

# Commercial and Industrial Smart Inverter Solutions

GW50K-ET-L-G10 | GW75K-ET-G10 | GW80K-ET-G10 | GW99.99K-ET-G10 | GW100K-ET-G10  
GW51.2-BAT-I-G10 | GW56.3-BAT-I-G10  
GW92.1-BAT-AC-G10 | GW102.4-BAT-AC-G10 | GW112.6-BAT-AC-G10

## Solution User Manual

**GOODWE**

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### **NOTICE**

The information in this user manual is subject to change due to product updates or other reasons.

This guide cannot replace the notices and warnings of the device unless otherwise specified. All descriptions in the manual are for guidance only.

# About This Manual

## Overview

The energy storage system consists of inverter, battery system, and smart meter. This manual describes the product information, installation, electrical connection, commissioning, troubleshooting and maintenance of the system. Read through this manual before installing and operating the products to understand product safety information and familiarize yourself with functions and features of the product. This manual is subject to update without notice. For more product details and latest documents, visit <https://en.goodwe.com/>.

## Applicable Model

The energy storage system includes the following products:

Product Type	Product Information	Description
Inverter	GW50K-ET-L-G10	-
	GW75K-ET-G10	
	GW80K-ET-G10	
	GW99.99K-ET-G10	
	GW100K-ET-G10	
Static Transfer Switch Cabinet	GW125K-STS-G10	Nominal output power: 125kW
Battery system	BAT Series 35.8-56.3kWh High Voltage Battery	<ul style="list-style-type: none"><li>Supports up to 6 battery systems in parallel cluster</li><li>Different models of battery systems cannot be mixed and used in parallel cluster within the same battery input terminal of the inverter</li></ul>

Product Type	Product Information	Description
	BAT Series 92.1-112.6kWh Commercial & Industrial Battery System	<ul style="list-style-type: none"> <li>Single cluster storage capacity 92.1/102.4/112.6kWh, parallel cluster storage capacity up to 368.4/409.6/450.4kWh</li> <li>Supports up to 4 battery systems in parallel cluster</li> <li>Different models of battery systems cannot be mixed and used in parallel cluster within the same battery input terminal of the inverter</li> <li>Domestic version is only applicable to BAT Series 102.4-112.6kWh Commercial &amp; Industrial Battery System</li> </ul>
Smart Meter	GM330	Monitoring module in the energy storage system, capable of detecting operating voltage, current, and other information in the system
Smart dongle	WiFi/LAN Kit-20	In standalone scenario, system operation information can be uploaded to the monitoring platform via WiFi or LAN signal
	4G Kit-CN-G20	In standalone scenario, system operation information can be uploaded to the monitoring platform via 4G signal
	4G Kit-G20	In standalone scenario, system operation information can be uploaded to the monitoring platform via 4G signal

## Symbol Definition

DANGER

Indicates a high-level hazard that, if not avoided, will result in death or serious injury.

 **WARNING**

Indicates a medium-level hazard that, if not avoided, could result in death or serious injury.

**CAUTION**

Indicates a low-level hazard that, if not avoided, could result in minor or moderate injury.

**NOTICE**

Highlights key information and supplements the texts. Or some skills and methods to solve product-related problems to save time.

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# 1 Safety Precautions

Please strictly follow these safety instructions in the user manual during the operation.

## WARNING

The products are designed and tested strictly to comply with related safety rules. Follow all the safety instructions and cautions before any operations. Improper operation might cause personal injury or property damage as the products are electrical equipment.

## 1.1 General Safety

### NOTICE

- The information in this user manual is subject to change due to product updates or other reasons. This manual cannot replace the product safety labels unless otherwise specified. All descriptions in the manual are for guidance only.
- Before installations, read through the user manual to learn about the product and the precautions.
- All operations should be performed by trained and knowledgeable technicians who are familiar with local standards and safety regulations.
- Use insulating tools and wear personal protective equipment(PPE) when operating the equipment to ensure personal safety. Wear anti-static gloves, wrist strips, and cloths when touching electronic devices to protect the equipment from damage.
- Unauthorized dismantling or modification may damage the equipment, and the damage is not covered under the warranty.
- Strictly follow the installation, operation, and configuration instructions in this manual or the user manual. The manufacturer shall not be liable for equipment damage or personal injury if you do not follow the instructions. For more warranty details, please visit <https://www.goodwe.com/warrantyrelated.html>.

## 1.2 Personal Requirements

## NOTICE

- Personnel who install or maintain the equipment must be strictly trained, learn about safety precautions and correct operations.
- Only qualified professionals or trained personnel are allowed to install, operate, maintain, and replace the equipment or parts.

## 1.3 System Safety



- Before performing electrical connections, disconnect all upstream switches of the equipment to ensure it is powered off. Operating on live circuits is strictly prohibited, as it may cause electric shock or other hazards.
- To prevent personal injury or equipment damage caused by working on live circuits, a circuit breaker must be added to the voltage input side of the equipment.
- All operations, including transportation, storage, installation, operation, use, and maintenance, must comply with applicable laws, regulations, standards, and specifications.
- The specifications of cables and components used for electrical connections must comply with local laws, regulations, standards, and specifications.
- Please use the cable connectors provided in the box to connect the equipment cables. If other models of connectors are used, any resulting equipment damage is not within the manufacturer's liability.
- Ensure all equipment cable connections are correct, secure, and not loose. Improper wiring may cause poor contact or damage the equipment.
- Before operating the equipment, ensure the system is reliably grounded. Otherwise, there is a risk of electric shock.
- To protect the equipment and its components from damage during transportation, ensure transport personnel are professionally trained. Record the operational steps during transport and keep the equipment balanced to avoid dropping.
- The equipment is heavy. Assign personnel according to the equipment's weight to prevent it from exceeding the human carrying capacity, which could cause injury.
- Ensure the equipment is placed stably and not tilted. Equipment tipping may cause equipment damage and personal injury.
- Do not wear metal objects during Equipment Handling, Installation, or commissioning to avoid equipment damage or electric shock injury.
- Do not place metal parts on the equipment to prevent conductive electric shock injury.
- If the equipment short-circuits, do not approach or touch it. Immediately turn off the power.

 **WARNING**

- During device installation, avoid placing weight on the terminal blocks, as this may cause terminal damage.
- If the cable is subjected to excessive tension, poor connections may result. When wiring, leave a certain length of slack in the cable before connecting it to the device's terminal port.
- Cables of the same type should be bundled together. Different types of cables should be routed at least 30mm apart and must not be intertwined or cross-routed.
- Using cables in high-temperature environments may cause insulation aging or damage. Maintain a distance of at least 30mm between cables and heat-generating components or the periphery of heat source areas.

### 1.3.1 PV String Safety

 **WARNING**

- Ensure that the component frames and bracket system are properly grounded.
- After connecting the DC cables, ensure that the cable connections are tight and secure. Improper wiring may cause poor contact or high impedance, and damage the inverter.
- Use a multimeter to measure the positive and negative poles of the DC cables to ensure correct polarity, no reverse connection; and the voltage is within the allowable range.
- Use a multimeter to measure the DC cables to ensure correct polarity, no reverse connection; the voltage should be lower than the maximum DC input voltage. Damage caused by reverse connection and overvoltage is not within the responsibility of the equipment manufacturer.
- PV string output does not support grounding. Before connecting the PV string to the inverter, ensure that the minimum insulation resistance to ground of the PV string meets the minimum insulation impedance requirement ( $R = \text{Max. Input Voltage (V)} / 30\text{mA}$ ).
- Do not connect the same PV string to multiple inverters, as this may cause damage to the inverters.
- The photovoltaic modules used with the inverter must comply with IEC 61730 Class A standard.
- When the input voltage or input current of the PV string is high, it may cause the inverter output power to derate.

### 1.3.2 Inverter Safety



- Ensure the voltage and frequency at the grid connection point comply with the inverter's grid-connection specifications.
- It is recommended to install protective devices such as circuit breakers or fuses on the AC side of the inverter. The rating of the protective device must be greater than 1.25 times the inverter's maximum AC output current.
- If the inverter triggers an arc fault alarm less than 5 times within 24 hours, the alarm can be cleared automatically. After the 5th arc fault alarm, the inverter will shut down for protection. The inverter can resume normal operation only after the fault is cleared.
- If the PV system is not configured with a battery, using the BACK-UP function is not recommended, as it may cause a risk of system power outage.
- Changes in grid voltage and frequency may cause the inverter's output power to derate.

### 1.3.3 Battery Safety

 **DANGER**

- This battery system is a high-voltage system, and high voltage is present during operation. Before operating any equipment in the system, ensure that the equipment is powered off to avoid the risk of electric shock. Strictly adhere to all safety precautions in this manual and the safety labels on the equipment during operation.
- This battery system is a high-voltage system; keep away from it unless you are a professional. Do not touch or operate without permission.
- This energy storage system is heavy equipment; use appropriate equipment and tools and take protective measures during installation and maintenance. Improper operation may cause personal injury or product damage.
- Do not disassemble, modify, or repair the battery or control box without official authorization from the equipment manufacturer. Otherwise, there may be a risk of electric shock or equipment damage, and losses caused thereby are beyond the manufacturer's liability.
- The equipment must be installed on concrete or other non-combustible surfaces, ensuring that the foundation is level, firm, flat, dry, and has sufficient load-bearing capacity; depressions or tilting are prohibited.

- Do not impact, pull, drag, squeeze, step on the equipment, or use sharp objects to pierce the equipment casing. Also, do not place the battery in fire, as the battery may explode.
- Do not place the battery in high-temperature environments. Ensure there are no heat sources near the battery and that it is not exposed to direct sunlight. When the ambient temperature exceeds 60°C, a fire may occur.
- Do not use if the battery or control box has obvious defects, cracks, damage, or other conditions.
- Battery damage may cause electrolyte leakage.
- Do not move the battery system while it is operating.
- When installing the battery system, pay attention to the positive and negative terminals. Do not reverse the polarity, as this may cause a short circuit, leading to personal injury or property damage.
- Strictly prohibit short-circuiting the battery positive and negative terminals. A battery short circuit may cause personal injury; the instantaneous high current from a short circuit can release a large amount of energy and may cause a fire.
- When operating the equipment, ensure that the equipment is not damaged and the system is fault-free; otherwise, there may be risks of electric shock and fire.
- During equipment operation, do not open the equipment cabinet door or touch any wiring terminals or components. Otherwise, there is a risk of electric shock.
- The enclosure temperature may exceed 60°C during equipment operation; do not touch the enclosure before it cools down. Do not install it within reach of non-professionals.
- During battery system operation, do not plug or unplug terminals and connection lines, as this may pose safety hazards.
- If abnormal conditions occur during battery system operation, immediately power off the battery system and contact relevant personnel for handling.

 **WARNING**

- Ensure that the battery is charged promptly after discharge; otherwise, over-discharge may cause battery damage.  
Do not use charging or discharging currents exceeding the rated values for the battery.
- Battery current may be affected by factors such as temperature, Humidity, weather conditions, etc., which may cause current limiting and affect load-bearing capacity.
- If the battery cannot start, contact the after-sales service center as soon as possible. Otherwise, the battery may be permanently damaged.
- If battery modules need to be replaced or added, contact the after-sales service center.
- Avoid charging the battery at low temperatures; otherwise, the battery system capacity may decrease.
- Do not place unrelated items in any part of the battery cabinet.

## Emergency Response Measures

- Battery electrolyte leakage

If the battery module leaks electrolyte, avoid contact with the leaked liquid or gas. Electrolyte is corrosive, and contact may cause skin irritation and chemical burns. If you accidentally come into contact with the leaked substance, please perform the following actions:

- inhalation: Evacuate from the contaminated area and seek medical help immediately.
- Eye contact: Rinse with clean water for at least 15 minutes and seek medical help immediately.
- Skin contact: Thoroughly wash the affected area with soap and water, and seek medical help immediately.
- Ingestion: Induce vomiting and seek medical assistance immediately.

- Fire

- When the battery temperature exceeds 150°C, there is a risk of fire, and the battery may release toxic and harmful gases after catching fire.
- To prevent fire, ensure that there are carbon dioxide, Novec1230, or FM-200 fire extinguishers near the equipment.
- When extinguishing fire, do not use ABC dry powder fire extinguishers. Firefighters must wear protective clothing and self-contained breathing apparatus.

### 1.3.4 Smart Meter Safety

#### ⚠️WARNING

If the voltage of the power grid fluctuates, resulting in the voltage over 265V. In this case, long-term overvoltage operation may cause damage to the meter. It is recommended to add a fuse with a rated current of 0.5A on the voltage input side of the meter to protect it.

## 1.4 Safety Symbols and Certification Marks

#### ⚠️DANGER

- After the equipment is installed, the labels and warning signs on the cabinet must be clearly visible. Do not block, alter, or damage them.
- The following cabinet warning label descriptions are for reference only. Please refer to the actual labels used on the equipment.

No.	Symbol	Meaning
1		Potential hazard exists during equipment operation. Take precautions when operating the device.
2		High voltage hazard. High voltage is present during equipment operation. Ensure the equipment is powered off before performing any operations.
3		The inverter surface is at high temperature. Do not touch during operation to avoid burns.
4		Use the equipment properly. There is a risk of explosion under extreme conditions.
5		The battery contains flammable materials. Beware of fire.
6		The equipment contains corrosive electrolyte. Avoid contact with leaked electrolyte or vapor.

7		Delayed discharge. After powering off the device, please wait 5 minutes for it to fully discharge.
8		Keep the equipment away from open flames or ignition sources.
9		Keep the equipment out of reach of children.
10		Please read the product manual carefully before operating the equipment.
11		
12		Personal protective equipment must be worn during installation, operation, and maintenance.
13	 	Do not dispose of the equipment as household waste. Dispose of the equipment according to local laws and regulations, or return it to the manufacturer.
14		Grounding point.
15		Recycling symbol.
16		CE certification mark.
17		TUV mark.
18		RCM mark.
19		Keep away from children.
20		Do not lift the equipment.
21		Do not turn off under load, as it may cause hazards such as electric shock/fire.

22		Disassemble is forbidden.
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## 1.5 EU Declaration of Conformity

### 1.5.1 Equipment with Wireless Communication Modules

The equipment with wireless communication modules sold in the European market meets the requirements of the following directives:

- Radio Equipment Directive 2014/53/EU (RED)
- Restrictions of Hazardous Substances Directive 2011/65/EU and (EU) 2015/863 (RoHS)
- Waste Electrical and Electronic Equipment 2012/19/EU
- Registration, Evaluation, Authorization and Restriction of Chemicals (EC) No 1907/2006 (REACH)

### 1.5.2 Equipment without Wireless Communication Modules (Except Battery)

The equipment without wireless communication modules sold in the European market meets the requirements of the following directives:

- Electromagnetic compatibility Directive 2014/30/EU (EMC)
- Electrical Apparatus Low Voltage Directive 2014/35/EU (LVD)
- Restrictions of Hazardous Substances Directive 2011/65/EU and (EU) 2015/863 (RoHS)
- Waste Electrical and Electronic Equipment 2012/19/EU
- Registration, Evaluation, Authorization and Restriction of Chemicals (EC) No 1907/2006 (REACH)

### 1.5.3 Battery

The batteries sold in the European market meets the requirements of the following directives:

- Electromagnetic compatibility Directive 2014/30/EU (EMC)
- Electrical Apparatus Low Voltage Directive 2014/35/EU (LVD)
- Battery Directive 2006/66/EC and Amending Directive 2013/56/EU
- Waste Electrical and Electronic Equipment 2012/19/EU
- Registration, Evaluation, Authorization and Restriction of Chemicals (EC) No 1907/2006 (REACH)

You can download the EU Declaration of Conformity from our [official website](#).

# 2 System Introduction

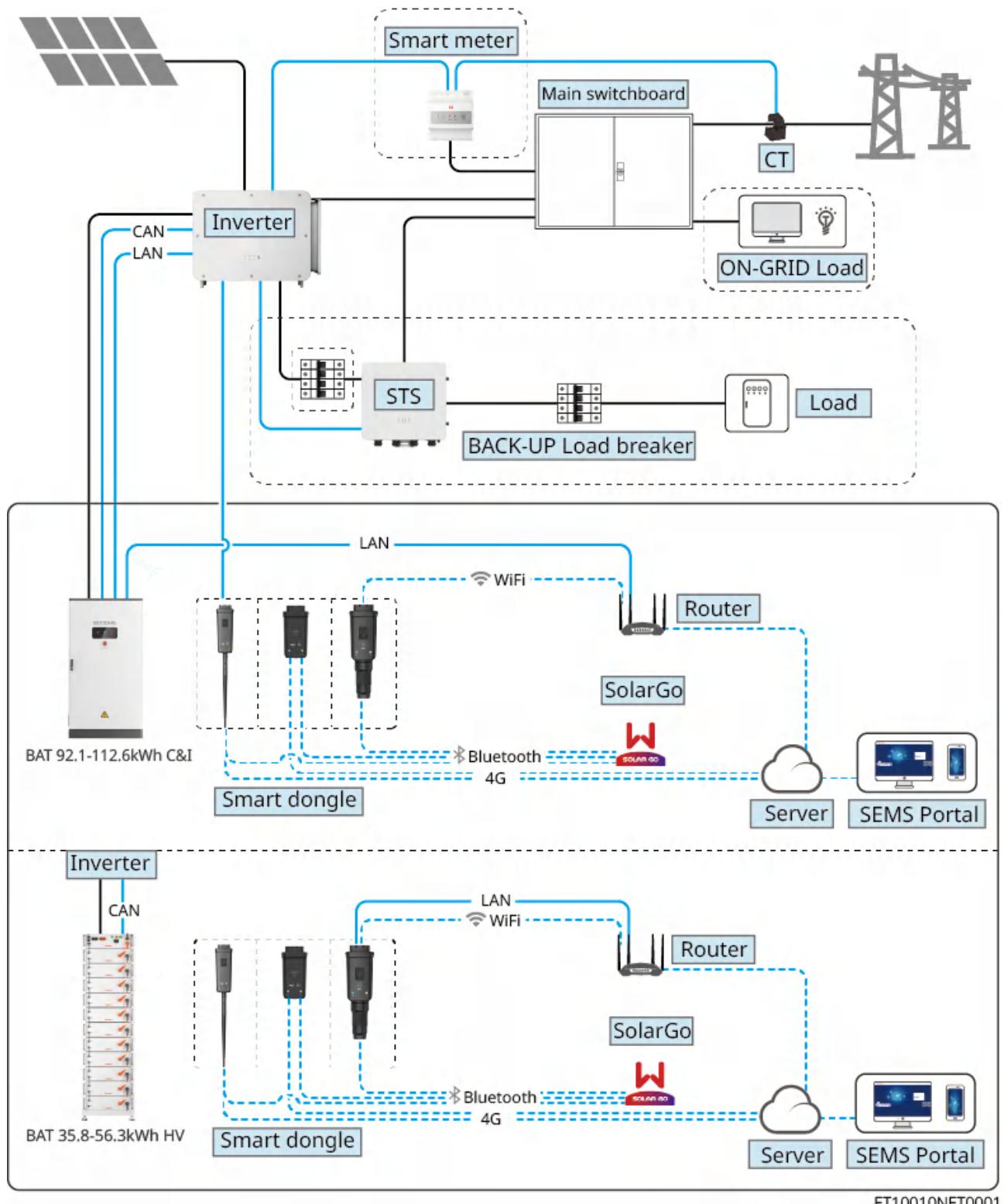
## 2.1 System Overview

The commercial and industrial smart inverter solution integrates devices such as inverters, static transfer switch cabinets, batteries, smart meters, and smart communication sticks. In the photovoltaic system, it converts solar energy into electricity or purchases electricity from the grid to meet commercial and industrial electricity demands. The energy IoT devices in the system control the electricity usage equipment by identifying the overall electricity situation in the system, thereby achieving intelligent management of electricity for load use, storage to batteries, or output to the grid.



- The photovoltaic system is not suitable for connecting devices that rely on stable power supply, such as life-sustaining medical equipment, etc. Please ensure that system power failure does not cause personal injury.
- In the photovoltaic system, try to avoid using loads with high starting current, such as high-power water pumps, etc., otherwise it may cause off-grid output failure due to excessive instantaneous current.
- If the battery is not configured in the photovoltaic system, it is not recommended to use the BACK-UP function, otherwise it may cause system power failure risk.
- Battery current may be affected by some factors, such as temperature, humidity, weather conditions, etc., which may cause battery current limiting and affect load capacity.
- When the inverter experiences overload protection once, the inverter can automatically restart; if it occurs multiple times, the inverter restart time will be extended. If you need to restart the inverter as soon as possible, you can immediately restart the inverter via the SolarGo App.
- When the inverter is in off-grid mode, it can be used normally for industrial and commercial loads, such as:
  - Motor loads:
    - If a single single-phase motor power is greater than or equal to 6kW or a single three-phase motor power is greater than or equal to 15kW, VFD/VSD configuration is required;
    - The sum of the rated power of single-phase motors connected to a certain phase should not exceed  $0.5*Pn/3$ , and the sum of the rated power of motor loads on three phases should not exceed  $0.5*Pn$ ;  $Pn$  refers to the inverter rated output power.
    - If there are other loads, the motor load should be reduced accordingly, calculated based on specific application conditions.
  - Capacitive loads: total power  $\leq 0.33Pn$ .  $Pn$  refers to the inverter rated output power.
  - The inverter supports half-wave loads. Half-wave loads: some old or non-EMC compliant household appliances (such as hair dryers, small heaters, etc. using half-wave rectification)

## Single Inverter Grid-tied and Off-grid Scenario



Product Type	Product Information	Description
Inverter	GW50K-ET-L-G10	-
	GW75K-ET-G10	

Product Type	Product Information	Description
	GW80K-ET-G10 GW99.99K-ET-G10 GW100K-ET-G10	
Static Transfer Switch Cabinet	GW125K-STS-G10	Nominal output power: 125kW
Battery system	GW35.8-BAT-I-G10 GW40.9-BAT-I-G10 GW46.0-BAT-I-G10 GW51.2-BAT-I-G10	<ul style="list-style-type: none"> <li>Up to 6 battery systems can be paralleled per cluster.</li> <li>The inverter has 2 pairs of battery input terminals. One battery system can be connected to the two inverter's battery terminals which are paralleled, or two battery system can be connected to two battery terminals independently. Each battery input terminals can connect up to 6 paralleled battery systems.</li> <li>Different models of battery systems cannot be mixed and paralleled within the same battery input terminal of the inverter.</li> </ul>
	GW56.3-BAT-I-G10	
	GW92.1-BAT-AC-G10	<ul style="list-style-type: none"> <li>Up to 4 battery systems can be paralleled per cluster.</li> <li>The inverter has 2 pairs of battery input terminals. One battery system can be connected to the two inverter's battery terminals which are paralleled, or two battery system can be connected to two battery terminals independently. Each battery input terminals can connect up to 4 paralleled battery systems.</li> </ul>
	GW102.4-BAT-AC-G10 GW112.6-BAT-AC-G10	<ul style="list-style-type: none"> <li>Up to 4 battery systems can be paralleled per cluster.</li> <li>The inverter has 2 pairs of battery input terminals. One battery system can be connected to the two inverter's battery terminals which are paralleled, or two battery system can be connected to two battery terminals independently. Each battery input terminals can connect up to 4 paralleled battery systems.</li> <li>Different models of battery systems cannot be mixed and paralleled within the same battery input terminal of the inverter.</li> </ul>

Product Type	Product Information	Description
Smart Meter	GM330	<p>The meter is supplied with the inverter. CTs can be sourced from GoodWe or purchased separately. CT ratio requirement: nA/5A</p> <ul style="list-style-type: none"> <li>• nA: CT primary side input current, where n ranges from 200 to 5000.</li> <li>• 5A: CT secondary side output current.</li> </ul>
Smart dongle	WiFi/LAN Kit-20	Uploads system operation information to the monitoring platform via WiFi or LAN signal.
	4G Kit-CN-G20	Uploads system operation information to the monitoring platform via 4G signal.
	4G Kit-G20	

When the inverter is in off-grid mode, it can be used normally for commercial and industrial loads. The off-grid load capacity of the inverter is as shown in the table below.

Parameter	Single-phase Grid	Three-phase Grid
Single Motor Load Rated Power (kVA)	6	15
Sum of Motor Load Rated Power (kVA)	0.5*Pn/3	0.5*Pn
Capacitive Load (kVA)	0.33*Pn/3	0.33*Pn
Half-wave Load (kVA)	4	-

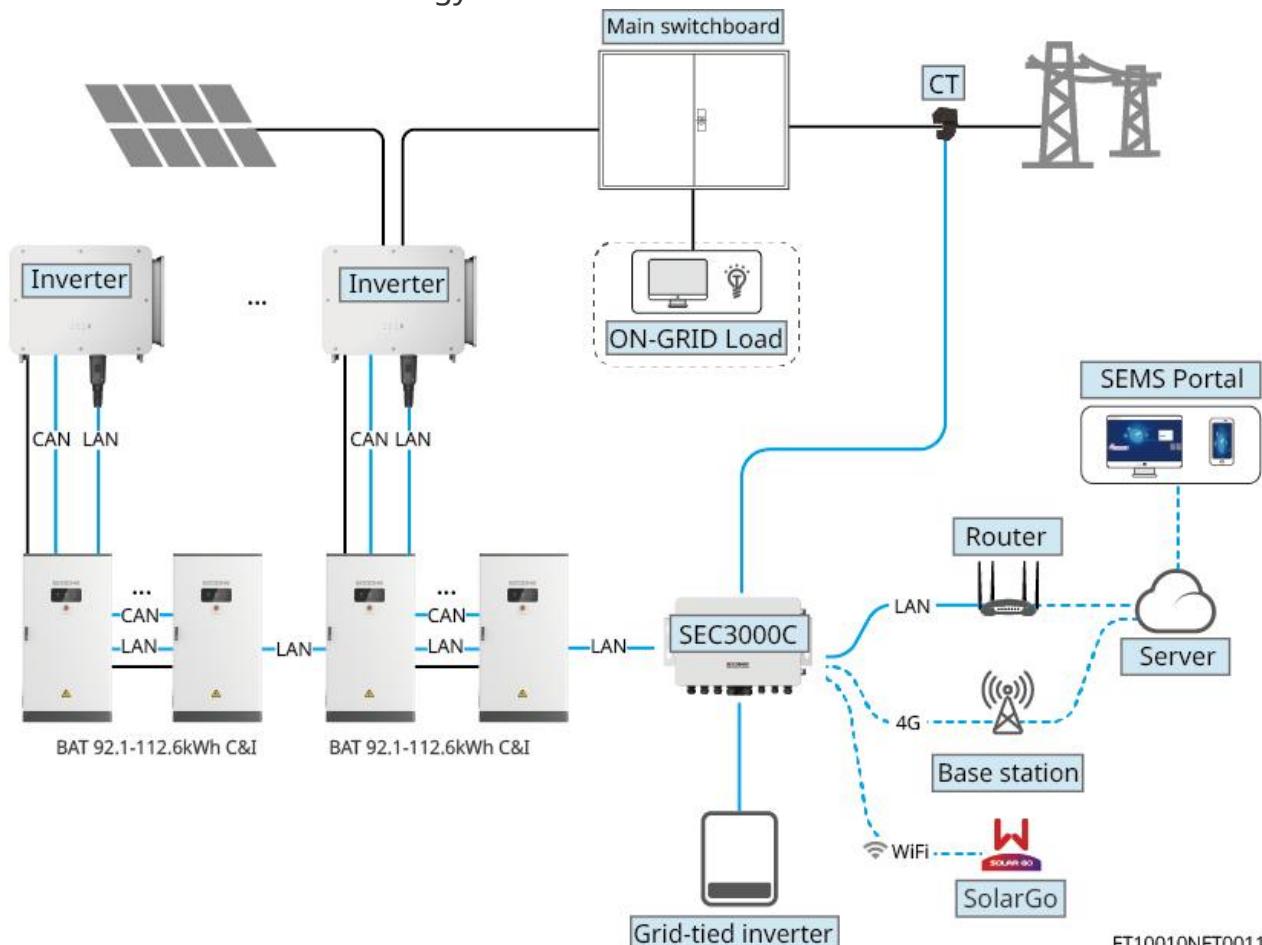
Note:

1. Pn: Inverter rated output power.
2. If the rated power of a single motor load is greater than or equal to the nominal value in the table above, a VFD/VSD must be configured.
3. If 2 or more units are paralleled, the allowed total motor load power = Pn \* 50% \* number of paralleled units \* 80%.

## Multiple Inverters Grid-tied

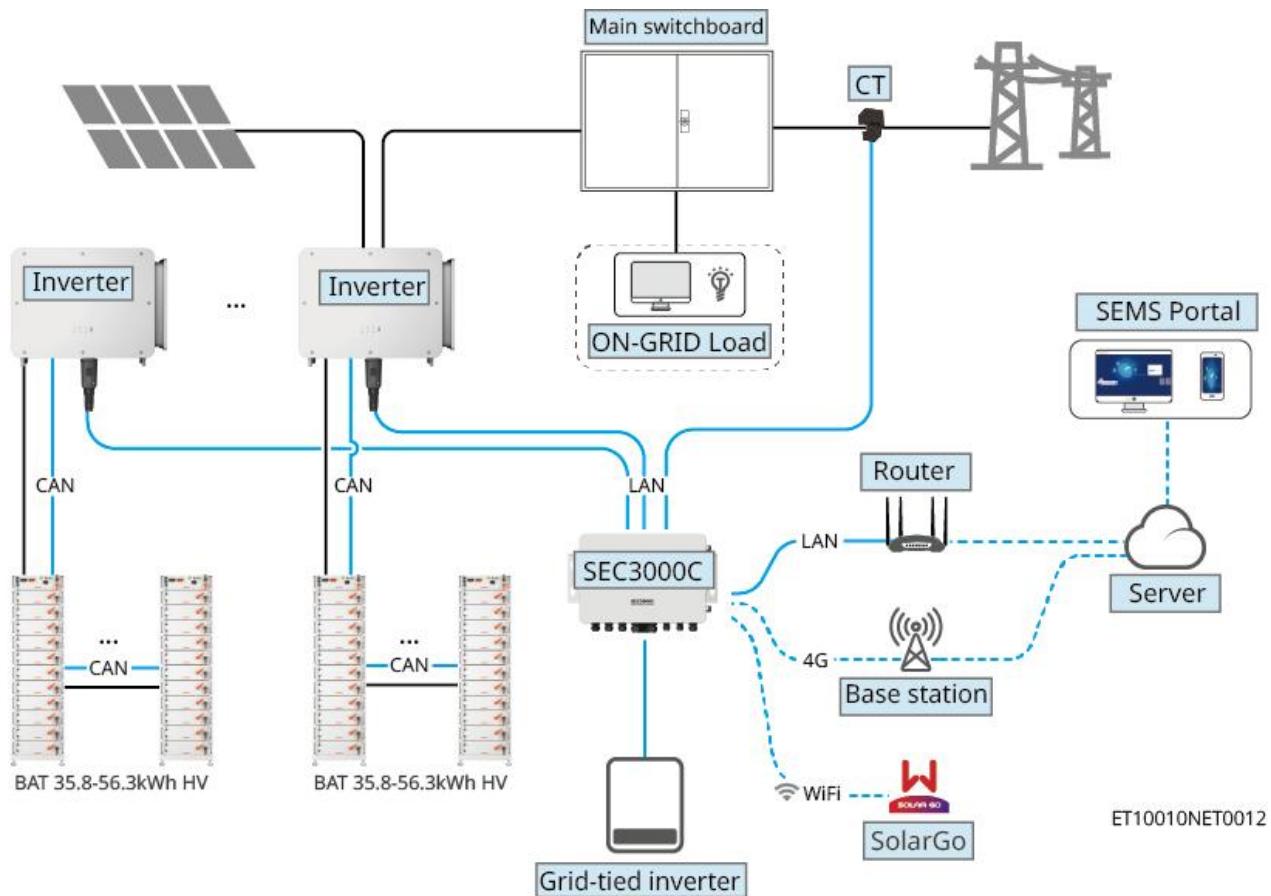
### Type 1: Inverter paired with BAT 92.1-112.6kWh commercial and industrial battery system

In this type, each inverter is connected to the battery system via a smart communication stick, and the battery system transmits the parallel operation information to the Smart Energy Control Box SEC3000C.



### Type 2: Inverter paired with BAT 35.8-56.3kWh high-voltage battery system

In this type, each inverter transmits the parallel operation information to the Smart Energy Control Box SEC3000C via a smart communication stick.



Product Type	Product Information	Description
Inverter	GW50K-ET-L-G10	Nominal output power: 50.0kW
	GW75K-ET-G10	Nominal output power: 75kW
	GW80K-ET-G10	Nominal output power: 80kW
	GW99.99K-ET-G10	Nominal output power: 99.99kW
	GW100K-ET-G10	Nominal output power: 100kW
Battery system	GW35.8-BAT-I-G10	
	GW40.9-BAT-I-G10	
	GW46.0-BAT-I-G10	
	GW51.2-BAT-I-G10	

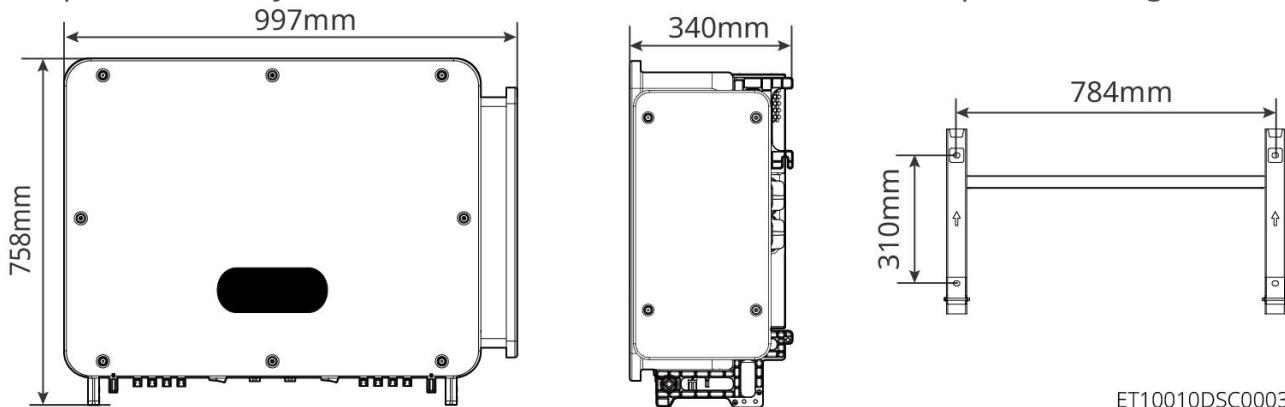
Product Type	Product Information	Description
	GW56.3-BAT-I-G10	<ul style="list-style-type: none"> <li>The battery system can be clustered with up to 6 units.</li> <li>The inverter has 2 pairs of battery input terminals. The two battery terminals can be connected in parallel to the same battery system or independently to two battery systems. Each pair of battery input terminals can connect up to 6 clustered batteries.</li> <li>In the same battery input terminal of the inverter, battery systems of different models cannot be mixed and clustered.</li> </ul>
	GW92.1-BAT-AC-G10	
	GW102.4-BAT-AC-G10	
	GW112.6-BAT-AC-G10	
Smart Energy Control Box	SEC3000C	<p>For SEC3000C related requirements, installation, wiring, and other information, please refer to <a href="#"><u>SEC3000C User Manual</u></a>.</p>

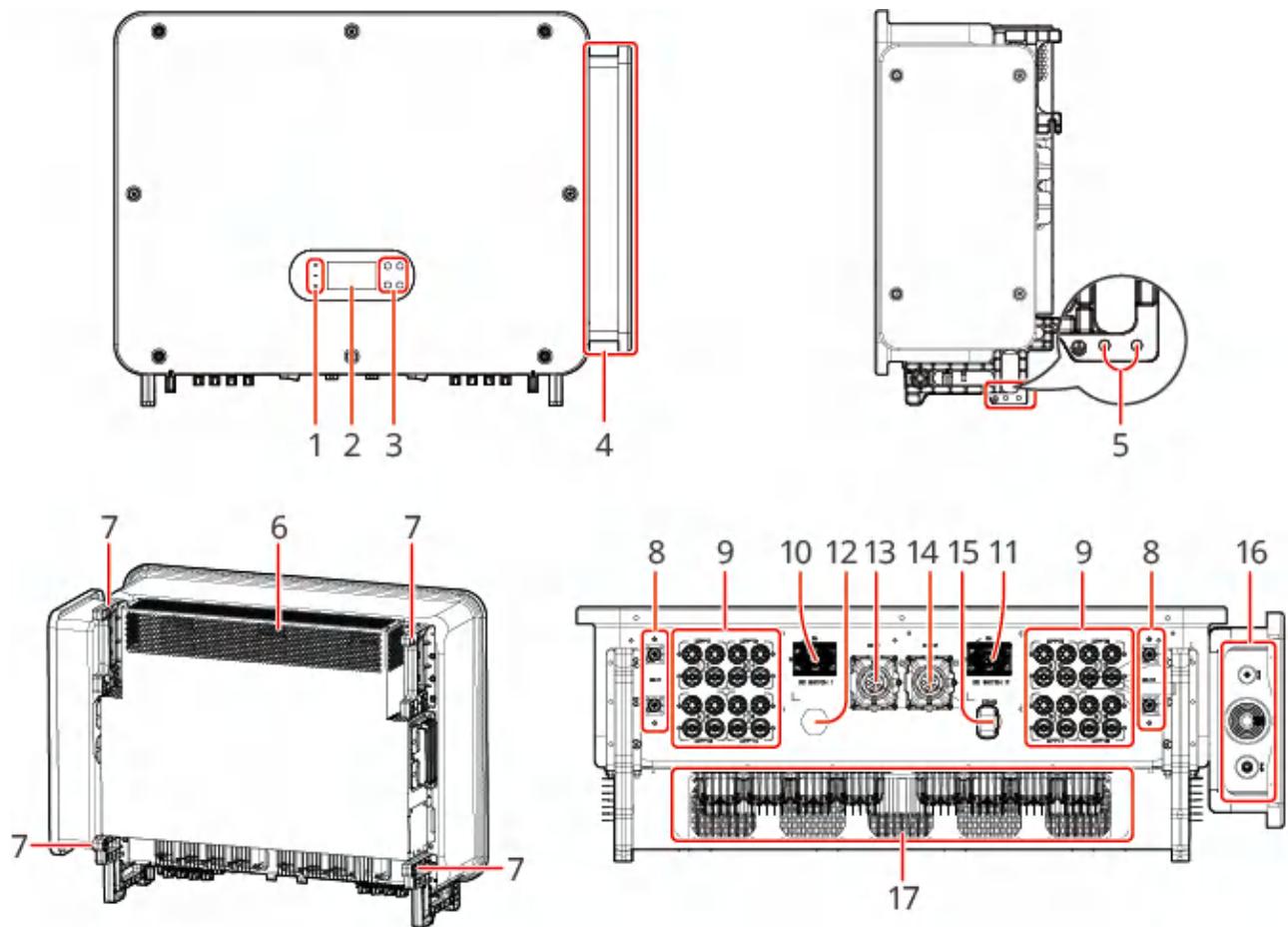
Product Type	Product Information	Description
CT	-	<p>Supports purchase from GoodWe or self-procurement. CT ratio requirement: nA/5A</p> <ul style="list-style-type: none"> <li>• nA: CT primary side input current, where n ranges from 200 to 5000</li> <li>• 5A: CT secondary side output current</li> </ul>
Smart dongle	WiFi/LAN Kit-20	Can upload system operation information to the monitoring platform via WiFi or LAN signal.
	4G Kit-CN-G20	Can upload system operation information to the monitoring platform via 4G signal.
	4G Kit-G20	

## 2.2 Product Overview

### 2.2.1 Inverter

Inverter in the photovoltaic system controls and optimizes the energy flow through an integrated energy management system. It can supply the electricity generated in the photovoltaic system for load use, store it in batteries, or output it to the grid, etc.





ET10010DSC0001

No.	Component/Silkscreen	Description
1	indicator	Indicates the inverter's operating status.
2	Display (Optional)	Used with the buttons to view inverter-related data.
3	Buttons (Optional)	Used with the display to operate the inverter.
4	AC wiring module	AC cable wiring area.
5	Grounding terminal	Connecting the PE cable.
6	Air outlet	Exhausts hot air.
7	Handle	Used for carrying the inverter.

8	Battery input terminals	Connect the battery DC input cables.
9	PV input terminals	Connect the PV module DC input cables.
10	DC switch 1	Controls the connection or disconnection of DC input MPPT1-4.
11	DC switch 2	Controls the connection or disconnection of DC input MPPT5-8.
12	Ventilation valve	-
13	Communication port 1	Connect communication cables for load control, RS485, Remote Shutdown/Rapid Shutdown, DRM (Australia)/RCR (Europe), etc.
14	Communication port 2	Connect communication cables for smart meter, BMS, STS, etc.
15	Communication port 3	Connect the smart communication stick. Please select the type of communication stick according to actual requirements.
16	AC cable outlet hole	Entry/exit hole for AC output cables.
17	External fan	Heat dissipation.

## 2.2.2 STS

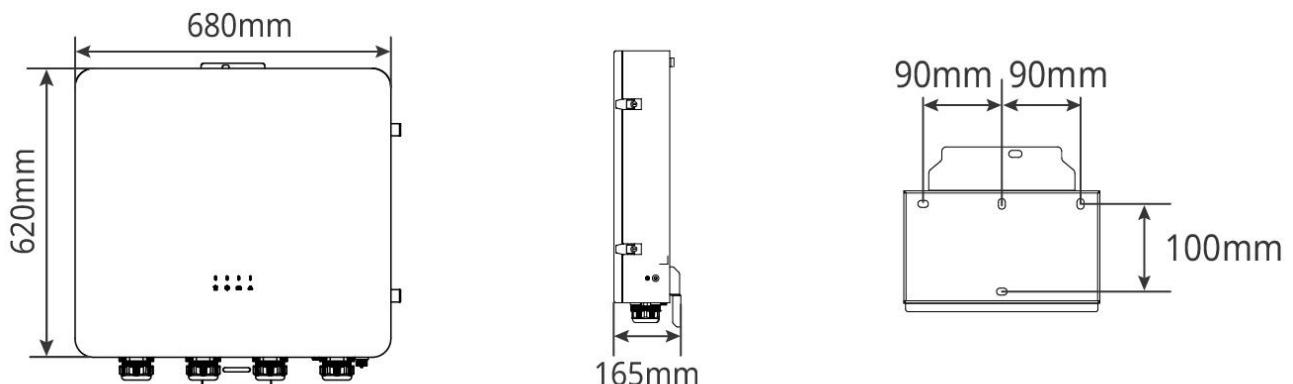
The STS Static Transfer Switch cabinet is suitable for commercial and industrial energy storage systems. The system supports grid-connected/off-grid switching of the inverter via the STS.

When the grid power fails:

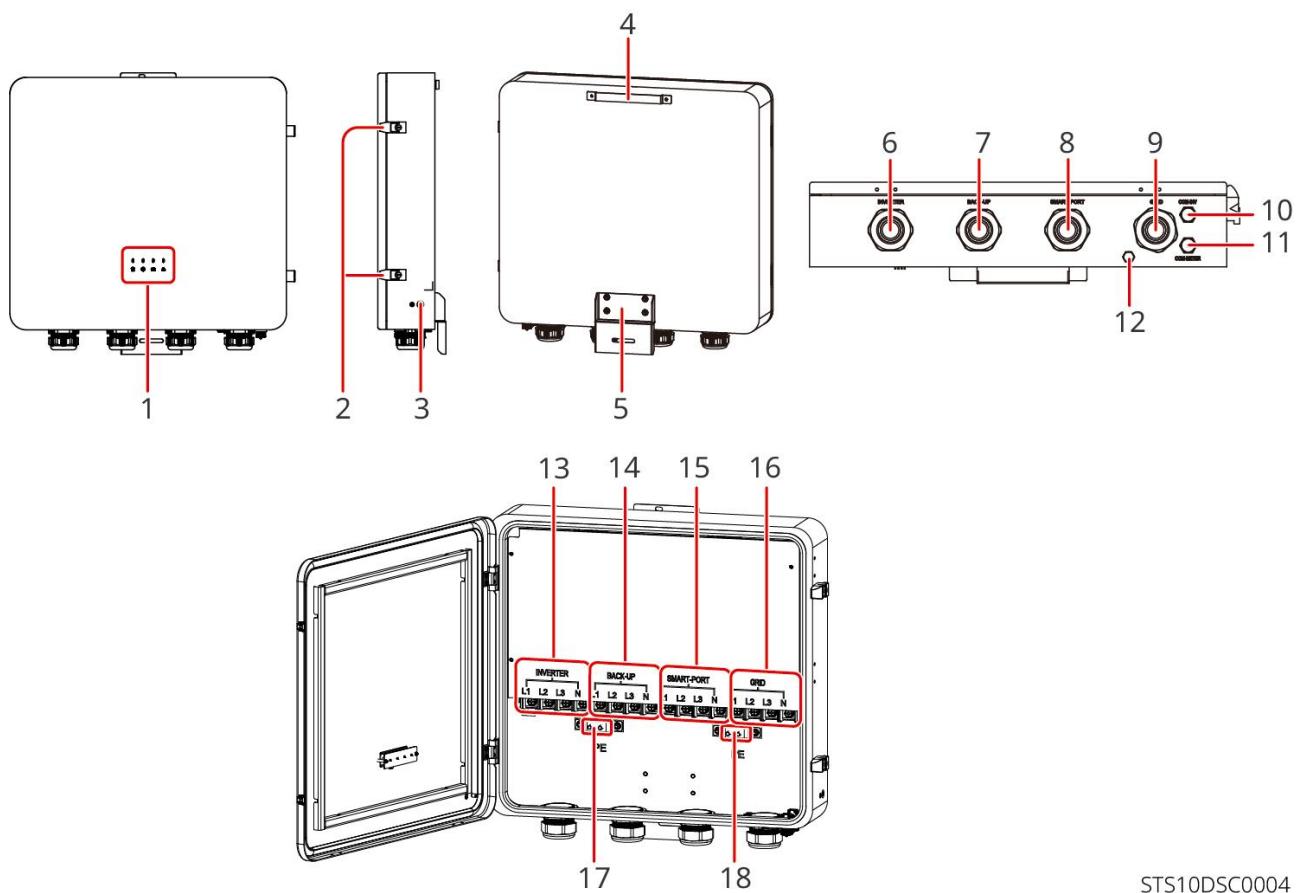
- If the energy storage system is not connected to a generator, the system switches to off-grid operation. Photovoltaic generation or battery discharge supplies the load.
- If the energy storage system is connected to a generator and photovoltaic generation and battery discharge already meet the load demand, the generator does not start. The system switches to off-grid operation.
- If the energy storage system is connected to a generator and photovoltaic generation and battery system discharge cannot meet the load demand, the

generator starts to supply power to the load, while photovoltaic and generator output charge the battery.

- When grid power is restored, the system switches back to grid-connected operation.



STS10DSC0005



STS10DSC0004

No.	Name	Description
1	indicator	Indicates the operating status of the STS
2	Latch	Used to open/close the STS cover
3	Grounding terminal	Used to connect the PE wire
4	Mounting bracket	Used to hang the STS on the backplate
5	Fixed support bracket	Used to fix and support the STS on the wall
6	Inverter cable entry	Cable entry port
7	BACK-UP cable entry	
8	Smart port cable entry	
9	Grid cable entry	
10	Inverter communication terminal (COM1)	Used to connect to the inverter, enabling communication between the STS and the inverter
11	Meter communication terminal (COM2)	In whole-house backup scenarios, used to connect to the inverter's Meter communication port to transmit power information to the inverter for power control functionality.
12	Ventilation valve	-
13	Inverter terminal	Used to connect to the inverter
14	BACK-UP terminal	Used to connect to BACKUP loads
15	Smart terminal	Used to connect to a generator or large loads
16	Grid terminal	Used to connect to the grid
17	PE terminal block	Used to connect the PE wire

## 2.2.3 Battery

The battery system consists of a high-voltage box and a PACK.

The battery system can store and release electrical energy according to the requirements of the photovoltaic energy storage system. Both the input and output ports of the energy storage system are high-voltage direct current.

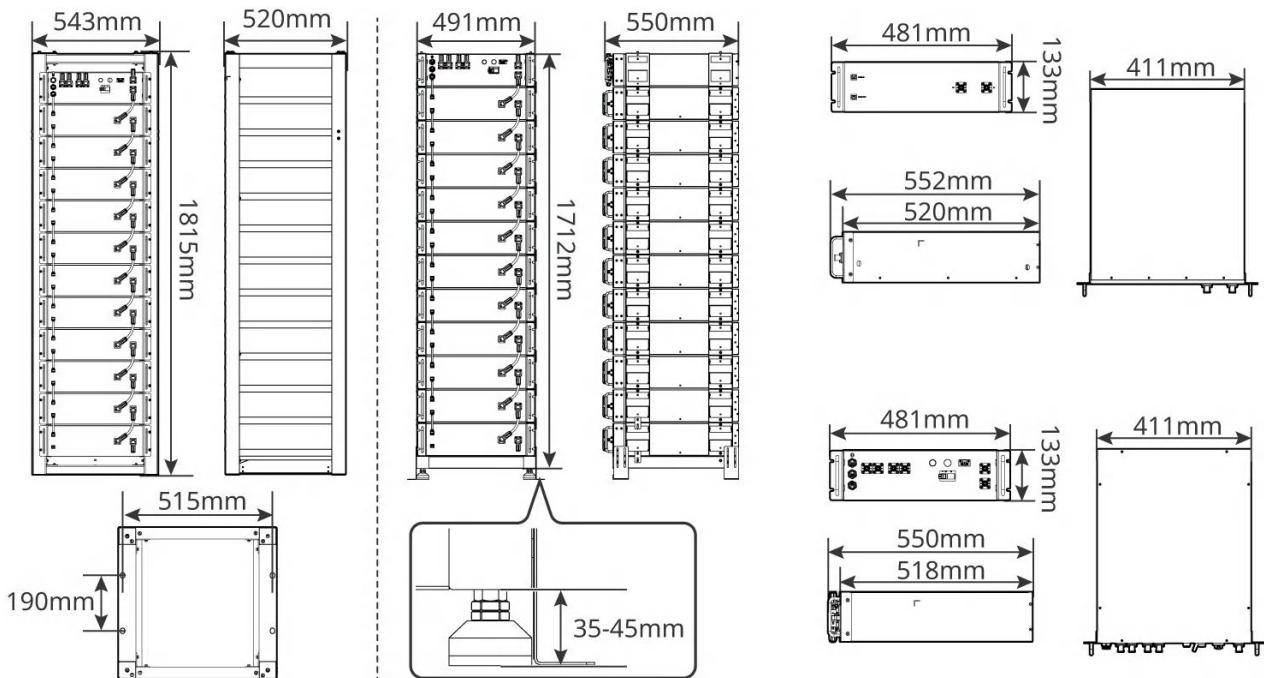
### NOTICE

- A single battery cabinet does not support capacity expansion by adding PACKs after installation.
- The BAT series battery system supports cluster expansion by adding battery cabinets of the same model and part number within one year after installation. For details, please consult after-sales service.

