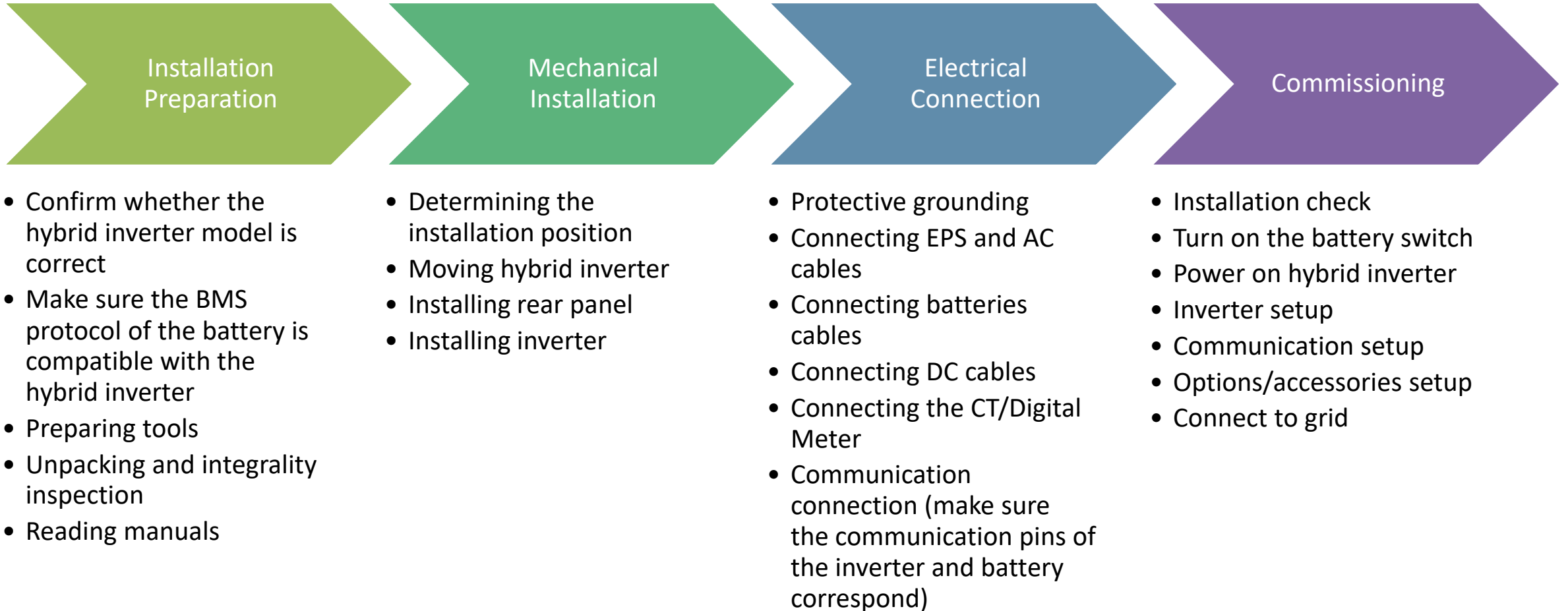




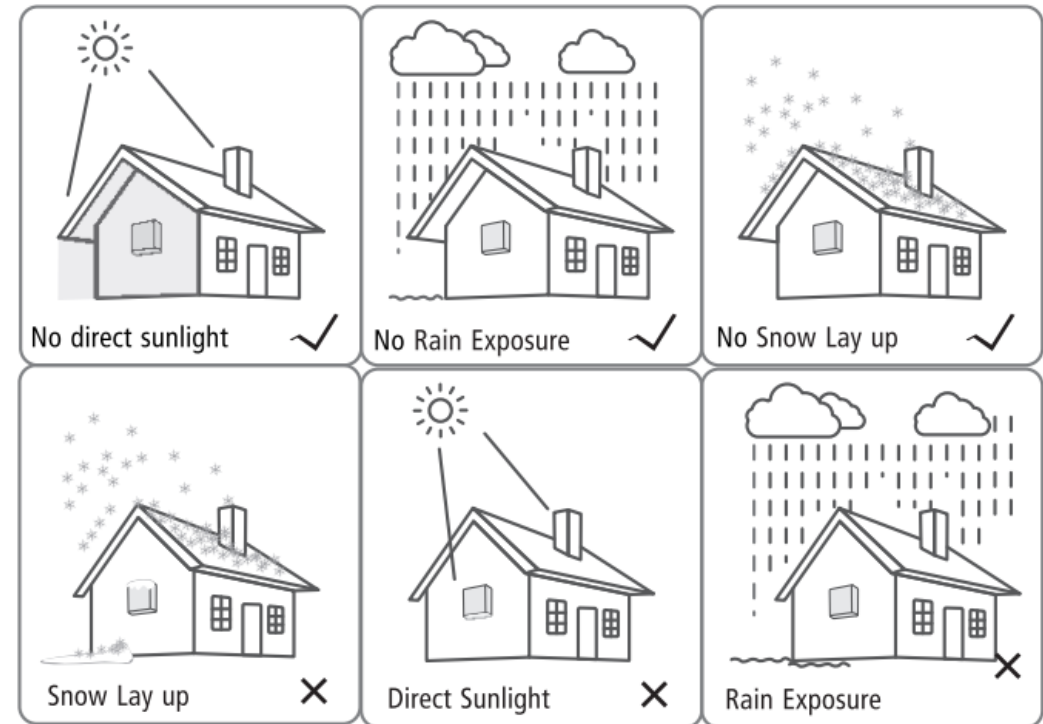
Hybrid Inverter Product Installation

General process of installation and first start up

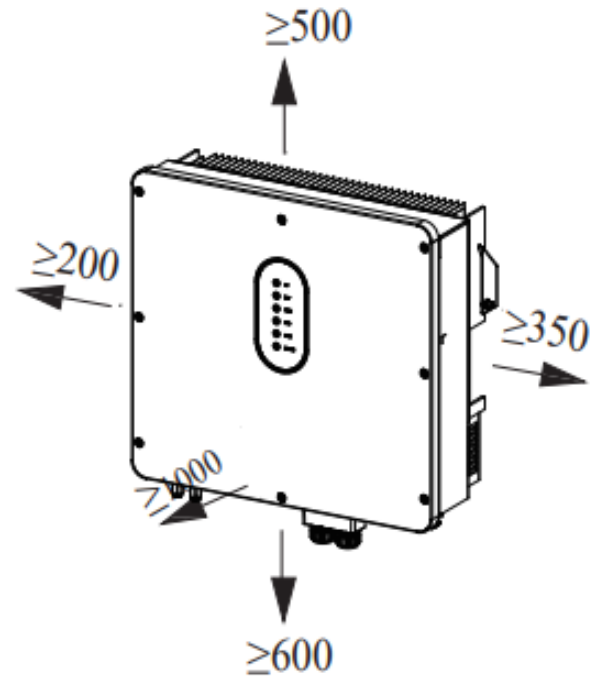


Recommendations for determining the installation position

- ❑ Ambient temp. <math>< 50\text{ }^{\circ}\text{C}</math> ,keep well ventilated environment
- ❑ Make sure the mounting carrier is strong and can withstand the heavy load of the inverter for a long time
- ❑ Keep away from direct exposure to sunlight, rain and snow
- ❑ During operation, the shell temperature is relatively high , do not install the inverter in a position that is easy to touch
- ❑ Reserve space for operation, maintenance and cooling
- ❑ Keep the batteries as close as possible to the installation position of the inverter, generally no more than 1.5M



Space requirements for single unit



Above: 500mm

Below: 600mm

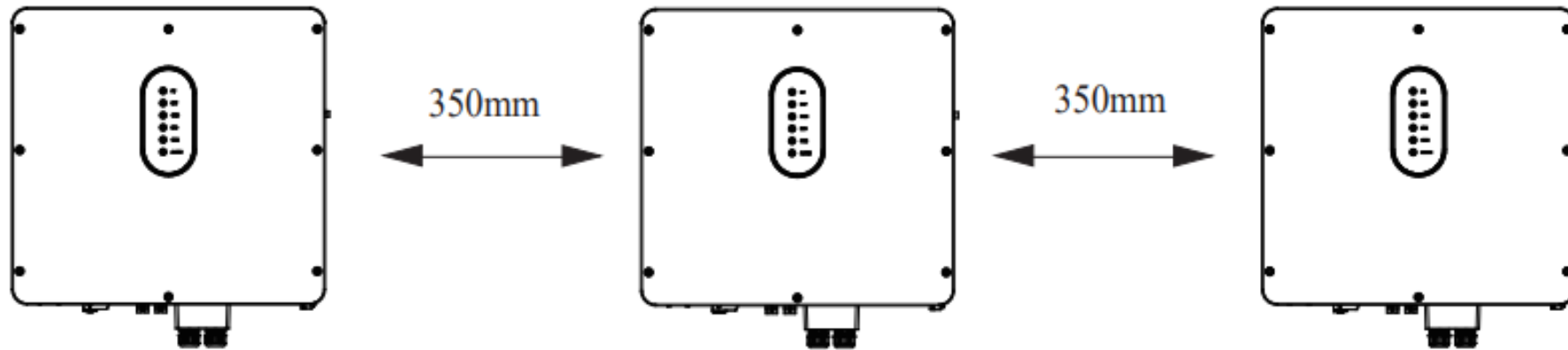
Front: 1000mm

Left side: 200mm

Right side: 350mm

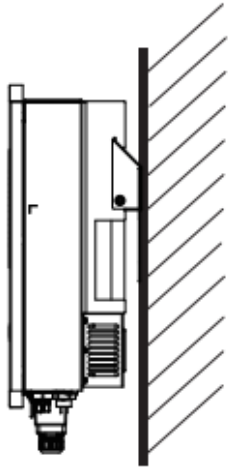
	Top	Bottom	Left	Right	Front
5-6kW	$\geq 500\text{mm}$	$\geq 600\text{mm}$	$\geq 200\text{mm}$	$\geq 350\text{mm}$	$\geq 1000\text{mm}$

