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Neovolt Product Installation Instructions

Installation I Start-up I Commissioning

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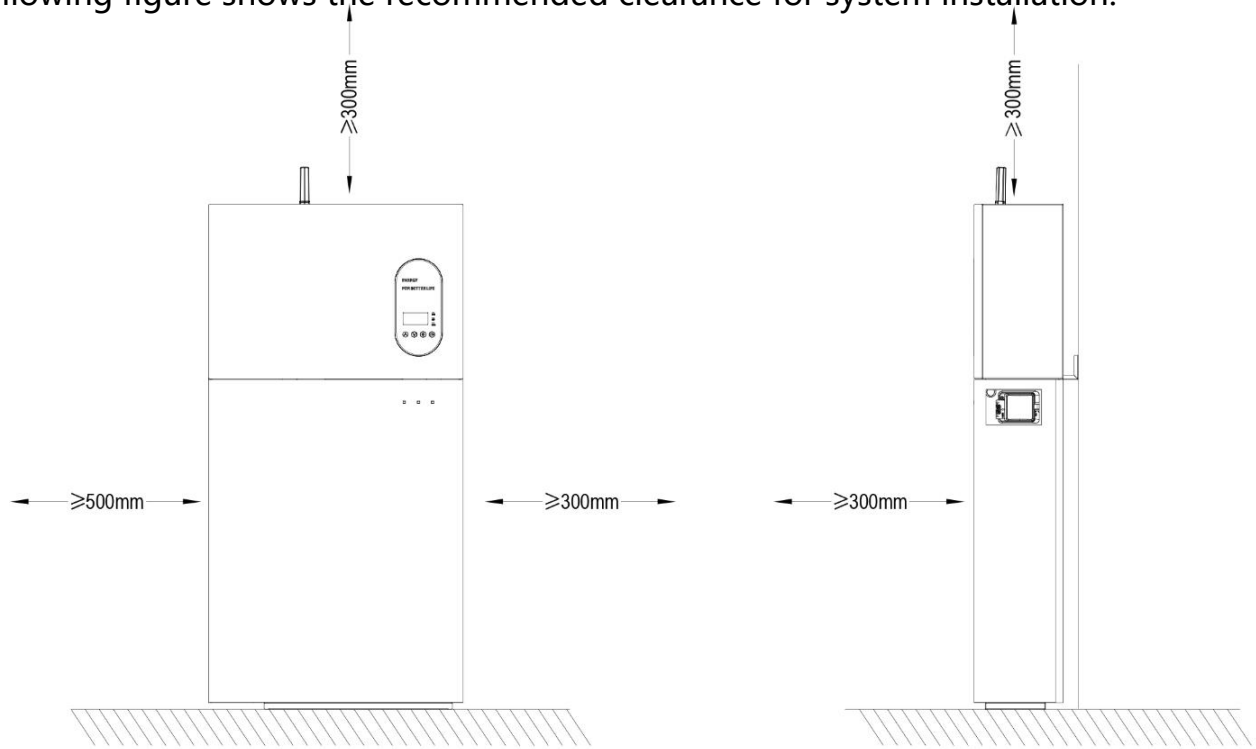
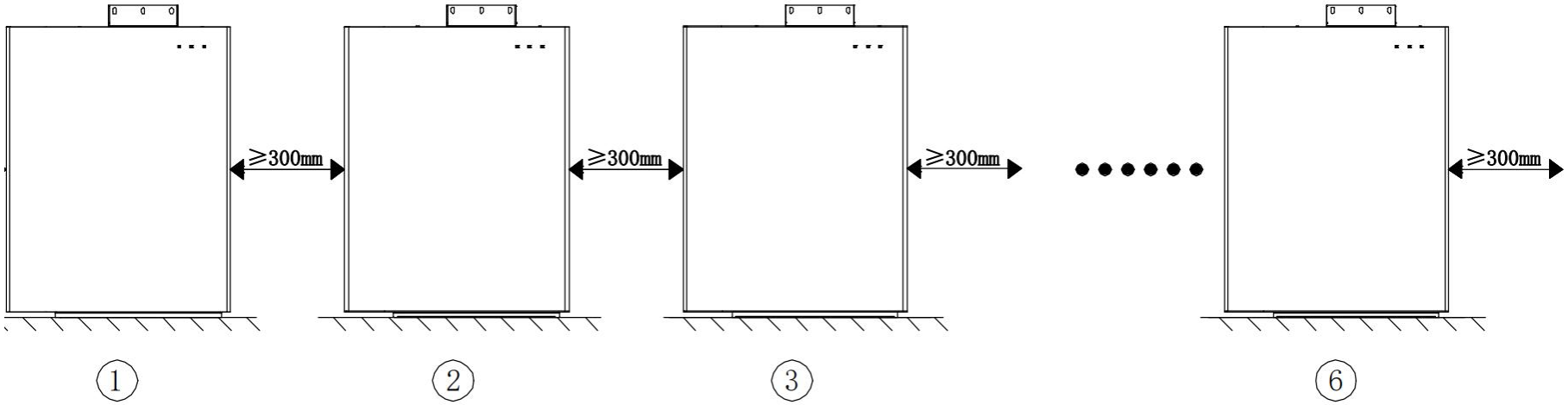
Mounting Space Requirements

- Reserve sufficient clearance around the product to ensure sufficient space for installation, maintenance and heat dissipation.
- The following figure shows the recommended clearance for system installation.



Mounting Space Requirements

- The following figure shows the recommended clearance for battery expansion.



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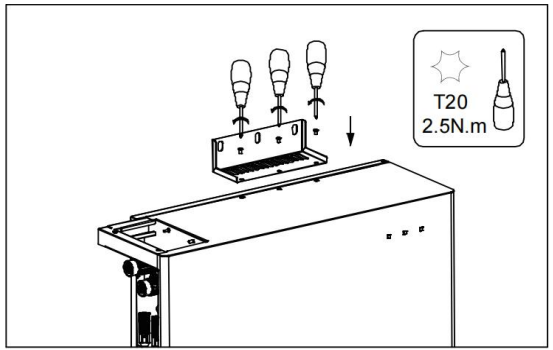
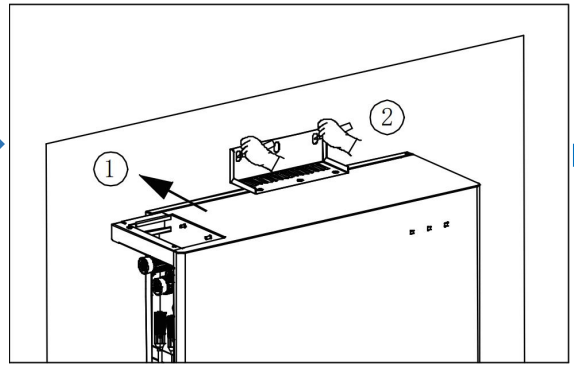
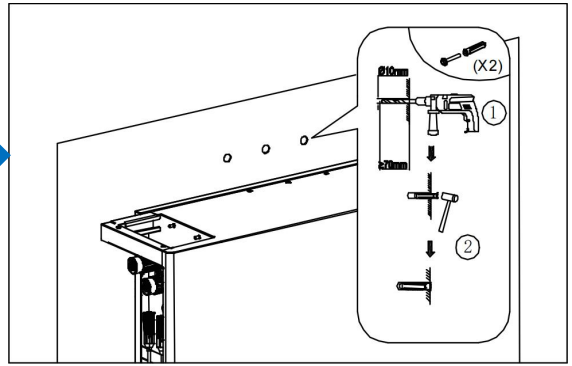
Battery Installation

Step1: Fix the bolt wall bracket on the battery body.

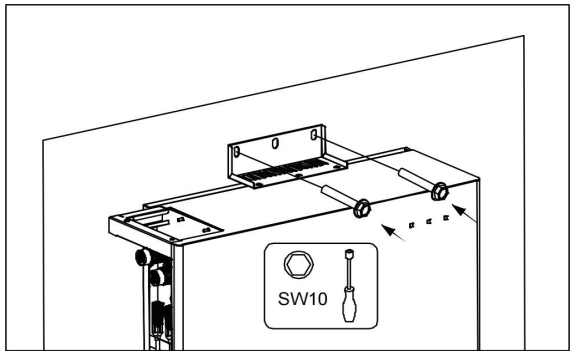


Step2: Battery against the wall, mark the drilling position and drilling.





Step3: Battery against the wall again, then attach the battery wall bracket to the wall and lock screws.



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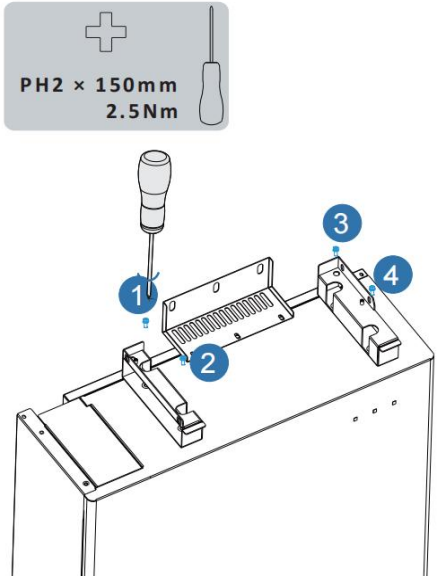
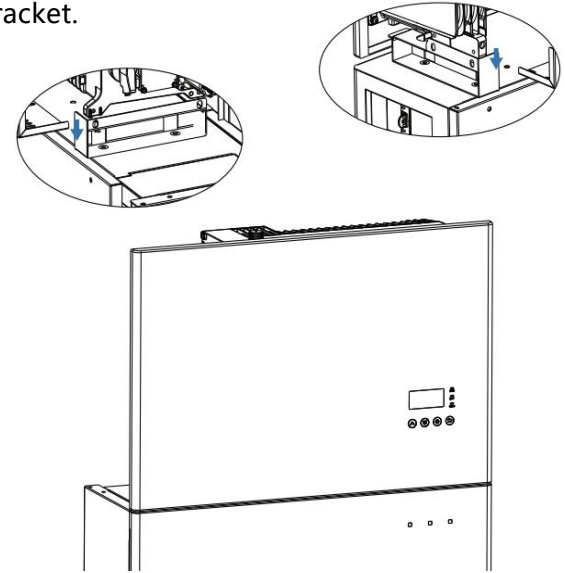
Inverter Installation

Step1: Fit the left and right side brackets onto the top of the battery.

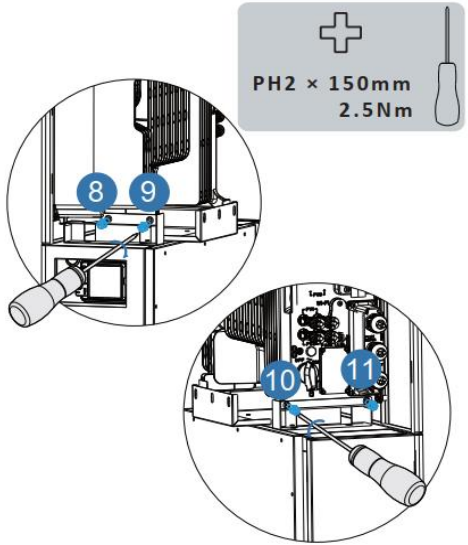
Note: The left and right brackets are different. Please install them strictly as shown to avoid reverse installation.



Step2: Attach the inverter to the mounting bracket.



Step3: Tighten the screws on both sides.



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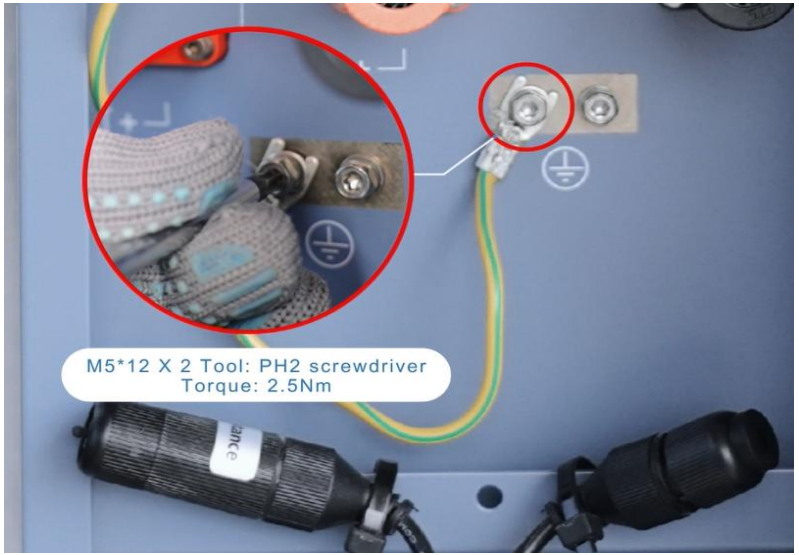
Grounding Connection

Step1: Grounding connection for inverter.

Step2: Grounding connection between inverter and battery.



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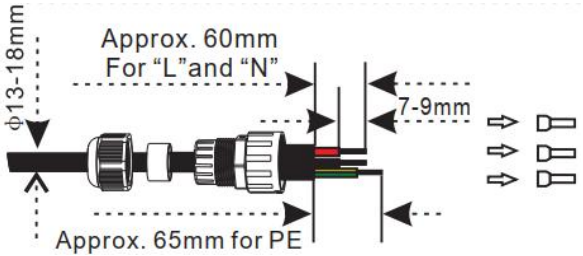
AC Grid Connector

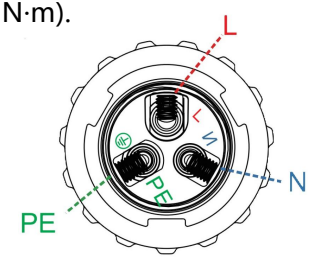
Step1: Strip and thread the wires

Route the AC cables through the swivel nut, sealing ring, and threaded sleeve in sequence. Insert the stripped wires into the European-style terminals and crimp them.
(If without a Euro terminal, it can be inserted directly with wire).

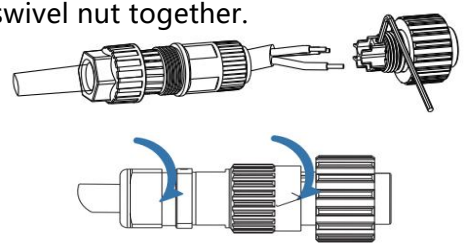


Step2: Wire and tighten the swivel nut

Insert the crimped conductors L, N and PE into corresponding terminals and tighten the screws(torque 1.5±0.1N·m).

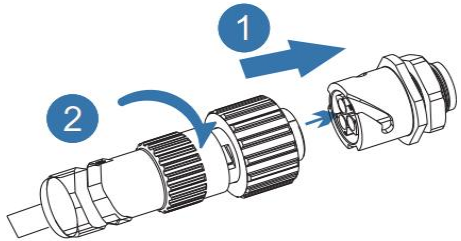


Assemble the locking cap, threaded sleeve and swivel nut together.



Step3: Plug and tighten

Plug the AC Connector into the corresponding AC port on the inverter and tighten it clockwise.