### 2.2.3.1 BAT Series 35.8-56.3kWh High Voltage Battery

No.	model	Number of Battery Modules	usable energy (kWh)
1	GW35.8-BAT-I-G10	7	35.8
2	GW40.9-BAT-I-G10	8	40.9
3	GW46.0-BAT-I-G10	9	46.0
4	GW51.2-BAT-I-G10	10	51.2
5	GW56.3-BAT-I-G10	11	56.3

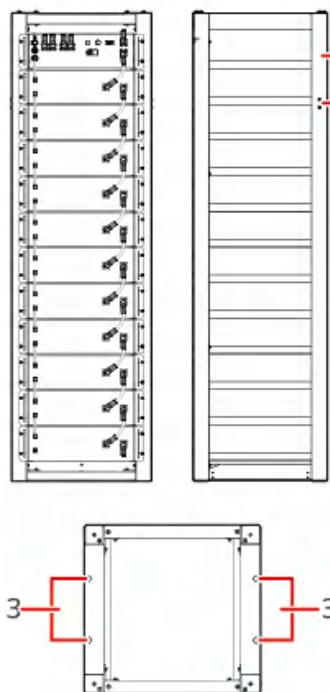
### Dimensions Description



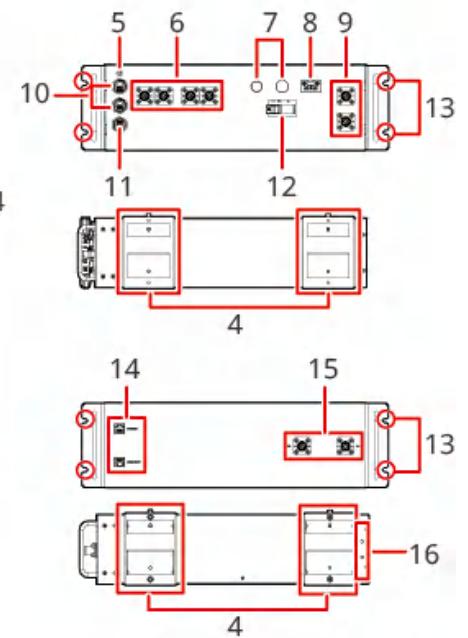
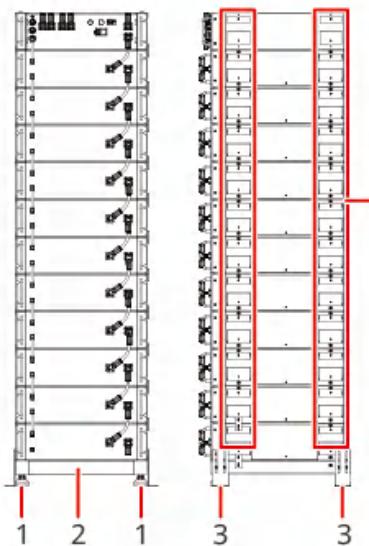
BAT10DSC0007

## Component Introduction

Rack-mounted



Stacked



BAT10DSC0002

- Type I (Rack Mounted)

No.	Name	Description
1	Battery Rack	Used for installing the battery system
2	Wall Mount Fixing Hole	Used to fix the battery rack on the wall to prevent tipping
3	Floor Mount Fixing Hole	Used to fix the battery rack on the floor to prevent tipping

- Type II (Stack Mounted)

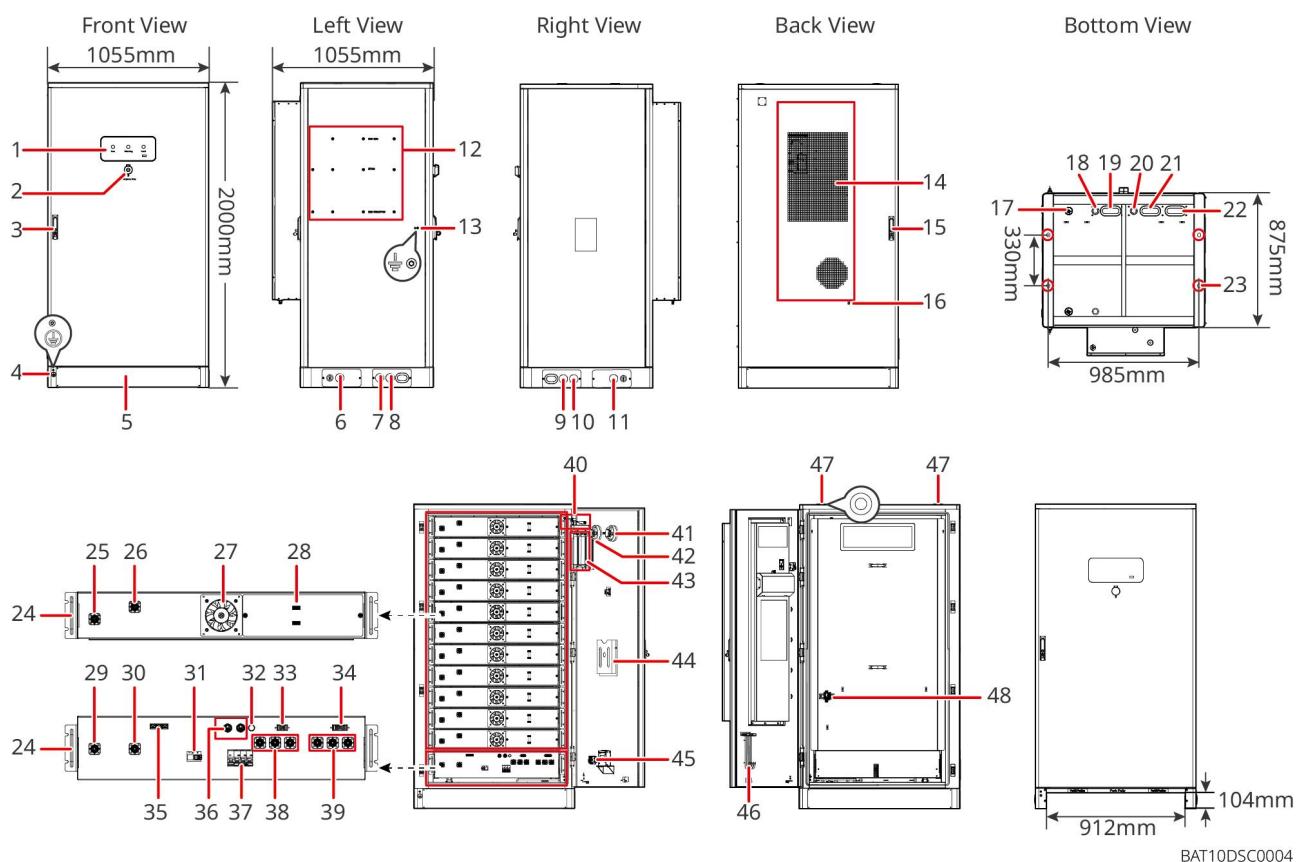
No.	Name	Description
1	Adjustable feet	Adjustable in height to keep the base level
2	Base	The battery system is stacked and installed on the base
3	Ground lock bracket	Used to secure the base to the ground to prevent tipping
4	Stacking bracket	Fixed on the battery PACK and high-voltage box for stacking installation of the battery system
5	Protective grounding point	Used for connecting the ground wire
6	High-voltage box power input/output port 1	Connects the power cable between the high-voltage box and the inverter
7	Battery Indicators	Used to indicate the status of the battery system
8	Dry contact	Contact for external fire protection system activation (Normally, the dry contact remains open. When a closed dry contact is detected, the battery system will automatically power down)
9	High-voltage box power input/output port 2	Connects the power cable between the high-voltage box and the battery PACK

No.	Name	Description
10	External communication port	Communication with the inverter / Placement of terminal resistor / Battery system cluster parallel communication
11	High-voltage box communication port	Communication with the battery PACK
12	Battery system switch	Controls the start and stop of the battery system
13	High-voltage box / Battery PACK fixing holes	Used to fix the high-voltage box / battery PACK onto the battery rack
14	Battery PACK communication port	Communication between adjacent battery PACKs / Communication with the high-voltage box
15	Battery PACK power input/output port	Connects the power cable between adjacent battery PACKs
16	Wall lock bracket fixing holes	Used for installing the wall lock bracket

### 2.2.3.2 BAT Series 92.1-112.6kWh Commercial & Industrial Battery System

No.	model	Number of Battery Modules	usable energy (kWh)
1	GW92.1-BAT-AC-G10	9	92.1
2	GW102.4-BAT-AC-G10	10	102.4
3	GW112.6-BAT-AC-G10	11	112.6

## Component Introduction



No.	Name	Description
1	LED Indicator Light	-
2	Emergency Stop Button	Pressing the emergency stop button will power down the battery system.
3	Front Door Lock	-
4	PE Port 1	Connect the battery grounding cable.
5	Bottom Baffle	-
6	Left-side Cable Entry 1	Air conditioner power cable & ET100 power cable
7	Left-side Cable Entry 2	Inverter communication cable

No.	Name	Description
8	Left-side Cable Entry 3	Inverter power cable
9	Right-side Cable Entry 1	Battery cluster parallel power cable
10	Right-side Cable Entry 2	Battery cluster parallel communication cable
11	Right-side Cable Entry 3	Air conditioner power cable
12	Back Mounting Plate Installation Hole	Mounting hole for the inverter back mounting plate
13	PE Port 2	Connect the inverter grounding cable.
14	Air Conditioner	Responsible for temperature control. The air conditioner refrigerant model is R134A.
15	Rear Door Lock	-
16	Air Conditioner Drain Pipe Installation Port	-
17	Explosion-proof Valve	Responsible for explosion-proof, exhaust, and other functions. When abnormal pressure rise occurs inside the battery system, the internal gas is quickly and directionally released by opening the exhaust port of the explosion-proof check valve, thereby preventing the battery system from exploding.
18	Communication Cable Entry/Exit (Bottom)	Communication cable entry/exit between the battery and the inverter
19	Power Cable Entry/Exit (Bottom)	Power cable entry/exit between the battery and the inverter
20	Battery Communication Cable Entry/Exit	Battery cluster parallel communication cable entry/exit
21	Battery Power Cable Entry/Exit (Positive)	Battery cluster parallel power cable entry/exit (Positive)

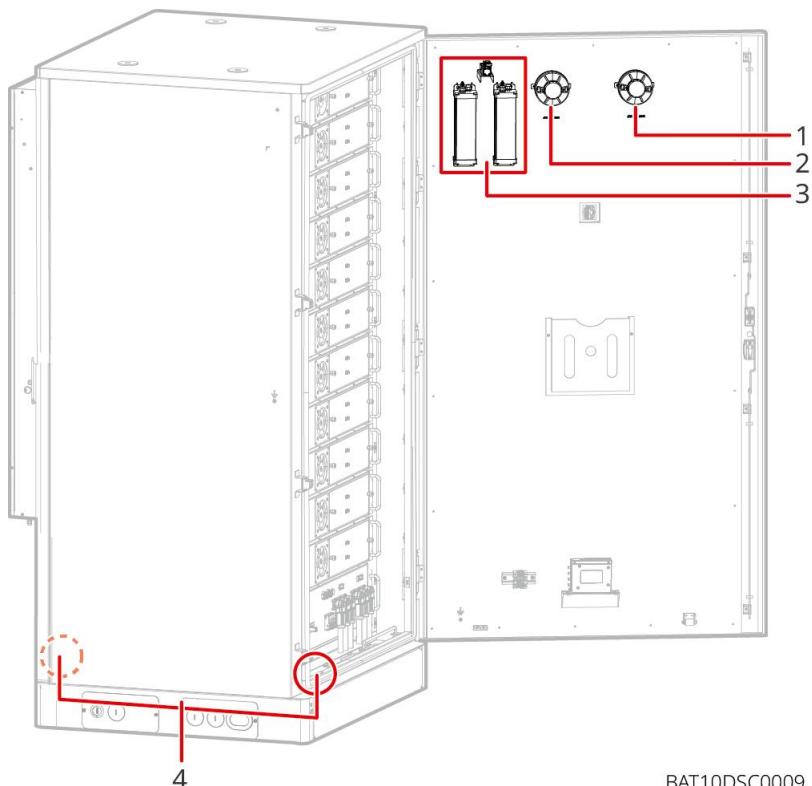
No.	Name	Description
22	Battery Power Cable Entry/Exit (Negative)	Battery cluster parallel power cable entry/exit (Negative)
23	Foundation Fixing Hole	Used to fasten the battery system and the foundation together.
24	Handle	-
25	Battery PACK Power Input/Output Port Positive	-
26	Battery PACK Power Input/Output Port Negative	-
27	Fan	-
28	Battery PACK Communication Port	Communication between adjacent battery PACKs, communication with the high-voltage box, and fan power supply.
29	High-voltage Box Power Input/Output Port Negative 1	Connect the power cable between the high-voltage box and the battery PACK.
30	High-voltage Box Power Input/Output Port Positive 1	
31	Molded Case Circuit Breaker	Controls the high-voltage output of the battery system.
32	Black Start Button	Controls the black start of the battery system.
33	Internal Communication Port 1	Communication with battery PACK and battery PACK fan power supply port 1.
34	Internal Communication Port 2	Air conditioner communication, access control identification, emergency stop, and fire alarm signal communication port.

No.	Name	Description
35	LAN Communication Port	LAN communication between batteries, used for transmitting cell-level information. (Only supported on machines shipped after October 2025)
36	External Communication Port 1	Communication with the inverter / placement of termination resistor / battery system cluster parallel communication.
37	Air Switch	Controls the low-voltage power supply of the battery system.
38	High-voltage Box Power Input/Output Port Positive 2	Connect the power cable between the high-voltage box and the inverter.
39	High-voltage Box Power Input/Output Port Negative 2	Connect the power cable between the high-voltage box and the inverter.
40	Access Control Switch	Automatically disconnects when the door is opened, ensuring the energy storage system is powered off.
41	Heat Detector	<p>The heat detector monitors temperature through a dual thermistor network and outputs a voltage proportional to the external air temperature. One thermistor is exposed to ensure good thermal contact with the surrounding air, while the other is thermally insulated. It emits a red light to alert the operator when an anomaly is detected.</p> <ul style="list-style-type: none"> <li>• Suitable for environments where dust or smoke is normally present.</li> <li>• Wide operating voltage range.</li> </ul>

No.	Name	Description
42	Smoke Detector	<p>The smoke detector utilizes the principle of scattered light to detect smoke entering the inner chamber of the detector housing.</p> <ul style="list-style-type: none"> <li>• Good response to slow-burning, smoldering fires.</li> <li>• Unaffected by wind or atmospheric pressure.</li> <li>• Some models are equipped with a flashing LED and a magnetic test switch.</li> <li>• Alarm indicator: Red light-emitting diode (LED) emits red light.</li> </ul>
43	Aerosol Fire Extinguishing Device	<p>Monitors fire signals inside the cabinet and implements fire suppression.</p> <p>When a fire occurs, the aerosol fire extinguishing device, upon receiving an electrical activation signal or an open flame, ignites the thermal fuse wire. The electric igniter thermal fuse wire burns and activates the aerosol generator in the fire extinguishing device. The heat released through a series of reactions decomposes the chemical coolant, causing the aerosol generator and coolant to combine to extinguish the fire.</p>
44	Document Shelf	-
45	Fire Alarm Action Signal Port	Dry contact signal interface, normally NC (Normally Closed). voltage: 0-24Vdc, current: 0.3A. Connect the audible and visual alarm cable.
46	Maintenance Hook Shelf	When disassembling the Pack and PCU, the maintenance hook can be taken from here for operation.

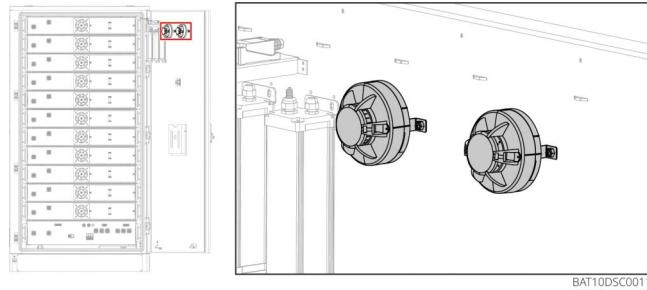
No.	Name	Description
47	Lifting Ring Installation Hole	-
48	Air Conditioner Switch	Connect the air conditioner power cable to control the air conditioner power supply.

### Fire Protection System Description



1	2	3	4
Smoke Detector	Heat Detector	Aerosol Fire Extinguishing Device	Explosion-proof Valve

- **Temperature Detectors & Smoke Detectors**



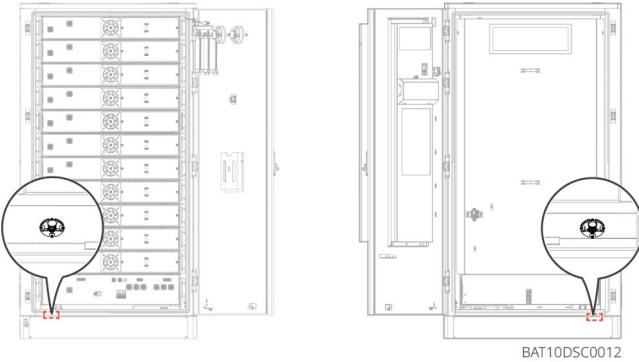
BAT10DSC0011

**Temperature Detection Principle:** The detector uses a negative temperature coefficient (NTC) thermistor as the sensor, leveraging its sensitivity to ambient temperature to obtain environmental temperature information. The internal circuit converts this information into a voltage signal and transmits it to the microcontroller. The microcontroller analyzes and processes the signal using built-in intelligent algorithms while determining whether a fire alarm or fault condition is present.

**Smoke Detection Principle:** The detector utilizes the principle of infrared light scattering to detect fires. In a smoke-free state, it receives only very weak infrared light. When smoke enters the optical smoke detection chamber, the received light signal is enhanced due to scattering. When the smoke concentration reaches a certain level, an alarm signal is output.

Technical Specifications	Heat Detector	Smoke Detector
Dimensions (mm)	102 × 55	
Installation Requirements	Fixed with screws	
indicator (red)	Flashes during monitoring, stays lit during alarm	
Operating Temperature (°C)	-40~+85	
Relative Humidity	≤95%RH (no condensation)	

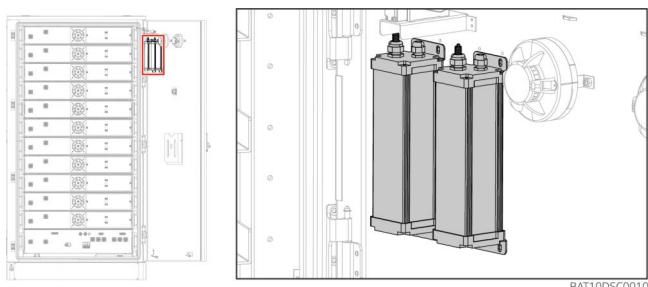
#### ▪ Explosion Relief Valve



When the internal pressure of a sealed product like a battery enclosure rises rapidly, the explosion relief valve's exhaust port opens to rapidly and directionally release the internal gas, thereby preventing explosions in sealed products such as battery boxes.

Technical Specifications	Explosion Vent Valve
Ingress Protection Rating	IP68
Opening Area	570 mm <sup>2</sup>
Operating Temperature	-40°C ~ +130°C
Flame Retardancy	UL94-V0

#### ▪ Aerosol Fire Extinguishing Device

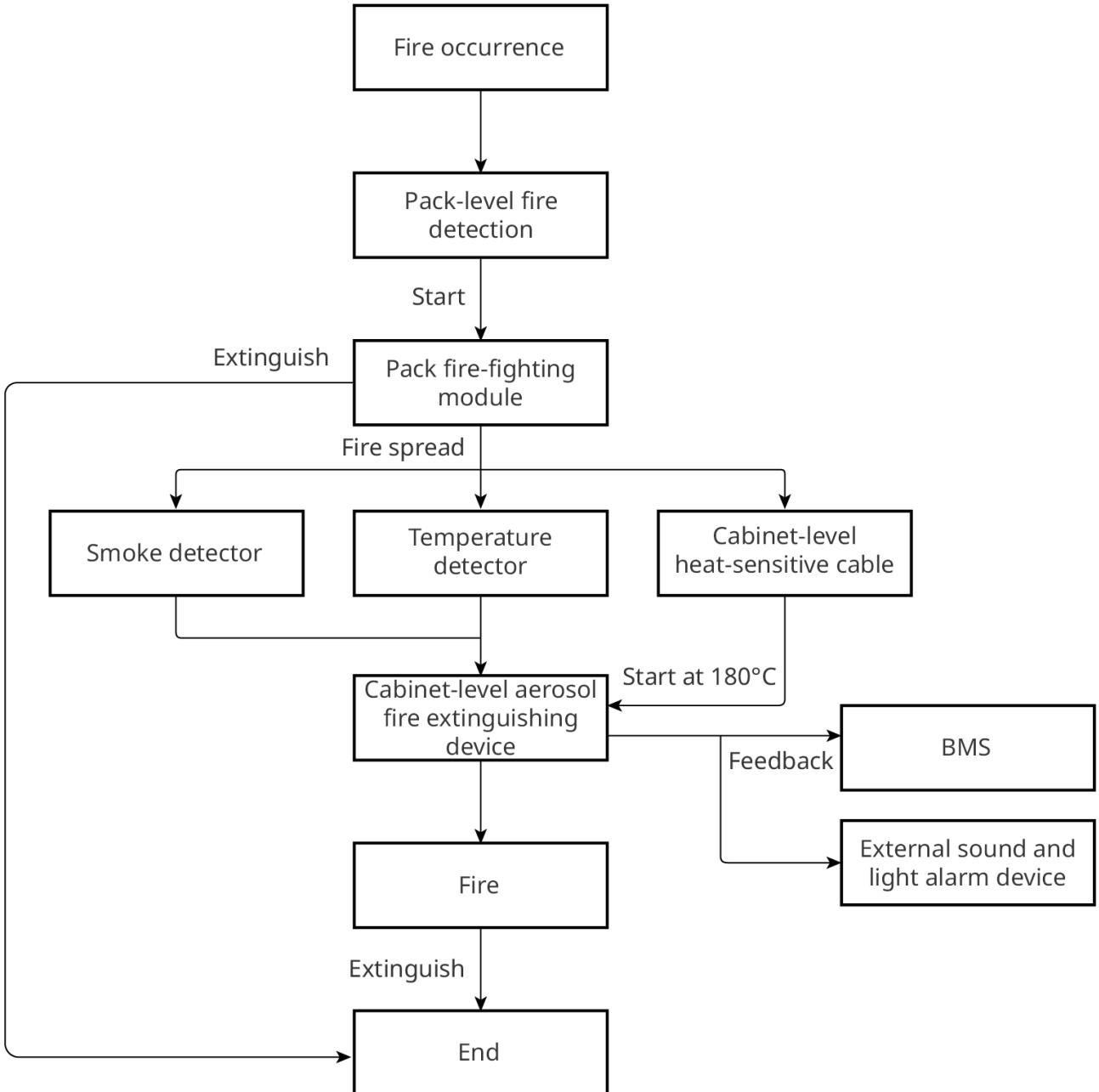


When a fire occurs, upon receiving an electrical activation signal or when an open flame ignites the thermal fuse, the electric initiator or burning thermal fuse activates the aerosol-forming agent inside the extinguishing device. The heat released by the redox reaction of the aerosol-forming agent decomposes the chemical coolant, enabling both the aerosol-forming agent and the coolant to participate in fire suppression.

Technical Specifications	Aerosol Fire Extinguishing Device
Operating Environment Temperature Range	-30°C ~ +70°C
Operating Environment Relative Humidity	≤95%RH
Thermal Activation Temperature	185±10°C

## Fire Protection Logic

The fire protection for this battery system adopts a tiered response design. When a fire occurs inside a battery Pack, it is first detected by the Pack-level detectors, which immediately activate the aerosol fire suppression device within the Pack for initial firefighting. If the fire is not controlled and spreads further, it will trigger cabinet-level fire protection. When both smoke detectors and temperature detectors detect a fire, or when an open flame ignites the thermal fuse (temperature reaching 180°C), the cabinet-level aerosol fire extinguishing device is automatically activated for comprehensive fire suppression. The aerosol-forming agent produces extinguishing agents through a combustion reaction. The heat released during the reaction decomposes the chemical coolant, allowing the aerosol extinguishing agent and the coolant to work synergistically to extinguish the fire. Simultaneously, the BMS receives feedback signals from the fire protection system, triggering external audible and visual alarms until the fire is completely extinguished.



ET5010MTN0001

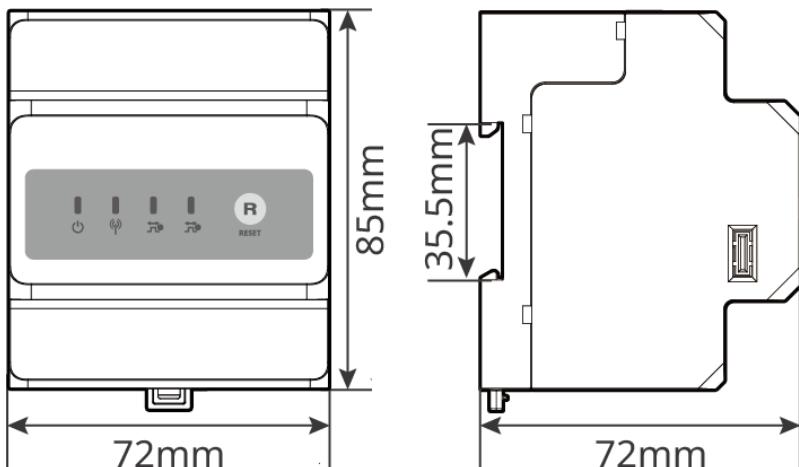
## 2.2.4 Smart Meter

Smart Meter can measure parameters such as grid voltage, current, Power, Frequency, electrical energy, etc., and transmit the information to the inverter to control the input and output power of the energy storage system.

GM330 meter is distributed with the inverter, CT can be purchased from GoodWe or on your own, CT transformation ratio requirement: nA/5A

- nA: CT primary side input current, n ranges from 200-5000
- 5A: CT secondary side output current

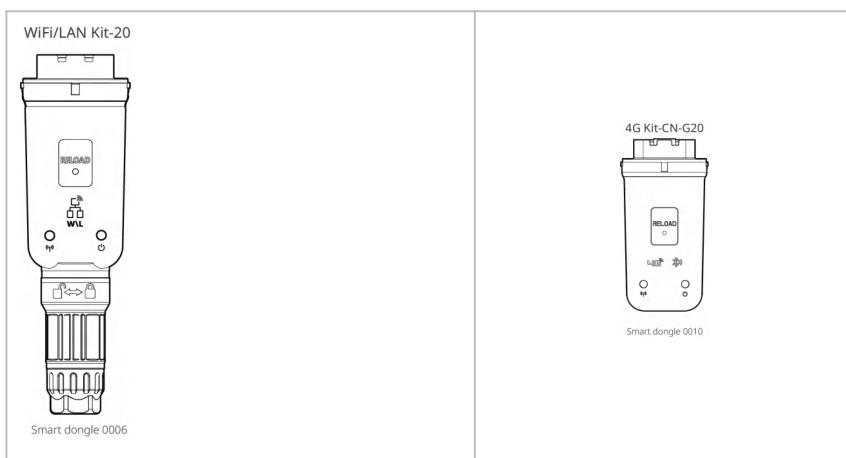
GM330



GMK10DSC0003

## 2.2.5 smart dongle

The smart dongle is mainly used for real-time transmission of various power generation data from the inverter to the SEMS Portal remote monitoring platform, and for near-end device debugging by connecting the smart dongle via the SolarGo APP.



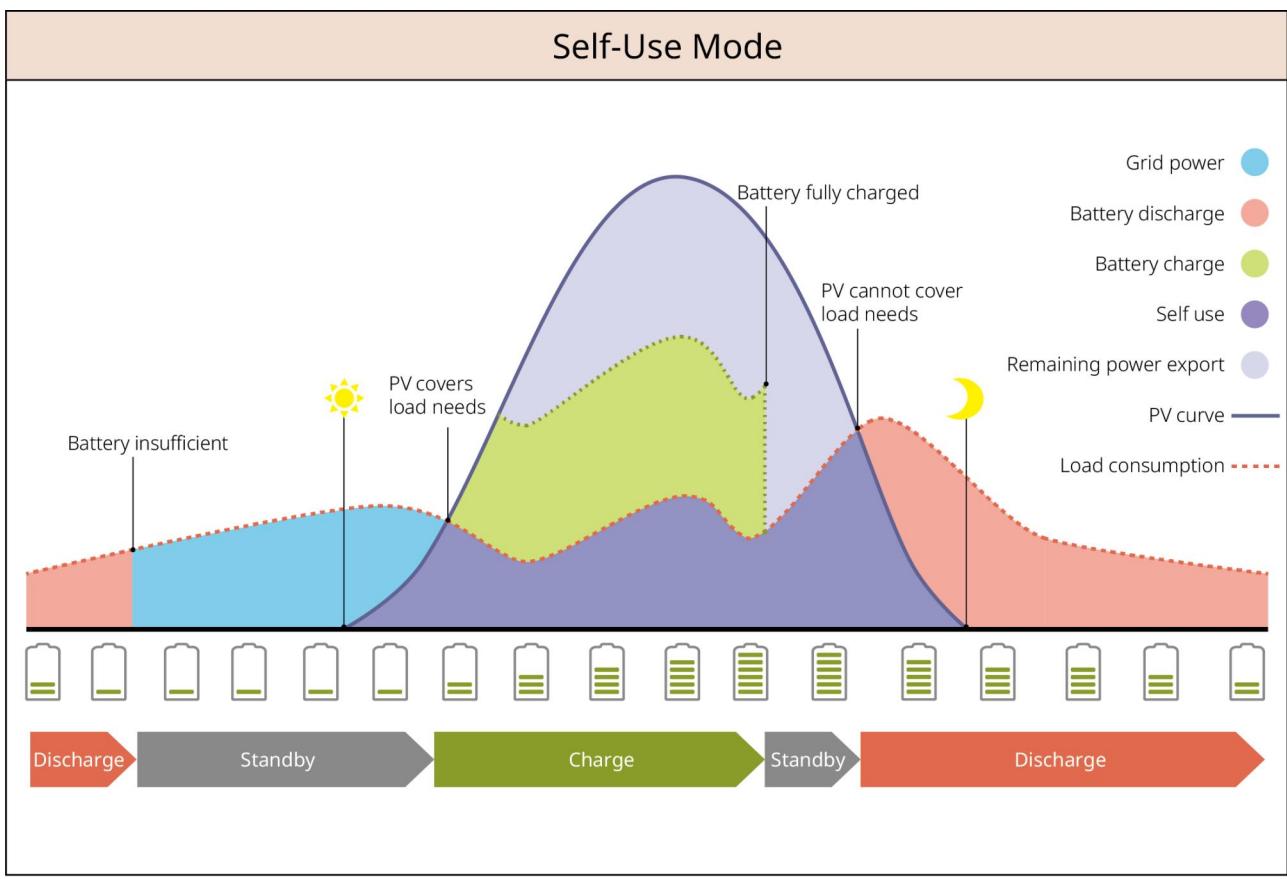
No.	model	Signal Type	Applicable Scenarios
1	WiFi/LAN Kit-20	Bluetooth, WiFi, LAN	For single inverter scenarios

No.	model	Signal Type	Applicable Scenarios
2	4G Kit-CN-G20 4G Kit-G20	Bluetooth, 4G	

## 2.4 System Working Mode

### Self-use Mode

- The basic operating mode of the system.
- PV generation is prioritized to supply power to the loads, excess electricity charges the battery, and any remaining electricity is sold to the grid. When PV generation does not meet the load demand, the battery supplies power to the loads; when the battery power is also insufficient, the grid supplies power to the loads.

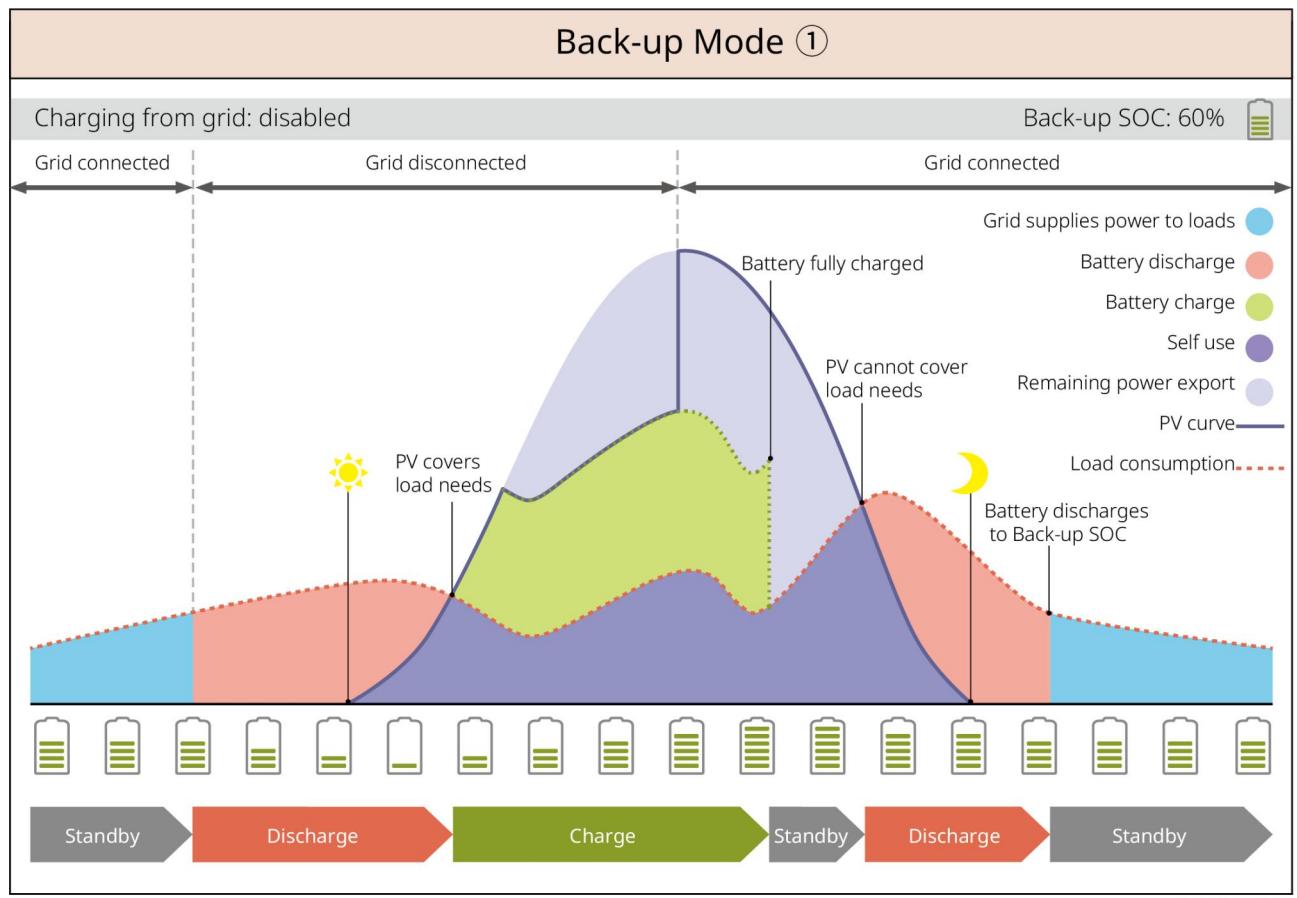


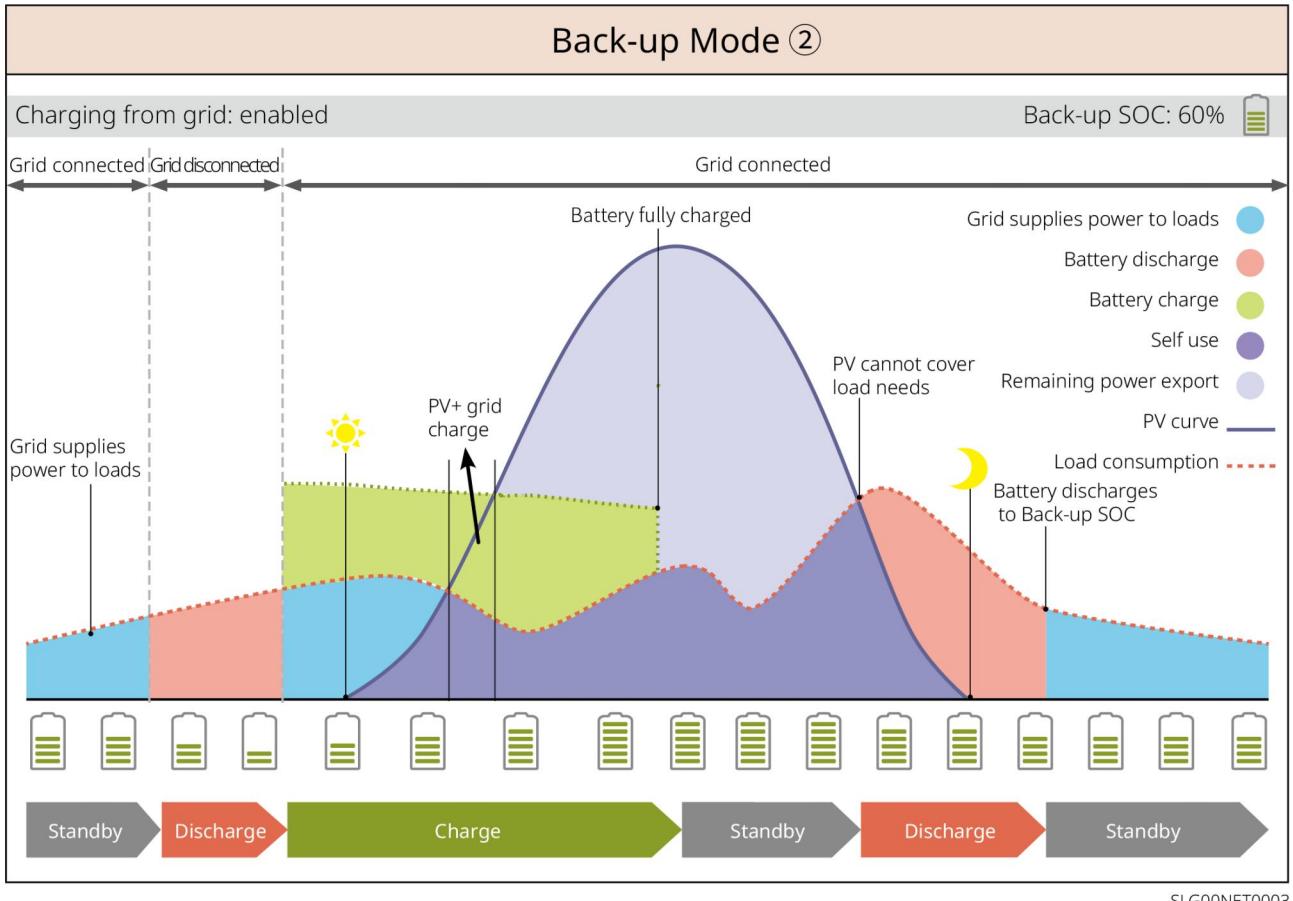
### Backup Mode

- Recommended for use in areas with unstable grid.
- When the grid is out, the inverter switches to off-grid operation mode, and the

battery discharges to supply power to the loads, ensuring that the BACK-UP Loads do not lose power; when the grid is restored, the inverter switches back to grid-connected operation.

- To ensure that the battery SOC is sufficient to maintain normal system operation when off-grid, during grid-connected operation, the battery will use PV or buy electricity from the grid to charge to the backup power SOC. If it is necessary to buy electricity from the grid to charge the battery, please confirm that it meets local grid laws and regulations.





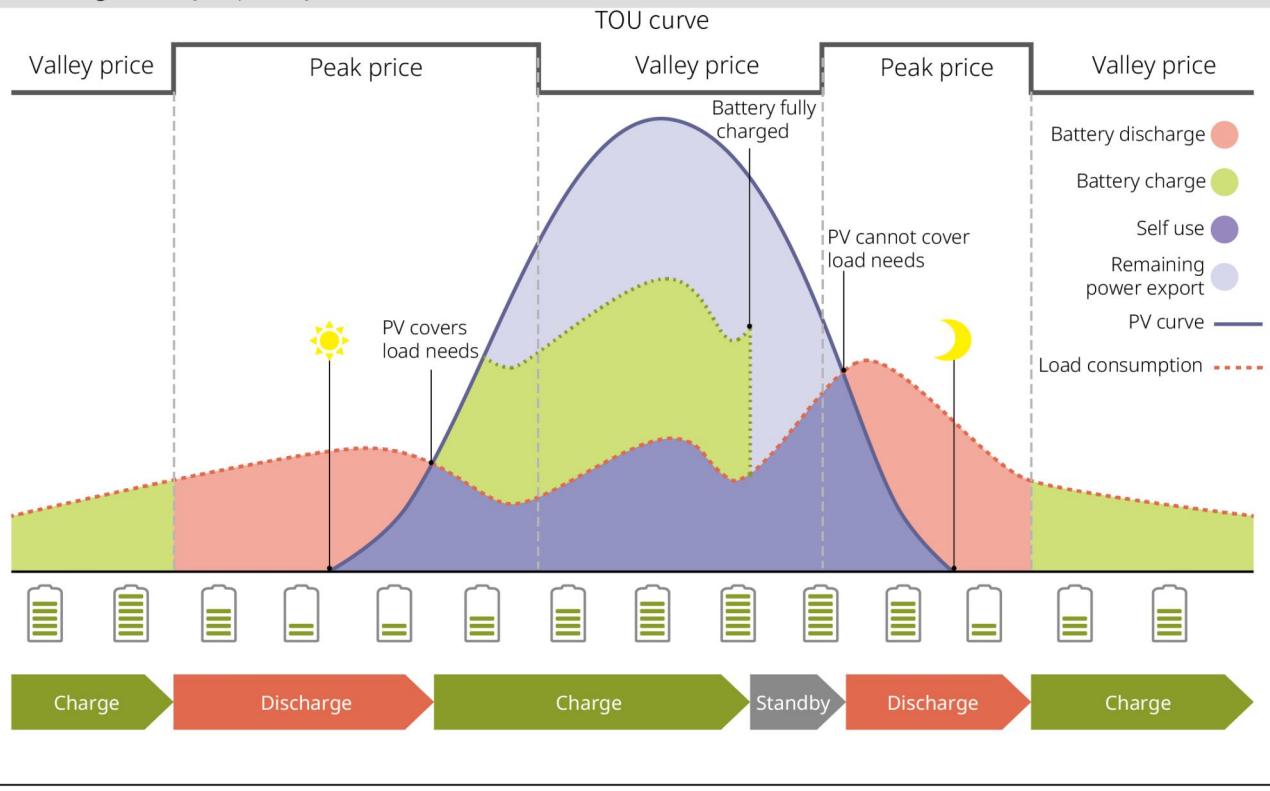
### TOU Mode

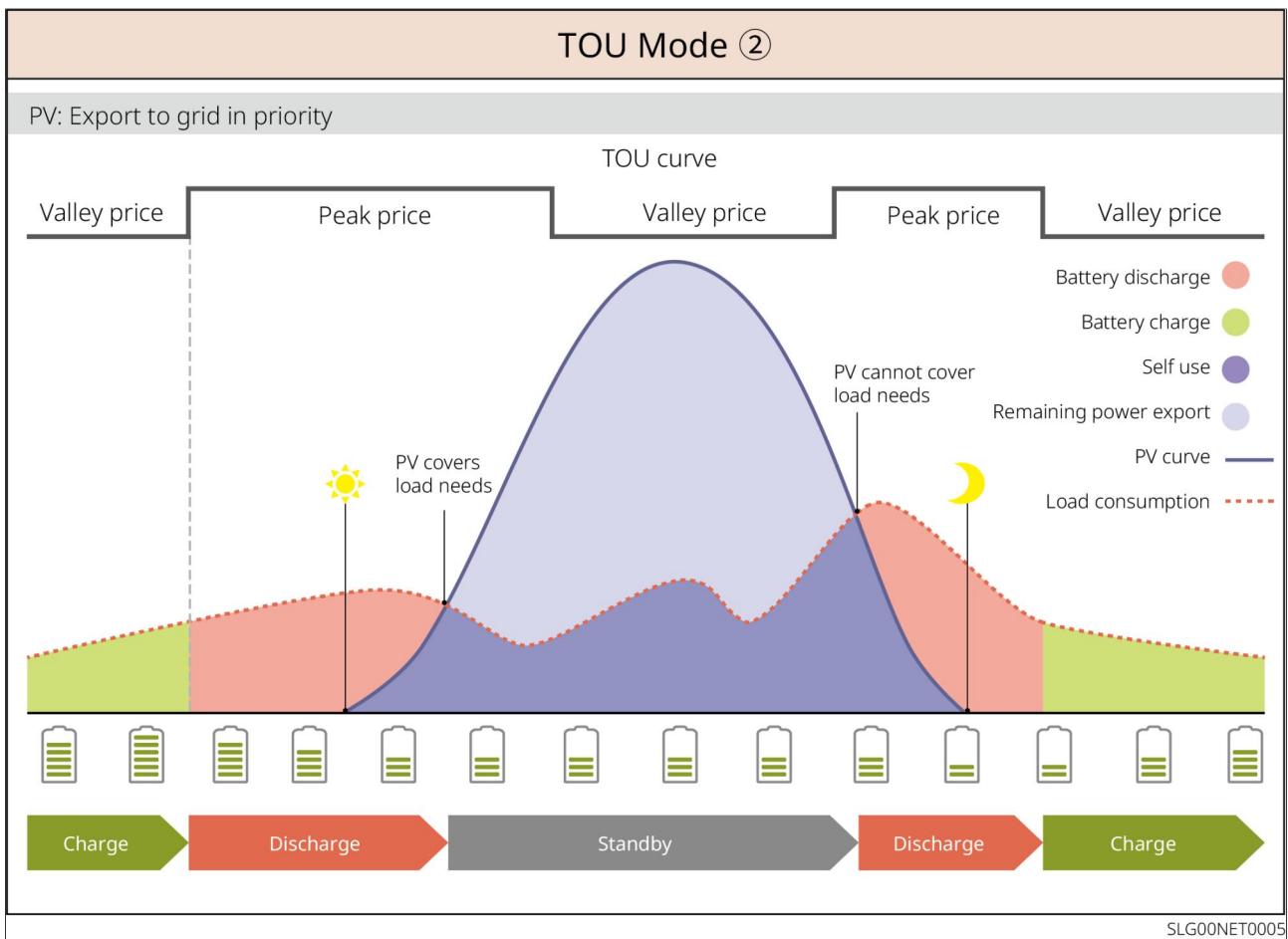
Under the premise of complying with local laws and regulations, set different time periods for buying and selling electricity based on the difference between peak and valley grid electricity prices.

For example: during valley electricity price periods, set the battery to charging mode to buy electricity from the grid for charging; during peak electricity price periods, set the battery to discharging mode to supply power to the loads through the battery.

## TOU Mode ①

PV: Charge battery in priority





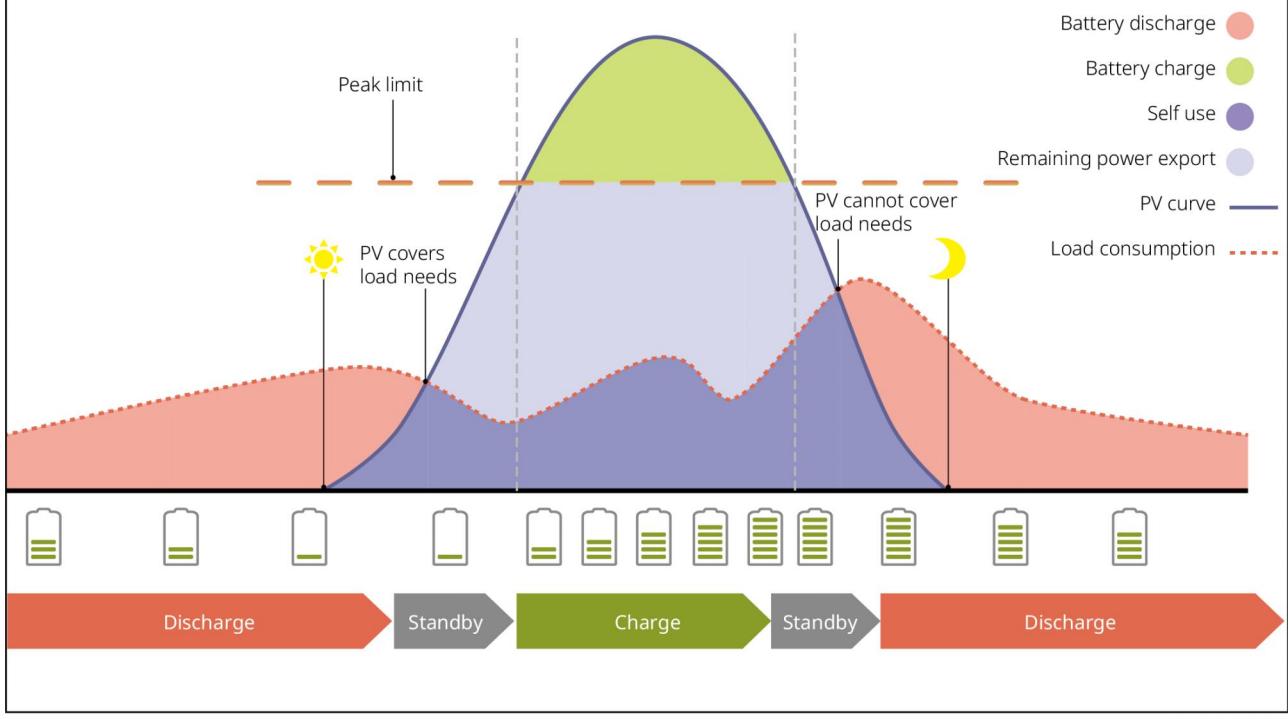
## Delayed Charging Mode

- Suitable for areas with grid-connected power output limitations.
- Setting a peak power limit can use PV generation that exceeds the grid-connected limit to charge the battery; or set PV charging periods to use PV generation to charge the battery during those periods.

## Delayed Charging ①

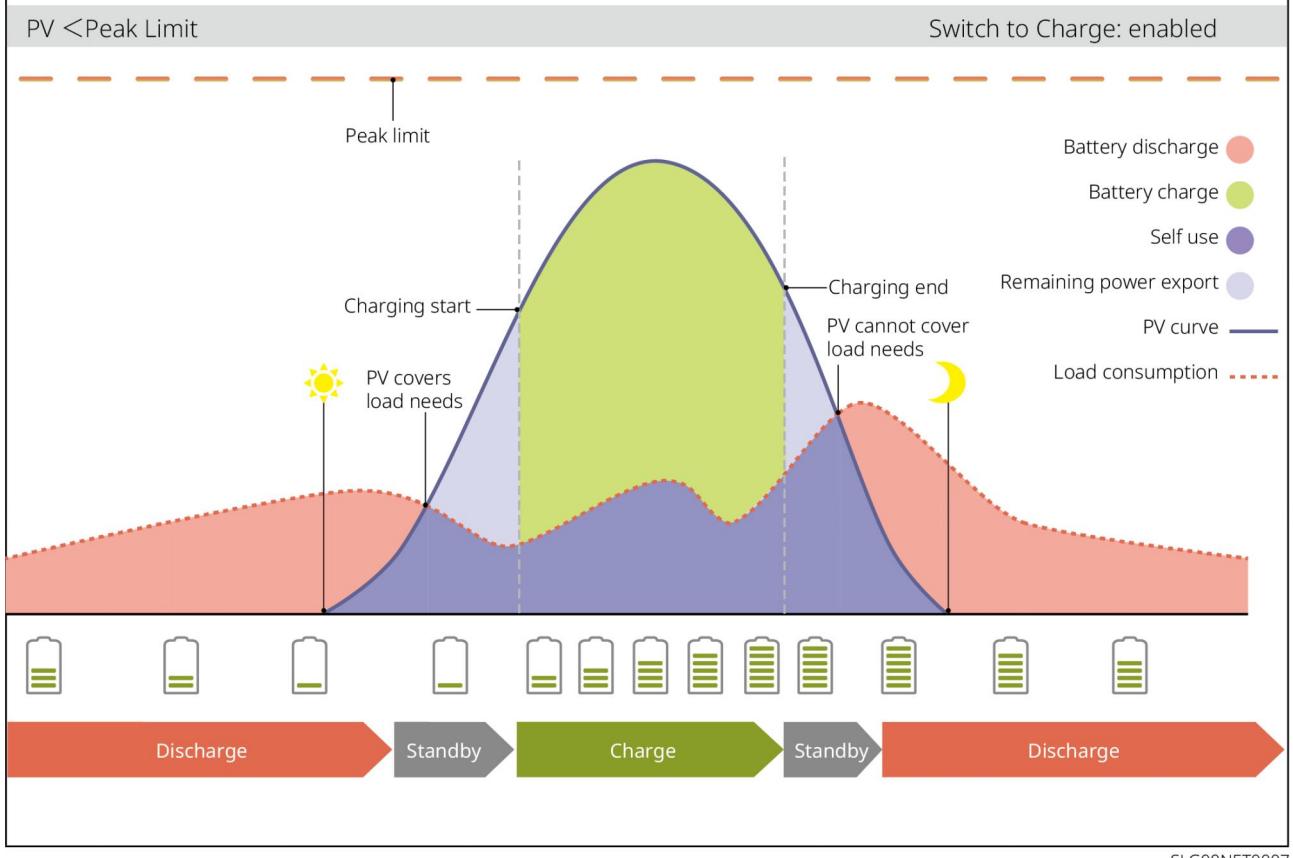
PV > Peak Limit

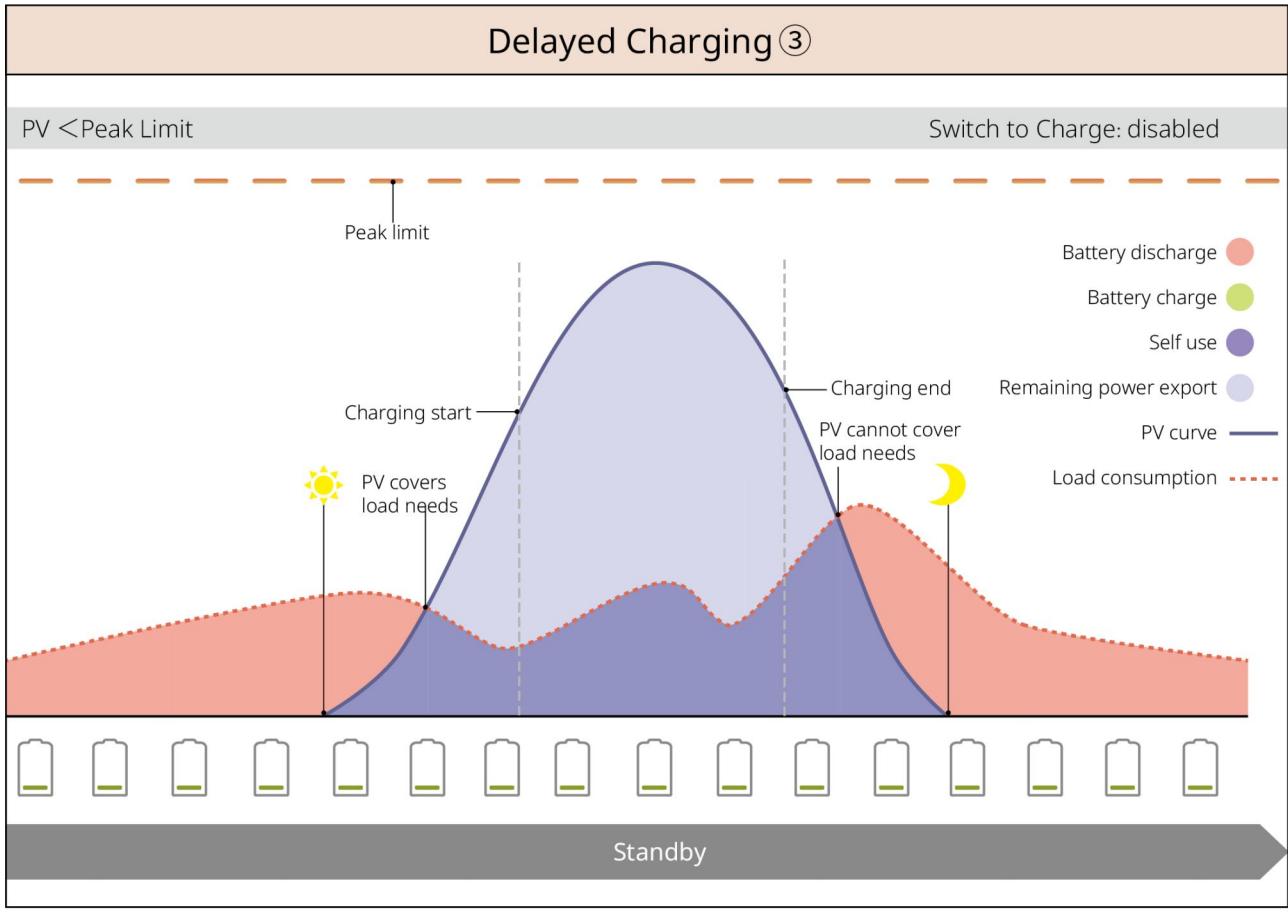
Switch to Charge: enabled/disabled



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## Delayed Charging ②

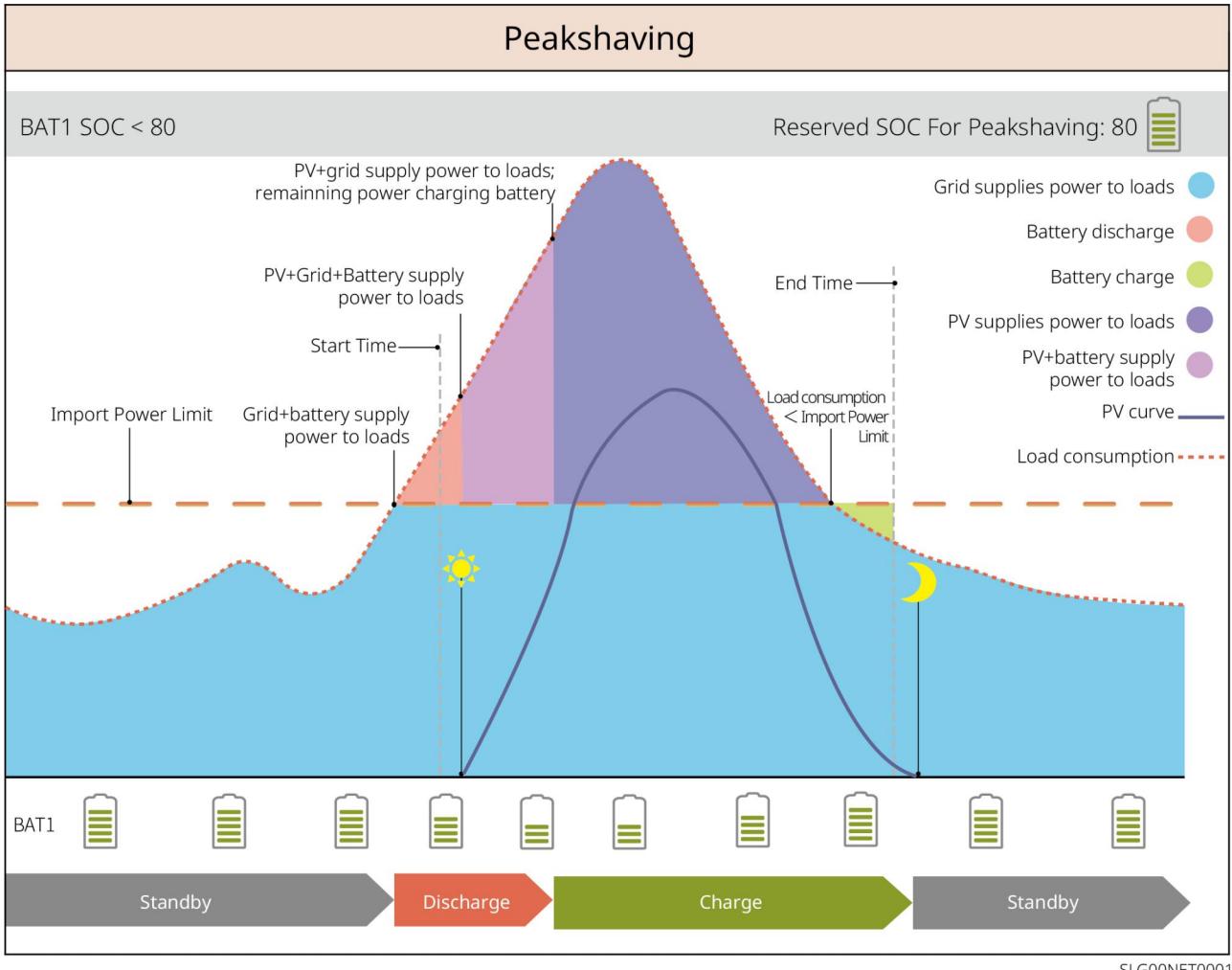




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## Demand Control Mode

- Mainly suitable for industrial and commercial scenarios.
- When the total load power consumption exceeds the electricity quota in a short time, battery discharge can be used to reduce the portion of electricity consumption that exceeds the quota.
- When the battery SOC is below the reserved SOC for demand control, the system buys electricity from the grid based on time periods, load electricity consumption, and the peak buying electricity limit.



## 2.5 Features

### Three-phase Unbalanced Output

Both the grid-tied side and the BACK-UP side of the inverter support three-phase unbalanced output, allowing connection of loads with different power ratings to each phase. The maximum output power per phase for different models is shown in the table below:

model	Maximum Output Power per Phase
GW50K-ET-L-G10	1/3 x 50kW
GW75K-ET-G10	1/3 x 75kW
GW80K-ET-G10	1/3 x 88kW

GW99.99K-ET-G10	1/3 x 99.99kW
GW100K-ET-G10	1/3 x 110kW

## AFCI

The inverter integrates an AFCI circuit protection device to detect arc faults and quickly cut off the circuit upon detection, thereby preventing electrical fires.

Causes of arc faults:

- Damaged connections in the PV system connectors.
- Incorrect or damaged cable connections.
- Aging of connectors or cables.

Fault handling methods:

1. When the inverter detects an arc fault, the fault type can be viewed via the inverter display or the App.
2. If the inverter triggers the fault <5 times within 24 hours, it will automatically resume grid-tied operation and protection after a 5-minute wait. After the 5th arc fault, the fault must be cleared before the inverter can operate normally. For specific operations, please refer to the "SolarGo APP User Manual".

Standard for Brazil models, optional for other regions.

model	Label	Description
GW50K-ET-L-G10		F (Full coverage): Full coverage inverter PV input ports
GW75K-ET-G10		I (Integrated): Integrated within the inverter AFPE (arc fault protection equipment): Combines both AFD and AFI arc detection functions
GW80K-ET-G10	F-I- AFPE-1- 4-4	1: One pair of PV input ports (PV+, PV-) connects to one string of PV input
GW99.99K-ET-G10		4: Number of PV input ports detected by one arc fault detection sensor
GW100K-ET-G10		4: Quantity of arc fault detection sensors

## load control (Optional)

The inverter's dry contact control port supports connection of additional contactors

to control load switching on or off. Supports household loads, heat pumps, etc. load control methods are as follows:

- Time control: Set the time for turning the controlled load on or off. The load will automatically turn on or off within the set time period.
- Switch control: When the control mode is set to ON, the load will turn on; when set to OFF, the load will turn off.
- BACK-UP Loads control: The inverter has a built-in relay dry contact control port, which can control whether the load is switched off via the relay. In off-grid mode, if an overload on the BACK-UP side is detected and the battery SOC value is below the set off-grid protection value, the load connected to the relay port can be switched off.

