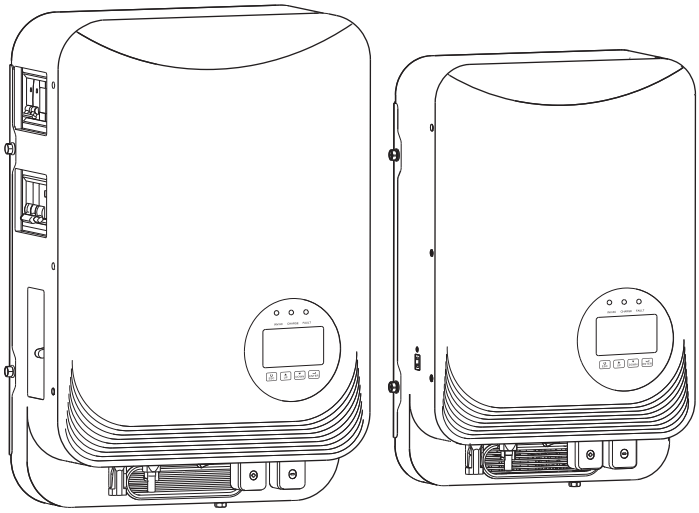
Installation Guide

4.2KW / 6.2KW / 9.2KW

Hybrid Inverter

• Inverter • MPPT Controller • AC Charger



Hybrid Inverter	4.2KW/6.2KW/9.2KW
Integrated Combiner box hybrid inverter	4.2KW/6.2KW/9.2KW

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I. Installation Precautions

1. Please read this manual carefully and familiarize yourself with the installation procedure before installation.

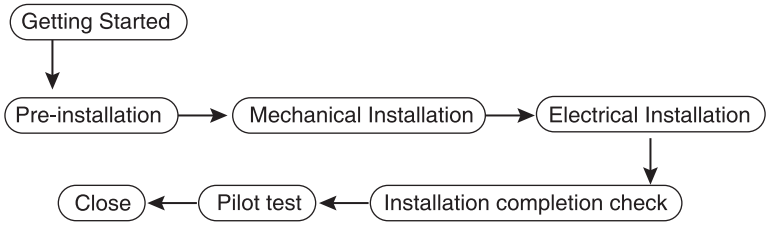
2. When installing this series of inverters, at least two professionals must operate at the same time, and all electrical installations must comply with local electrical installation standards.

3. Do not touch any other parts inside the chassis except the terminals during installation.

4. All upstream switches must be turned off.

II. Installation process

The installation process is as follows:.



Installation Flowchart

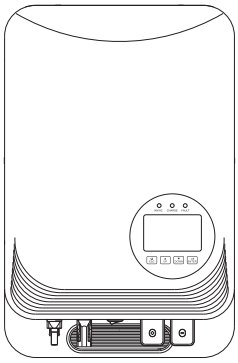
III. Preparation for installation

1. Packaging inspection

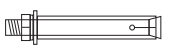
Please check the equipment for any damage before installation. If any transportation damage is found, please contact the transportation company or after-sales service personnel and provide photos of the damaged part.

2. Accessories check

After unpacking, please check according to the following accessories to confirm whether all the delivered accessories are complete and intact.

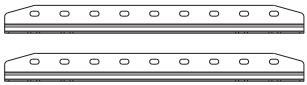


Hybrid inverter 1 unit



Bracket mounting screws
M6 Expansion Bolt 4pcs

MC4 1 set



Inverter bracket 1 set

Inverter Side Mounting Screws
M5 screws 4 pcs

M5 Ground Screw 1pc

3. Installation tools

The tools needed to install the inverter are as follows:

Electric impact drills, M8 impact drills, wire strippers, crimping pliers, screwdrivers, socket plate hand, multimeter。

4. Installation Environmental Requirements

Please confirm the following environmental requirements before installing the inverter:

Temperature -30℃~55℃, humidity <95% (no condensation), altitude <3000m.

