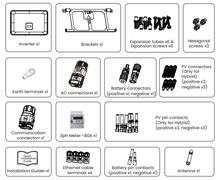
Quick Installation Guide

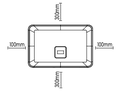
5-15kW Three Phase Storage Inverter

1. Packing List

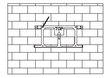


2. Mounting Steps

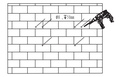
Step 1:
Please make sure the inverter will be installed with a proper distance as shown below.



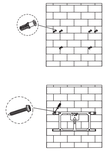
Step 2:
Select the installation location, place the bracket on the wall, and mark the hole positions.



Step 3:
Drill the 6 holes with a ϕ8 drill bit.
Depth: at least 50mm.
Hammer the expansion tubes.

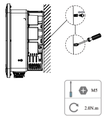


Step 4:
Installing the Bracket.
Screw the expansion bolts.



Step 5:
Match the inverter with wall bracket.

Step 6:
Lock the screws on the side (Left and right). Make sure the inverter is firmly attached.

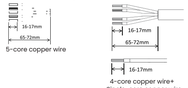


3. GRID Connection

Step 1:
Prepare AC wire.
Cable is a five-core cable with a diameter less than 9-16 mm.
Cross-sectional area of wire is shown in the following table.

Model (kW)	5.0	6.0	8.0	10.0	12.0	15.0
Cable (GRID)	4.0mm²			6.0mm²		6.0mm²
Cable (EPS)	4.0mm²			6.0mm²		6.0mm²
Micro-Breaker	20A			25A		32A

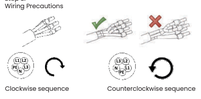
Step 2:
Dimension of stripping line
Dimension of stripping line outside machine



5-core copper wire

4-core copper wire+
Single-core copper wire

Step 3:
Wiring Precautions



Clockwise sequence

Counterclockwise sequence

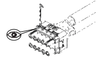
Step 4:
Seal accessory option
A. Ø18: The recommended outer diameter of the cable is 17.5-18.5mm.
B. Ø21: The recommended outer diameter of the cable is 19-21mm.
C. Ø6: When the four wire system is used, the special hole for the ground wire is recommended to be applicable to the outer diameter of the cable. (5-6mm)

NOTE
If the outer diameter of the cable is greater than 18mm, remove part 1. When 4-core wire is used, Ø6 holes are ground wire through holes. Remove part 3.

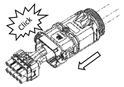
Installation steps for 5-core wire
Thread the stripped wire into the lock nut and the main body in turn. (the flexible wire needs to be riveted to the insulated terminal)

First, insert the EPS end cable into the EPS end of the rubber core. After the cable is in place through the perspective hole, tighten the screw using an 52.5 hexagon wrench with a torque of 2.5±0.1N·m.

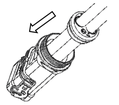
Insert the GRID end-core wire into the GRID end of the rubber core, observe the perspective hole cable in place, use 52.5 hex wrench to tighten the screws, torque 2.5±0.1N·m ;



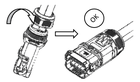
Insert the main body into the rubber core and hear the 'click' sound.



Seal plugin to main body.



Tighten the nut with an open-ended wrench.
(torque 10.0±0.1N·m, Complete the installation)

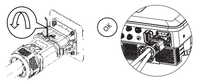


Inserted
Open the latch.

Align the female end with the male end in the anti-stay position.

After the male and female insert the card point into the tracks lot, press the lock.

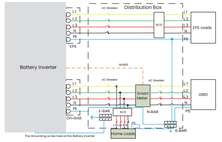
Tighten the screws with the 52.5 hexagon wrench with a torque of 2.5±0.1N·m. Installation completed.



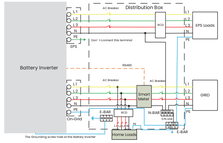
4. EPS Connection

EPS wiring diagram

For countries such as **China, Germany, the Czech Republic, Italy, etc,** please follow local wiring regulations.
This diagram is an example for an application in which neutral is separated from the PE in the distribution box.