### **Rapid Shutdown (RSD) (Optional)**

In a rapid shutdown system, the rapid shutdown transmitter and receiver work together to achieve rapid system shutdown. The receiver maintains module output by receiving signals from the transmitter. The transmitter can be external or built into the inverter. In an emergency, by enabling an external trigger device, the transmitter can be stopped, thereby shutting down the modules.

#### **External Transmitter:**

- Transmitter Models: GTP-F2L-20, GTP-F2M-20

<https://www.goodwe.com/Ftp/Installation-instructions/RSD2.0-transmitter.pdf>

- Receiver Models: GR-B1F-20, GR-B2F-20

[https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW\\_RSD-20\\_Quick-Installation-Guide-POLY.pdf](https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_RSD-20_Quick-Installation-Guide-POLY.pdf)

#### **Built-in Transmitter:**

- External Trigger Device: External Switch
- Receiver Models: GR-B1F-20, GR-B2F-20

[https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW\\_RSD-20\\_Quick-Installation-Guide-POLY.pdf](https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_RSD-20_Quick-Installation-Guide-POLY.pdf)

# 3 Check and Storage

## 3.1 Check Before Receiving

Before signing for the product, please carefully inspect the following:

1. Check the outer packaging for any damage, such as deformation, holes, cracks, or any other signs that could indicate damage to the equipment inside the box. If damaged, do not open the packaging and contact your dealer.
2. Check the anti-tipping label on the battery cabinet's outer packaging. If the circular indicator is white, it indicates normal transport. If it is red, it indicates a tip-over occurred during transport. Do not open the packaging and contact your dealer.
3. Check if the inverter model is correct. If it does not match, do not open the packaging and contact your dealer.
4. After opening the box, check the battery anti-tipping labels inside the front door and on the side wall: if the circular indicator is white, it indicates normal transport; if it is red, it indicates a tip-over occurred during transport. Do not use this battery and contact the after-sales service center for inspection.

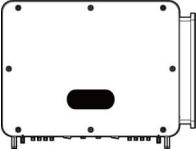
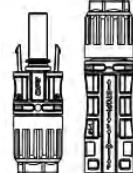
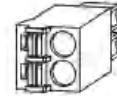
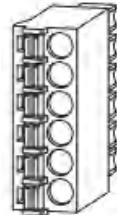
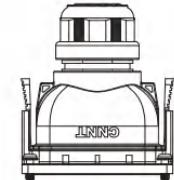
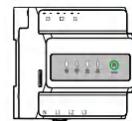
## 3.2 deliverables

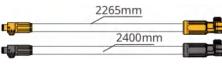
### WARNING

Check if the types and quantities of delivered items are correct, and if there is any damage to the appearance. If damaged, please contact your dealer.

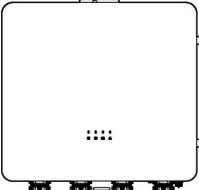
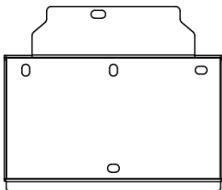
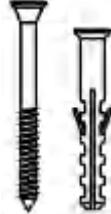
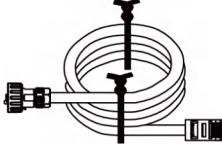
After taking the delivered items out of the packaging, do not place them on rough, uneven, or sharp surfaces to prevent paint chipping.

### 3.2.1 Inverter Deliverables

Component	Description	Component	Description
	Inverter x 1		mounting plate x 1
	Expansion bolt x 4		Grounding terminal x 2
	PV DC wiring terminal x 16		PIN terminal x 21
	2PIN communication terminal x 2		3PIN communication terminal x 2
	6PIN communication terminal x 1		7PIN communication terminal x 1
	Battery connector (Positive) x 2		Battery connector (Negative) x 2
	Communication stick x 1		Meter communication cable x 1
	Communication connector x 2		Meter and accessories x 1

Component	Description	Component	Description
	PV unlocking tool x 1		Inverter lifting rod x 3
	Product documentation x 1		Crossbeam x 2 <sup>[1]</sup>
	Inverter battery connection cable x 1 <sup>[1]</sup>		
Note: [1] Required only when the inverter is installed on the battery-side cabinet and must be ordered separately.			

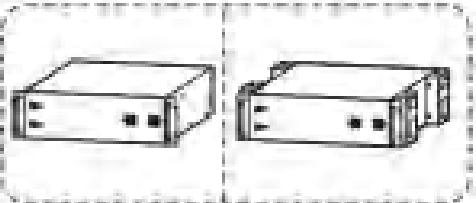
### 3.2.2 STS Deliverables

Part	Description	Part	Description
	STS x 1		Backplate x 1
	Expansion bolt x 6		Grounding terminal x 1
	Flange nut x 4		Inverter-to-STS communication cable x 1

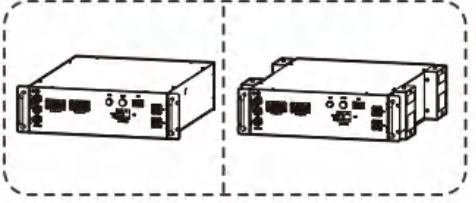
Part	Description	Part	Description
	AC insulation sleeve		Product documentation x 1

### 3.2.3 Batteries Deliverables (BAT Series 35.8-56.3kWh High Voltage Battery)

#### Battery PACK

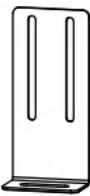
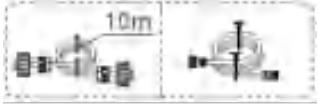
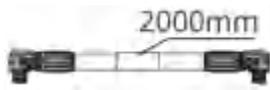
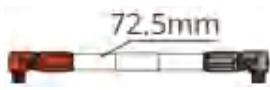
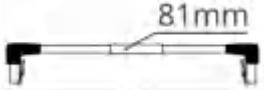
Component	Description
	<p>Battery PACK</p> <ul style="list-style-type: none"> <li>• GW35.8-BAT-I-G10 x 7</li> <li>• GW40.9-BAT-I-G10 x 8</li> <li>• GW46.0-BAT-I-G10 x 9</li> <li>• GW51.2-BAT-I-G10 x 10</li> <li>• GW56.3-BAT-I-G10 x 11</li> </ul>

#### PCU

Component	Description
	PCU x 1

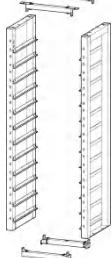
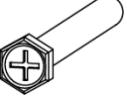
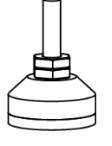
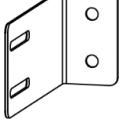
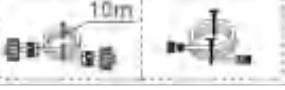
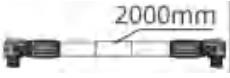
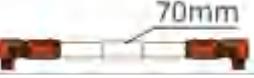
#### Accessories

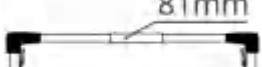
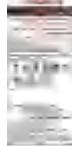
- Stack Mounting

Part	Description	Part	Description
	Floor lock bracket x 4		Wall lock bracket x 4
	Equipotential bonding strip x 15		M5 screw x N
	Cable gland x 1		Expansion bolt x 8
	Adjustable foot x 4		Base x 1
	Power connector x 2		Battery and inverter communication cable x 1
	B- power cable x 1		B+ power cable x 1
	Battery internal power cable x N		Battery internal communication cable x N
	Protective earth terminal x 2		M12 expansion bolt x 4

Part	Description	Part	Description
	Nameplate x1		Cable tie x 10
	Product documentation x 1		

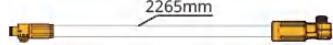
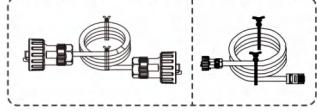
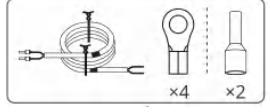
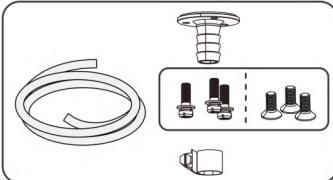
- **Rack Mounting**

Part	Description	Part	Description
	Battery rack x 1		Rubber pad x 4
	M5 screw x N		ST6.3screw x 4
	Adjustable feet x 4		Wall mounting bracket x 2
	Power connector x 2		Battery to inverter communication cable x 1
	B- power cable x 1		B+ power cable x 1

Part	Description	Part	Description
	Battery internal power cable x N		Battery internal communication cable x N
	Protective grounding terminal x 2		M12 expansion bolt x 4
	Nameplate x1		Cable tie x 10
	Product documentation x 1		

### 3.2.4 Batteries Deliverables (BAT Series 92.1-112.6kWh Commercial & Industrial Battery System)

Part	Description	Part	Description
	battery cabinet x 1		Expansion screw x 4
	Grounding M5 screw x 3		Grounding terminal x 3
	Inverter battery connection terminal 25mm <sup>2</sup> x 2		Inter-battery connection terminal 50mm <sup>2</sup> x 2

Part	Description	Part	Description
	<p>Pack series connection harness</p> <ul style="list-style-type: none"> <li>• GW92.1-BAT-AC-G10 x 8</li> <li>• GW102.4-BAT-AC-G10 x 9</li> <li>• GW112.6-BAT-AC-G10 x 10</li> </ul>		Pack negative to high-voltage box negative harness x 1
	Inverter battery connection (positive) x 1		Inverter battery connection (negative) x 1
	Battery to inverter communication network cable x 1		Air conditioner power supply harness kit x 1
	fireproofing mud x 8		Cable tie x 20
	Air conditioner water pipe kit x 1		Lifting eye x 4
	Corrugated pipe connector x 6		25mm <sup>2</sup> to 10mm <sup>2</sup> round tube terminal x 4

Part	Description	Part	Description
	Product documentation x 1		

### 3.2.5 Smart Meter Deliverables

Part	Description	Part	Description
	Smart Meter GM330 x 1		2 PIN communication terminal x 1
	PIN terminal x 6		7 PIN communication terminal x 1
	screwdriver x 1		Product documentation x 1

### 3.2.6 Smart dongle

#### 3.2.6.1 WiFi/LAN Kit-20

Component	Description	Component	Description
	smart dongle x1		product documentation x 1

#### 3.2.6.2 Communication Module Deliverables (4G Kit-G20/4G Kit-CN-G20)

4G Kit-G20

Part	Description	Part	Description
 4G Kit-G20 Smart dongle 0002	smart dongle x1		Product Documentation x 1
	Accessory x1		Tool x1 or 0

#### 4G Kit-CN-G20

Component	Description	Component	Description
 4G Kit-CN-G20 4G Kit-CN-G21 Smartdongle 0004	smart dongle x1		Product documentation x 1

### 3.3 Storage

If the device is not put into use immediately, please store it according to the following requirements. After long-term storage, the device must be inspected and confirmed by professionals before it can be used again.

1. If the inverter is stored for more than two years or does not operate for more than six months after installation, it is recommended to have it inspected and tested by professionals before putting it into use.
2. To ensure the good electrical performance of the internal electronic components of the inverter, it is recommended to power it on every six months during storage. If it has not been powered on for more than six months, it is recommended to have it inspected and tested by professionals before putting it into use.
3. To protect battery performance and service life, it is recommended to avoid long-

term idle storage. Prolonged storage may cause deep discharge of the battery, leading to irreversible chemical loss, capacity decay, or even complete failure. It is advised to use it promptly. If the battery needs long-term storage, please maintain it according to the following requirements:

Battery	Battery Storage Initial SOC Range	Recommended Storage Temperature	Charge/Discharge Maintenance Cycle[1]	Battery Maintenance Method[2]
BAT Series 35.8-56.3kWh High-Voltage Battery			-20~35°C (≤12 months)	For maintenance methods, please consult the dealer or after-sales service center.
BAT Series 92.1-112.6kWh Industrial and Commercial Battery System	30%~40%	0~35°C	35~+45°C (≤6 months)	

## NOTICE

[1] The storage time is calculated from the SN date on the battery's outer packaging. After exceeding the storage period, charge-discharge maintenance is required. (Battery maintenance time = SN date + charge-discharge maintenance cycle). For the method to view the SN date, refer to: [SN Code Meaning](#).

[2] After passing the charge-discharge maintenance, if the outer box has a Maintaining Label, please update the maintenance information on the Maintaining Label. If there is no Maintaining Label, please record the maintenance time and battery SOC yourself and keep the data properly for maintaining records.

## Packaging Requirements:

Ensure that the outer packaging box is not removed and the desiccant inside the box is not lost.

## Environmental Requirements:

1. Ensure that the device is stored in a cool place, avoiding direct sunlight.
2. Ensure that the storage environment is clean, with appropriate temperature and humidity ranges, and no condensation. If there is condensation on the device ports, do not install the device.
3. Ensure that the device is stored away from flammable, explosive, corrosive, and other hazardous materials.

**Stacking Requirements:**

1. Ensure that the stacking height and direction of the device are arranged according to the instructions on the packaging box label.
2. Ensure that there is no risk of tipping after the device is stacked.

# 4 Installation

## DANGER

When performing device installation and electrical connections, please use the delivery items shipped with the box; otherwise, device damage caused will not be covered under warranty.

## 4.1 System Installation and Commissioning Procedure

Steps	① Installation	② PE	③ PV	④ Battery	⑤ AC	⑥ COM	⑦ Communication module
Inverter							
Tools			Recommend: PV-CZM-61100	Recommend: YQK-70			
Steps	① Installation	② PE	③ Battery	④ COM	⑤ Air-conditioner wiring	⑥	⑦
Battery BAT 92.1-112.6kWh C&I							
Tools							
Steps	① Installation	② PE	③ Battery	④ COM	⑤	⑥	⑦
Battery BAT 35.8-56.3kWh HV							
Tools							

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Steps	① Installation	② PE	③ AC	④ CT	⑤ COM	⑥ ETH	⑦ 4G	⑧ DO/DI/AI/PT	
Controller SEC3000C									
Tools	<p>A: D: 70mm <math>\Phi</math>: 15mm B: M12 <math>\times</math> 42N·m C: M10 <math>\times</math> 24N·m</p>	M5 $\times$ 1.5-2N·m	M7 $\times$ 2-2.5N·m	0.5N·m				M2 $\times$ 0.5N·m	
Steps	① Installation	② PE	③ AC	④ COM	Steps	① Installation	② Cable Connections	③ Power	④ Commissioning
STS					Smart meter GM30		<p>① AC cable connection ② Power connection</p>		<p>SolarGo APP SEMS Portal APP or SEMS Portal WEB</p>
Tools	<p>D: 60mm <math>\Phi</math>: 8mm</p>	M8 $\times$ 5-8N·m	<p>① M8 <math>\times</math> 5-8N·m ② M10 <math>\times</math> 6-8N·m ③ 44mm C 7-7.5N·m</p>						

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## 4.2 Installation Requirements

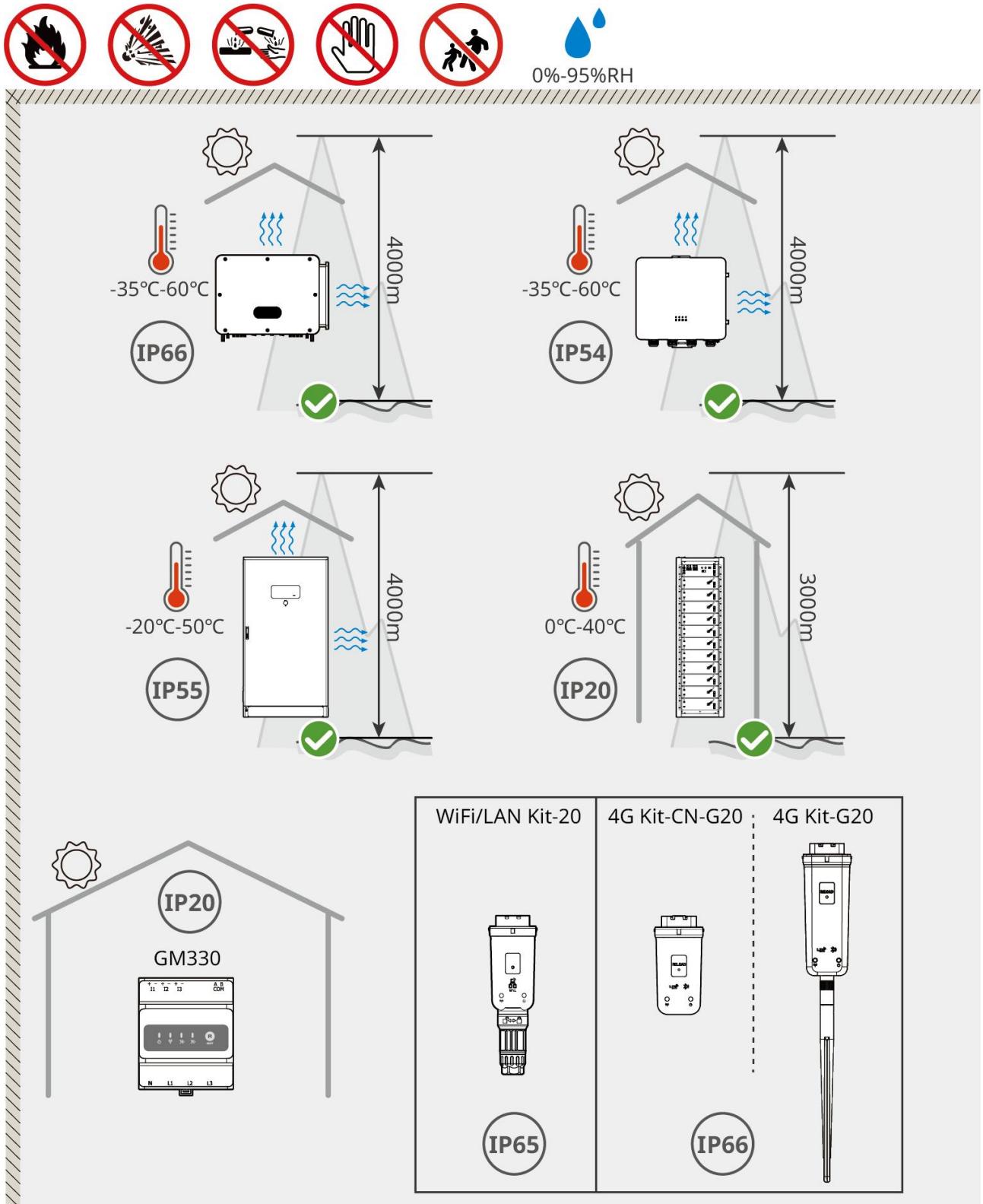
### 4.2.1 Installation Environment Requirements

1. The equipment must not be installed in flammable, explosive, corrosive, or similar environments.
2. The ambient temperature and humidity at the installation site must be within the suitable range.
3. The installation location must be out of reach of children and avoid easily accessible positions.
4. The enclosure temperature of the Inverter may exceed 60°C during operation. Do not touch the enclosure before it cools down to prevent burns.
5. The equipment must be installed away from direct sunlight, rain, snow accumulation, etc. It is recommended to install it in a sheltered location. If necessary, build a sunshade.
6. Adverse environmental conditions such as direct sunlight and high temperatures may cause the Inverter output power to derate.
7. The installation space must meet the equipment's ventilation, heat dissipation, and operational space requirements.
8. The installation environment must satisfy the equipment's ingress protection rating.
  - The Inverter and smart communication stick are suitable for indoor and outdoor installation.
  - The meter is suitable for indoor installation.
  - The BAT series 92.1-112.6kWh commercial & industrial battery system is suitable

for indoor and outdoor installation.

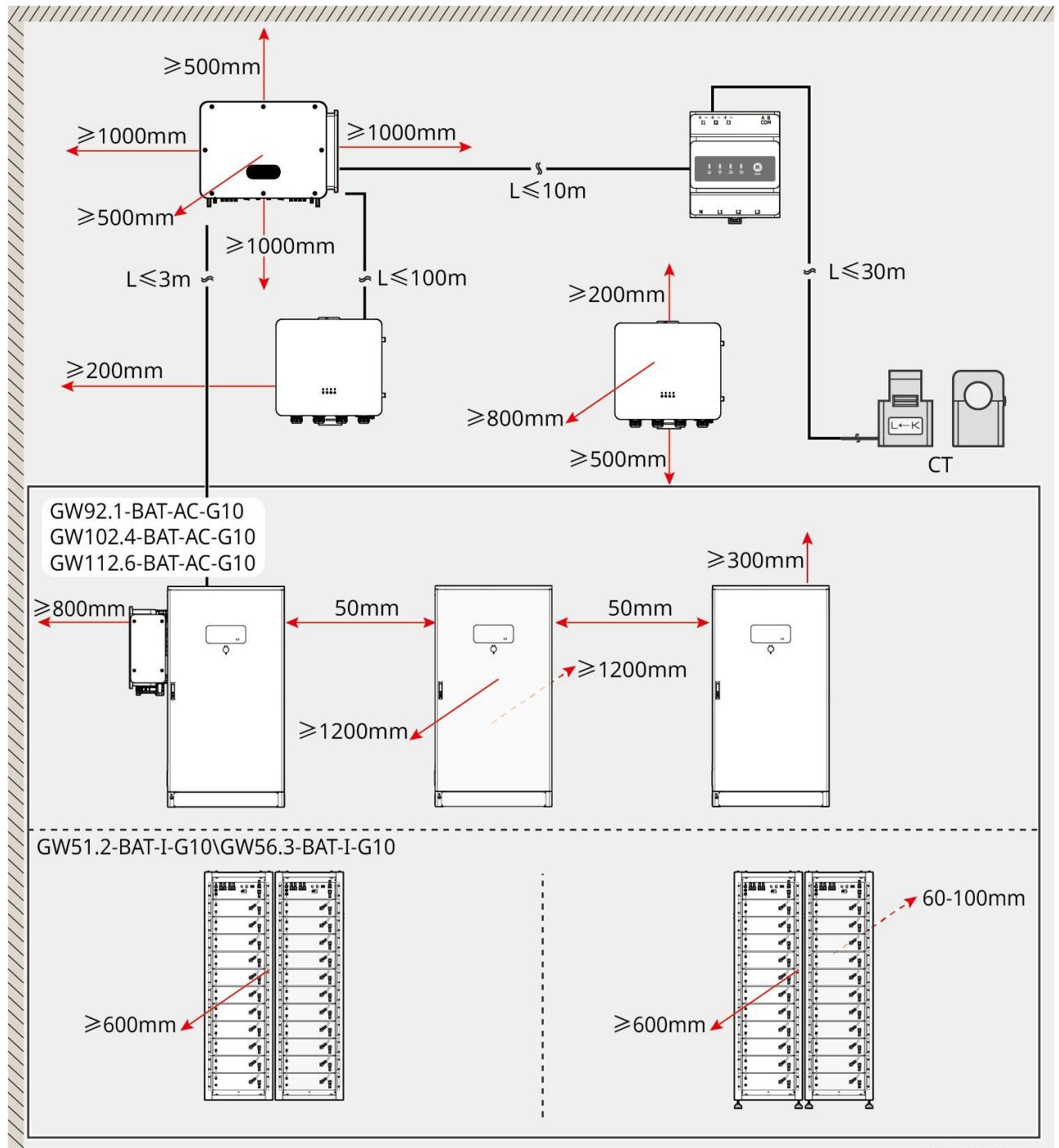
- The BAT series 35.8-56.3kWh high-voltage battery requires indoor installation with adequate ventilation.

9. The equipment installation height should facilitate operation and maintenance, ensuring indicator lights, all labels are easily visible, and terminals are easy to operate.
10. The installation altitude must be below the maximum operating altitude.
11. The battery system must be installed on a flat, dry surface, not in a depression or on a slope. Installation in water-prone environments is strictly prohibited.
12. Do not install the battery system on ground prone to water accumulation or subsidence. Ensure the ground can bear the weight of the battery system.
13. For outdoor installation in salt damage areas, consult the equipment manufacturer. Salt damage areas mainly refer to regions within 500m of the coastline. The affected area is related to sea breeze, precipitation, terrain, etc.
14. Keep away from strong magnetic field environments to avoid electromagnetic interference. If there are radio stations or wireless communication equipment operating below 30MHz near the installation site, install the equipment according to the following requirements:
  - Inverter: Add ferrite cores with multiple turns on the DC input lines or AC output lines of the Inverter, or add low-pass EMI filters; or maintain a distance of over 30m between the Inverter and the wireless electromagnetic interference equipment.
  - Other equipment: Maintain a distance of over 30m between the equipment and the wireless electromagnetic interference equipment.



## 4.2.2 Installation Space Requirements

When installing a device in the system, a certain amount of space should be reserved around the device to ensure sufficient space for installation and heat dissipation.



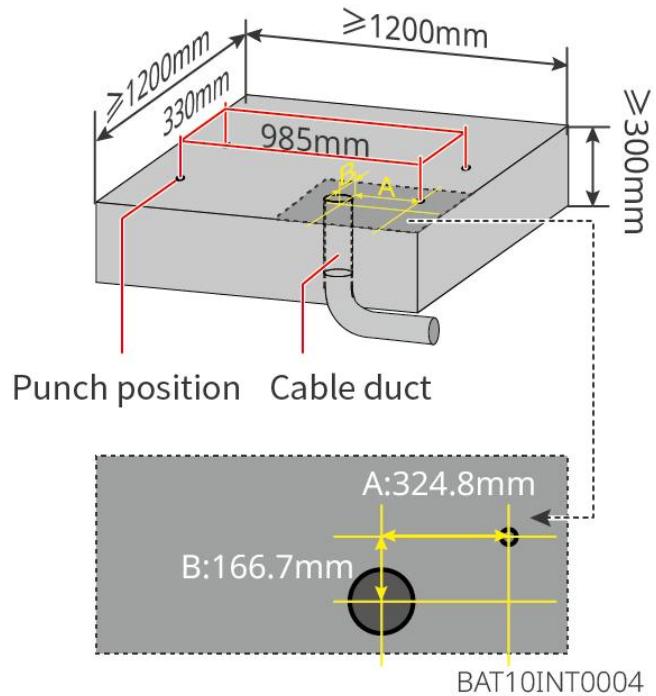
#### 4.2.3 Foundation Installation Requirements

## NOTICE

- Only BAT series 92.1-112.6kWh industrial and commercial battery systems require foundation construction.
- The conduit can be replaced on-site with PVC pipes of appropriate dimensions.

1. The foundation material must be C25 plain concrete hardened ground or other non-combustible surfaces.
2. The foundation must have pre-reserved trenches or outlet holes to facilitate equipment cabling.
3. The equipment (including height, embedded expansion screw parts, conduit, etc.) should be adjusted according to the process and on-site conditions.
4. The top elevation of the equipment foundation can be adjusted based on the equipment and actual on-site requirements.
5. Ensure the equipment is installed level and must not be tilted or inverted.
6. Trench Requirements:
  - If the equipment uses bottom cable entry, the trench must have a dust-proof and rodent-proof design to prevent foreign objects from entering.
  - The trench must have a waterproof and moisture-proof design to prevent cable aging and short circuits, which could affect the normal operation of the equipment.
  - As the equipment cables are relatively thick, sufficient space for the cables must be reserved during trench design to ensure smooth cable connection and prevent wear.

### **BAT Series 92.1-112.6kWh Commercial and Industrial Battery System:**



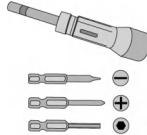
#### 4.2.4 Tool Requirements

##### NOTICE

During installation, it is recommended to use the following installation tools. If necessary, other auxiliary tools can be used on site.

#### Installation Tools

Tool Type	Description	Tool Type	Description
	diagonal plier		RJ45 Connector Crimping Tool
	wire stripper		Level bar
	open-end wrench		PV Terminal Crimping Tool A-2546B

Tool Type	Description	Tool Type	Description
	hammer drill (Drill bit $\Phi 8\text{mm}$ )		torque wrench M4, M5, M8
	rubber hammer		socket wrench
	marker pen		multimeter Range $\leq 600\text{V}$
	heat shrink tubing		heat gun
	cable tie		vacuum cleaner
	YQK-70 hydraulic pliers		

## Personal Protective Equipment

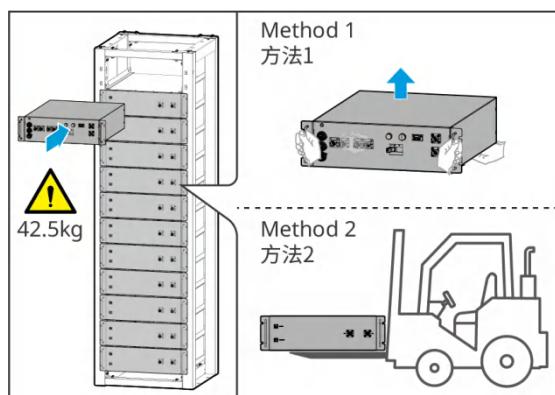
Tool Type	Description	Tool Type	Description
	Insulating gloves, protective gloves		Dust mask
	goggle		Safety shoes

## 4.2.5 Handling Requirements

## ⚠️ CAUTION

1. During operations such as transportation, handling, and installation, all actions must comply with the laws, regulations, and relevant standards of the country or region where the operations take place.
2. Before installation, the equipment must be moved to the installation site. To prevent personal injury or equipment damage during handling, please note the following:
  - Ensure an adequate number of personnel is assigned according to the equipment's weight to avoid exceeding the safe manual handling capacity and causing injury.
  - Wear safety gloves to prevent injury.
  - Ensure the equipment remains balanced during handling to avoid dropping.
  - Ensure all cabinet doors are securely locked during equipment handling.
3. When using lifting methods to move the equipment, use flexible slings or straps, with a single strap load-bearing capacity of  $\geq 2t$ .
4. When using a forklift to move the equipment, the forklift's load-bearing capacity must be  $\geq 2t$ .

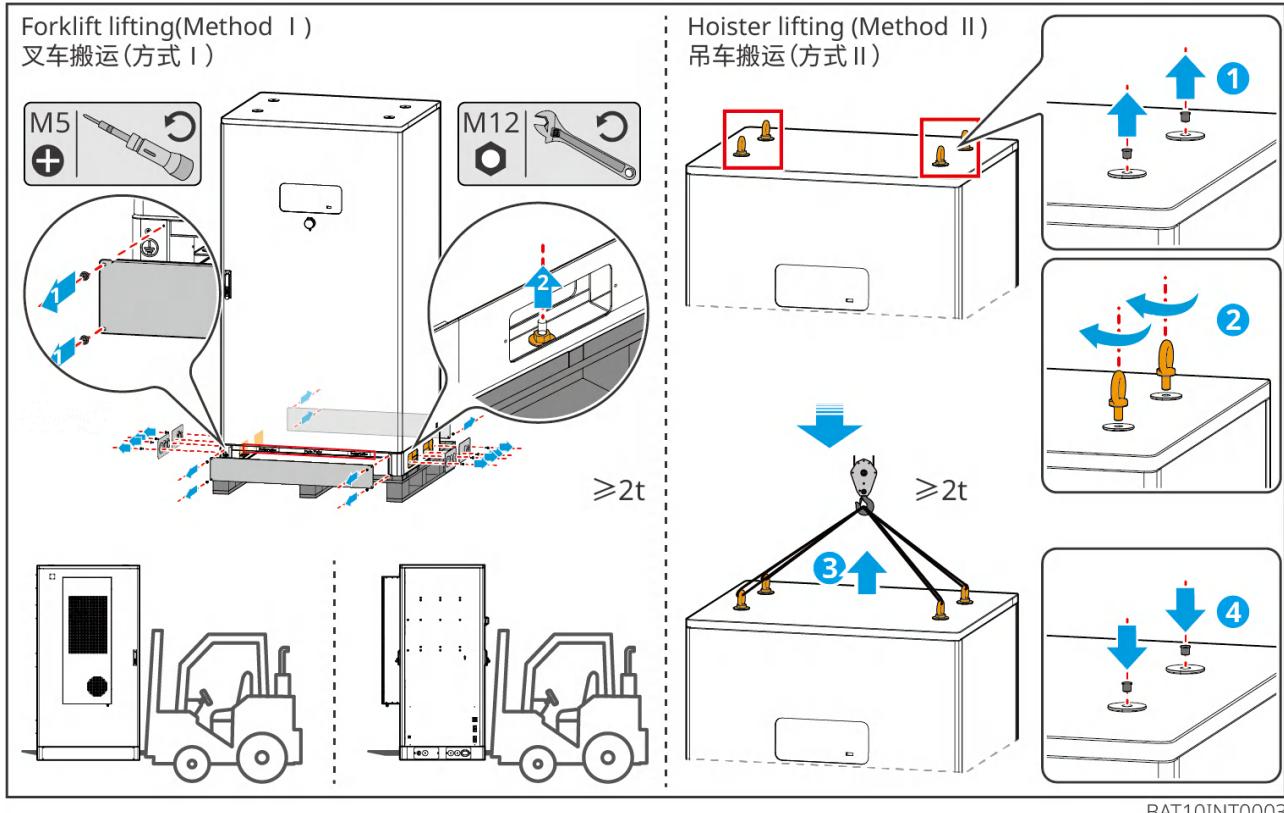
- **BAT Series 35.8-56.3kWh High Voltage Battery**



- **BAT Series 92.1-112.6kWh Commercial & Industrial Battery System**

## NOTICE

- Before using a forklift to move the equipment, the baffle needs to be removed.
- During shipment, the battery system is secured to the pallet with bottom screws. Please remove the pallet before installation.



## 4.3 Installing the Inverter

 **CAUTION**

- When drilling holes, ensure that the drilling positions avoid water pipes, cables, etc., inside the wall to prevent danger.
- When drilling, please wear safety goggles and dust masks to avoid inhaling dust into the respiratory tract or getting it into the eyes.
- Ensure that the inverter is installed securely to prevent it from falling and injuring people.

**Step1:** Place the back mounting plate horizontally on the wall, use a marker to mark the drilling positions (for wall mounting); or remove the screws (for battery cabinet side cabinet installation).

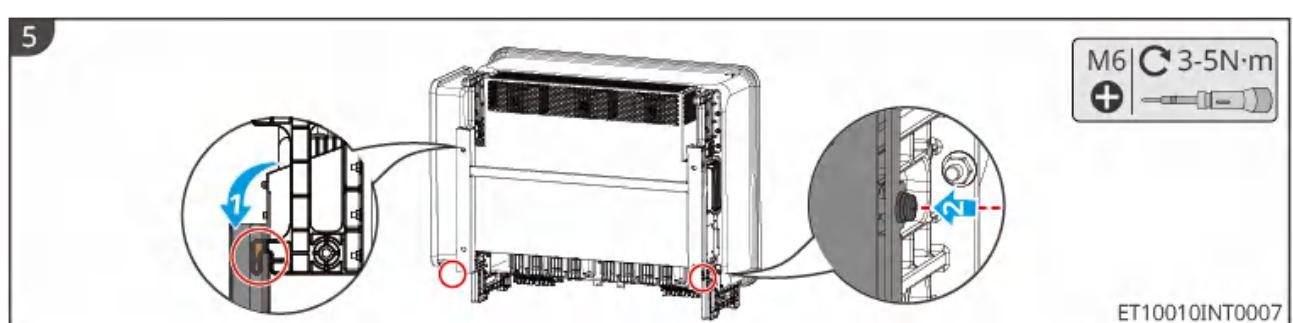
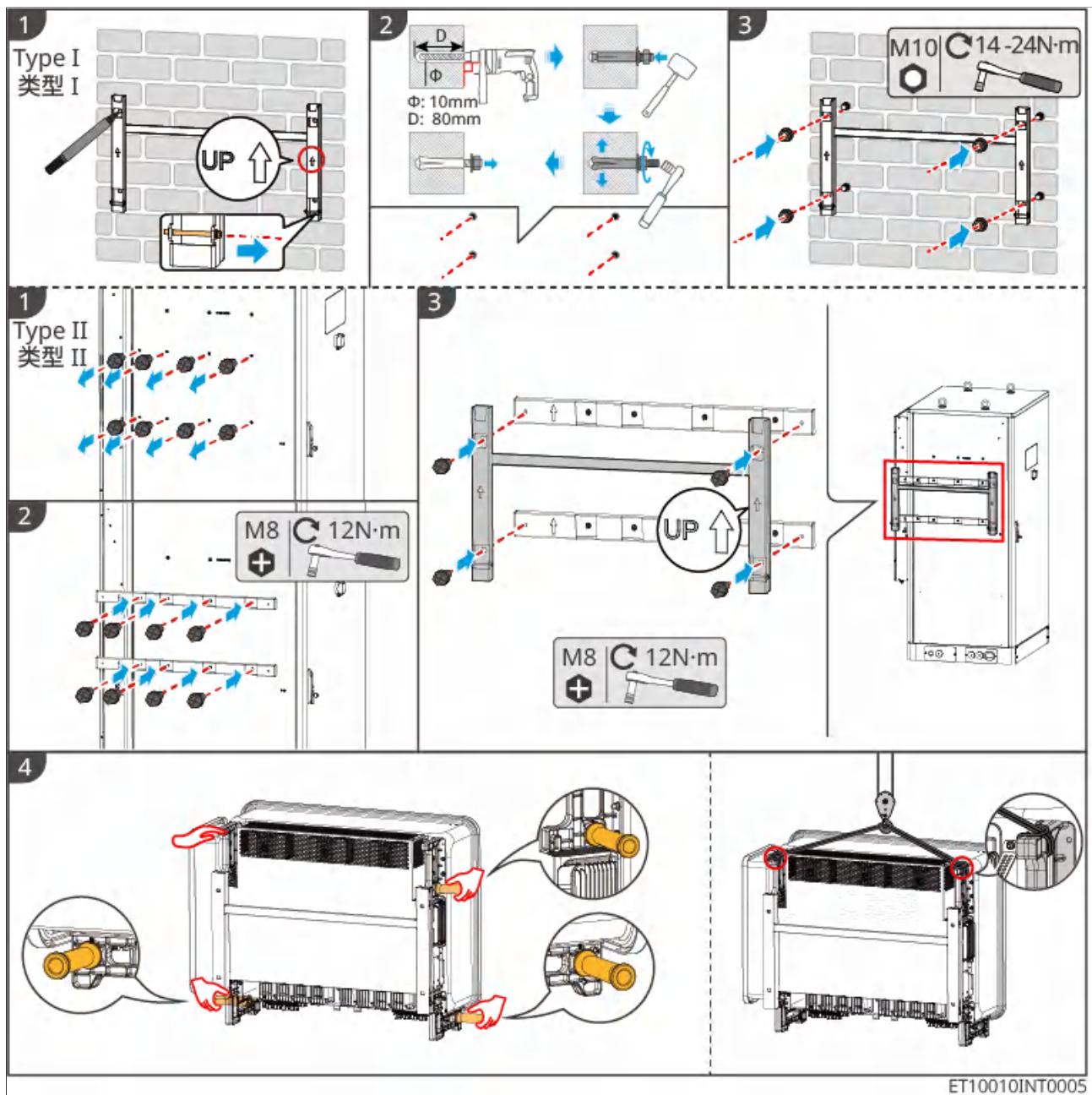
**Step2:** Use an impact drill to drill holes, then place expansion bolts into the holes (for wall mounting); or install the crossbeam (for battery cabinet side cabinet installation).

**Step3:** Fix the inverter back mounting plate to the wall or the battery cabinet side cabinet.

**Step4:** Transport the inverter.

- Manual transportation: After installing the inverter handle, hold the handle to transport it.
- Hoisting transportation: Thread the lifting rope through the hoisting holes and secure it, then use a crane to transport it.

**Step5:** Hang the inverter onto the back plate, and secure the inverter to the back plate.



## 4.4 Installing STS

**Step 1:** Place the backplate horizontally on the wall and use a marker to mark the drilling positions.

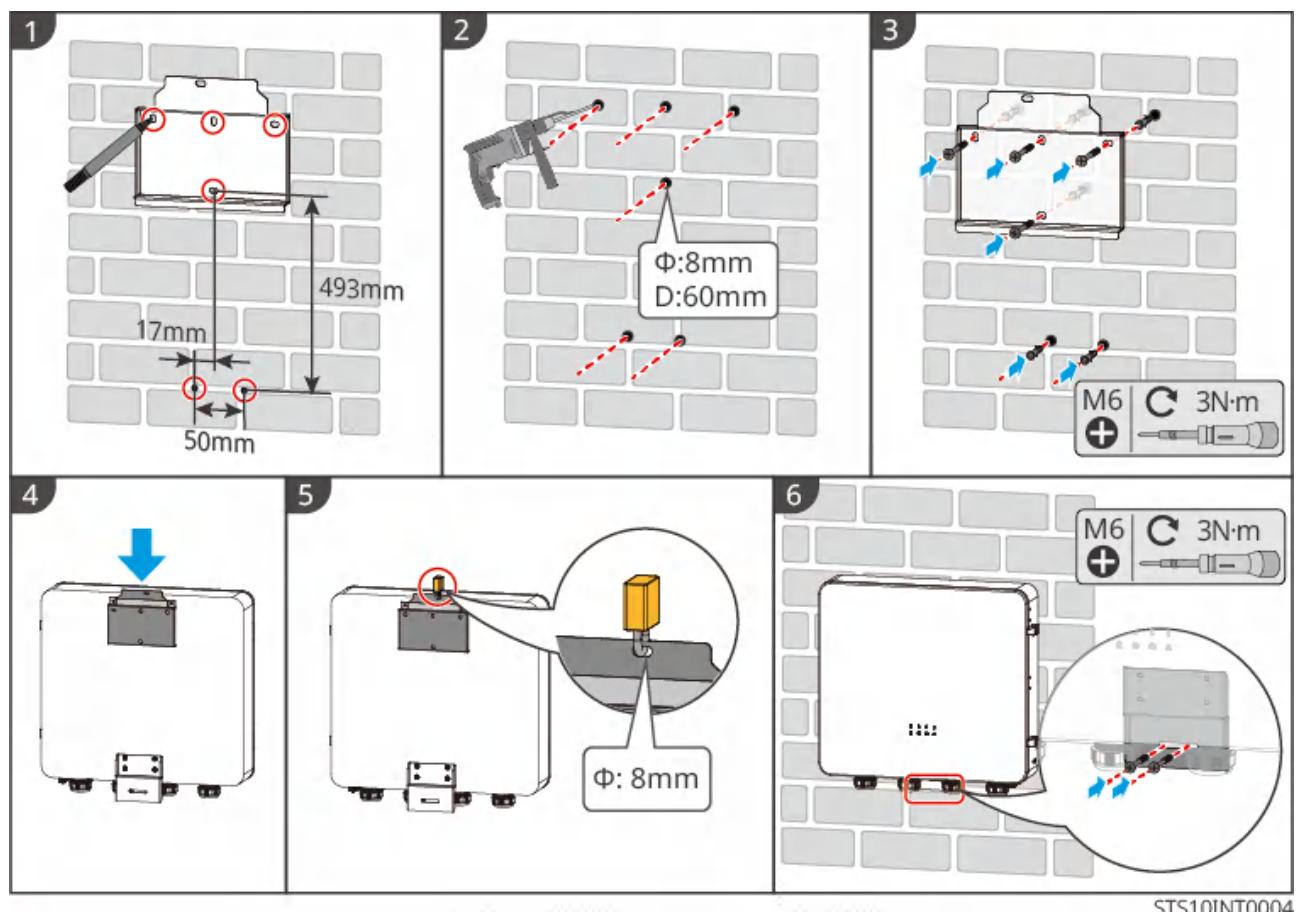
**Step 2:** Use an impact drill to create the holes.

**Step 3:** Use expansion bolts to secure the backplate to the wall.

**Step 4:** Mount the STS onto the backplate.

**Step 5:** Install the anti-theft lock.

**Step 6:** Use M6 screws to secure the fixed support bracket to the wall.



## 4.5 Installing the Battery System

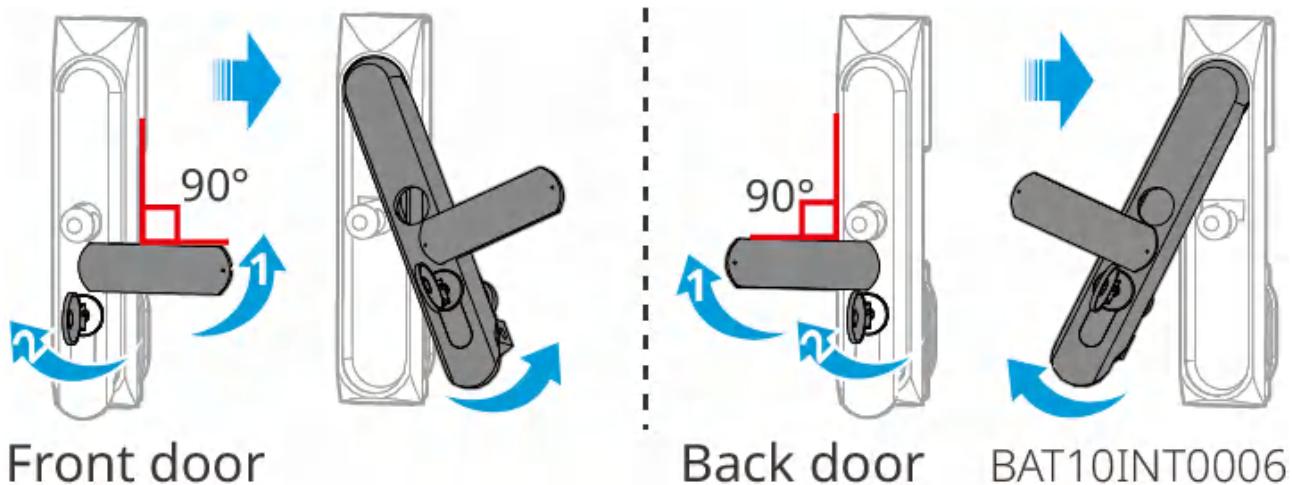
### 4.5.1 Open the Cabinet Door

## NOTICE

- This section applies only to the BAT Series 92.1-112.6kWh Commercial & Industrial Battery System.
- Do not open the cabinet doors during equipment handling.
- Close the cabinet doors after completing operations such as equipment installation, wiring, and commissioning.

**Step 1:** Unscrew the lock cylinder cover plate and use the key to unlock the cabinet door.

**Step 2:** Rotate the door handle to open the cabinet door.



### 4.5.2 Installation of BAT Series 35.8-56.3kWh High-Voltage Battery

#### • Stacked Installation

**Step 1:** Install adjustable feet under the base. The adjustable height range of the feet is 35-45mm.

**Step 2:** Fix the ground locking bracket onto the base.

**Step 3:** Use a pen to mark the drilling positions for expansion bolts on the ground.

**Step 4:** Install the expansion bolts.

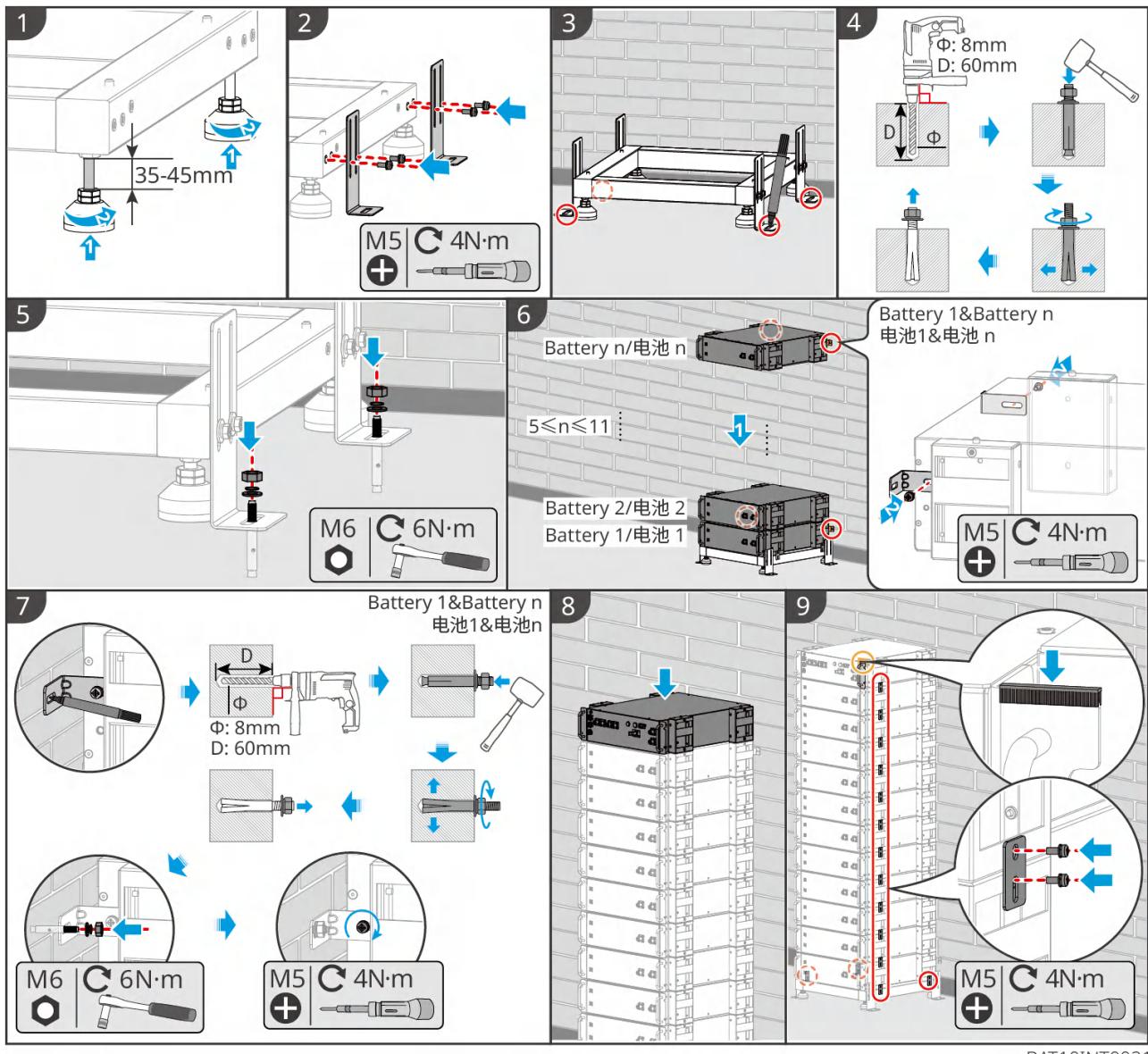
**Step 5:** Secure the ground locking bracket to the ground using expansion bolts.

**Step 6:** Stack the battery PACKs, and pre-tighten the wall locking brackets on the first and last battery PACKs.

**Step 7:** Use a pen to mark the drilling positions for expansion bolts on the wall, fix the wall locking brackets with expansion bolts, and then tighten the wall locking brackets on the battery PACKs.

**Step 8:** Place the high-voltage box.

**Step 9:** Install the equipotential bonding strip and wire protection sleeve.



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## • Battery Rack Installation

### Installing the Battery Rack

**Step 1:** Lay the bracket flat according to the arrow marks, and align the holes according to the serial number silkscreen.

**Step 2:** Use M5 screws to fix the round holes first, then fix the oblong holes.

## Securing the Battery Cabinet

- **Type I**

**Step 1:** Use a marker pen to mark the drilling positions on the level ground.

**Step 2:** Use an impact drill to drill holes, and install expansion bolts.

**Step 3:** Move the battery rack to the hole positions, and tighten the expansion bolts with a socket wrench.

- **Type II**

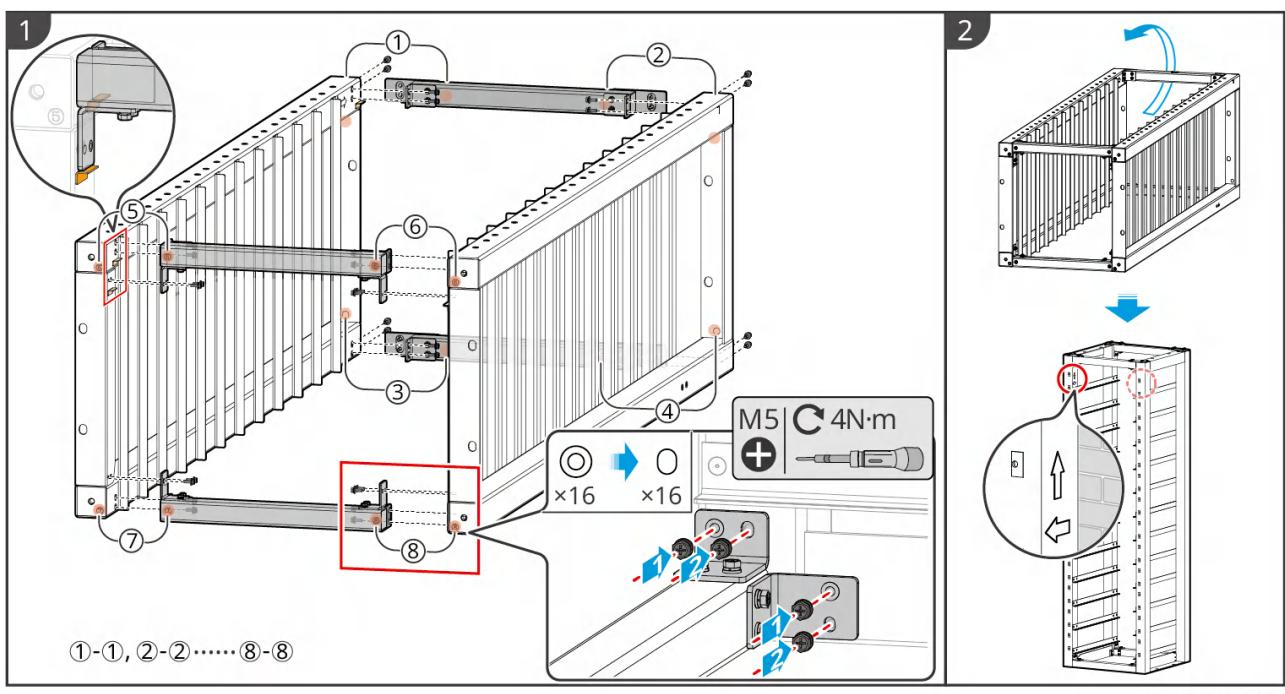
**Step 1:** Lay the bracket down and install foot cups at the bottom.

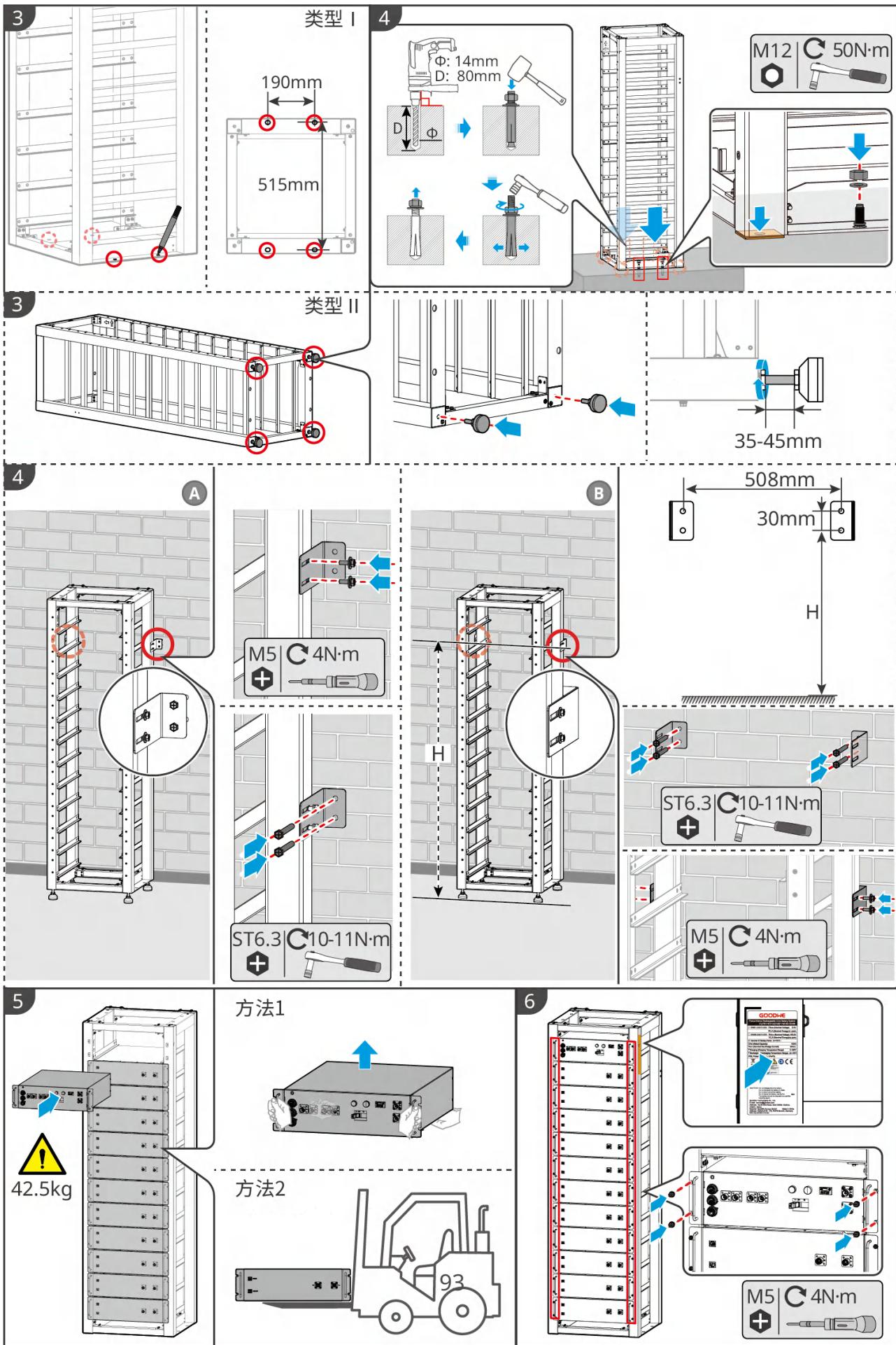
**Step 2:** Erect the bracket, and secure the battery rack to the wall using wall fixing brackets.