Space requirements for multiple units

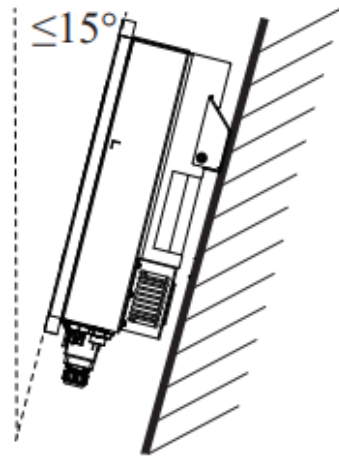


In the same line

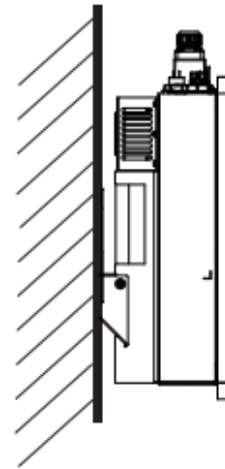
Installation mode requirements



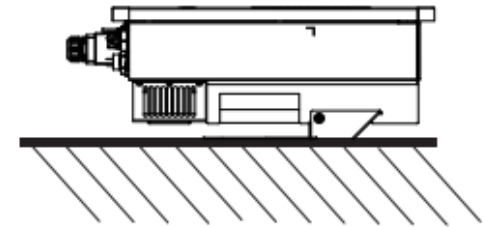
Upright ✓



Lean back $\leq 15^\circ$ ✓

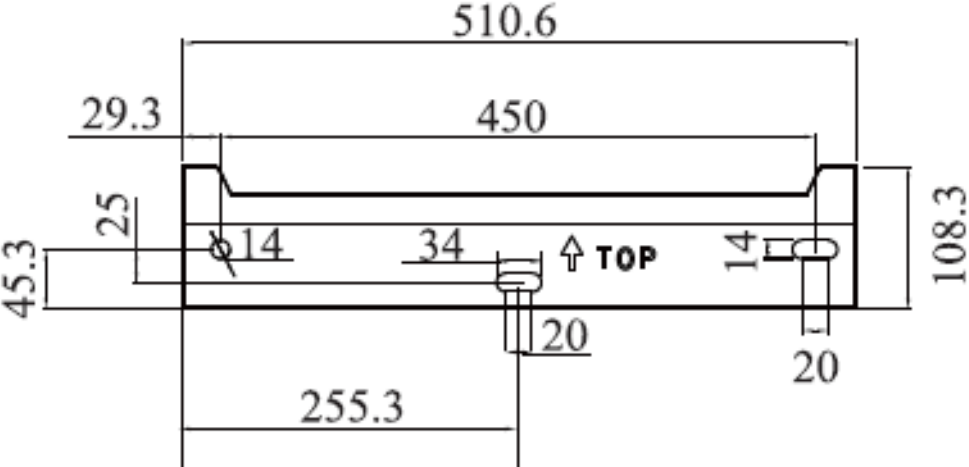


Upside-down ✗

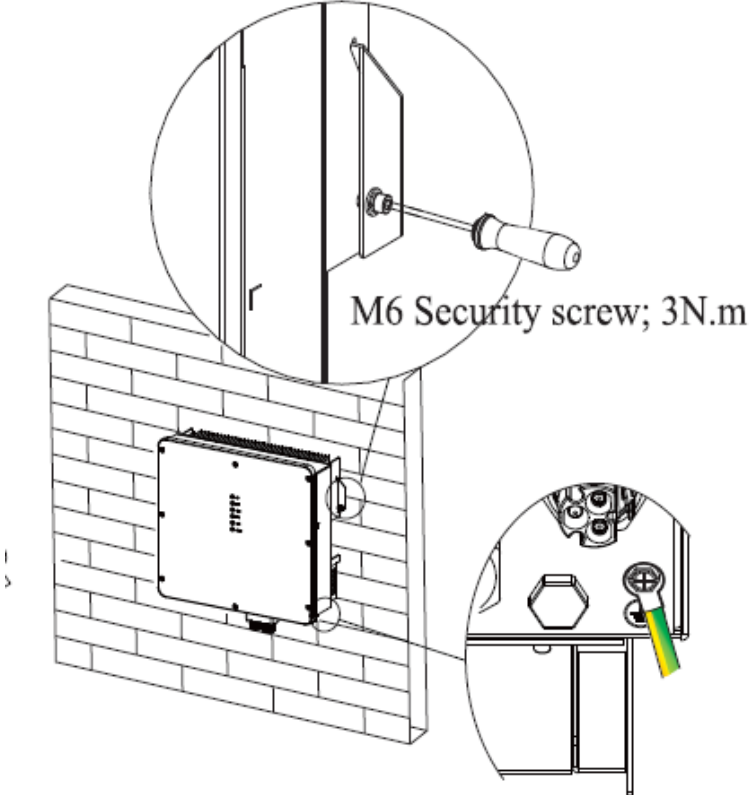


Horizontally ✗

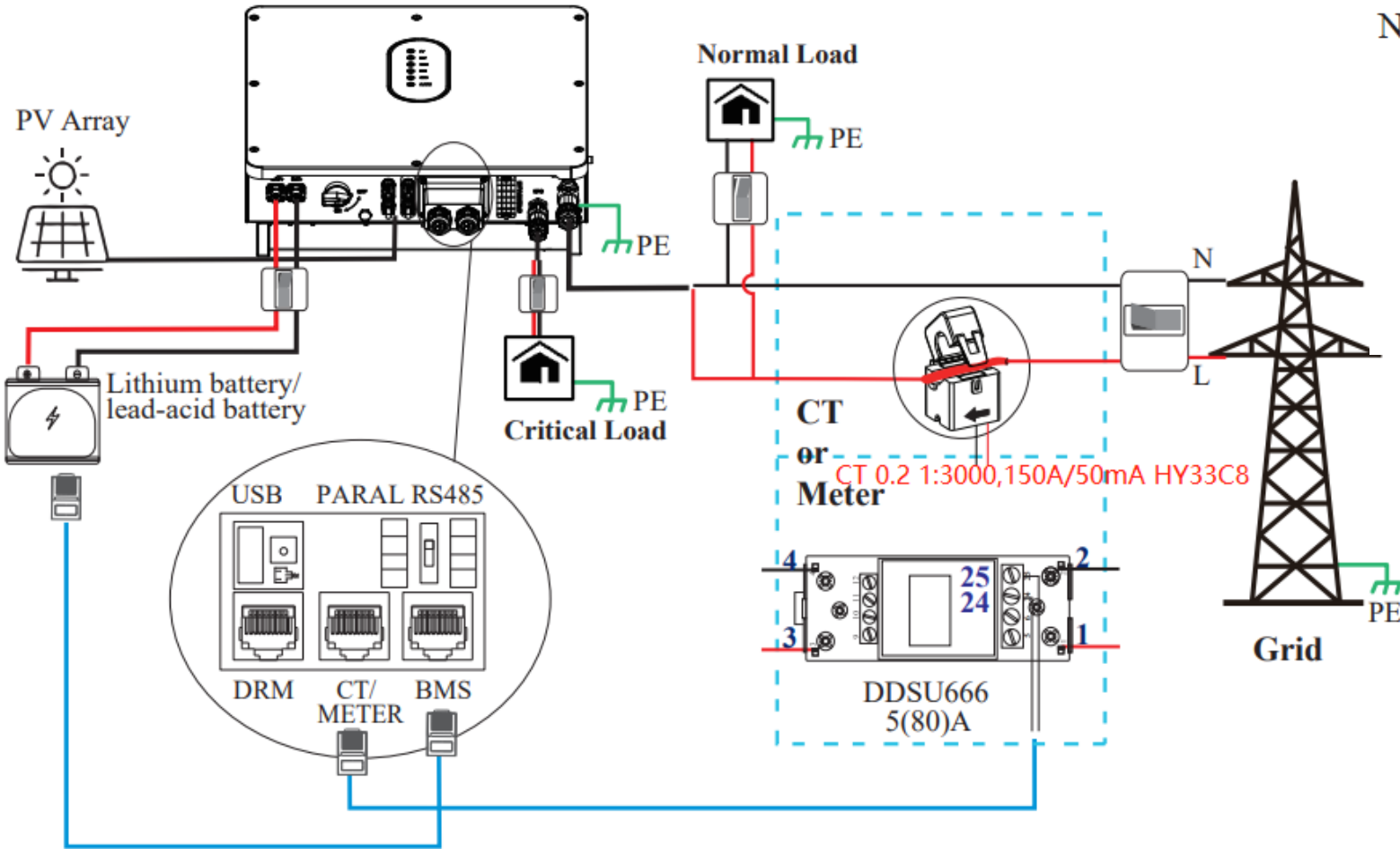
Mounting bracket and fixation



Unit: mm



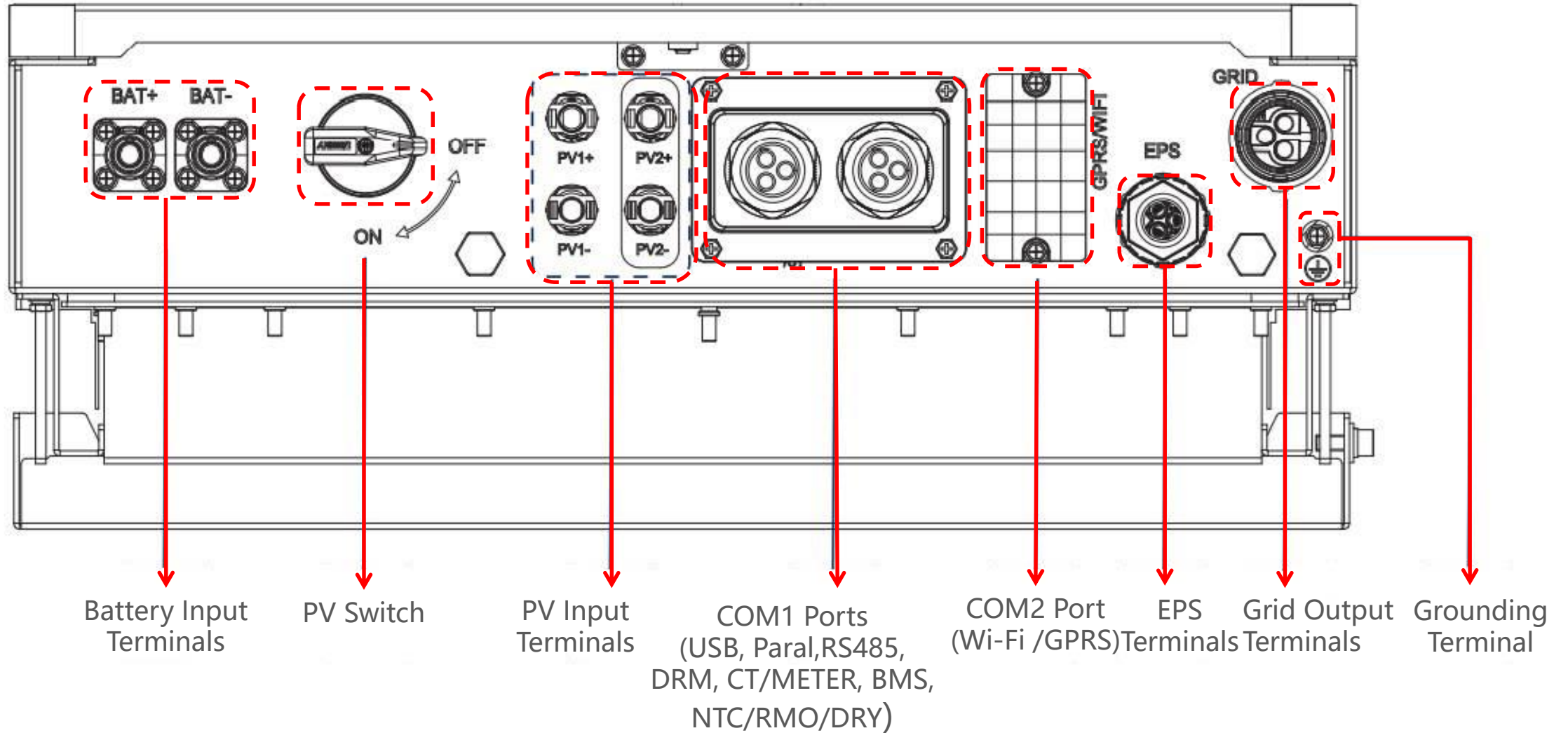
Electrical structure



Note: BMS connection is only for lithium battery.
Meter is optional.

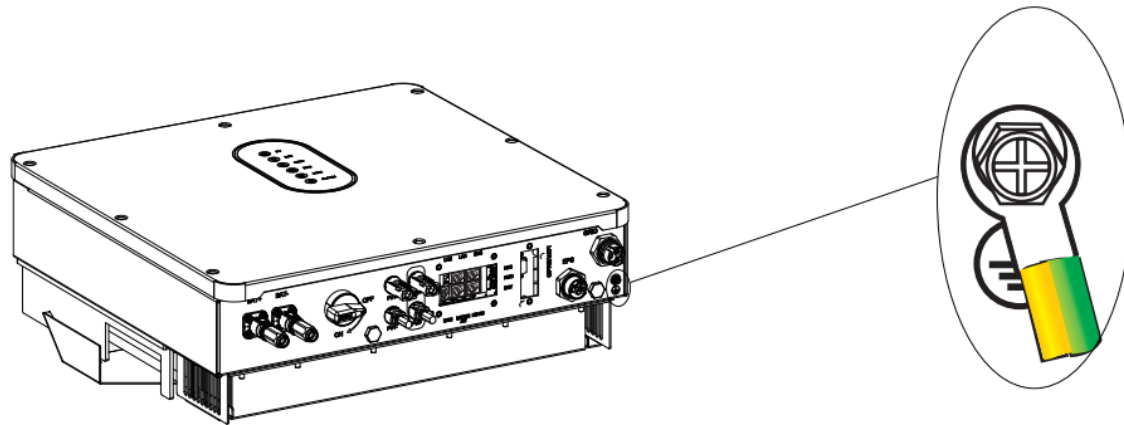
- DC breaker on BATTERY side: 150A
- AC breaker on Critical load side $\geq 50A$
- AC breaker on Normal load side $\geq 50A$
- AC breaker on Grid side $\geq 60A$

Interfaces 3.6 & 5.5kW

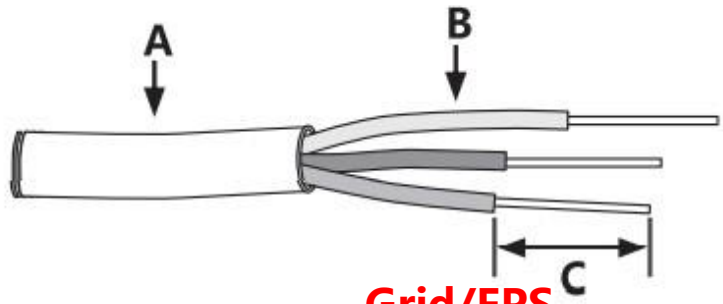


Grounding protection requirements

- ❑ Purpose: To protect the inverter and operator
- ❑ The diameter of the protection ground cable must be the same as that of the AC output PE cable
- ❑ To improve anti-corrosion performance, suggest to apply silicone gel or paint to the ground terminal
- ❑ Solar system grounding should be separated from building lighting protection grounding .



