

Quick Installation Guide Smart Control Device (SCD)



LJKUND

1 IMPORTANT SAFETY INSTRUCTIONS




SAVE THESE INSTRUCTIONS

You shall follow all the safety precautions mentioned in this manual when working on the device.

Notice
The product is designed and tested strictly complies with related safety rules. Read and follow all the safety instructions and cautions before any operations. Improper operations might cause personal injury or property damage as the device is electrical equipment.

1.1 Symbol Definition

Different levels of warning messages in this manual are defined as follows:

 DANGER
Indicates a high-level hazard that, if not avoided, will result in death or serious injury.
 WARNING
Indicates a medium-level hazard that, if not avoided, could result in death or serious injury.
 CAUTION
Indicates a low-level hazard that, if not avoided, could result in minor or moderate injury.
NOTICE
Highlight and supplement the texts. Or some skills and methods to solve product-related problems to save time.

1.2 General Safety

Notice
<ul style="list-style-type: none">• The information in this manual is subject to change due to product updates or other reasons. This guide cannot replace the product labels or other safety precautions unless otherwise specified. All descriptions here are for guidance only.• Before installations, read through this manual to learn about the product and the precautions.• All operations should be performed by trained and knowledgeable technicians who are familiar with local standards and safety regulations.• Use insulating tools and wear personal protective equipment when operating the device to ensure personal safety. Wear anti-static gloves, cloths, and wrist strips when touching electron devices to protect the device from damage.• Strictly follow the installation, operation, and configuration instructions in this manual. The manufacturer shall not be liable for device damage or personal injury if you do not follow the instructions. Visit the official website to get more information about product warranty.









1.3 Device Safety

WARNING

The voltage and frequency at the connecting point should meet the on-grid requirements. Make sure that the rated current of the product main breaker meets the specifications of the household power distribution unit.
 PE cable of the device must be connected firmly.
 You are recommended to use copper cables as AC cables.

DANGER

All labels and warning marks should be visible after the installation. Do not scrawl, damage, or cover any label on the device.
 Unauthorized dismantling or modification may damage the equipment, the damage is not covered under the warranty.
 Warning labels on the device are as follows.

	<p>DANGER High voltage hazard. Disconnect all incoming power and turn off the product before working on it.</p>		<p>Delayed discharge. Wait 5 minutes after power off until the components are completely discharged.</p>
	<p>Read through the user manual before working on this device.</p>		<p>Potential risks exist. Wear proper PPE before any operations.</p>
	<p>High-temperature hazard. Do not touch the product under operation to avoid being burnt.</p>		<p>Grounding point.</p>
	<p>Do not dispose of the device as household waste. Discard the product in compliance with local laws and regulations, or send it back to the manufacturer.</p>		<p>CSA mark</p>

1.4 Personal Requirements

NOTICE

- Personnel who install or maintain the device must be strictly trained, learn about safety precautions and correct operations.
- Only qualified professionals or trained personnel are allowed to install, operate, maintain, and replace the device or parts.

2 Product Introduction

2.1 Product Introduction

Function Description

The Smart Control Device (SCD) transfers between on-grid mode and backup mode with an integrated switch. The device connects the main panel, the utility grid, and the AC output of the inverter to form a grid system when the utility grid works normally. Once the utility grid fails, the device will connect loads and the AC output of the inverter only to form a backup system. The SCD supports one inverter or up to three inverters (undertaking).

Model Description

This manual covers listed device below:

SCD Series
SCD-200-63

Model Explanation

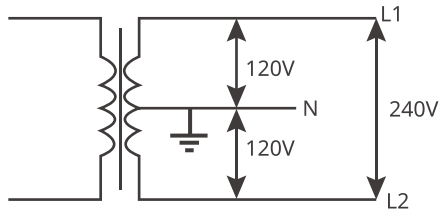
SCD-200-63



No.	Meaning	Description
1	Product	SCD: Smart Control Device
2	Nominal current of the main panel	200: The nominal current of the main panel is 200A.
3	Protection current of the inverter breaker	63: The protection current of the inverter breaker is 63A, which matches with the following inverters: TX5K-HM, TX6K-HM, TX7.6K-HM, TX9.6K-HM, TX11.4K-HM

Supported Grid Type

The inverter supports 120/240V split phase grid type.