WARNING	This series models are for indoor use only! Installation in harsh environments such as humid, salt spray, corrosive, greasy, flammable and explosive, or where dust collects in large quantities is strictly prohibited.

IV. Guidance on mechanical installation

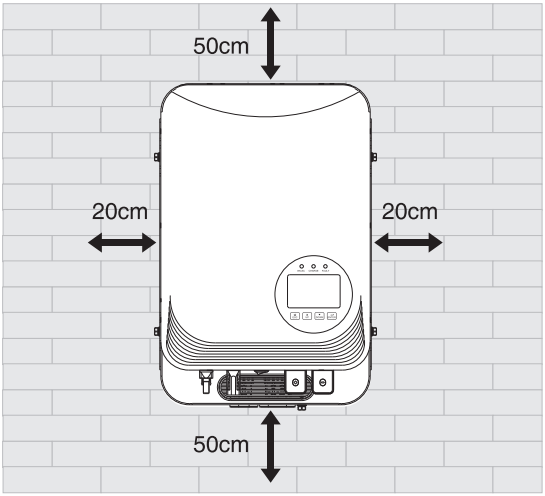
Positioning and fixing

This series of models is for indoor use only! Installation is wall mounted, please consider whether the bearing capacity of the wall meets the requirements before installation.

WARNING	1. The inverter can be fixed on concrete and solid brick wall, not on hollow brick wall. 2. The distance between the left and right of the inverter installation position is not less than 20cm or more, and the distance between the bottom of the inverter is not less than 50cm.

Step 1:

Firstly, determine the installation location of the inverter, such as the wall, and confirm that there is sufficient air circulation to guarantee natural convection heat dissipation.



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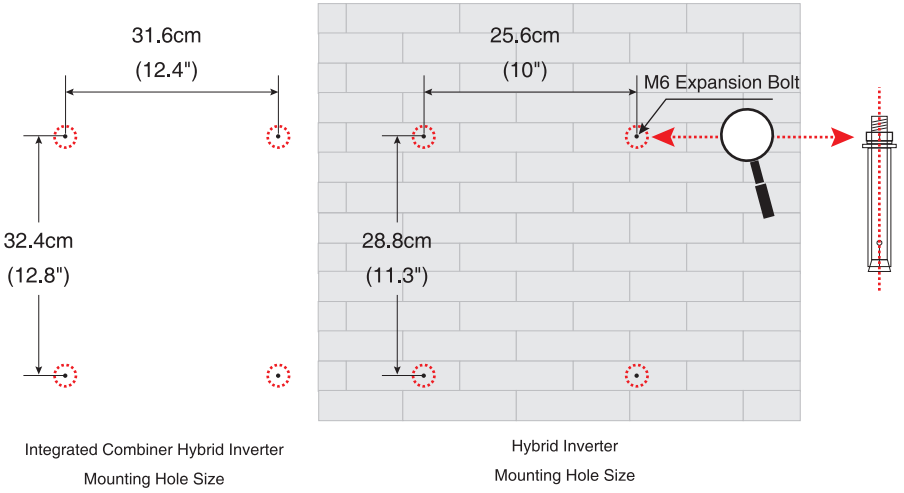
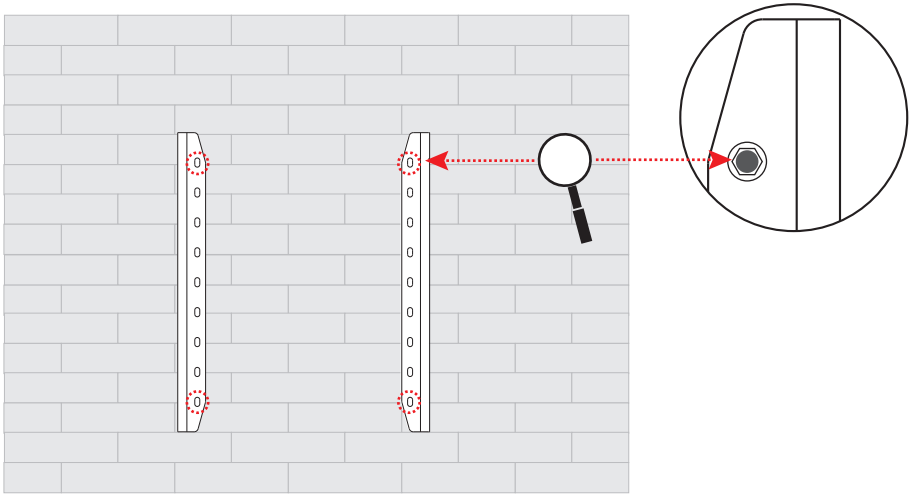
Step 2: Drill 4 M8 holes with an electric impact drill according to the marked mounting holes; Plug the screws of M6 expansion bolts into the 4 holes along with the steel pipe.