## Installing the High-Voltage Box and Battery Pack

**Step 1:** Push directly or use a forklift to move the high-voltage box and battery Pack.

**Step 2:** Attach labels, and fasten the high-voltage box and battery Pack with M5 screws.

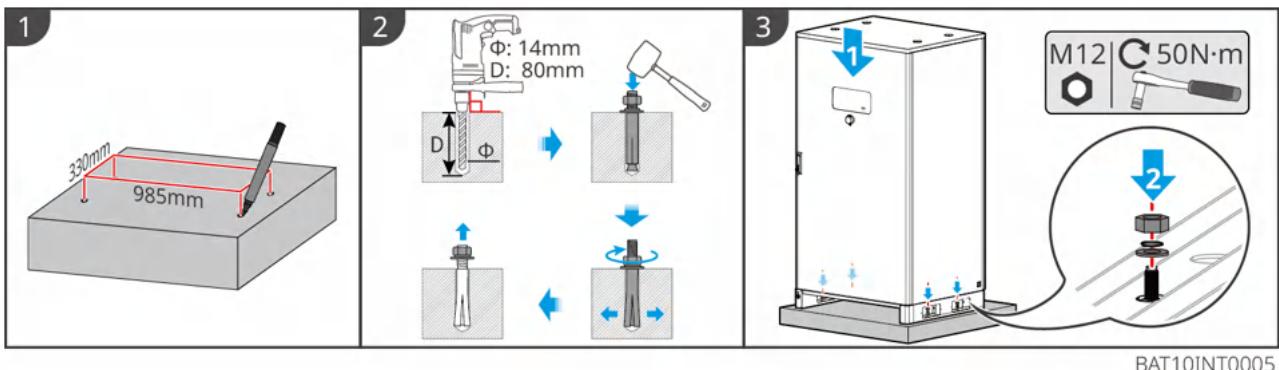




# Installation of BAT Series 92.1-112.6kWh Commercial and Industrial Battery System

## Step 1: Secure the battery system to the foundation.

1. Mark the drilling positions according to the dimensions shown in the diagram.
2. Use an impact drill to drill holes and install expansion bolts.
3. Move the battery rack to the hole positions and secure the battery to the foundation with expansion bolts.

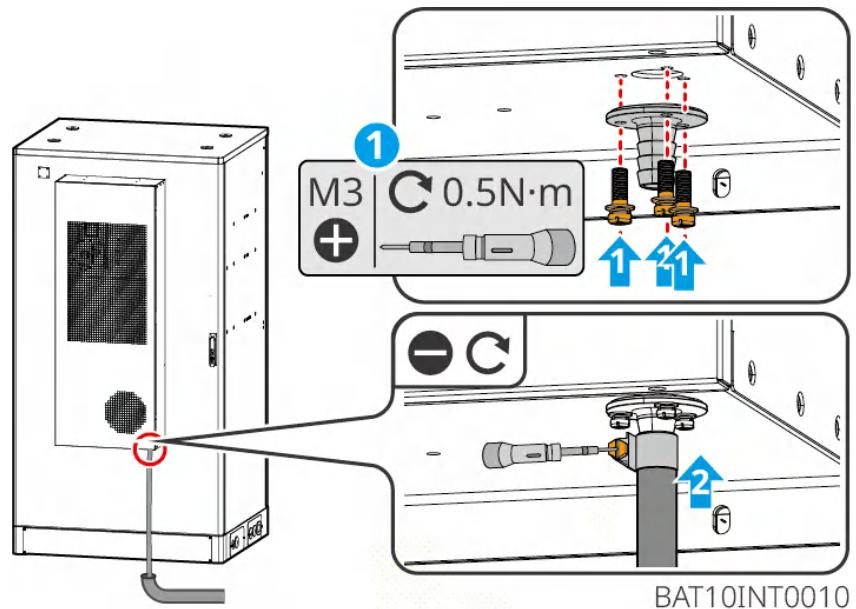


**Step 2:** Remove the protective covers from the smoke and temperature sensor alarms. The smoke and temperature sensor alarms come with protective covers when the battery is shipped; these covers need to be removed for the alarms to function properly.



**Step 3:** Install the air conditioning drain pipe.

1. Install the air conditioning drain pipe connector.
2. Secure the air conditioning drain pipe to the connector.

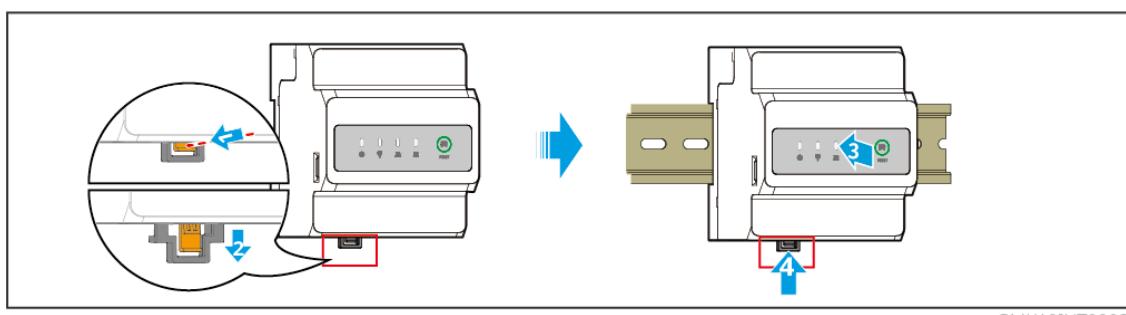


## 4.6 Installing the Smart Meter

### **⚠️ WARNING**

In areas with lightning risk, if the meter cable length exceeds 10m and the cable is not routed using a grounded metal conduit, it is recommended to install external lightning protection devices.

### GM330



# 5 System Wirings

## DANGER

- The installation, routing, and connection of cables must comply with local laws, regulations, and standard requirements.
- All operations during electrical connection, as well as the specifications of cables and components used, must meet local legal and regulatory requirements.
- Before performing electrical connections, please turn off the DC switch and AC output switch of the equipment to ensure it is powered off. Operating on live circuits is strictly prohibited, as it may lead to hazards such as electric shock.
- Cables of the same type should be bundled together and separated from different types of cables. They must not be intertwined or cross-routed.
- If excessive tension is applied to the cable, poor connections may result. When connecting, leave a certain length of slack in the cable before connecting it to the inverter's terminal ports.
- When crimping terminal lugs, ensure the conductor part of the cable makes full contact with the lug. Do not crimp the cable insulation together with the lug. Failure to do so may cause the equipment to malfunction or, after operation, lead to overheating due to unreliable connections, potentially damaging the inverter's terminal block.

## WARNING

- Do not connect loads between the inverter and the AC switch directly connected to the inverter.
- Each inverter must be equipped with an AC output circuit breaker. Multiple inverters should not be connected to a single AC circuit breaker simultaneously.
- To ensure that the inverter can safely disconnect from the grid in case of abnormalities, install an AC circuit breaker on the AC side of the inverter. Select an appropriate AC circuit breaker according to local regulations.
- The inverter BACK-UP function requires an STS static transfer switch cabinet to be implemented.

## NOTICE

- When performing electrical connections, wear personal protective equipment such as safety shoes, protective gloves, and insulated gloves as required.
- Only qualified professionals are permitted to perform electrical connection operations.
- The cable colors shown in the diagrams in this document are for reference only. Specific cable specifications must comply with local regulations.
- External overcurrent protection devices for the battery ports and AC output ports shall be provided during on-site installation and clearly specified in the installation manual.

## 5.1 System Wiring Electrical Block Diagram

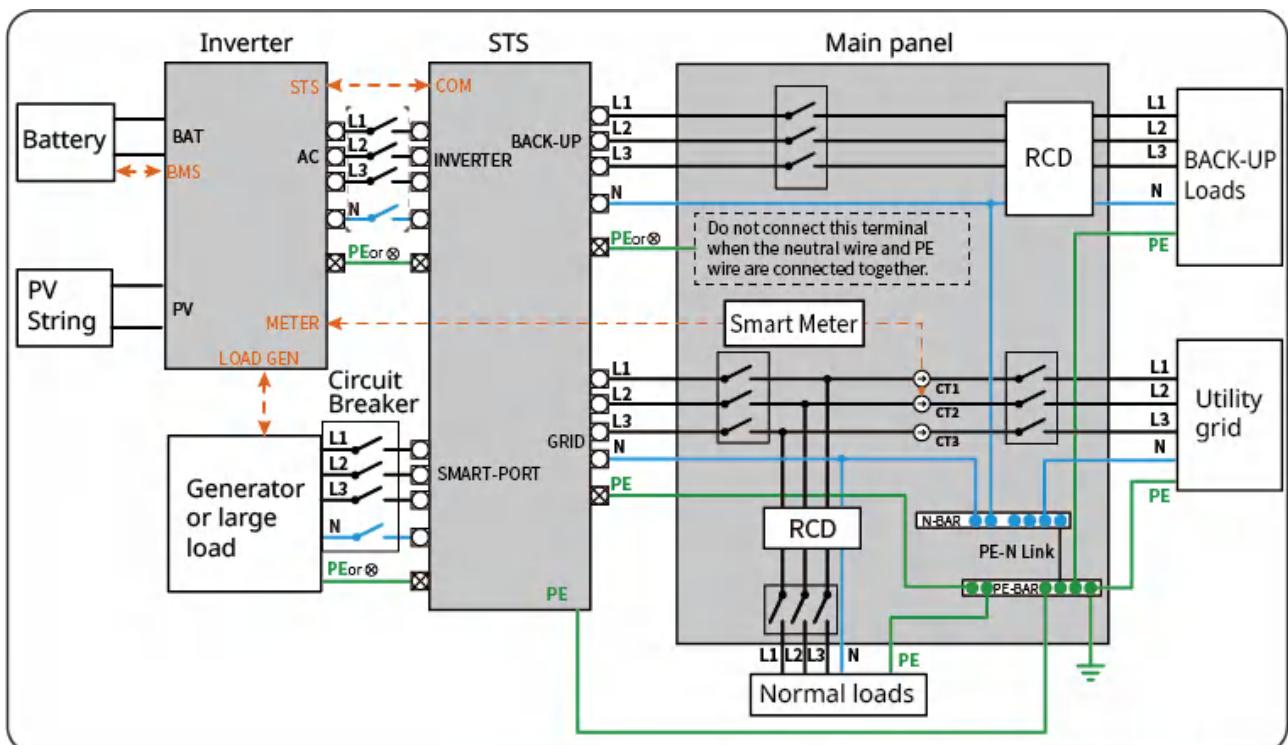
## NOTICE

- Depending on regional regulatory requirements, the wiring methods for the N and PE lines of the inverter's GRID and BACK-UP ports differ. Please comply with local regulations.
- The inverter's BACK-UP function is only available when paired with an STS.
- After the inverter is powered on, the BACK-UP AC port becomes live. If maintenance is required on the BACK-UP Loads, please power down the inverter first to avoid the risk of electric shock.

N and PE lines are connected together in the distribution box

## NOTICE

- To maintain neutral integrity, the neutral wires on the grid-connected side and off-grid side must be connected together; otherwise, the off-grid function cannot be used normally.
- The following diagram is a schematic of the power grid system for regions such as Australia and New Zealand:



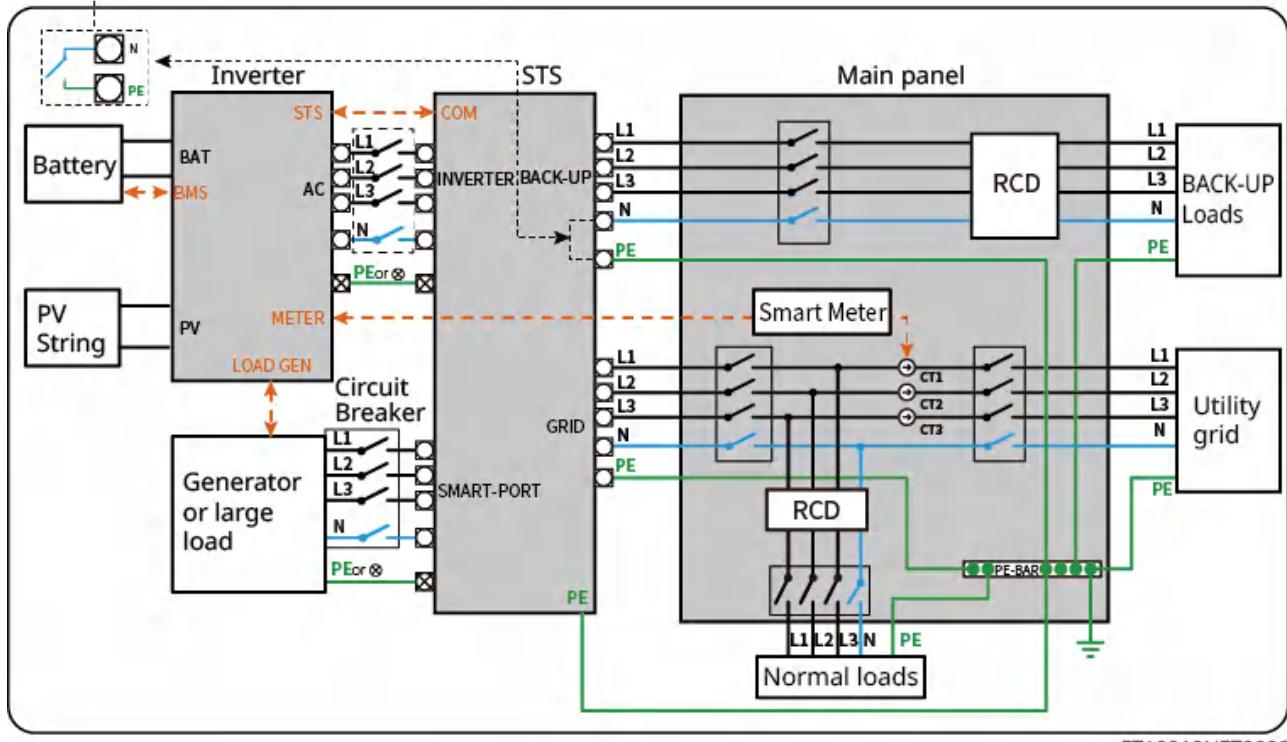
ET10010NET0009

N and PE lines are wired separately in the distribution box

## NOTICE

If the N and PE wires do not need to be connected when the inverter switches to off-grid mode, this function can be set via the "Backup Power N and PE Relay Switch" in the "Advanced Settings" interface of the SolarGo APP. The following wiring method applies to regions other than Australia, New Zealand, etc.:

- When the inverter switches to off grid mode, the STS internal relay automatically connects, connecting the PE and N cables.
- When the inverter switches to grid connection mode, the STS internal relay automatically disconnects, disconnecting the PE and N cables.



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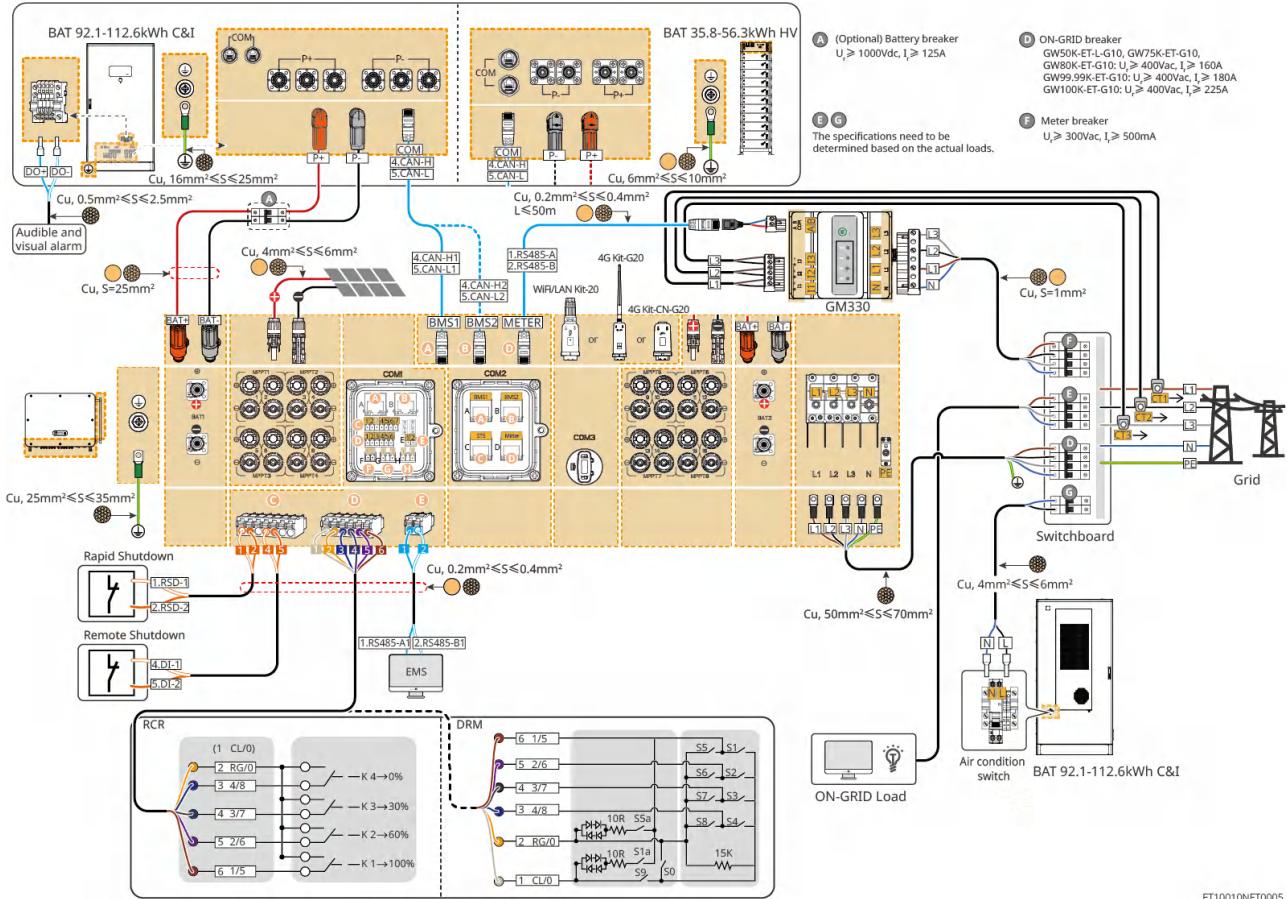
## 5.2 Detailed System Wiring Diagram

### NOTICE

- If the energy storage system requires the use of off-grid functionality, it must be paired with a static transfer switch cabinet.
- No circuit breaker should be connected between the inverter and the static transfer switch cabinet.

### 5.2.1 Single Inverter (Pure Grid-tied)

- In a single-unit scenario, the inverter uses the 4G Kit-G20, 4G Kit-CN-G20 (domestic), or WiFi/LAN Kit-20 smart communication stick.
- In a single-unit scenario, the GM330 smart electricity meter is standard equipment.

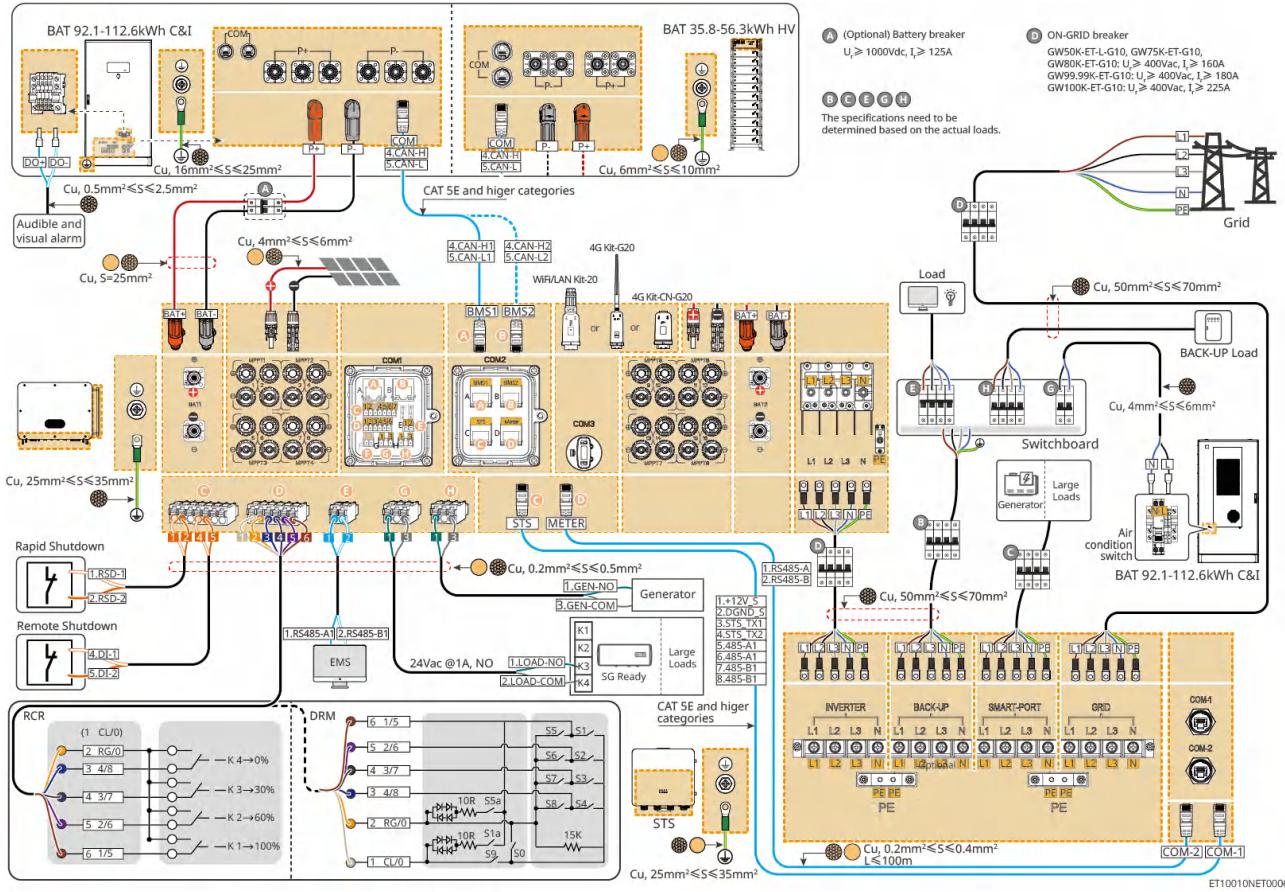


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## 5.2.2 Single Inverter (On/Off-grid & Whole House Backup Power)

This system is a single inverter energy storage system, supporting both grid-connected and off-grid operation.

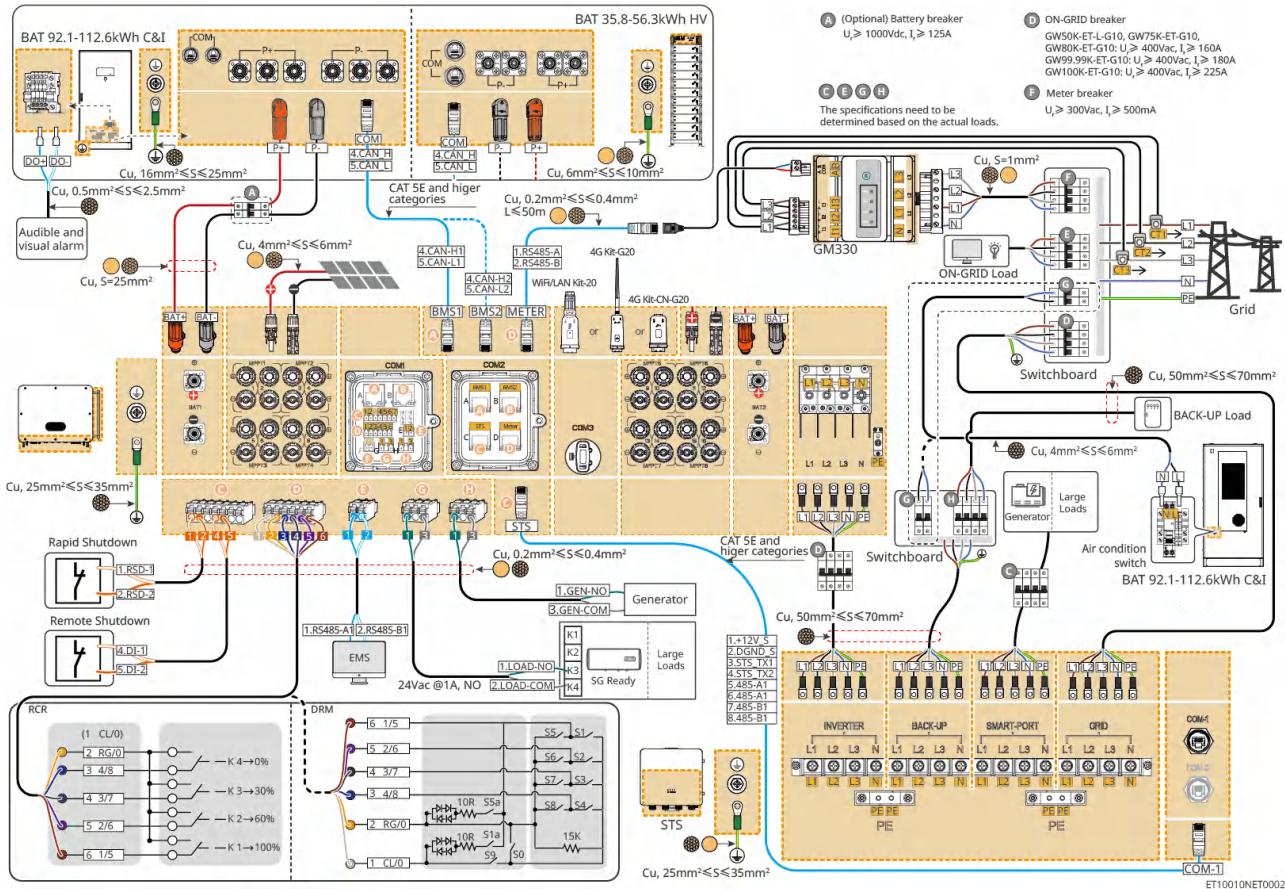
- The inverter paired with STS has UPS-level On/Off-grid switching function, with switching time less than 4ms. Please ensure that the BACK-UP Loads capacity is less than the inverter rated power; otherwise, it may cause function failure during grid power outage.
- The inverter paired with STS can connect to a generator. The generator power needs to be  $\leq 1.1 \times$  inverter rated power.
- In single-unit scenarios, the inverter uses 4G Kit-G20, 4G Kit-CN-G20 (domestic) or WiFi/LAN Kit-20 smart communication sticks.
- In single-unit scenarios, the GM330 smart meter is standard.



### 5.2.3 Single Inverter (On/Off-grid & Partial Backup Power)

This system is a single inverter energy storage system, supporting both grid-connected operation and off-grid operation.

- The inverter paired with STS has UPS-level On/Off-grid switching function, with switching time less than 4ms. Please ensure that the BACK-UP Loads capacity is less than the inverter rated power; otherwise, it may cause function failure during grid power failure.
- The inverter paired with STS can connect to a generator. The generator power needs to be  $\leq 1.1 \times$  inverter rated power.
- In single-unit scenarios, the inverter uses 4G Kit-G20, 4G Kit-CN-G20 (domestic) or WiFi/LAN Kit-20 smart communication stick.
- In single-unit scenarios, the GM330 smart meter is standard.



## 5.2.4 Multi-Inverter (Grid-Tied Only)

This system is an inverter parallel-connection energy storage system. Each inverter is connected and networked via the SEC3000C Smart Energy Controller.

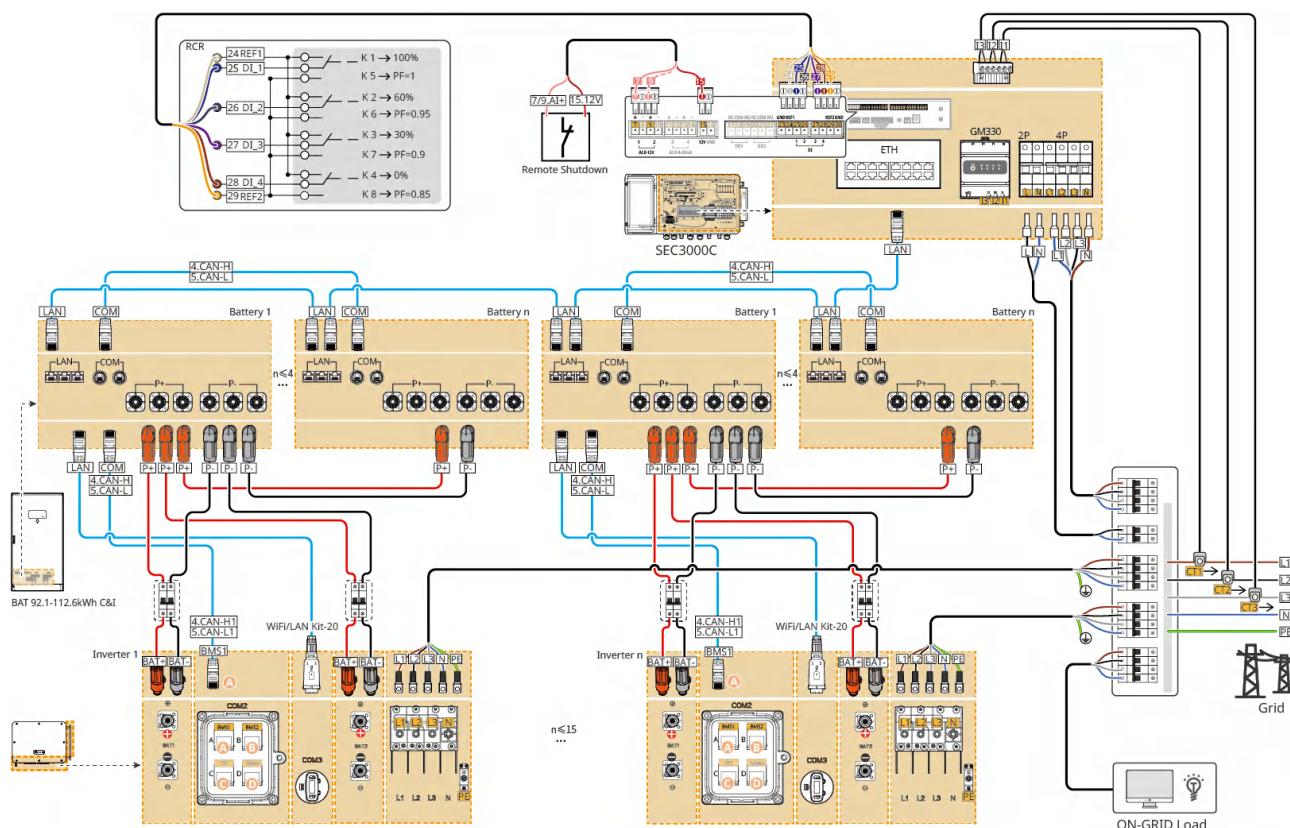
### NOTICE

- To implement remote shutdown, DRED, RCR, and other functions, please connect the communication cable to the SEC3000C.
- Each inverter requires connection to a WiFi/LAN Kit-20 smart dongle.
- The following diagram highlights wiring related to parallel connection. For wiring methods of other ports, please refer to the single-unit system.

**Inverter paired with BAT 92.1-112.6kWh Commercial & Industrial Battery System**

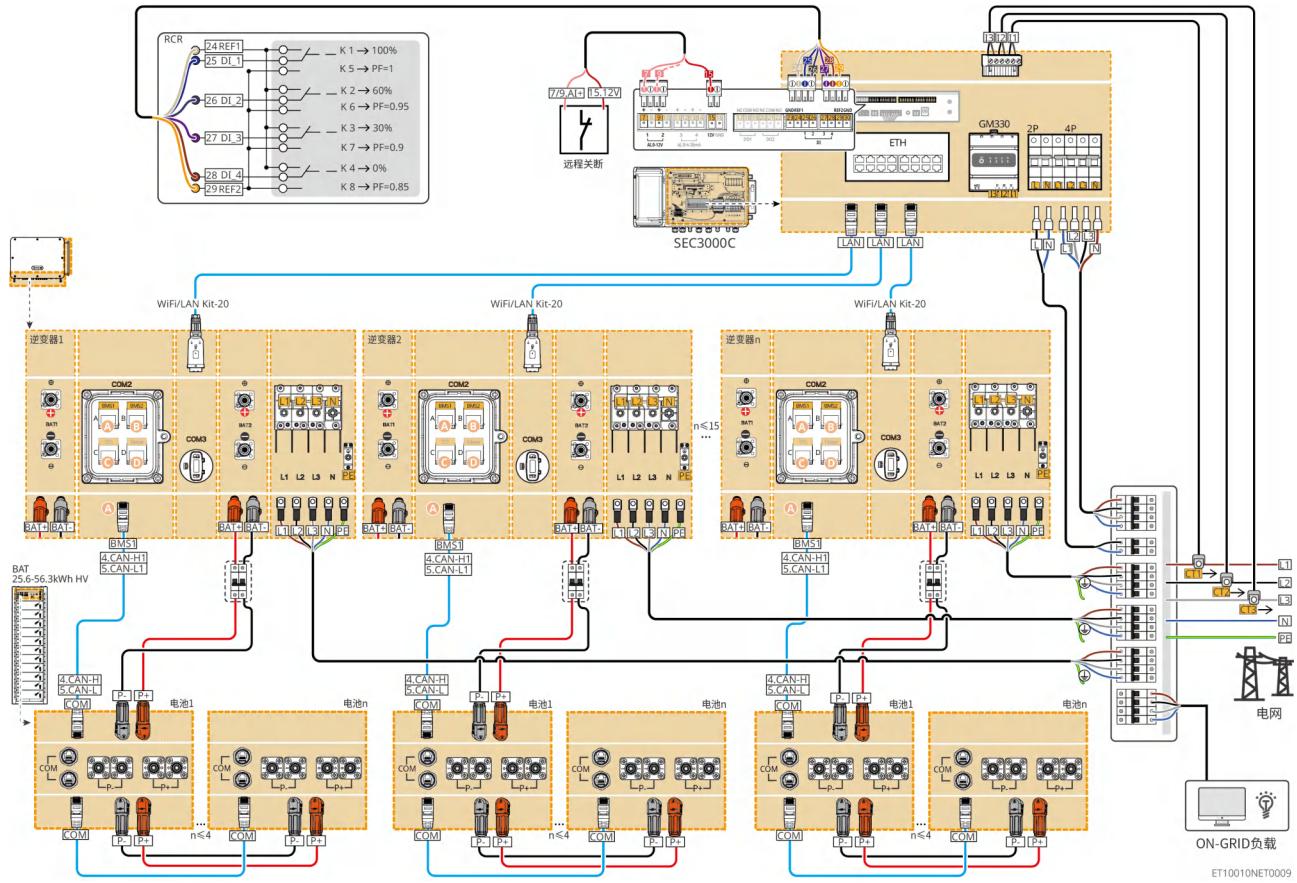
## NOTICE

The inverter has 2 pairs of battery input terminals, supporting parallel connection or independent connection of the battery system. When connecting the battery system in parallel or independently, the inverter's grid-connection and parallel operation methods are the same. The following diagram uses the independent battery wiring method as an example to illustrate the inverter's grid-connection wiring scheme. For wiring between the inverter and the battery, please refer to [5.Connecting the Battery Cable\(Page 96\)](#).



**Inverter paired with BAT 35.8-56.3kWh High-Voltage Battery System**

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## 5.3 Preparing Materials

### 5.3.1 Preparing Breakers

#### ⚠️ WARNING

- Please configure the circuit breaker according to the requirements in the table below. The circuit breaker must be disconnected before maintenance to ensure personnel safety.

No.	breaker	Specifications	Remarks
1	<ul style="list-style-type: none"> <li>• GRID breaker (Inverter &amp; STS)</li> <li>• BACK-UP Loads breaker (STS)</li> <li>• Smart-Port breaker STS (STS)</li> </ul>	4P breaker <sup>[1]</sup> , Nominal Voltage $\geq 400V$ , Rated Current requirements as follows: <ul style="list-style-type: none"> <li>• GW100K-ET-G10: Rated Current <math>\geq 225A</math></li> <li>• GW99.99K-ET-G10: Rated Current <math>\geq 180A</math></li> <li>• GW80K-ET-G10: Rated Current <math>\geq 160A</math></li> <li>• GW75K-ET-G10: Rated Current <math>\geq 160A</math></li> <li>• GW50K-ET-G10: Rated Current <math>\geq 160A</math></li> </ul>	Customer -provided
2	Battery Switch	Select according to local laws and regulations <ul style="list-style-type: none"> <li>• 2P DC Switch*2</li> <li>Rated Current <math>\geq 125A</math></li> <li>Nominal Voltage <math>\geq 1000V</math></li> </ul>	Customer -provided
3	RCD	Select according to local laws and regulations <ul style="list-style-type: none"> <li>• Type A</li> <li>• GRID side: 1000mA</li> <li>• BACK-UP side: 500-1000mA</li> </ul>	Customer -provided
4	Meter Switch	Nominal Voltage: 380V/400V Rated Current: 0.5A	Customer -provided
5	Load breaker	Specification requirements must be determined based on actual usage loads.	Customer -provided
6	(Optional) Bypass Switch		

[1]: In Australia and New Zealand regions, GRID and BACK-UP Loads circuit breakers are 3P.

### 5.3.2 Preparing Cables

No.	Type	Cable	Recommended Specification	Acquisition Method
1	PE cable	Inverter and STS PE cable	<ul style="list-style-type: none"> <li>Single-core outdoor copper cable</li> <li>Conductor cross-sectional area: 25-35mm<sup>2</sup></li> </ul>	Customer-supplied
2		BAT Series 92.1-112.6kWh Commercial & Industrial Battery System	<ul style="list-style-type: none"> <li>Single-core outdoor copper cable</li> <li>Conductor cross-sectional area: 16-25mm<sup>2</sup></li> </ul>	Customer-supplied
	power cable	BAT Series 35.8-56.3kWh High Voltage Battery	<ul style="list-style-type: none"> <li>Single-core outdoor copper cable</li> <li>Conductor cross-sectional area: 6-10mm<sup>2</sup></li> </ul>	Customer-supplied
3		PV DC cable	<ul style="list-style-type: none"> <li>Industry-standard outdoor PV cable</li> <li>Conductor cross-sectional area: 4-6mm<sup>2</sup></li> <li>Cable outer diameter: 4.7mm-6.4mm</li> </ul>	Customer-supplied
4		BAT Series 92.1-112.6kWh Commercial & Industrial Battery System (for parallel cluster)	<ul style="list-style-type: none"> <li>Single-core outdoor copper cable</li> <li>Conductor cross-sectional area: 50mm<sup>2</sup></li> <li>Cable outer diameter: 13mm-14mm</li> </ul>	Customer-supplied

No.	Type	Cable	Recommended Specification	Acquisition Method
		BAT Series 35.8-56.3kWh High Voltage Battery (for parallel cluster)	<ul style="list-style-type: none"> <li>• Single-core outdoor copper cable</li> <li>• Conductor cross-sectional area: 25mm<sup>2</sup></li> <li>• Cable outer diameter: 6.5mm-10.5mm</li> </ul>	Customer-supplied
5		Inverter AC cable SMART-PORT AC cable (STS) BACK-UP AC cable (STS) GRID AC cable (STS)	<ul style="list-style-type: none"> <li>• Single-core outdoor copper cable</li> <li>• Conductor cross-sectional area: 50-70mm<sup>2</sup></li> <li>• Cable outer diameter: 22mm-43mm</li> </ul>	Customer-supplied
6		Smart meter power cable	<ul style="list-style-type: none"> <li>• Outdoor copper cable</li> <li>• Conductor cross-sectional area: 0.5-1mm<sup>2</sup></li> </ul>	Customer-supplied
7		SEC3000C Three-phase AC cable	<ul style="list-style-type: none"> <li>• Single-core outdoor copper cable</li> <li>• Conductor cross-sectional area: 2.5mm<sup>2</sup>-6.0mm<sup>2</sup></li> <li>• Cable outer diameter: 1.8mm-2.8mm</li> </ul>	Customer-supplied
8		Battery BMS communication cable	-	Included in the package

No.	Type	Cable	Recommended Specification	Acquisition Method
9	Communication cable	Meter RS485 communication cable	-	RJ45-2PIN terminal adapter cable and standard network cable, included in the package
10		Battery parallel cluster communication cable	CAT 5E or above specification, EIA/TIA 568B standard network cable and RJ45 connector	Customer-supplied
11		Communication cable (DO, GEN, Remote Shutdown, RSD, DRM/RCR, EMS, Charging Pile)	<ul style="list-style-type: none"> <li>Shielded cable meeting local standards</li> <li>Conductor cross-sectional area: 0.2mm<sup>2</sup>-0.4mm<sup>2</sup></li> <li>Cable outer diameter: 5mm-8mm</li> </ul>	Customer-supplied
12		Inverter and STS communication cable	<ul style="list-style-type: none"> <li>Standard network cable: CAT 5E or above specification standard network cable and RJ45 connector</li> <li>Length: 10m</li> </ul>	Customer-supplied

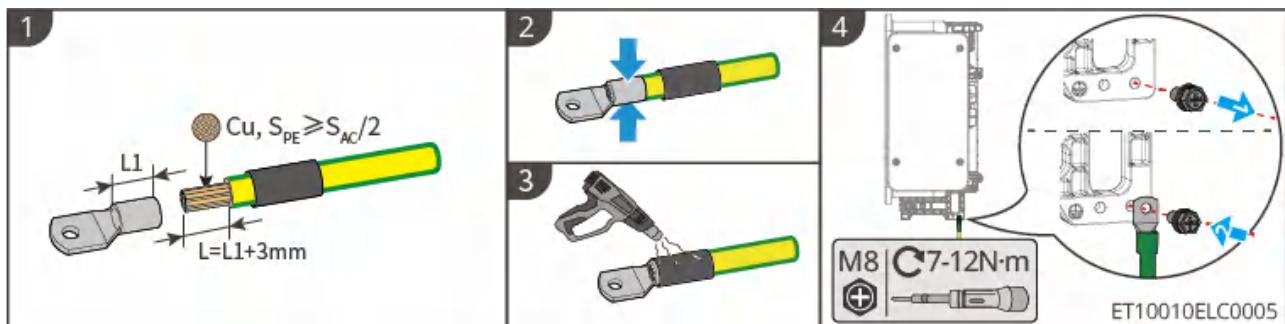
No.	Type	Cable	Recommended Specification	Acquisition Method
13		Meter CT cable	<ul style="list-style-type: none"> <li>Single-core outdoor copper cable</li> <li>Conductor cross-sectional area: <math>1.3\text{mm}^2</math>-<math>2.3\text{mm}^2</math></li> <li>Cable outer diameter: 1.3-1.7mm</li> </ul>	Customer-supplied

## 5.4 Connecting the PE cable

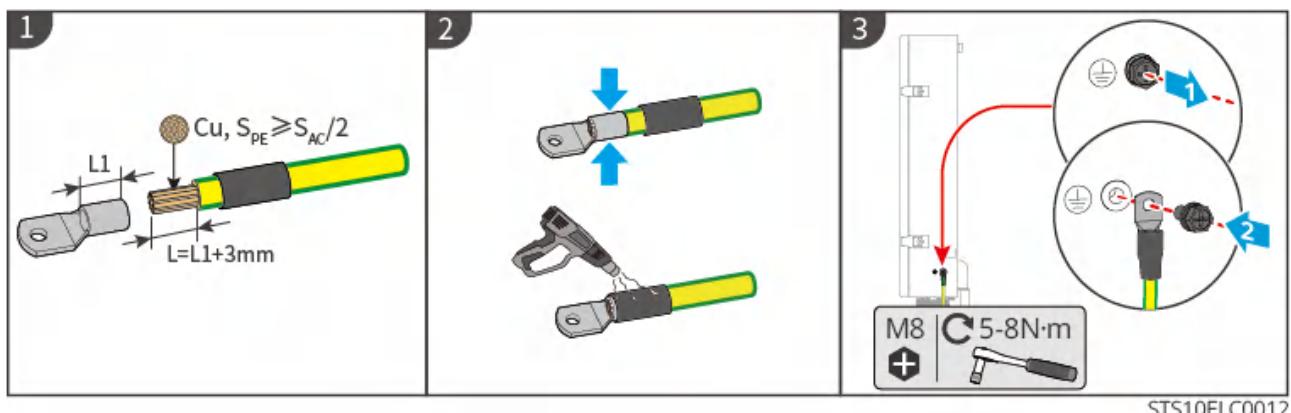
### ⚠️WARNING

- The protective grounding of the chassis cannot replace the protective ground wire of the AC output port. When wiring, ensure the protective ground wires at both locations are reliably connected.
- When using multiple devices, ensure all device chassis protective grounding points are equipotentially connected.
- To improve the corrosion resistance of the terminals, it is recommended to apply silicone sealant or paint over the external part of the grounding terminal after installation of the protective ground wire connection is complete.
- When installing the device, the protective ground wire must be installed first; when removing the device, the protective ground wire must be removed last.

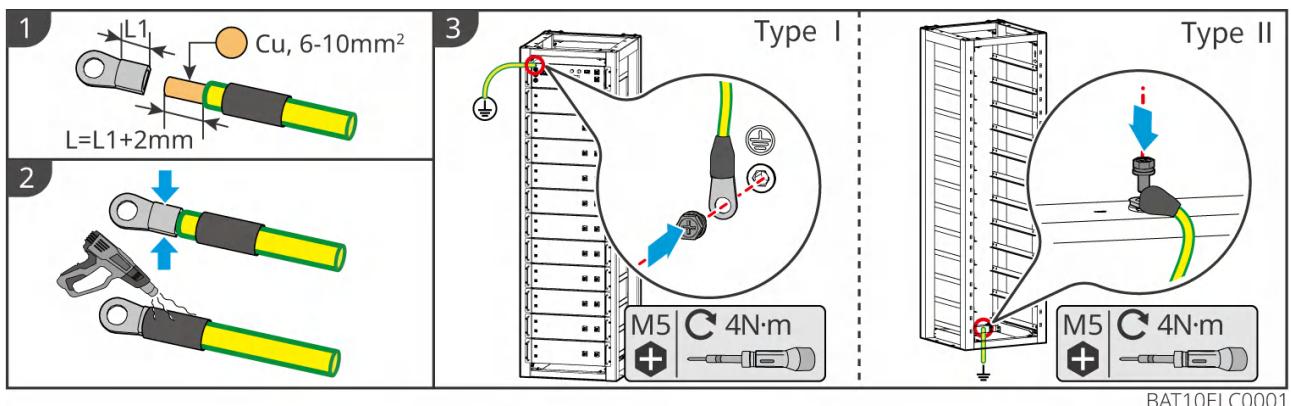
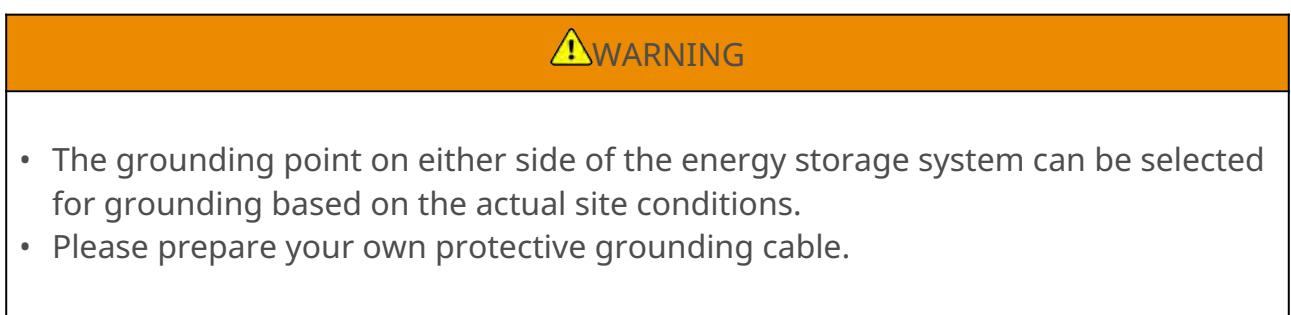
### Inverter



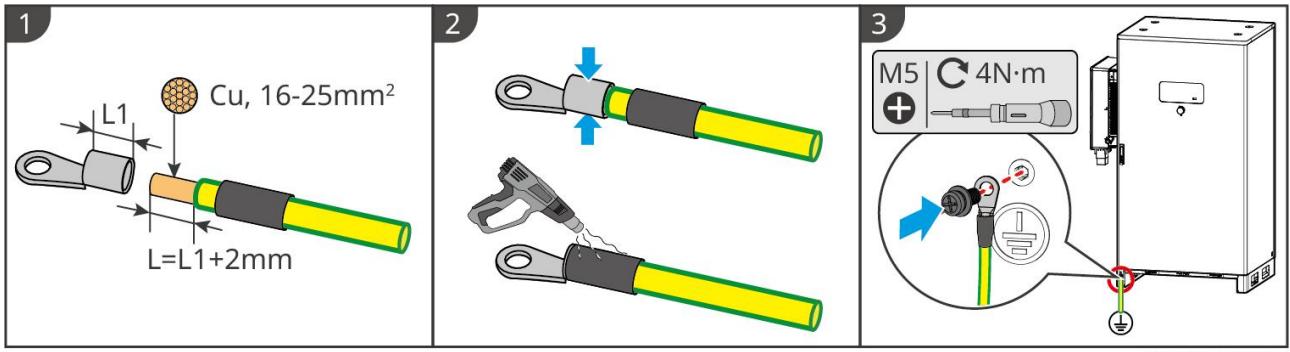
## Static Transfer Switch Cabinet (GW125K-STS-G10)



## Battery system (BAT Series 35.8-56.3kWh High Voltage Battery)



## Battery system (BAT Series 92.1-112.6kWh Commercial & Industrial Battery System)



BAT10ELC0007

## 5.5 Connecting the PV Cable

### **DANGER**

- Do not connect the same PV string to multiple inverters, otherwise it may cause inverter damage.
- PV strings generate high-voltage direct current when exposed to sunlight. Pay attention to safety during electrical connections.
- Before connecting the PV string to the inverter, please confirm the following information. Otherwise, it may cause permanent damage to the inverter, and in severe cases, it may lead to fire causing personal injury and property loss.
  1. Please ensure that the maximum short-circuit current and maximum input voltage of each MPPT are within the allowable range of the inverter.
  2. Please ensure that the positive pole of the PV string is connected to the PV+ of the inverter, and the negative pole of the PV string is connected to the PV- of the inverter.

## **WARNING**

- PV string output does not support grounding. Before connecting the PV strings to the inverter, ensure the minimum insulation resistance to ground of the PV strings meets the minimum insulation impedance requirement ( $R=\text{Max. Input Voltage}/30\text{mA}$ ).
- After completing the DC cable connections, ensure the cable connections are tight and secure, with no looseness.
- Use a multimeter to measure the positive and negative poles of the DC cables to ensure correct polarity (no reverse connection) and that the voltage is within the allowable range.
- Parallel connection of MPPT strings must comply with local laws and regulations.
- Ensure the voltage difference between different MPPT circuits is less than or equal to 200V.
- The two PV strings within each MPPT circuit must use the same model, the same number of panels, the same tilt angle, and the same azimuth to ensure maximum efficiency.

## **PV String Connection Method**

To achieve optimal power generation, it is recommended to connect the PV strings as follows:

- When the number of PV strings is less than 9, connect the PV strings to the inverter sequentially from MPPT1 to MPPT8.
- When the number of PV strings is 9 or more, please connect the PV strings to the inverter according to the table below.

•: Connect one PV string

••: Connect two PV strings

PV String Count	MPPT1	MPPT2	MPPT3	MPPT 4	MPPT 5	MPPT 6	MPPT 7	MPPT8
9	••	•	•	•	•	•	•	•
10	••	•	••	•	•	•	•	•

PV String Count	MPPT1	MPPT2	MPPT3	MPPT 4	MPPT 5	MPPT 6	MPPT 7	MPPT8
11	..	•	..	•	..	•	•	•
12	..	•	..	•	..	•	..	•
13	..	..	..	•	..	•	..	•
14	..	..	..	..	..	•	..	•
15	..	..	..	..	..	..	..	•
16	..	..	..	..	..	..	..	..

## Connection Steps

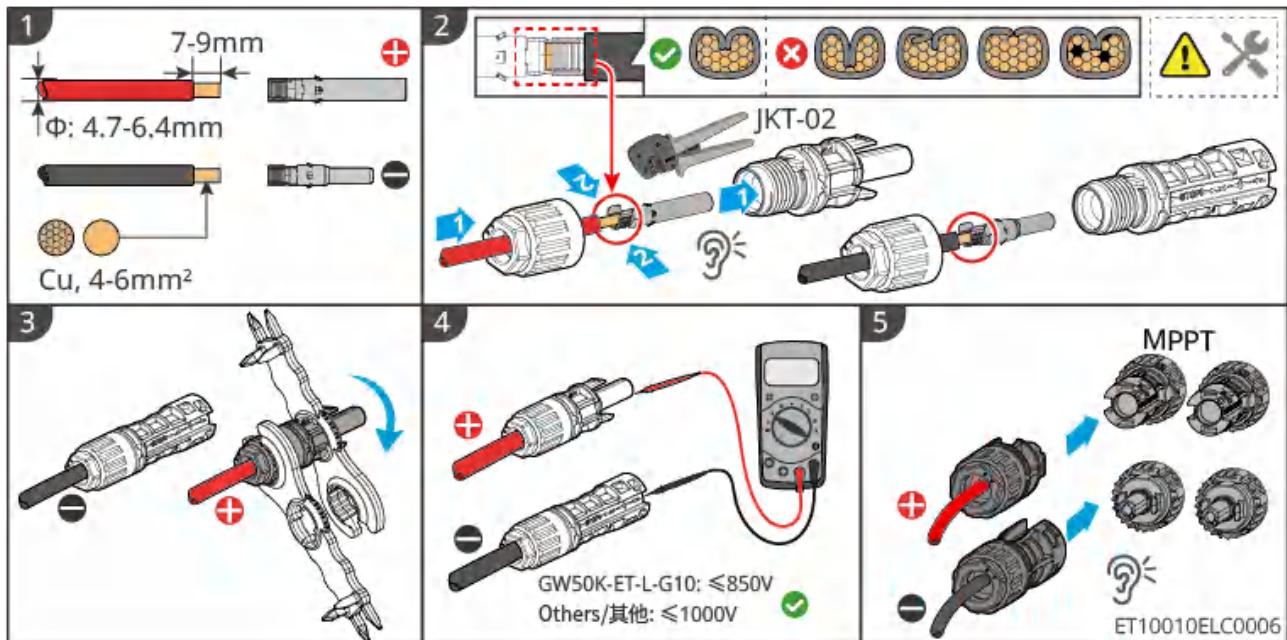
**Step 1:** Prepare the DC cable.

**Step 2:** Disassemble the DC connector, crimp the DC terminal, and assemble the DC connector.

**Step 3:** Tighten the DC connector.

**Step 4:** Check the DC input voltage.

**Step 5:** Connect the DC connector to the inverter DC terminal.



## NOTICE

If the inverter DC input terminals do not need to be connected to PV strings, please use dust-proof caps to seal the terminals; otherwise, the equipment protection rating will be affected.