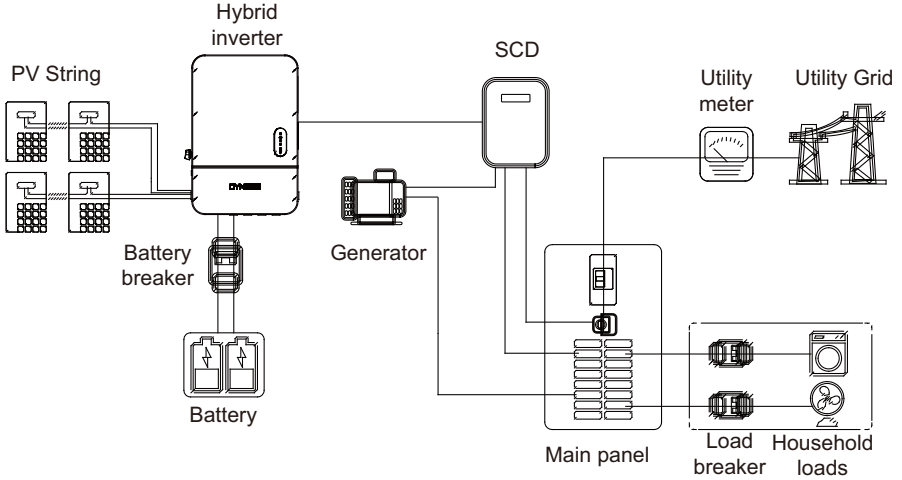


2.2 Application Scenarios

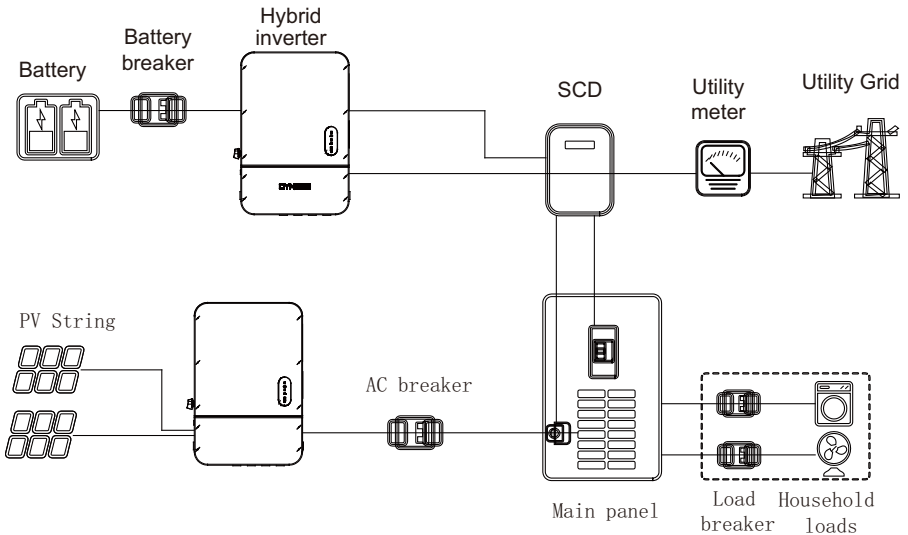
- Add an SCD in the system to realize the whole home backup. Once the utility grid fails, the main panel will disconnect from it, and the inverter will switch to off-grid working mode to supply power to the loads.

2.2.1 Application Scenarios - For Grid

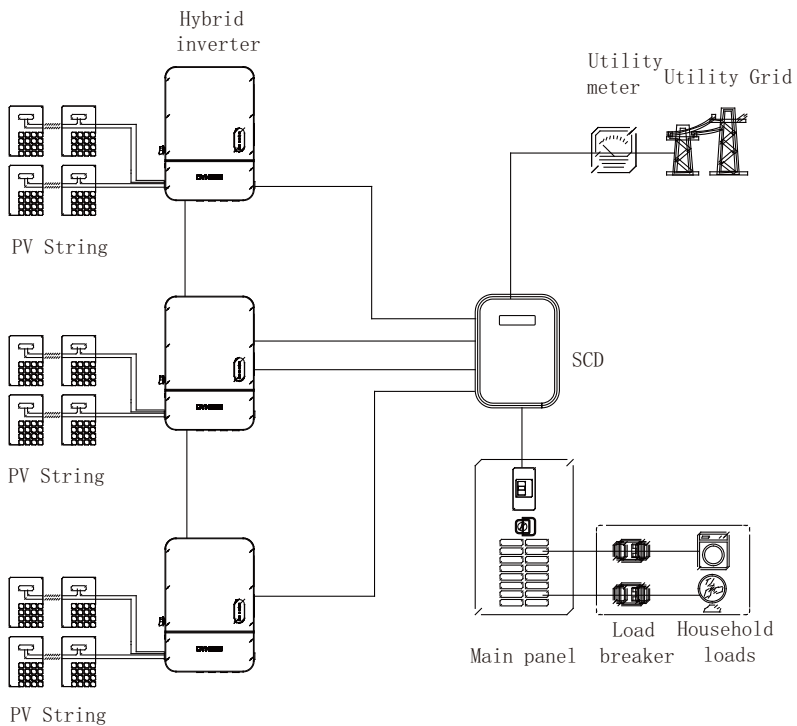
- Whole Home Backup System



- Microgrid System (undertaking)