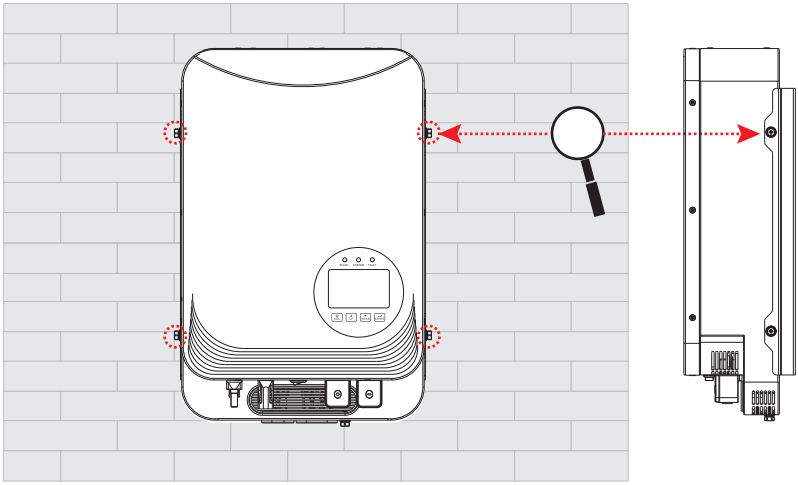
Integrated Combiner Hybrid Inverter Mounting Hole Size

Hybrid Inverter Mounting Hole Size

Step 3: Please mount the inverter bracket against the wall, horizontally on the 4 M6 expansion bolts, and tighten the 4 expansion bolt nuts with a plate hand.



Step 4: Please use 4 M5 screws to mount the inverter on the bracket, and use a plate hand to tighten the 4 M5 screws on the side of the bracket Mechanical installation is finished.



V. Electrical installation instructions

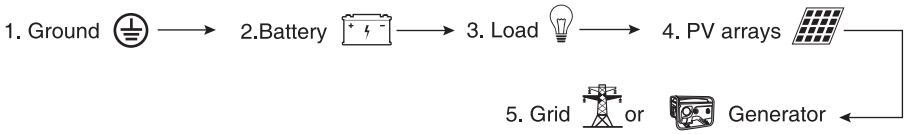
1. Please make sure that the switch and circuit breaker of the whole machine are off or disconnected before connecting the line, and the wiring is correct before operating according to the instructions.

2. Disconnected connections and corroded wires may cause heat to melt the insulation layer of the wires, burning the surrounding materials and causing a fire.

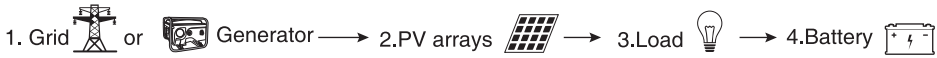
3. Make sure the connectors are tightly screwed, and it is recommended to fix the wires to avoid loose connectors caused by shaking of the wires.

