SC50/60/75HV Quick Installation Guide

This guide provides a general instruction of the installation procedures of SC50/60/75HV.

NOTICE

In no case shall this guide substitute for the user manual or related notes on the device.

Make sure to read over, fully understand and strictly follow the detailed instructions of the user manual and other related regulations before installing the equipment. The user manual can be downloaded by visiting the website at http://support.sungrowpower.com/; or it can be obtained by scanning the QR code on the side of the equipment or the back cover of the Quick Guidance.

Any violation could result in personal death or injury or device damage.

1 Unpacking and Inspection

Step 1 Remove the backplate and fasteners from the packaging.

Step 2 Inspect the converter for visible damages and check the completeness of the delivery contents according to the inner packing list.

Contact your supplier if any of the contents is missing. The converter is unavailable if any damage is detected.

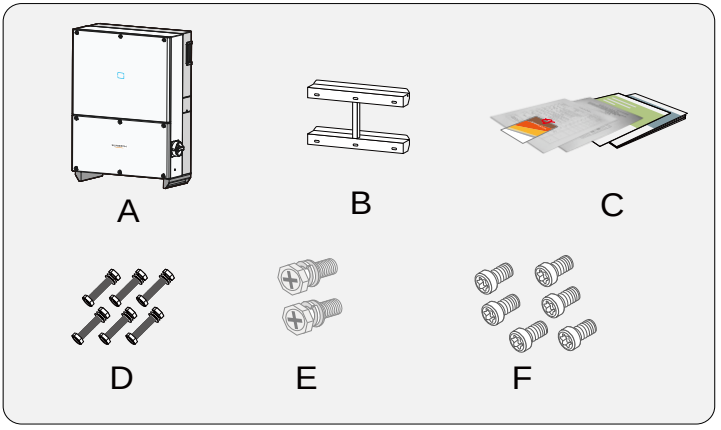


Fig. 1-1 Scope of delivery

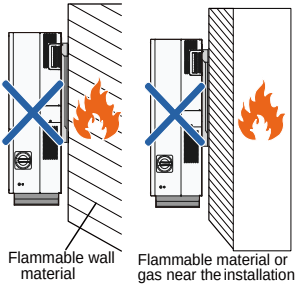
*Images shown here is for reference only! Actual product you receive may differ.

Item	Name	Description
A	PCS unit	---
B	Backplate	It is used for mounting PCS onto the wall.
C	Documents	Documents include quality certificate, packing list, product test report, and quick user manual.
D	Fastener set	Six units. It is used for fastening backplate onto metal frame.
E	Fix screws	2, M4×16 screws for fix the PCS to the backplate.
F	Spare screw	6, M6×12 screws for lower connection cabinet

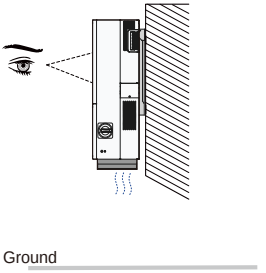
2 Mounting Converter onto the metal frame

2-1 Installation Site Selection

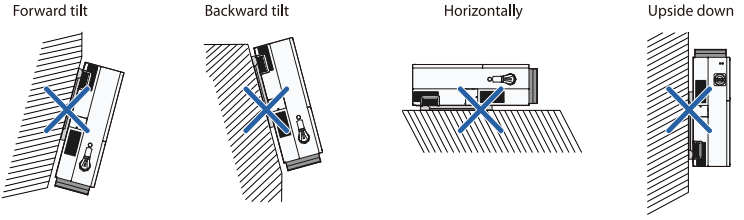
- Requirement for wall materials



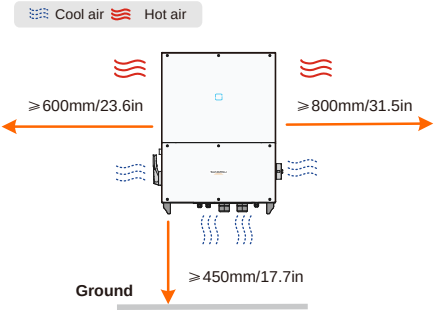
- Requirement for installation height



- Requirement for installation angle



- Requirement for installation space (The fans are maintained on the left side of the converter, and a larger clearance is required.)



2-2 Install the converter

- Select the installation location and regulate the clearances of multiple converters, referring to the user manual.
- Move the converter to the installation site with the help of another person or the lifting device by means of the handles.
- Install the converter onto metal frame as following procedures.