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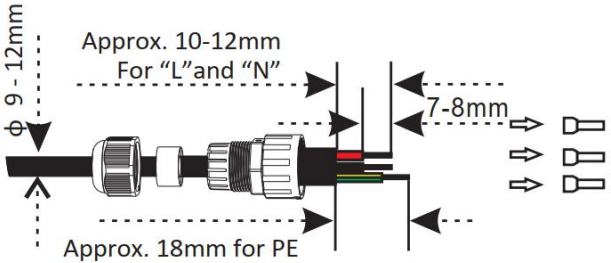
BACKUP Connector

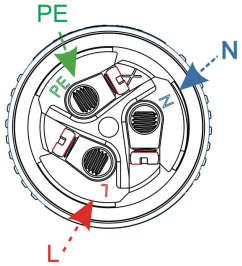
Step1: Strip and thread the wires

Route the AC cables through the swivel nut, sealing ring, and threaded sleeve in sequence. Insert the stripped wires into the European-style terminals and crimp them.
(If without a Euro terminal, it can be inserted directly with wire).

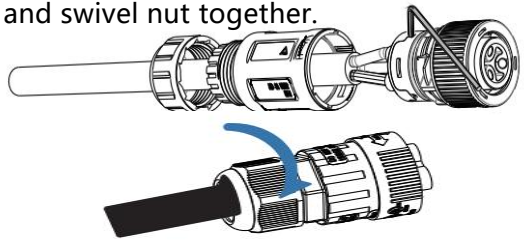


Step2: Wire and tighten the swivel nut

Insert the crimped conductors L, N and PE into corresponding terminals and tighten the screws(torque 1.5±0.1N·m).

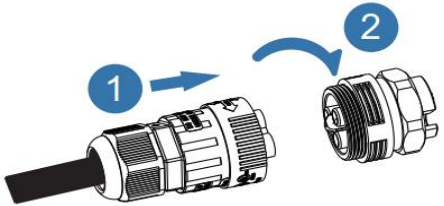


Assemble the locking cap, threaded sleeve and swivel nut together.



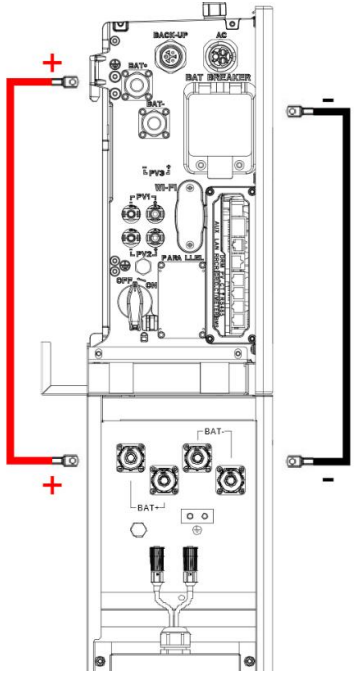
Step3: Plug and tighten

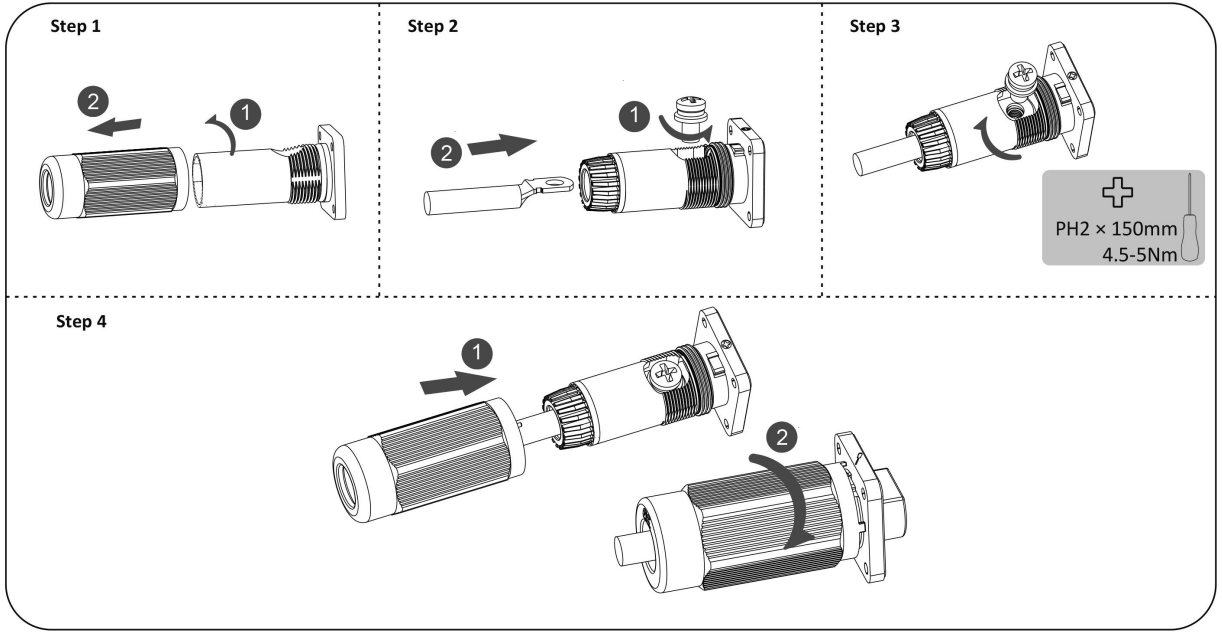
Plug the BACKUP Connector into the corresponding BACKUP port on the inverter and tighten it clockwise.



BAT Power Cable Connection

Step1: Switch off the battery breaker on the inverter and battery(It should be off before delivery. If it's not, switch it off first).
Step2: Take out the battery power cables from the package and connect the terminals as shown in the picture to ensure the correct polarity connection. It is recommended to connect the battery side first, and then connect the inverter side.
Note: When connecting, first connect the BAT- cable(black), then the BAT+ cable(red) to prevent a short circuit.





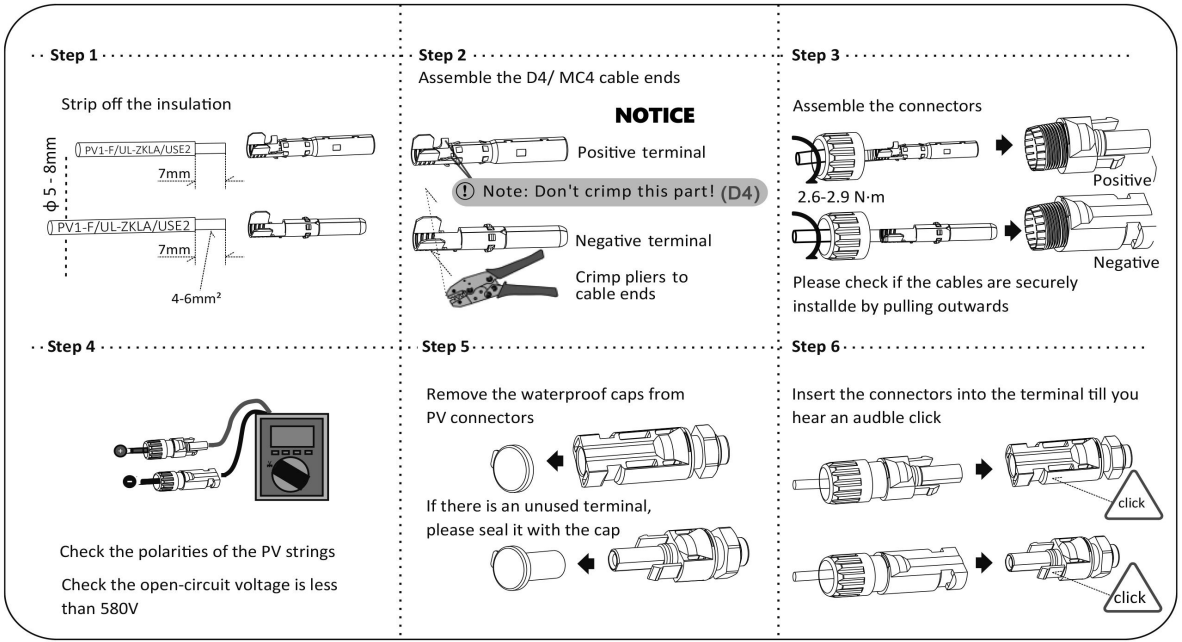
PV Connection

Please ensure the following before connecting PV strings:

- Make sure the open voltage of the PV strings will not exceed the max. DC input voltage (580Vdc).
- Make sure the polarity of the PV connectors is correct.
- Make sure the PV-switch, breakers of batteries, AC-BACKUP and AC-Grid are all in their off-states.
- Make sure the PV resistance to ground is higher than 200kOhms.

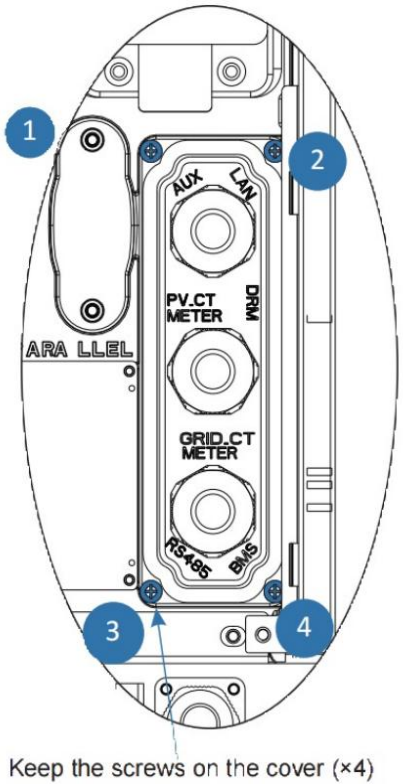
The inverter uses the Vaconn D4/MC4(optional) PV connectors.

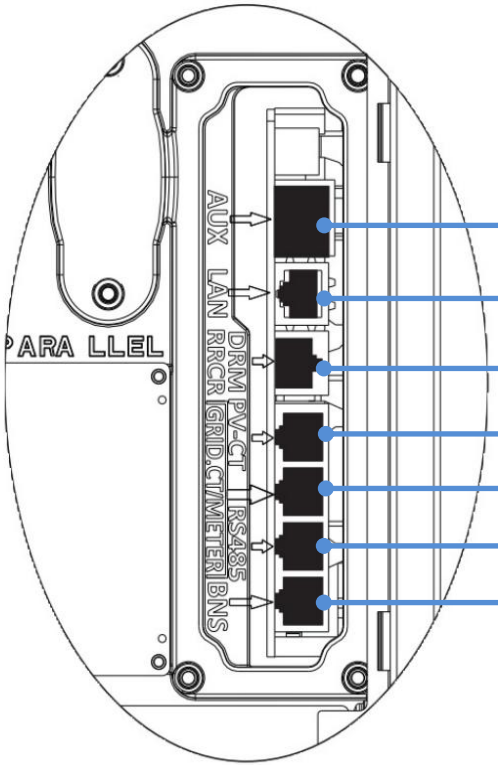
Please follow the picture below to assemble the PV connectors. PV conductor cross section requirements: 4~6 mm².



Communication Cable Connection

Step1: Unscrew the four screws on the COM cover. Communication ports as follows:





AUX: Dry contact, diesel engine

LAN: Connect the network cable to the router

DRM/RRCR: This port for factory test only, please do not connect

PV_CT: PV CT connection

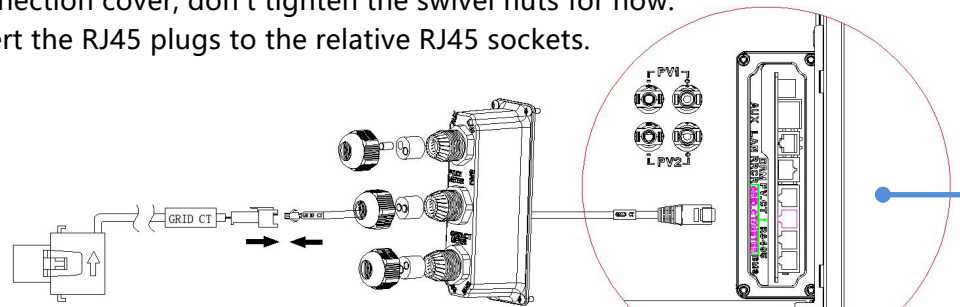
GRID_CT/METER: Grid CT or Meter connection

RS485: This port for factory test only, please do not connect

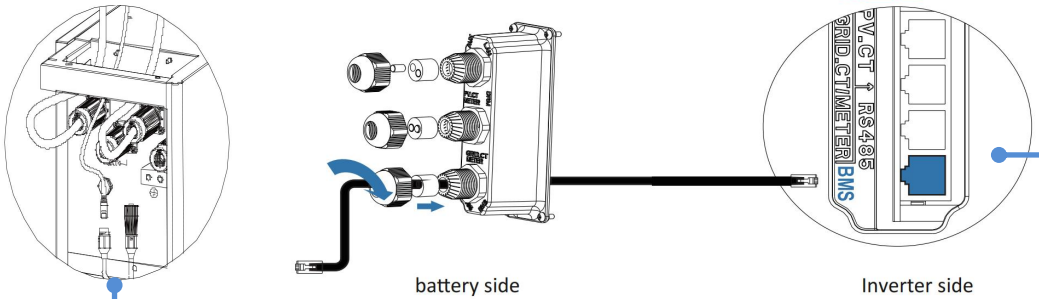
BMS: Battery communication cable connection

Communication Cable Connection

Step2: Loosen the cable glands on the COM connection cover, lead the communication cables through the cable glands of the COM connection cover, don't tighten the swivel nuts for now.
Insert the RJ45 plugs to the relative RJ45 sockets.



Grid CT or Meter comm cable insert GRID_CT/METER.
(PV CT comm cable needs to insert PV_CT)



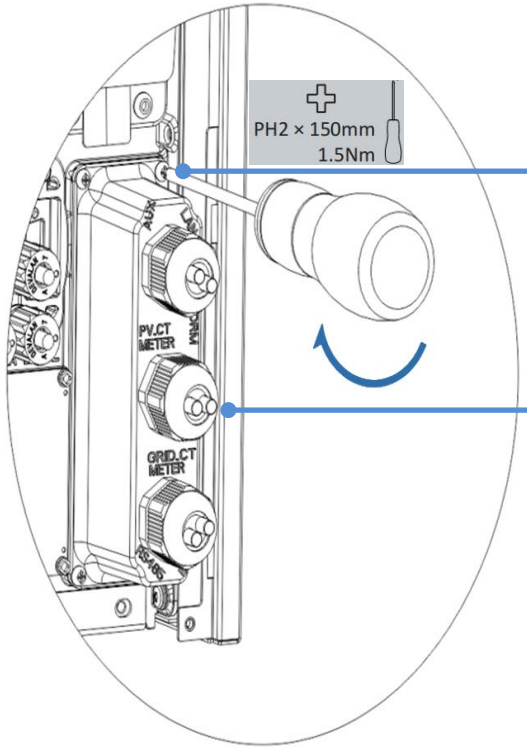
Battery comm cable insert BMS.

Battery side comm port

Note: The end of the battery communication cable marked "INV" is inserted into the BMS port of the inverter, the end marked "BAT" is inserted into the communication port of the battery.