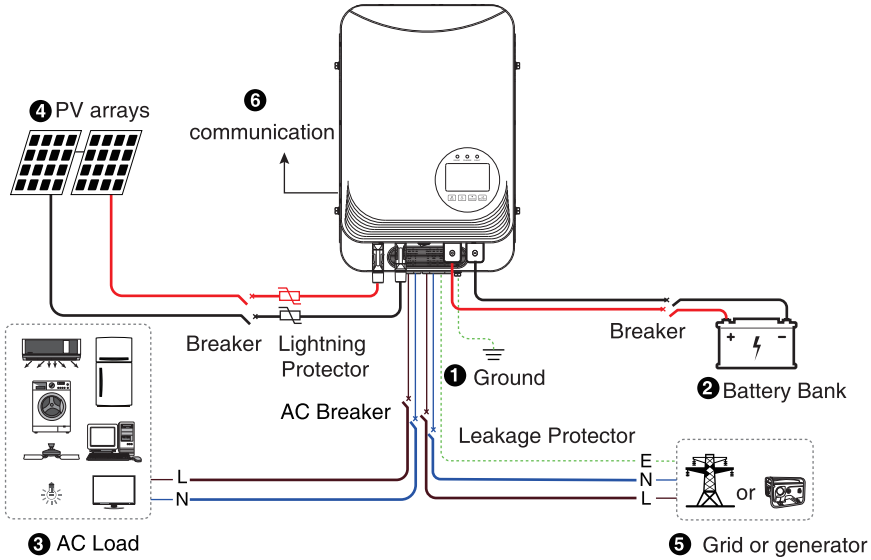
4. The system connection wire is selected according to the current density of not more than 5A/mm2.

Inverter connection sequence:

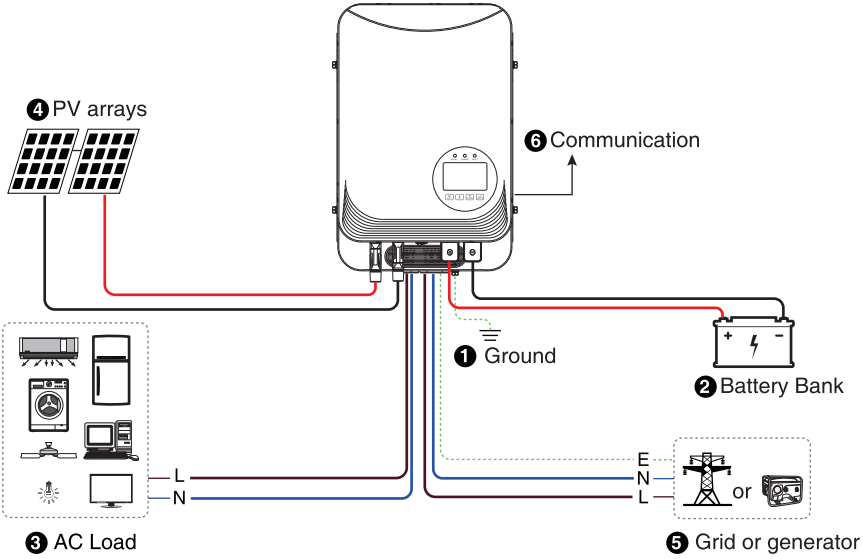


If disconnecting the system follow the procedure below to disconnect.





Hybrid inverter assembly diagram

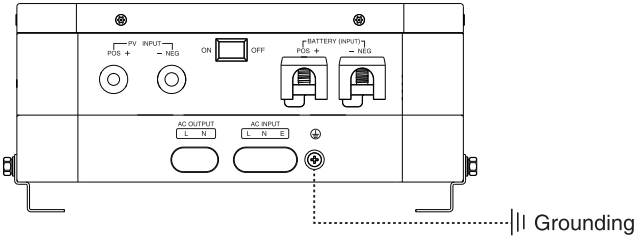


Integrated Combiner Box Hybrid Inverter assembly diagram

Step 1: Grounding

The grounding terminal of this inverter must be correctly and reliably grounded, the cross-sectional area of the grounding cable is required to be consistent with the recommended load wiring diameter, the grounding point should be as close to the inverter as possible, and the shorter the grounding wire, the better.