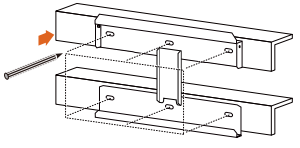
Step 1 Remove the backplate and fasteners from the packaging.

Step 2 Place the backplate to the chosen metal frame and adjust it to proper position and height.

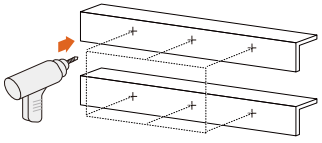
Step 3 Mark the position for holes drilling according to the holes position of the backplate.

Step 4 Drill holes according to the marks make before. If the shape of the metal frame does not match the backplate, re-drill holes on the backplate according to the metal frame chosen.

Mark positions

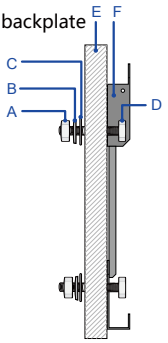


Drill holes



Step 5 Secure the backplate to the metal frame firmly by the supplied fastener. Torque of the fasten nut is 35 N•m.

Install backplate

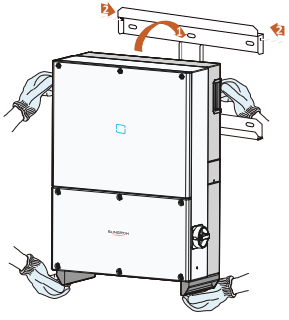


No.	Name	Description
A	Hexagon nut	M10
B	Spring washer	-
C	Flat washer	-
D	Screw bolt	M10*45
E	Metal frame	-
F	Backplate	-

Step 1 Lift the converter above the backplate and then slide down to make sure they match perfectly.

Step 2 After putting the converter on the backplate, secure the converter to the backplate with two M4×16 screws (fix screw hole has its own nut).

Mount the PCS



3 Electrical Connection

DANGER

Death hazards due to high voltage existing inside the converter!

Make sure that all the DC and AC cables to the converter are not live before you start the electrical work.

Do not turn on the AC side or DC side circuit breaker until all converter electrical connections have completed.

3-1 Open the Connection Cabinet

Loose the six screws on the front cover of the connection cabinet and remove the front cover to see the internal layout of the connection cabinet.

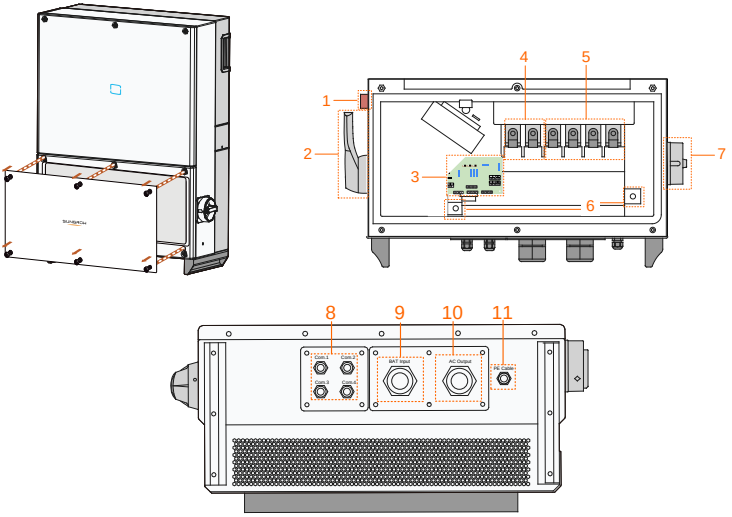


*Image shown here is for reference only. Actual product you receive may differ.

No.	Name	Description
1	Start / Stop button	Start / Stop the PCS.

No.	Name	Description
2	Battery switch	Protective components to safely disconnect DC side current.
3	Configuration circuit board	Communication cable connection and configuration
4	Battery crimping terminal	Battery input cable access
5	AC crimping terminal	AC output cable access
6	PE terminals	PE cable access
7	AC switch	Protective components to safely disconnect from AC side.
8	Communication cable glands	For Communication cable connection Knockout diameter for COM cable is 28.5mm
9	Battery cable gland	For battery cables connection Knockout diameter for BAT cable is 75.5mm
10	AC cable gland	For AC cables connection Knockout diameter for AC cable is 75.5mm
11	PE cable gland	For PE cable connection

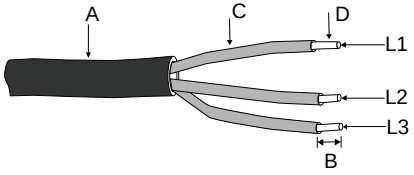
3-2 Cables Selection

- Second PE Cable

  The cross-sectional area of the second PE cable shall be exactly the same with that of the PE cable of the AC cable.