## 5.6 Connecting the Battery Cable

### DANGER

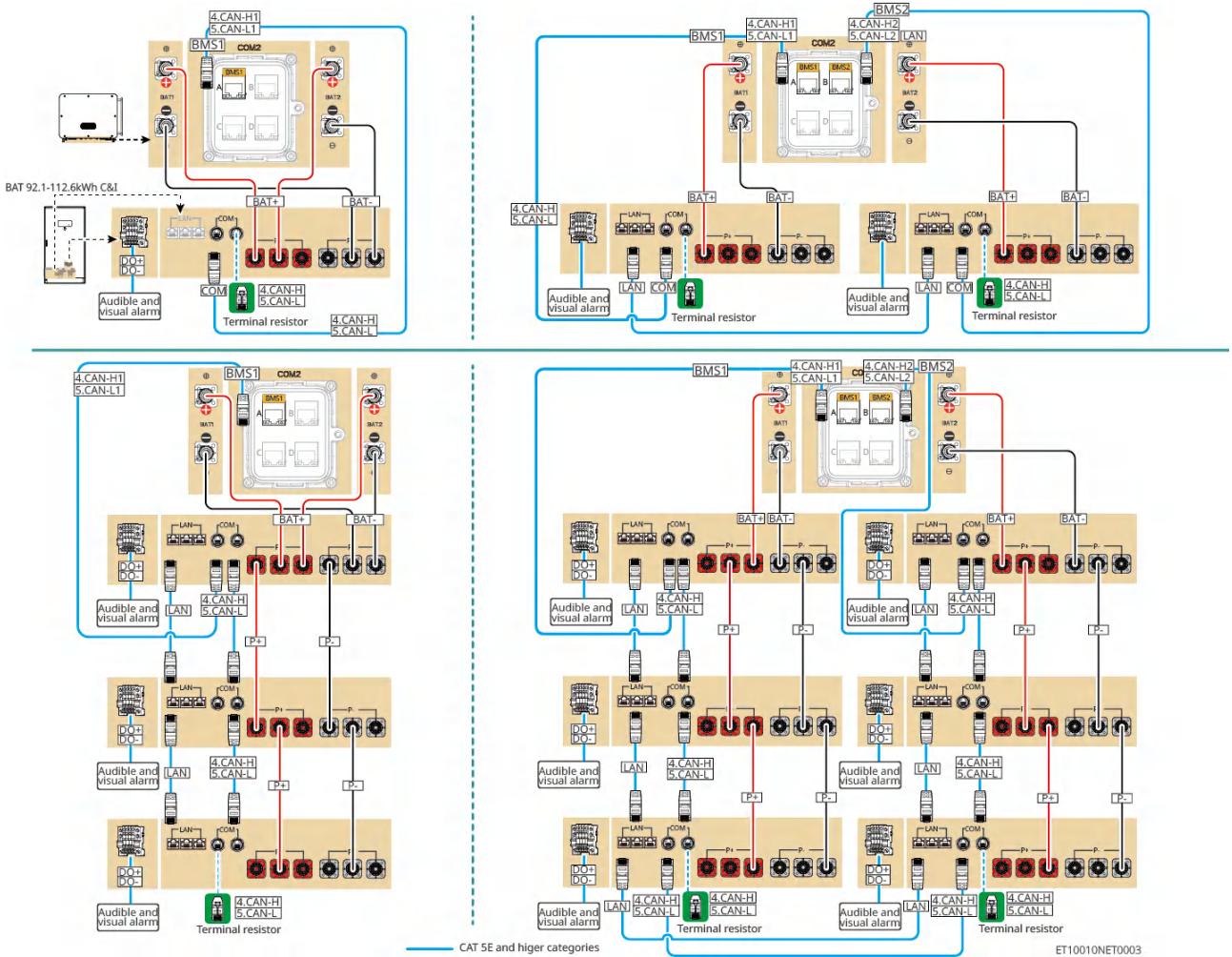
- In a standalone system, do not connect the same battery bank to multiple inverters, as this may cause inverter damage.
- Do not connect any load between the inverter and the battery.
- When connecting battery cables, use insulated tools to prevent accidental electric shock or battery short circuits.
- Ensure the battery open-circuit voltage is within the inverter's allowable range.
- Choose whether to install a DC switch between the inverter and the battery according to local laws and regulations.

### Battery System Wiring Diagram

GW92.1-BAT-AC-G10, GW102.4-BAT-AC-G10, GW112.6-BAT-AC-G10

## NOTICE

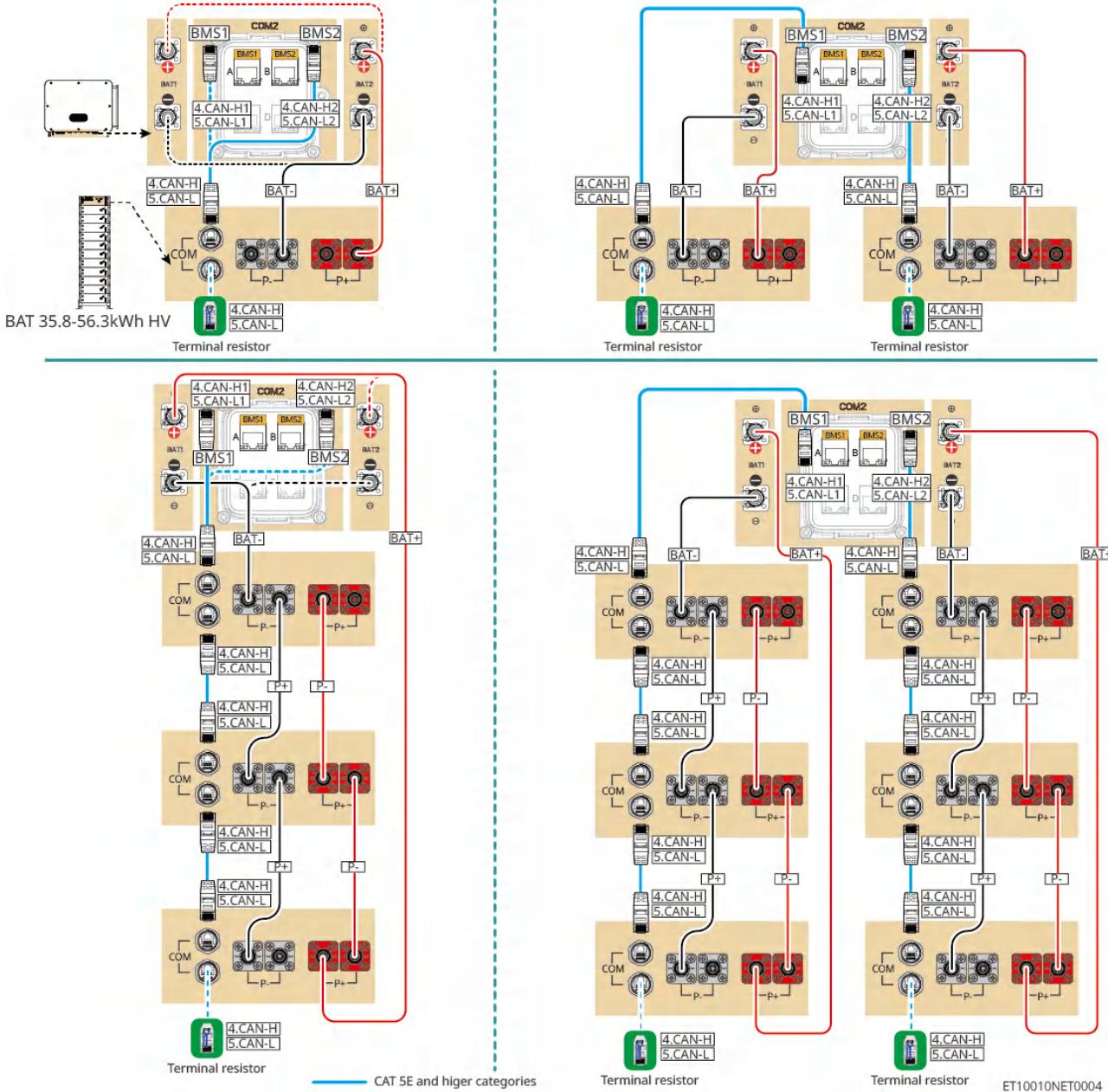
- When the inverter battery terminals are connected in parallel to the battery system, the battery's communication cable must be connected to the inverter's BMS1 port. Do not connect it to the BMS2 port.
- When the inverter battery terminals are independently connected to the battery system, the communication cable of the battery connected to the inverter's BAT1 port must be connected to the inverter's BMS1, and the communication cable of the battery connected to the BAT2 port must be connected to BMS2.



GW51.2-BAT-I-G10, GW56.3-BAT-I-G10

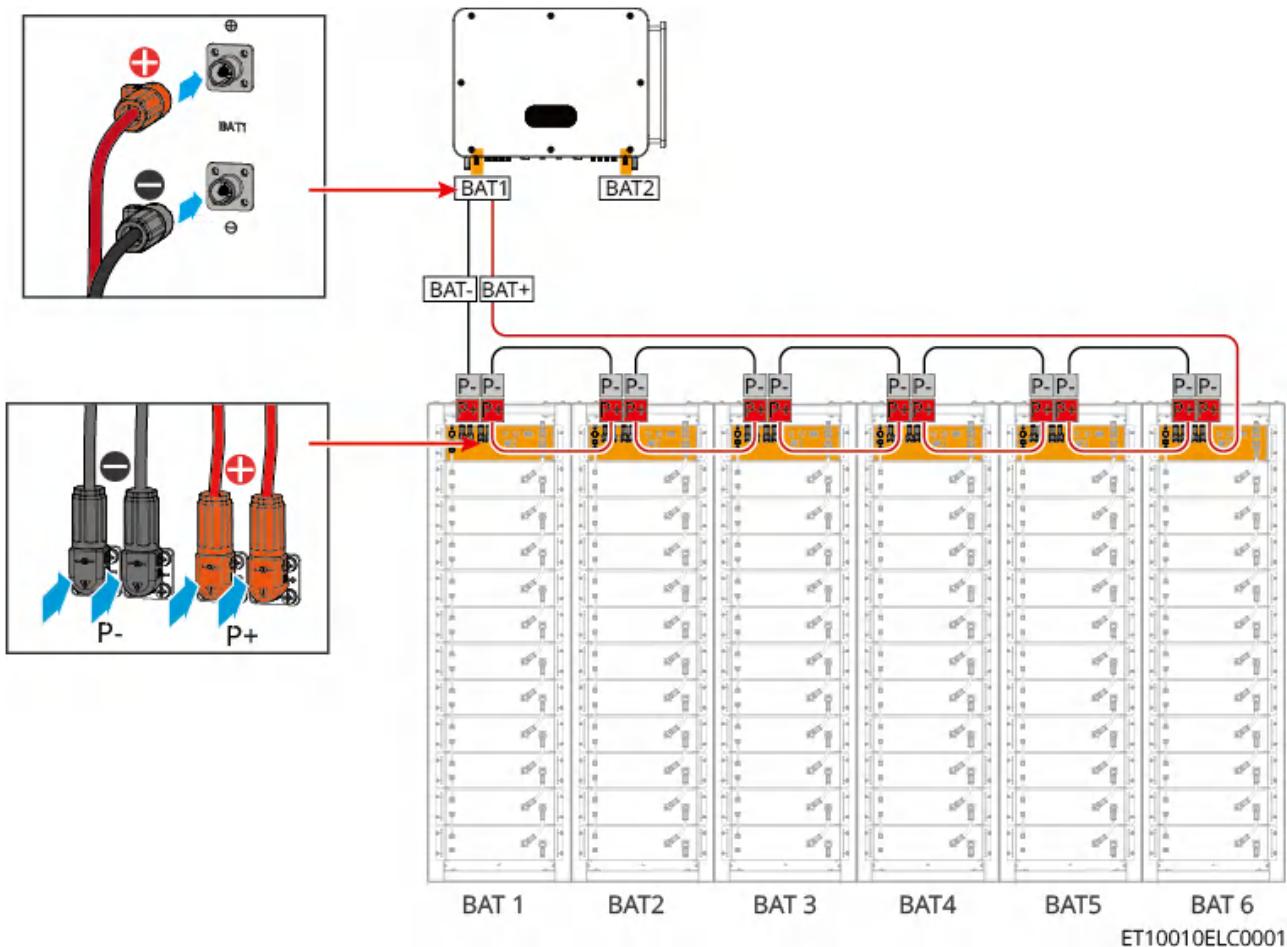
### NOTICE

When inverter battery terminals are independently connected to the battery system, the communication cable of the battery connected to the BAT1 port of the inverter must be connected to BMS1 of the inverter, and the communication cable of the battery connected to the BAT2 port must be connected to BMS2.

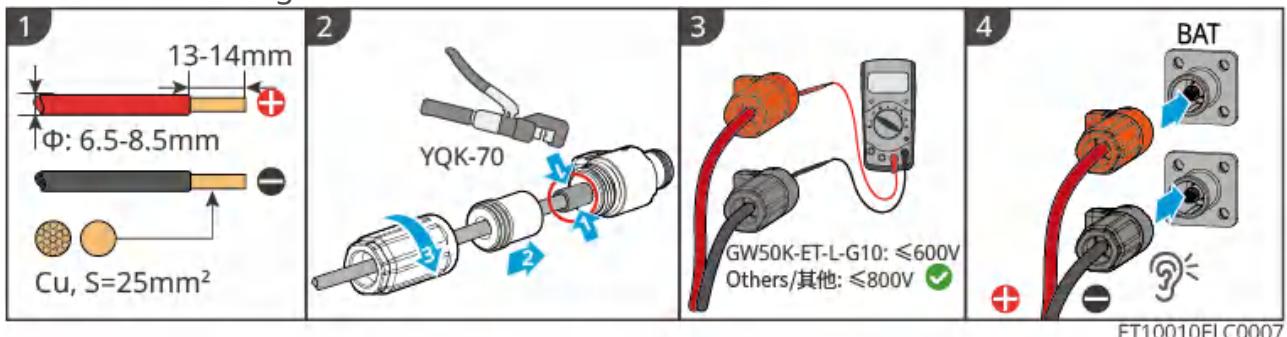


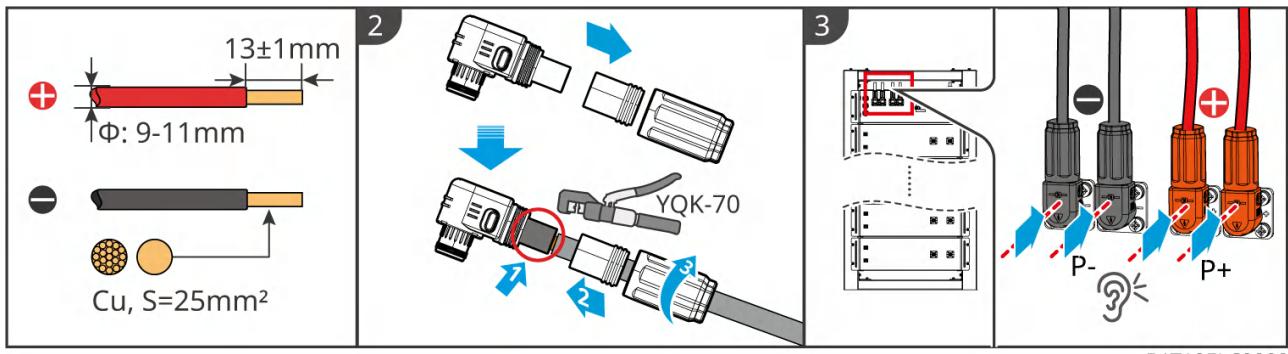
## 5.6.1 BAT Series 35.8-56.3kWh High-Voltage Battery

### 5.6.1.1 Connecting the Power Cable between the Inverter and Battery



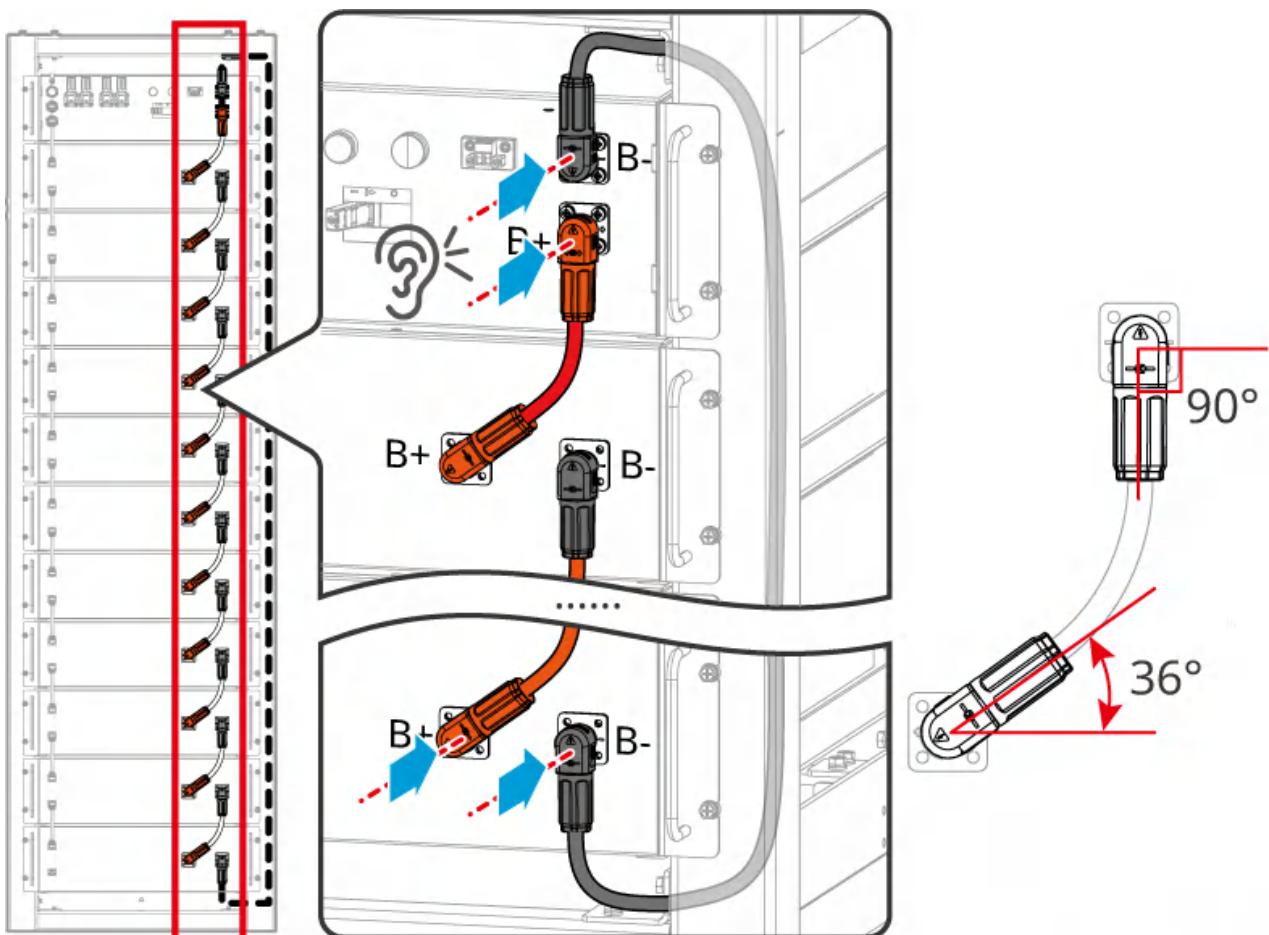
#### Method for making the cable on the inverter side





BAT10ELC0002

### 5.6.1.2 Connecting Power Cables Between Batteries



BAT10ELC0003

### 5.6.1.3 Connecting the Communication Cable

NOTICE

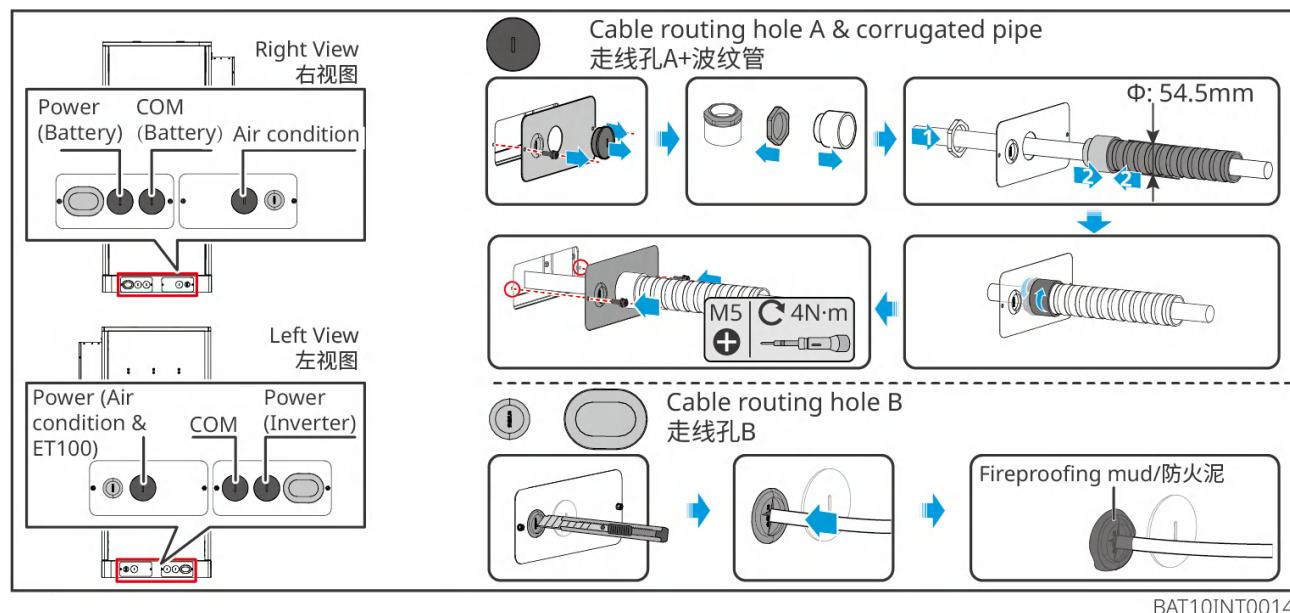
The battery system comes with a communication cable in the box. Please use the communication cable provided with the system.

Instructions for BMS Communication Connection between Inverter and Battery:

Port	Definition	Description
COM1、COM2	1: RS485_A1 2: RS485_B1	For communication with the inverter (reserved).
	4: CAN_H 5: CAN_L	For communication with the inverter or for cluster communication.

## 5.6.2 BAT Series 92.1-112.6kWh Commercial & Industrial Battery System

### 5.6.2.1 Battery Wiring Holes and System Cabling Introduction



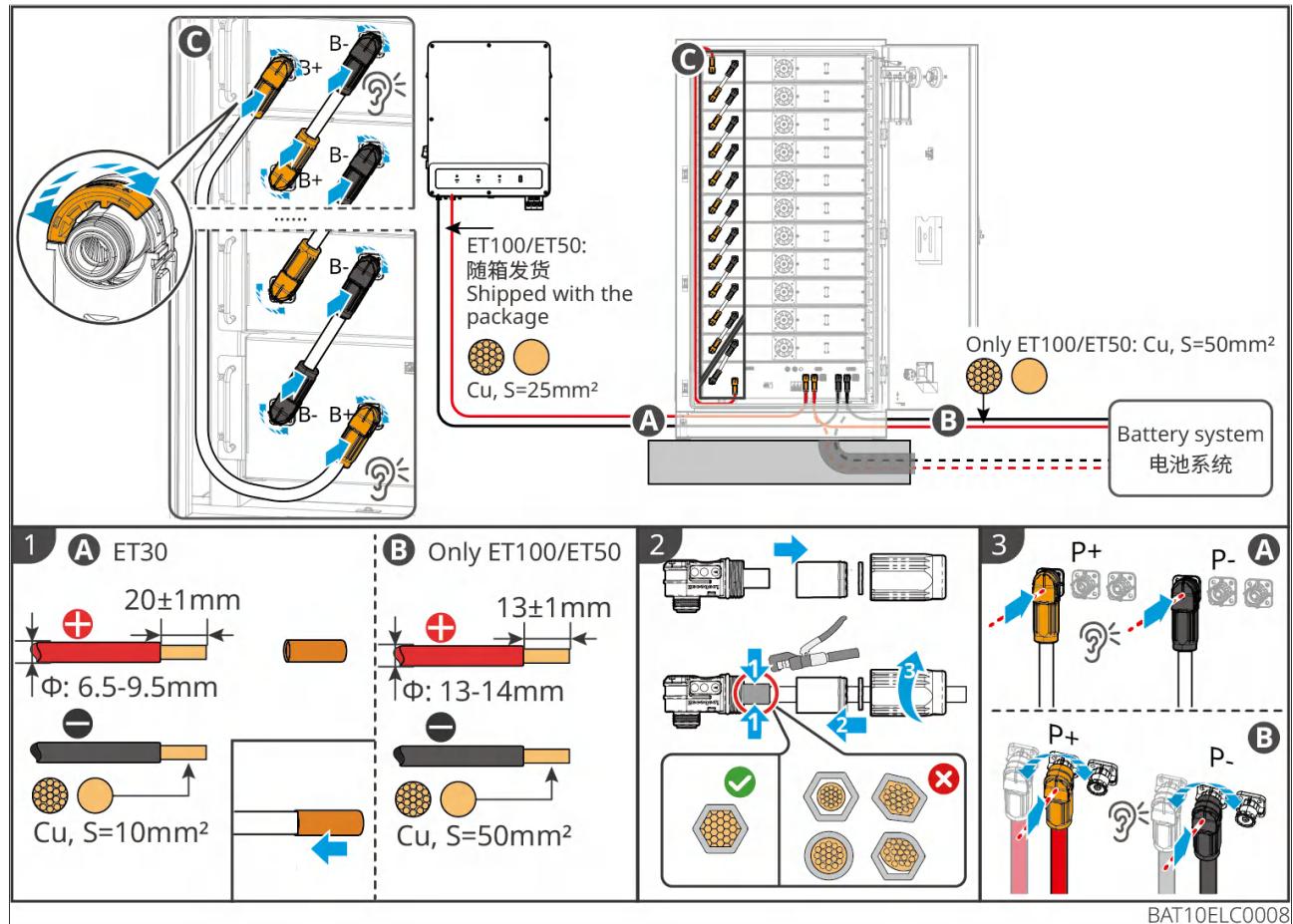
#### NOTICE

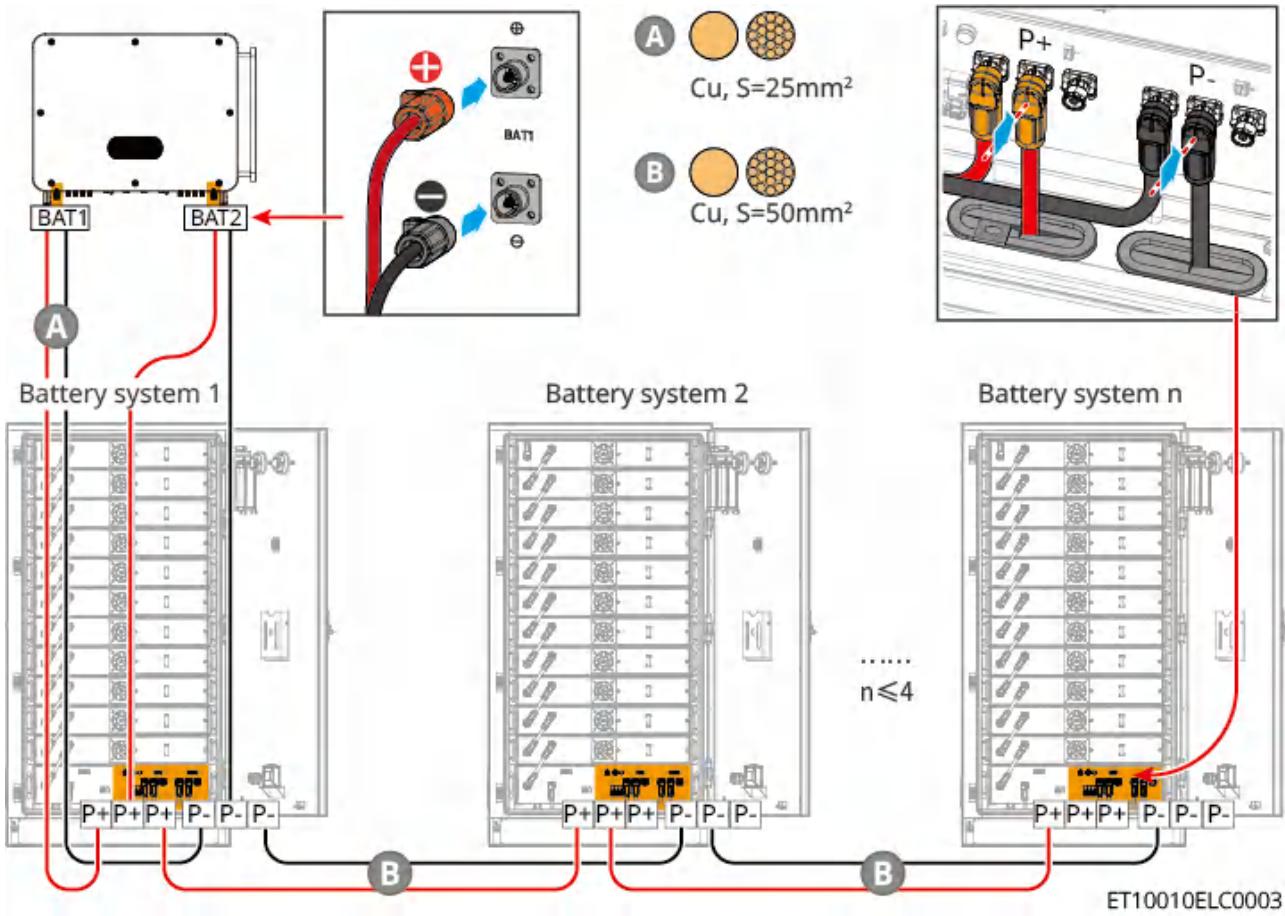
All cut cable holes must be sealed with fireproof putty.

## 5.6.2.2 Connecting Inverter to Battery Power Cables and Inter-Battery Power Cables

### NOTICE

- When connecting the inverter to the battery, please use the pre-made cables shipped with the box. If the pre-made cables are not long enough, please select cables that meet the requirements to make your own.
- The BAT series 92.1-112.6kWh Commercial & Industrial Battery System supports a maximum of 4 battery cabinet clusters in parallel.





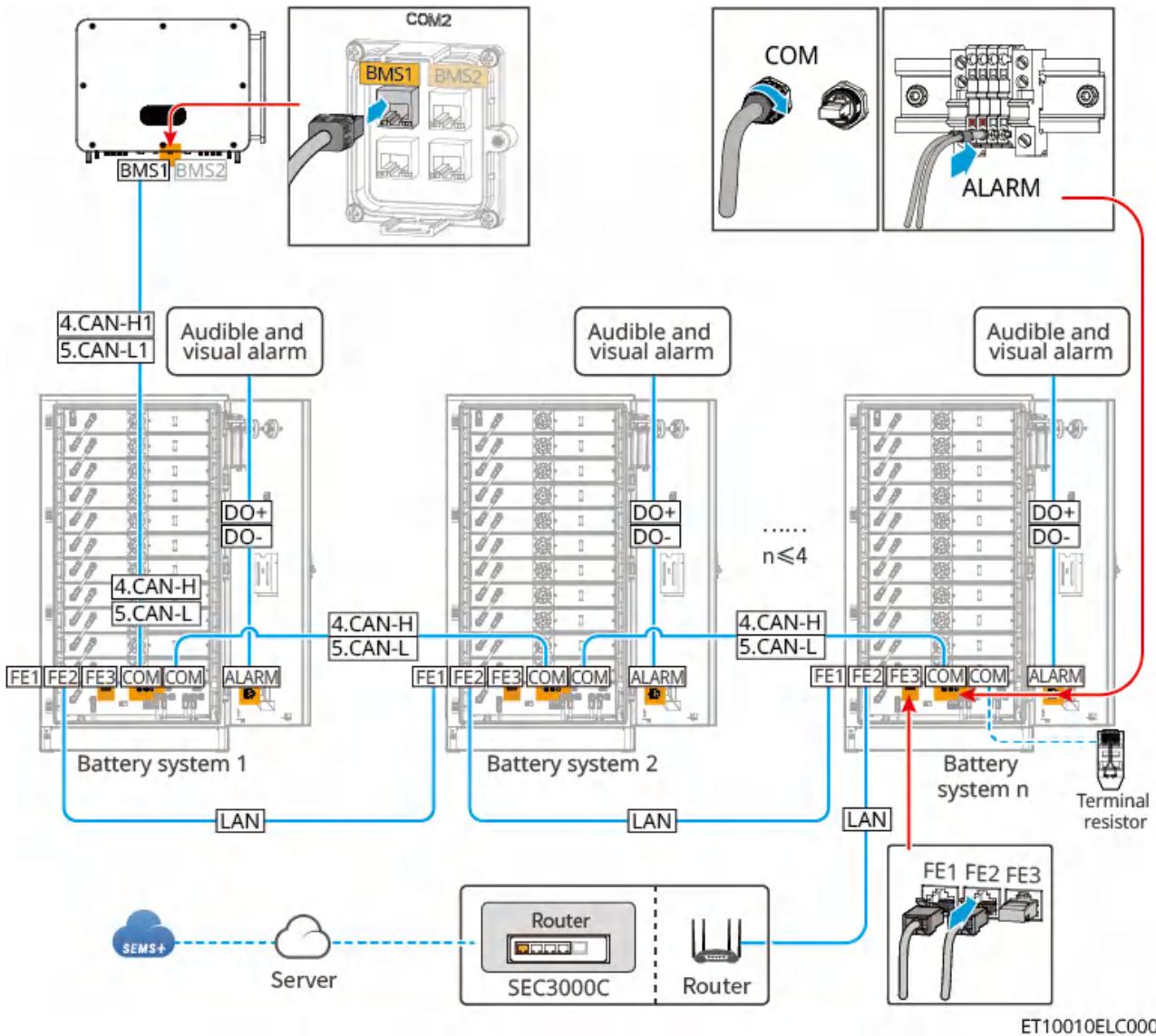
### 5.6.2.3 Connect Communication Cables

## NOTICE

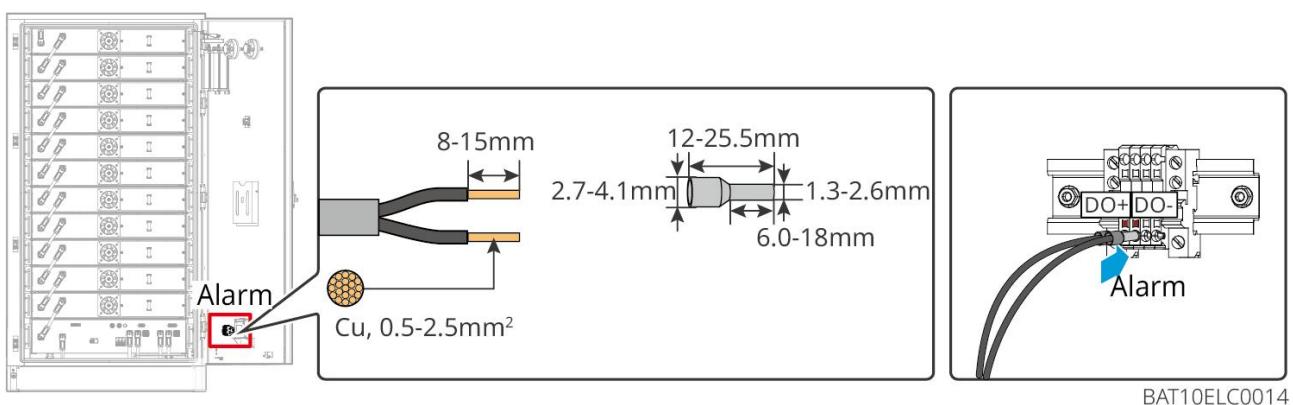
- The external communication ports of the battery system are pre-installed with terminal resistors at the factory. If you need to connect a communication cable, please remove the terminal resistor. Ports without communication cables should retain the terminal resistor.
- Inter-battery LAN communication supports the transmission of cell-level information and allows for a maximum of 40 battery systems to be connected in parallel. When using LAN communication, please use shielded network cables, and the connected router must be the one configured by the inverter.
- When connecting battery clusters in parallel, to enhance communication quality, the COM port on the battery farthest from the inverter must retain its terminal resistor.
- When connecting battery clusters in parallel, the maximum communication distance from the inverter to the battery is 50 meters. Please ensure the distance from the battery farthest from the inverter to the inverter does not exceed 50 meters.
- Communication cables are provided with the battery system. Please use the communication cables supplied with the system.

## BMS Communication Between Inverter and Battery

port	Definition	Description
1-3, 6-8	-	-
4	CAN_H	For communication with the inverter and cluster CAN bus.
5	CAN_L	



## Dry Contact Wiring



#### 5.6.2.4 Connecting Battery Air Conditioning Cables

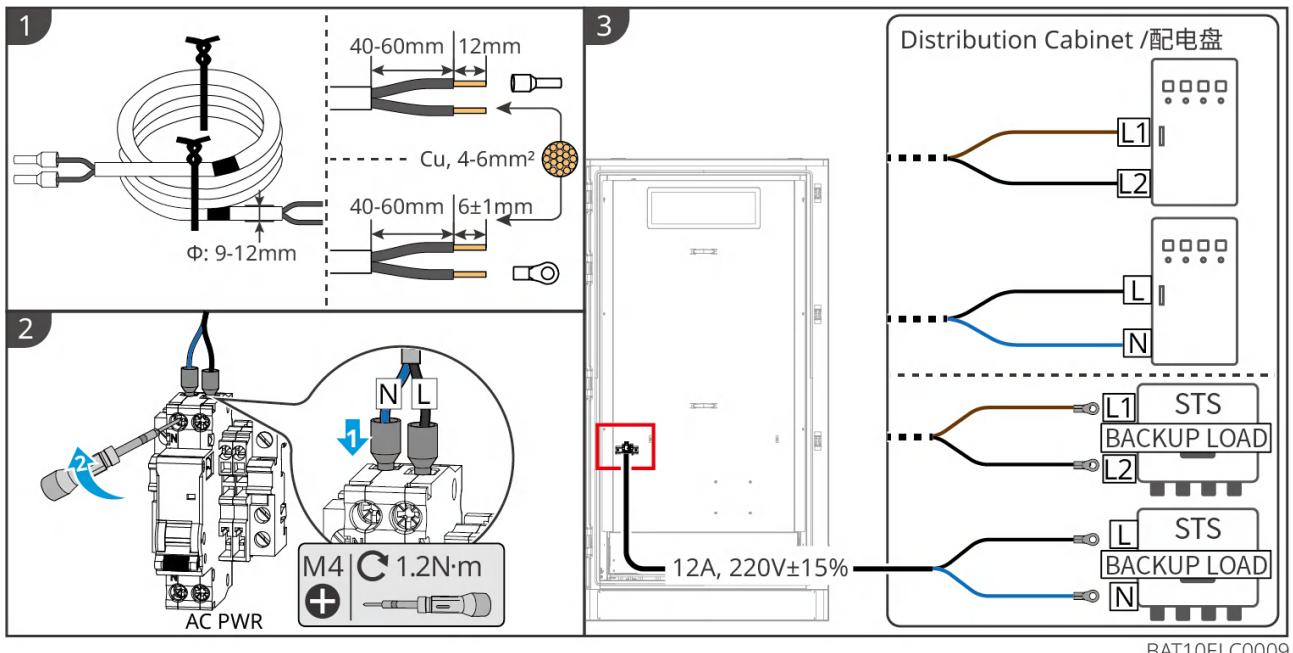
**Step 1:** Prepare the air conditioning cable.

**Step 2:** Connect the cable to the air conditioning switch on the battery.

**Step 3:** Connect the cable to the distribution panel or to the BACKUP port of the inverter via an STS.

#### NOTICE

- When battery systems are clustered, please connect the air conditioner power cables separately.
- Please ensure that the voltage of the air conditioner power cable is  $220V \pm 15\%$ , and the rated current is 12A.



#### 5.6.2.5 Install Base Plate and Release Emergency Stop Switch

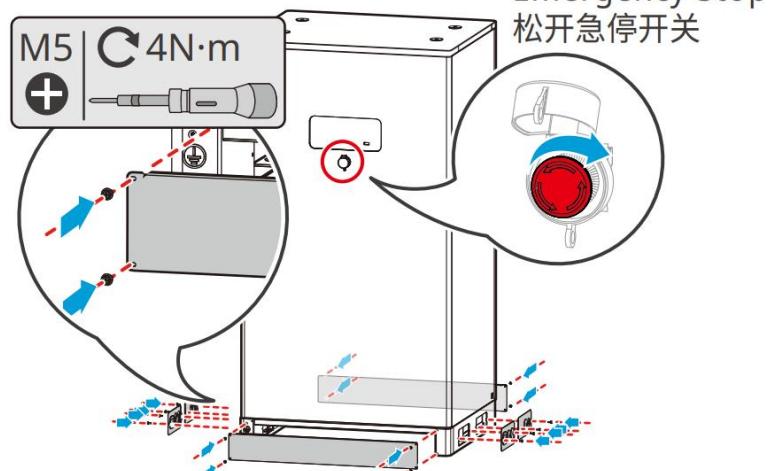
After completing the wiring, please reinstall the cover plate at the bottom of the battery onto the battery and rotate it to the right to release the emergency stop switch.

Pedestal installation

安装底板

Emergency Stop

松开急停开关



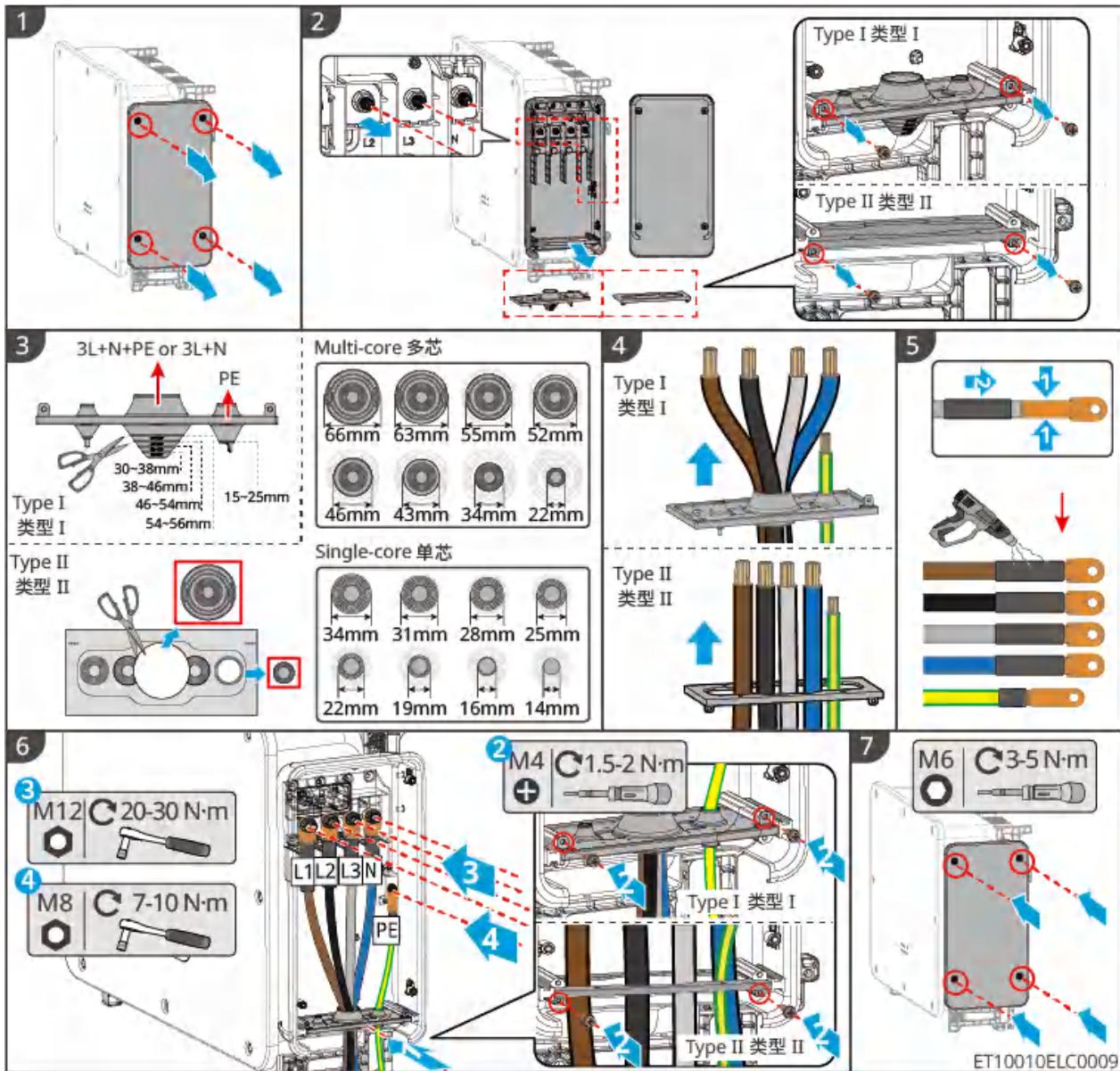
## 5.7 Connecting the AC Cable

 **WARNING**

- The inverter integrates a Residual Current Monitoring Unit (RCMU) internally to prevent residual current from exceeding specified values. When the inverter detects a leakage current greater than the allowable value, it will rapidly disconnect from the grid.
- During wiring, ensure the AC wires fully match the "L1", "L2", "L3", "N", and "PE" grounding terminals of the AC terminal block. Incorrect cable connection will cause equipment damage.
- Ensure the wire cores are fully inserted into the terminal wiring holes with no exposed parts.
- Ensure the insulation plate at the AC terminal block is securely fastened and not loose.
- Ensure cable connections are tight; otherwise, loose connections may cause terminal overheating and equipment damage during operation.
- To ensure loads connected to the BACK-UP port can continue operating during inverter power-down maintenance, installation of a single-pole double-throw switch is recommended.

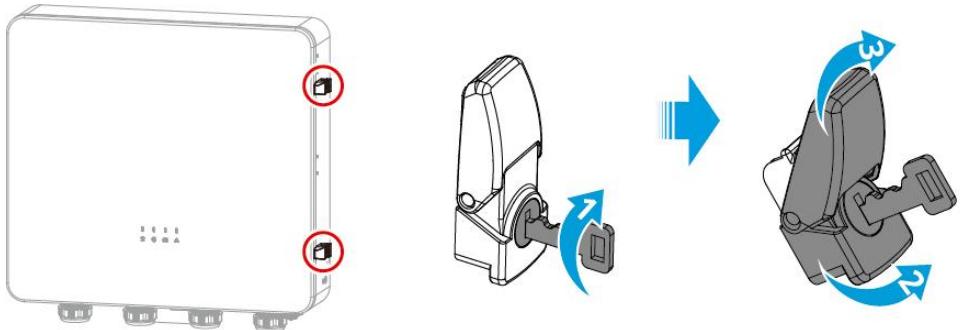
### **5.7.1 Connecting the Inverter AC Cables**

#### **Connecting the Inverter AC Cables**



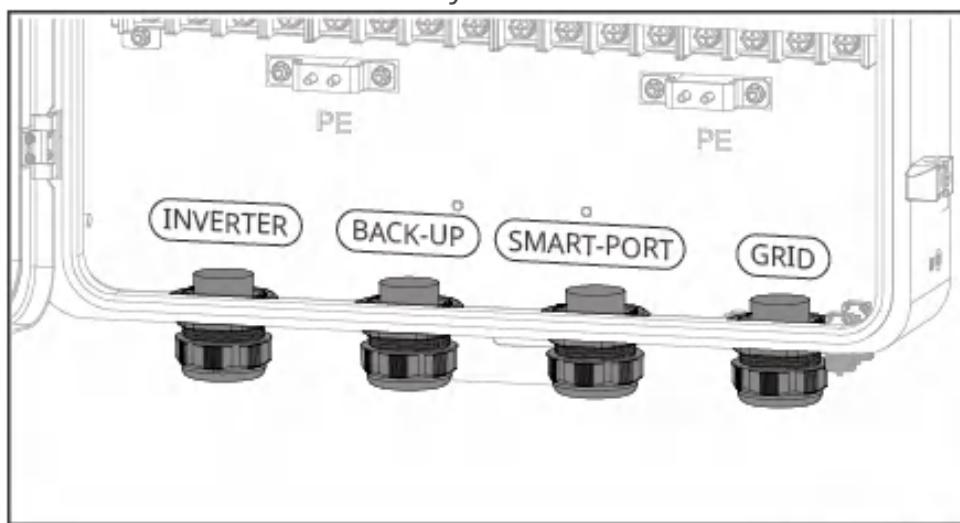
### 5.7.2 Connecting the STS AC Power Cable (Optional)

Open the STS front cover



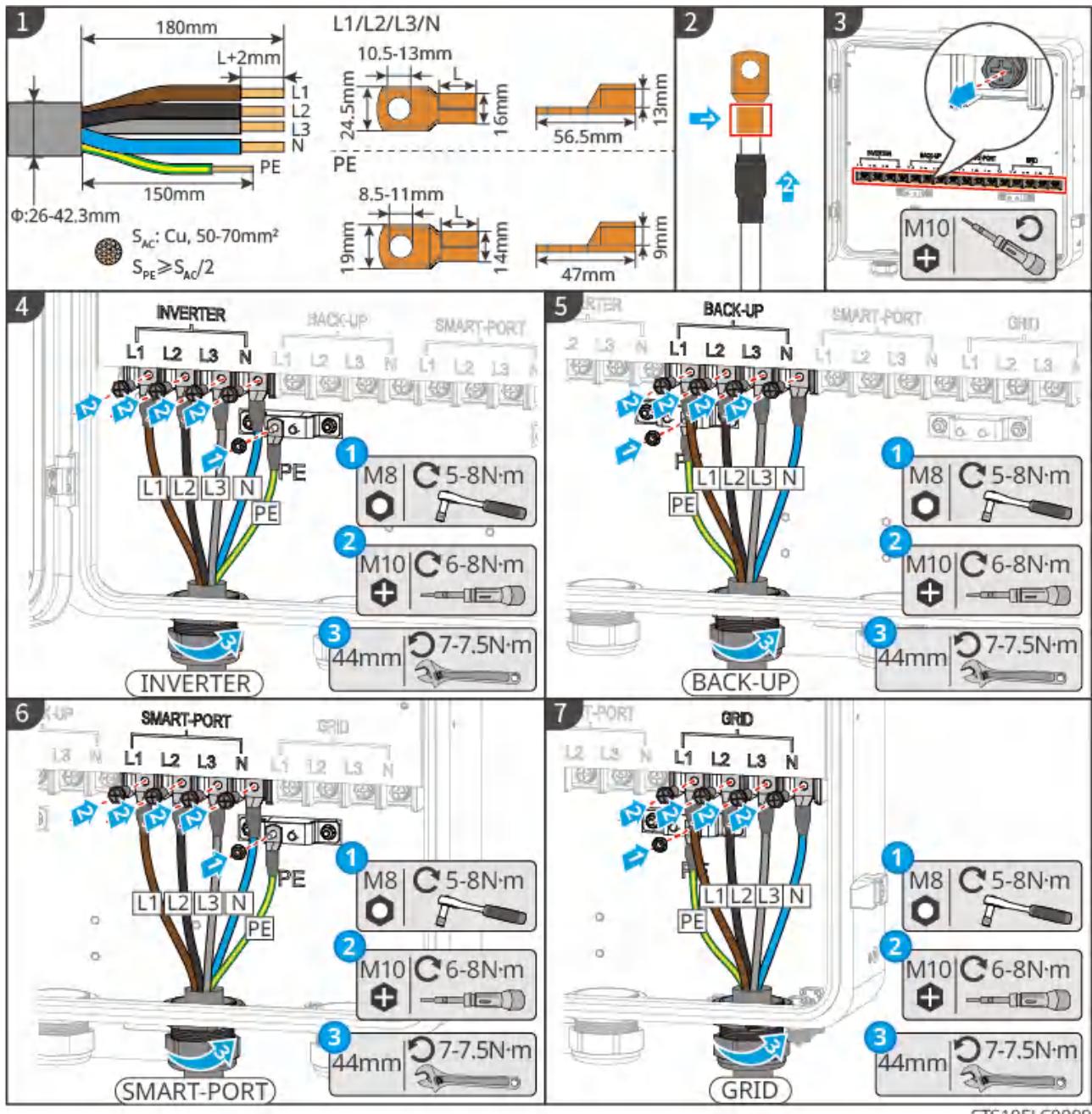
STS10INT0005

Introduction to the cable entry hole at the bottom of the STS



STS10ELC0007

Wiring steps

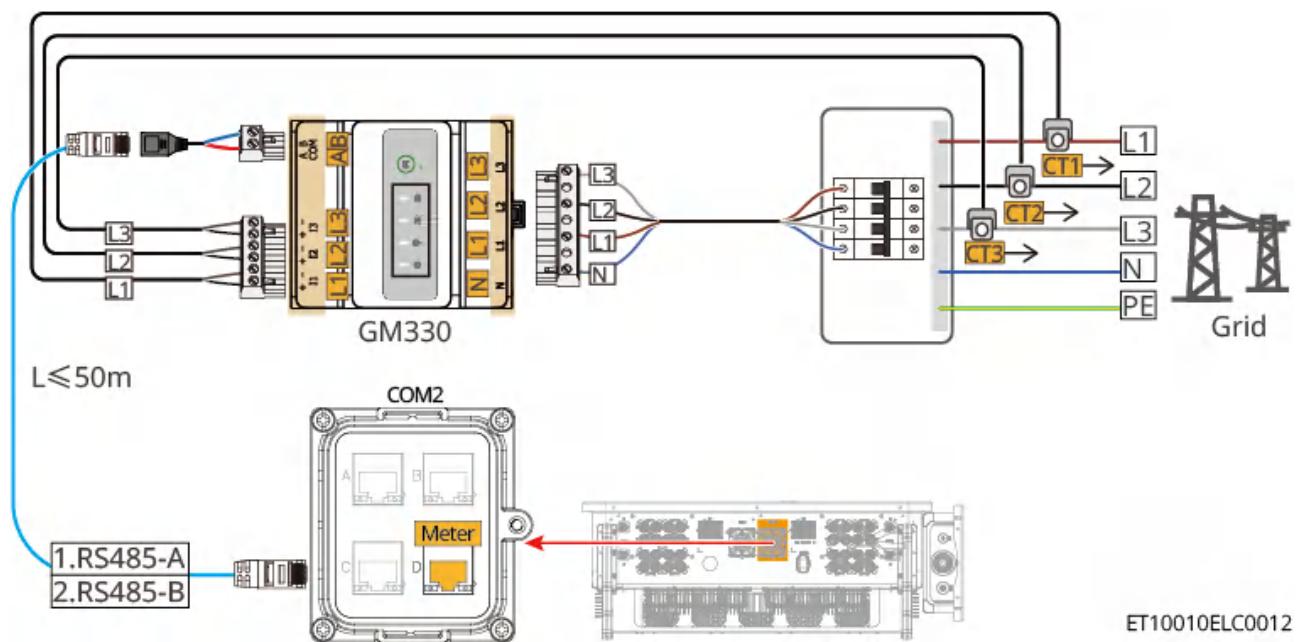


## 5.8 Connecting the Meter Cable

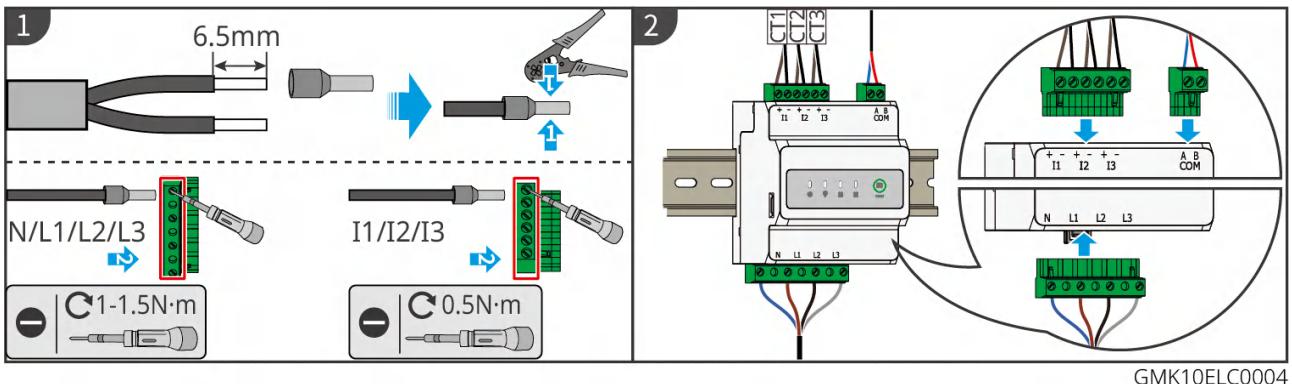
NOTICE

- The electricity meter shipped with the box is for use with a single inverter only. Do not connect one meter to multiple inverters. If you have requirements for multiple inverters, please consult the manufacturer to purchase meters separately.
- Please ensure the CT connection direction and phase sequence are correct; otherwise, it may lead to incorrect monitoring data.
- Ensure all cable connections are correct, secure, and not loose. Improper wiring may cause poor contact or damage the meter.
- In areas with lightning risk, if the meter cable length exceeds 10m and the cable is not routed using a grounded metal conduit, it is recommended to install external lightning protection devices.