Grounding Prohibited	1. Strictly prohibit positive and negative battery grounding 2. Strictly prohibit positive and negative PV grounding 3. It is strictly prohibited to ground the AC input terminal L, N between the inverter and the household distribution box. 4.It is strictly prohibited to ground the AC output terminal L,N.
Must be grounded	The PE terminals of the chassis and the AC inputs and outputs are connected to earth via an earth rail.



Step 2: Connecting the battery

1. Ensure that there is someone next to you ready to help during installation.
2. Prepare clean water and soap in case the battery acid splashes on your skin, clothes and eyes.
3. Protect your eyes from injury. Wash your hands with soap after installation.
4. If acid splashes on clothes please wash them quickly with soap and water, if splashes on eyes, please flush with cool water within 15 minutes and seek medical help.
5. Do not smoke or generate sparks near the battery and inverter.
6. Don't touch the tools to the battery terminals when installing, in order to avoid the danger of short-circuit of the battery.
7. Take off rings, bracelets, necklaces, watches, etc., so as not to cause a short circuit of the battery causing danger.

Warning	Note: The charging function of this inverter is only applicable to rechargeable batteries such as lead-acid, colloidal, lithium iron phosphate, etc. Other types of batteries may cause an explosion, resulting in personal injury.
Warning	1: Do not close the circuit breaker during the wiring process, and make sure that the "+" and "-" pole leads of each component are connected correctly. 2: A circuit breaker is required to be installed at the battery terminal.

- Recommended battery wiring specifications and circuit breaker sizing

Hybrid Inverter	Battery Wire Gauge	Battery protector type
24V/4200W	16mm^2	DC 2P-200A
48V/6200W	16mm^2	DC 2P-200A
48V/9200W	25mm^2	DC 2P-250A

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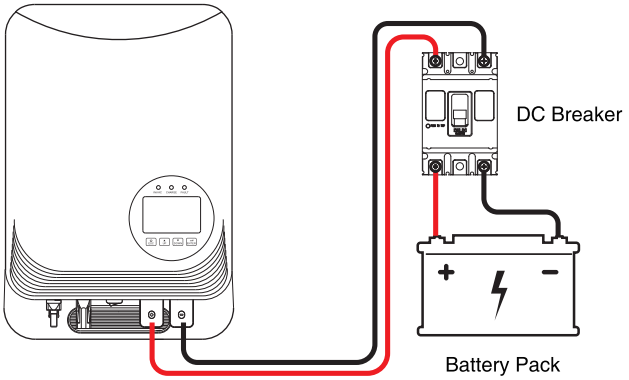
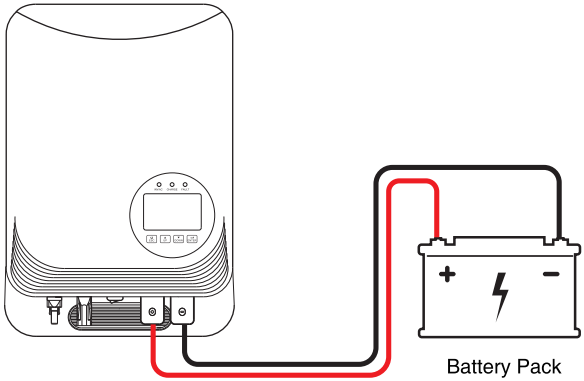
Integrated Combiner Box Hybrid Inverter	Battery protector type
24V/4200W	16mm^2
48V/6200W	16mm^2
48V/9200W	25mm^2



Hybrid inverter battery wiring diagram



Integrated Combiner Box Hybrid Inverter Battery Wiring Schematic

Warning	1. If the distance between the inverter and the battery is far, please use bigger wires, which can reduce the voltage drop to improve the system performance. 2. The above wiring diameter and circuit breaker are for reference, please select the appropriate wiring diameter and circuit breaker according to the actual situation.