- AC Cable

The cross-section of the AC cable conductor must be sized in order to prevent accidental disconnections of the PCS from the grid due to high impedance of the cable that connects the PCS to the power supply point.



No.	Description	Remark
A	Protective layer /Conduit	Outer diameter: 22mm~33mm / 0.87in~1.30in
B	Length of insulation to be stripped off	Refer to Fig. 3-1Crimping the lugs
C	Insulation layer	-
D	Cross section of AC cables	Range: 25mm^2-120 mm^2 / 4AWG~4/0AWG

- Internal PE Cables

Outer diameter	Cross section
5mm~10mm / 0.20in~0.40in	6 mm^2–16 mm^2 / 10AWG~6AWG

- DC cables:

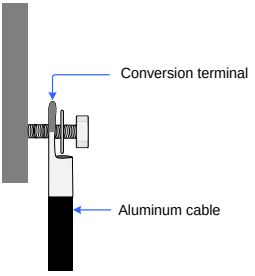
Outer diameter	Cross section
22mm~33mm / 0.87in~1.30in	25mm^2-120 mm^2 / 4AWG~4/0AWG

- RS485 communication cables

Shielded twisted pair cables or Shielded twisted pair Ethernet cables.

3-3 Aluminum cable requirements

- If the aluminum cable is selected, in order to ensure a reliable electrical connection, use the the copper and aluminum conversion terminal to avoid direct contact between the AC copper bar and the aluminum cable.



NOTICE

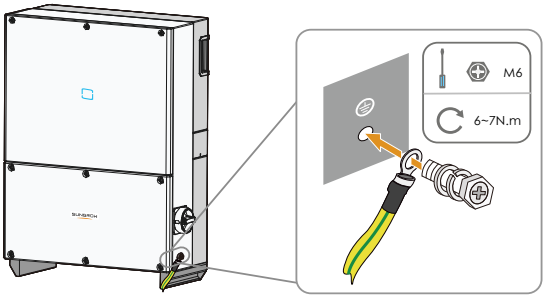
Directly connecting the aluminum cable to the copper bar will cause abnormal operation or even device damage.

3-4 Second PE Cable Connection

A second protective earth (PE) terminal is equipped at the side of the PCS. Be sure to connect this PE terminal to the PE bar for reliable grounding and ensure that the grounding resistance should be less than 10 Ohm.

WARNING

In no case shall the second PE connection substitute for the PE connection on the terminal block of AC connector. Be sure to connect both PE terminals for reliable grounding. The loss of any or all the warranty rights may follow if otherwise.

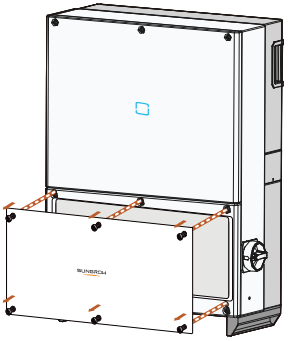


3-5 AC Connection

Install an AC circuit breaker (recommended specification 125A/690V) between the PCS and the AC side.

Step 1 Disconnect AC circuit breaker to prevent it from inadvertently reconnecting.

Step 2 Loosen the six screws (M6×16) on the lower connection cabinet.



Step 3 Strip off AC cables as shown below.

For flexible cables (stranded wires), use crimping lugs.

Step 4 Strip the protection layer and insulation layer by specific length, as described in the figure below.

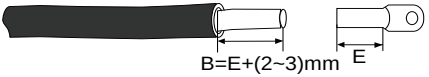
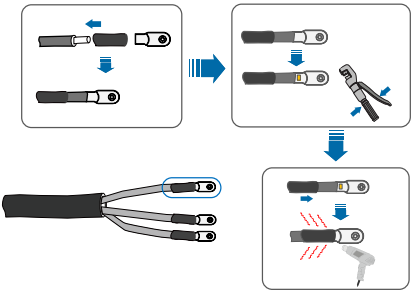


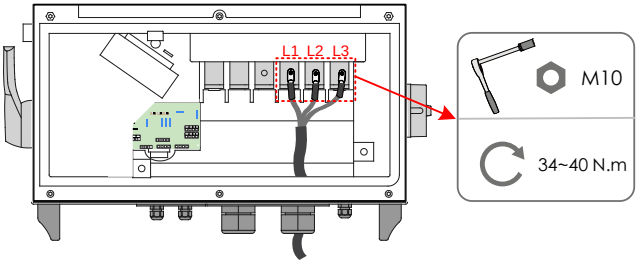
Fig. 3-1 Crimping the lugs

Step 5 Crimp the cord end terminals.