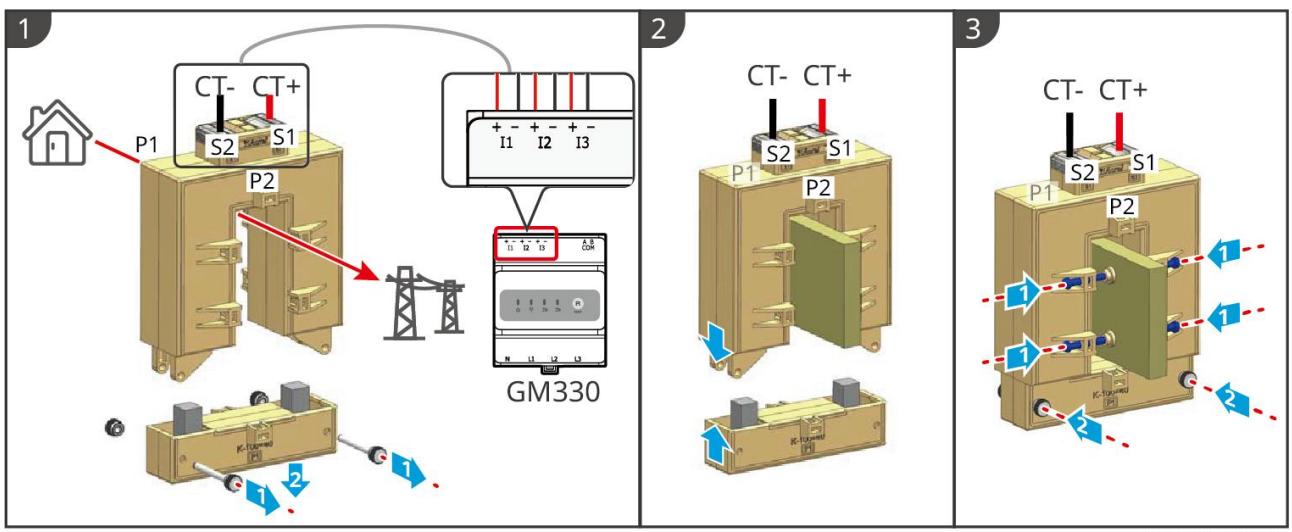
### GM330 Meter Wiring



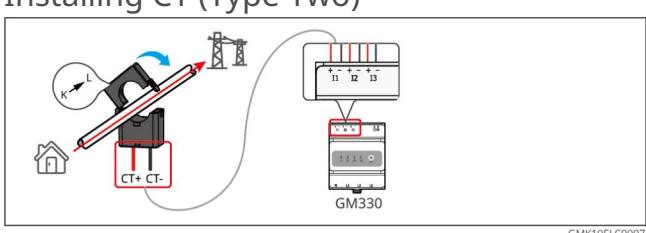
### Wiring Steps



### Installing CT (Type One)



### Installing CT (Type Two)

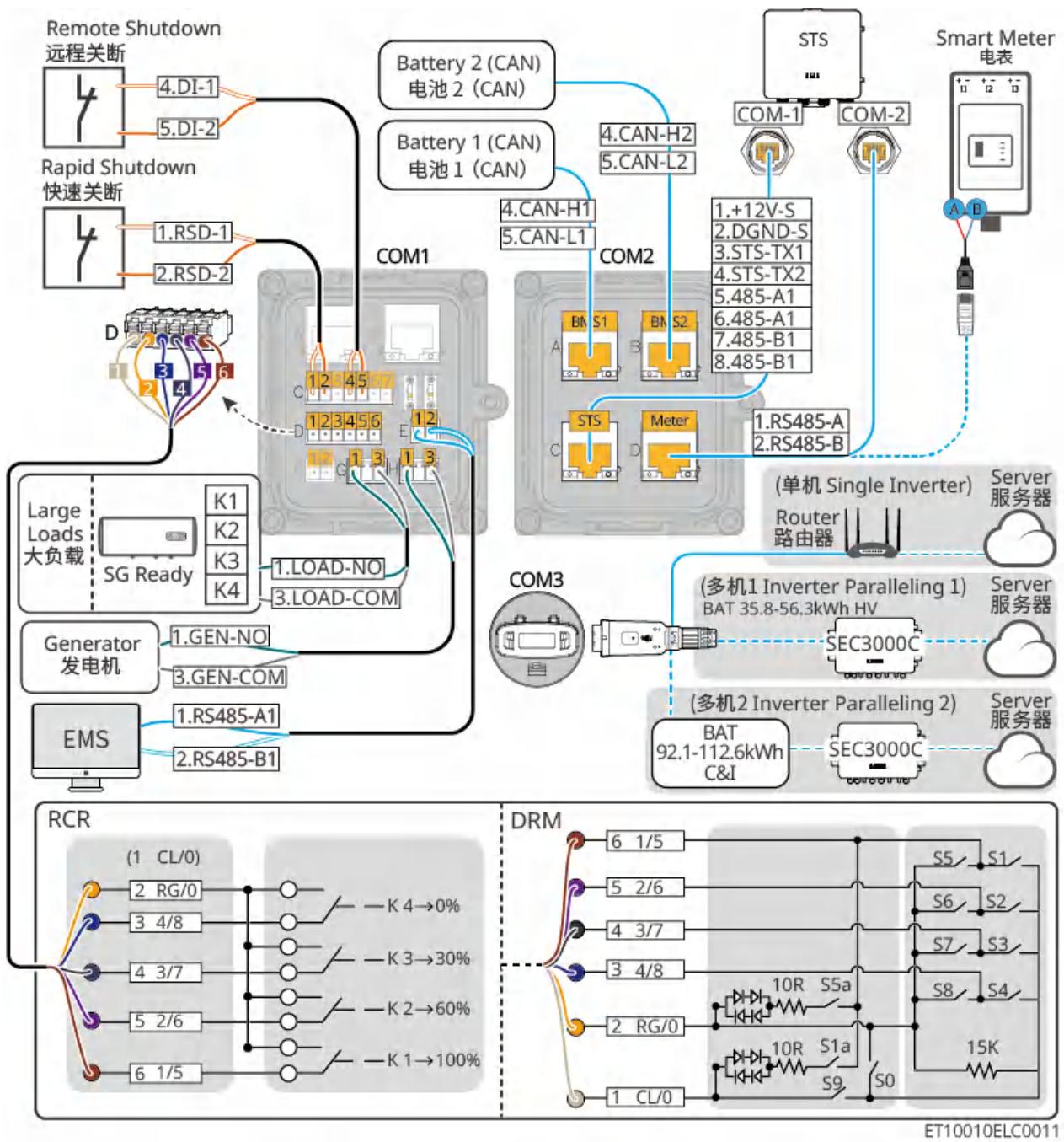


## 5.9 Connecting the Inverter Communication Cable

NOTICE

- Inverter communication function is optional. Please select according to the actual usage scenario.
- If you need to use the DRM, RCR, or remote shutdown function, please enable it in the SolarGo App or the SEC3000C web interface after wiring is completed.
- Do not enable this function in the SolarGo App or the SEC3000C web interface if the inverter is not connected to a DRED or remote shutdown device, otherwise the inverter will not be able to operate in grid-connected mode.
- When using a 4G module for inverter communication, please note the following issues:
  - The 4G module is an LTE single-antenna device, suitable for application scenarios with low requirements for data transmission rates.
  - To ensure 4G signal communication quality, do not install the device indoors or in areas with metal interference to the signal.
  - The built-in SIM card in the 4G module is a China Mobile communication card. Please confirm whether the device is installed in an area covered by China Mobile's 4G signal.

## Communication Function Description



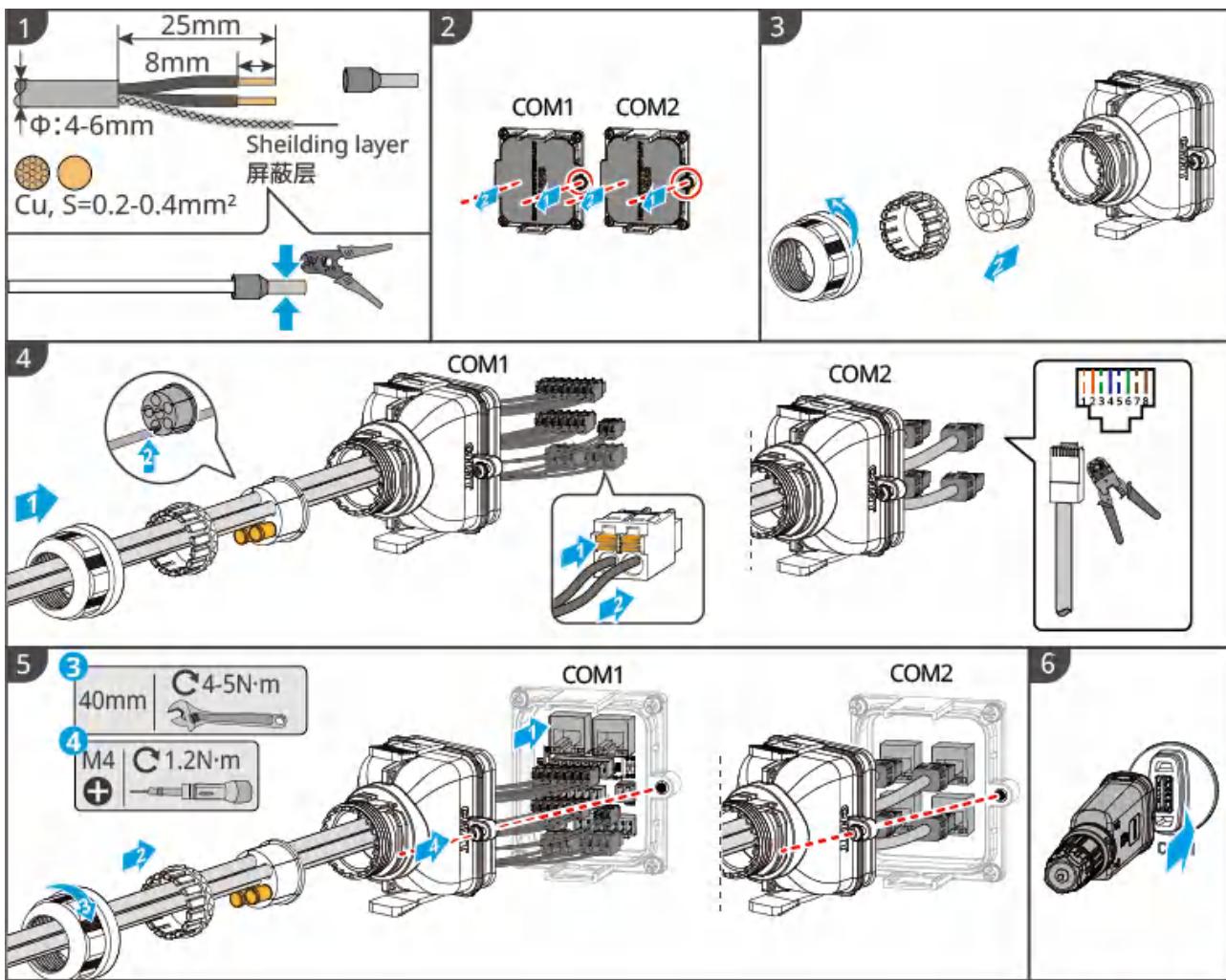
Communication Port	Area	No.	Function/Connected Device	Port Name	Function Description
COM1	C	1	Rapid Shutdown	RSD-1	

Communication Port	Area	No.	Function/Connected Device	Port Name	Function Description	
	D	2	Remote Shutdown	RSD-2	Connect to Rapid Shutdown devices to control the shutdown of PV modules in case of an incident.	
		3			Reserved	
		4		DI-1	Connect to Remote Shutdown devices to control equipment shutdown in case of an incident.	
		5				
		6-7		DI-2	Reserved	
		1				
	D	2	DRM&RCR	CL/0	Complies with Australian DRM (Demand Response Modes) and provides a DRED signal control port. RCR (Ripple Control Receiver) : In Germany and parts of Europe, grid operators use Ripple Control Receivers to convert grid dispatch signals into dry contact outputs. Power plants receive grid dispatch signals via dry contact communication.	
		3				
		4		4/8		
		5				
		6		3/7		
	D			2/6		
				1/5		

Communication Port	Area	No.	Function/Connected Device	Port Name	Function Description
COM2	E	1	EMS	RS485-A1	Connect to the EMS to enable communication between the inverter and the EMS.
		2		RS485-B1	
	G	1	Large Load	LOAD-NO	Large load control port
		2		LOAD-COM	
	H	1	Generator	GEN-NO	Generator control port
		2		GEN-COM	
	A	1-3、5-6	-	-	Reserved
		4	Battery	CAN-H1	Connect to the battery BMS to enable communication between the inverter and the battery BMS.
		5		CAN-L1	
	B	1-3、5-6	-	-	Reserved
		4	Battery	CAN-H2	Connect to the battery BMS to enable communication between the inverter and the battery BMS.
		5		CAN-L2	
	C	1	STS	+12V-S	Connect to the COM1 port of the STS to enable communication between the inverter and the STS.
		2		DGND-S	
		3		STS-TX1	
		4		STS-TX2	

Communication Port	Area	No.	Function/Connected Device	Port Name	Function Description
		5		485-A1	
		6		485-A1	
		7		485-B1	
		8		485-B1	
	D	7	Smart Meter/STS	RS485-B	Connect to a Smart Meter or the COM2 port of the STS to enable communication between the inverter and the meter.
		8		RS485-A	
		3-8		-	Reserved
COM3	-	-	smart dongle	-	Connect to the smart dongle.

Method for Connecting the Communication Cable



ET10010ELC0010

# 6 System Commissioning

## 6.1 Check Before Power ON

No.	Inspection Item
1	The equipment is securely installed, positioned for convenient operation and maintenance, with adequate space for ventilation and heat dissipation, and the installation environment is clean and tidy.
2	The PE cable, DC cable, AC cable, Communication cable, and terminal resistor are connected correctly and securely.
3	Cable bundling meets wiring requirements, is reasonably distributed, and shows no damage.
4	For unused cable entry holes and ports, please use the terminals provided with the accessories for reliable connection, and ensure they are properly sealed.
5	Ensure that used cable entry holes have been sealed.
6	The voltage and frequency at the inverter grid connection point meet the grid connection requirements.

## 6.2 Power ON

### **WARNING**

When there are multiple inverters in the system, ensure that all slave inverters are powered on at the AC side within one minute after the master inverter is powered on at the AC side.

## NOTICE

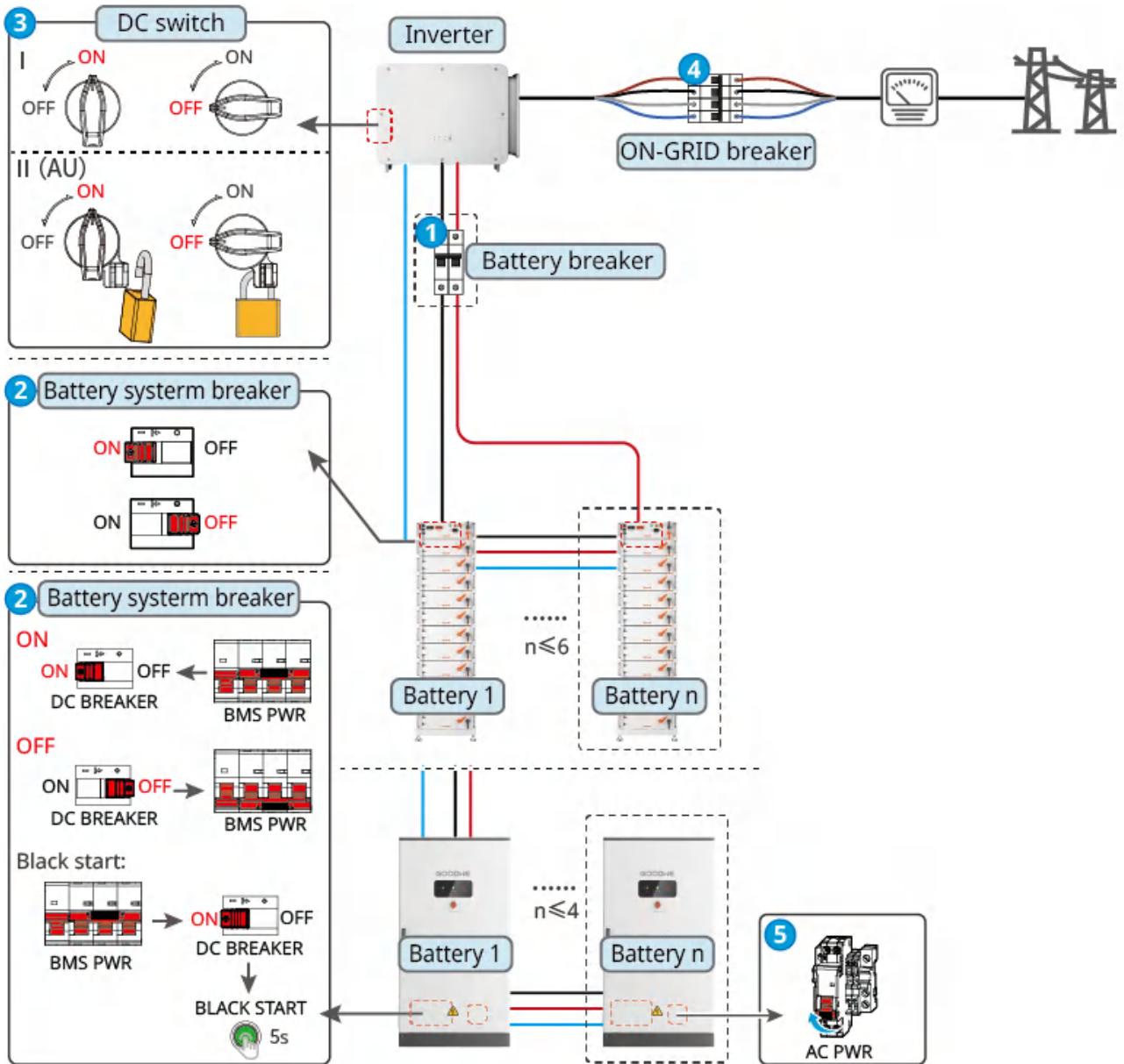
When there is no PV power generation in the photovoltaic system and the grid is abnormal, if the inverter cannot operate normally, the battery black start function can be used to force battery discharge to start the inverter. The inverter can then enter off-grid operation mode, supplying power to the loads from the battery.

- BAT Series 25.6-56.3kWh High Voltage Battery Black Start Procedure: After closing the molded case circuit breaker, the RUN indicator  flashes, and the FAULT indicator  remains off. Press and hold the RUN  for 5 seconds. If the sound of the contactor closing is heard and the RUN  turns to steady on, the black start is successful. If the RUN indicator  continues to flash and the FAULT indicator  remains off, the black start has failed. After a black start failure, press and hold the RUN  for 5 seconds to repeat the black start procedure. If it fails again, please contact GoodWe after-sales personnel.
- For the black start procedure of the BAT Series 92.1-112.6kWh Commercial & Industrial Battery System, please refer to the power-on/power-off steps.
- The black start procedures for other batteries are the same as their power-on steps.

Before performing the power-on operation for the BAT Series 92.1-112.6kWh Commercial & Industrial Battery System, ensure the battery's emergency stop switch is in the released state. Release procedure: Rotate the emergency stop switch to the right.



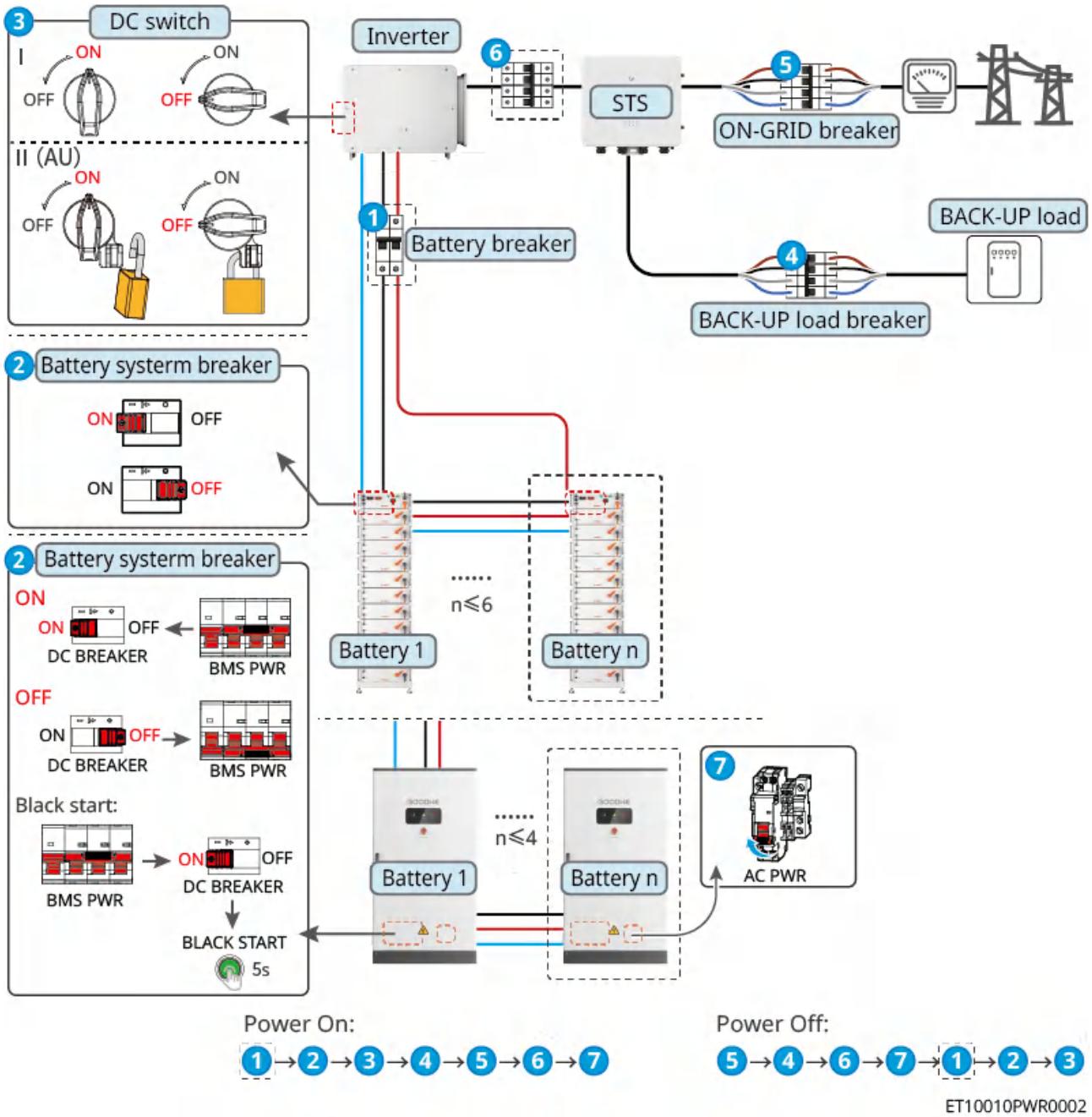
### 6.2.1 Single Inverter, No Off-Grid Function



Power ON: **1** → **2** → **3** → **4** → **5**

**3**: Optional based on local laws and regulations.

## 6.2.2 Single Inverter with Off-Grid Function

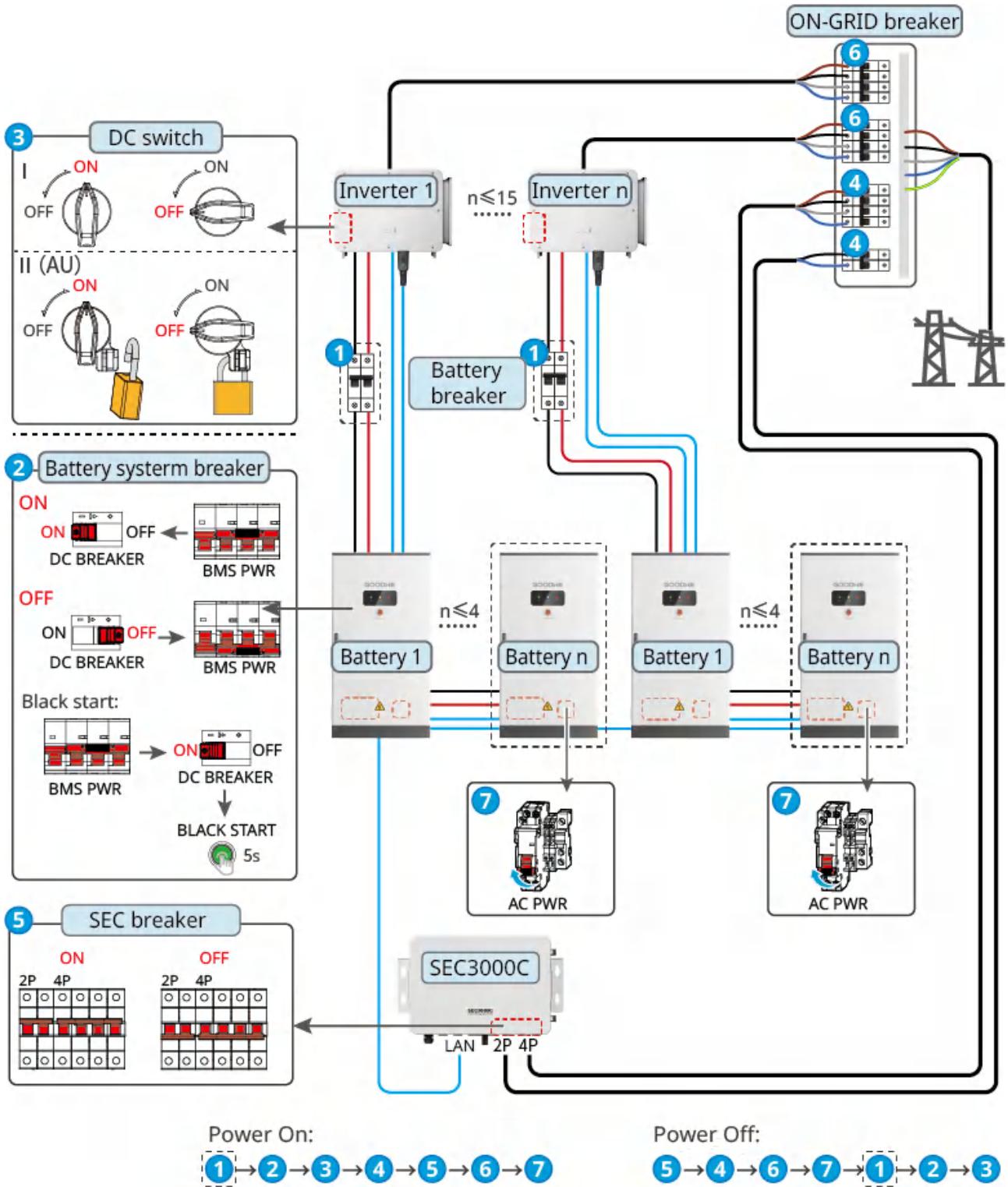


Power ON: **1 → 2 → 3 → 4 → 5 → 6 → 7**

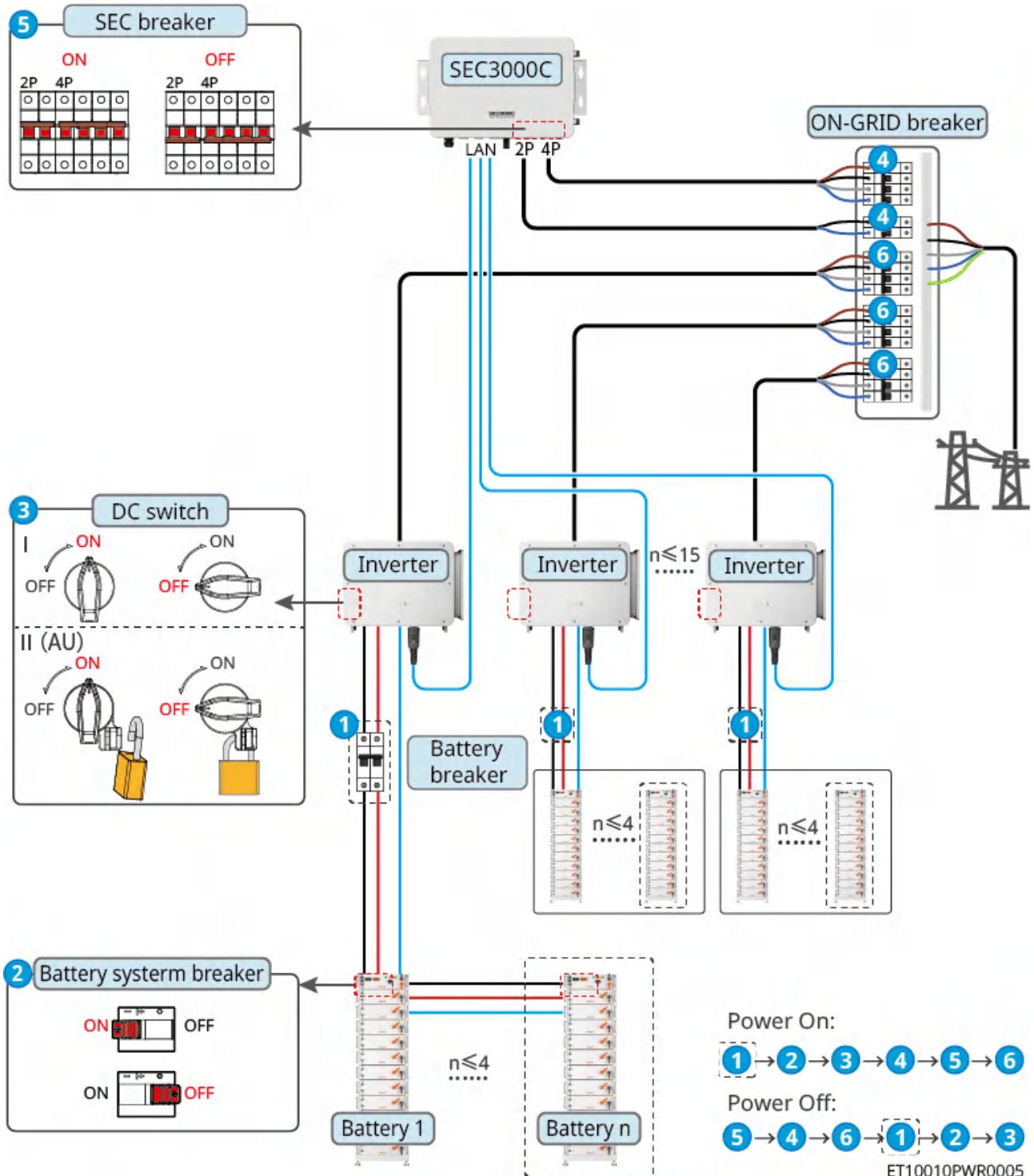
⑤: Optional according to local laws and regulations.

### 6.2.3 Multi-Inverter Pure Grid-Tied

## Inverter with BAT 92.1-112.6 kWh Commercial and Industrial Battery System



## Inverter with BAT 25.6-56.3 kWh High Voltage Battery System



## 6.3 Indicators

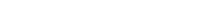
### 6.3.1 Inverter Indicators

LED

Indicator	Status	Description
		Inverter is powered on and in standby mode
		Inverter is starting up and in self-check mode
		Inverter is operating normally in grid-connected power generation or off-grid mode
		BACK-UP output overload
		System fault
		Inverter is powered off
		Grid abnormal, Inverter BACK-UP port power supply normal
		Grid normal, Inverter BACK-UP port power supply normal
		BACK-UP port has no power supply
		Inverter monitoring module resetting
		Inverter and communication terminal not connected
		Communication fault between communication terminal and cloud server
		Inverter monitoring normal
		Inverter monitoring module not started

## LCD

Indicator	Status	Description
		Inverter is starting up, in self-check mode
		Inverter is normally grid-connected for power generation or operating in off-grid mode
		BACK-UP output overload
		System fault
		LCD ON: Powered on Inverter OFF, LCD OFF: Powered off
		Grid abnormal, Inverter BACK-UP port power supply normal
		Grid normal, Inverter BACK-UP port power supply normal

		BACK-UP port no power supply
		Inverter monitoring module resetting
		Inverter and communication terminal not connected
		Communication terminal and cloud server communication fault
		Inverter monitoring normal
		Inverter monitoring module not started

## 6.3.2 Battery Indicators

- BAT Series 35.8-56.3kWh High Voltage Battery



Indicator	Status	Description
Run		Green light steady on: Device operating normally
		Green light single blink: Battery operating normally, not communicating with inverter
		Green light double blink: Device in standby
Fault		Steady on: Device fault
		Red light single blink: System undervoltage 3~4 level
		Red light double blink: SN abnormal

- BAT Series 92.1-112.6kWh Commercial & Industrial Battery System

**Run****Warning****Fault**

LXC10010DSC0002

Indicator	Status	Description
Run		Steady green: Device operating normally
		Green light flashes once: Battery operating normally, not communicating with inverter
		Green light flashes twice: Device in standby
		Green light off, steady yellow: Device alarm
Warning		Green light off, steady red: Device fault
		Green, yellow, and red lights all off: Device not powered on
Fault		Steady on: Device alarm
		Off: No device alarm
		Steady on: Device fault
		Red light flashes once: Sleep (under voltage)
		Red light flashes twice: SN abnormal

### 6.3.3 Smart Meter Indicator

#### GM330 Smart Meter Indicator:

Type	Status	Description
	Steady On	The meter is powered on, with no RS485 communication

 <b>Power Light</b>	Flashing	The meter is powered on, RS485 communication is normal
	Off	The meter is powered off
 <b>Communication Light</b>	Off	Reserved
	Flashing	Press the Reset button for ≥5s, the Power Light and Buy/Sell Light flash: Meter reset
 <b>Buy/Sell Light</b>	Steady On	buy power from the grid
	Flashing	Sell power to the grid
	Off	Sell power to the grid
	Reserved	

### 6.3.4 Smart Dongle Indicator

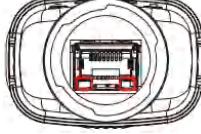
- **WiFi/LAN Kit-20**

#### NOTICE

- After double-clicking the Reload button to turn on Bluetooth, the communication indicator light will enter a single flash state. Please connect to the SolarGo APP within 5 minutes, otherwise Bluetooth will automatically turn off.
- The communication indicator light's single flash state only occurs after double-clicking the Reload button to turn on Bluetooth.

indicator	Status	Description
 <b>Power Light</b>		Solid: The Smart Communication Stick is powered on.
		Off: The Smart Communication Stick is not powered on.
 <b>Communication Light</b>		Solid: Communication is normal in WiFi mode or LAN mode.
		Single blink: The Smart Communication Stick's Bluetooth signal is on, waiting to connect to the SolarGo APP.

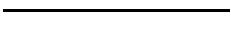
	Two blinks: The Smart Communication Stick has not connected to the router.
	Four blinks: The Smart Communication Stick communicates normally with the router, but has not connected to the server.
	Six blinks: The Smart Communication Stick is identifying connected devices.
	Off: The Smart Communication Stick is undergoing software reset or is not powered on.

Indicator	Color	Status	Description
 LAN Port Indicator	Green	Steady on	100Mbps wired network connection normal.
		Off	<ul style="list-style-type: none"> <li>Network cable not connected.</li> <li>100Mbps wired network connection abnormal.</li> <li>10Mbps wired network connection normal.</li> </ul>
	Yellow	Steady on	10/100Mbps wired network connection normal, no communication data transmission/reception.
		Flashing	Communication data transmission/reception in progress.
		Off	Network cable not connected.

Button	Description
Reload	Hold for 0.5~3 seconds to reset the smart communication stick.
	Hold for 6~20 seconds to restore the smart communication stick to factory settings.
	Double-click quickly to enable Bluetooth signal (only lasts for 5 minutes).

- **4G Kit-G20/4G Kit-CN-G20**

Indicator	Status	Description
-----------	--------	-------------

 <b>Power Light</b>		Steady on: The Smart Communication Stick is powered on.
		Off: The Smart Communication Stick is not powered on.
 <b>Communication Light</b>		Steady on: The Smart Communication Stick is connected to the server and communication is normal.
		Blinks twice: The Smart Communication Stick is not connected to the base station.
		Blinks four times: The Smart Communication Stick is connected to the base station but not connected to the server.
		Blinks six times: Communication between the Smart Communication Stick and the inverter is disconnected.
		Off: The Smart Communication Stick is undergoing software reset or is not powered on.
<b>Button</b>	<b>Description</b>	
<b>Reload</b>	Press and hold for 0.5~3 seconds, the Smart Communication Stick will restart.	
	Press and hold for 6~20 seconds, the Smart Communication Stick will restore factory settings.	

### 6.3.5 STS Indicator Light

indicator	Status	Description
		Connected to grid, port voltage normal
		Connected to grid, port has no voltage, STS powered by inverter communication line
		STS powered off
		Device connected to port, port voltage normal
		Device connected to port, port has no voltage, STS powered by inverter communication line
		STS powered off
		Device connected to port, port voltage normal
		Device connected to port, port has no voltage, STS powered by inverter communication line
		STS powered off



fault

No fault

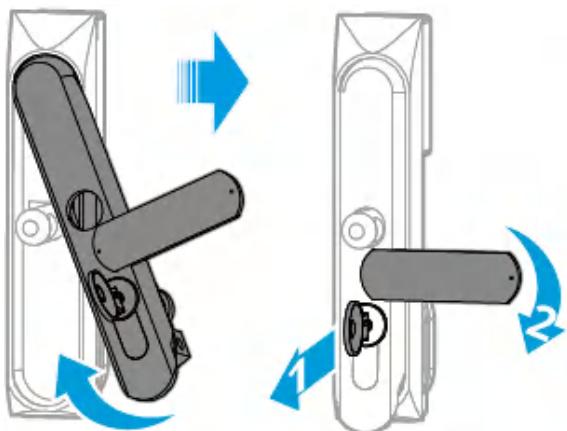
## 6.4 Close the Cabinet Door

### NOTICE

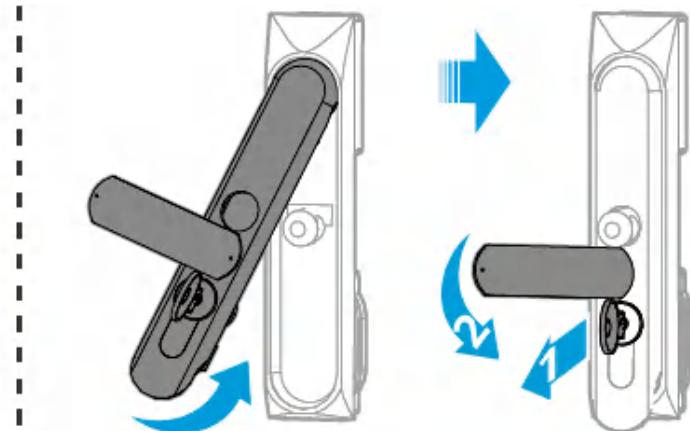
- This section only applies to the BAT series 92.1-112.6kWh commercial and industrial battery system.
- After the system power-on is completed, please close the battery system cabinet door.
- After closing the cabinet door, please store the cabinet door key safely.

**Step 1:** Close the cabinet door and secure the handle.

**Step 2:** Lock the door with the key, then remove it, and finally close the lock cylinder cover.



Front door



Back door

BAT10INT0007

# 7 Rapid System Configuration

## 7.1 Downloading the App

### 7.1.1 Downloading SolarGo App

Make sure that the mobile phone meets the following requirements:

- Mobile phone operating system: Android 5.0 or later, iOS 13.0 or later.
- The mobile phone can access the Internet.
- The mobile phone supports WLAN or Bluetooth.

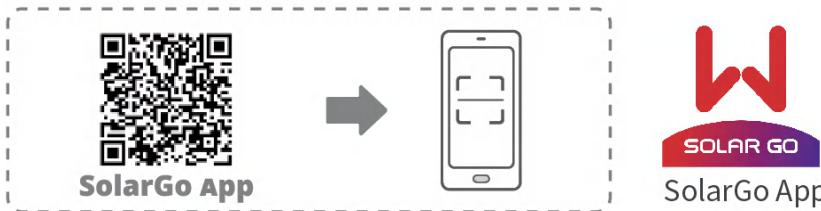
#### NOTICE

Once the SolarGo App has been installed, you will receive automatic notifications when updates are available.

Method 1: Search SolarGo in Google Play (Android) or App Store (iOS) to download and install the app.



Method 2: Scan the QR code below to download and install the App.



### 7.1.2 Downloading SEMS+ APP

**Make sure that the mobile phone meets the following requirements:**

- Mobile phone operating system: Android 6.0 or later, iOS 13.0 or later.
- The mobile phone can access the Internet.

- The mobile phone supports WLAN or Bluetooth.

### Download Method:

#### Method 1:

Search SEMS+ in Google Play (Android) or App Store (iOS) to download and install the App.



#### Method 2:

Scan the QR code below to download and install the App.



## 7.2 Setting Communication Parameters

### NOTICE

The communication configuration interface may be different if the inverter uses different communication modes or connects different communication modules. Please refer to the actual interface.

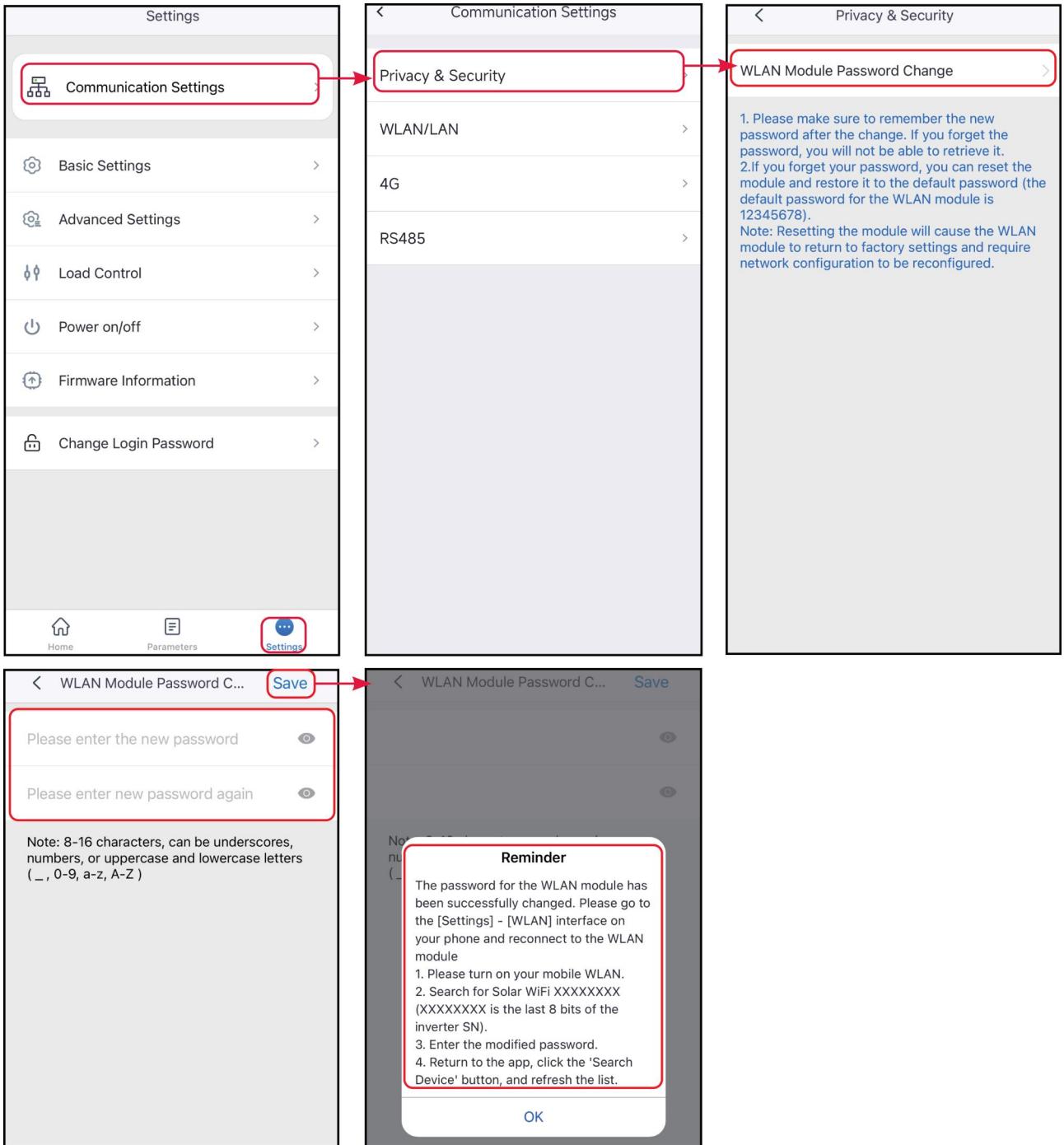
### 7.2.1 Setting Privacy and Security Parameters

#### Type I

**Step 1** : Tap **Home** > **Settings** > **Communication Setting** > **Privacy & Security** to set the parameters.

**Step 2** : Set the new password for the WiFi hotspot of the communication module, and tap **Save**.

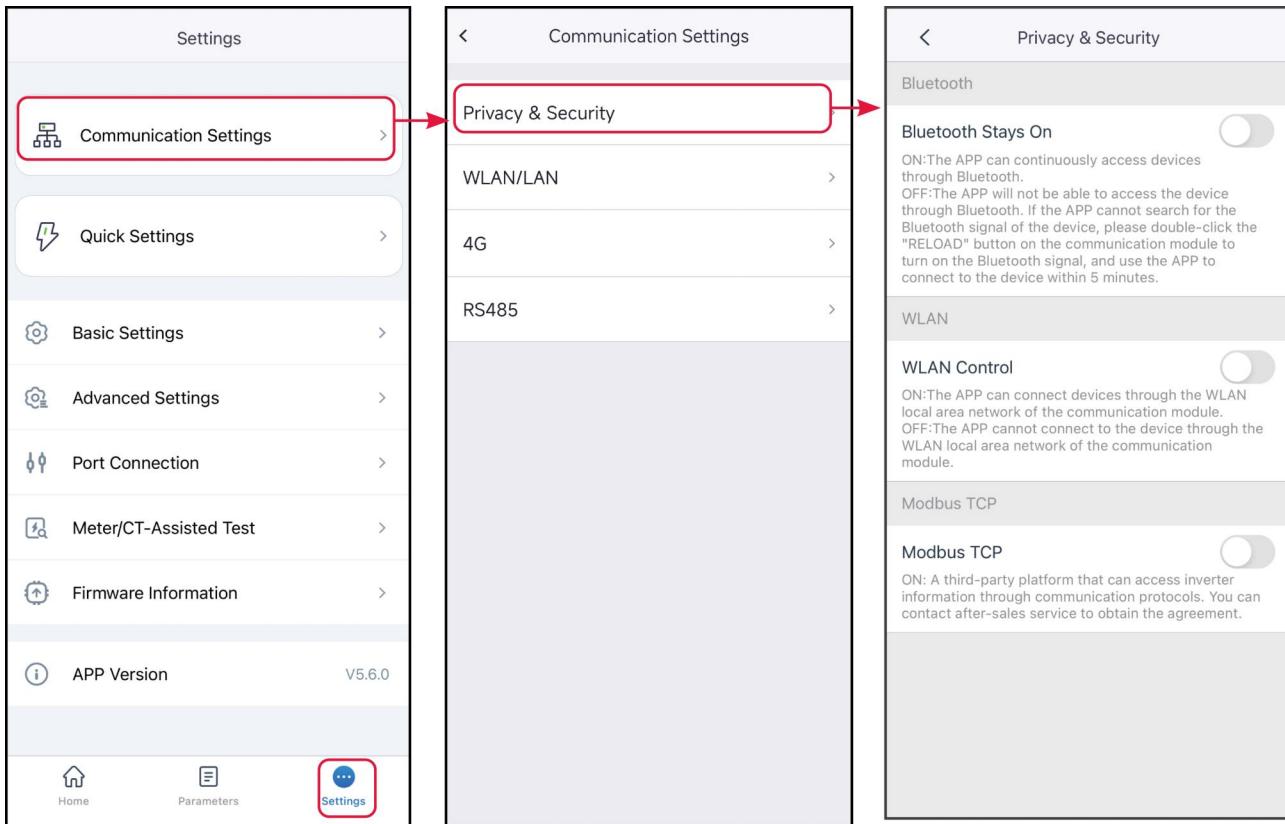
**Step 3** Open the WiFi settings of your phone and connect to the inverter's WiFi signal (Solar WiFi\*\*\*) with the new password.



## Type II

**Step 1** : Tap Home > Settings > Communication Setting > Privacy & Security to set the parameters.

**Step 2** Enable Bluetooth Stays On or WLAN Control based on actual needs.



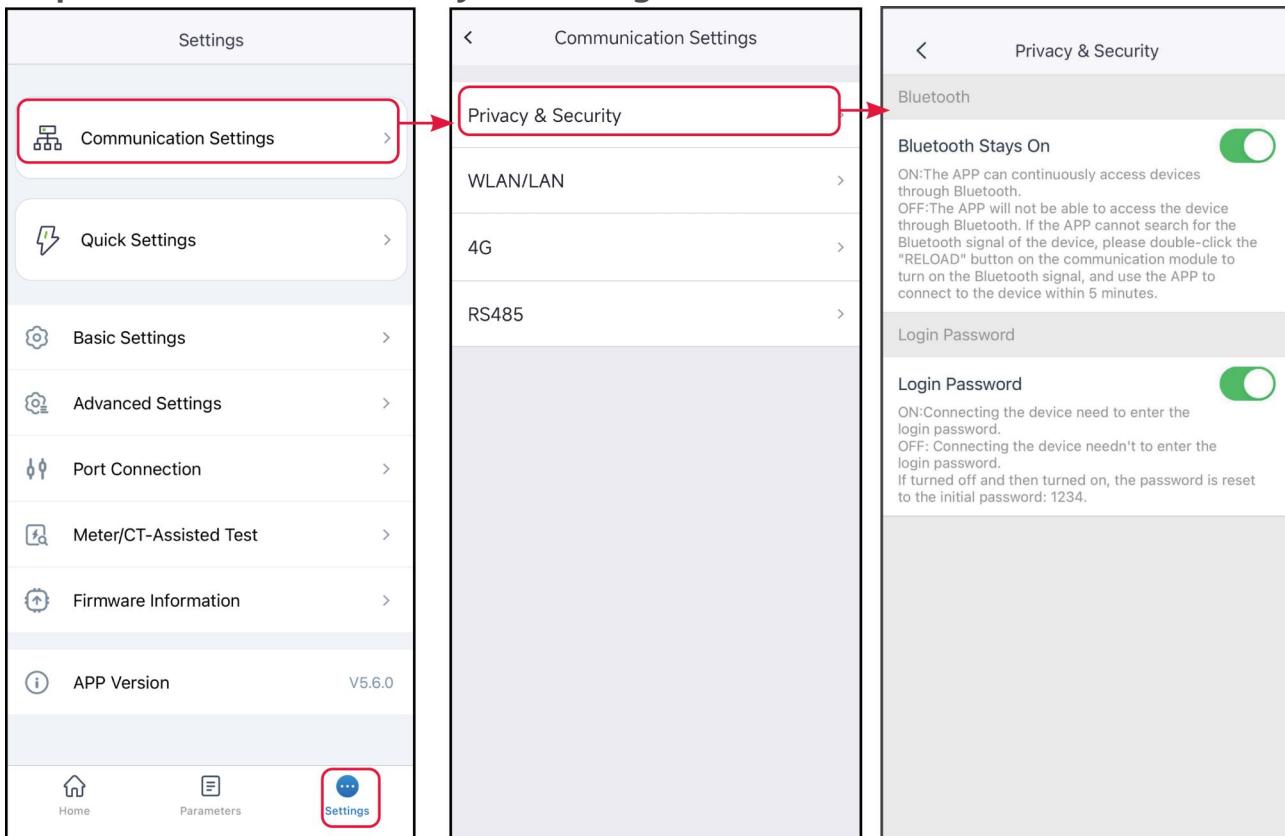
No.	Parameters	Description
1	Bluetooth Stays On	Disabled by default. Enable the function, the bluetooth of the device will be contentious on to keep connected to SolarGo. Otherwise, the bluetooth will be off in 5 minutes, and the device will be disconnected from SolarGo.
2	WLAN Control	Disabled by default. Enable the function, the device and the SolarGo can be connected through the WLAN when they are on the same LAN. Otherwise, they cannot be connected even if they are on the same LAN.
3	Modbus-TCP	Enable the function, the third party monitoring platform can access inverter through Modbus-TCP communication protocol.
4	SSH control Ezlink	After enabling this function, third-party platforms can connect to and control EzLink's Linux system.

### Type III

**Step 1 : Tap Home > Settings > Communication Setting > Privacy & Security to set**

the parameters.

## Step 2 : Enable **Bluetooth Stays On** or **Login Password** based on actual needs.



No.	Parameters	Description
1	Bluetooth Stays On	Disabled by default. Enable the function, the bluetooth of the device will be contentious on to keep connected to SolarGo. Otherwise, the bluetooth will be off in 5 minutes, and the device will be disconnected from SolarGo.
2	Password	Disabled by default. Enable the function, you will be prompted to enter the login password when connecting the device to SolarGo. Use the initial password and change it at the first login prompt.

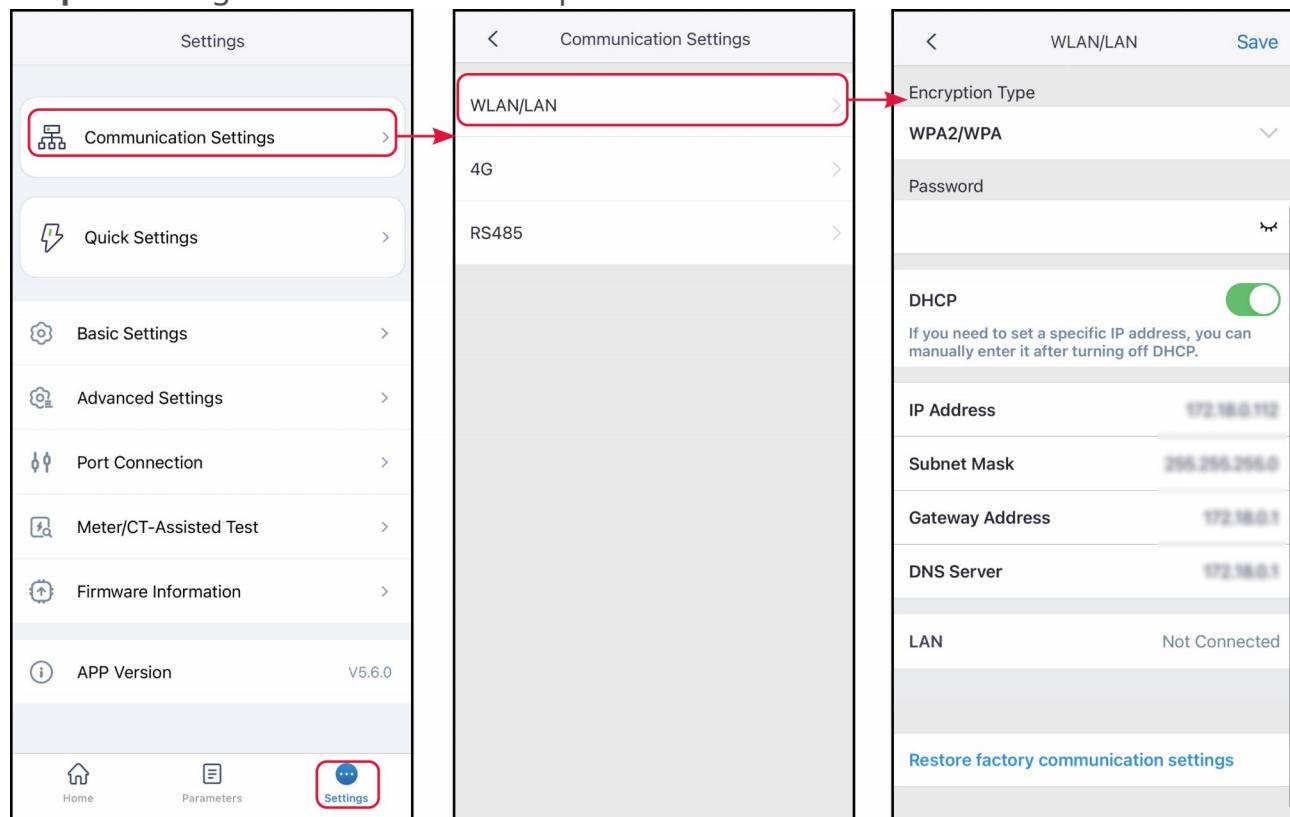
### 7.2.2 Setting WLAN/LAN Parameters

## NOTICE

When the inverter is connected to different communication modules, the communication configuration interface may be different. Please refer to the actual interface.

**Step 1** : Tap Home > Settings > Communication Setting > WLAN/LAN to set the parameters.

**Step 2** : Configure the WLAN or LAN parameters based on actual needs.



No.	Parameters	Description
1	Network Name	Only for WLAN. Select WiFi based on the actual connecting.
2	Password	Only for WLAN. WiFi password for the actual connected network.
3	DHCP	Enable DHCP when the router is in dynamic IP mode. Disable DHCP when a switch is used or the router is in static IP mode.