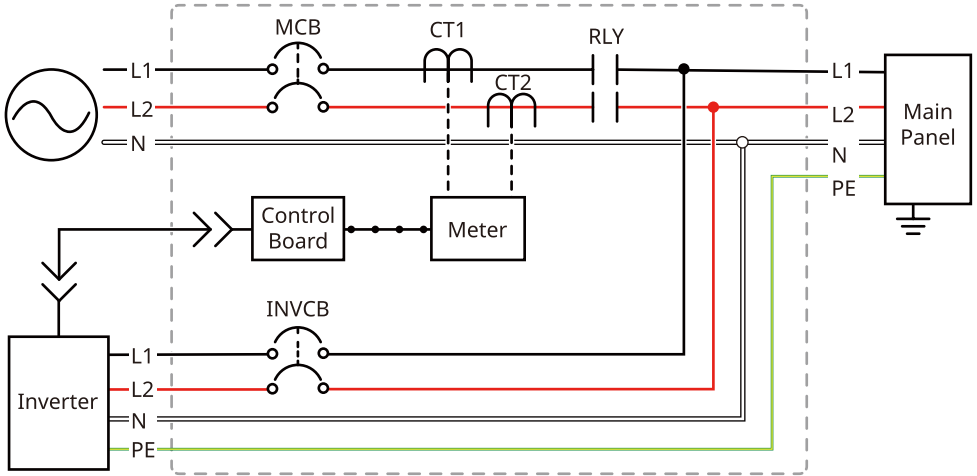


2.2.2 Application Scenarios - With Parallel (undertaking)

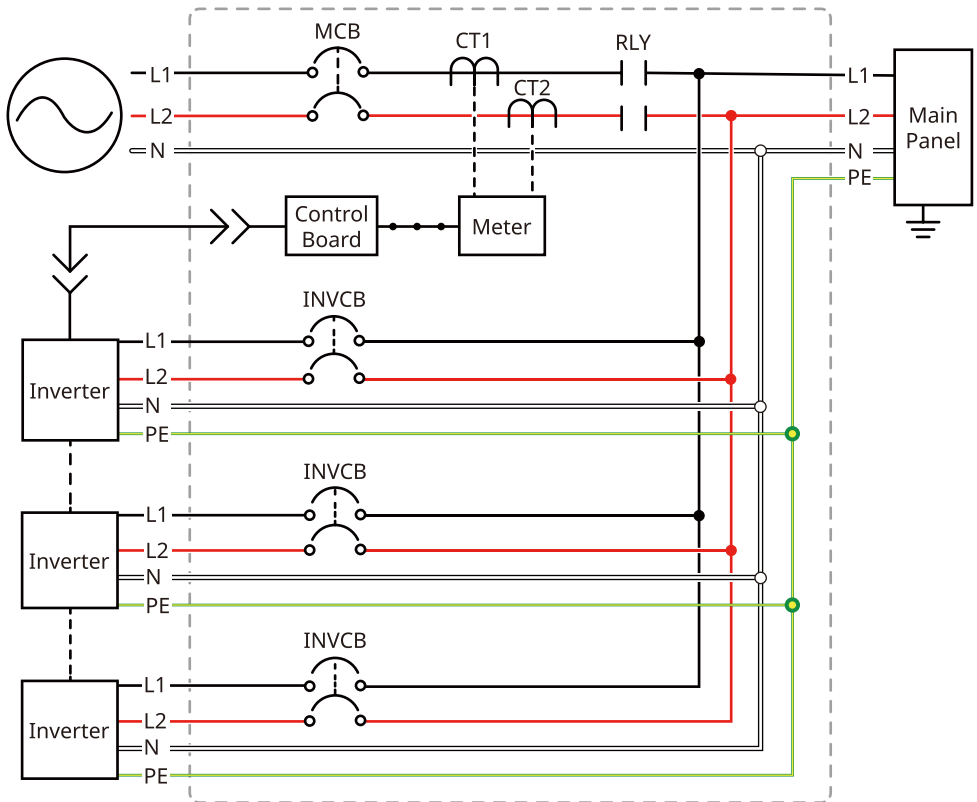


2.3 Electrical Diagram

2.3.1 Electrical Diagram-SCD

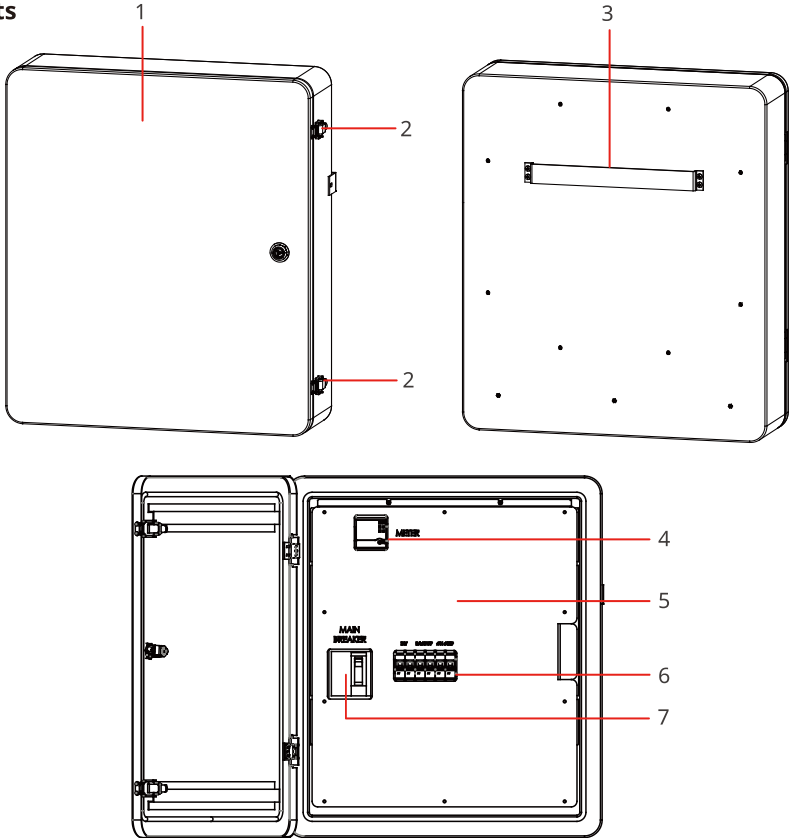


2.3.2 Electrical Diagram-With parallel (undertaking)



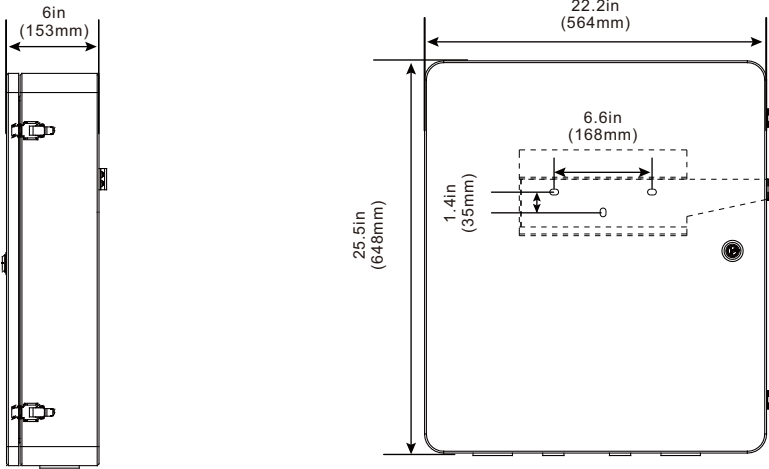
2.4 Appearance

2.4.1 Parts

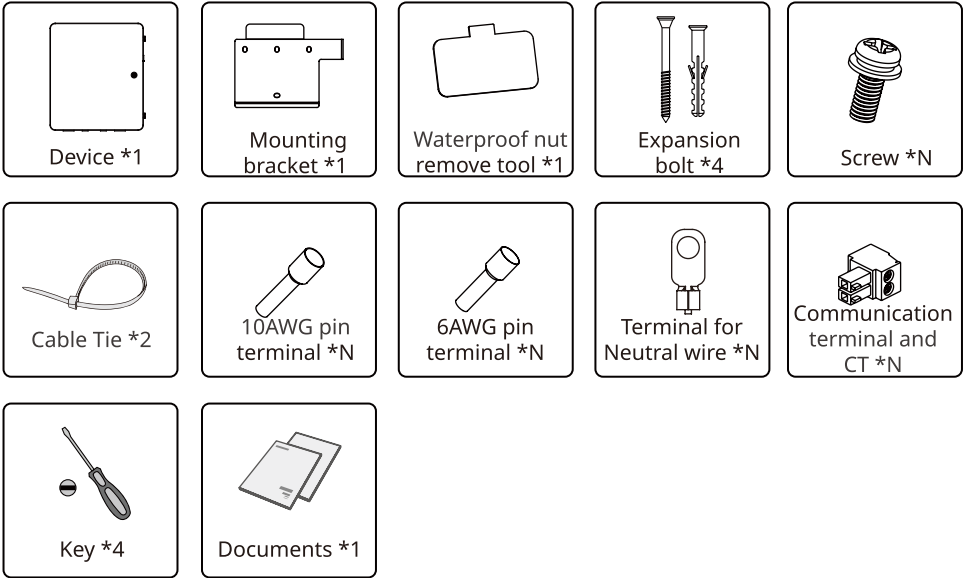


No.	Part	Description
1	LED indicator	Indicates the working status of the device.
2	Lock	Locks the door of the device. The key to the lock is delivered.
3	Hanging bracket	Hangs the device on the mounting support.
4	Smart meter	Contact the after-sales service to replace it if it cannot work properly.
5	Insulation board	Ensure personal safety and protect the device.
6	Inverter breaker	Realize the inverter overcurrent protection function. Recommended specification: 63A (60A) Breaker, UL489 certified.
7	Main Breaker	Recommended specification: 200A Breaker, UL489 certified.