Step 6 Loosen the swivel nut of the gland terminal (Marked as "AC Output") and select an appropriate seal according to cable outer diameter. Lead the cable through the swivel nut and seal successively.

Step 7 Connect the AC cable to the corresponding terminals.



* Pictures here are indicatively only. Product in kind prevail.

NOTICE

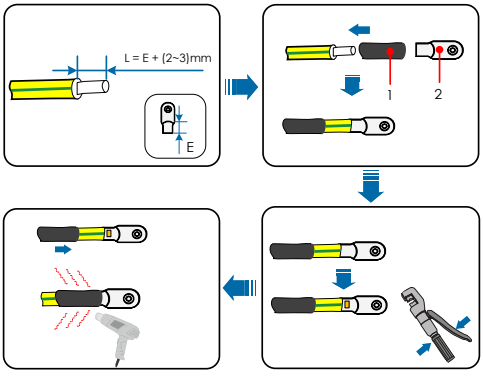
- **Please avoid squeezing the cable insulation layer into the AC terminal. Improper connection may affect the normal operation of the PCS.**
- **During AC cable connection, the cables inside the lower part of the device should be bent to be surplus in length. In this way, cable dropping or loosening, which can cause arc or other problems impairing functionality of the device, due to self-weight of the cables in case of land subsidence is avoided.**

Step 8 Screw cap-nut tightly onto the cable.

Step 9 Seal the gaps between the AC cable and the gland inside the lower part of the cabinet with duct seal.

3-6 Internal PE Cable Connection

Step 1 Prepare the cable and crimp cord end terminal.

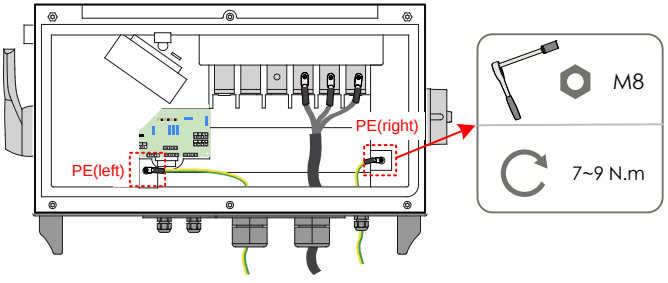


1: Heat shrink tubing

2: Cord end terminal

Step 2 Loosen the swivel nut of the gland terminal (Marked as "PE cable") and select an appropriate seal according to cable outer diameter. Lead the cable through the swivel nut and seal successively.

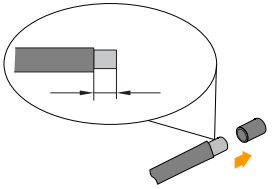
Step 3 Connect the PE cable to the corresponding terminal. (The cabinet includes two PE terminals inside. Wire either or both of them in an appropriate manner according to local regulations.)



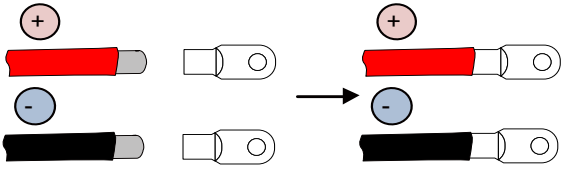
3-7 Battery Connection

Step 1 Rotate the BAT switch to the "OFF" position.

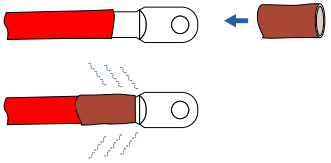
Step 2 Strip the insulation layer of the DC cable to proper length according to the DC cable specification.



Step 3 Insert the end of the DC cable to the cable socket that matches with the M10 bolt and tighten it with the proper tool.