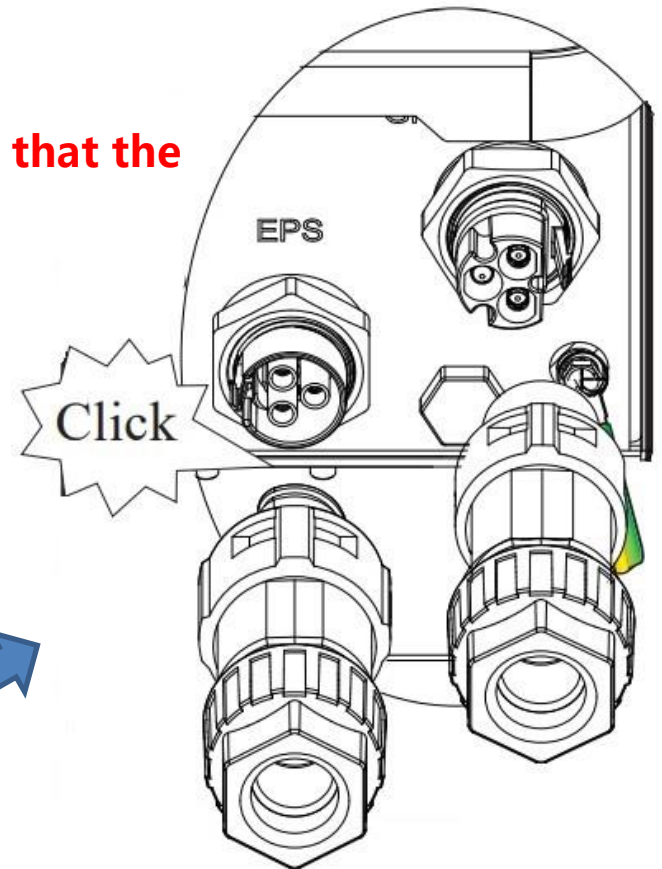
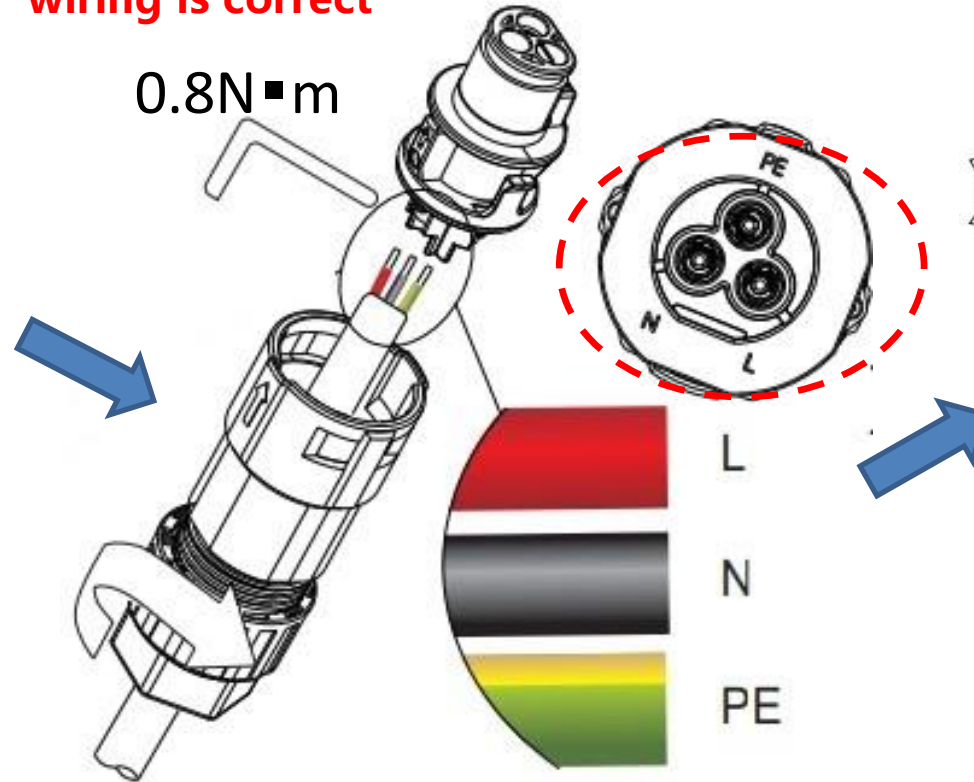
Grid/EPS cable connection



Grid/EPS

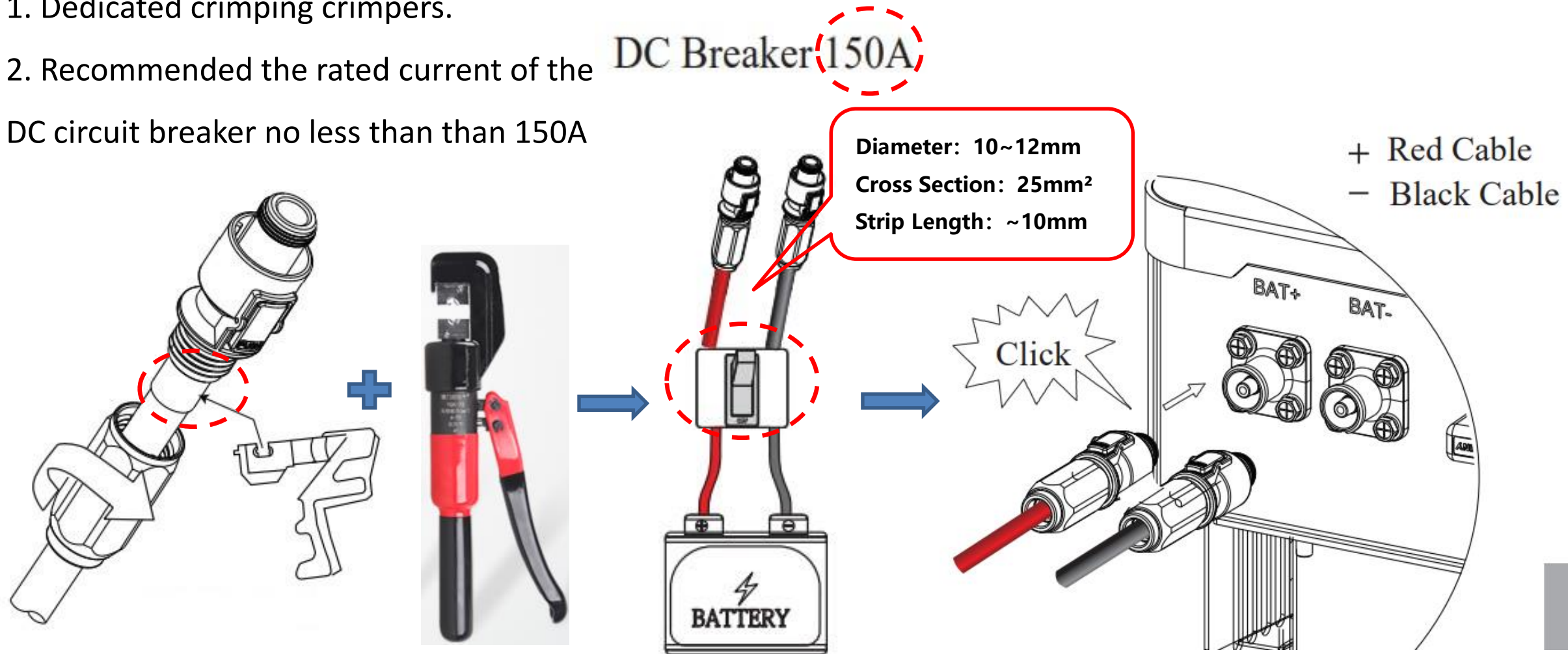
A. Diameter	14 ~ 20/10~14mm
B. Cross Section	8~14/4~6mm ²
C. Strip Length	~10mm

Note:
Check after connecting the wires to ensure that the wiring is correct



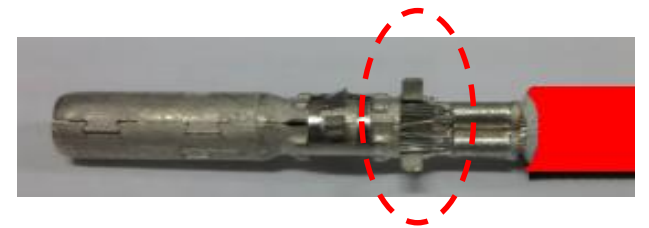
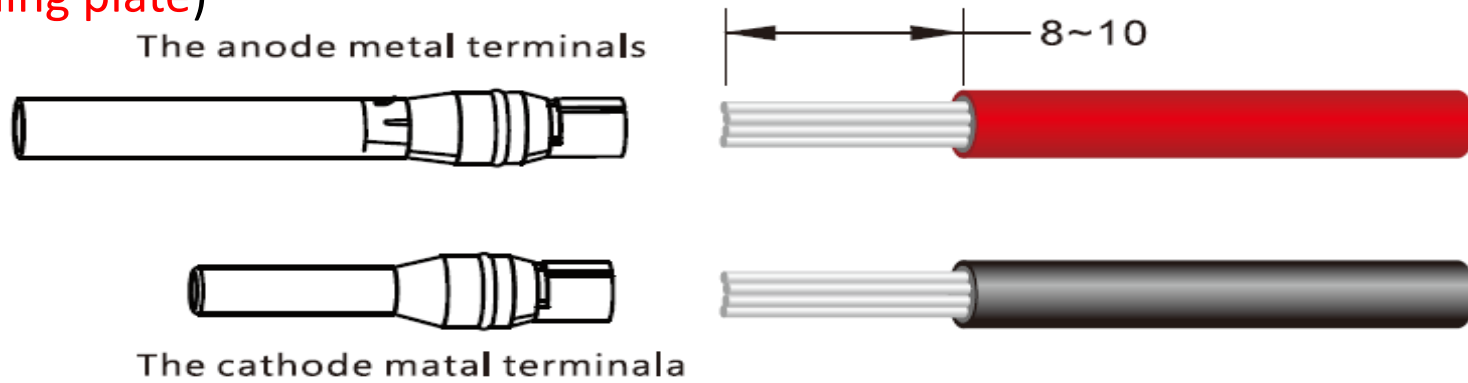
Battery connection

1. Dedicated crimping crimpers.
2. Recommended the rated current of the DC circuit breaker no less than 150A



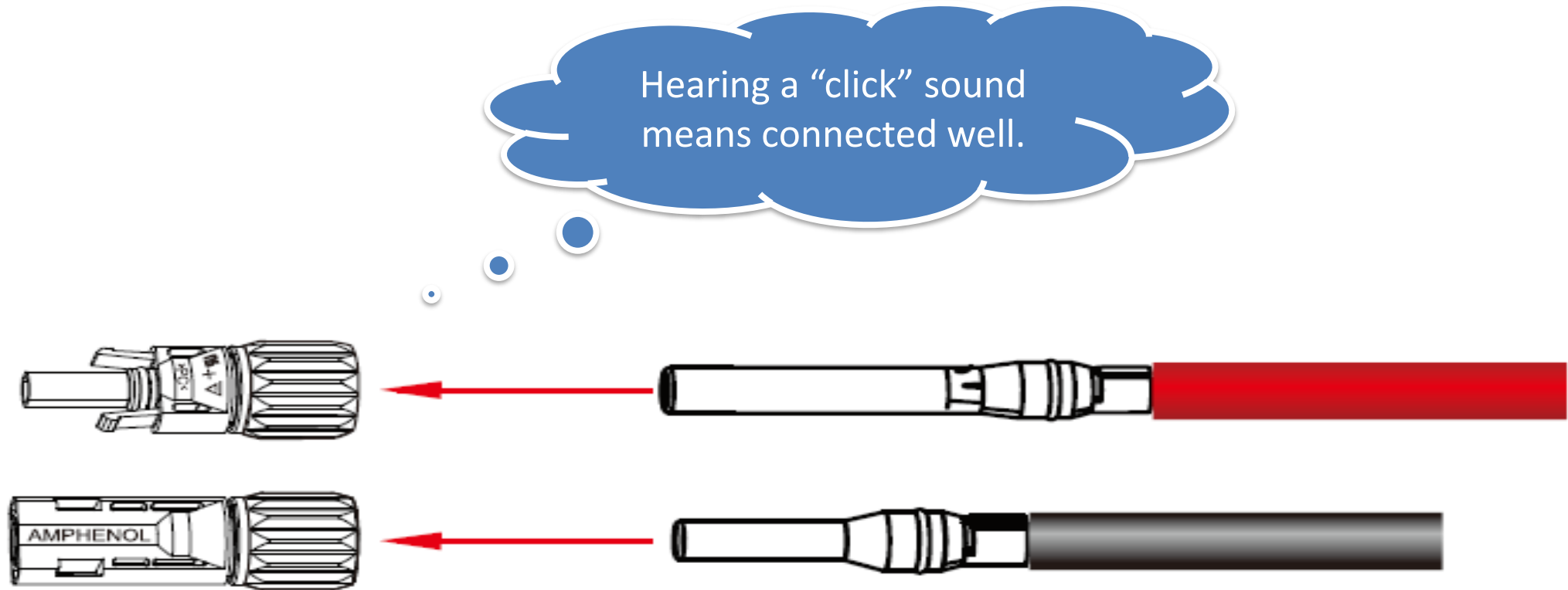
DC connection

1. PV wire crimping metal terminal (Note: 1. polarity corresponds; 2. do not destroy the positioning plate)



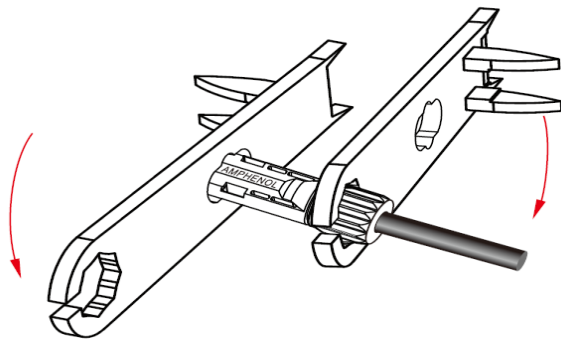
DC connection

2. Insert the metal terminal into the corresponding terminal shell (Note: 1. correspond pole , 2. insert the connector in place)