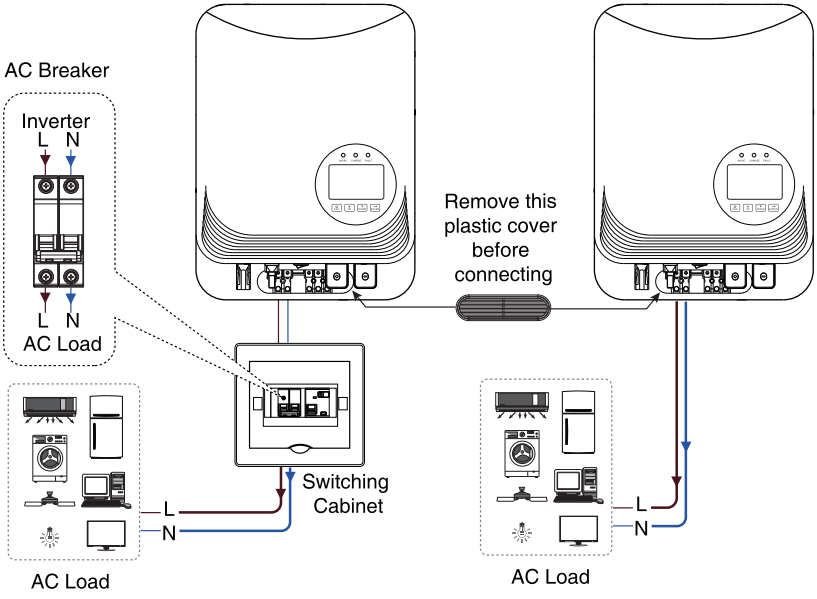
Step 3: Connecting the AC Output

● AC Output Connection Cable Specifications and Circuit Breaker Selection

Hybrid Inverter	AC Output Cable	AC breaker
24V/4200W	2.5mm^2	AC 2P-32A
48V/6200W	4mm^2	AC 2P-40A
48V/9200W	6mm^2	AC 2P-63A

Integrated Combiner Box Hybrid Inverter	AC Output Wire Diameter
24V/4200W	2.5mm^2
48V/6200W	4mm^2
48V/9200W	6mm^2

Warning	1.High voltage danger! AC output will generate high voltage, during wiring, please do not close the circuit breaker, and make sure the parts are connected correctly. 2. AC equipment should be determined according to the continuous output power of the inverter, and the shock power of AC equipment is not allowed to be greater than the instantaneous shock power that the inverter can withstand, or it may lead to the damage of the inverter. 3. If inductive loads such as motors are connected to the load side, or two-way transfer switches are connected, it is necessary to install an over-voltage and over-current protector separately on the AC output side of the inverter.



Hybrid inverter AC output wiring diagram

Integrated Combiner Box Hybrid Inverter AC Output Wiring Diagram

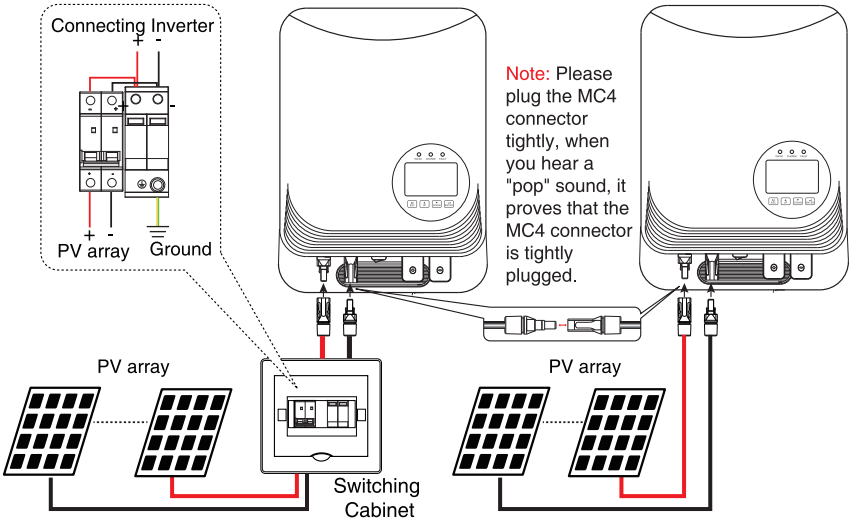
Step 4: Connect the PV array

● Recommended PV array wiring specifications and selection of circuit breakers and surge arresters