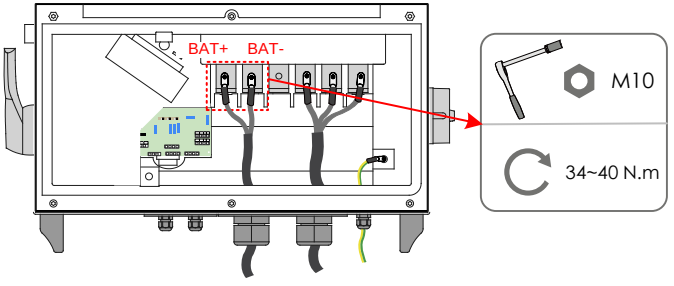


Step 4 Install the heat-shrinkable tubing, shrink the tubing with hot air blower.



Step 5 Loosen the swivel nut of the gland terminal (Marked as "BAT. Input") and select an appropriate seal according to cable outer diameter. Lead the cable through the swivel nut and seal successively.

Step 6 Connect the positive and negative polarity of the DC cable to the corresponding positive and negative cable connection terminals.



⚠ WARNING

When accessing the positive and negative cable, it is necessary to ensure the insulation requirements between the positive access and the negative access. Once positive and negative inputs are short-circuited, it can cause unrecoverable damage to the PCS. Sungrow shall hold no liability for any possible consequences caused by ignorance of this warning.

Step 7 Pull the cable gently to make sure it is secured.

Step 8 Seal the gaps between the DC cable and the gland inside the lower part of the cabinet with duct seal.

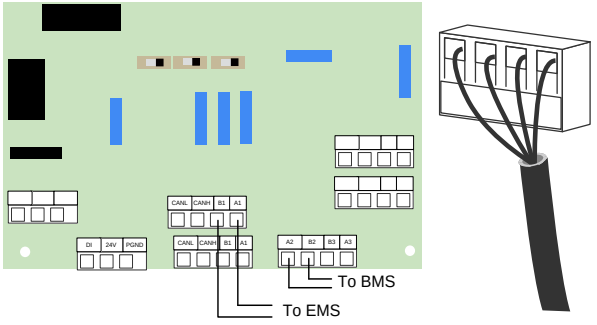
NOTICE

Seal the gap between the cable and the gland/conduit with duct seal or other suitable materials to prevent the entry of foreign bodies or moisture and ensure long-term and normal operation of the PCS.

3-8 Communication Connection

Step 1 Thread the Network cable through communication cable gland to the configuration circuit board.

Step 2 Strip off the insulation layer of the communication cable. Connect the communication cable to corresponding terminals according to the marks on the configuration circuit board.



Step 3 Lightly pull on cables to confirm whether they are fastened firmly.

Step 4 Tighten the thread-lock sealing lock. Block off the vacant terminals to protect from dust and moisture penetrating inside the PCS.

Step 5 Seal the gaps between the cable and the gland inside the lower part of the cabinet with duct seal. If there is no other connection procedure, reassemble and connect the front cover of the connection cabinet.

NOTICE

Seal the gap between the cable and the gland with duct seal or other suitable materials to prevent the entry of foreign bodies or moisture and ensure long-term and normal operation of the PCS.

Step 6 Connect the communication devices. Refer to other manuals and documents if there are other devices.

Step 7 Confirm the communication connection and set the communication parameters through APP.

4 Commissioning

Before starting the PCS, make sure all installation and connections are completed and verified.

If all of the items mentioned above meet the requirements, proceed as follows to start up the PCS for the first time.

Step 1 Make sure all the above-mentioned items meet the requirements.

Step 2 Close the external AC circuit breaker.

Step 3 Rotate the BAT. switch to the "ON" position.

Step 4 Use iSolarcloud App to restore the factory settings to the machine.

Step 5 If the PCS needs to communicate with the BMS, use the APP to configure the BMS data source to be a battery. Otherwise, configure the BMS data source to be EMS. See User Manual "10.9 Configuring BMS Data Sources" for detailed steps.

Step 6 Use the iSolarcloud App to establish the communication connection with the PCS through Bluetooth to set the initial parameters. When the device is initialized, send start instructions via the App For details, please refer to User Manual "10.4.2 Login Steps".

Step 7 The PCS will feed AC power to the grid and enters into the running state.

Step 8 Observe the status of LED indicator panel.

LED indicator	LED state	Definition
	Steady Blue	The device is connected to the grid and operating normally.
	Flashing blue (fast) 	The Bluetooth communication is connected and there is data communication. No fault occurs.
	Flashing blue (slow) 	The DC or AC side is powered on and the device is in standby or startup state (not feeding power into the grid).
	Steady Red	A fault occurs and the device cannot connect to the grid
	Flashing Red	The Bluetooth communication is connected and there is data communication. Fault occurs.
	OFF	Both the AC and DC sides are powered down.