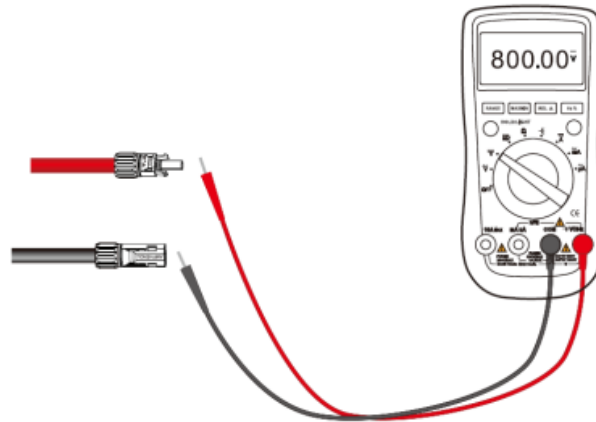


DC connection

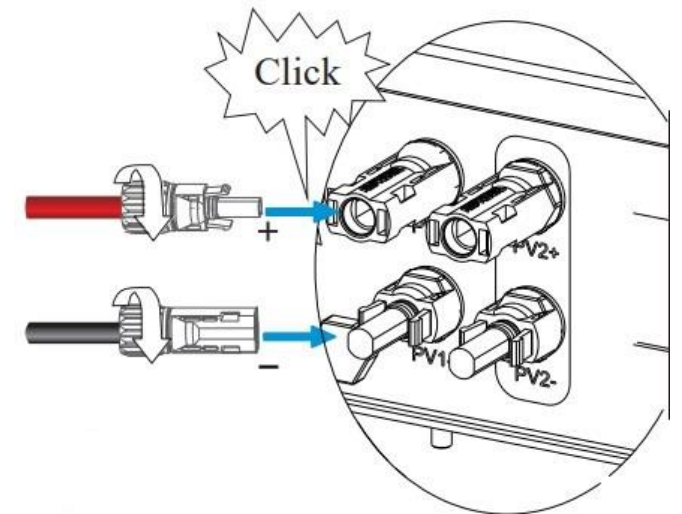
3 Tighten the terminal waterproof nut



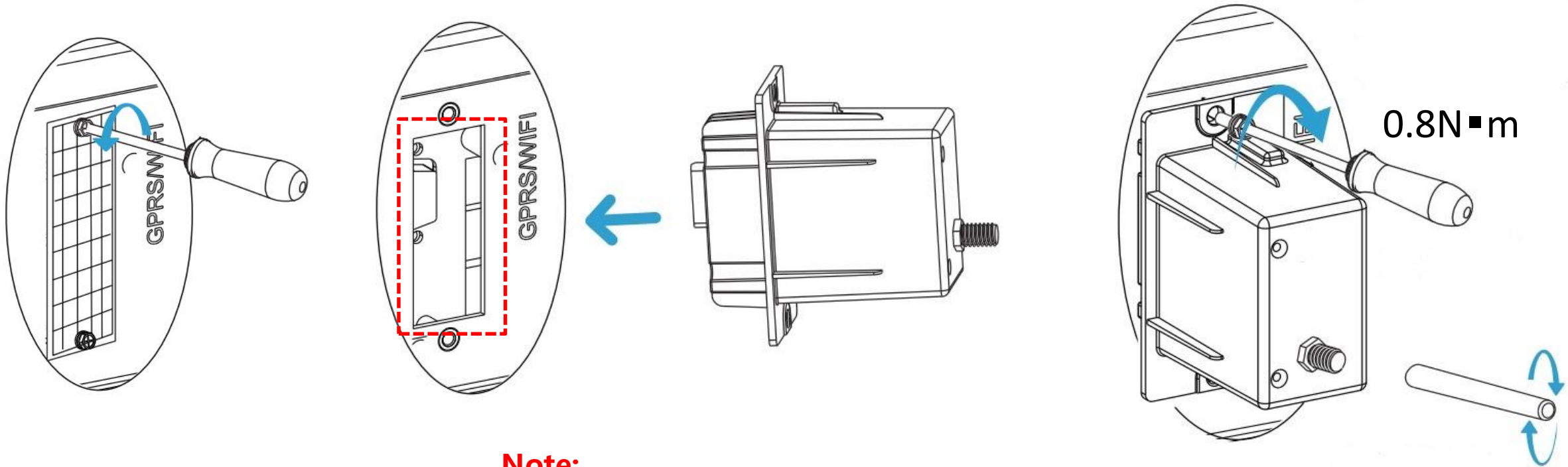
4 Measure the voltage of PV connectors to make sure the pole correct



5 Insert the PV connectors into the PV port



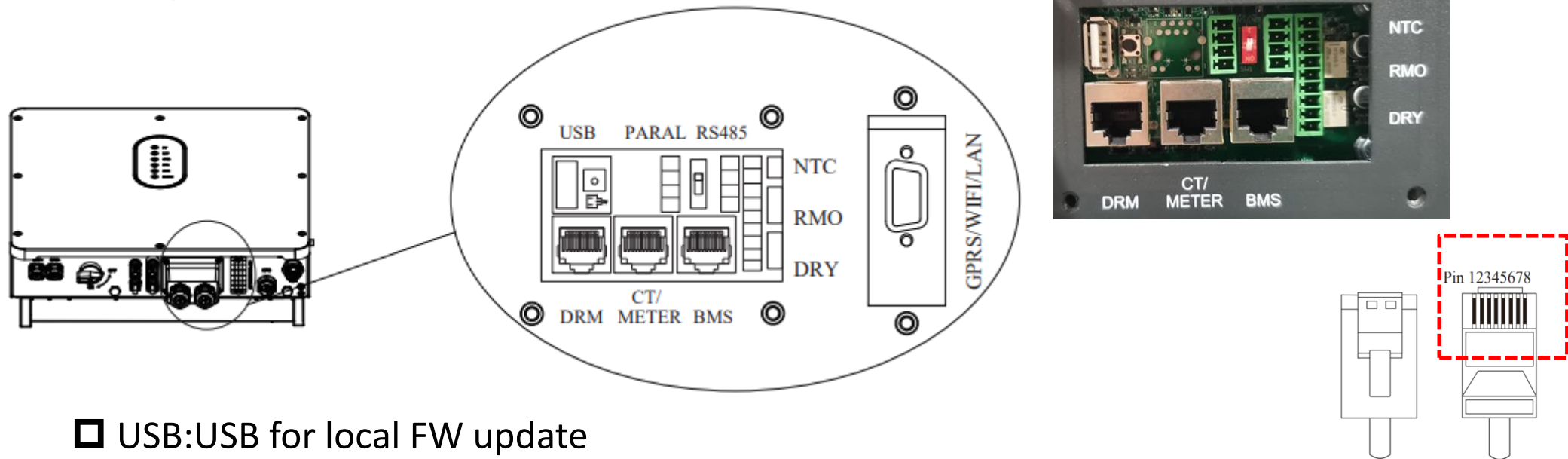
Wi-Fi/GPRS module installation



Note:

After the module is installed, check the module is tightly inserted

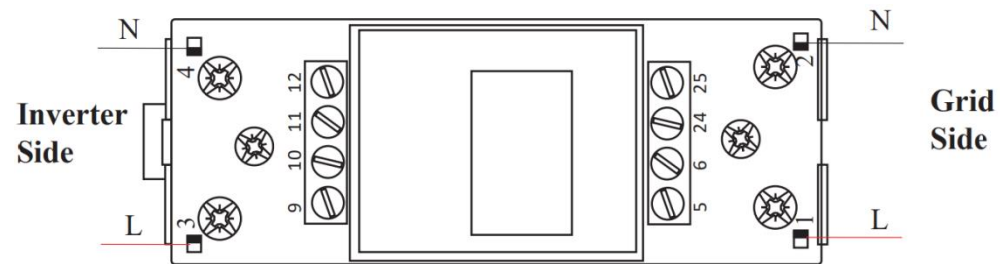
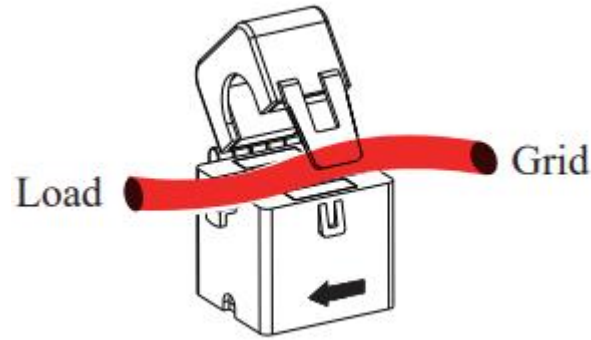
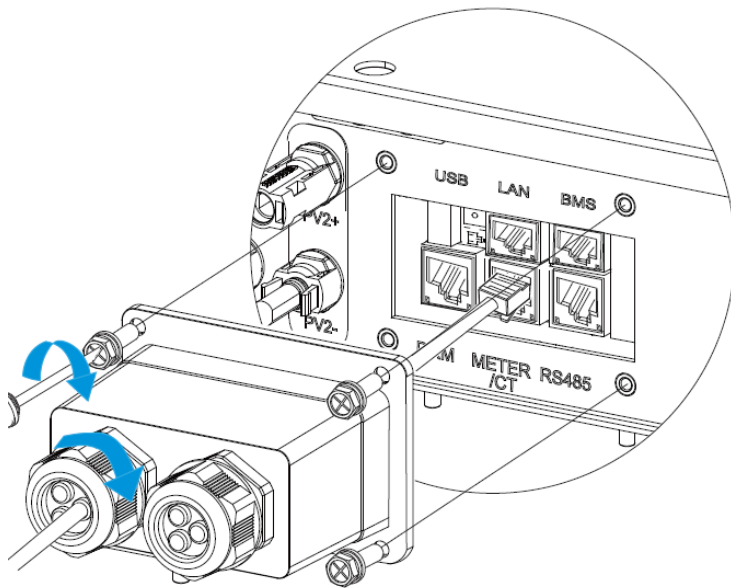
COM port connection



- ❑ USB:USB for local FW update
- ❑ PARAL:Parallel communication terminal
- ❑ BMS:Lithium battery COM port
- ❑ DRM:Only for AU market
- ❑ METER/CT:Meter/CT COM pot
- ❑ RS485:R485 for communication
- ❑ NTS:NTC for lead-acid temperature sensor
- ❑ RMO:Remote shutdown port
- ❑ DRY:DI/DO control port