Hybrid Inverter	PV input cable	PV Input Breaker
24V/4200W	6mm^2	AC 2P-40A
48V/6200W	6mm^2	AC 2P-40A
48V/9200W	6mm^2	AC 2P-63A

Integrated Combiner Box Hybrid Inverter	PV input cable
24V/4200W	6mm^2
48V/6200W	6mm^2
48V/9200W	6mm^2

Warning	1. High voltage hazard! The PV module will generate very high voltage, do not close the circuit breaker during the wiring process, and make sure the "+" and "-" pole leads of each component are connected correctly. 2. It is strictly prohibited to connect the positive or negative pole of the PV module to the earth, otherwise the inverter will be damaged.
Warning	A lightning protector needs to be installed on the PV input of the inverter.



Hybrid Inverter PV Array Wiring Diagram

Integrated Combiner Box Hybrid Inverter PV Array Wiring Diagram

Warning	1. The voltage in series should not be greater than the maximum PV input open-circuit voltage of 440V (25°C ambient temperature). 2. The PV open-circuit voltage in series should be 150V above the starting voltage (25°C ambient temperature).

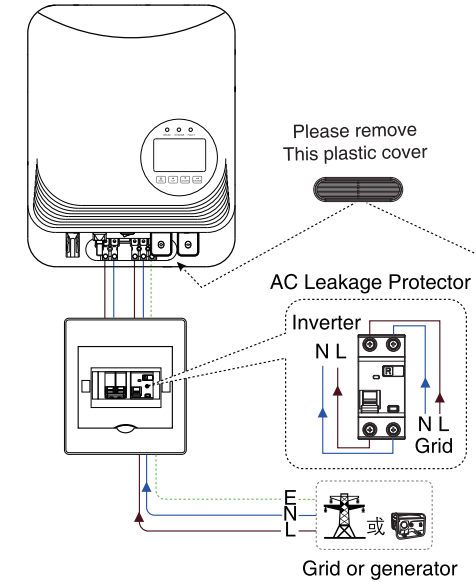
Step 5: Connect to the grid or generator

- Recommended grid input wiring specifications and leakage protector selection

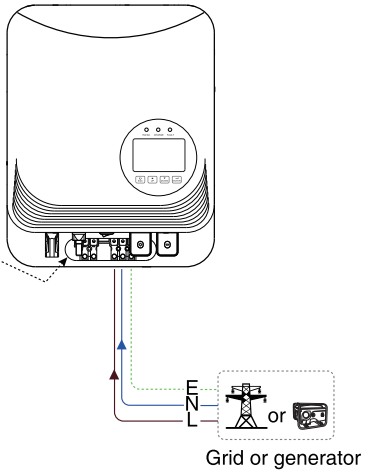
Hybrid Inverter	Grid input cable	Selection of grid input leakage protector
24V/4200W	2.5mm^2	AC 2P-32A
48V/6200W	4mm^2	AC 2P-40A
48V/9200W	6mm^2	AC 2P-63A

Integrated Combiner Box Hybrid Inverter	Grid input cable
24V/4200W	2.5mm^2
48V/6200W	4mm^2
48V/9200W	6mm^2

Warning	1. High voltage hazard! The power grid generates very high voltage. During wiring, do not close the leakage protector and make sure that the parts are connected correctly. 2. In order to effectively shield the external electromagnetic interference and prevent the shell from being charged and causing electric shock injury to the human body. When there is grid connection, but the inverter case must be grounded.
Warning	There are many types of generators with complex outputs that need to be tested in practice before they can be used.



Hybrid Inverter Grid Input Wiring Diagram



Integrated Combiner Box Hybrid Inverter Grid Input Wiring Diagram

Step 6: Connect the communication module

Connect the WIFI module to the communication interface of the inverter, you can monitor the inverter remotely on the mobile phone APP, support to set or query the parameters of the inverter, please refer to the cloud APP,WIFI module manual for the specific setting method.