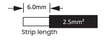
For countries such as **Australia, New Zealand, South Africa, etc,** please follow local wiring regulations.
According to Australian safety requirements, **the N cables of the GRID side and EPS side must be connected together**. Otherwise, the EPS function will not work.



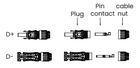
5. PV connection

PV Wiring (For Hybrid Only)

Step 1:
Prepare PV wire. Choose 12 AWG wire to connect the PV module. Trim 6mm of insulation from the wire end.

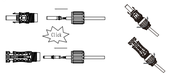


Step 2:
Separate the PV connector as below.



Step 3:
To insert terminal. Press the wire and terminal tightly with a wire clamp. Rivet terminal. Ensure the conce-ntricity of metal parts and cable at some levelcrimped metal parts and cable pull tension 230N.

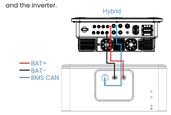
Step 4:
Insert pin into the male or female plug. Until hear a "click".
Tighten the nut on the terminal.



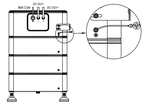
6. BAT connection

Step 1:
Prepare BAT wire.
We recommand to use the original Bat-Inverter power cable and communication cable from Battery's accessory bag. If require a longer cable, please contact our sales representative to purchase.

Step 2:
Connect the power line and communication line between the BMS and the inverter.



Step 3:
Connect the grounding cable to ensure that all batteries are grounded.
Wiring shall be connected in the sequence as shown in below.



The connection between BMS and inverter should be less than 10m.

NOTE
The number of battery packs cannot be less than 3 pcs.

7. Grounding connection

Grounding Wiring

Step 1:
Prepare ground wire.

Step 2:
To insert Earth terminal.
Press the wire and terminal tightly with a wire clamp.

Step 3:
screw the ground screw with screwdriver as shown below.

8. Firmware Update

Preparation:
Please ensure the inverter is powered on with steady PV/BAT and AC power.
Please prepare a PC and an U-Disk.
Please note the U-Disk shall be less than 32GB and its formats is fat16 or fat 32.
Please DO NOT apply USB3.0 U-Disk on USB port, the inverter USB port only support for USB2.0 U-disk.

Step1:
Please contact our service support to get the update files, and extract it into your U-Disk as follow:
update/master/ H3_G2_X9_Master_Vx.xx.bin
update/slave/ H3_G2_X9_Slave _Vx.xx.bin
update/manager/ H3_G2_Smart_Manager_Vx.xx.bin

NOTE
Vx.xx is version number.

Step 2:
Unscrew the waterproof lid and insert U-disk into the "USB" port at the bottom of the inverter.

Step 3:
The LCD will show the selection menu. Then press up and down to select the one that you want to upgrade and press "OK" to confirm to upgrade.

Step 4:
After the upgrade is finished, pull out the U-disk. Screw the waterproof lid.

9. RJ45 connection

The machine has three RJ45 terminals, which are meter, Ethernet, and DRM functions
The definition of meter port pin is as follows:

PIN Port	1	2	3	4	5	6	7	8
Meter	meter 485B	meter 485A	/	/	/	/	meter 485B	meter 485A

The definition of Ethernet port pin is as follows:

PIN Port	1	2	3	4	5	6	7	8
Ethernet	TX+	TX-	RX+	/	/	/	RX-	/

The definition of DRM port pin is as follows:

PIN Port	1	2	3	4	5	6	7	8
DRM	+3.3V	DRM	DRM2	DRM3	DRM4	DRM5	GND	GND

RJ45 Wiring

Installation Procedure of the RJ45 Connector

Step 1
Insert the network cable into the wire-locking nut, sealing plug and mainbody in turn. The sealing plug is stuck into the network cable through the gap on the sealing side.