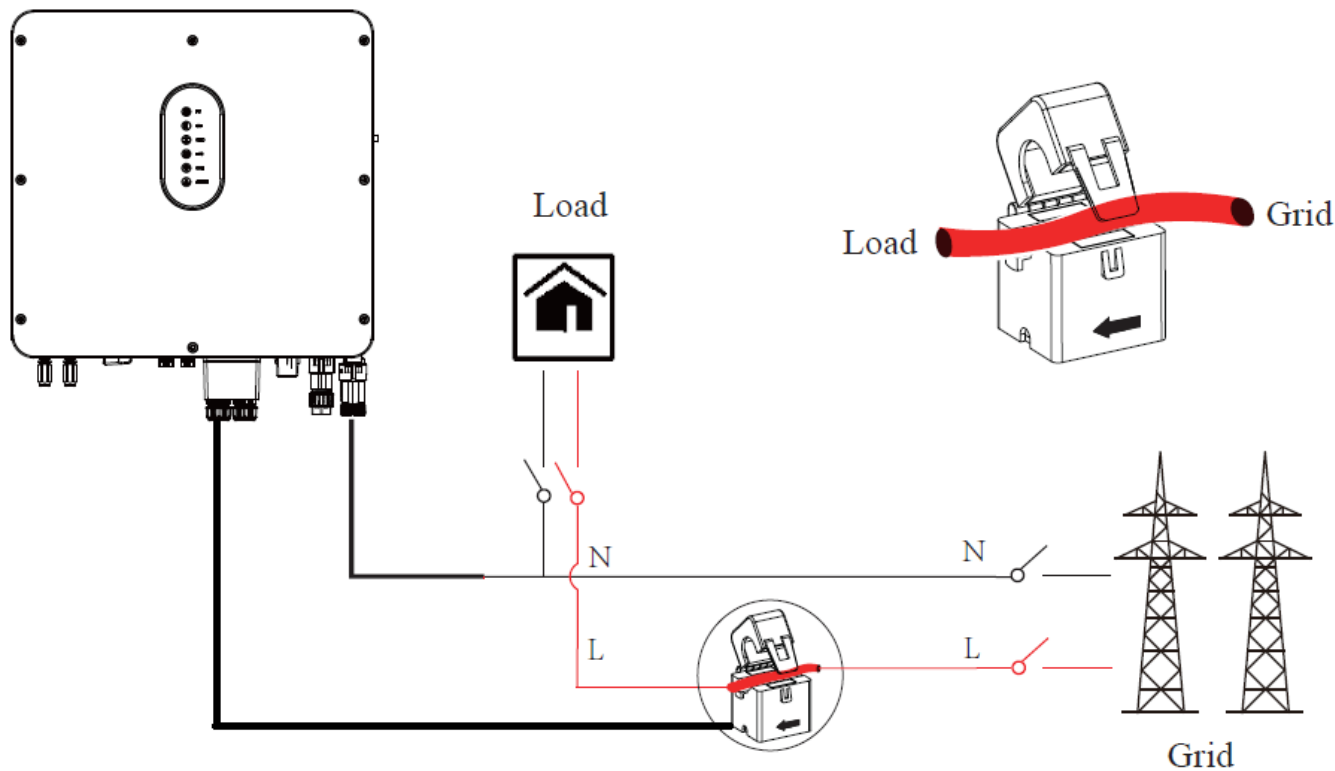
CT/Smart Meter connection

- ❑ Use only one option: CT or meter
- ❑ Add a AC breaker between CT/Meter and power grid for better maintenance

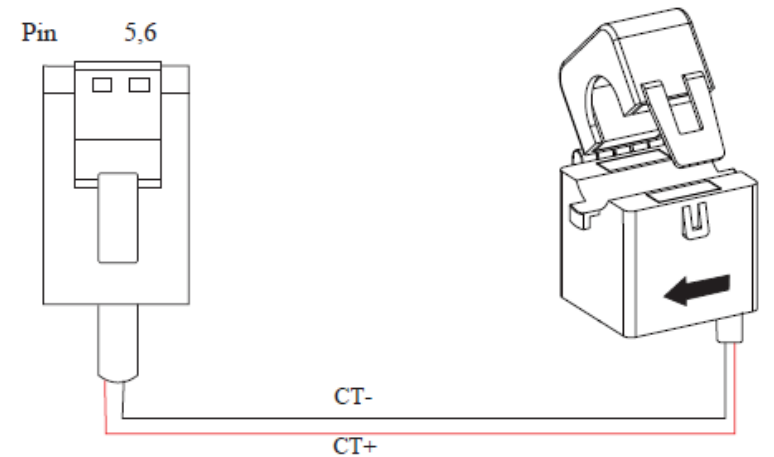


CT Wiring Diagram

- When connecting CT, pay attention to the direction of current flow. The current direction from the grid end to the inverter is positive, and the current direction from the inverter to the grid is negative



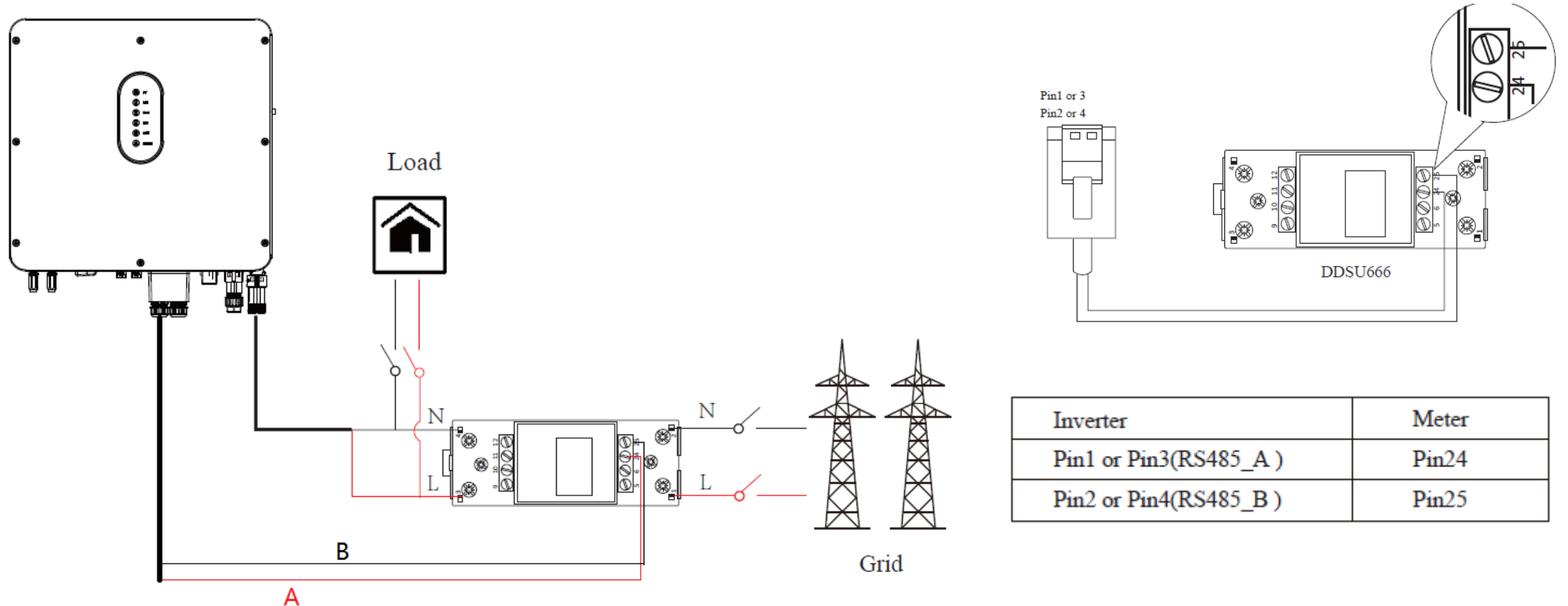
CT cable connection overview



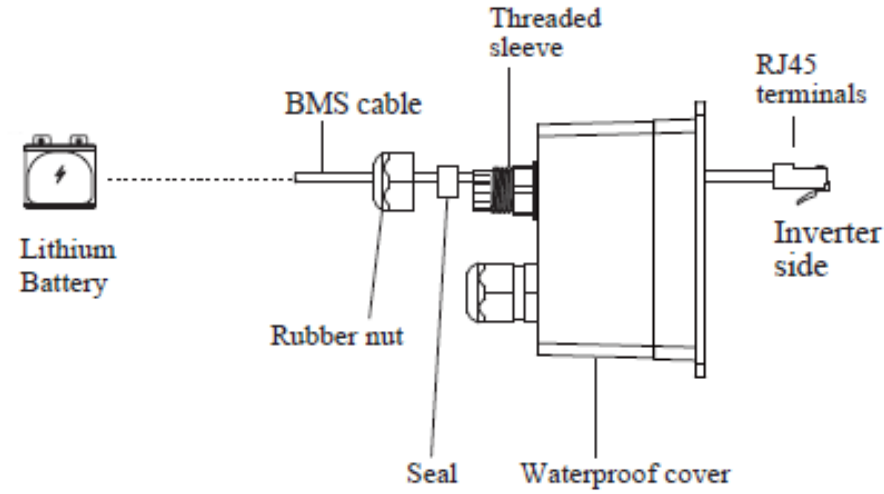
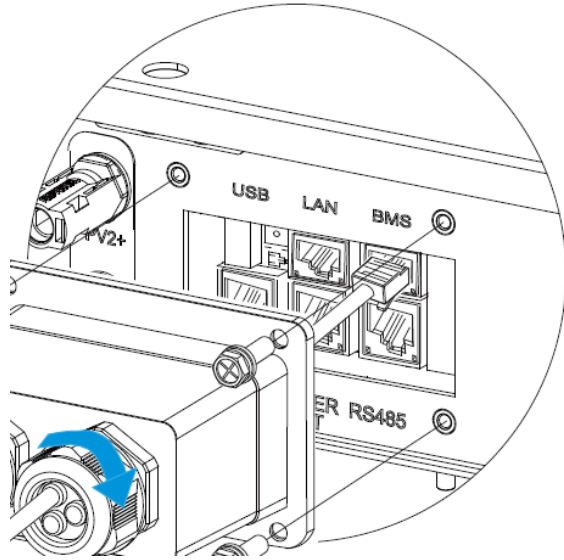
Inverter	CT
Pin5(CT+)	Red
Pin6(CT-)	Black

Smart Meter Wiring Diagram

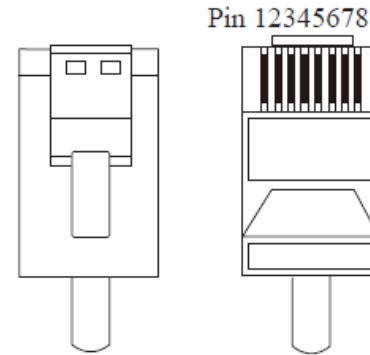
- pay attention to the direction of inlet and outlet. For details, refer to the instruction manual of the meter



BMS connection



RJ45 Terminal Configuration of Battery Communication (BMS)

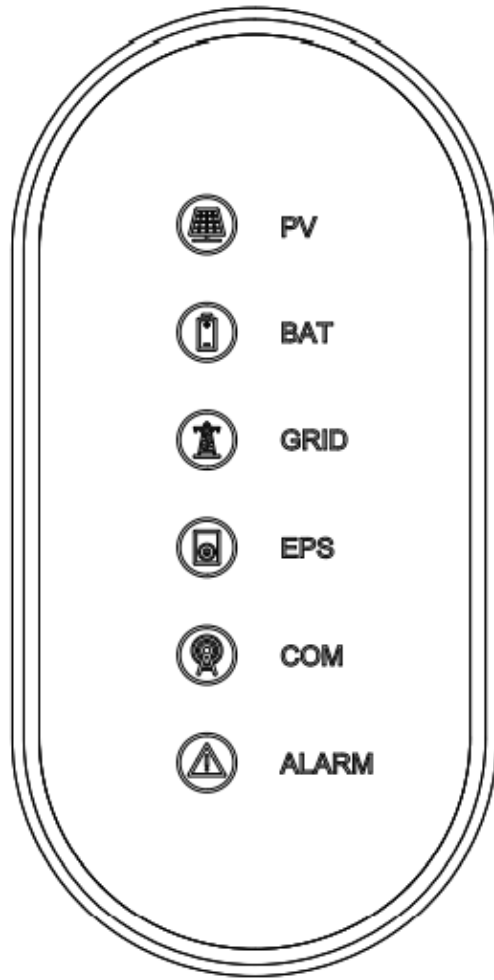


PIN	1	2	3	4
Function Description	RS485_A	RS485_B	GND_S	GND_S
PIN	5	6	7	8
Function Description	GND_S	GND_S	CAN_L	CAN_H

Note:

- 1 . Be sure BMS protocol is compatible with the inverter
- 2 Make communication cable according to the pin position inverter and battery

This manual describes the cable sequence of the inverter. For details about the cable sequence of the battery, see the manual of the battery you used.



1. The corresponding LEDs keeps on when working with different mode
2. Communication LED blink means data is being exchanged

LED Indicator	Status	Description
PV	On	PV input is normal.
	Blink	PV input is abnormal.
	Off	PV is unavailable.
BAT	On	Battery is charging.
	Blink	Battery is discharging. Battery is abnormal.
	Off	Battery is unavailable.
GRID	On	GRID is available and normal.
	Blink	GRID is available and abnormal.
	Off	GRID is unavailable.
COM	On	Communication is ok.
	Off	Power supply is unavailable.
EPS	On	EPS power is available.
	Blink	EPS output is abnormal.
	Off	EPS power is unavailable.
ALARM	On	Fault has occurred and inverter shuts down.
	Blink	Alarms has occurred but inverter doesn't shut down.
	Off	No fault.

Commissioning



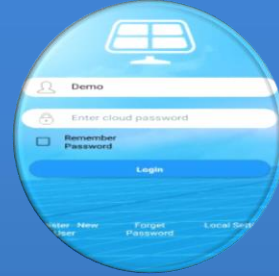
Turn on
AC switch



Turn on
Battery
switch



Turn on
PV switch



APP quick
setting



Select
working
mode



Download the mobile APP

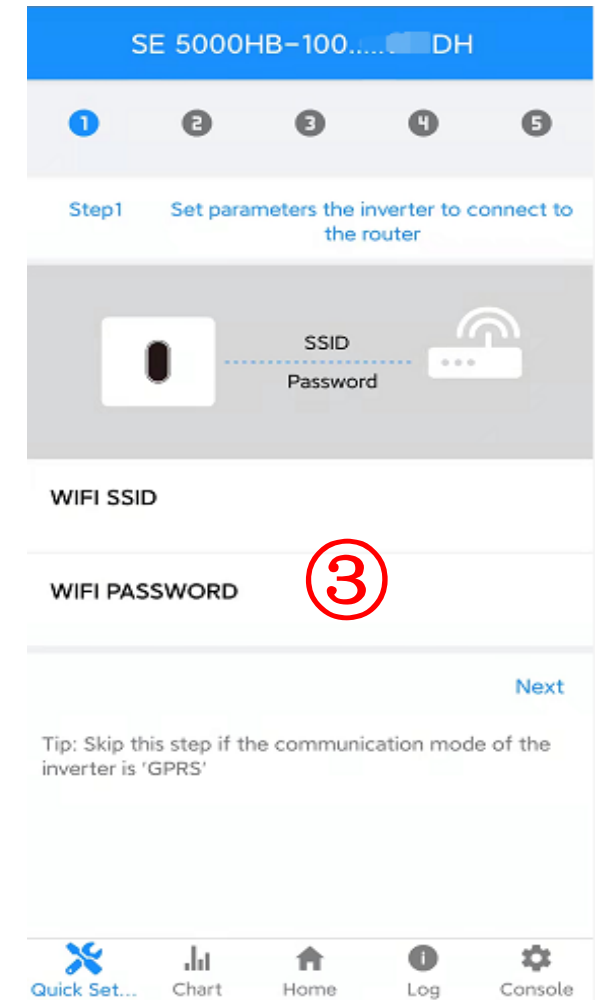
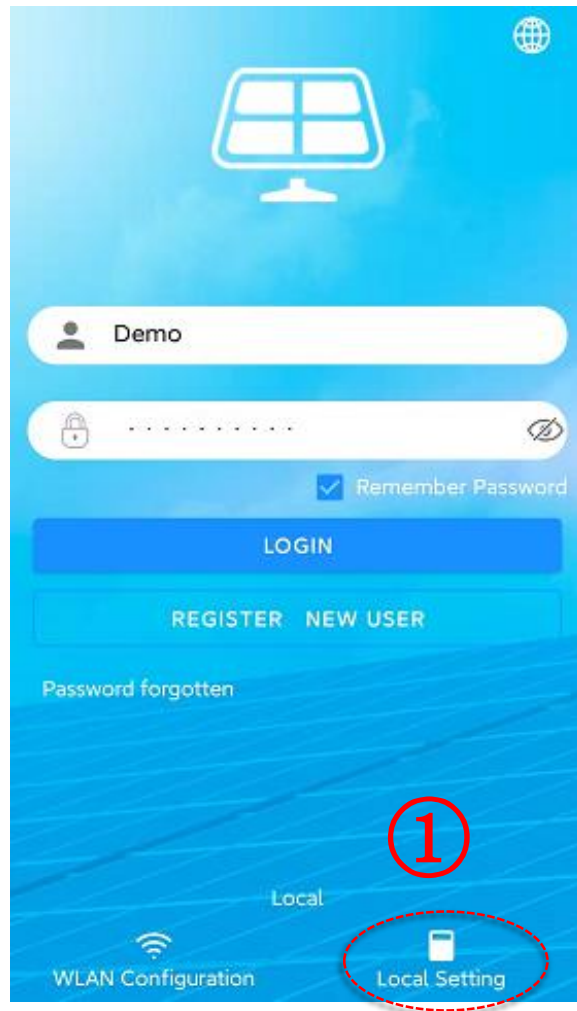
What can it do?

- ❑ Local monitoring and debugging through short distance wireless communication
- ❑ Remote monitoring the PV inverter from anywhere as long as your smart mobile device connected to the internet

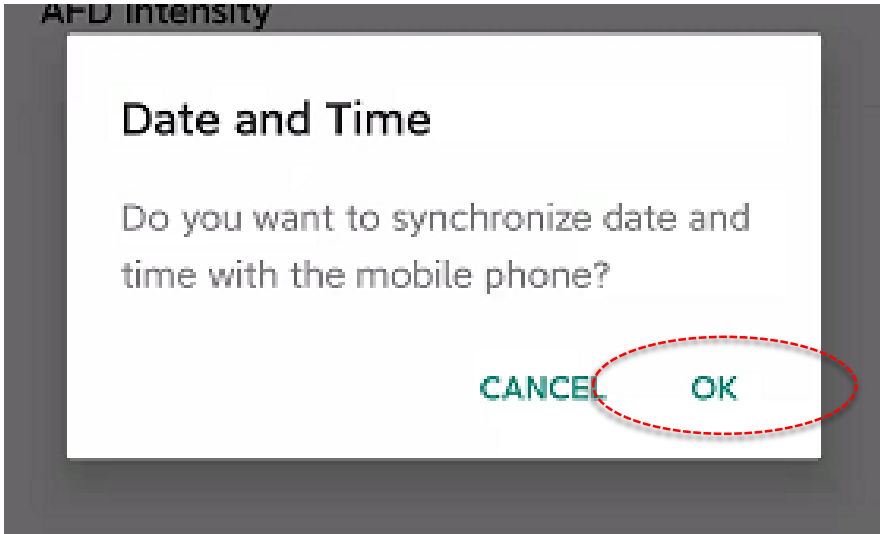
How to download it?

- ❑ Method 1: Scan the QR Code in the Quick Installation Manual with smart mobile device.
- ❑ Method 2: Search APP name in App Store if using iPhone.
- ❑ Method 3: Search APP name in Google play store if using Android
- ❑ Method 4: Access the portal of cloud monitoring service (<http://www.cloudinverter.net>)

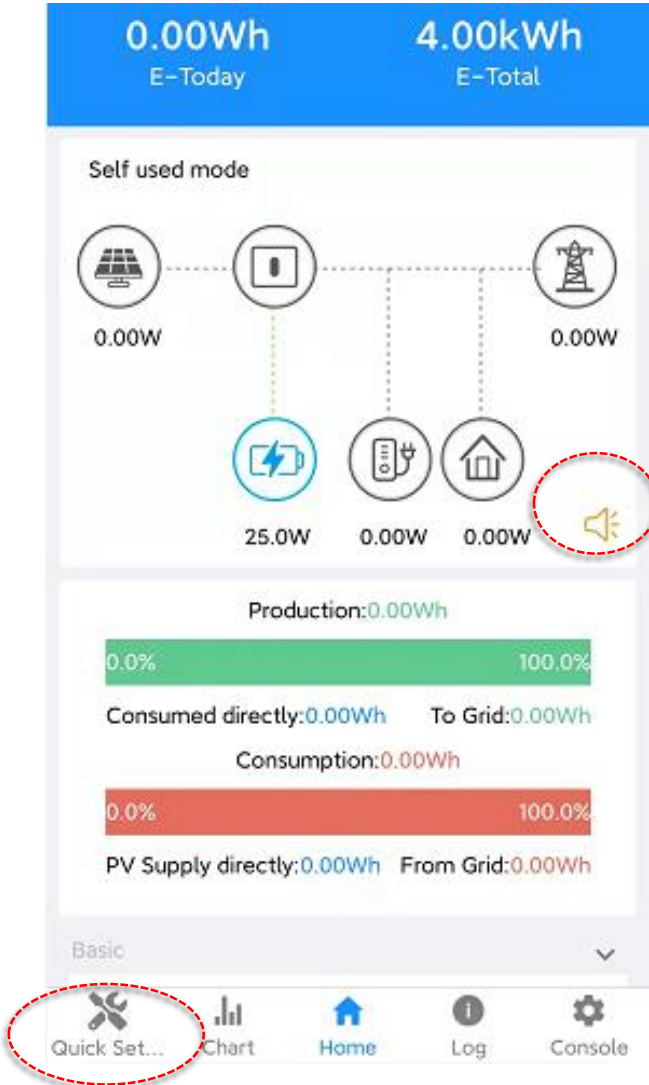
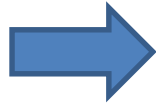
Connect smart mobile device to inverter through Bluetooth



Quick setting



Update inverter time




Current fault alarm

Quick setting

① Connect Wi-Fi network

Step1 Set parameters the inverter to connect to the router



The inverter is not connected to the router

WIFI SSID [Click on the switch](#)

WIFI PASSWORD

START THE CONFIGURATION

Next



② Setting grid parameters

Step2 Set parameters for the inverter to connect to the power grid

Standard Code
IN (IEC61727)

Nominal voltage(V)
230

Nominal frequency(Hz)
50

Date and Time
2023-06-02 11:21:47

[Previous](#) [Next](#)



③ Setting power limit parameters

Step3 Set parameters for the inverter to connect to the power limit

Power control
CT sensor

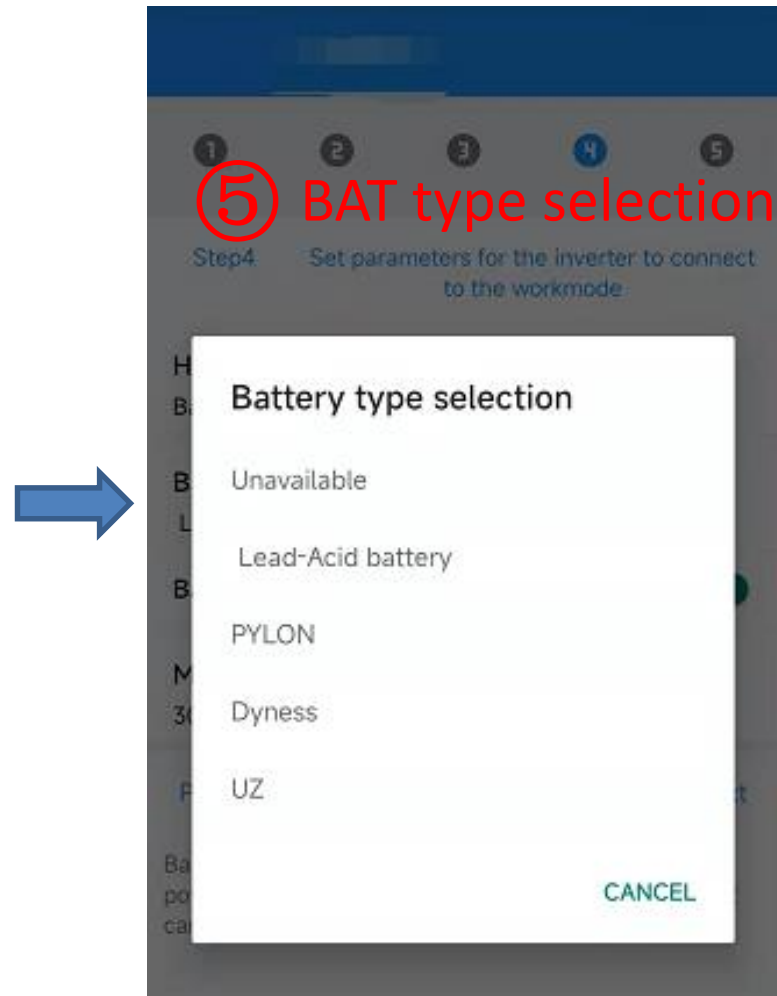
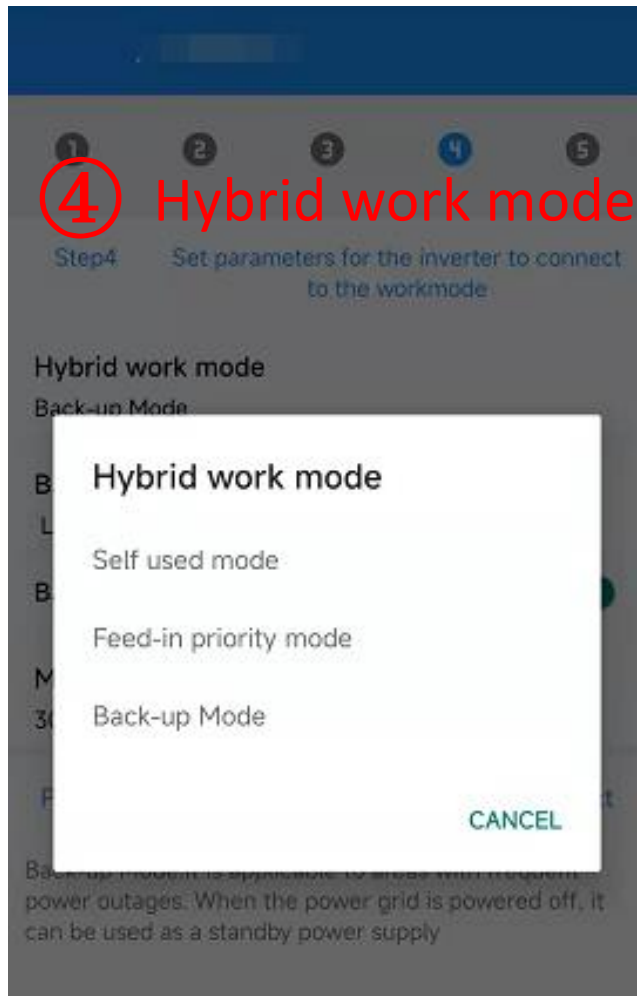
Meter location
On Grid