VI. Installation Completion Inspection

Before commissioning, thoroughly check the installation of the equipment. In particular, you should check that the voltages at the DC and AC terminals comply with the requirements of the inverter and that the polarity is correct. Check that all connections have been made in accordance with the relevant standards and that the system is well earthed. The earthing resistance is important for the safety of the whole system and must be determined before the first commissioning.

⚠ Warning	Before commissioning, make sure that all switching circuit breakers on the DC and AC sides are disconnected.

Step 1: Inverter

There are a series of checks that need to be performed on the inverter before it is powered up:

1. Check that the installation and wiring of the inverter is complete according to the contents.
2. Make sure all AC and DC circuit breakers are disconnected.

Step 2: Check AC side voltage

1. Check if the AC input of the inverter is properly connected to the grid or generator.
2. Check if the grid or generator voltages are all within the predetermined range and record the voltage values.

Step 3: Check DC Voltage

1. Check that the battery pack voltages are all within the predetermined range and ensure that the battery pack input polarity is correct.
2. Check that the PV voltages are all within the predetermined range and ensure that the PV array input polarity is correct.

⚠ Warning	It is strictly forbidden to disconnect the circuit breaker directly during normal operation of the machine to avoid damage to the circuit breaker by arcing. It may also cause damage to the inverter in severe cases.

VII. Commissioning tests

Power-on operation procedure

After all the above items are satisfied, the inverter can be switched on.

The operation steps are as follows:

Step 1: Check again that all wiring is connected correctly.

Step 2: Close the battery circuit breaker.

Step 3: Switch on the inverter after completing the above steps.

The LCD screen will light up after the machine is switched on normally, and you can check the running status of the machine through the LCD screen.

Warning	1、Close the battery circuit breaker first to make the inverter work normally, and then close the PV array circuit breaker and the grid leakage protector; if you don't do it according to this operation, it may cause the inverter to be damaged, which will not be covered by the warranty. 2、After the inverter is powered on, the AC output is open by default. Before opening the AC output circuit breaker, please reconfirm that the AC output is correctly connected to the load without any safety hazards.

Step 4: Parameter setting via the keys on the inverter display.

Warning	Specific settings are detailed in the manual parameter settings, if you have questions before setting, please consult the relevant technical staff.

Step 5: Test the inverter by trial operation

Open the PV module circuit breaker and grid leakage protector in turn, close the AC output circuit breaker after the AC output is normal, open the AC loads one by one, so as to avoid the protection action due to the large momentary impact generated by the simultaneous opening of the loads, you can view the system operation status through the LCD screen, see the manual for details.

Warning	1、If you supply power to different AC loads, it is recommended to turn on the load with larger inrush current first, and then turn on the load with smaller inrush current after the load has stabilised. 2、If the inverter can not work normally or the LCD or indicator light is abnormal, please refer to the instruction manual for troubleshooting, or contact our after-sales service personnel.

Shutdown operation process

Normal Shutdown During normal maintenance or overhaul, the machine should be shut down according to the following procedure:

Step 1: Switch off the machine through the switch on the inverter.

Step 2: Manually disconnect the grid input leakage protector and PV circuit breaker.

Step 3: Disconnect the inverter AC load breaker and manually disconnect the battery breaker.

DISCLAIMER

Before use, please read the installation guide for this product to ensure that it is used correctly when fully understood. After reading, keep the installation guide in a safe place for future reference. Failure to operate this product correctly could cause you serious injury to yourself or others, or result in product damage and property loss. By using this product, you are deemed to have understood, recognised and accepted all the terms and contents of this document. The user undertakes to be responsible for his/her own behaviour and all consequences arising therefrom. The Company shall not be liable for all damages arising from the user's failure to use the product in accordance with the Installation Guide. In compliance with laws and regulations, the Company reserves the right of final interpretation of this document and all documents related to the product. This document is subject to change, revision or termination without prior notice. Please visit our official website for the latest product information.

Contact: