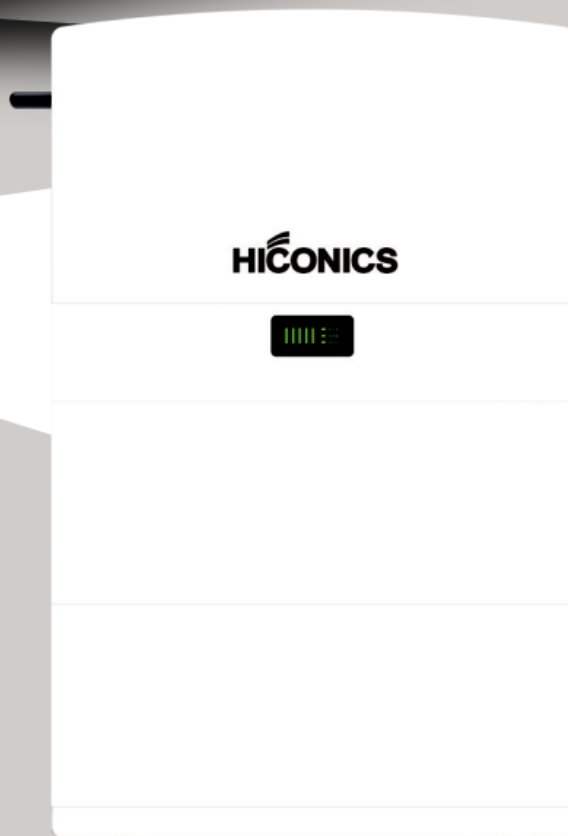


HEC2 SINGLE PHASE RESS Quick Installation Manual



Contents

Contents	2
1 Notes on this Manual	1
1.1 Scope of Validity	1
2 Pre-installation Requirements	2
2.1 Place of Installation	2
2.2 Position Requirements	2
3 Installation Process	2
3.1 Battery Pack Installation	2
3.2 Inverter Installation	3
4 Electrical Connection.....	4
4.1 Battery System Cable Connection.....	4
4.2 PV Connection	4
4.3 AC Input/Output Connection.....	5
4.4 Communication Interface Connection.....	6
4.4.1 PM(METER/CT) Interfaces.....	6
4.4.2 COM/LCD Interface.....	6
4.4.3 External Smart Meter (optional) Connection	7
5 System Operation.....	7

1 Notes on this Manual

1.1 Scope of Validity

This manual is an integral part of HEC2 series single phase residential energy storage system with hybrid inverter, it describes the assembly, installation, commissioning, maintenance and failure of the product. Please read it carefully before operating.

Configuration	
Inverter	HEC2-S3.68Hr2
	HEC2-S3.8Hr2
	HEC2-S5.0Hr2
	HEC2-S6.0Hr2
ESS	HEC2-BHP50r2
	HEC2-BHP100r2
	HEC2-BHP150r2
	HEC2-BHP200r2-A
	HEC2-BHP300r2

Inverter naming rules, for example: HEC2-S5.0Hr2 “HEC2” uses for “HICONICS 2nd generation series”.

“S” uses for “Single Phase Output”.

"5.0" uses for "rated output power "5kW".

“H” uses for “High voltage”.

“r2” uses for “All-in-one”.

ESS naming rules, for example: HEC2-BHP50r2 “HEC2” uses for “HICONICS 2nd generation series”.

“B” uses for “Battery system”

“H” uses for “High voltage system”

“P50” uses for “5kWh”

“r2” uses for “all in one system”

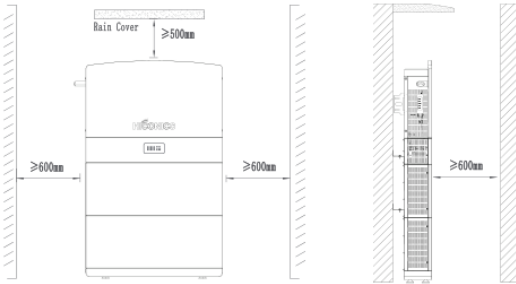
2 Pre-installation Requirements

2.1 Place of Installation

HiEnergy series is designed for outdoor installation (IP65). Please AVOID direct sunlight, rain exposure, snow laying up during installation and operation.



2.2 Position Requirements



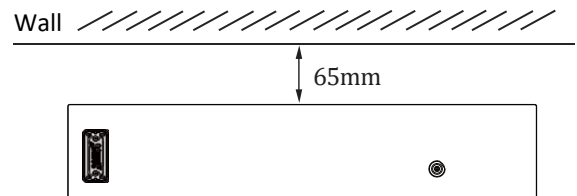
Note: The inverter mount can be stacked on its battery.

3 Installation Process

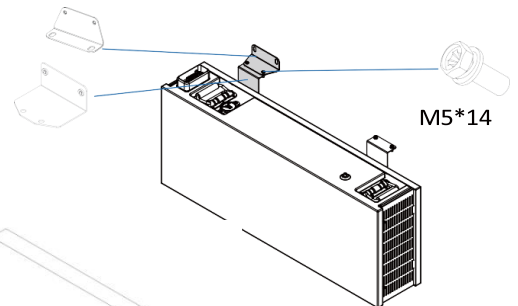
3.1 Battery Pack Installation

The battery pack height must comply with local regulations. If the positioning plate conflicts with the regulations, the regulations must be met first.

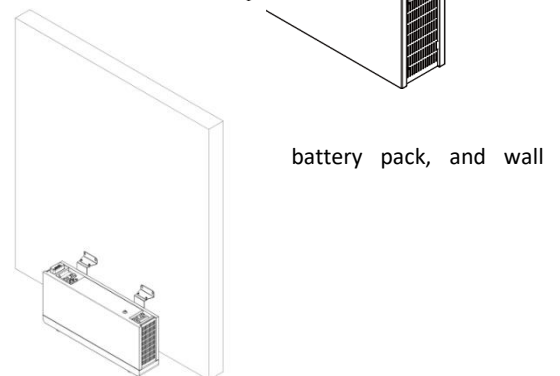
Step 1: Determine the position of the base: mainly determine the distance from the wall; The distance from the wall is 65mm, and keep horizontal;



Step 2: Use 4 units of M5*14mm screws to secure the battery bracket on the battery modules and secure the battery bracket and mounting bracket with 4 units of the same. Both sides need to be installed.

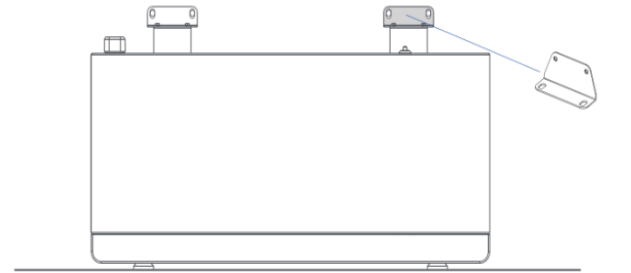
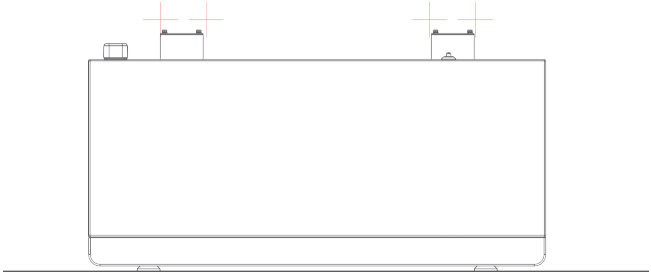
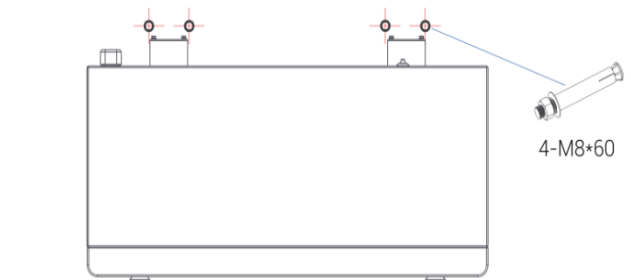
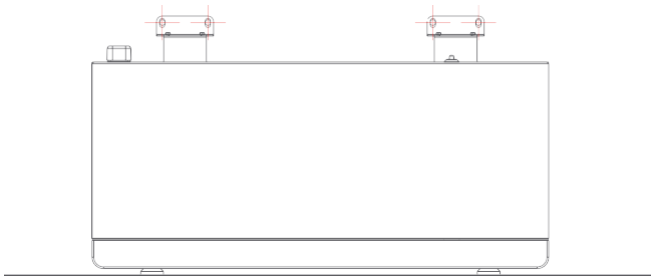


Step 3: Use phillips four head screws and a three M5x14 unit to install the battery mounts. As shown in the following figure.



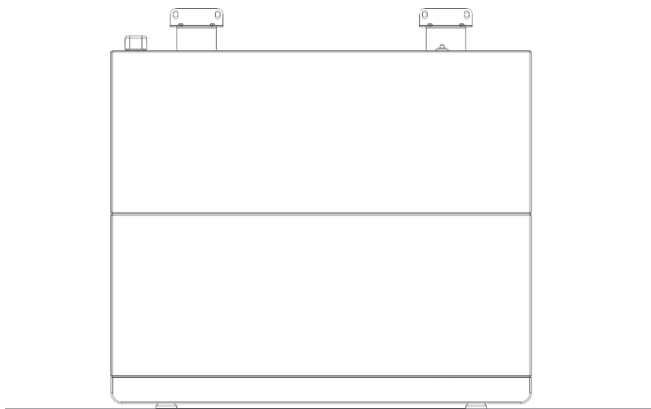
Step 4: Use a marker to draw dots at the red intersection in the following image. After drawing the dots, remove the wall battery pendant and use a drill bit to drill holes.

Step 5: Install expansion bolts in the drilled holes. Use the expansion bolt with its own M8 nut to fix the wall battery pendant with the expansion bolt. Afterwards, use phillips head screws head screws with M5x14 to fix the wall battery mount and pack mount.



Step 6: Repeat steps 2 to 5 to install the other battery modules required. Please align the lower battery with the front of the upper battery during installation.

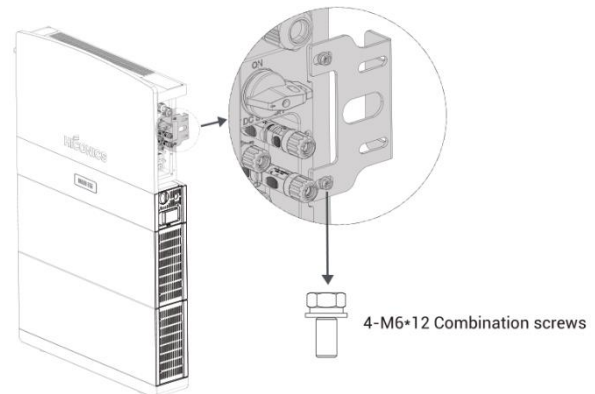
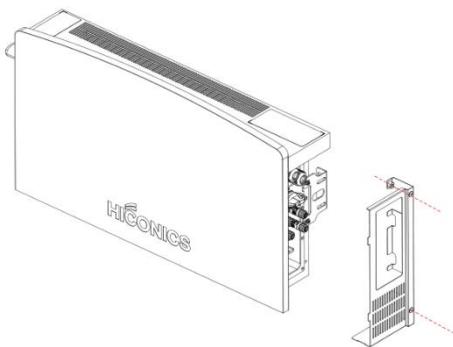
Step 7: After installing the battery module, place the BMS control box on top of the battery box. Please align the BMS control box with the front of the lower battery during installation



3.2 Inverter Installation

Step 1: Open the inverter hood covers on both sides and place the inverter vertically on the BMS control box. It will build the connection between the inverter and BMS of the control box via PACK and inverter connection cable

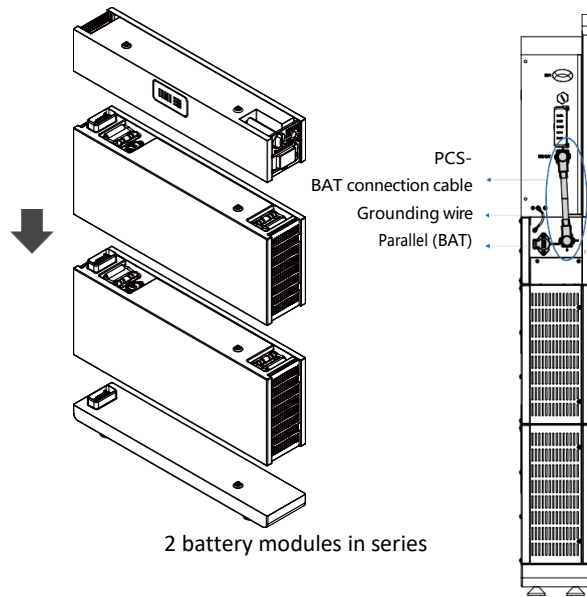
Step 2: Place the inverter on the BMS main box, fix the inverter on the mounting bracket, adjust the whole system, and ensure that the battery and inverter are firmly hung on the panel and bracket



4 Electrical Connection

4.1 Battery System Cable Connection

The HEC2-BHP system (without inverter) is cableless installation design which includes pre-installed internal connections. The modular stack installation directly plug-in and completes the series connection between battery modules. The connection between the confirm from R&D about the BMS box model number system (from BMS main box) and the inverter requires a cable connection using PCS-BAT connector which includes power connection, communication and grounding. Also, there's a separate grounding connection between BMS main box and inverter.



4.2 PV Connection

Before connecting to PV modules, please install a separately DC circuit breaker between inverter and PV modules.

It is very important for system safety and efficient operation to use appropriate cable for PV module connection. To reduce risk of injury, please use the proper recommended cable size.

Wire Size	Cable (mm ²)
12 AWG	4

When select PV array, make sure the open circuit voltage should be greater than the minimum operating voltage and should be less than maximum voltage limit.

Model	HEC2-S3.68Hr2	HEC2-S3.68Hr2	HEC2-S3.68Hr2	HEC2-S3.68Hr2
Max. DC Voltage (V)	600	600	600	600
MPPT Voltage Range (V)	100-540	100-540	100-540	100-540

Step 1: Checking PV module.

- Use voltmeter to measure module array voltage.
- Check the PV+ and PV- from the PV string combiner box correctly.
- Please make sure the impedance between the positive pole and negative pole of PV to earth should be MΩ level

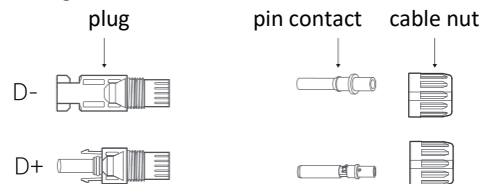
Step 3: Wiring

- Choose the 4 mm² wire to connect with the cold-pressed terminal.
- Remove 10mm of insulation from the end of wire.
- Insert the insulation into pin contact and clamp it.



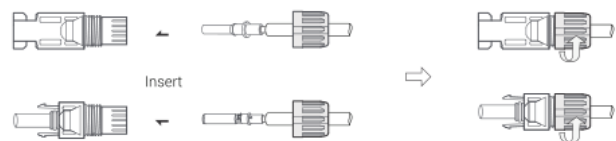
Step 5: Plug the PV connector into the corresponding PV connector on inverter

Step 2: Separating the DC connector.







Step 4:

Insert pin contact through the cable nut to assemble into back of the male or female plug. When you feel or heard a “click” sound the pin contact assembly is seated correctly.



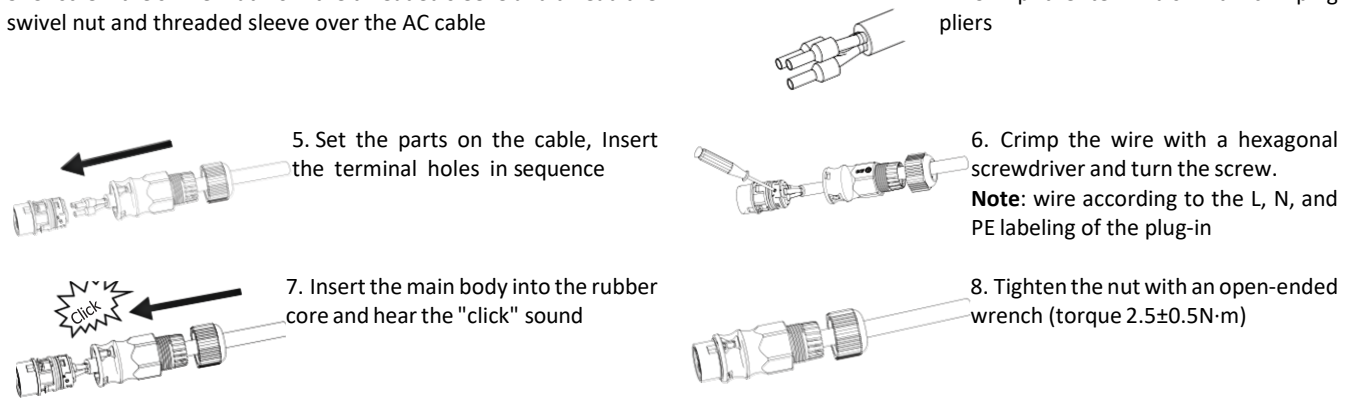
4.3 AC Input/Output Connection

Installation tools

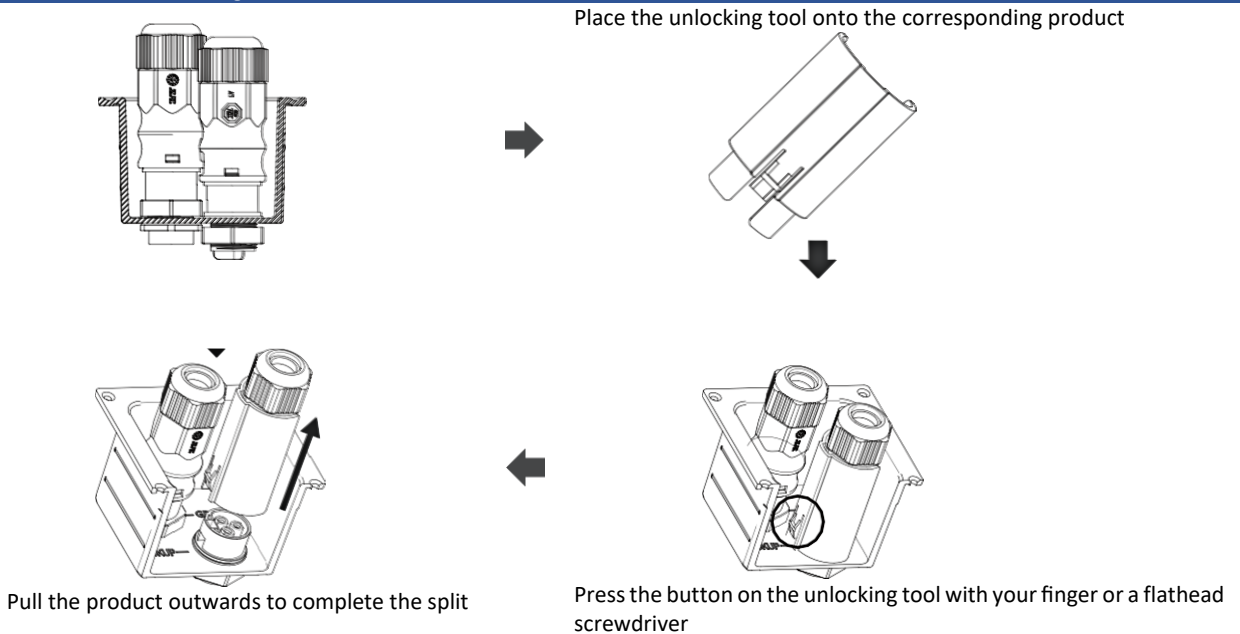
 <p>open-end wrench</p>	 <p>wire stripper</p>	 <p>2.0 Allen driver</p>	 <p>6-side Rivet pliers</p>
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Installation Steps

1. Use professional tools to peel off the cables according to the requirements
2. Insert the conductor into the suitable ferrule acc. to DIN 46228-4 and crimp the contact
3. Unscrew the swivel nut from the threaded sleeve and thread the swivel nut and threaded sleeve over the AC cable
4. Crimp the terminals with crimping pliers
5. Set the parts on the cable, Insert the terminal holes in sequence
6. Crimp the wire with a hexagonal screwdriver and turn the screw. **Note:** wire according to the L, N, and PE labeling of the plug-in
7. Insert the main body into the rubber core and hear the "click" sound
8. Tighten the nut with an open-ended wrench (torque $2.5 \pm 0.5 \text{ N}\cdot\text{m}$)

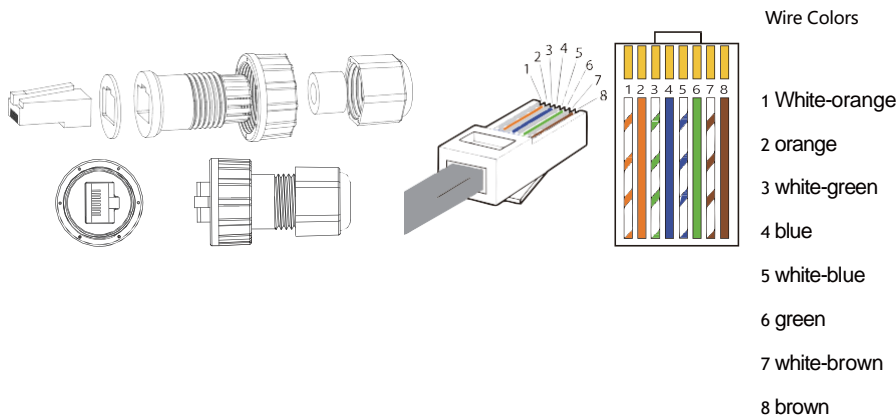


Port unlocking Instructions



Note: The disassembling and assembling methods and procedure operation for the male plug-in is the same as that for the female plug-in

4.4 Communication Interface Connection



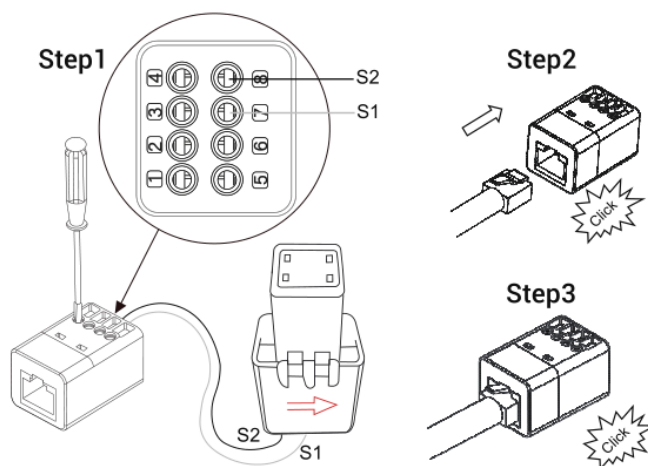
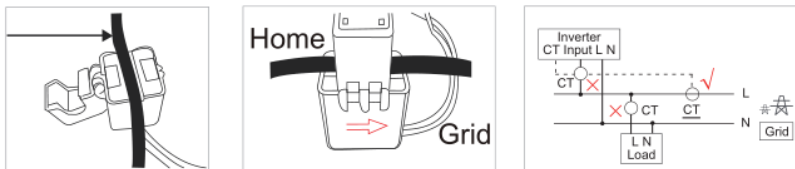
1. The installer will prepare all the network cables as per requirements (for PM, DRM, and COM/LCD interface) and the length of the cable will be determined according to the site environment.
2. Remove the cable insulation and make the RJ45 connector according to the cable line order

4.4.1 PM(METER/CT) Interfaces

Pin	Description	Pin	Description
1	485A	5	GND
2	485B	6	CT2B
3	CT2A	7	CT1A
4	VCC	8	CT1B



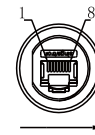
Interface description



4.4.2 COM/LCD Interface

This interface is a dry contact. COM port uses RS485 communication, the communication protocol is the same as WIFI port 485 protocol, used for client power grid scheduling monitoring.

Pin	Description	Pin	Description
1	DO2A	5	GND
2	DO2B	6	485B
3	485A	7	DO1A
4	VCC	8	DO1B



Interface description

4.4.3 External Smart Meter (optional) Connection

You must connect external CTs or a smart grid meter between the inverter and the power grid. If you want to connect a smart meter, note that only one meter is necessary for each inverter. The meter must be mounted and connected at the grid transition point (feed-in point) so that it can measure the grid reference and feed-in power.

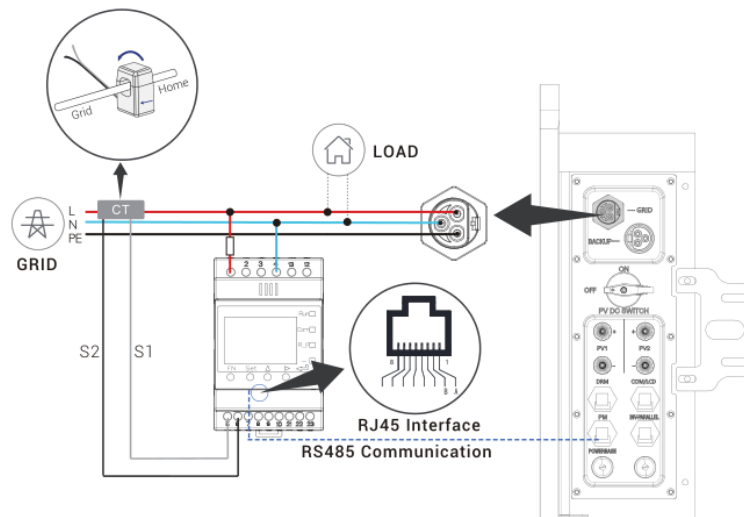
Procedure

Step 1: Prepare the communication wires, power cable, and tools for the meter connection

Step 3: Installation of CT. Refer to the introduction of CT installation for specific steps

Step 2: Selection of a suitable position location for fixing the DIN track, Mount the Meter on the DIN track

Step 4: Install the cables correctly as shown



Wiring of Smart Meter Connection (Example, ACRIORH-D10TE)

5 System Operation

Switch On:

When turning on the system, it is very important to follow the steps below to prevent damage to the system.

WARNING: Please check the installation again before turning on the system.

Power-on process:

Step 1: Open the protective cover and close the BMS control box circuit breaker

Step 2: Press the BMS control box button and check the status of the light strip

Step 3: Turn on the photovoltaic isolation switch

Step 4: Turn on the grid-side circuit breaker

Switch Off:

Step 1: Turn off the grid-side circuit breaker

Step 2: Turn off the PV disconnect switch

Step 3: Open the protective cover and turn off the BMS control box circuit breaker