Power flow direction
From grid to inverter

Maximum feed in grid power(W)
0

[Previous](#) [Next](#)

Quick setting



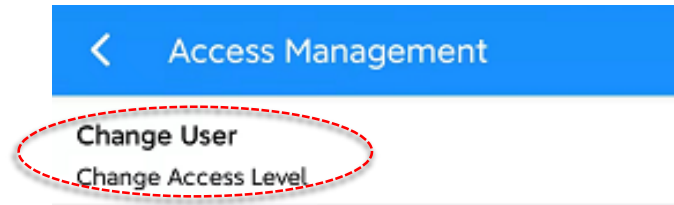
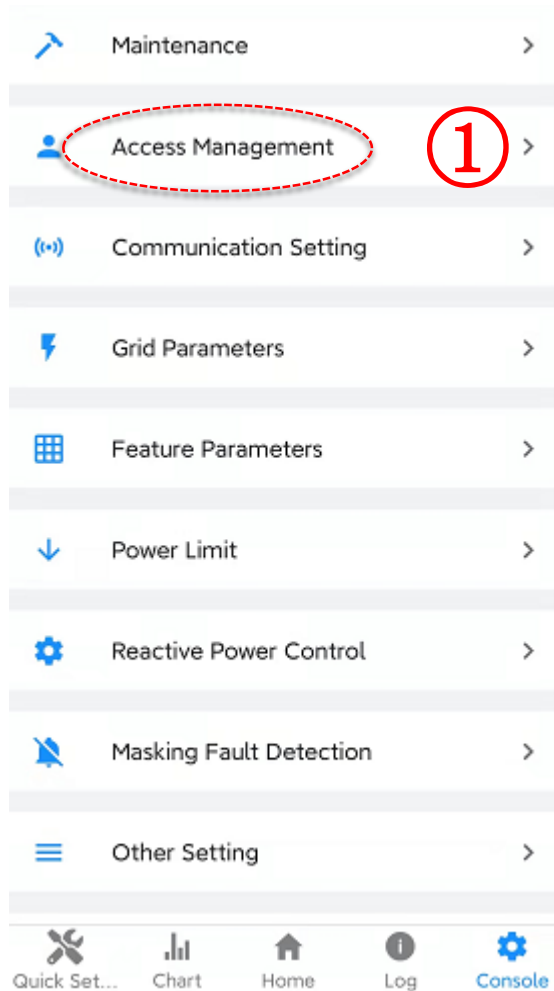
Red: Turn off the inverter
Green: Turn on the inverter

Check working status



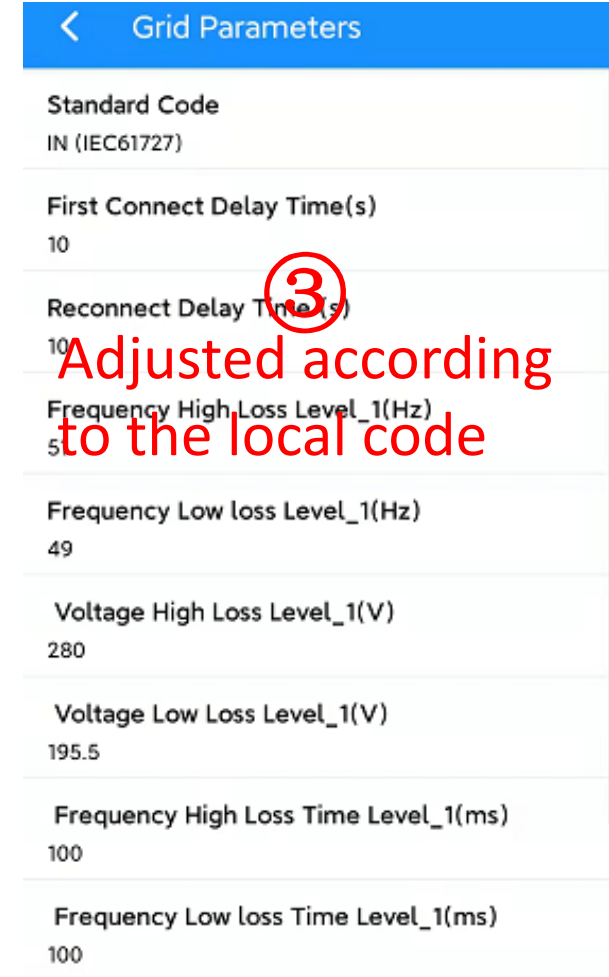
Refresh the home page and check whether the data displayed is consistent with the reality

Other settings — grid parameters

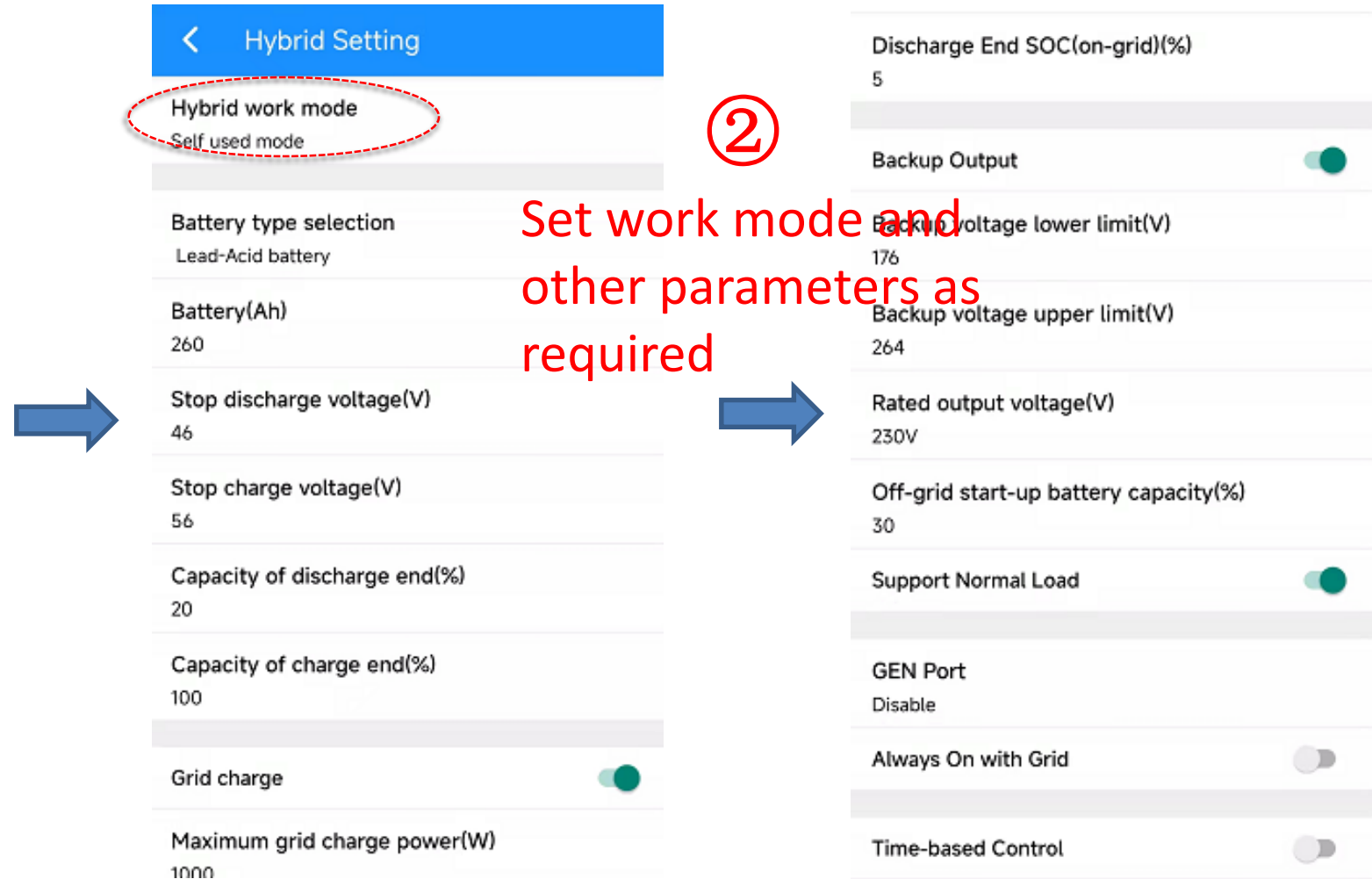


②

Enter "admin"



Other settings — Hybrid parameters

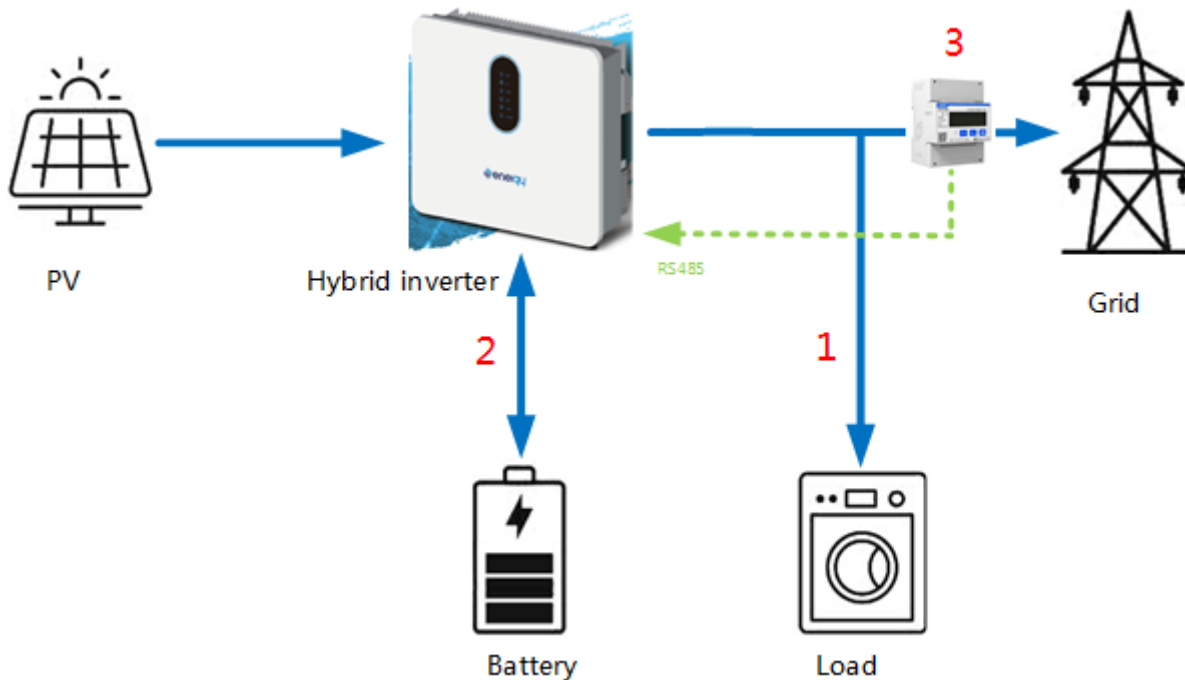


Working mode introduction



Residential ESS working modes

Self Used Mode - daytime



Priority: Load > BAT > Grid

PV Energy Priority

- ① PV is preferentially supplied to the load
- ② Extra energy charges the BAT
- ③ Feed into the grid

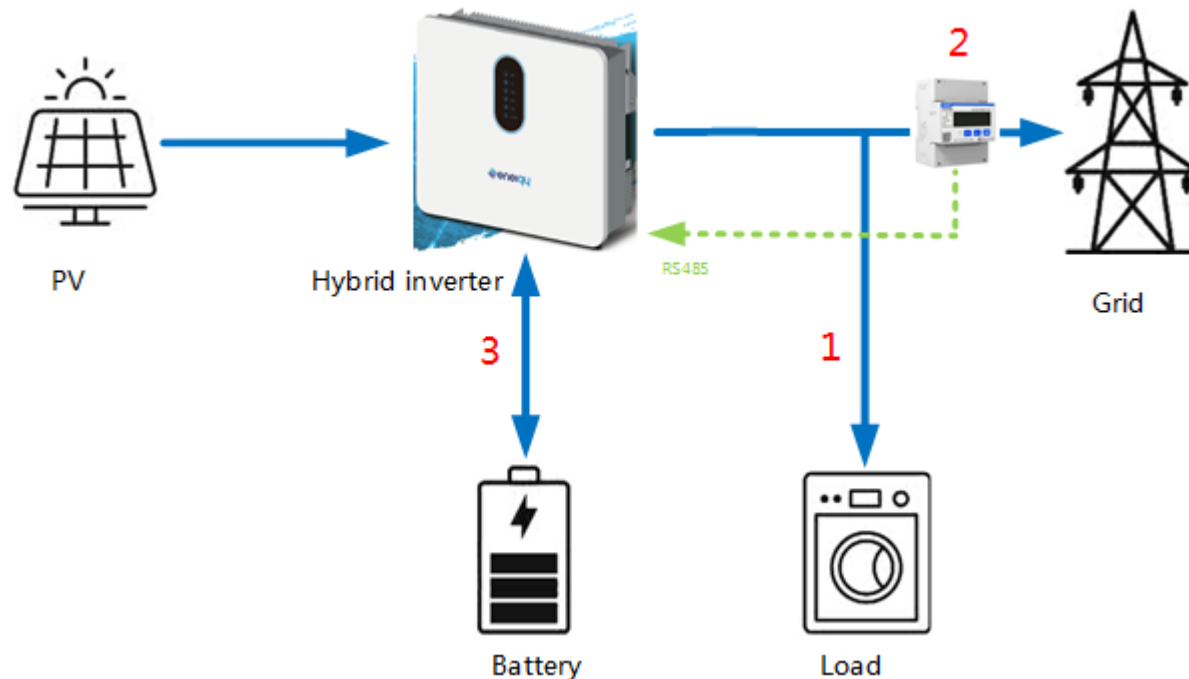
Load Power Supply Priority

- ① The load obtains power from the PV preferentially
- ② If the PV power is poor, the BAT provides additional power
- ③ Supplemented by power grid if necessary

Application: Applicable to areas with high electricity price, low subsidies and high requirements for self-use

Residential ESS working modes

Feed-in Priority Mode - daytime



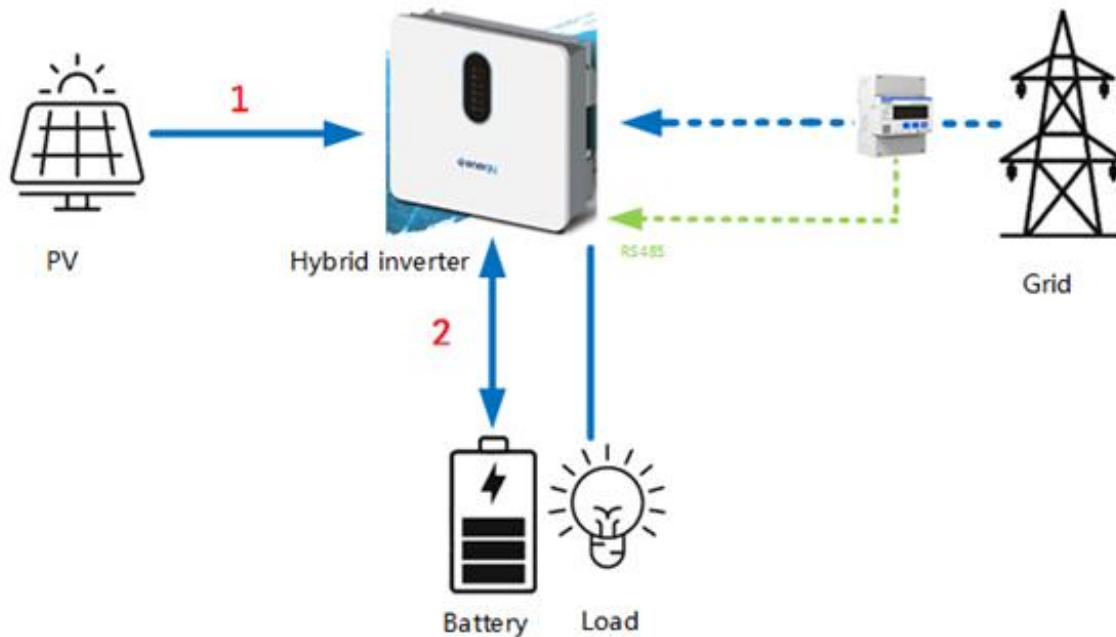
Priority: Load > Grid > BAT

- ① PV is preferentially supplied to the load
- ② Extra energy feed into the grid
- ③ The excess energy charges the BAT

Application: Applicable to areas with high subsidies and high requirements for self-use

Residential ESS working modes

Back UP mode



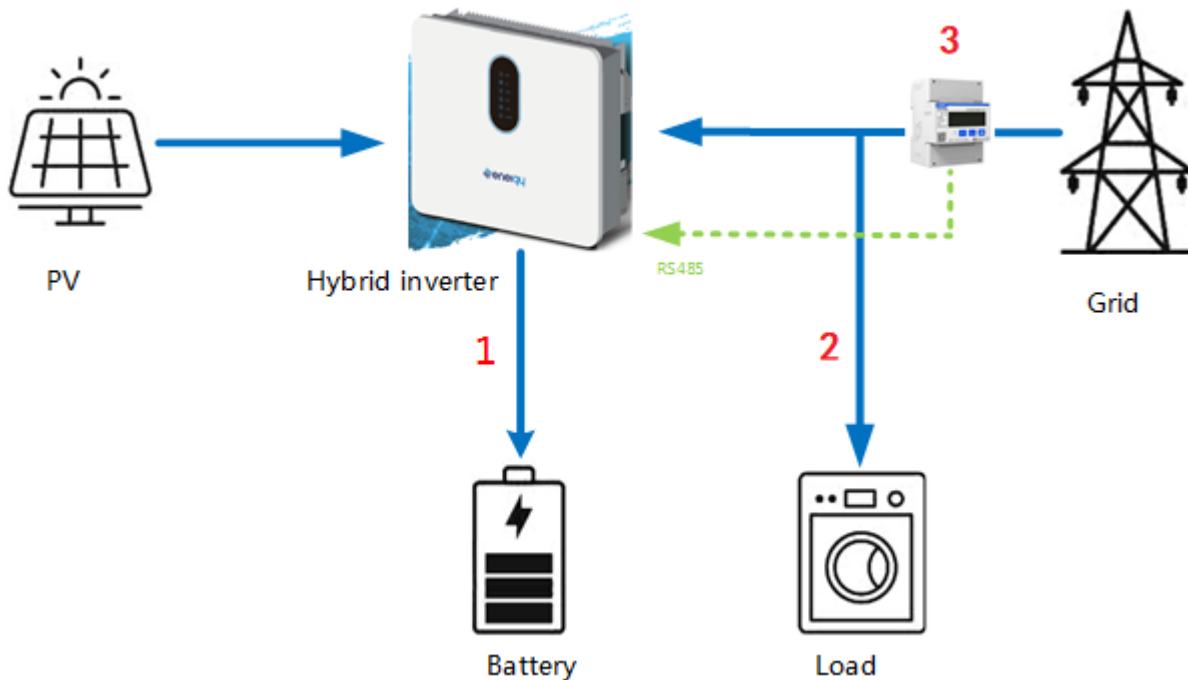
Priority: BAT > Load > Grid

- ① Automatically switch to EPS for emergency load if the grid power abnormal
- ② PV supplies the load with the maximum charging current, extra power is used to charge the battery
- ③ BAT supplies to the load if PV power is not enough
- ④ Charging from power grid to the BAT is settable

Application : Suitable for areas with frequent power outages, and can be used as backup power supply when the power grid is abnormal

Residential ESS working modes

Time-Based Control Introduce - Charge



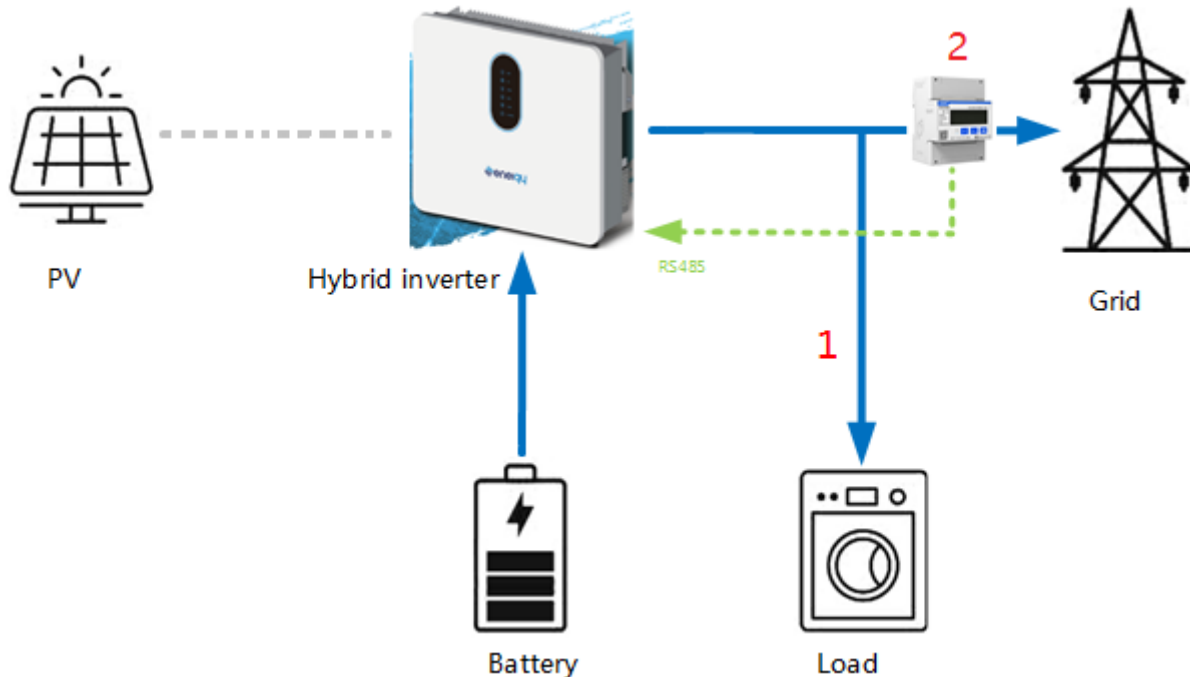
Priority: BAT > Load > Grid

- ① PV charges the battery with the maximum charging current
- ② Extra energy supplies to the load
- ③ Power grid charges the BAT if PV power is not enough
- ④ Power grid supplies to the load if PV power is not enough

Application :Within the user-defined time period , **Time-based Control** > **other work mode**. Undefined time periods will run according to the preset work mode.

Residential ESS working modes

Time-Based Control Introduce - Discharge



Priority: Load > Grid

- ① MPPT stops working in battery discharge mode
- ② BAT power supplies to the load , extra energy feed into the grid
- ③ Power grid supplies to the load if BAT power is not enough

Application :Within the user-defined time period , **Time-based Control** > **other work mode**. Undefined time periods will run according to the preset work mode.