Communication Cable Connection

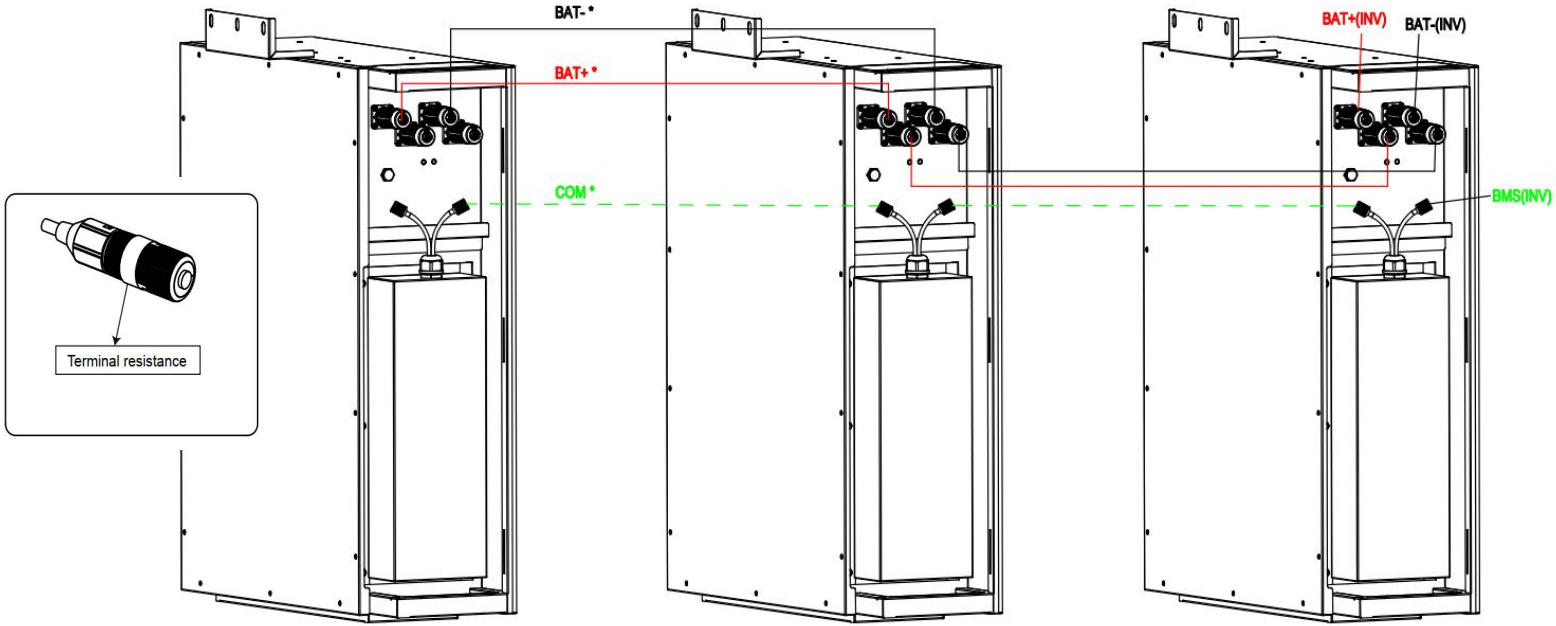
Step3: After the comm cables are connected well, reinstall the outer cover.



First, tighten the four screws on the outer cover.

Tighten the swivel nuts of the cable glands at the end.

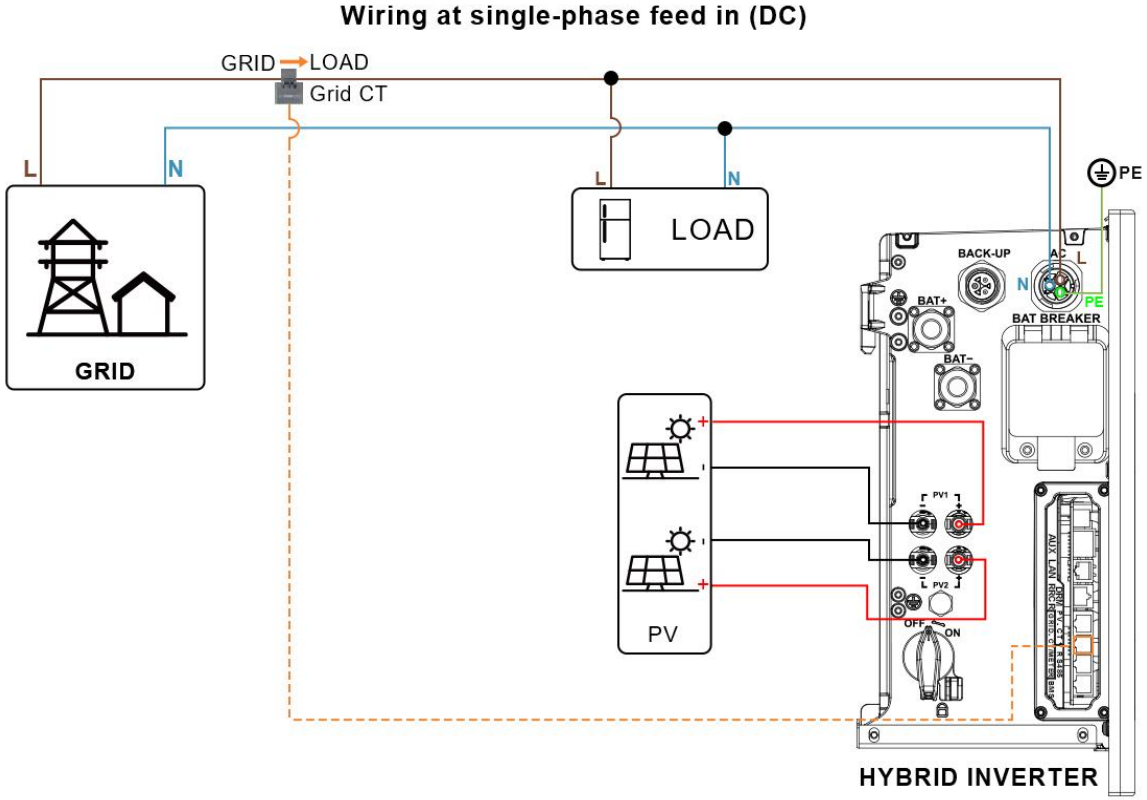
Battery Expansion



Warning:

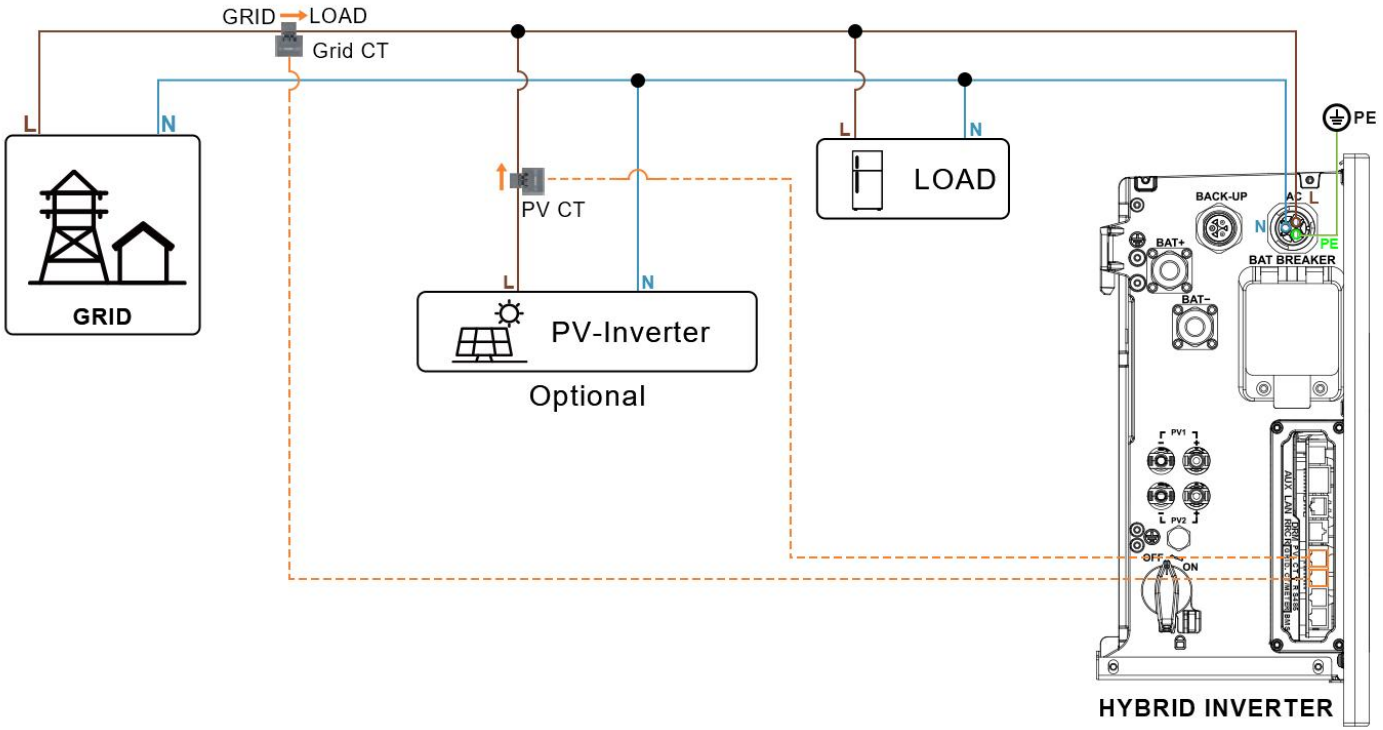
1. A maximum of 6 batteries can be installed for one system. Place batteries side-by-side. Do not stack batteries.
2. When expanding the battery, remove the terminal resistance of the previous battery and then connect the communication cables between them.
3. Do not remove the terminal resistance in the last battery.

CT Connection—Single-phase DC mode

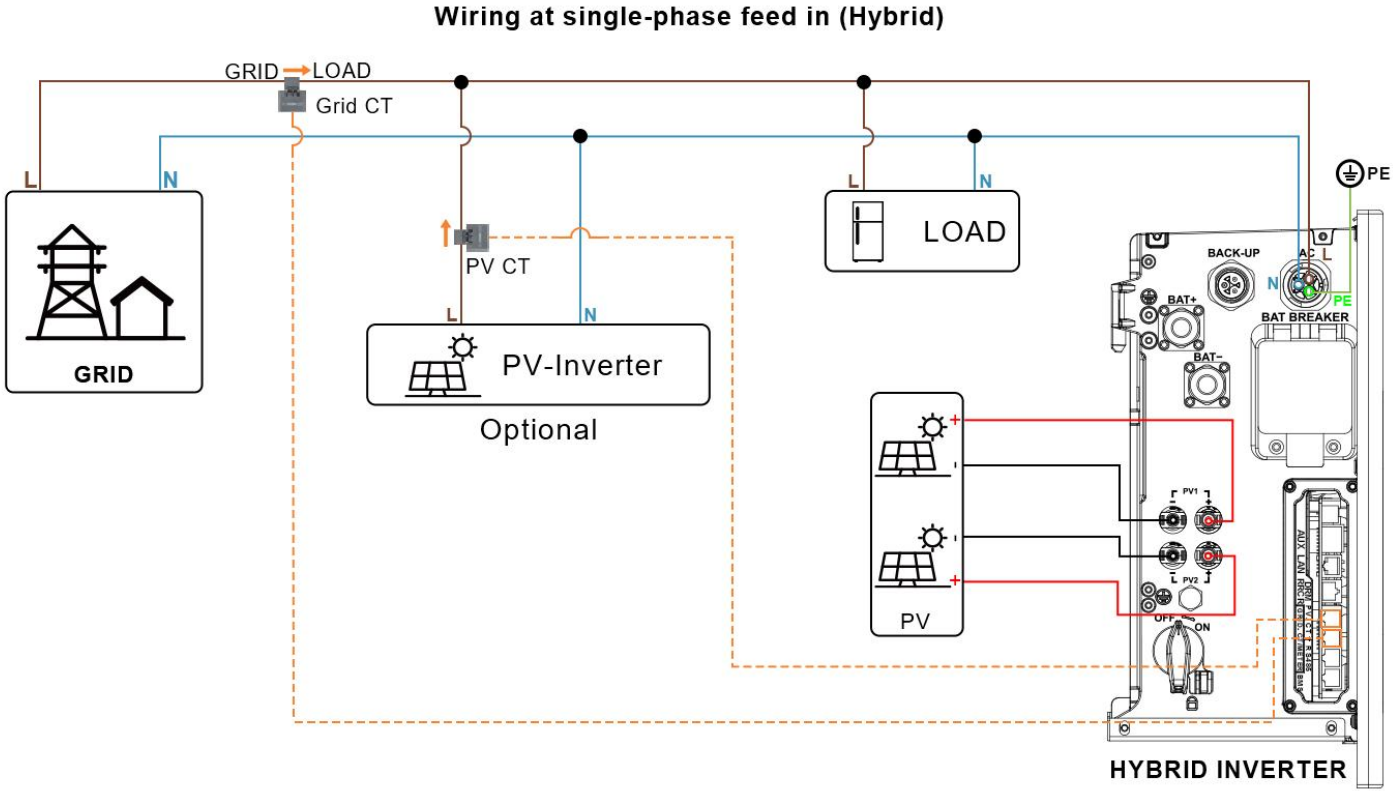


CT Connection—Single-phase AC mode

Wiring at single-phase feed in (AC)