Step 2
Insert the network cable plug into the matched RJ45 panel mount connector.

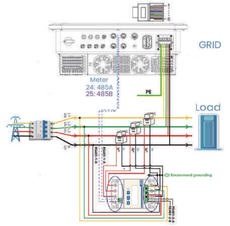
Step 3
Tighten the connector mainbody by an open-ended wrench into the RJ45 panel mount connector with a torque 1.2±0.2N·m.

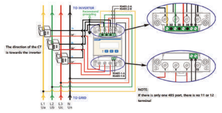
Step 4
Insert the sealing plug into the main body of RJ45 cable end connector.

Step 5
Tighten the connector's nut by an open-ended wrench with a torque 1.2±0.2N·m.

CT-Meter Type

Step 1:
Insert L1/L2/L3/N wires, CT and RS485A/B cable into the meter. Please refer to the meter wiring diagram on side of meter itself. During CT use, the direction of the CT arrow faces the inverter.





Step2
Connect RS485A to pin 2/8 of the inverter METER/RS485 port. Connect RS 485B to pin 1/7 of the inverter METER/RS485 port. Please use twisted pair cable.

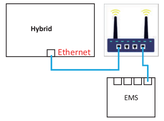
PIN Port	1	2	3	4	5	6	7	8
Meter	meter 485B	meter 485A	/	/	/	/	meter 485B	meter 485A

Step 3:
The transformation ratio setting of a CT meter needs to be consistent with the transformation ratio of a CT meter. The transformation ratio setting method for a CT meter is as follows:

Introduction to Ethernet port:

The network port is mainly used for communication, transmitting data from the inverter to the network for detecting the daily operation status of the machine, and can control the inverter's wake-up through EMS.

Ethernet connection Diagram



DRM port

DRM is mainly used to implement the Ripple Control function. The prerequisite for the use of this function is the selection of the German grid connection regulation VDE 4105 and the use of the RCR function.

The ripple control function is described below:

Switching state	Output active power (%Pn)
No contact closed	100%
Several contacts closed	100%
Contact DRM 1 to +3.3V	60%
Contact DRM 2 to +3.3V	30%
Contact DRM 3 to +3.3V	0%
Contact DRM 4 to +3.3V	Immediate OFF
Contact Drm0 to 3.3V	AC Max.Chr power limit to 4.2kw under Vde4105 Safty

10. COM connection

Introduction to COM port:

The COM port mainly includes EMS485, Meter485, WIFI485, Estop port, two relay output ports, two parallel ports and a toggle switch, +12V and corresponding relay output signals.

The ripple control function is described below.

EMS 485:
Supports Modbus485 communication, which can be used to read and control machines.
The specific protocol is provided by the manufacturer.

Meter 485:
Similar to the Meter485 interface, this interface is designed to be redundant.

Wifi 485:
For internal testing.

Estop port:
When short circuiting ESTOP and GND, the machine will stop working.

DY OUT:
The machine has two DY OUT interfaces, with two internal contacts of relays hat can drive loads of 230VAC1A/50VDC0.5A, and can be used for powering on and starting heat pumps.

PARA port RJ45:
Used for parallel communication, it is necessary to set the DIP switch to the ON state during parallel operation. +12V and RY-Out are used to control external relay switches and cannot be used for other functions.

24PIN Wiring

Installation Procedure

Step 1
Remove the plug inside the plug and thread the terminal according to the sequence shown in the illustration.

Step 2
Insert the wires into the corresponding terminals.

Step 3
And use a screwdriver to crimp the wire, screwing torque 1.2+/-0.1N·m.

Step 4
Arrange the core line, the rubber core areamust not appear to ride the line. The rubber core is loaded into the main body and accompanied by a "click" sound.

Step 5
Install the plug into the main body and plug the holes without wires with a plug.

Step 6
Lock wire nut screwed onto the body, torque 2.5+/-0.1N·m, then complete installation.

11. Inverter Start-Up