2.4.2 Dimensions



2.5 Deliverables



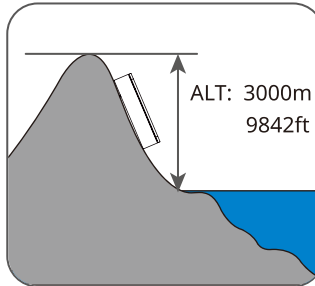
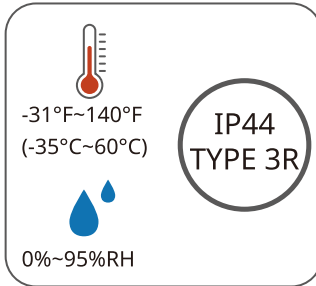
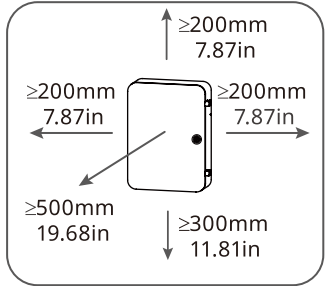
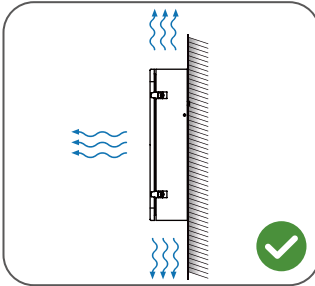
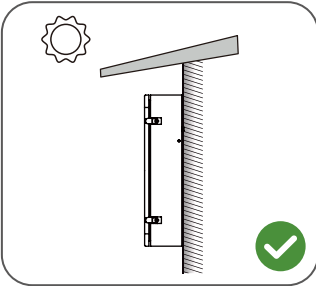
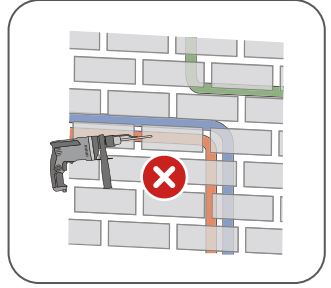
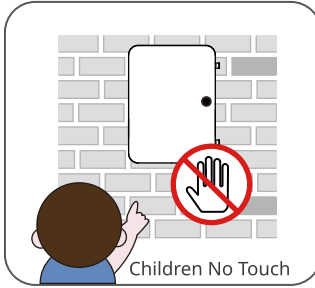
NOTICE

The number of expansion bolts, pin terminals, and communication terminal are various depending on different devices. The actual accessories may differ.

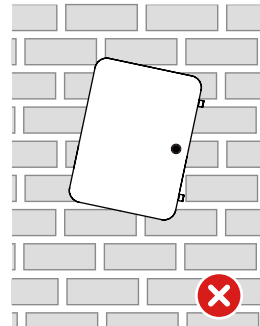
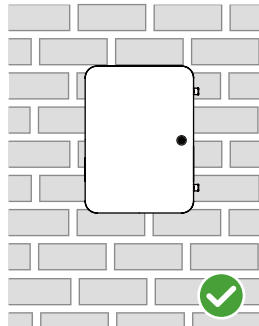
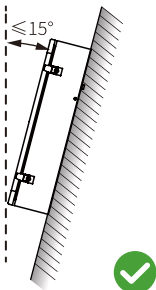
3 Installation

3.1 Installation Requirements

Installation Environment Requirements



Installation Angle Requirements



3.2 Device Installation

NOTICE

- Avoid the water pipes and cables buried in the wall when drilling holes.
- Wear goggles and a dust mask to prevent the dust from being inhaled or contacting eyes when drilling holes.

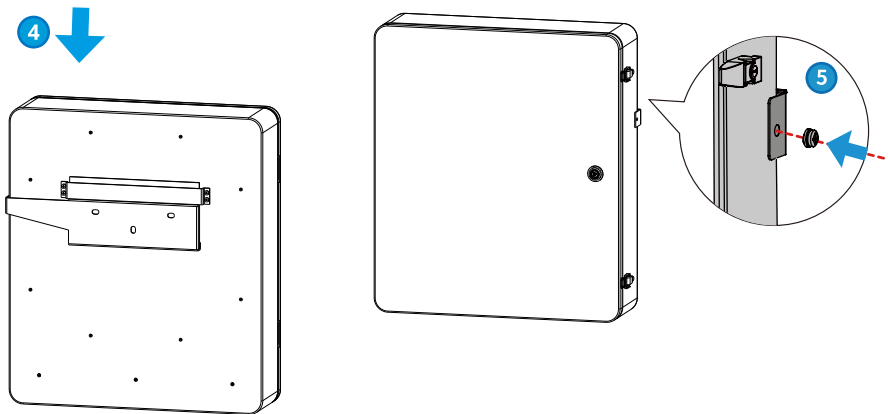
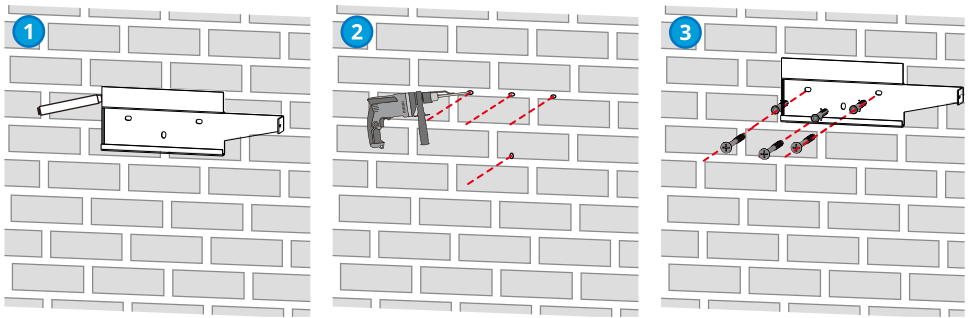
Step 1 Put the mounting bracket on the wall or the support horizontally and mark positions for drilling holes.