No.	Parameters	Description
4	IP Address	Do not configure the parameters when DHCP is enabled.
5	Subnet Mask	
6	Gateway Address	Configure the parameters according to the router or switch information when DHCP is disabled.
7	DNS Server	

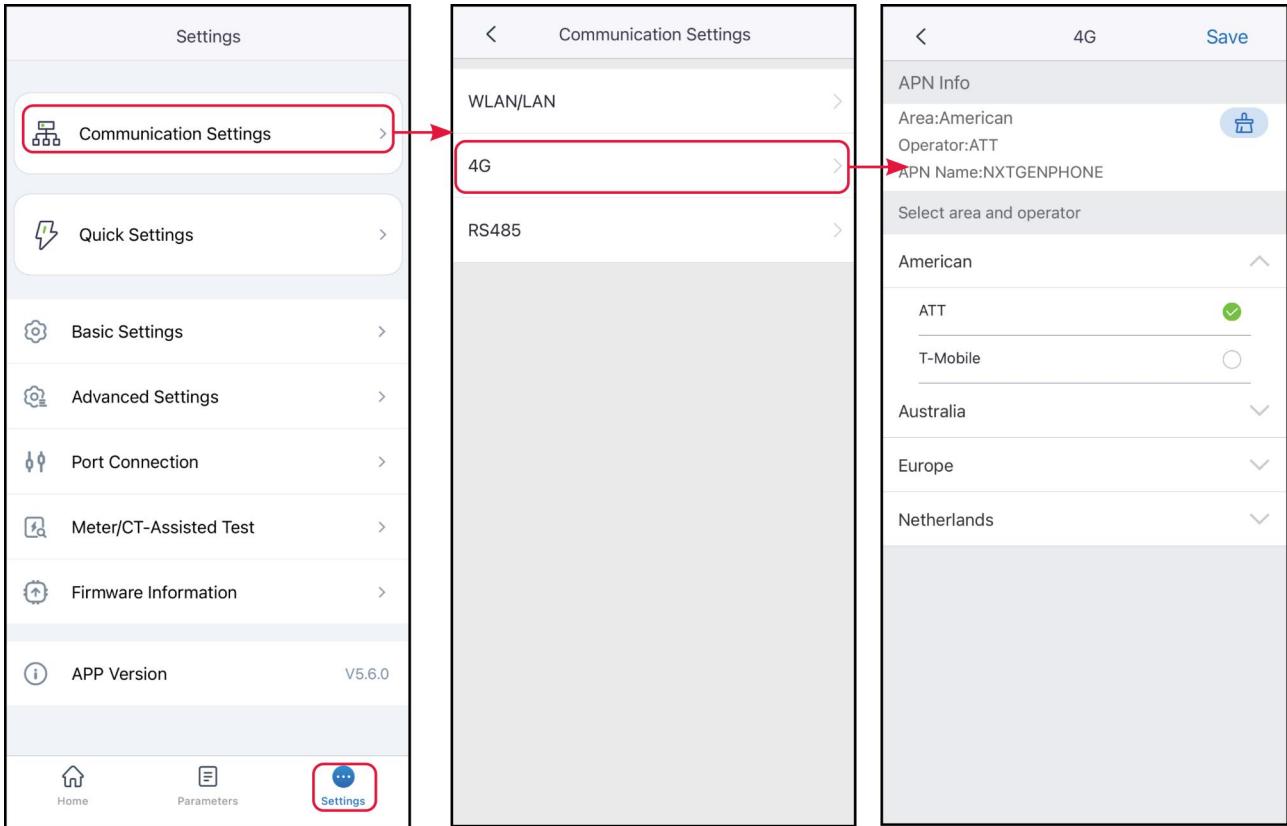
### 7.2.3 Configuring APN Parameters

#### NOTICE

- Configure the SIM card information of 4G communication device.
- If the 4G module does not offer bluetooth signal, please configure the APN parameters through the Bluetooth module or WiFi module first to achieve 4G communication.

**Step 1:** Tap **Home > Settings > Communication Settings > 4G** to set the parameters.

**Step 2:** Set the region and operator based on actual needs.



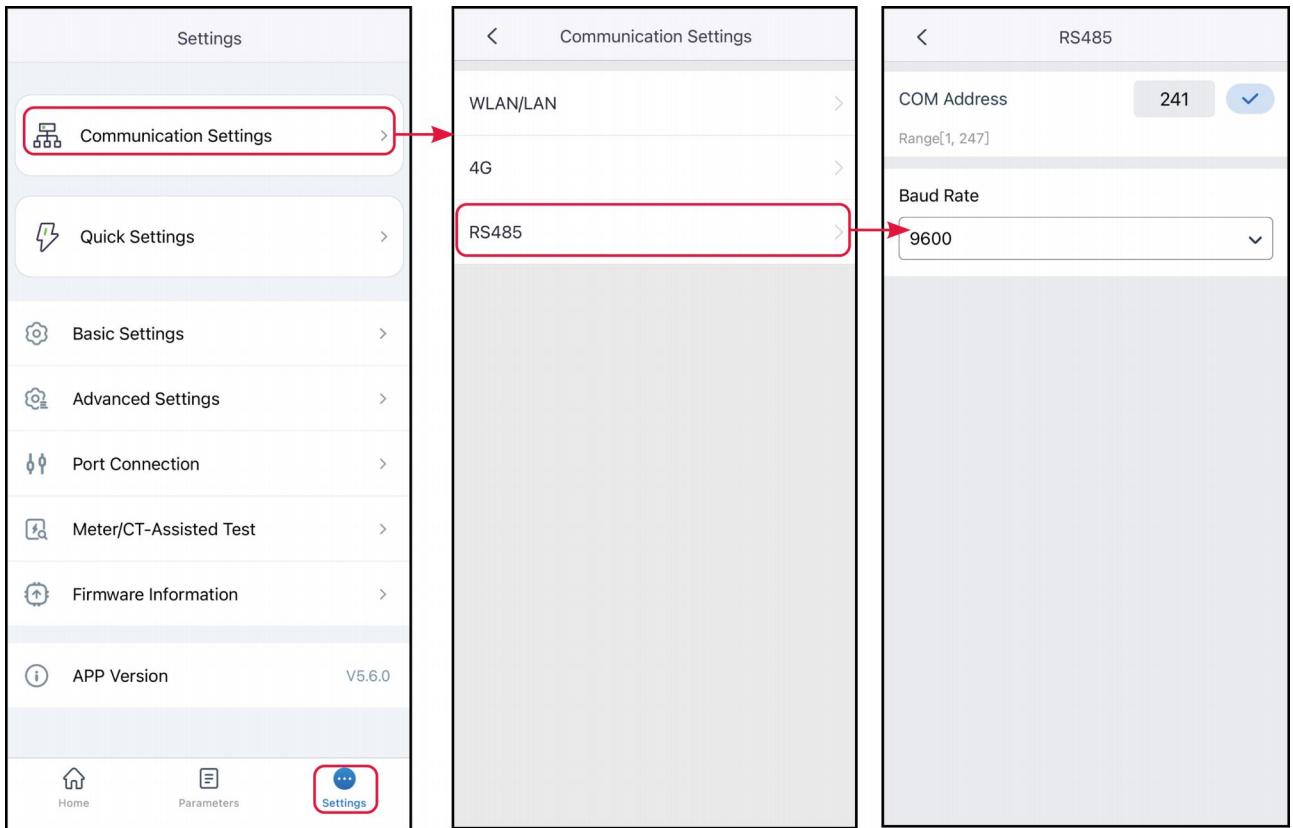
## 7.2.4 Configuring RS485 Parameters

### NOTICE

Set the communication address of the inverter. For a single inverter, the address is set based on actual needs. For multi connected inverters, the address of each inverter should be different while cannot be 247.

**Step 1:** Tap **Home** > **Settings** > **Communication Settings** > **RS485** to set the parameters.

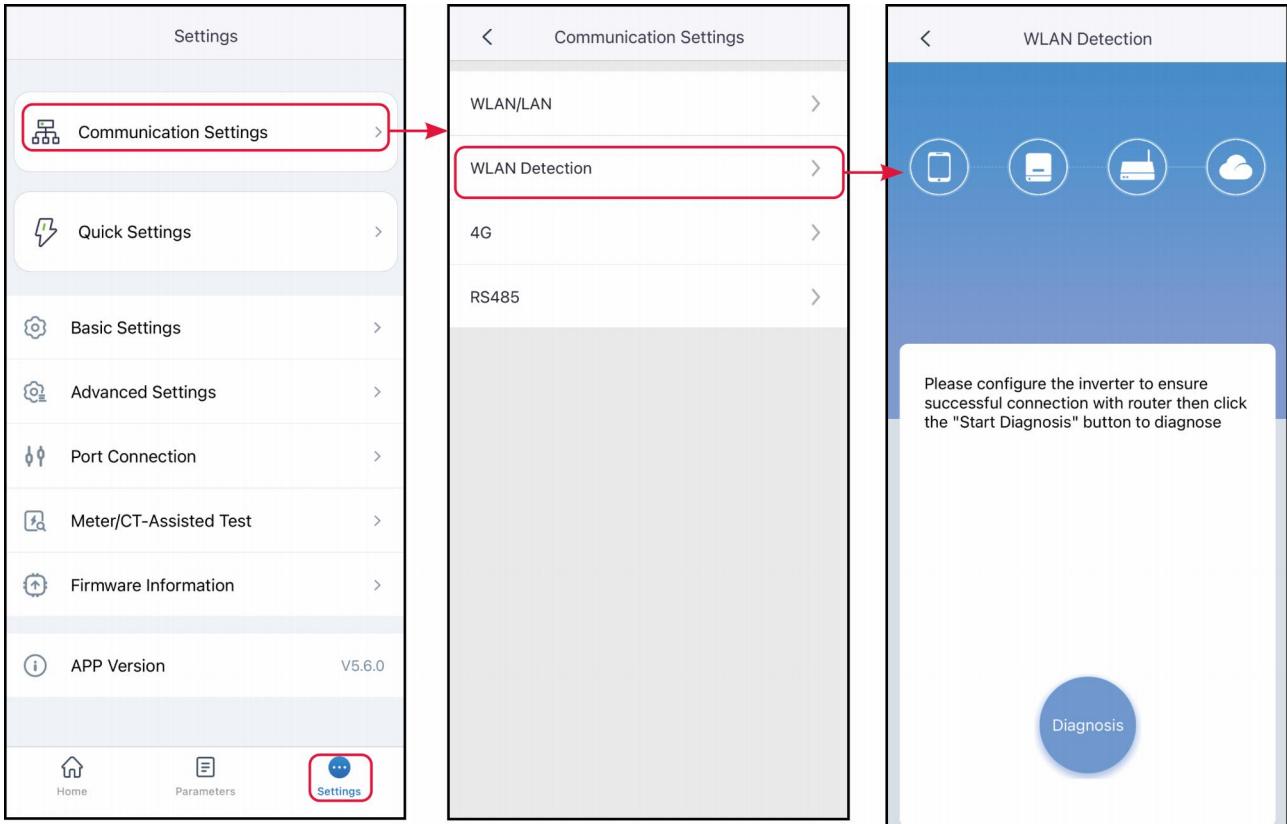
**Step 2 :** Set the Modbus Address And Baud Rate base on actual situation.



## 7.2.5 WLAN Detection

**Step 1** : Tap Home > Settings > Communication Settings > WLAN Detection..

**Step 2** : Tap Diagnosis to check the network connection status.



## 7.3 Quick Setting the Basic Information(Type II)

**Step 1:** Tap **Home** > **Settings** > **Quick Settings** to set the parameters.

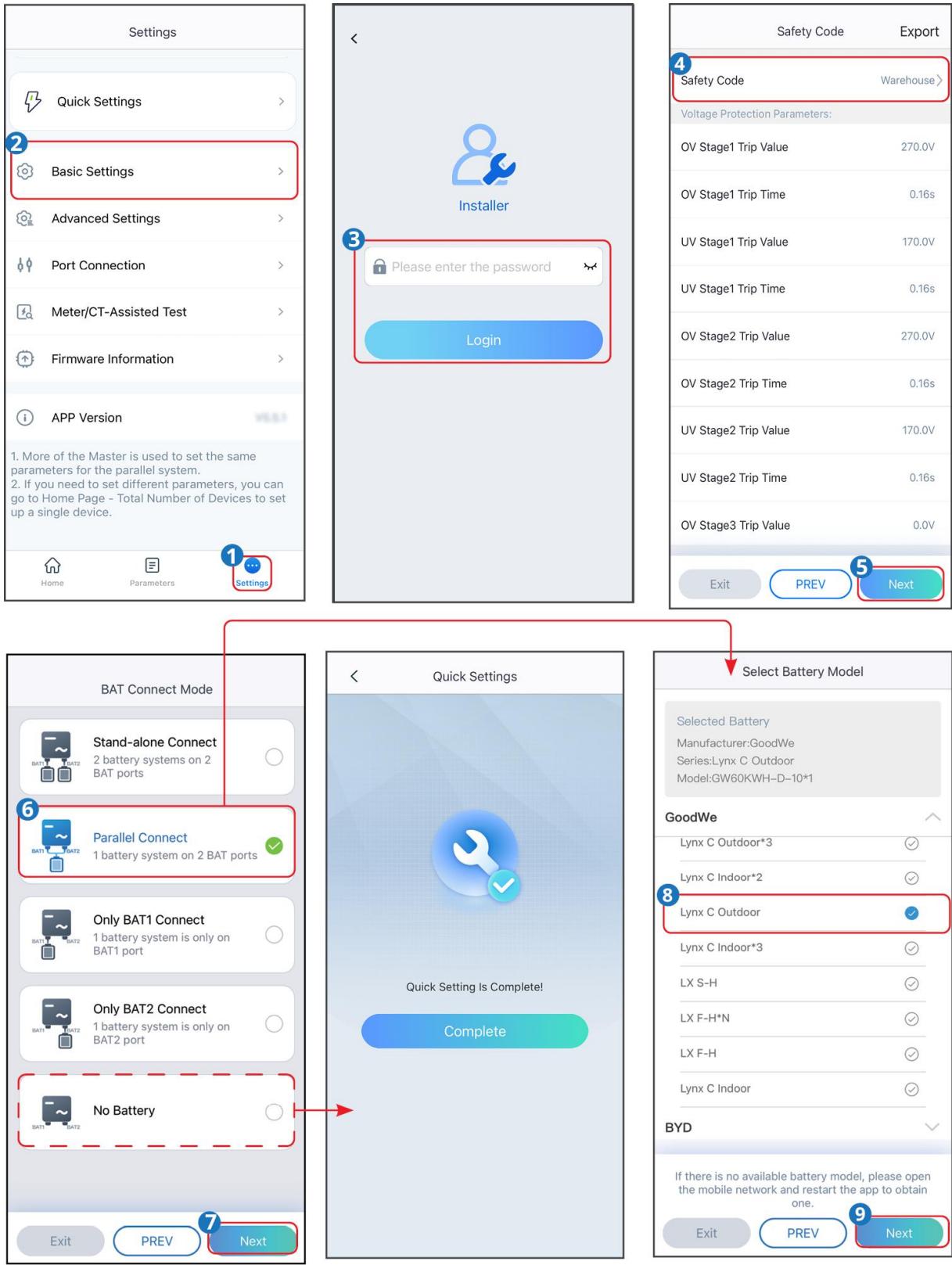
**Step 2 :** Enter the password for quick settings. Contact the supplier or after sales service for password. Password for professional technicians only.

**Step 3 :** Some models support one-click configuration. Select **Guided Mode** to quickly configure the system.

**Step 4:** Select safety country accordingly. Tap **Next** to set the Battery Connect Mode.

**Step 5 :** Select the actual mode in which the battery is connected to the inverter. The basic settings are completed if there is no battery connected in the system. Tap **Next** to set the Battery Model if there is any battery connected in the system.

**Step 6:** Select the actual battery model. Tap **Next** to set the Working Mode.



**Step 7:** Set the working mode based on actual needs. Tap **Next** to set the Working Mode. For some models, after the working mode configuration is completed, it will

automatically enter the CT/meter self-test state. At this time, the inverter will temporarily disconnect from the grid and then automatically reconnect.

**Step 8 :** Select the battery based on actual situation whether it is **First Installation, Routine Operation or Replacement Installation.**

Working Mode

⑪  Self-use Mode

Backup Mode

TOU Mode

Off-grid Mode

Capacity Demand Management

Peak Shaving

Delayed Charging

Priority of Working Mode:  
Off-grid Mode>Peak Shaving>Delayed Charging>TOU Mode>Backup Mode>Self-use Mode

Exit PREV ⑫ Next

Backup Mode

Charging Power From Grid

ON: Photovoltaic prioritizes charging the battery. If the photovoltaic power is insufficient for charging, electricity will be purchased from the grid for charging. Nighttime charging is not supported.

Charging Power 0.0 0.0  
Range[0,100]%

Peak power of buying electricity for charging, percentage of inverter power

TOU Mode

Time Add up to 8 sets of time

23:59-01:01

Month-Repeat Every Month

Week-Repeat Every day

Charge Or Discharge Mode Battery Discharge

Battery Discharge Power 45.0%

Start Time End Time

21 57 21 57  
22 58 22 58  
23 59 23 59  
00 00 00 00  
01 01 01 01  
02 02 02 02  
03 03 03 03

Repetition (Requires both monthly and weekly repetition to take effect)

Month-Repeat None

Week-Repeat None

Charging/Discharge Mode

Battery Charging  Discharge

Battery Discharge Power 0.0 0.0  
Range[0,100]%

Delayed Charging

Peak Power Sales Limit 0 0  
Range[0,1000]%

PV Prioritizes Charging Battery

ON: PV power generation changes from selling electricity to charging batteries

Start Charging Time Suggest setting a time point with strong sunlight exposure

None

Peak Shaving

Reserved SOC for Peak Shaving 0 0  
Range[0,100]%

Peak Power Purchase Limit 0.00 0.00  
Range[0,655]kW

Time For Charging From Grid 00:00-00:00

Quick Settings

Quick Setting Is Complete!

⑬ Complete

First Installation

Routine Operation

Replacement Installation

⑭ OK

SLG00CON0060

No.	Parameters	Description
Back-up mode		
1	Charging Power From Grid	Enable Charging Power From Grid to allow power purchasing from the utility grid.
2	Charging Power	The percentage of the purchasing power to the rated power of the inverter.
TOU mode		
3	Start Time	Within the Start Time and End Time, the battery is charged or discharged according to the set Battery Mode as well as the Rated Power.
4	End Time	
5	Charge Discharge Mode	Charge or discharge according to actual needs.
6	Rated Power	The percentage of the charging/discharging power to the rated power of the inverter.
7	Charge Cut-off SOC	The battery stop charging/discharging once the battery SOC reaches Charge Cut-off SOC.
Peakshaving		
8	Reserved SOC For Peakshaving	In Peak Shaving mode, the battery SOC should be lower than Reserved SOC For Peakshaving. Once the battery SOC is higher than Reserved SOC For Peakshaving, the peak shaving mode fails.
9	Peak Power Purchase Limit	Set the maximum power limit allowed to purchase from the grid. When the loads consume power exceed the sum of the power generated in the PV system and Peak Power Purchase Limit, the excess power will be made up by the battery.
10	Time for Charging From Grid	The utility grid will charge the battery between Start Time and End Time if the load power consumption do not exceed the power quota. Otherwise, only PV power can be used to charge the battery. Otherwise, only PV power can be used to charge the battery.

No.	Parameters	Description
Smart charging		
11	Peak Power Sales Limit	Set the Peak Power Sales Limit in compliance with local laws and regulations. The Peak Limiting Power shall be lower than the output power limit specified by local requirements.
12	PV Prioritizes Charging Battery	During charging time, the PV power will first charge the battery.
13	Start Charging Time	

## 7.4 Creating a Station

**Step 1:** Tap  on overview or station page, or tap **Create Station** on service page.

**Step 2:** Enter station information on the **Create Station** page.

**Step 3:** Tap **Save&Exit** to complete creating a station, without devices added. Or tap **Save&Continue** to add devices. Support adding multiple devices.

今日发电量  
9.50 kWh

本月  
1.46 MW

总装机容量  
18.51 MWp

73 电站

1 1 0 72 0

发电量排名

今日发电量  
9.50 kWh

1 1 0 72 0

2 2 1 1 0 72 0

3 3 1 1 0 72 0

4 4 1 1 0 72 0

5 5 1 1 0 72 0

6 6 1 1 0 72 0

7 7 1 1 0 72 0

电站名称: G\_250818\_000001

电站地址: Huai'an, Jiangsu, China

电站时区: (UTC+08:00) Asia/Shanghai

电站详细地址: 请输入你的详细地址

电站分类: 请选择光伏电站的类型

币种: GBP

光伏电站配置

保存并连接  
保存并退出

已完成

# 8 System Commissioning

## 8.1 SolarGo APP

### 8.1.1 SolarGo APP Introduction

SolarGo App is a mobile application software that can communicate with inverters via Bluetooth module or WiFi module. The following are common functions of SolarGo:

1. View the device's operating data, software version, alarm information, etc.
2. Set the device's grid parameters, communication parameters, safety regulation regions, anti-reverse flow, etc.
3. Maintain the device.
4. Upgrade the device software version.

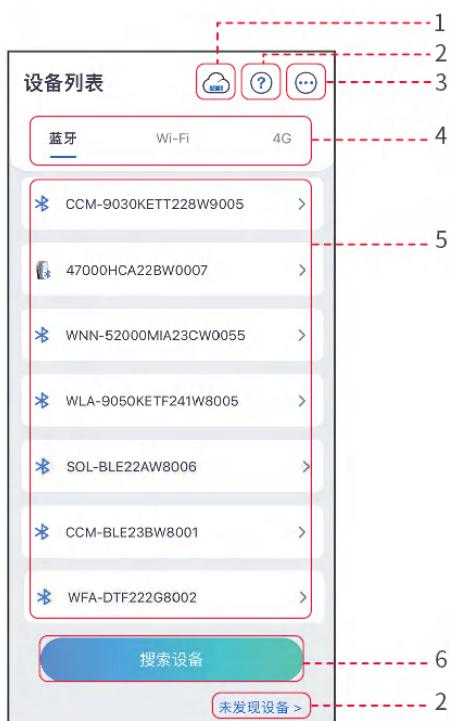
#### App Interface Structure



ET10010CON0002

Presented with **xmind**

## SolarGo App Login Interface Introduction

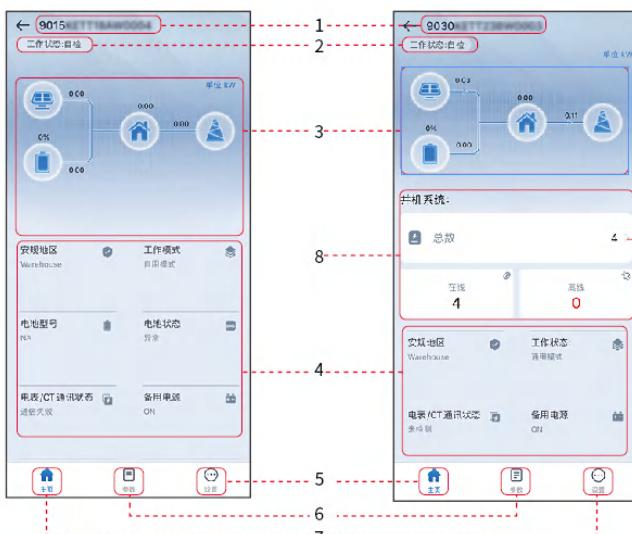


No.	Name/Icon	Description
1		Click the icon to jump to the Xiaogu Cloud Window download page.
2	No Device Found	View the device connection guide.

No.	Name/Icon	Description
3		<ul style="list-style-type: none"> <li>View information, such as app version, contact details.</li> <li>Other settings, such as updating data, switching language, setting display temperature unit, etc.</li> </ul>
4	Bluetooth/WiFi/4G	Select based on the device's actual communication method. If in doubt, please click or No Device Found to view more detailed guidance.
5	Device List	<ul style="list-style-type: none"> <li>Displays the list of connectable devices. The device name corresponds to the device serial number; please select the corresponding device based on the serial number.</li> <li>When multiple inverters form a parallel system, select the corresponding device based on the master inverter's serial number.</li> <li>When device models or communication module models differ, the displayed device names will vary.</li> </ul>
6	Search Device	When the corresponding device is not found in the device list, click Search Device.

## SolarGo App Main Interface Introduction

### Single Inverter



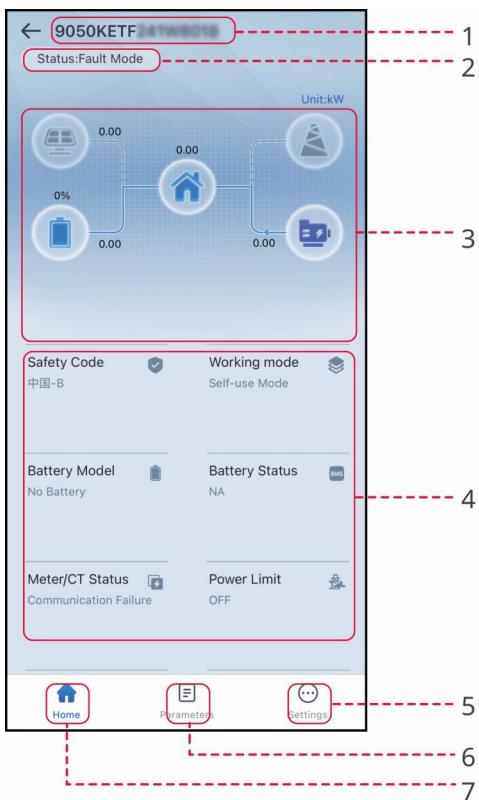
### Multiple Inverters



No.	Name/Icon	Description
1	Device Serial Number	Displays the serial number of the connected device or the main inverter in a parallel system.
2	Device Status	Displays the inverter status, such as Running, Fault, etc.
3	Energy Flow Diagram	Displays the energy flow diagram of the PV system. The actual interface display may vary.
4	System Operation Status	Displays the current system operation status, such as Safety Region, Operation Mode, Battery Model, Battery Status, Power Limit, Three-Phase Imbalance, etc.
5	 Home	Home page interface. Click to view information such as device serial number, operation status, and system operation status.
6		Parameter query interface, supporting query of system operation parameters.
7		Parameter setting interface. Login is required to enter the Quick Setup and Advanced Setup interfaces. Default password: goodwe2010 or 1111.
8	Parallel System	Click on the total number to view all inverter serial numbers. Click on an inverter serial number to enter the single-unit setting interface for that inverter.

### 8.1.2 Connecting the Hybrid Inverter

### 8.1.3 GUI Introductions to Hybrid Inverters



No.	Name/Icon	Description
1	Serial Number	Serial number of the connected inverter.
2	Device Status	Indicates the status of the inverter, such as Working, Fault, etc.
3	Energy Flow Chart	Indicates the energy flow chart of the PV system. The actual page prevails.
4	System Status	Indicates the system status, such as Safety Code, Working Mode, Battery Model, Battery Status, Power Limit, Three-Phase Unbalanced Output, etc..
5		Home. Tap Home to check Serial Number, Device Status, Energy Flow Chart, System Status, etc.
6		Parameters. Tap Parameters to check the inverter Data.

No.	Name/Icon	Description
7		<ul style="list-style-type: none"> <li>Settings Tap to perform quick settings, basic settings, advanced settings, etc. on the inverter.</li> <li>Login required to access Quick Setup and Advanced Setting. Contact the supplier or after sales service for password. Password for professional technicians only.</li> </ul>

## 8.1.4 Setting Communication Parameters

### NOTICE

The communication configuration interface may be different if the inverter uses different communication modes or connects different communication modules. Please refer to the actual interface.

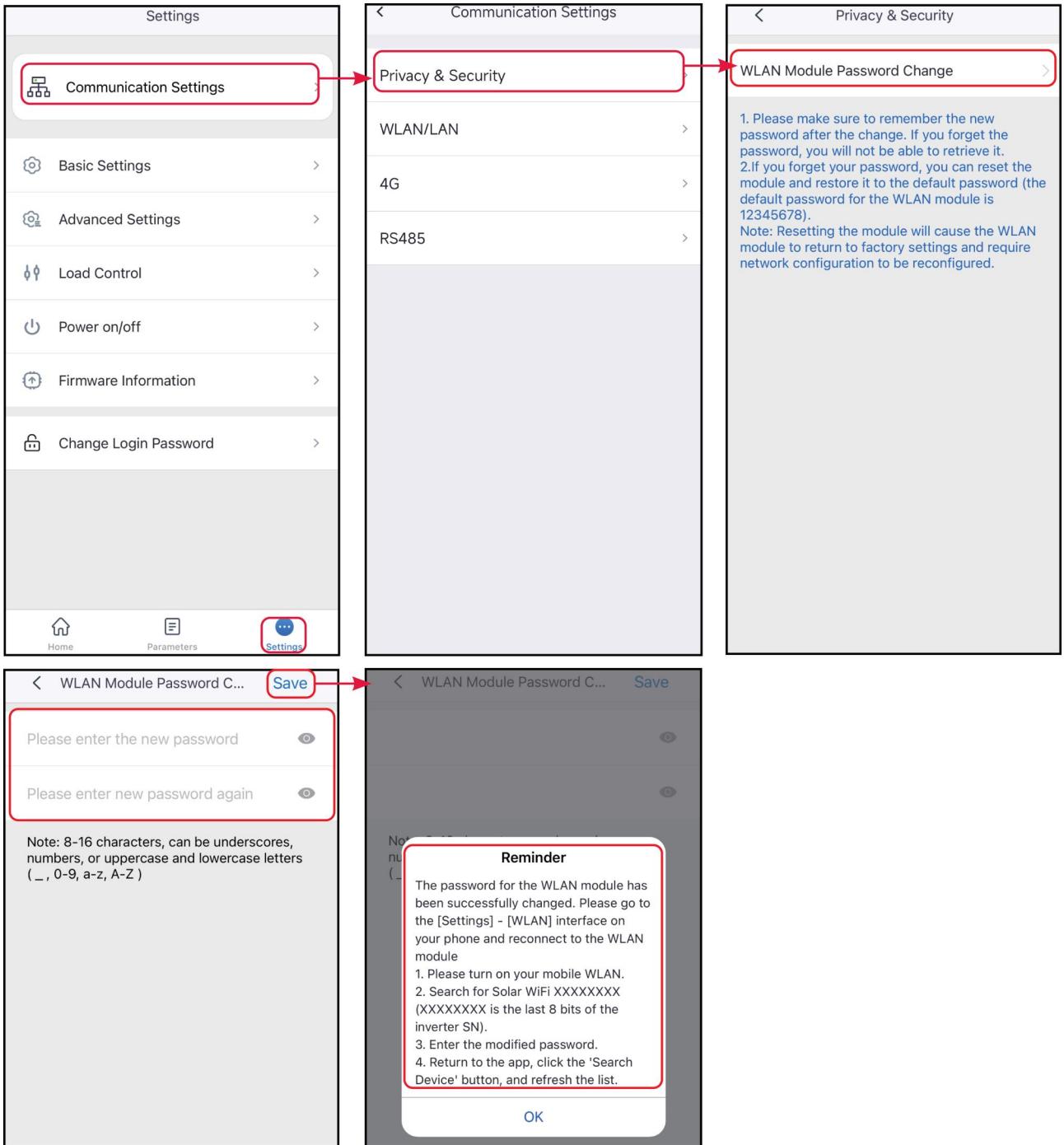
### 8.1.4.1 Setting Privacy and Security Parameters

#### Type I

**Step 1** : Tap **Home > Settings > Communication Setting > Privacy & Security** to set the parameters.

**Step 2** : Set the new password for the WiFi hotspot of the communication module, and tap **Save**.

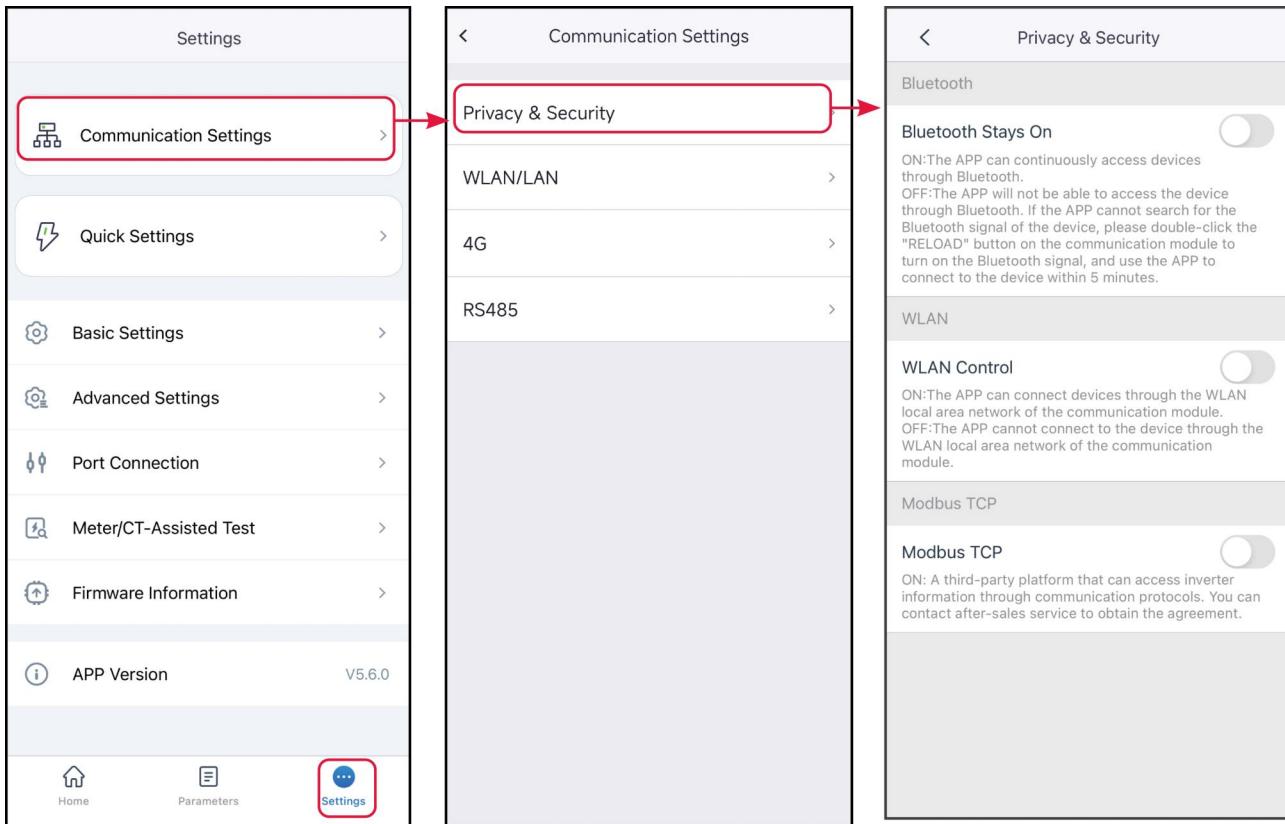
**Step 3** Open the WiFi settings of your phone and connect to the inverter's WiFi signal (Solar WiFi\*\*\*) with the new password.



## Type II

**Step 1** : Tap Home > Settings > Communication Setting > Privacy & Security to set the parameters.

**Step 2** Enable Bluetooth Stays On or WLAN Control based on actual needs.



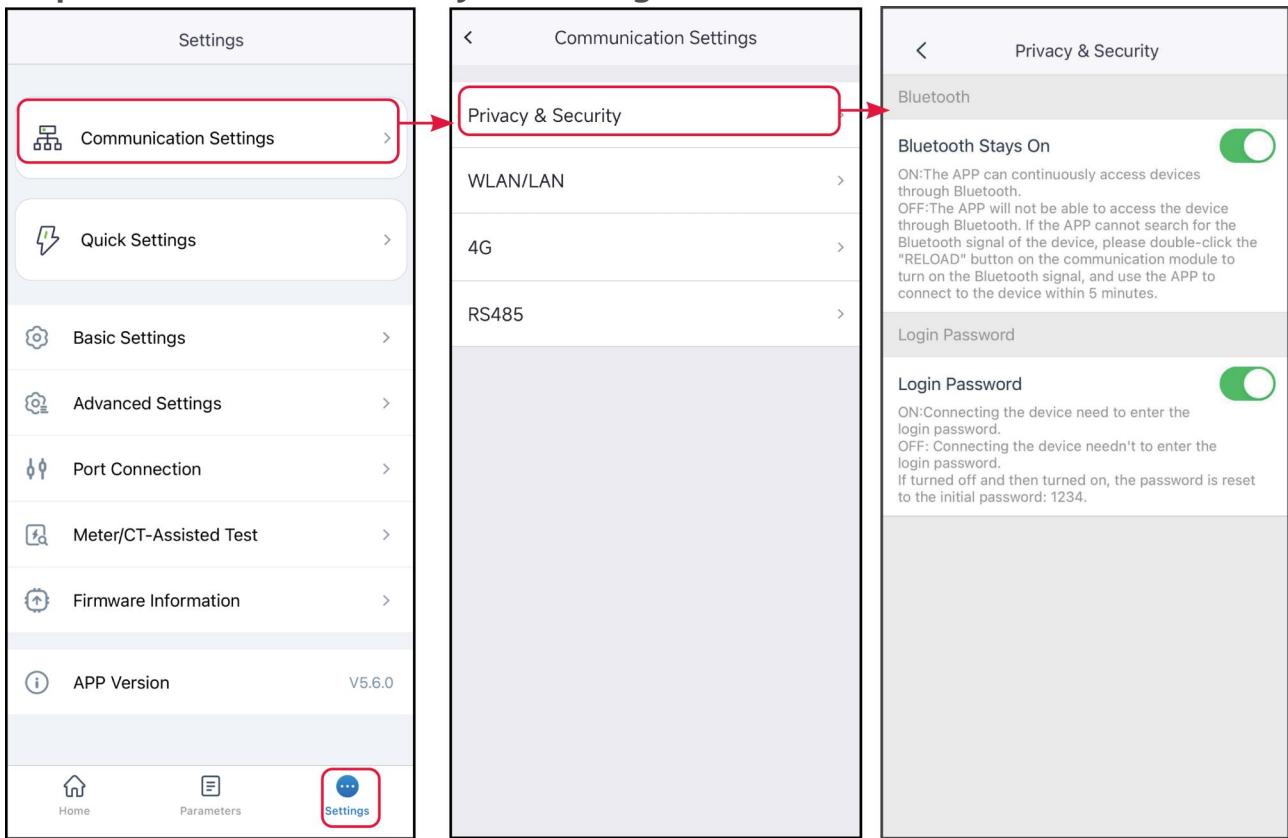
No.	Parameters	Description
1	Bluetooth Stays On	Disabled by default. Enable the function, the bluetooth of the device will be contentious on to keep connected to SolarGo. Otherwise, the bluetooth will be off in 5 minutes, and the device will be disconnected from SolarGo.
2	WLAN Control	Disabled by default. Enable the function, the device and the SolarGo can be connected through the WLAN when they are on the same LAN. Otherwise, they cannot be connected even if they are on the same LAN.
3	Modbus-TCP	Enable the function, the third party monitoring platform can access inverter through Modbus-TCP communication protocol.
4	SSH control Ezlink	After enabling this function, third-party platforms can connect to and control EzLink's Linux system.

### Type III

**Step 1 : Tap Home > Settings > Communication Setting > Privacy & Security to set**

the parameters.

## Step 2 : Enable **Bluetooth Stays On** or **Login Password** based on actual needs.



No.	Parameters	Description
1	Bluetooth Stays On	Disabled by default. Enable the function, the bluetooth of the device will be contentious on to keep connected to SolarGo. Otherwise, the bluetooth will be off in 5 minutes, and the device will be disconnected from SolarGo.
2	Password	Disabled by default. Enable the function, you will be prompted to enter the login password when connecting the device to SolarGo. Use the initial password and change it at the first login prompt.

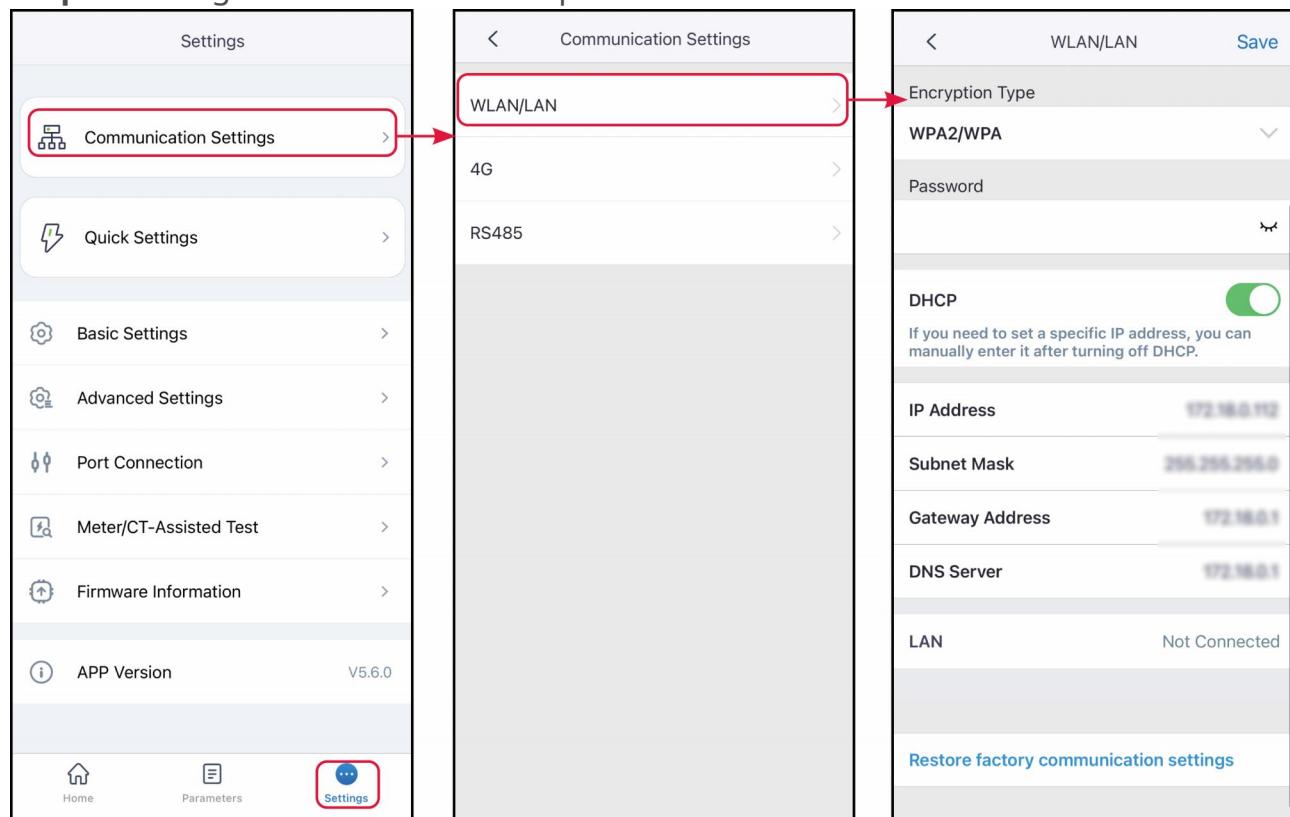
### 8.1.4.2 Setting WLAN/LAN Parameters

## NOTICE

When the inverter is connected to different communication modules, the communication configuration interface may be different. Please refer to the actual interface.

**Step 1** : Tap Home > Settings > Communication Setting > WLAN/LAN to set the parameters.

**Step 2** : Configure the WLAN or LAN parameters based on actual needs.



No.	Parameters	Description
1	Network Name	Only for WLAN. Select WiFi based on the actual connecting.
2	Password	Only for WLAN. WiFi password for the actual connected network.
3	DHCP	Enable DHCP when the router is in dynamic IP mode. Disable DHCP when a switch is used or the router is in static IP mode.

No.	Parameters	Description
4	IP Address	Do not configure the parameters when DHCP is enabled.
5	Subnet Mask	
6	Gateway Address	Configure the parameters according to the router or switch information when DHCP is disabled.
7	DNS Server	

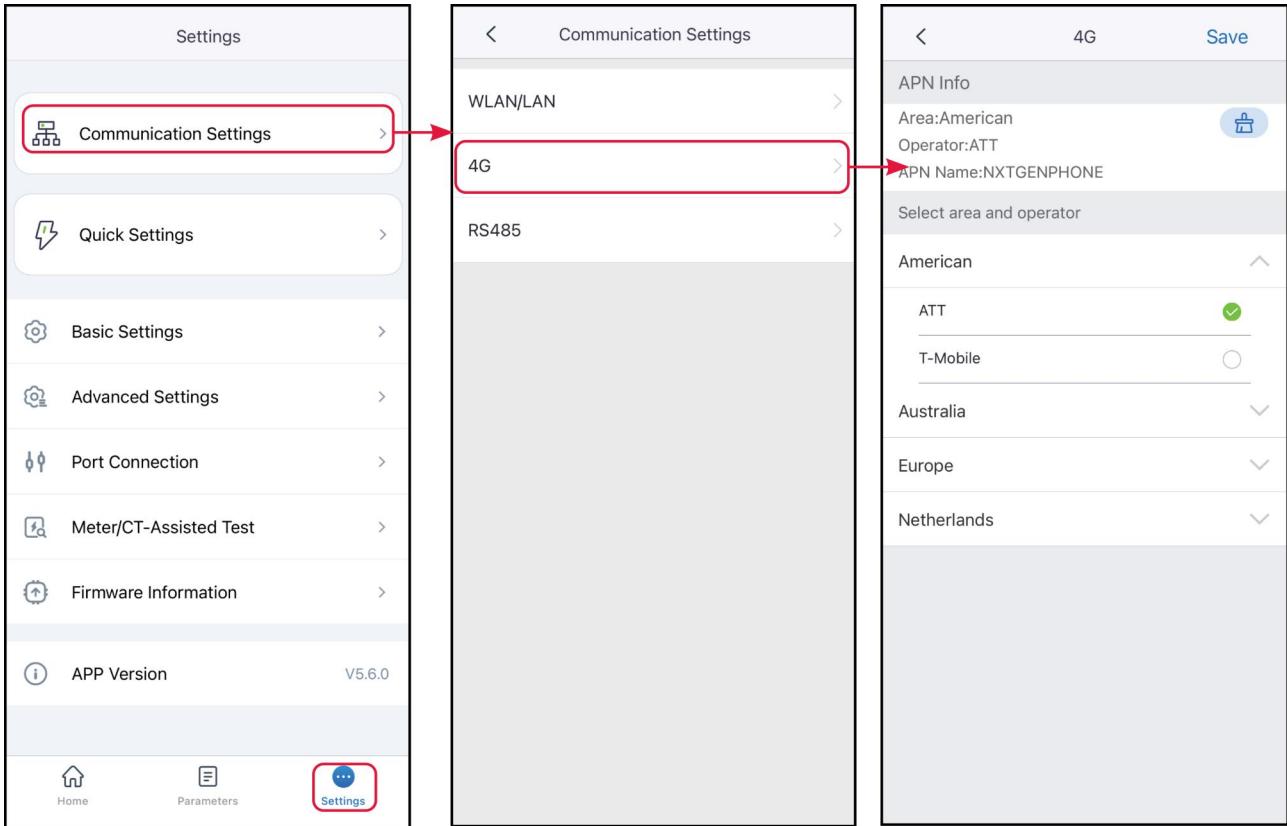
#### 8.1.4.3 Configuring APN Parameters

##### NOTICE

- Configure the SIM card information of 4G communication device.
- If the 4G module does not offer bluetooth signal, please configure the APN parameters through the Bluetooth module or WiFi module first to achieve 4G communication.

**Step 1:** Tap **Home > Settings > Communication Settings > 4G** to set the parameters.

**Step 2:** Set the region and operator based on actual needs.



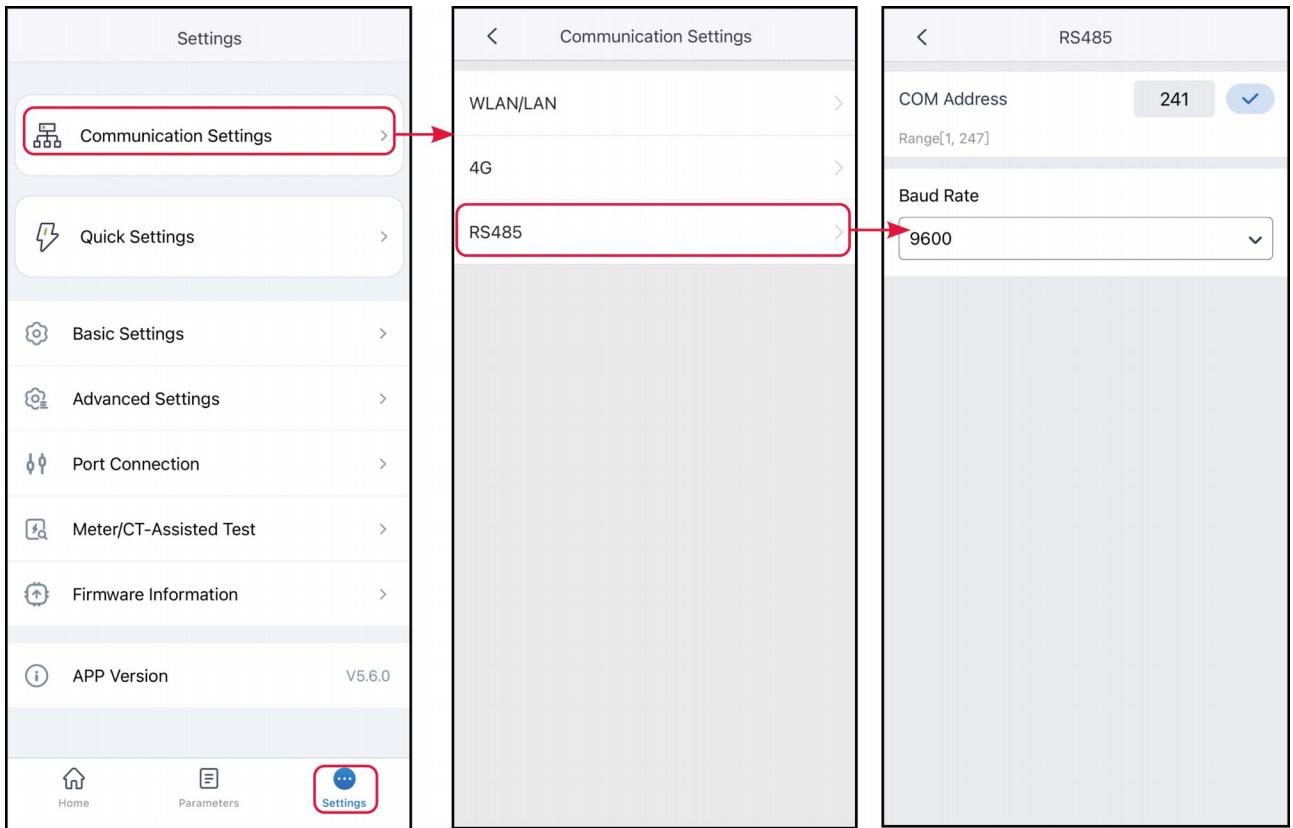
#### 8.1.4.4 Configuring RS485 Parameters

##### NOTICE

Set the communication address of the inverter. For a single inverter, the address is set based on actual needs. For multi connected inverters, the address of each inverter should be different while cannot be 247.

**Step 1:** Tap Home > Settings > Communication Settings > RS485 to set the parameters.

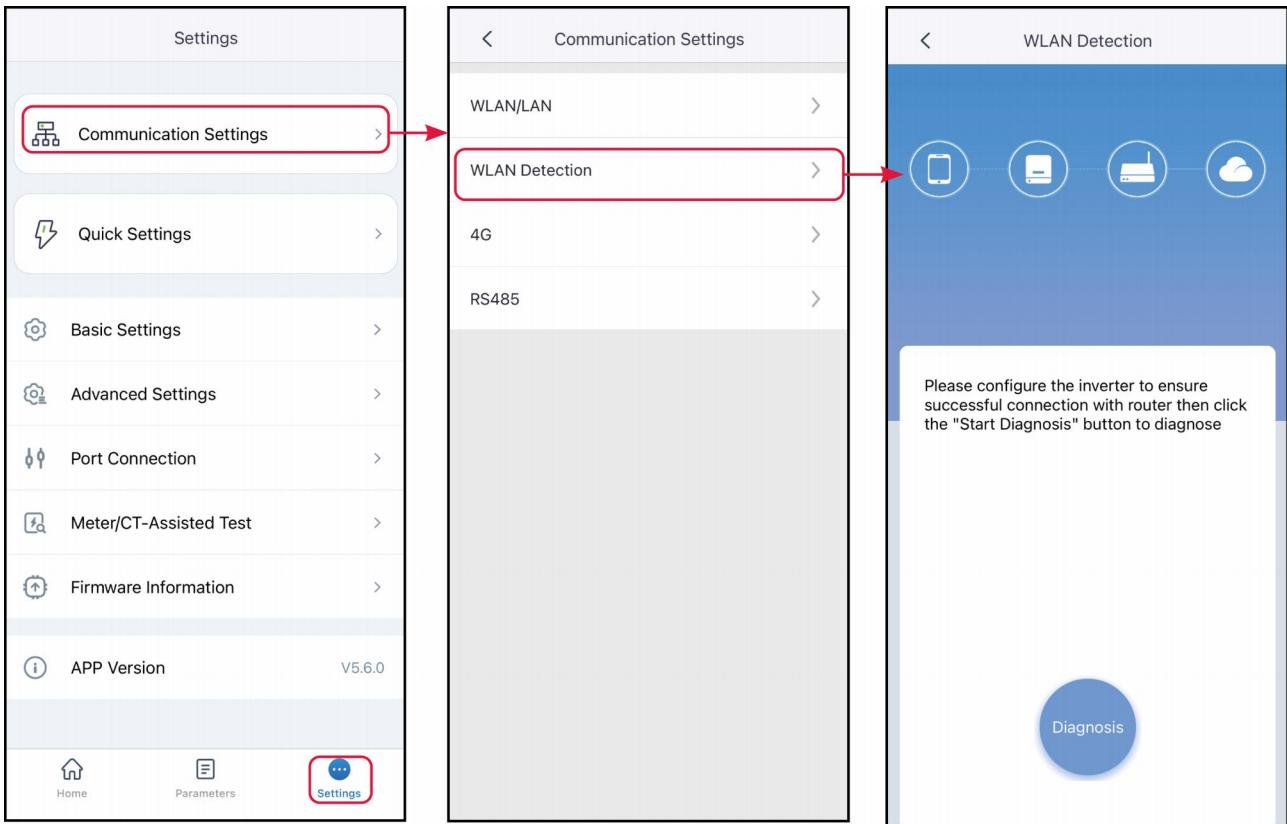
**Step 2 :** Set the Modbus Address And Baud Rate base on actual situation.



#### 8.1.4.5 WLAN Detection

**Step 1 :** Tap Home > Settings > Communication Settings > WLAN Detection..

**Step 2 :** Tap Diagnosis to check the network connection status.



### 8.1.5 Setting the Wiring Method

#### NOTICE

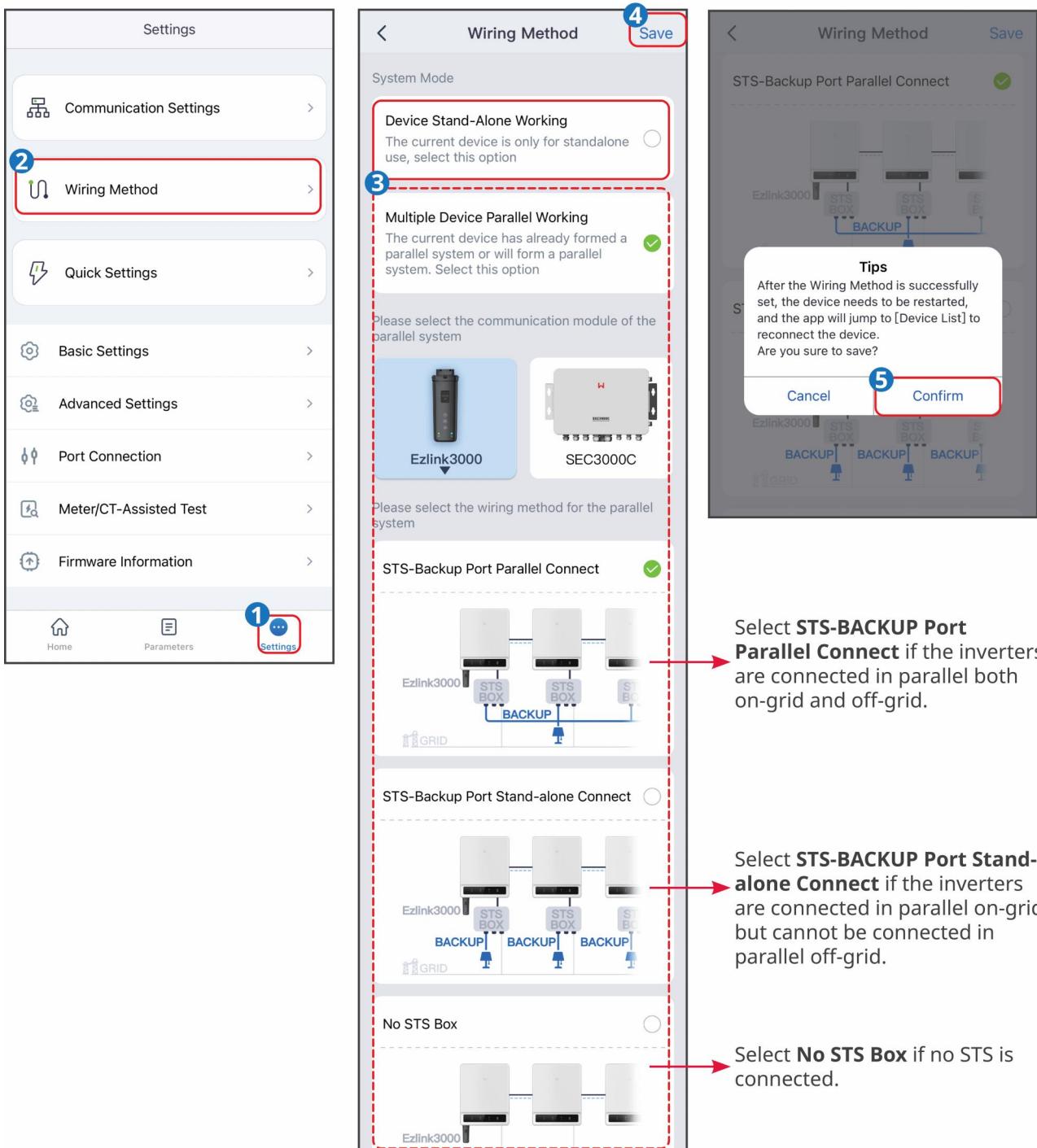
- Only for ET40-50kW series inverters.
- Do not set the Wiring Method if the inverter is installed for the first time and only one inverter is applied.

