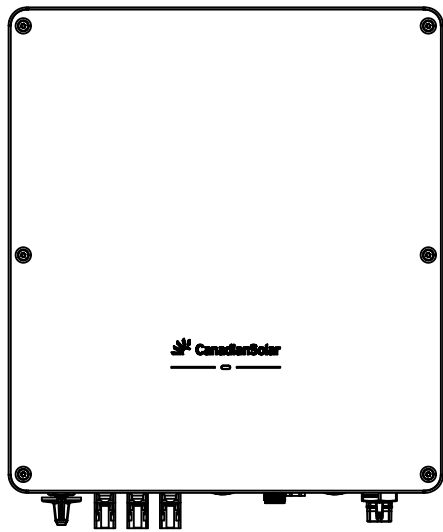




Quick Installation Guide

CSI-7K-S22002-E
CSI-8K-S22002-E
CSI-9K-S22002-E
CSI-7K-S2203A-E
CSI-8K-S2203A-E
CSI-9K-S2203A-E
CSI-7K-S22003-E
CSI-8K-S22003-E
CSI-9K-S22003-E



More information, please scan the QR code to download the user manual.

1.Safety

The inverters are single-phase gird-connected PV string inverters without transformer, which can convert the DC power from the photovoltaic (PV) strings into alternating current (AC) power, and feed the power into the power grid.

- 1.This document provides important safety information on relating to the installation of single phase PV inverters. Both users and professional installers must read these guidelines carefully and strictly follow these instructions. Failure to follow these instructions may result in death, serious injury or property damage.
- 2. Only qualified professionals and service personnel can do the installation and operation (refer to 62109-1). Installers must inform end-users (consumers) about the aforesaid information accordingly..
- 3. A warning describes a hazard to equipment or personnel. It calls attention to procedure or practice.

Symbol	Description	Symbol	Description
	Danger		Observe the documentation
	Hot surfaces		Time need to discharge stored energy in the capacitors
	Hazardous voltage		WEEE designation

2.Unpackaging and Inspection

- 1. Before unpacking the inverter, check the package appearance thoroughly, such as any holes and cracks, and check the inverter model accordingly. If discover any damage to the packaging which indicates the inverter may have been damaged, or the inverter model is not what you requested, do not unpack the product and contact your dealer immediately.
- 2. After opening the package, check all of the accessories carefully in the carton. If any damage is found or any component is missing, contact your dealer.

3.Installation Requirements

- 1. Do not install the inverter on the structures constructed of flammable or thermolabile materials.
- 2. The installation surface must be strong enough to bear the inverter's weight for a long period time.
- 3. The inverter is protected to IP65, can be installed indoors and outdoors.
- 4. The humidity of the installation location should be below 100% without condensation.
- 5. The ambient temperature should be between -25°C to 60°C.
- 6. Install at eye-level for easy operation.
- 7. Do not install the inverter near television antenna or any other antennas and antenna cables.
- 8. Ensure the inverter is out of children's reach.
- 9. Install inverter at the locations with some cover or protection, to ensure the optimum operation.
- 10. Do not install in small closed cabinet where air cannot circulate freely. Do not put any other objects on the inverter.
- 11. Comply with the Min. clearance to walls, other inverters, or objects to ensure the installation and maintenance, meanwhile for the good heat dissipation.

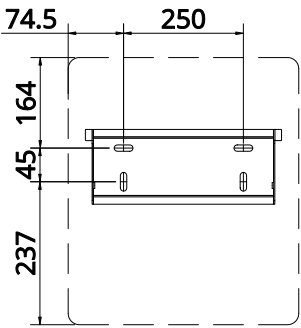
Direction	Above	Below	Sides
Min. clearance	50cm	50cm	30cm

- 12. Install the inverter vertically or at a maximum backward tilted angle of 15 degrees to facilitate heat dissipation.

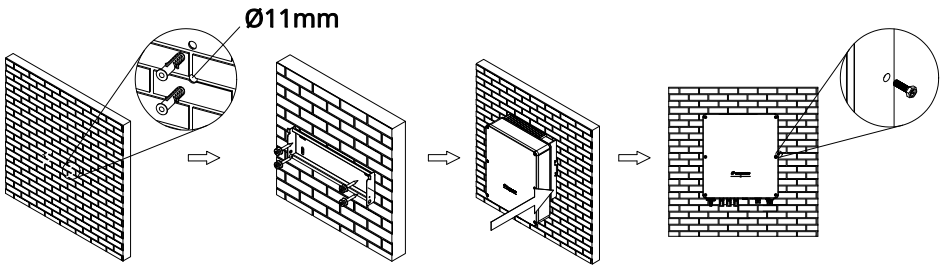
√	√	X	X	X	X	X

4. Installation

- 1. Use the wall-mounting bracket as a template and mark the positions of the drill holes, then drill 4 holes(Ø11mm) to a depth about 55mm.



- 2. Knock expansion anchors into the corresponding four holes, and then fix the wall-mounting bracket to the wall with self-tapping screws.
- 3. Hang the inverter on wall-mounting bracket. Use two safety bolts to fix both sides of inverter to ensure the inverter fixed to the wall firmly.