Step 2 Drill holes to a depth of 80mm (3.15in) using the hammer drill. The diameter of the drill bit should be 10mm (0.39in).

Step 3 Secure the mounting bracket using the expansion bolts.

Step 4 Install the device on the mounting bracket.

Step 5 Screw to secure the device and the mounting bracket.



4 Electrical Connection

4.1 Safety Precaution



INSTRUCTIONS PERTAINING TO A RISK OF FIRE OR ELECTRIC SHOCK

- Perform electrical connections, including operations, cables, and component specifications in compliance with local laws and regulations ANSI/NFPA 70.
- The input and output circuits are isolated from the enclosure and that system grounding, if required by the National Electric Code, ANSI/NFPA 70, is the responsibility of the installer.
- Power off the device before any electrical connections. Otherwise, an electric shock may occur.
- Tie the cables of the same type together, and place cables of different types apart. Do not place the cables entangled or crossed.
- If the tension is too large, the cable may be poorly connected. You have to reserve a certain length of the cable before connecting it to the device cable port.
- Make sure that the cable conductor is in full contact with the terminal and the cable insulation part is not crimped with the terminal when crimping the terminal. Otherwise, the device may not be able to work properly, or the connection may be unreliable during working, which may cause terminal block damage, etc.

Notice

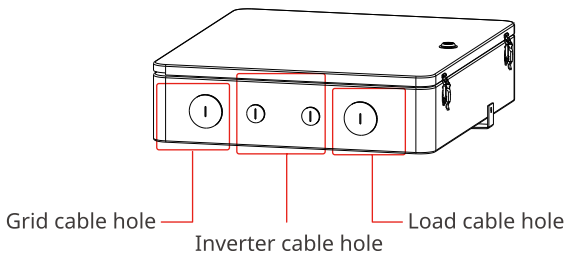
- Cable colors in this document are for reference only. The cable specifications shall meet local laws and regulations.

4.2 Preparing Cables

4.2.1 Cable Hole Introduction

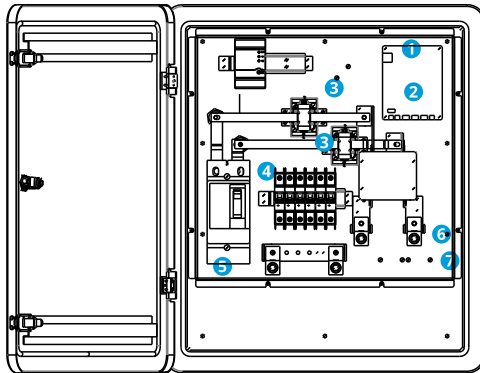


- Wiring conduits are additionally required, not included in the scope of delivery. The conduit must be UL514B listed and meet the specifications of the waterproof nut.
- To avoid influencing the protection class or damaging the equipment, check the wiring conduit to make sure that the conduit is installed properly and the holes are sealed.



Cable Hole	Description	Conduit
Grid cable hole	Install the wiring conduit and run Grid-L1, Grid-L2, and Neutral wire through the cable hole.	2 inch conduit
Load cable hole	Install the wiring conduit and run Load-L1, Load-L2, Neutral wire, and PE through the cable hole.	2 inch conduit
Inverter cable hole	<ul style="list-style-type: none"> Install the wiring conduit and run Inverter-L1, Inverter-L2, Neutral wire, PE cable, and communication cable through the cable hole. 	1 inch conduit

4.2.2 Cable Specifications



No.	Parts	Silkscreen	Description
1.	Inverter communication cable terminal	Inverter COM	<ul style="list-style-type: none"> Terminal for connecting the communication cable of the inverter. Recommended specification: RJ45 cable, 24AWG, CAT5 or better
2.	CT terminal for solar inverter	-	<ul style="list-style-type: none"> Terminal for connecting the CT for the solar inverter.
3.	CT	-	-
4.	Inverter AC cable terminal	Inverter A-L1 / L2, Inverter B-L1 / L2, Inverter C-L1 / L2, Inverter-N	<ul style="list-style-type: none"> Terminal for connecting the AC cable of the inverter. Inverter B and Inverter C are only for parallel. (Undertaking) Recommended specification: 6-8AWG, copper cable, 90°C(194°F).

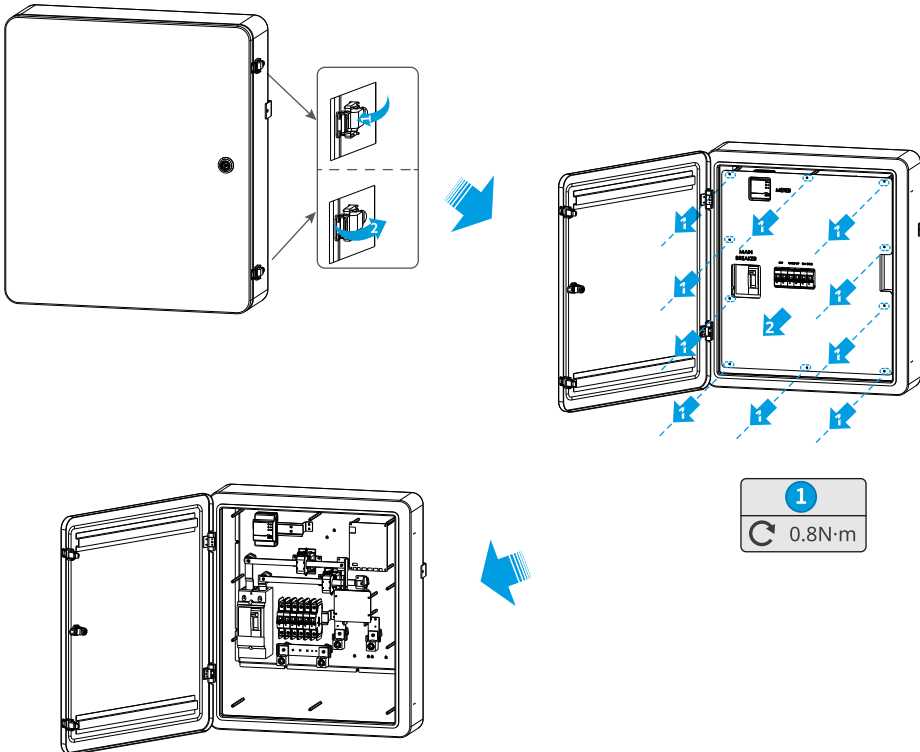
5.	Grid AC cable terminal	Grid-L1, Grid-L2, Grid-N	<ul style="list-style-type: none"> Terminal for connecting the Grid cable. Recommended specification: 4/0-3AWG, copper cable, 90°C(194°F)
6.	Load AC cable terminal	Load-L1, Load-L2, Load-N	<ul style="list-style-type: none"> Terminal for connecting the AC cable of the load. Recommended specification: 4/0-3AWG, copper cable, 90°C(194°F)
7.	Grounding busbar	⊕	<ul style="list-style-type: none"> Busbar for connecting the PE cables. Recommended specification: <ul style="list-style-type: none"> Load-PE: 4-6AWG, copper cable, 90°C (194°F) Inverter-PE: 10AWG, copper cable, 90°C (194°F)

