverter commissioning. If fault still exists, please contact after-sales service