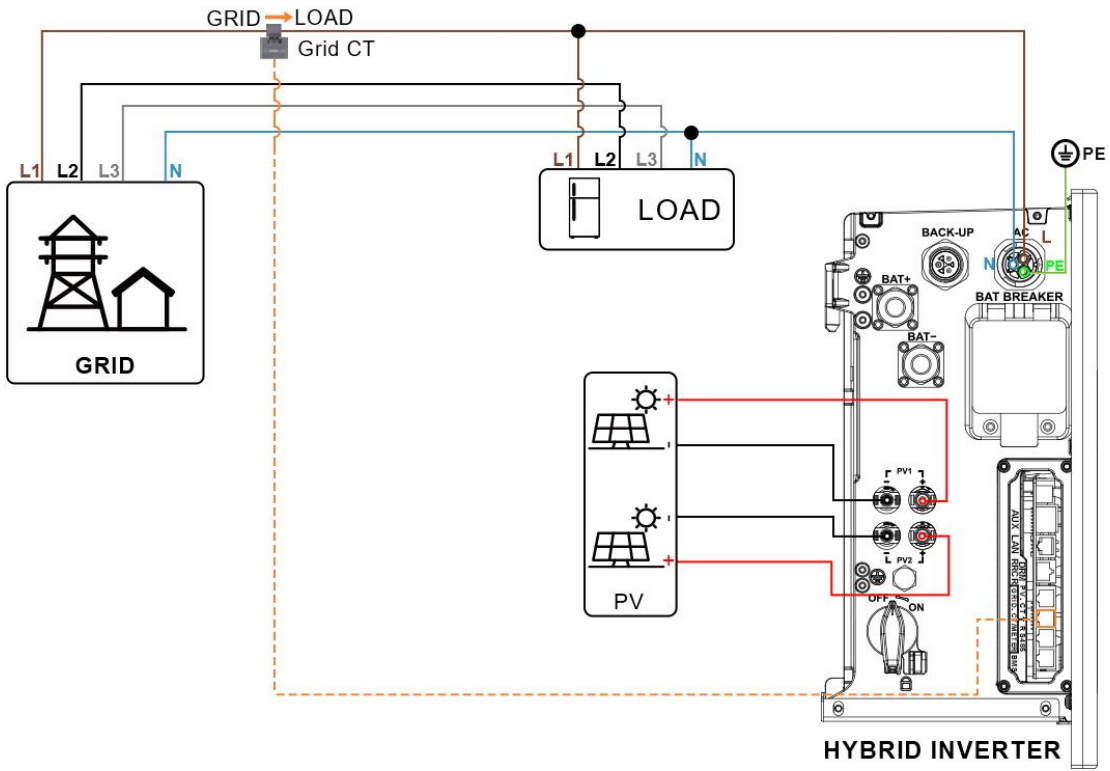


CT Connection—Single-phase Hybrid mode



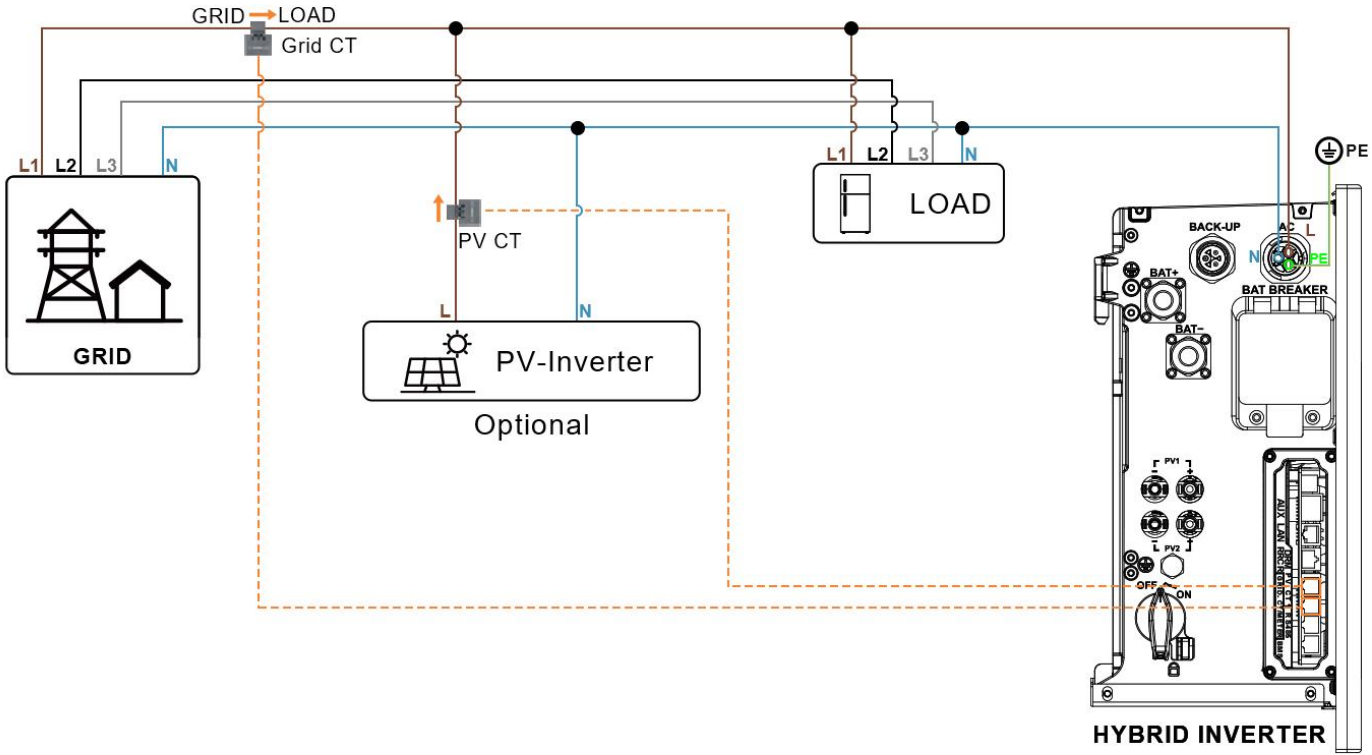
CT Connection—Three-phase DC mode

Wiring at three-phase feed in (DC)



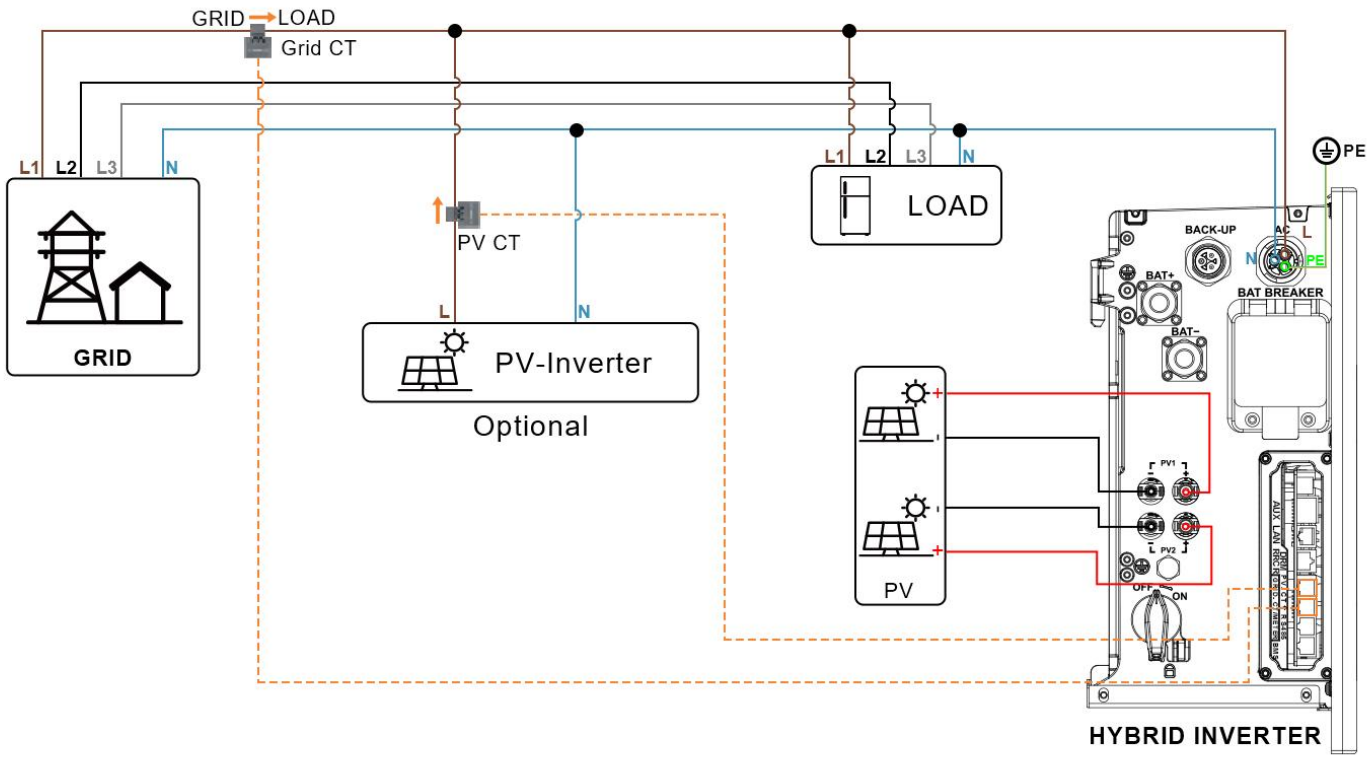
CT Connection—Three-phase AC mode

Wiring at three-phase feed in (AC)



CT Connection—Three-phase Hybrid mode

Wiring at three-phase feed in (Hybrid)



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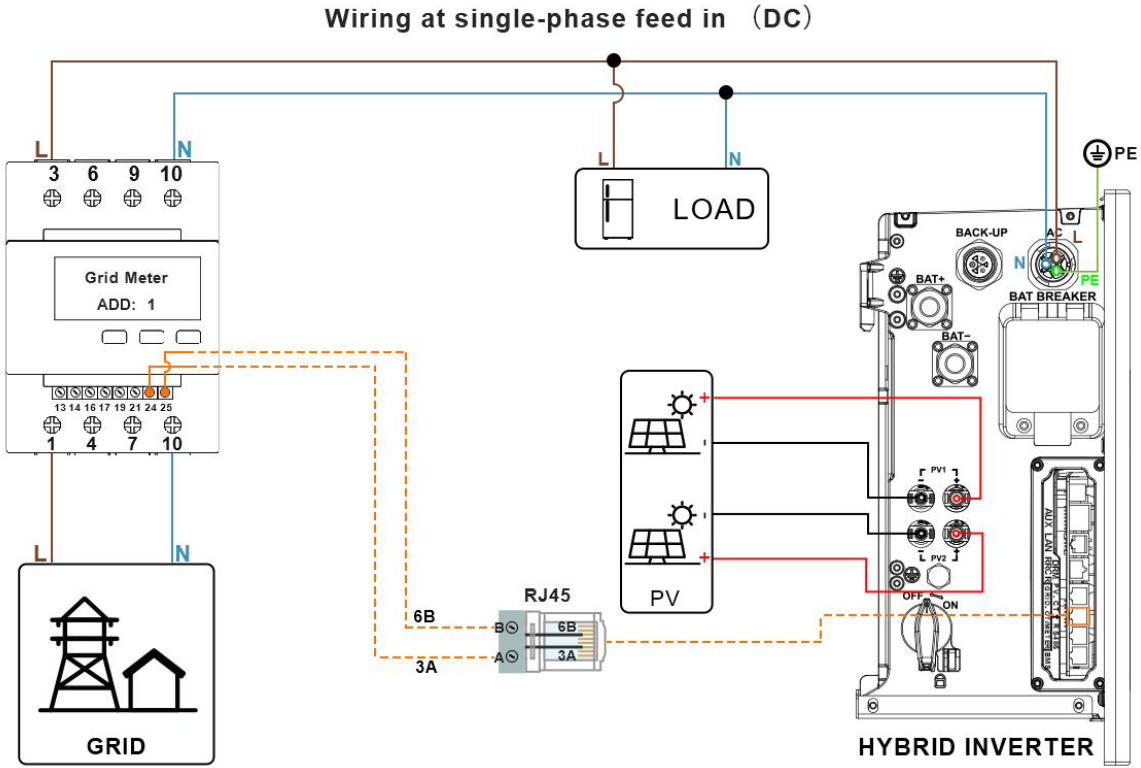
Meter Connection—Single-phase DC mode



1 System Installation

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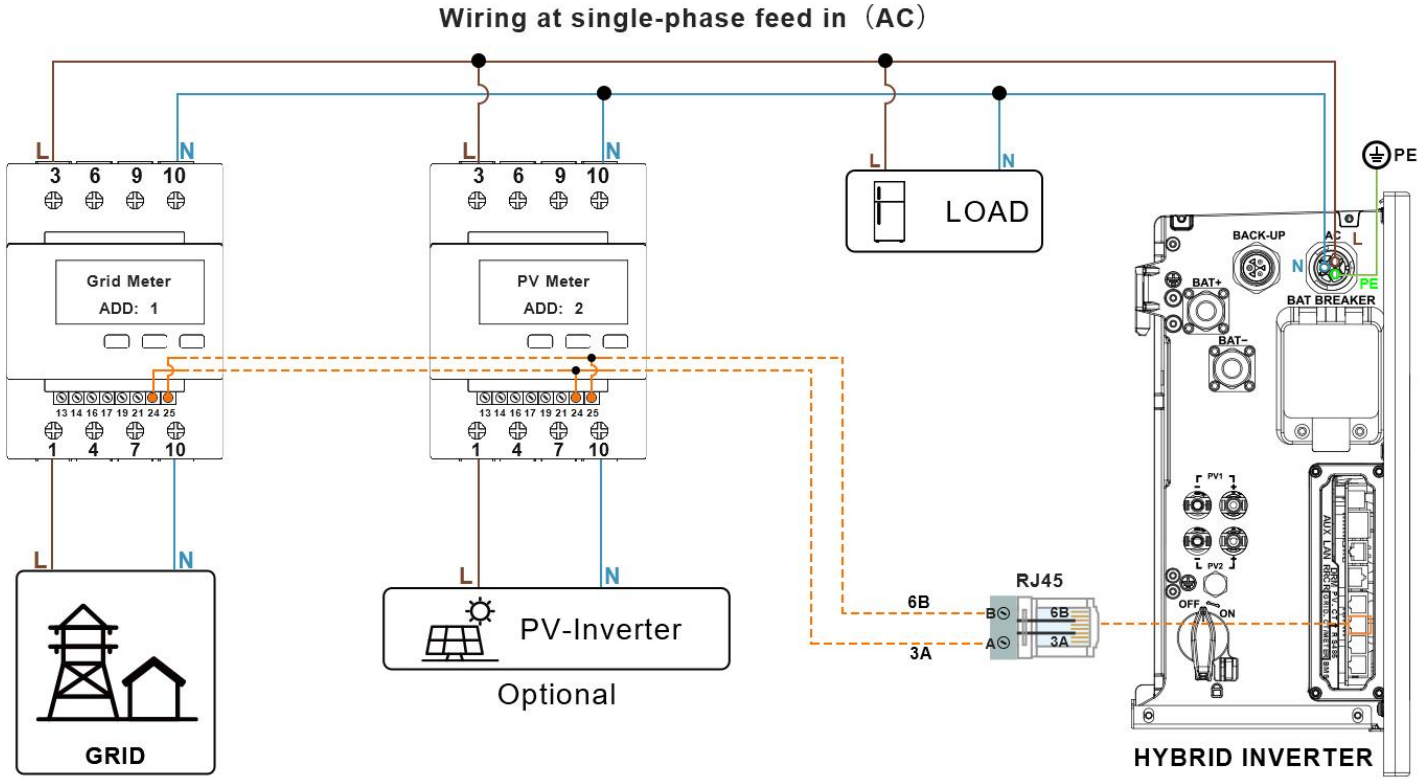
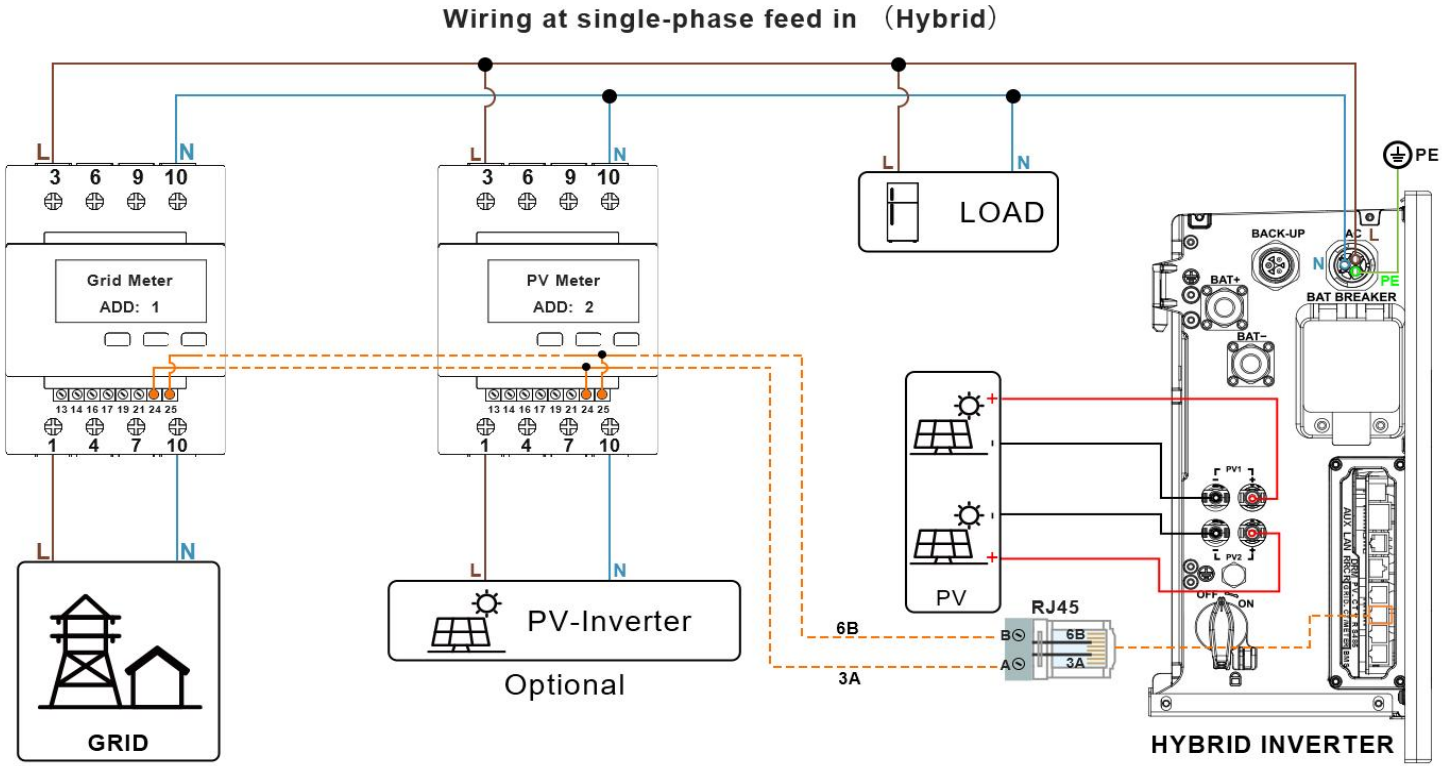
Meter Connection—Single-phase AC mode