4.3 Opening the Cabinet Door

Step 1 Unlock the cabinet door using the delivered key.

Step 2 Remove the ten screws fixing the insulation board (torque: 0.8Nm).

Step 3 Take the insulation board away.



4.4 Connecting the Cables

⚠ WARNING

- Connect the cables to the right terminals like L1, L2, and N. The device may be damaged if the cables are connected inappropriately.
- Make sure that the whole cable cores are inserted into the terminal holes. No part of the cable core can be exposed.
- Make sure that the cables are connected securely. Otherwise, the terminal may be too hot to damage the device when the device is working.

4.4.1 Connecting the AC Cable (Grid)

⚠ WARNING

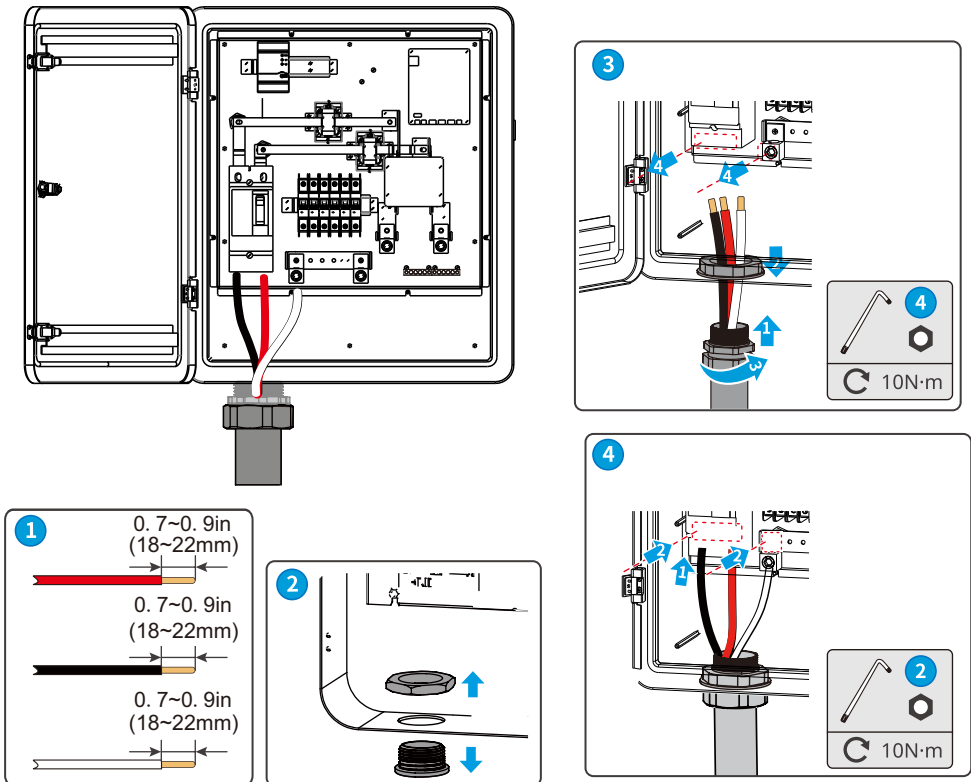
- The ac output (neutral) is not bonded to ground.

Step 1 Strip the cables.

Step 2 Remove the waterproof cover using the included cap removal tool.

Step 3 Insert the desired conduit and corresponding adaptors, fittings, and bushings.

Step 4 Insert the cables into the device and tighten the conduit.