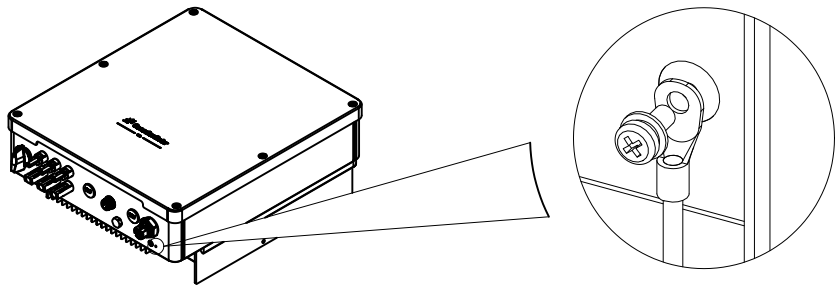


5. Wiring AC Output and Protective Ground

- 1. Before performing any work on the inverter, must disconnect both the AC and DC sides.
- 2. Take appropriate ESD precautions when replacing and installing the inverter.
- 3. Must install a separate single-phase circuit-breaker or other load disconnection unit form each inverter.

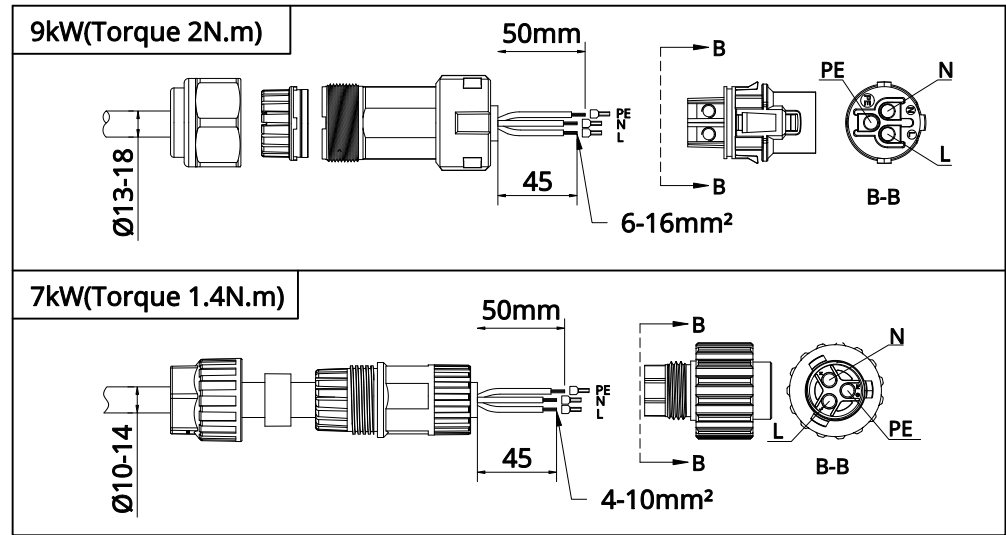
Note: The PE point at the AC output point is used only as a PE equipotential point, and cannot substitute for the PE point on the enclosure.

- 1. Insert the grounding conductor into the suitable terminal lug and crimp the contact. Recommended wire:6mm².
- 2. Fix terminal lug on external ground point by screw M4x10. Torque:1.4 N • m.

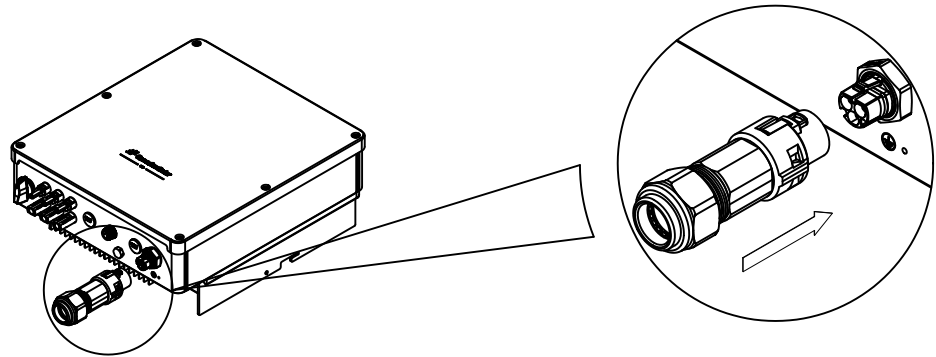


AC connectors procedure steps:

- 1. The required cable cross-sectional area range is 6.0~16.0mm², the required external diameter range is 13~18mm.
- 2. Strip the cable's jacket , and then adjust the relative length of L, N and PE cables, to make the length of PE cable is at least 5mm longer than L and N ones.
- 3. Insert the conductor into the suitable ferrule and crimp them firmly , tighten the screws which fix the conductors into the pins of plug by screwdriver.



- 4. Insert the plug assembled into the socket which installed on inverter.