1 System Installation

Meter Connection—Single-phase Hybrid mode



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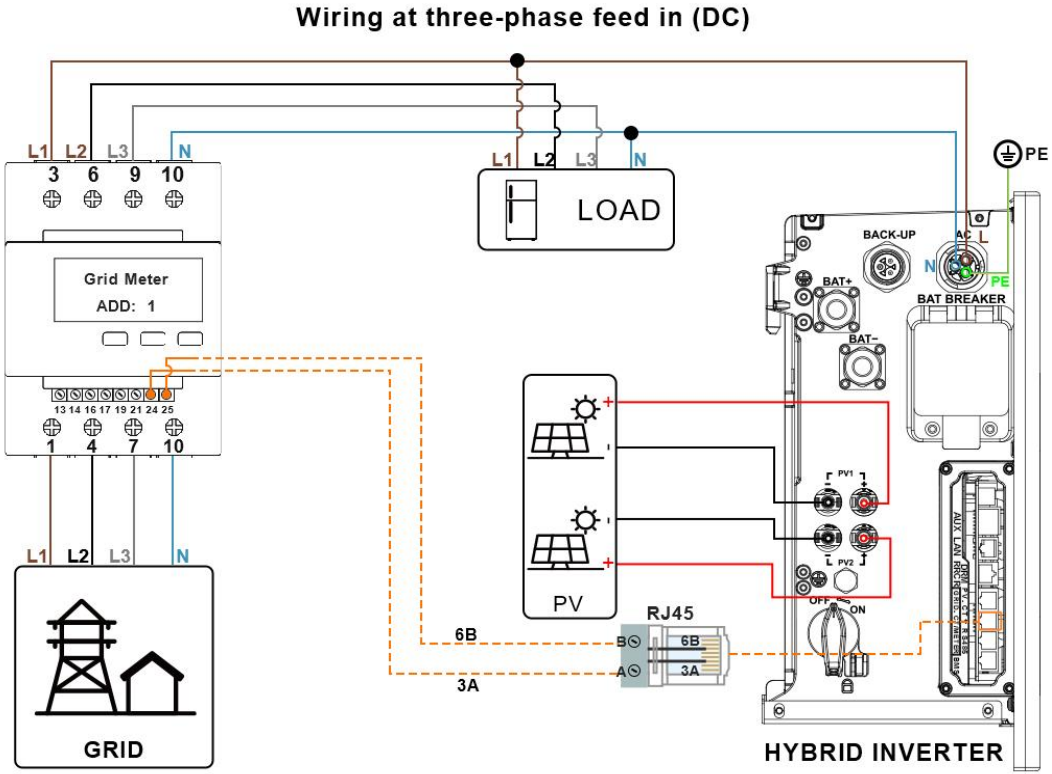
Meter Connection—Three-phase DC mode



1 System Installation

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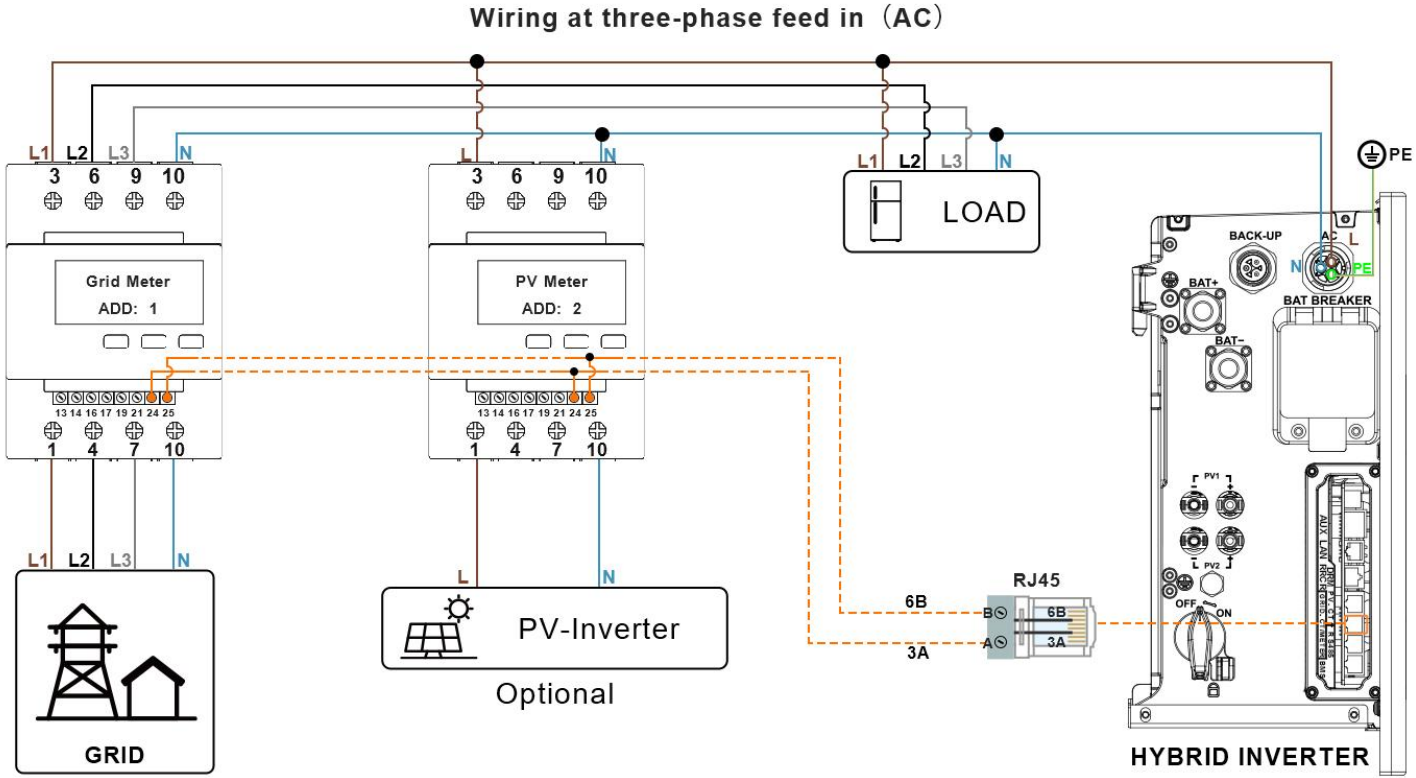
Meter Connection—Three-phase AC mode



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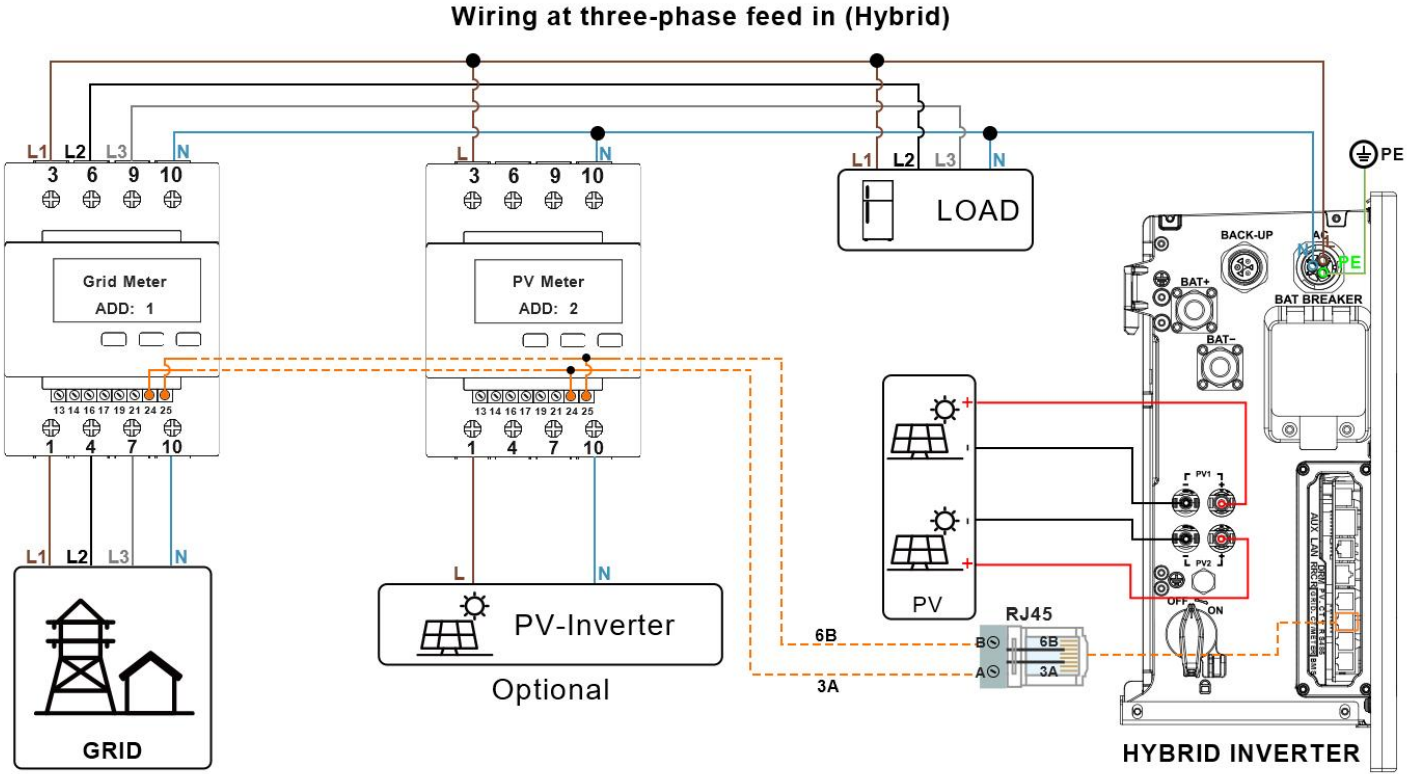
Meter Connection—Three-phase Hybrid mode



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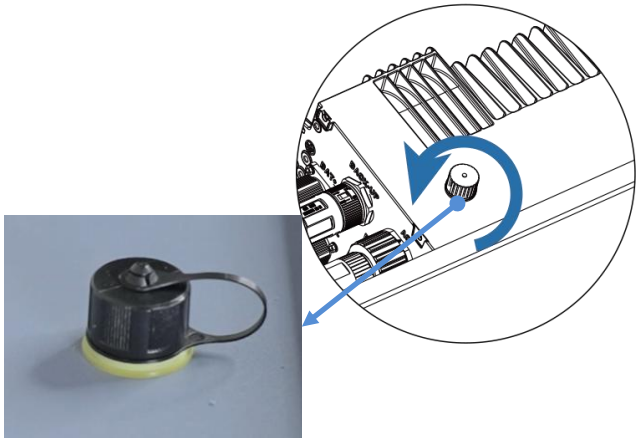
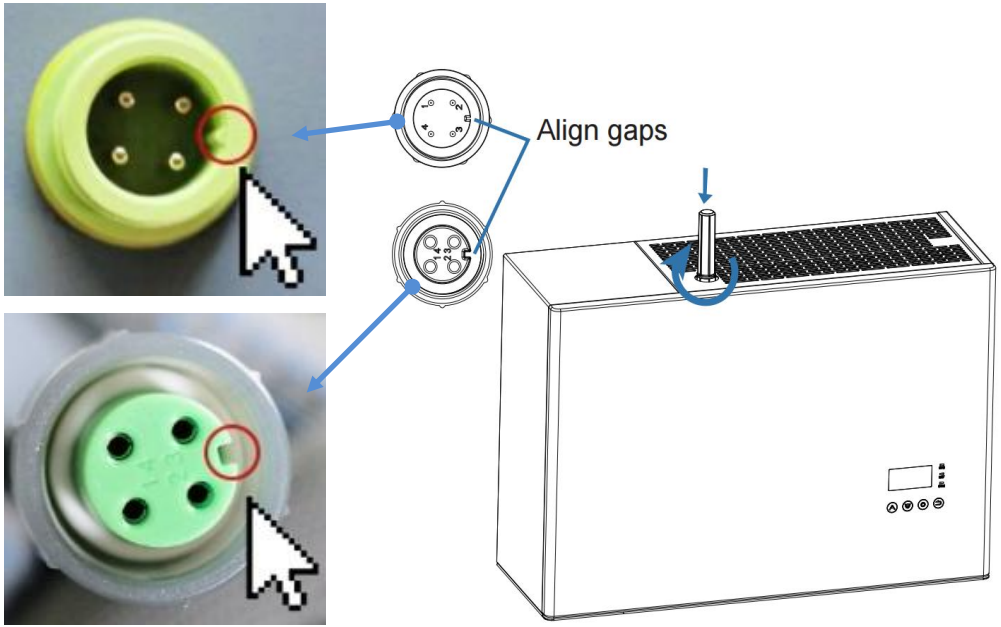
Wi-Fi Module Installation

Step1: Remove the Wi-Fi protection cover.