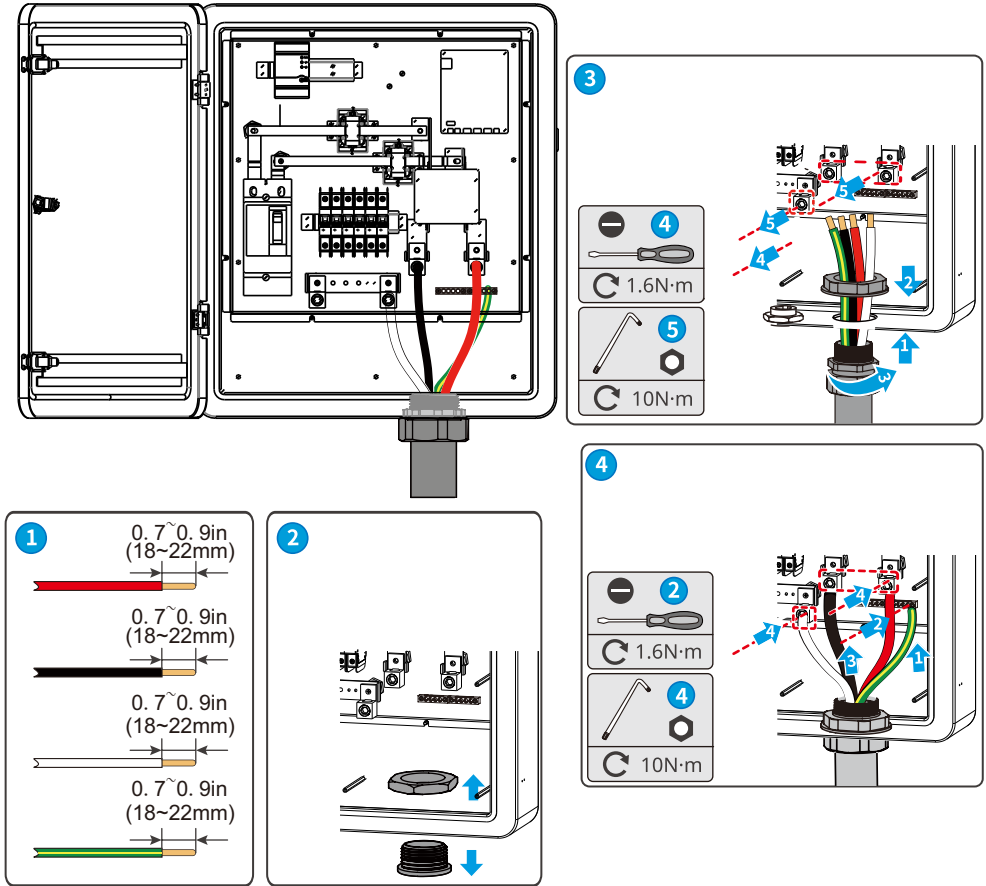
4.4.2 Connecting the AC Cable (Load)

Step 1 Strip the cables.

Step 2 Remove the waterproof cover using the included cap removal tool.

Step 3 Insert the desired conduit and corresponding adaptors, fittings, and bushings.

Step 4 Insert the cables into the device and tighten the conduit.



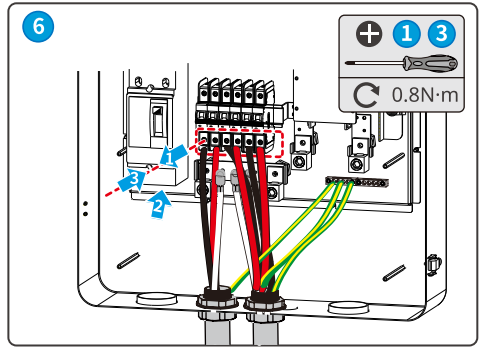
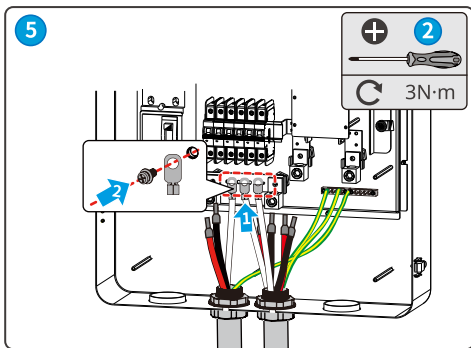
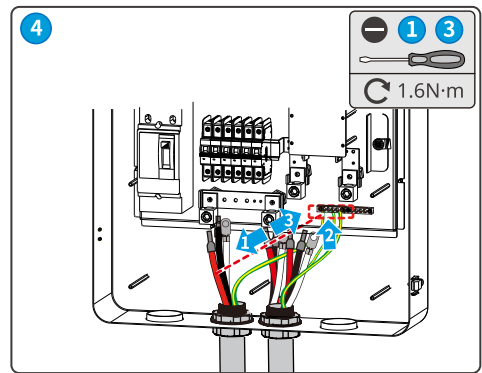
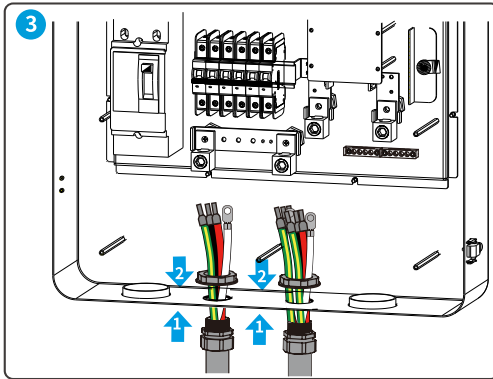
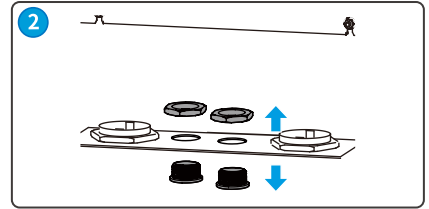
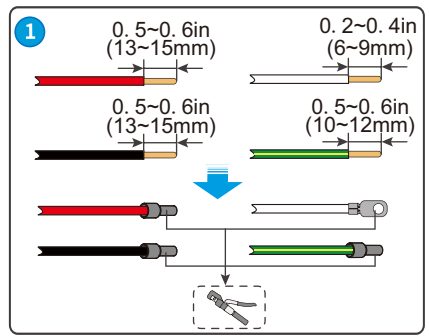
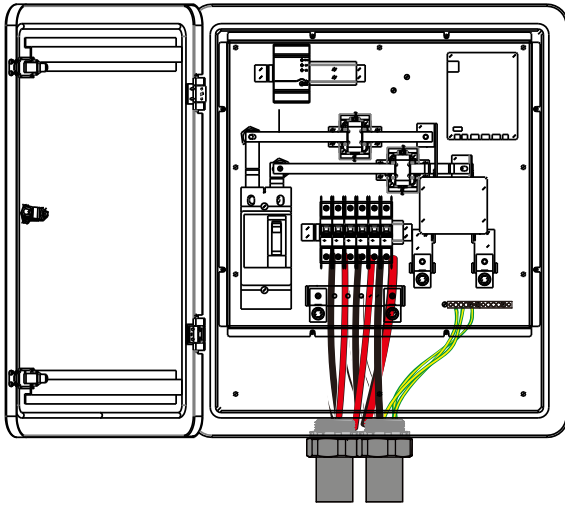
4.4.3 Connecting the AC Cable (Inverter)

Step 1 Strip the cables and crimp the cables and the terminals.

Step 2 Remove the waterproof cover using the included cap removal tool.

Step 3 Insert the desired conduit and corresponding adaptors, fittings, and bushings.