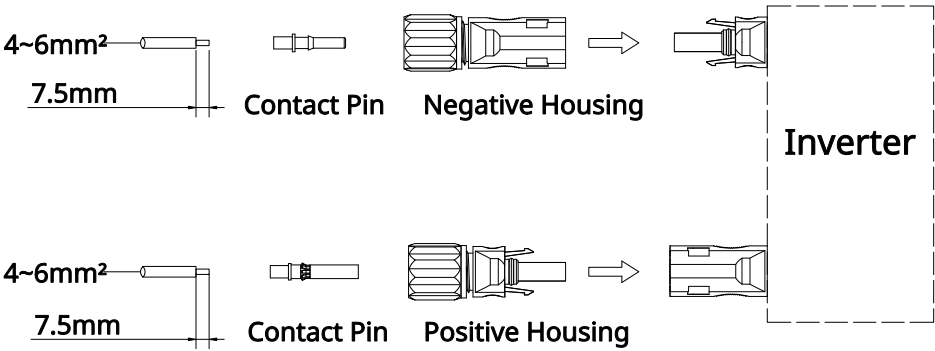
6.Wiring CT/Meter (Optional)

- 1. CT and Meter sensors are accessories for optional functions.
- 2. More details information please refer to the inverter user manual ,CT installation guide,or Meter installation guide.

7.Wiring DC Input

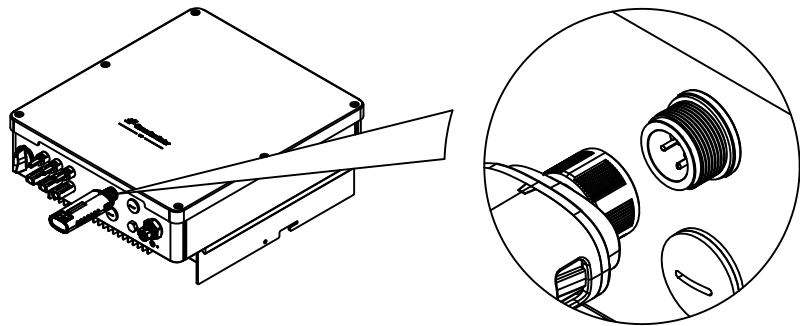
Requirements for PV module strings:
The power, voltage (startup and open-circuit voltage) and operating current of each PV strings must meet the allowable value of the inverter.

- DC connectors have two types —H4 or MC4, procedure steps:
- 1. Strip the insulation jacket of cable to about 7.5mm. Please note do not damage the conductor when do the stripping.
 - 2. Crimp the contact pin to the conductor of the cable.
 - 3. Plug the crimped contact pin into the connector housing back until one sound click audibly.
Pull lightly on the wire to ensure the contact pins of the connectors are engaged. Pay attention to the polarities when assembling.
 - 4. Tighten the nut with a special wrench, the required torque range is 2.5~2.9N.m.
 - 5. Insert the assembled connector into the DC connector of the inverter until one sound click audibly.



8.Communication

Two communication patterns for your option, RS485 and WIFI, with the communication interface M16 port.



9.Start up

Checking Electrical and Mechanical:

- 1. Check PE connections with multi-meter: To make sure all the bare metal surfaces of the inverter grounded.
- 2. Check DC voltage value: Check if the DC voltage of the PV string exceeds the allowable range.
- 3. Check the polarities of the DC voltage: To make sure the DC polarities are correct.
- 4. Check the ground insulation of PV array with multi-meter:
Ensure the impedance value of ground insulation is more than 1MOhm.
- 5. Ensure the inverter is installed properly, fixed with a Wall-mounting bracket firmly,and the upper cover is installed correctly.
- 6. Ensure the AC connectors are installed properly and fixed firmly.
- 7. Ensure the dust covers are sealed reliably which are used for the empty DC connectors.
- 8. Ensure all the cables are connected effectively, fixed firmly, and no visible damages to the insulation layer.

- Start-UP Inverter:
- After electrical and mechanical inspections, first turn on the AC main switch/ breaker, then turn on the DC switch. The inverter will start automatically when the DC input voltage meets the performance requirement of the utility grid. Normally there will be three statuses during the operation (refer to the LED indications):
- 1. Waiting:
Conditions: The initial DC voltage of the PV strings is greater than the Min. DC input voltage, but is lower than the DC start-up input voltage.
Inverter cannot start-up normally and cannot feed power into utility grid either.
 - 2. Checking:
Conditions: The initial voltage of the PV strings exceeds the start-up DC input voltage of the inverter. Meanwhile both the voltage and frequency of the utility grid are normal. Inverter will check the feeding conditions immediately.
If anything wrong during checking, inverter will switch to the “Fault” mode.
 - 3. Normal:
If the checking result is normal, the inverter will switch to “Normal” mode and feed power into the power grid.
- The inverter may turn on and off continuously during the period of low or absent sunlight due to the shortage of power generated by the PV modules. If such fault occurs frequently, please contact the maintenance personnel.

10.Panel Operation

LED Indicators:

NO.	Operate states	LED Indicators	Flicker frequency
1	Wait	Green LED flicker	1s On,1s Off
2	Normal	Green LED always on	/
3	Error	Red LED always on	/