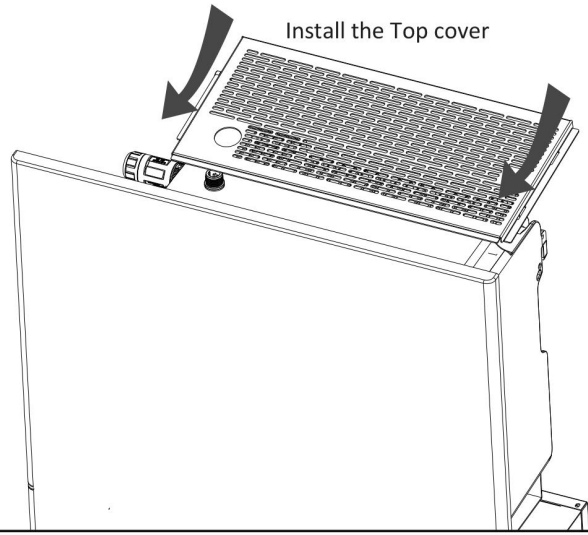
Step2: Insert the Wi-Fi module and tighten it.
(Pay attention to the alignment points at both sides when inserting)



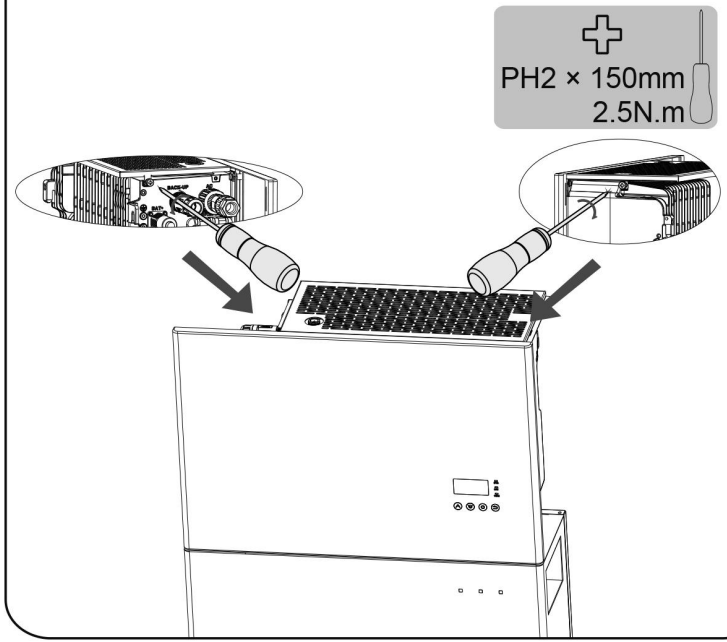
Top Decorative Cover Installation

Install the top decorative cover of the inverter.

Step 1 : Install the Top Cover

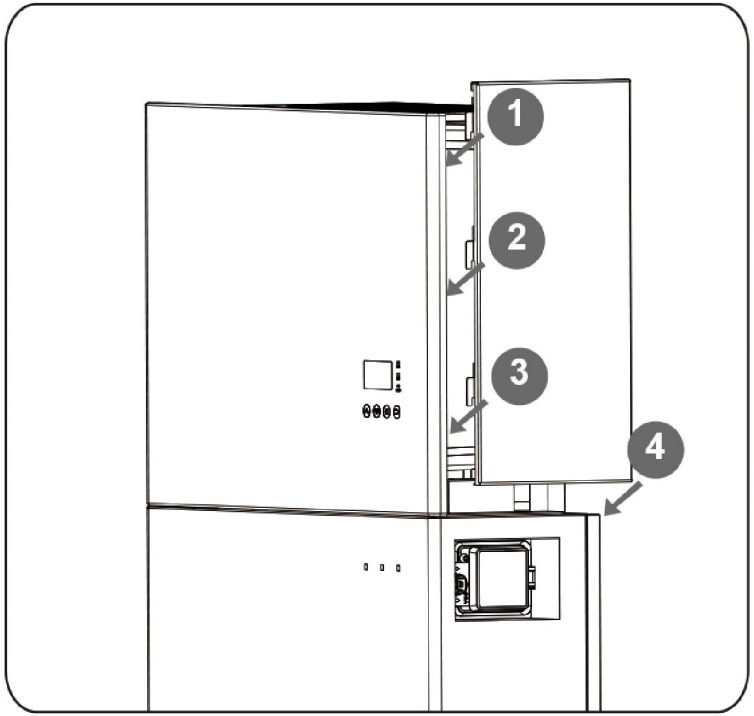


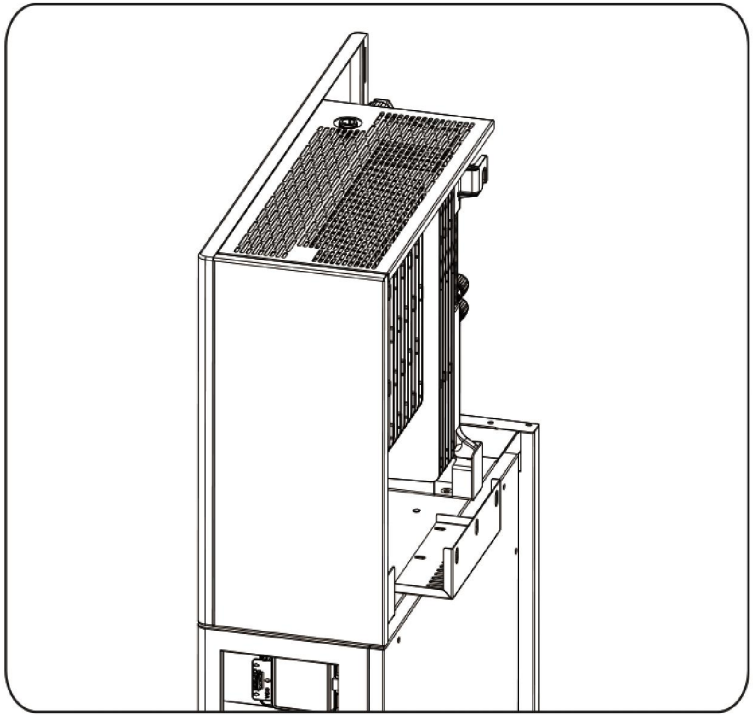
Step 2 : Lock both side screws



Right Decorative Cover Installation

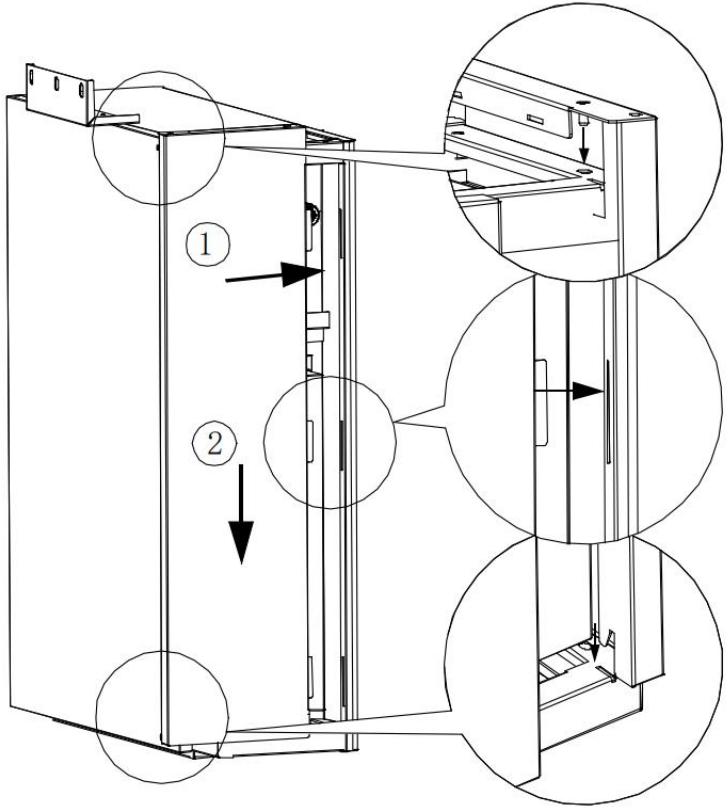
Install the right decorative cover of the inverter.





Battery Decorative Cover Installation

Install the left decorative cover of the inverter.



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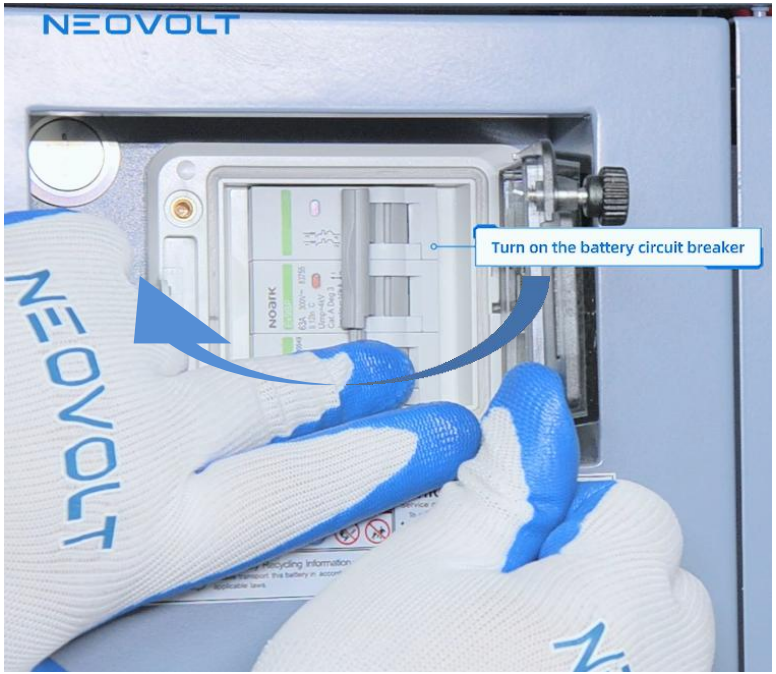
CONTENT

Checking Before Power-On

No.	Check Item	Acceptance Criteria
1	Mounting environment	The mounting space is proper, and the mounting environment is clean and tidy, without foreign objects.
2	Battery pack and inverter mounting	The battery pack and inverter are mounted correctly, securely and reliably.
3	WiFi mounting	The WiFi module is mounted correctly, securely and reliably.
4	Cable layout	Cables are routed properly as required by the customer.
5	Cable tie	Cable ties are secured evenly and no burr exists.
6	Grounding	The ground cable is connected correctly, securely and reliably.
7	Switch and breakers' status	The PV switch and battery breakers and all the breakers connecting to the product are OFF.
8	Cable connections	The AC cables, PV cables, battery power cables, and communication cables are connected correctly, securely and reliably.
9	Unused power terminals	Unused power ports and communication ports are blocked by watertight caps.

Powering on Procedure

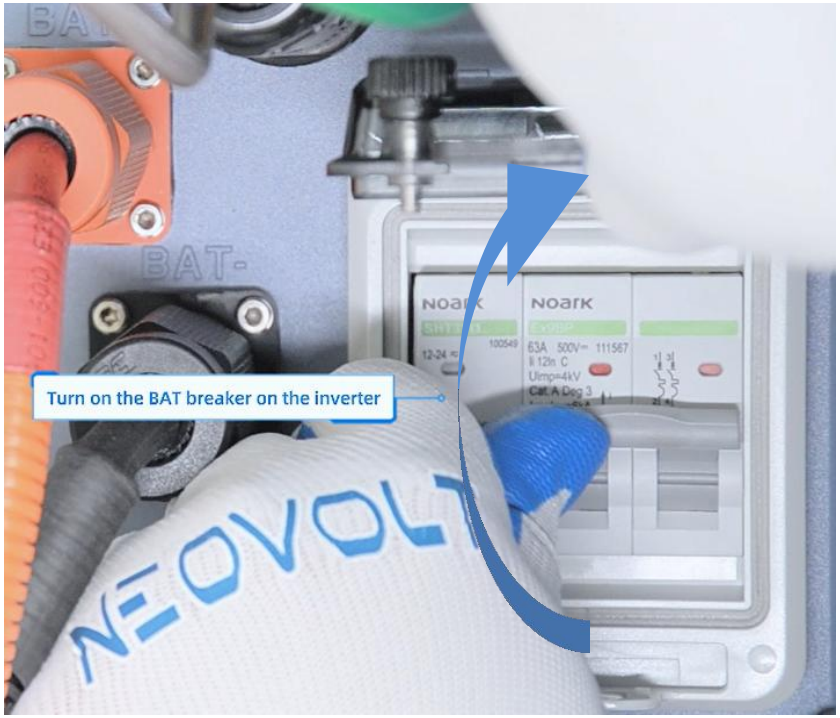


- Before powering on, ensure that the PV switch and battery circuit breaker and all circuit breakers connected to the system are off.

- Powering on procedure:

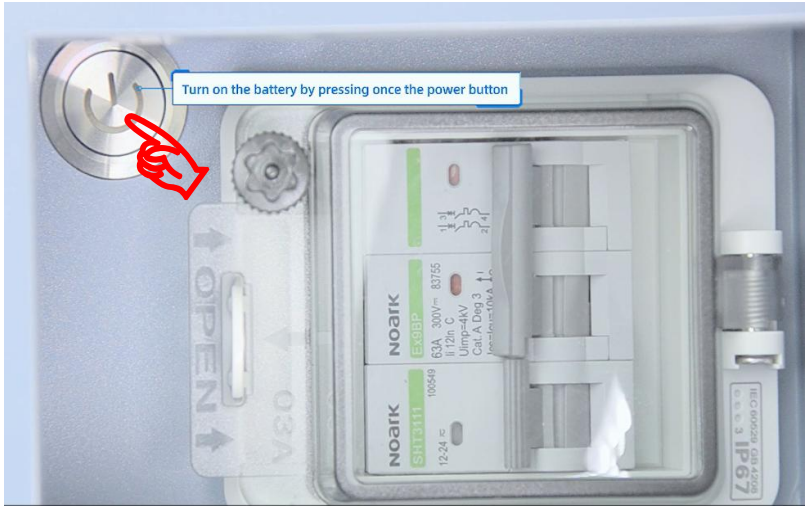
Step1: Switch on the battery breaker which is on the battery.

Powering on Procedure



Step2: Switch on the battery breaker which is on the side of the Hybrid inverter.

Powering on Procedure



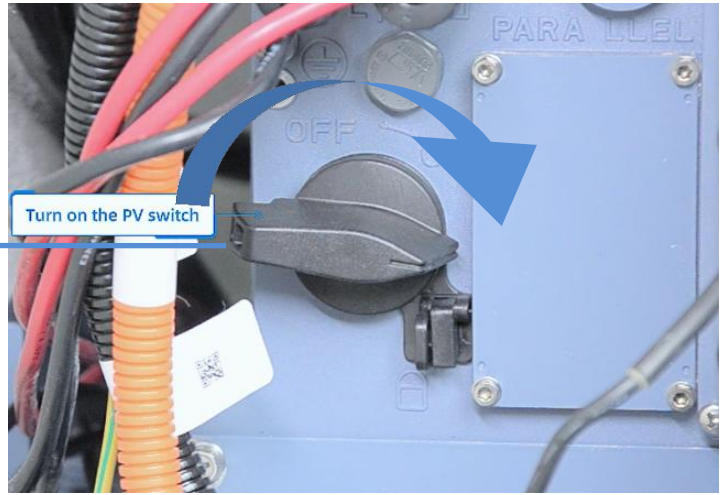
Step3: Press the battery button, if there is more than one battery, the button for each battery should be pressed within five seconds of the previous one.

Step4: Switch on the AC breaker between the grid port of the Hybrid inverter and the grid.