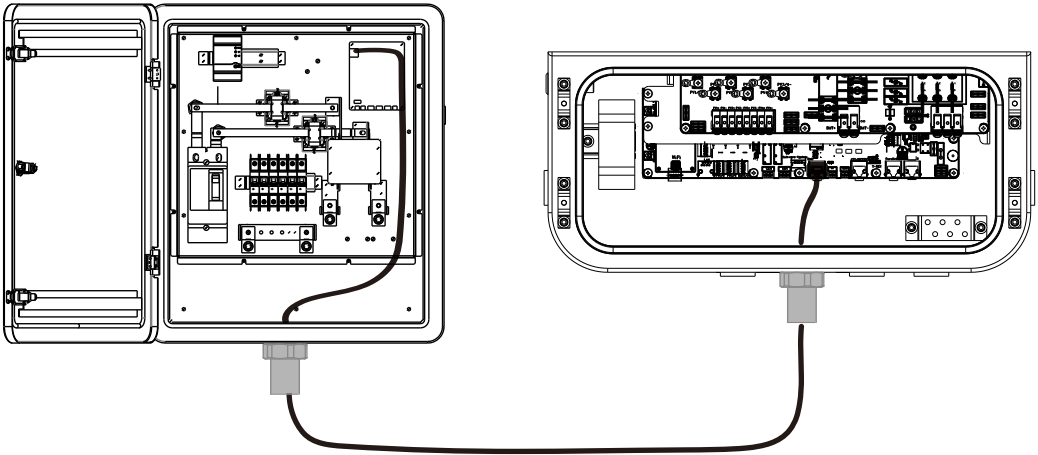
Step 4 Insert the cables into the device and tighten the conduit.



4.4.4 Connecting The Communication Cable

Step 1 Prepare a RJ45 network cable and insert the cables into the terminal.

Step 2 Run the cable through the cable clip and the conduit.

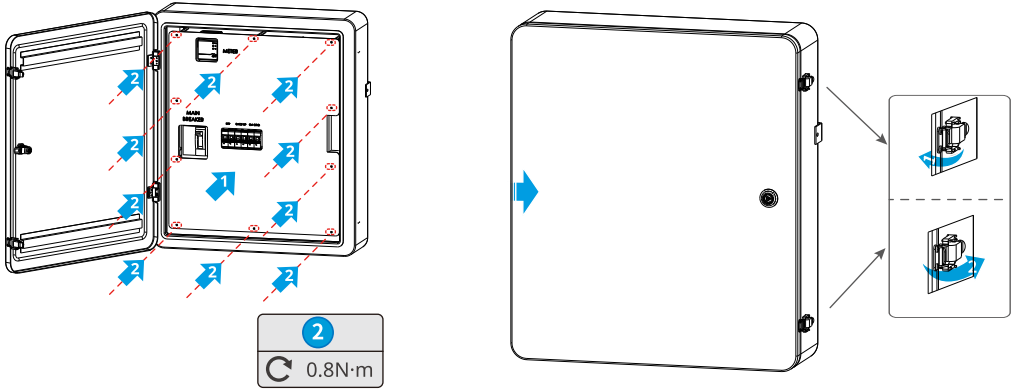


4.5 Closing the Cabinet Door

Step 1 Install the insulation board.

Step 2 Tighten the ten screws ten the insulation board (torque: 0.8N.m).

Step 3 Lock up the device using the cabinet key. Keep the key properly for future use.



5 Equipment Commissioning

5.1 Check Before Power ON

No.	Check Item
1	The product is firmly installed at a clean place that is well-ventilated and easy-to-operate.
2	The PE, power, and communication cables are connected correctly and securely.
3	Cable ties are intact, routed properly and evenly.
4	Unused ports and terminals are fitted using the waterproof caps.
5	The insulation board is installed properly.
6	The voltage and frequency at the connection point meet the grid connection requirements.
7	The electrical conduit holes are sealed.

5.2 Power ON the Device

Step 1 Turn on the main breaker of the device.

Step 2 Turn on the inverter breaker of the device.

6 Maintenance

6.1 Power Off the Device

 **DANGER**

INSTRUCTIONS PERTAINING TO A RISK OF FIRE OR ELECTRIC SHOCK

- Power off the device before operations and maintenance. Otherwise, the device may be damaged or electric shocks may occur.
- Delayed discharge. Wait until the components are discharged after power off.

- Step 1** Turn off the main breaker of the device.
Step 2 Turn off the inverter breaker of the device.
Step 3 Turn off the breaker of the main panel.
Step 4 Power off the inverter.

6.2 Replacing the Inverter Breaker

 **WARNING**

- Make sure that the device is powered off.
- Wear proper personal protective equipment before any operations.

- Step 1** Loosen the screws and cables of the breaker.
Step 2 Pull the plastic slot under the breaker.
Step 3 Replace the breaker with a new one, the new breaker shall be 63A (60A) and UL489 certified.
Step 4 Place the breaker properly and push the plastic slot. Make sure that the breaker is securely installed.
Step 5 Tighten the cables.

7 Technical Parameters

7.1 SCD series Technical Parameters

Technical Data	SCD-200-63
Electrical Data	
Nominal Output Voltage (V)	240
Output Voltage Range (V)	211~264
Feed-in Type	Split Phase
Nominal AC Voltage of Line Conductor (V)	120/240
Nominal AC Frequency (Hz)	60
AC Frequency Range (Hz)	58.5~61.2
Current Rating (From Grid)(A)	160
Max. Continuous Current From Inverter (A)	47.5
Maximum Overcurrent Protection of Main Breaker (A)	200
Maximum Overcurrent Protection of Circuit Breaker of Inverter (A)	63
General Data	
Operating Temperature Range (°F)	-13°F~+140°F (-25°C~+60°C)**1
Max. Operating Altitude (ft)	9842ft (3000m)
Cooling Method	Natural Convection
Communication with Inverter	RS485
Weight (lb)	35.3lb(16kg)
Dimension (W×H×D in)	22.2×25.5×6 (564×648×153mm)
Mounting Method	Wall Mounted
Ingress Protection Rating	Type 3R, IP44
Certification	
Safety Regulation	UL1741, CSA 22.2 No. 107-01
EMC	FCC part15 CLASS B
*1: Derating temperature: 113°F (45°C).	



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