Step5: Switch on the AC breaker between the backup port of the Hybrid inverter and the loads.

Powering on Procedure

PV Switch



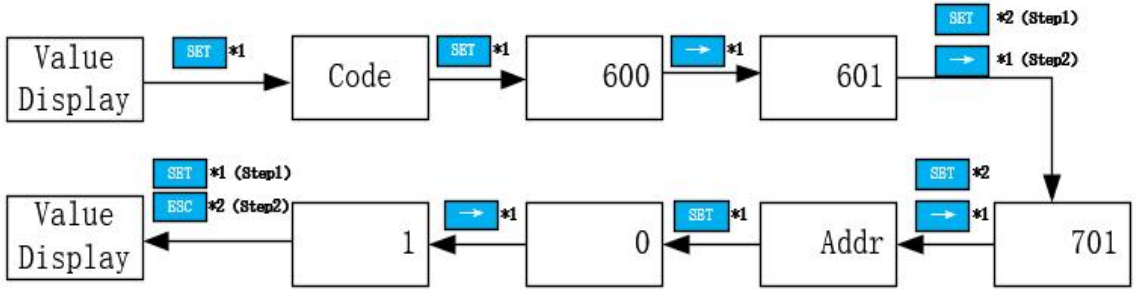
Step6: Switch on the PV switch on the side of the Hybrid inverter.

Step7: Switch on the AC breaker(if there is any) between the PV inverter and the grid.

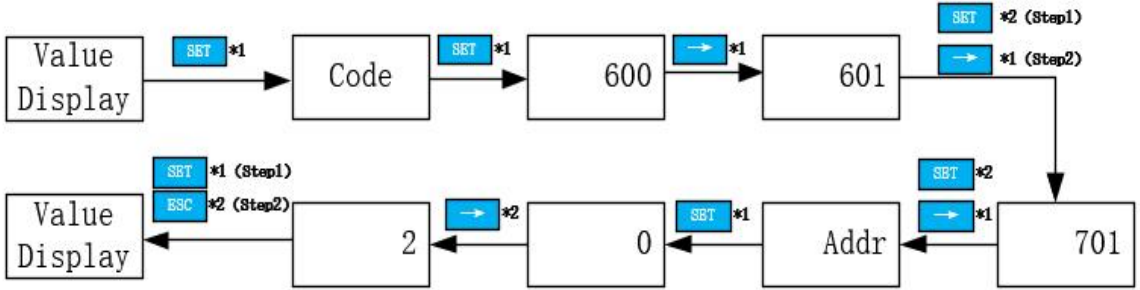
Meter Configuration

This operation is not required when using CT. Meter setting is only required when the meter is used.
According to the usage scenarios, the meter settings are divided into two types: Grid side meter and PV side meter:

- When the meter is used as Grid meter, please follow the steps to complete the address setting to 1:



- When the meter is used as PV meter, please follow the steps to complete the address setting to 2:



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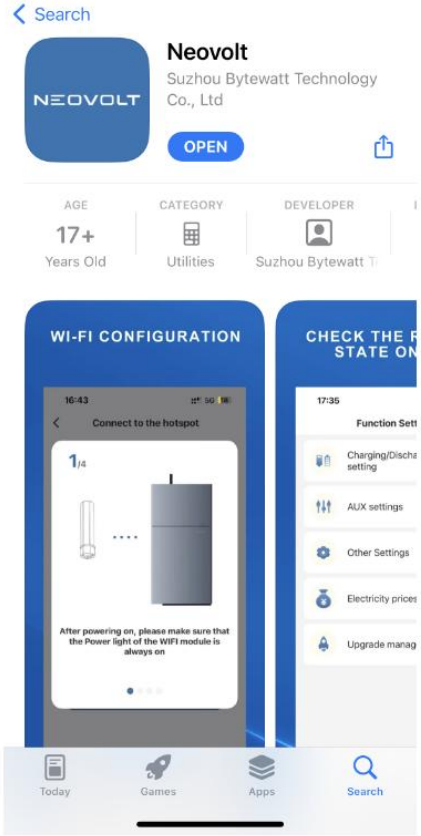
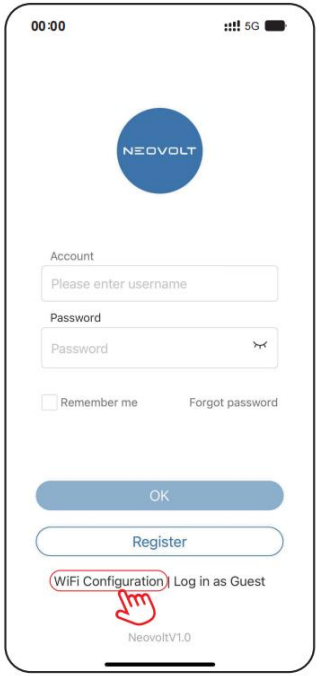
APP Download



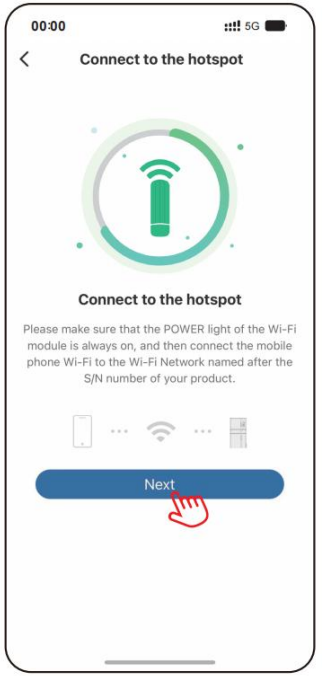
- IOS device users can search "Neovolt" to download APP from APP Store. Android device users can download from Google Play. If don't have the Google Play in the phone, also can download the APP by clicking the link directly: https://www.pgyer.com/Mkv9.
- The Neovolt APP supports WiFi network configuration and connection. Users can connect to WiFi through APP and set basic system parameters, as well as view system operating status and configuration information.

WiFi Configuration



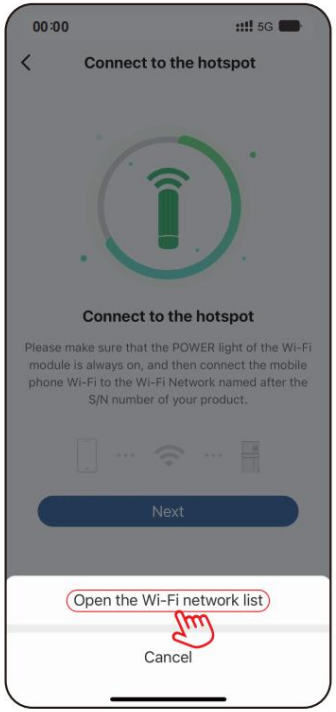
Step1: Open Neovolt APP, click "WiFi Configuration".

Step2: Click "I know, go to configure".

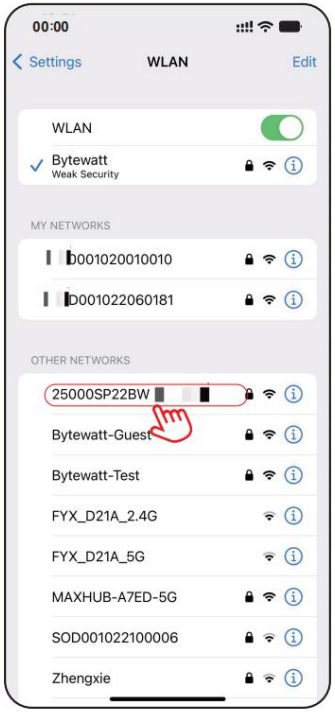


Step3: Click "Next".

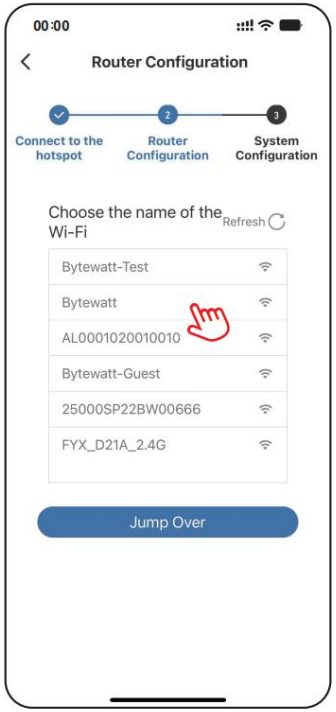
WiFi Configuration



Step4: Click "Open the WiFi network list".

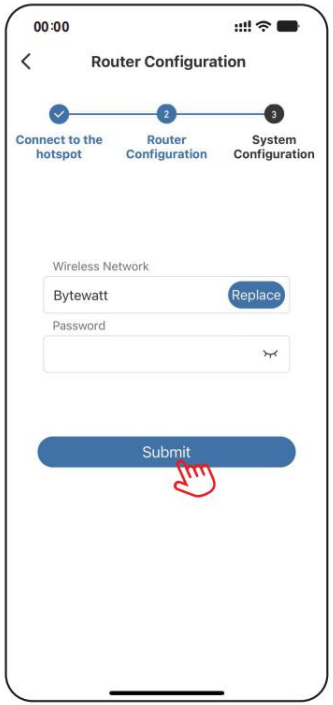


Step5: Select the WiFi Model Signal(named with system SN) and input the default password(12345678), then go back to APP and go on.

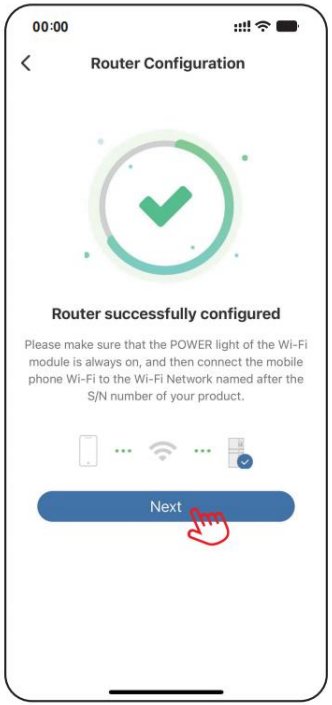


Step6: Select the home "WiFi Router" Signal.

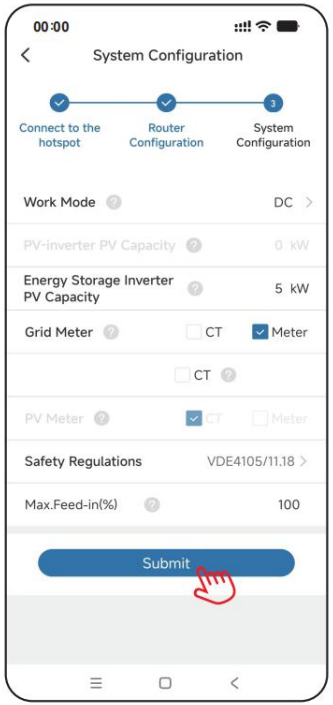
WiFi Configuration



Step7: Enter the WiFi Router Password, click "Submit".



Step8: Wait for a while, once the "Router Configuration" succeeded, click "Next".



Step9: Set the parameter, divided into three modes for setting.

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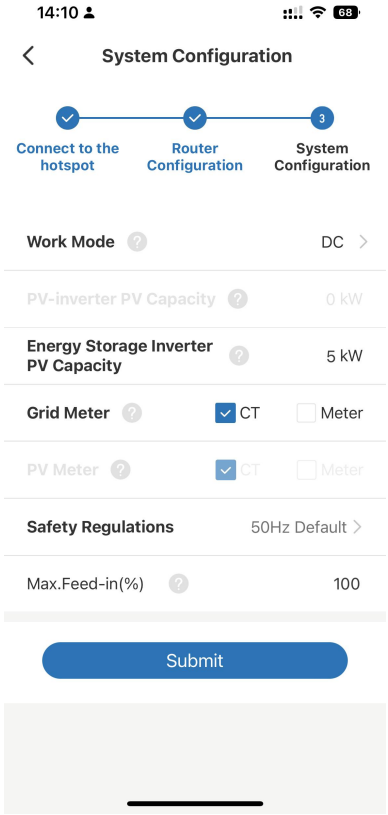
Set Parameters—DC Mode



DC Mode

Step1: Set work mode "DC";

Step2: Set energy storage inverter PV capacity;

Step3: Choose CT or Meter for the grid side;

Step4: Set safety regulations;

Step5: Set allowable feed-in ratio (0%~100%);

Step6: Click "Submit";

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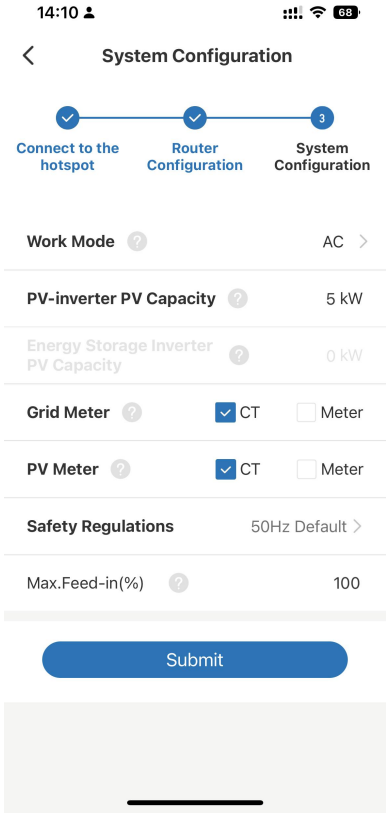
Set Parameters—AC Mode



AC Mode

Step1: Set work mode "AC";

Step2: Set PV-inverter PV capacity;

Step3: Choose CT or Meter for the grid side and PV side.

Step4: Set safety regulations;

Step5: Set allowable feed-in ratio (0%~100%);

Step6: Click "Submit";

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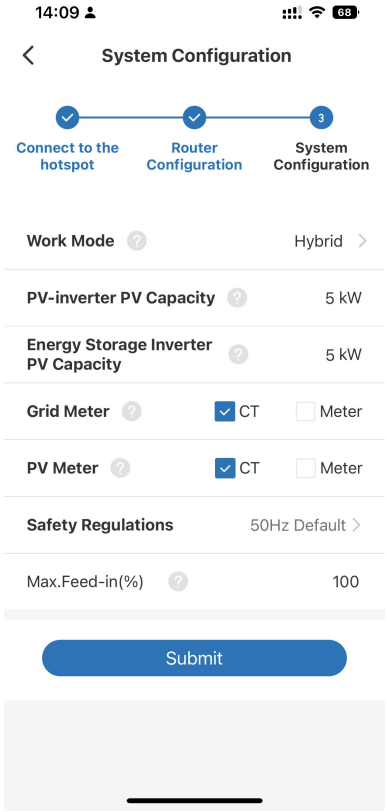
Set Parameters—Hybrid Mode



Hybrid Mode

Step1: Set work mode "Hybrid";

Step2: Set PV-inverter and energy storage inverter PV capacity.

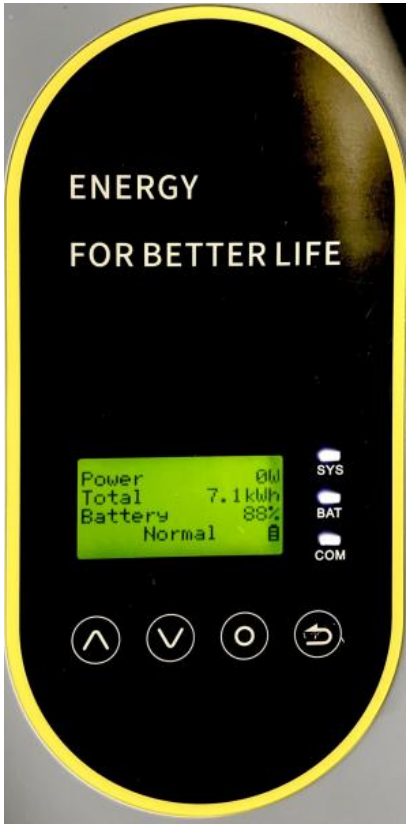
Step3: Choose CT or Meter for the grid side and PV side.

Step4: Set safety regulations;

Step5: Set allowable feed-in ratio (0%~100%);

Step6: Click "Submit";

Check Running Status



After setting the system parameters, check the running status:

- Wait for about 3 minutes for the inverter to enter the on-grid state, and observe the status of the indicator lights on the inverter display panel. At this time, the screen displays "Normal", and the 3 LEDs ("SYS", "BAT", "COM") on the display panel are steady white on.

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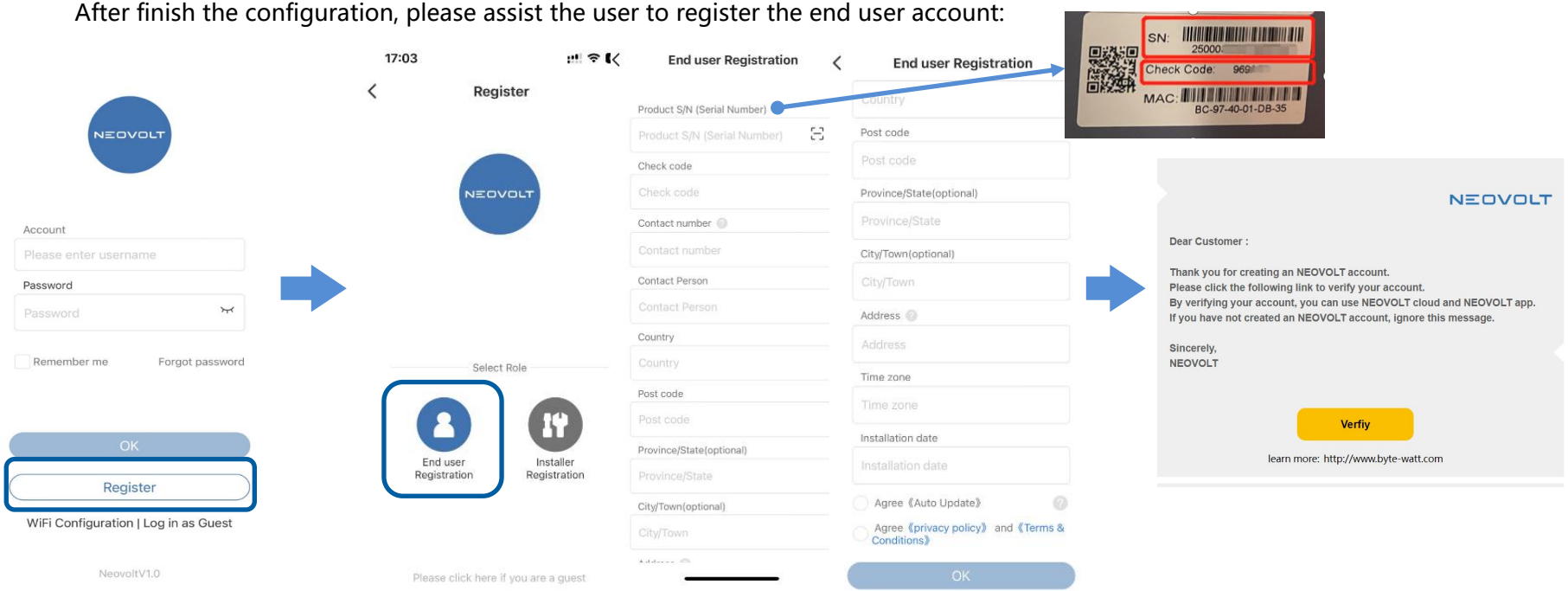
APP Register Enduser Account

After finish the configuration, please assist the user to register the end user account:



Step1: Open APP, click "Register".

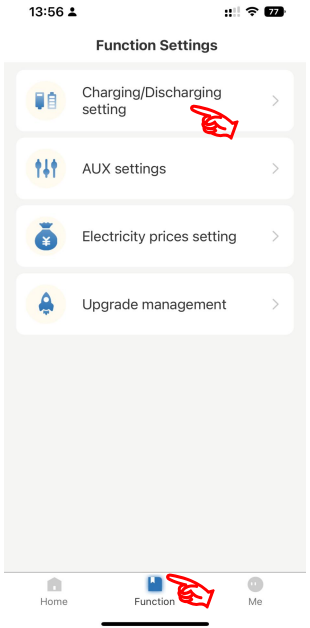
Step2: Choose "End user", fill in the relevant user information to register.
System SN and Check Code can be found on the side label of the inverter.

Step3: After receiving the activation email, click "Verfiy" to complete the account activation.

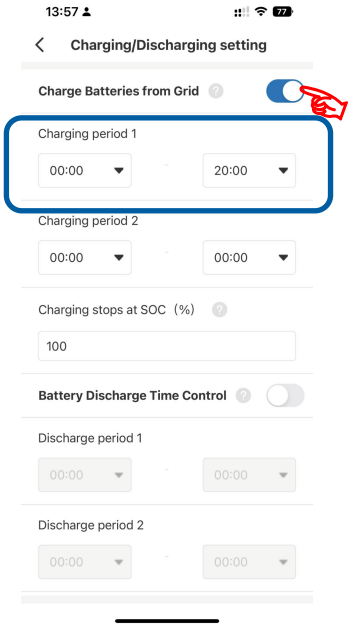
Charging Test

After completing the registration, please log in to the end-user account to perform a charging test.

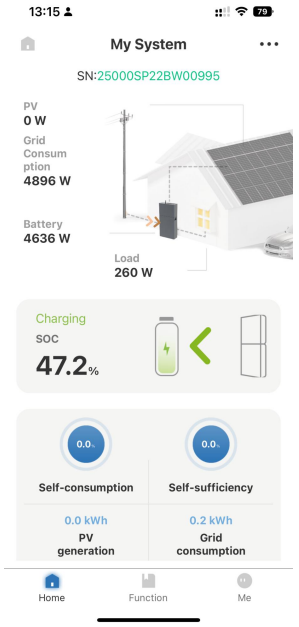
Please switch off the PV switch before testing:



Step1: After login, click "Function" → "Charging/Discharging setting".



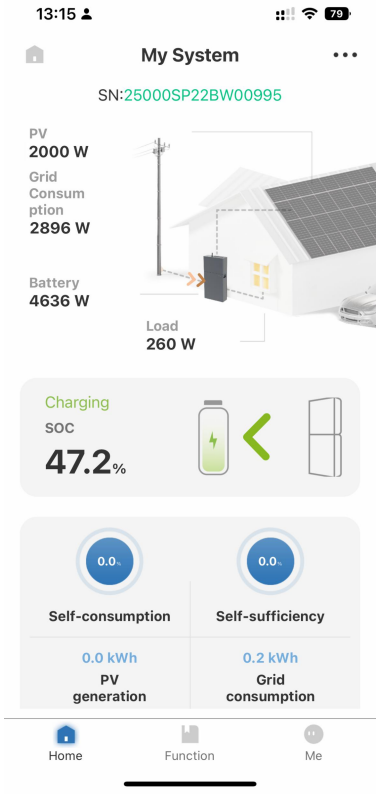
Step2: Select "ON" to Charge Batteries from Grid, and set "Charging period 1".



Step3: Check whether the power and direction are correct.
PV=0, Grid=Battery+Load。

Charging Test

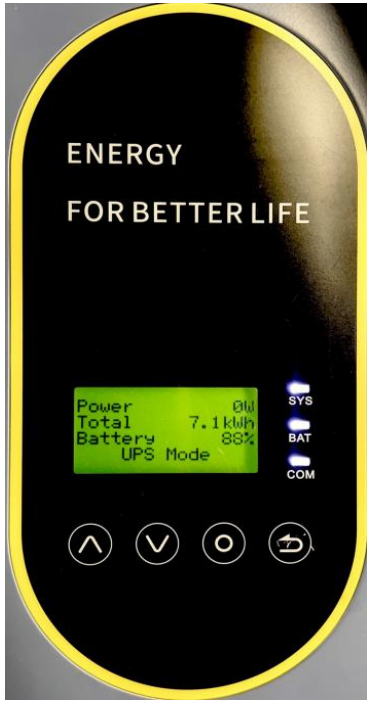
Switch on PV and keep monitoring:



After switching on the PV, continue to check whether the power and direction of the home page are reasonable and correct.

PV and Grid values should be positive, PV+Grid=battery+Load.

UPS Mode



Check the system UPS status:

- Switch off the PV switch.
- Switch off the external AC circuit breaker between the grid and inverter.
- The inverter will enter UPS status immediately, the screen will display "UPS Mode", and the three LEDs on the panel ("SYS", "BAT", "COM") will keep white on.
- If the load connected to the backup side of the inverter can work normally, it means that the output of the backup side is normal and the UPS function is running normally.

After commissioning and confirming that the UPS mode is operating normally, please switch on the AC circuit breaker and PV switch to restore the system to Normal operation. Finally, provide the end user account to the user.

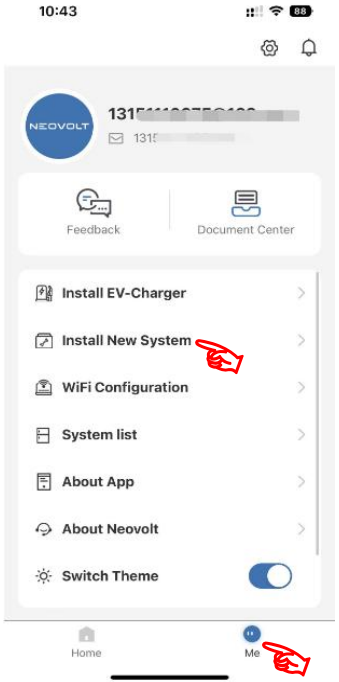
New System Binding

If you do not have an installer account, please directly feedback the following information to the installation company:

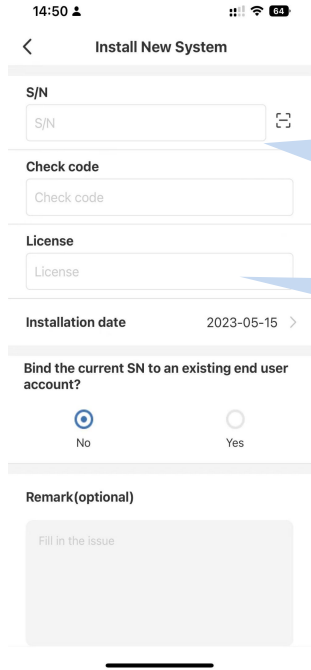
Please find the system SN and Check Code on the side of the inverter and feed it back to the installation company, so that the installation company can bind the new system to their installer account.

New System Binding

If you already have an installer account, please login directly:



Step1: After login, click "Me" → "Install New System".



Step2: Fill in the system information and complete, the newly installed system will be added to the installer account.

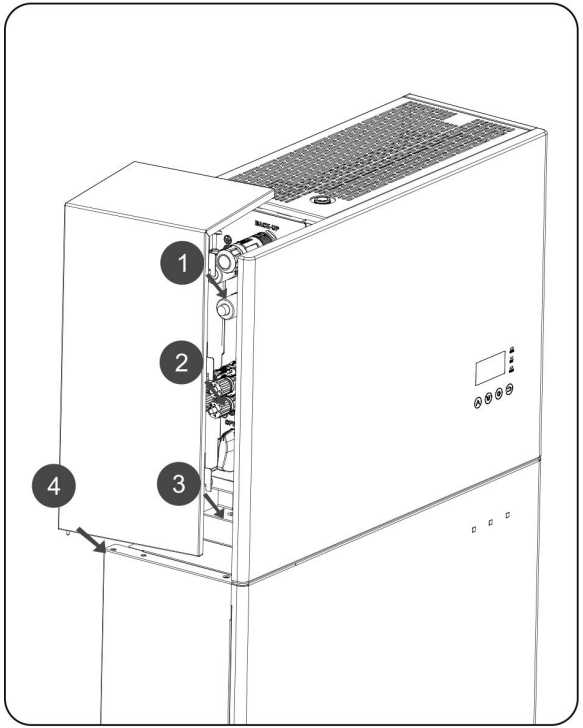
The system SN and Check Code can be found on the side label of the inverter.

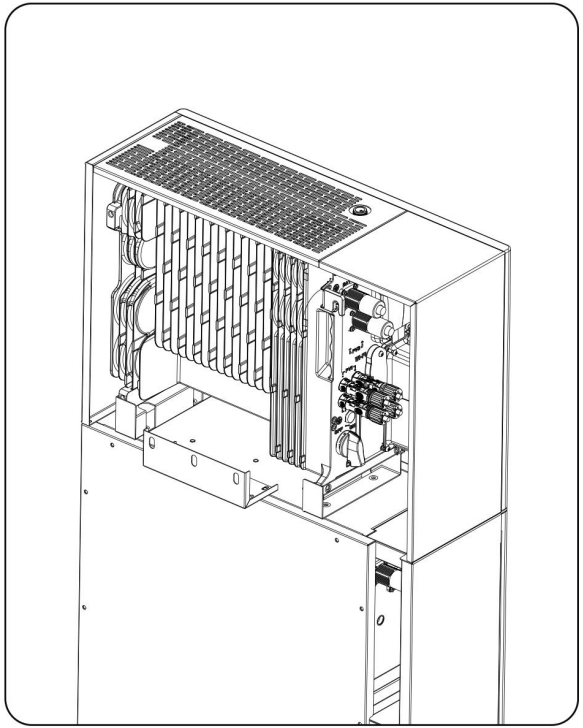
This "License" is the license of this installer account.

Note: It is necessary to complete this setting each time you install a new system, so that you will see the system in your installer account.

Left Decorative Cover Installation

After commissioning and confirming that the energy storage system works normally, please install the left decorative cover of the inverter.





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4 Final Confirmation

If the system is already functioning properly, the product installation steps are complete. Before leaving the site, please confirm the following:

- The enduser account has been given to the user and the user can log in and use the system normally;
- The system has been added to the installer account and is functioning normally as monitored;

If the enduser needs to power off the system, please perform the following steps:

step1: Switch off the AC breaker between the Hybrid inverter and the load.
step2: Switch off the AC breaker between the Hybrid inverter and the grid.
step3: Switch off the PV switch on the side of the Hybrid inverter.
step4: Switch off the PV switch between the PV string and the Hybrid inverter if there is any.
step5: Switch off the battery breaker which is on the side of the Hybrid inverter
step6: Press and hold for five seconds the power button of the battery.
step7: Switch off the battery breaker of the battery.

Note: After the inverter and battery are powered off, the remaining power and heat may still cause electric shock and body burns. Therefore, please pay attention to wear protective gloves.

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Thanks For Choosing Neovolt