**Step 1 : Tap Home > Settings > Wiring Method.**

**Step 2 : If the system is a single inverter system, select **Device Stand-Alone Working**. If the system is a parallel system with multiple inverters, select **Multiple Device Parallel Working**, and set the specific wiring method based on actual needs.**

- When the system is both on-grid and off-grid, select **the STS-BACKUP Port Parallel Connect**.
- When the system is a grid-connected parallel system or an off-grid non-parallel system, select **the STS-BACKUP Port Stand-alone Connect**.
- When STS is not connected to the system, select **No STS Box**.

**Step 3** : Tap **Save** to complete the settings, and click **OK** in the pop-up window to restart the device.



## 8.1.6 Quick Setting the Basic Information

## NOTICE

- The setting page varies depending on inverter model.
- The parameters will be configured automatically after selecting the safety country/region, including overvoltage protection, undervoltage protection, overfrequency protection, underfrequency protection, voltage/frequency connection protection,  $\cos\phi$  curve, Q(U) curve, P(U) curve, FP curve, HVRT, LVRT, etc. Tap Home > Settings > Advanced Settings > Safety Parameters to check the parameters after selecting the safety country.
- The power generation efficiency is different in different working modes. Set the working mode according to the local requirements and situation.
  - Self-use mode: The basic working mode of the system. PV power generation is used to supply power to the load first, the excess power is used to charge the battery, and the remaining power is sold to the grid. When PV power generation cannot meet the load's power demand, the battery will supply power to the load; when the battery power also cannot meet the load's power demand, the grid will supply power to the load.
  - Back-up mode: The back-up mode is mainly applied to the scenario where the grid is unstable. When the grid is disconnected, the inverter turns to off-grid mode and the battery will supply power to the load; when the grid is restored, the inverter switches to grid-tied mode.
  - Economic mode: It is recommended to use economic mode in scenarios when the peak-valley electricity price varies a lot. Select Economic mode only when it meets the local laws and regulations. Set the battery to charge mode during Vally period to charge battery with grid power. And set the battery to discharge mode during Peak period to power the load with the battery.
  - Off-grid mode: suitable for areas without power grid. PV and batteries form a pure off-grid system. PV generates electricity to power the load and excess electricity charges the battery. When PV power generation cannot meet the power demand of the load, the battery will supply power to the load.
  - Smart charging: In some countries/regions, the PV power feed into the utility grid is limited. Select Smart Charging to charge the battery using the surplus power to minimize PV power waste.
  - Peak shaving mode: Peak shaving mode is mainly applicable to peak power limited scenarios. When the total power consumption of the load exceeds the power consumption quota in a short period of time, battery discharge can be used to reduce the power exceeding the quota.

### 8.1.6.1 Quick Setting the Basic Information(Type II)

**Step 1:** Tap **Home** > **Settings** > **Quick Settings** to set the parameters.

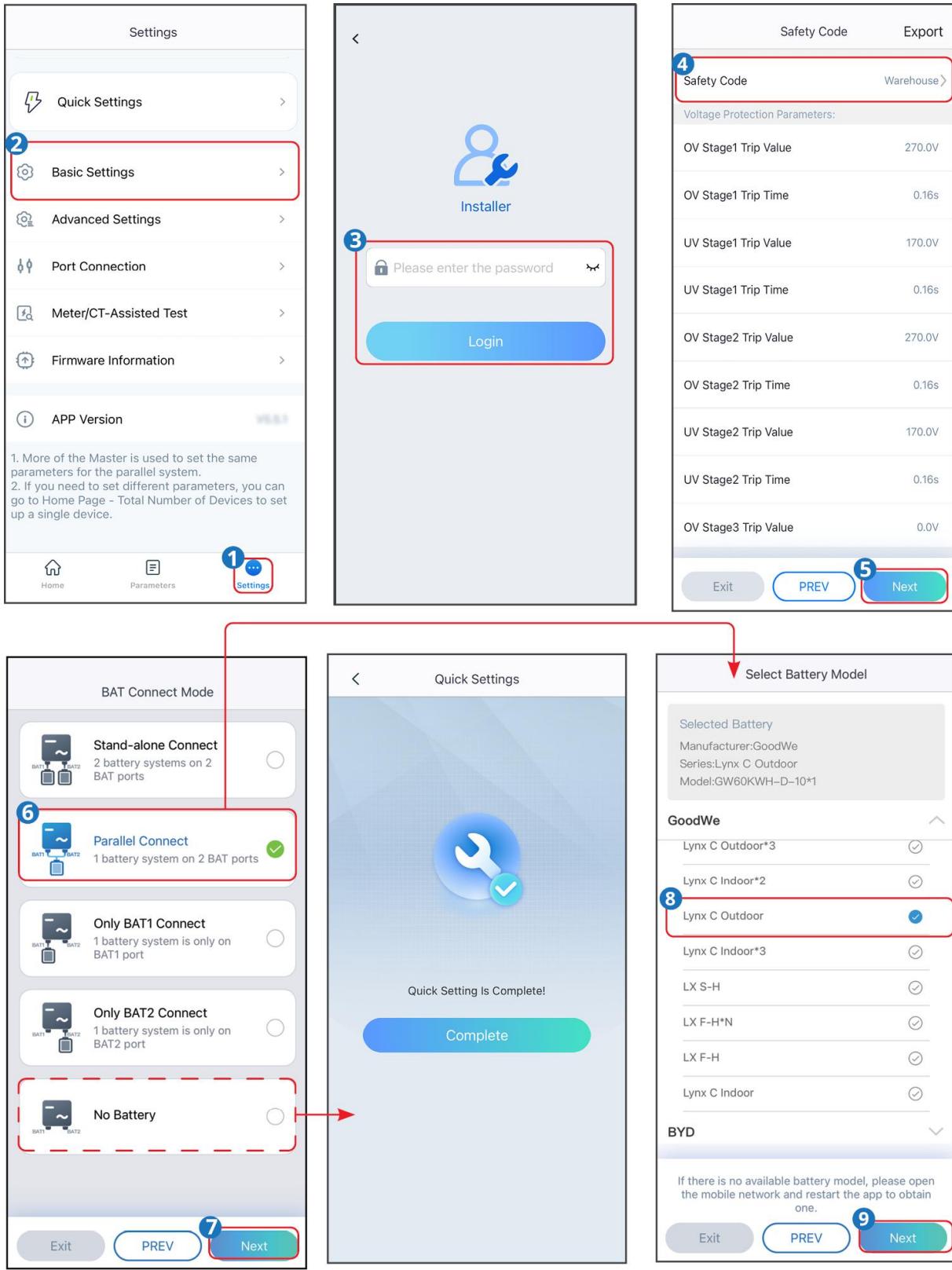
**Step 2 :** Enter the password for quick settings. Contact the supplier or after sales service for password. Password for professional technicians only.

**Step 3 :** Some models support one-click configuration. Select **Guided Mode** to quickly configure the system.

**Step 4:** Select safety country accordingly. Tap **Next** to set the Battery Connect Mode.

**Step 5 :** Select the actual mode in which the battery is connected to the inverter. The basic settings are completed if there is no battery connected in the system. Tap **Next** to set the Battery Model if there is any battery connected in the system.

**Step 6:** Select the actual battery model. Tap **Next** to set the Working Mode.



**Step 7:** Set the working mode based on actual needs. Tap **Next** to set the Working Mode. For some models, after the working mode configuration is completed, it will

automatically enter the CT/meter self-test state. At this time, the inverter will temporarily disconnect from the grid and then automatically reconnect.

**Step 8** : Select the battery based on actual situation whether it is **First Installation, Routine Operation or Replacement Installation**.

Working Mode

⑪  Self-use Mode

Backup Mode

TOU Mode

Off-grid Mode

Capacity Demand Management

Peak Shaving

Delayed Charging

Priority of Working Mode:  
Off-grid Mode>Peak Shaving>Delayed Charging>TOU Mode>Backup Mode>Self-use Mode

Exit PREV ⑫ Next

Backup Mode

Charging Power From Grid

ON: Photovoltaic prioritizes charging the battery. If the photovoltaic power is insufficient for charging, electricity will be purchased from the grid for charging. Nighttime charging is not supported.

Charging Power 0.0 0.0  
Range[0,100]%

Peak power of buying electricity for charging, percentage of inverter power

TOU Mode

Time Add up to 8 sets of time

23:59-01:01

Month-Repeat Every Month

Week-Repeat Every day

Charge Or Discharge Mode Battery Discharge

Battery Discharge Power 45.0%

Start Time End Time

21 57 21 57  
22 58 22 58  
23 59 23 59  
00 00 00 00  
01 01 01 01  
02 02 02 02  
03 03 03 03

Repetition (Requires both monthly and weekly repetition to take effect)

Month-Repeat None

Week-Repeat None

Charging/Discharge Mode

Battery Charging  Discharge

Battery Discharge Power 0.0 0.0  
Range[0,100]%

Delayed Charging

Peak Power Sales Limit 0 0  
Range[0,1000]%

PV Prioritizes Charging Battery

ON: PV power generation changes from selling electricity to charging batteries

Start Charging Time Suggest setting a time point with strong sunlight exposure

None

Peak Shaving

Reserved SOC for Peak Shaving 0 0  
Range[0,100]%

Peak Power Purchase Limit 0.00 0.00  
Range[0,655]kW

Time For Charging From Grid 00:00-00:00

Quick Settings

Quick Setting Is Complete!

⑬ Complete

First Installation

Routine Operation

Replacement Installation

⑭ OK

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No.	Parameters	Description
Back-up mode		
1	Charging Power From Grid	Enable Charging Power From Grid to allow power purchasing from the utility grid.
2	Charging Power	The percentage of the purchasing power to the rated power of the inverter.
TOU mode		
3	Start Time	Within the Start Time and End Time, the battery is charged or discharged according to the set Battery Mode as well as the Rated Power.
4	End Time	
5	Charge Discharge Mode	Charge or discharge according to actual needs.
6	Rated Power	The percentage of the charging/discharging power to the rated power of the inverter.
7	Charge Cut-off SOC	The battery stop charging/discharging once the battery SOC reaches Charge Cut-off SOC.
Peakshaving		
8	Reserved SOC For Peakshaving	In Peak Shaving mode, the battery SOC should be lower than Reserved SOC For Peakshaving. Once the battery SOC is higher than Reserved SOC For Peakshaving, the peak shaving mode fails.
9	Peak Power Purchase Limit	Set the maximum power limit allowed to purchase from the grid. When the loads consume power exceed the sum of the power generated in the PV system and Peak Power Purchase Limit, the excess power will be made up by the battery.
10	Time for Charging From Grid	The utility grid will charge the battery between Start Time and End Time if the load power consumption do not exceed the power quota. Otherwise, only PV power can be used to charge the battery. Otherwise, only PV power can be used to charge the battery.

No.	Parameters	Description
Smart charging		
11	Peak Power Sales Limit	Set the Peak Power Sales Limit in compliance with local laws and regulations. The Peak Limiting Power shall be lower than the output power limit specified by local requirements.
12	PV Prioritizes Charging Battery	During charging time, the PV power will first charge the battery.
13	Start Charging Time	

### 8.1.7 Setting the Basic Information

Setting the Basic Information

#### Shadow Scanning Function

**Step 1:** Via the APP, go to **Home > Settings > Basic Settings** to enter the settings page.

**Step 2:** Configure the function according to actual needs.

No.	Parameter Name	Description
1	shadow scan	When photovoltaic panels are severely shaded, enabling the shadow scan function can optimize the inverter's power generation efficiency.

#### SPD Secondary Lightning Protection Alarm

**Step 1:** Via the APP, go to **Home > Settings > Basic Settings** to enter the settings page.

**Step 2:** Configure the function according to actual needs.

No.	Parameter Name	Description
-----	----------------	-------------

1	SPD Secondary Lightning Protection Alarm	After enabling the SPD secondary lightning protection alarm function, an alarm will be triggered to indicate an abnormality when the lightning protection module malfunctions.
---	--	--

## Backup Power Function

After enabling the backup power function, when the grid power fails, loads connected to the inverter's BACKUP port can be powered by the battery, ensuring uninterrupted power supply to the loads.

**Step 1:** Via the APP, go to **Home > Settings > Basic Settings** to enter the settings page.

**Step 2:** Configure the function according to actual needs.

No.	Parameter Name	Description
1	UPS Mode - Full Wave Detection	Detects whether the grid voltage is too high or too low.
2	UPS Mode - Half Wave Detection	Detects whether the grid voltage is too low.
3	EPS Mode - Supports Low Voltage Ride-Through	Turns off the grid voltage detection function.
4	Clear Overload Fault	When the load power connected to the inverter's BACK-UP port exceeds the rated load power, the inverter will restart and detect the load power again. If not handled in time, the inverter will restart multiple times and perform load detection, with the interval between each restart increasing. After the load power on the BACK-UP port is reduced to within the rated power range, you can click this switch to clear the inverter restart interval, and the inverter will restart immediately.

## Setting Advanced Parameters

### AFCI Detection

**Step 1:** Via the APP, go to **Home > Settings > Advanced Settings** to enter the parameter settings page.

**Step 2:** Set the parameters according to actual requirements. After entering the parameter value, click "v" or "Save" to successfully set the parameter.

No.	Parameter Name	Description	
1	AFCI Detection	AFCI Detection	Please enable or disable the inverter's arc fault function as needed.
		AFCI Detection Status	Displays the detection status, such as not detected, detection failed, etc.
		Clear AFCI Fault Alarm	Clear arc fault alarm records.
		Self-test	Click Settings to check if the device's arc fault module is functioning properly.

## PV Connection Mode

**Step 1:** Via the APP, go to **Home > Settings > Advanced Settings** to enter the parameter settings page.

**Step 2:** Set the parameters according to actual requirements. After entering the parameter value, click "V" or "Save" to successfully set the parameter.

No.	Parameter Name	Description	
1	PV Connection Mode	Independent Connection	Each PV string is connected one-to-one to an MPPT port on the inverter side.
		Partial Parallel Connection	When one PV string is connected to multiple MPPT ports on the inverter side, other PV modules are simultaneously connected to other MPPT ports on the inverter side.
		Parallel Connection	When external PV strings are connected to the PV input ports on the inverter side, one PV string is connected to multiple PV input ports.

## Setting Export power limit

**Step 1:** Via **Home > Settings > Advanced Settings > Export power limit**, enter the parameter settings page.

**Step 2:** Turn the Export power limit function on or off according to actual requirements.

**Step 3:** After enabling the anti-reverse power flow function, input the parameter value as needed, click "V" to successfully set the parameter.

No.	Parameter Name	Description
-----	----------------	-------------

1	Export power limit	Enable this function when output power needs to be limited according to grid standards in certain countries or regions.
2	Power Limit	Set according to the actual maximum power that can be fed into the grid.
3	External Meter CT Ratio	Set as the ratio of the primary side current to the secondary side current of the external CT.

## Setting Battery Parameters

### Setting Lithium Battery Parameters

**Step 1:** Via Home > Settings > Advanced Settings > Battery Function Settings, enter the parameter settings interface.

**Step 2:** After entering the parameter value according to actual needs, click "v" to successfully set the parameter.

No.	Parameter Name	Description
1	Maximum Charging Current	Set the maximum charging current for the battery based on actual requirements.
2	Maximum Discharging Current	Set the maximum discharging current for the battery based on actual requirements.
3	SOC Protection	When enabled, if the battery capacity falls below the set discharge depth, the battery protection function can be activated.
4	Grid-connected Discharge Depth	The maximum percentage of the battery's allowable discharge amount relative to its capacity when the inverter is grid-connected or off-grid.
5	Off-grid Discharge Depth	
6	Backup SOC Maintenance	To ensure the battery SOC is sufficient to maintain normal system operation when off-grid, the system will charge the battery to the set SOC protection value via the grid or PV when operating grid-connected.
7	Immediate Charging	When enabled, the battery is charged immediately from the grid. Takes effect only once. Please enable or stop based on actual needs.
8	Stop SOC	When Immediate Charging is enabled, battery charging will stop when the battery SOC reaches the charging cutoff SOC.

9	Immediate Charging Power	<p>When Immediate Charging is enabled, this is the percentage of charging power relative to the inverter's rated power.</p> <p>For example, for an inverter with a rated power of 10kW, setting this to 60 results in a charging power of 6kW.</p>
10	Battery Heating	<p>Optional. This option appears on the interface when a battery supporting heating function is connected. After enabling the battery heating function, when the battery temperature does not support battery startup, PV generation or purchased electricity will be used to heat the battery.</p> <p>Heating Mode:</p> <ul style="list-style-type: none"> <li>• Economic Mode: Maintains the battery's minimum power input capability. Turns on when temperature is below 5°C, and turns off when temperature is greater than or equal to 7°C.</li> <li>• Standard Mode: Maintains the battery's moderate power input capability. Turns on when temperature is below 10°C, and turns off when temperature is greater than or equal to 12°C.</li> <li>• Efficient Mode: Maintains the battery's higher power input capability. Turns on when temperature is below 20°C, and turns off when temperature is greater than or equal to 22°C.</li> </ul> <p>This function can only be configured via the App.</p>
11	Battery Wake-up	<p>When enabled, the battery can be woken up after it shuts down due to undervoltage protection.</p> <p>Only applicable to lithium batteries without circuit breakers. After enabling, the output voltage at the battery port is around 60V.</p>

## Setting Lead-Acid Battery Parameters

### NOTICE

1. Before setting lead-acid battery parameters, read the lead-acid battery user manual, technical specifications, and other related materials. To ensure battery safety, strictly follow the battery manufacturer's documentation to set the battery parameters. Risks arising from not doing so are not within the responsibility scope of the inverter manufacturer.
2. The lead-acid battery voltage range must match the inverter. The inverter recommends connecting lead-acid batteries with a voltage  $\leq 60V$ ; otherwise, the inverter may not function properly.
3. The SOC of the lead-acid battery is calculated by the inverter's BMS and is not the actual battery charge level. Errors or SOC jumps may occur. During use, SOC should only be used as a reference for battery charge level. Performing SOC calibration after the battery is fully charged can improve the accuracy of the SOC value.

**Step 1:** Via **Home > Settings > Advanced Settings > Battery Function**, enter the parameter settings interface.

**Step 2:** After entering the parameter value according to actual needs, click "v" to successfully set the parameter.

No.	Parameter Name	Description
1	Battery Capacity	Please set according to the battery technical specifications.
2	Float Charging Voltage	When the battery is nearly full, it will switch to float charging mode. This value is the upper limit of the charging voltage in this mode. Please set according to the battery technical specifications.
3	Constant Charging Voltage	The default battery charging mode is constant charging. This value is the upper limit of the charging voltage in this mode. Please set according to the battery technical specifications.
4	Minimum Discharge Voltage	Please set according to the battery technical specifications. To protect battery performance and lifespan, this parameter should not be set too low.
5	Maximum Charging Current	The maximum current during charging, used to limit the charging current. Please set according to the battery technical specifications.

6	Maximum Discharge Current	Please set according to the battery technical specifications. The higher the discharge current, the shorter the battery operating time.
7	Maximum Float Charging Current	The maximum charging current in float charging state. Please set according to the battery technical specifications. The battery is in a float charging state when it is nearly full. For specific definitions, please refer to the technical specifications of the corresponding battery model.
8	Battery Internal Resistance	The internal resistance present within the battery. Please set according to the battery technical specifications.
9	Switch to Float Charging Mode	When the battery charging state switches from constant charging to float charging and the duration reaches the set value, the battery charging mode switches to float charging mode. The default duration is 180s.
10	Charging Temperature Compensation	By default, when the temperature exceeds 25°C, the upper charging voltage limit decreases by 3mV for every 1°C increase. Please set according to the actual battery technical specifications.

## Setting Generator Parameters

**Step 1:** After connecting to the SolarGo APP, go to **Home > Settings > Port Connection > Diesel Generator Connection**, select the generator type, and enter the parameter settings interface.

**Step 2:** After entering the parameter value according to actual needs, click "v" to successfully set the parameter.

**Manually Controlled Generator (Dry Contact Connection Not Supported):** This type of generator only supports manual start/stop.

**Automatically Controlled Generator (Dry Contact Connection Supported):** This type of generator supports automatic start/stop.

No.	Parameter Name	Description
1	Dry Node Control Method	Set the switch control mode and automatic control mode. In switch control mode, the generator can be started and stopped remotely. In automatic control mode, the generator starts and stops automatically based on preset parameters. This function only takes effect for generators that support dry node connections.

2	Prohibited Working Time	Set the prohibited working time. During this period, the generator stops working. This function only takes effect for generators that support dry node connections.
3	Rated Power	The rated power of the generator.
4	Running Time	The continuous running time of the generator. After exceeding the set running time, the generator will automatically shut down. This function only takes effect for generators that support dry node connections.
5	Voltage Upper Limit	Set the upper limit of the generator's operating voltage.
6	Voltage Lower Limit	Time mode will be enabled during the period between start time and stop time. Set the upper limit of the generator's operating voltage.
7	Frequency Upper Limit	Set the upper limit of the generator's operating frequency.
8	Frequency Lower Limit	Set the lower limit of the generator's operating frequency.
9	Preheat Time	The no-load preheat time of the generator before loading.
10	Switch	Enable or disable the function of the generator charging the battery. Only configurable via APP.
11	Max. Charging Power	Set the maximum charging power for the generator battery charging.
12	Start-up Voltage	Set the start-up voltage for the generator to charge the battery. When the battery voltage is below the set value, the generator will charge the battery.
13	Stop Voltage	Set the stop voltage for the generator to charge the battery. When the battery voltage is above the set value, the generator will stop charging the battery.

### Setting load control function

**Step 1:** After connecting to the SolarGo APP, go to **Home > Settings > Port Connection > load control** to enter the parameter settings interface.

**Step 2:** After entering the parameter value according to actual needs, click "v" to successfully set the parameter.

No.	Parameter Name	Description
-----	----------------	-------------

1	Dry Contact Mode	Will supply power to the load within the set time period. When the switch status is selected as ON, it starts supplying power to the load; when the switch status is set to OFF, it stops supplying power to the load. Please set the switch status to ON or OFF according to actual needs.
2	Time Mode	Within the set time period, the load will automatically be supplied with power or have power cut off.
3	SOC Mode	The inverter has a built-in relay dry contact control port, which can control whether to supply power to the load via the relay. In off-grid mode, if an overload at the BACK-UP terminal is detected or the battery SOC value falls below the off-grid battery protection value, it can stop supplying power to the load connected to the relay port.

Setting load control function

## 8.1.8 Setting Advanced Parameters

### NOTICE

Contact the supplier or after sales service for Advanced Setting password.  
Password for professional technicians only.

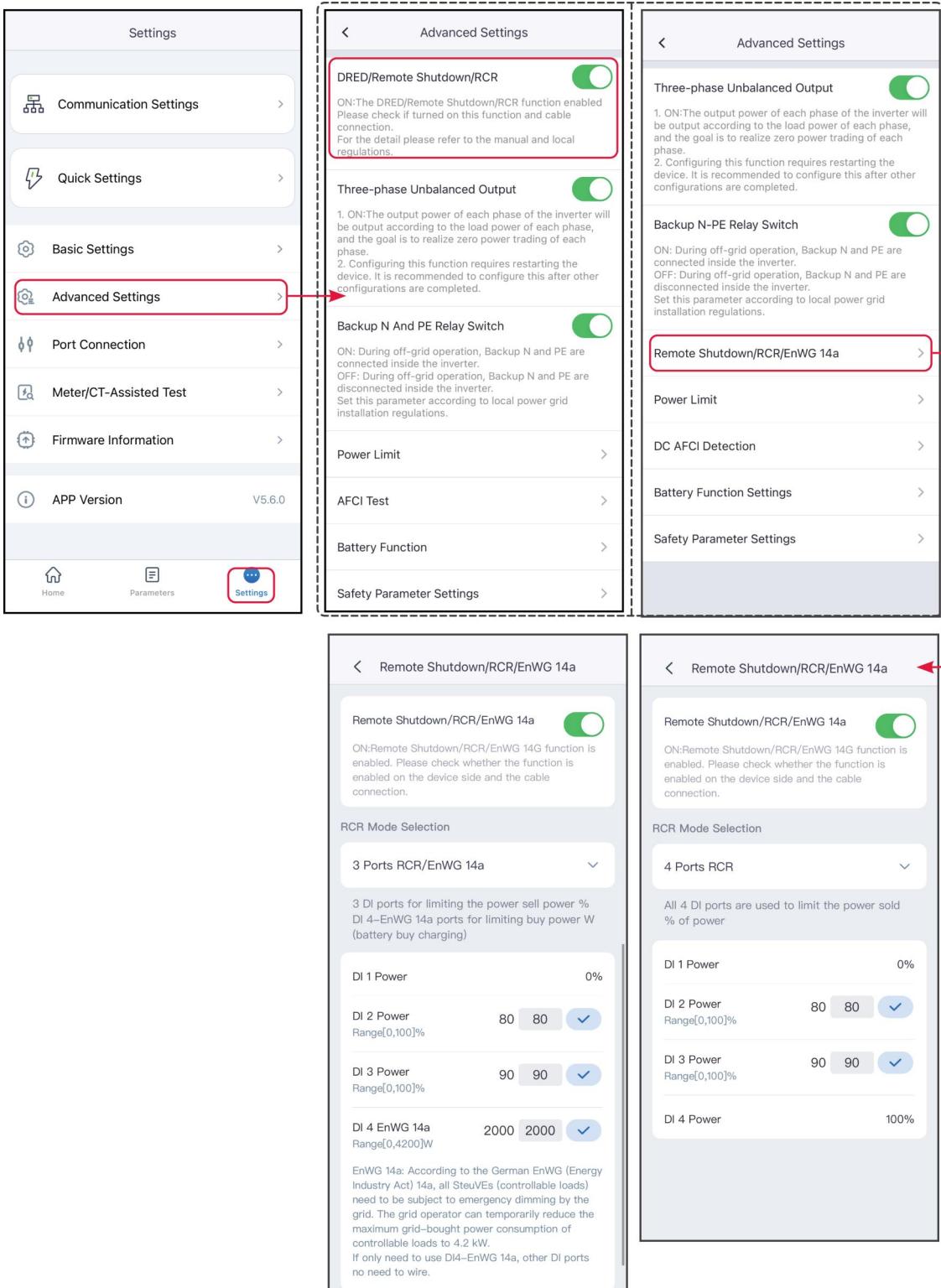
### 8.1.8.1 Setting DRED/Remote Shutdown/RCR/EnWG 14a

Enable DRED/Remote Shutdown/RCR before connecting the third party DRED, remote shutdown, or RCR device to comply with local laws and regulations.

**Step 1** : Tap **Home > Settings > Advanced Settings > DRED/Remote Shutdown/RCR** to set the parameters.

**Step 2** : Enable or disable the function based on actual needs.

**Step 3** : For areas where the EnWG 14a regulation applies, when enabling the RCR function, you need to select the RCR mode according to the actual device type and set the DI port power.



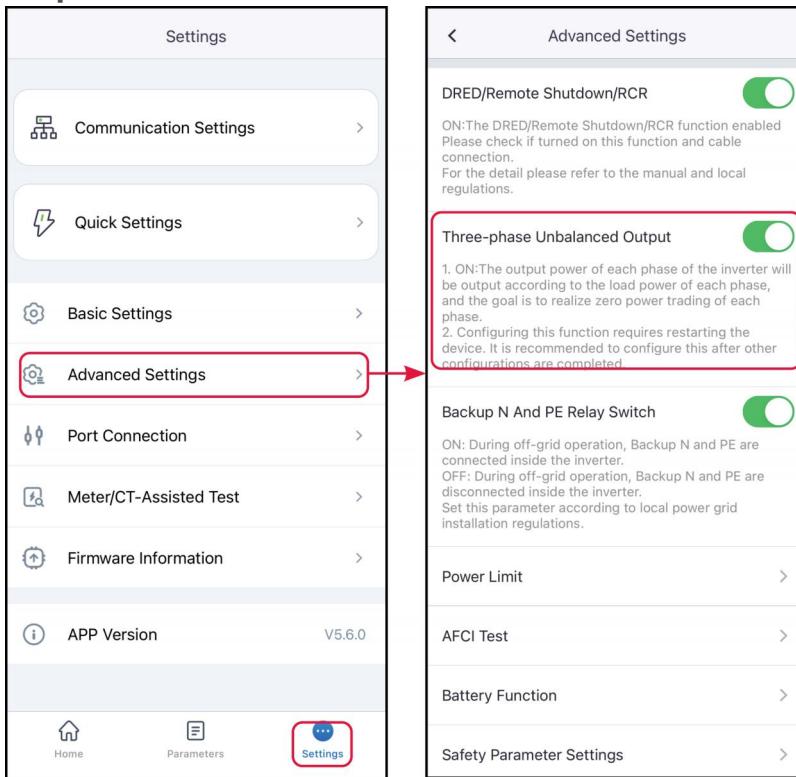
### 8.1.8.2 Setting Three-phase Unbalanced Output

Enable the Three-phase unbalanced output when connecting unbalanced loads,

which means L1, L2, L3 of the inverter respectively connected to loads with different power. Only for three phase inverters.

**Step 1** : Tap **Home** > **Settings** > **Advanced Settings** > **Three-phase Unbalanced Output** to set the parameters.

**Step 2** : Enable or disable the function based on actual needs.

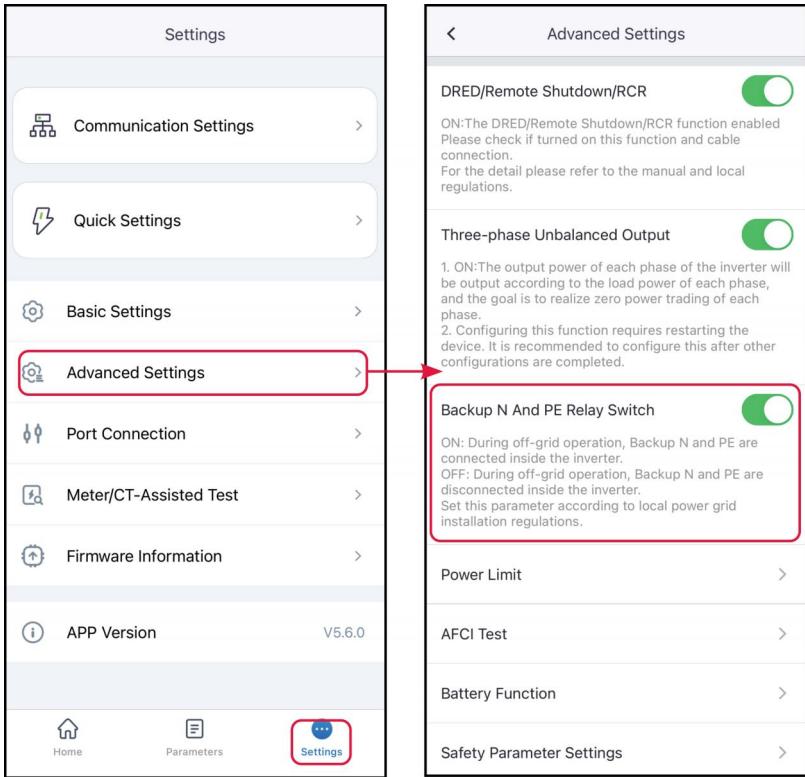


### 8.1.8.3 Setting the Backup N and PE Relay Switch

To comply with local laws and regulations, ensure that the relay inside the back-up port remains closed and the N and PE wires are connected when the inverter is working off-grid.

**Step 1** : Tap **Home** > **Settings** > **Advanced Settings** > **Backup N and PE Relay Switch** to set the parameters.

**Step 2** : Enable or disable the function based on actual needs.



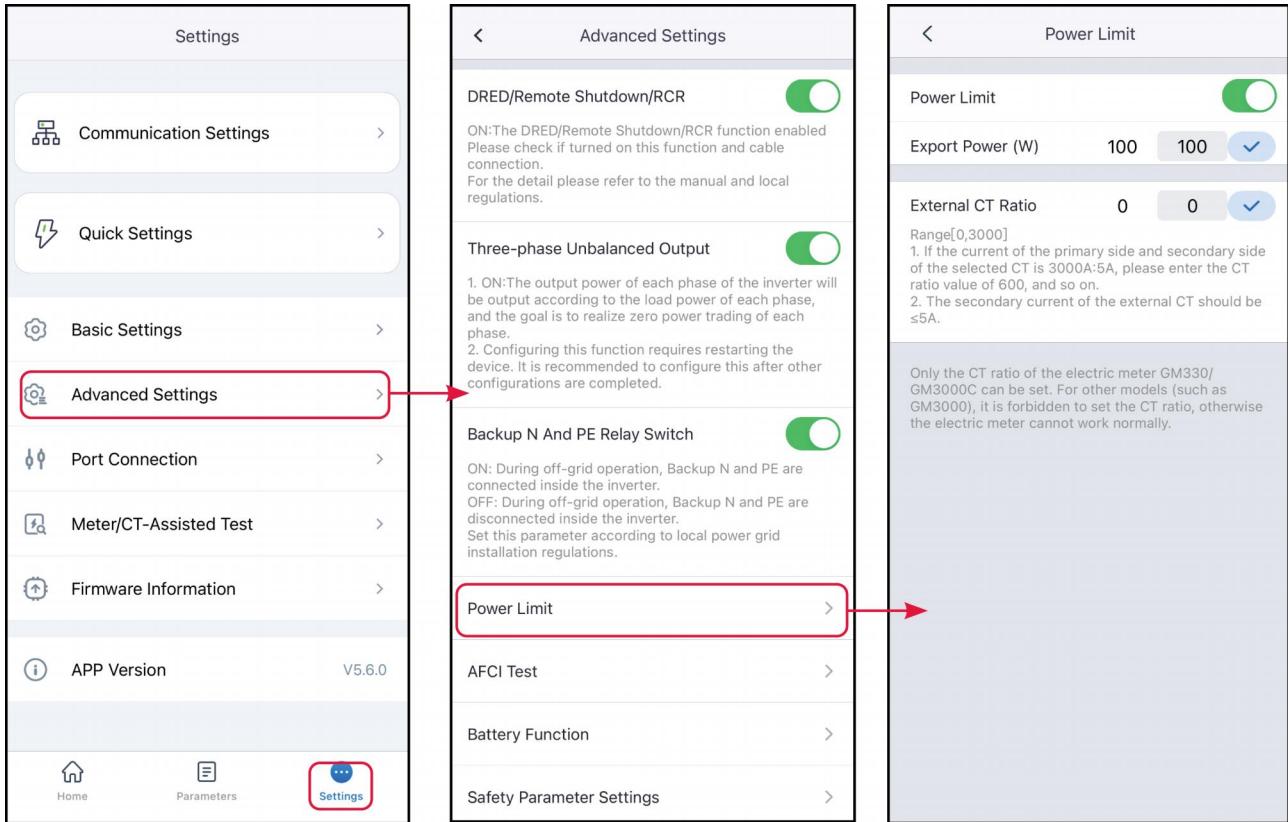
#### 8.1.8.4 Setting the Power Limit Parameters

**Step 1:** Tap Home > Settings > Advanced Settings > Power Limit to set the parameters.

**Step 2 :** Turn on or off the power limit function according to actual needs.

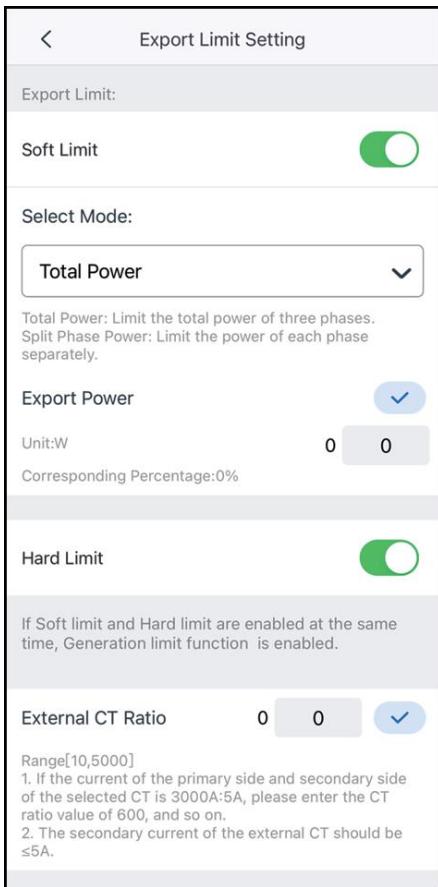
**Step 3 :** After turning on the function, enter the parameter value according to actual needs and tap "V" to successfully set the parameter.

##### 8.1.8.4.1 Set the grid-connected power limit parameters (general)



No.	Parameters	Description
1	Power Limit	Turn on this function when output power needs to be limited according to the grid standards of some countries or regions.
2	Export Power	Set according to the maximum power that can be input to the grid.
3	External Meter CT ratio	Set the ratio of the primary current to the secondary current of the external CT.

#### 8.1.8.4.2 Setting the Power Limit Parameters (Australia)



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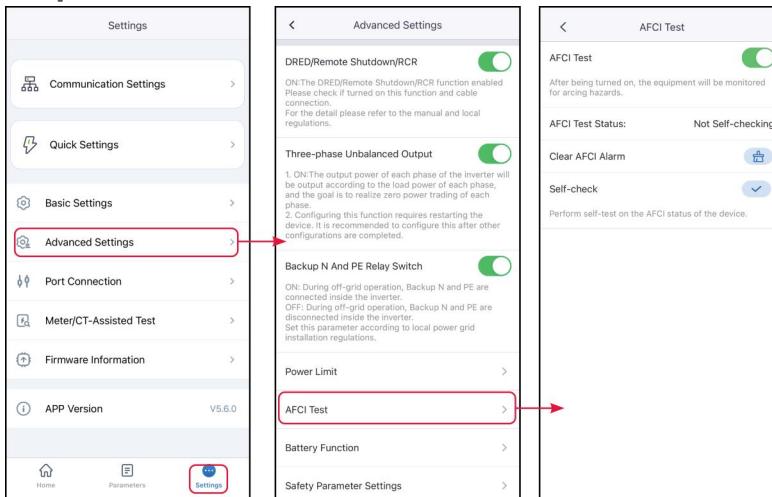
No.	Parameter s	Description
1	Software Power Limit	When output power needs to be limited according to grid standards in some countries or regions, turn on this function.
2	Limit Setting	<ul style="list-style-type: none"> <li>Set according to the maximum power that can be actually input to the grid.</li> <li>Supports setting of fixed power value or percentage. The set percentage is the percentage of the limit power to the rated power of the inverter.</li> <li>After setting the fixed value, the percentage changes automatically; after setting the percentage, the fixed value changes automatically.</li> </ul>

No.	Parameters	Description
3	Hardware Power Limit	After enabling this function, when the amount of electricity fed into the grid exceeds the limit value, the inverter will automatically disconnect from the grid.
4	External Meter CT Ratio	Set the ratio of the primary current to the secondary current of the external CT.

### 8.1.8.5 Setting the AFCI Detection

**Step 1 :** Tap Home > Settings > Advanced Settings > AFCI Test to set the parameters.

**Step 2 :** Enable AFCI Test, Clear AFCI Alarm and Self-Check based on actual needs.



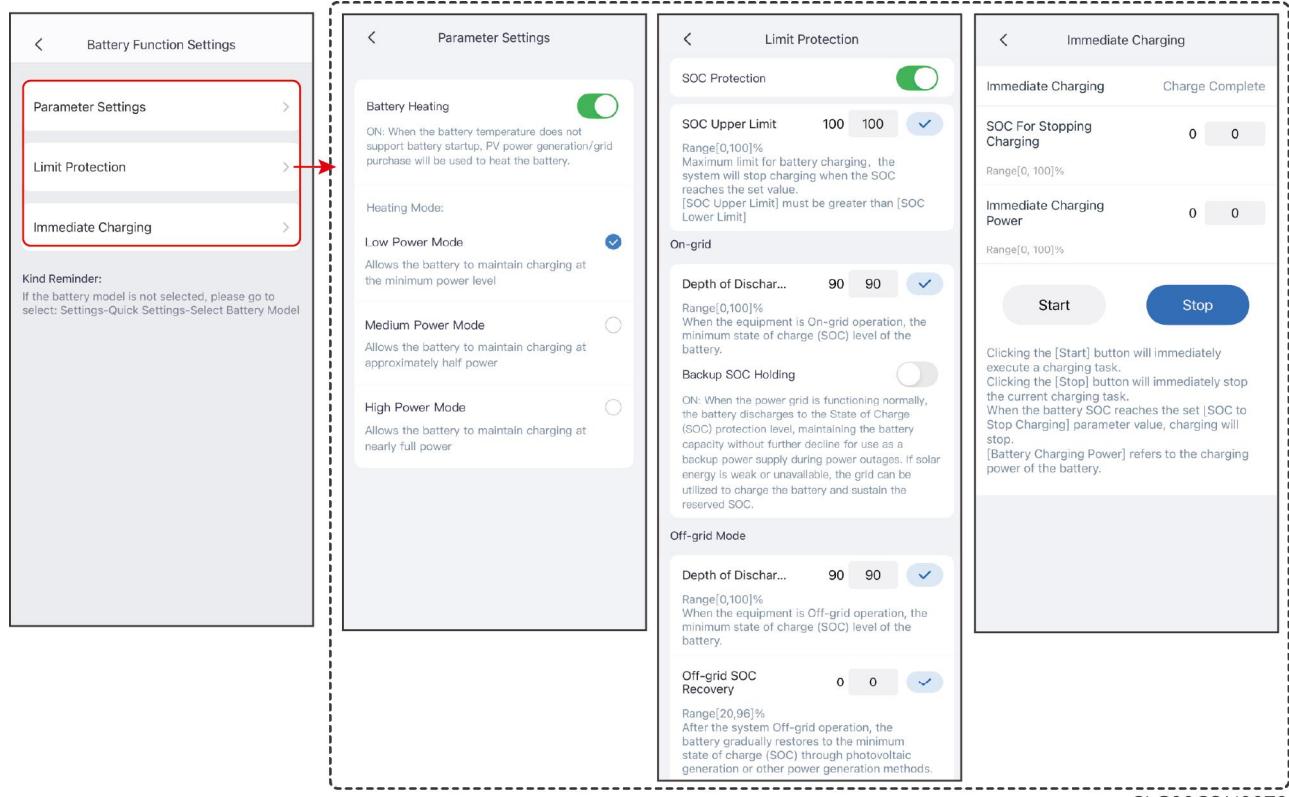
No.	Parameters	Description
1	AFCI Test	Enable or disable AFCI accordingly.
2	AFCI Test Status	The detection status like Not Self-checking.
3	Clear AFCI Alarm	Clear ARC Faulty alarm records.
4	Self-check	Tap to check whether the AFCI function works normally.

### 8.1.8.6 Setting the Battery

### 8.1.8.6.1 Set Parameters for Lithium Battery

**Step 1:** Tap Home > Settings > Advanced Settings > Battery Function Settings to set the parameters.

**Step 2:** Set the parameters based on actual needs.



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No.	Parameter	Description
Parameter Settings		
1	Max. Charging Current	Only applicable to certain models. Set the maximum charging current based on actual needs.
2	Max. Discharging Current	Only applicable to certain models. Set the maximum discharging current based on actual needs.

No.	Parameter	Description
3	Battery Heating	<p>Optional. This option is displayed on the interface when a battery that supports heating is connected. After the battery heating function is turned on, when the temperature is below the value that starts up the battery, PV power or electricity from the grid will be used to heat the battery.</p> <p>Heating Mode:</p> <ul style="list-style-type: none"> <li>• GW5.1-BAT-D-G20/GW8.3-BAT-D-G20 <ul style="list-style-type: none"> <li>◦ Low Power Mode: Maintains minimum battery power input capacity, turns on when the temperature is below -9°C, and turns off when the temperature is above or equal to -7°C.</li> <li>◦ Medium Power Mode: to maintain the moderate power input capacity of the battery. It will be turned on when the temperature is less than 6°C, and turned off when it is greater than or equal to 8°C.</li> <li>◦ High Power Mode: to maintain the higher power input capacity of the battery. It will be turned on when the temperature is less than 11°C, and turned off when it is greater than or equal to 13°C.</li> </ul> </li> <li>• GW14.3-BAT-LV-G10 <ul style="list-style-type: none"> <li>◦ Low Power Mode: Maintains minimum battery power input capacity, turns on when the temperature is below 5°C, and turns off when the temperature is above or equal to 7°C.</li> <li>◦ Medium Power Mode: to maintain the moderate power input capacity of the battery. It will be turned on when the temperature is less than 10°C, and turned off when it is greater than or equal to 12°C.</li> <li>◦ High Power Mode: to maintain the higher power input capacity of the battery. It will be turned on when the temperature is less than 20°C, and turned off when it is greater than or equal to 22°C.</li> </ul> </li> </ul>

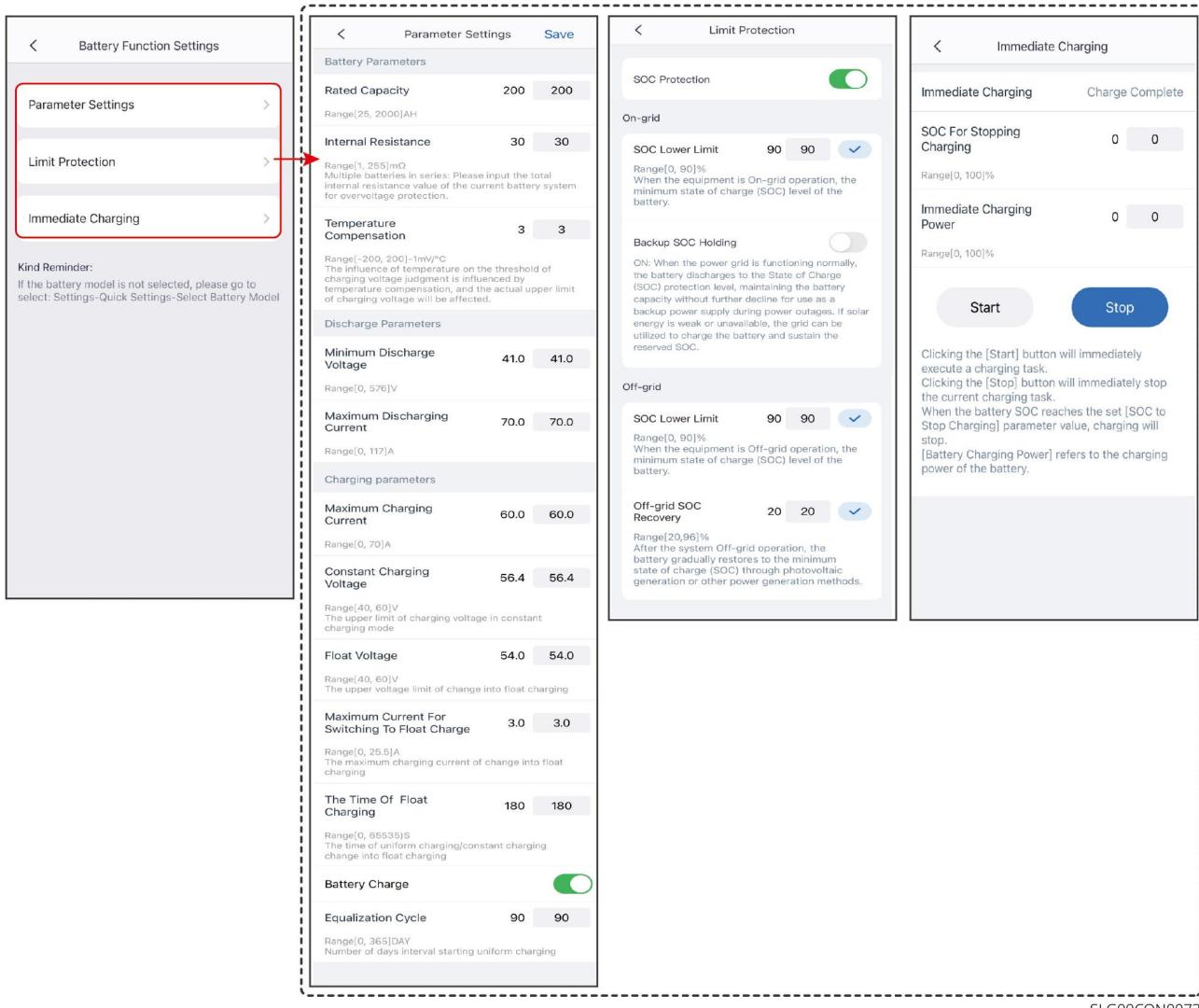
No.	Parameter	Description
4	Battery Wake-up	<ul style="list-style-type: none"> <li>After being turned on, the battery can be awakened when it shuts down due to undervoltage protection.</li> <li>Only applicable to lithium batteries without circuit breakers. After being turned on, the output voltage of the battery port is about 60V.</li> </ul>
Limit Protection		
5	SOC Protection	Start battery protection when the battery capacity is lower than the Depth of Discharge.
6	SOC Limit	The upper limit value for battery charging. Charging stops when the battery SOC reaches the SOC upper limit.
7	Discharge Depth (On-grid)	The maximum discharge value allowed for the battery when the inverter is in the on-grid scenario.
8	Backup Power SOC Maintenance	To ensure that the battery SOC is sufficient to maintain normal operation when the system is off-grid, the battery will purchase electricity from the grid and charge to the set SOC protection value when the system is connected to the grid.
9	Discharge Depth (Off-grid)	The maximum discharge value allowed for the battery when the inverter is in the off-grid scenario.
10	Off-grid SOC Recovery	When the inverter is operating off-grid, if the battery SOC drops below the lower limit, the inverter stops outputting power and only charges the battery until the battery SOC returns to the off-grid recovery SOC value. If the SOC lower limit value is higher than the off-grid recovery SOC value, charge to SOC lower limit +10%.
Immediate Charging		
11	Immediate Charging	Enable to charge the battery by the grid immediately. This takes effect once. Enable or Disable based on actual needs.

No.	Parameter	Description
12	SOC for Stopping Charging	Stop charging the battery once the battery SOC reaches SOC For Stopping Charging.
13	Immediate Charging Power	Indicates the percentage of the charging power to the inverter rated power when enabling Immediate Charging. For example, for an inverter with a rated power of 10kW, when set to 60, the charging power is 6kW.
14	Start	Start charging immediately.
15	Stop	Immediately stop the current charging task.

#### 8.1.8.6.2 Setting Lead-acid Battery Parameter

**Step 1:** Tap **Home > Settings > Advanced Settings > Battery Function Settings** to set the parameters.

**Step 2:** Set the parameters based on actual needs.



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No.	Parameter	Description
Parameter Settings		
1	Nominal Capacity	Set the battery capacity according to the actual parameters.
2	Battery Internal Resistance	Set the battery internal resistance according to the actual parameters.

No.	Parameter	Description
3	Temperature Compensation	<p>When the battery temperature changes, the battery charging voltage will be affected. Based on 25°C, the charging voltage upper limit is adjusted according to the set value for every degree change in battery temperature.</p> <p>For example, if the charging temperature influence coefficient is set to 10, when the battery temperature rises to 26 degrees, the charging voltage upper limit decreases by 10 mV.</p>
4	Lower Discharge Voltage	Set the minimum voltage during battery discharge according to actual requirements.
5	Max. Discharging Current	Set the maximum discharging current based on actual needs.
6	Max. Charging Current	Set the maximum charging current based on actual needs.
7	Constant Charging Voltage	Set the voltage value for constant charging of the battery according to actual requirements.
8	Floating Voltage	Set the voltage value for battery float charging according to actual requirements.
9	Maximum Current When Switching to Floating Charge	The maximum charging current after switching the battery charging mode from constant charging/equal charging to float charging.
10	Time to Switch to Float Charging Mode	The time required to switch the battery charging mode from constant charging/equal charging to float charging.
11	Equalization Charging Cycle	Set the interval days for battery equalization charging.

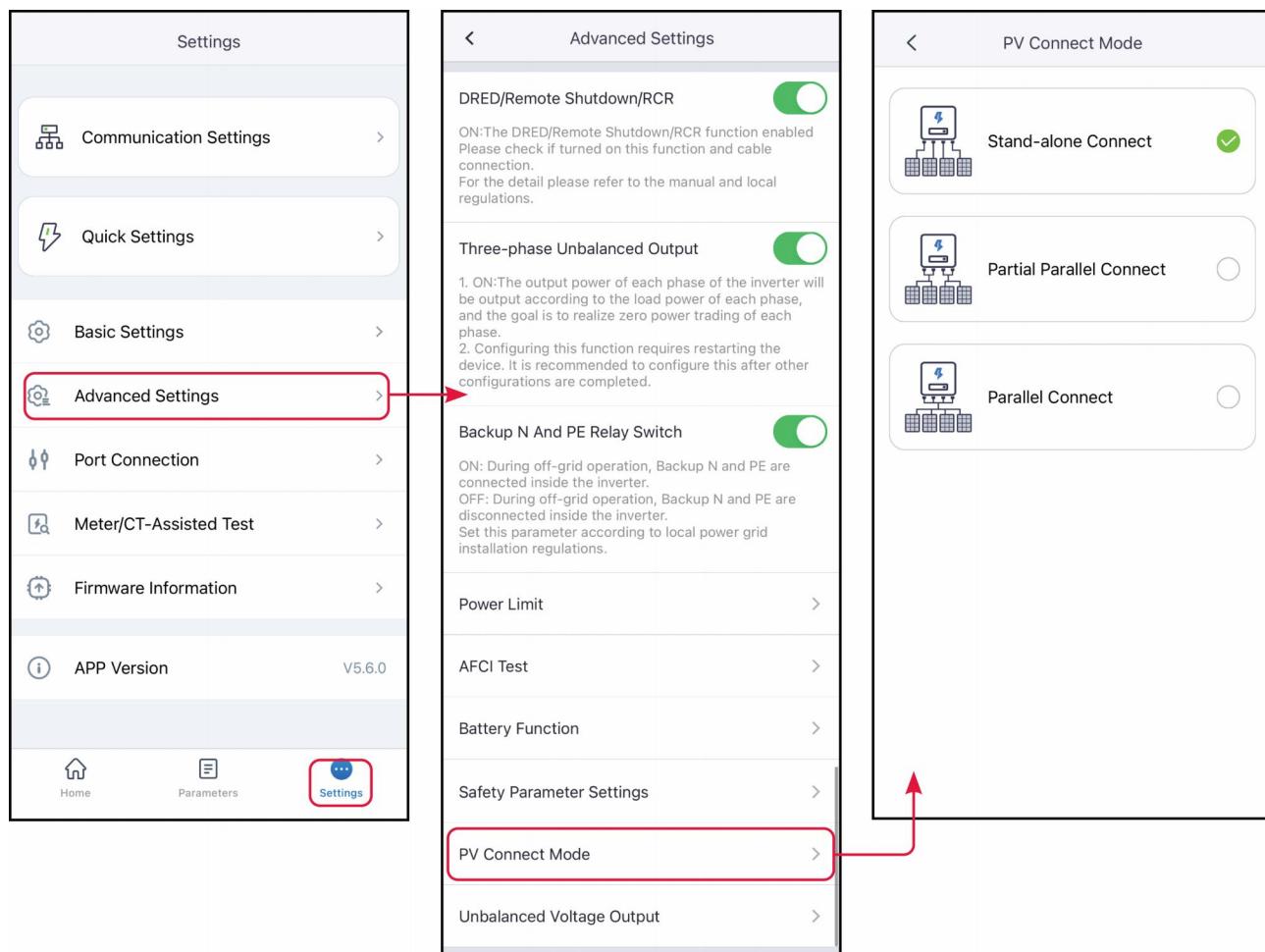
No.	Parameter	Description
Restriction protection.		
12	SOC Protection	Start battery protection when the battery capacity is lower than the Depth of Discharge.
13	SOC Lower Limit (Grid Connection)	The minimum battery charge that must be maintained when the inverter is connected to the grid.
14	Backup Power SOC Maintenance	To ensure that the battery SOC is sufficient to maintain normal operation when the system is off-grid, the battery will purchase electricity from the grid and charge to the set SOC protection value when the system is connected to the grid.
15	SOC Lower Limit (Off-Grid)	The minimum battery charge that must be maintained when the inverter is operating off-grid.
16	Off-grid SOC Recovery	When the inverter is operating off-grid, if the battery SOC drops below the lower limit, the inverter stops outputting power and only charges the battery until the battery SOC returns to the off-grid recovery SOC value. If the SOC lower limit value is higher than the off-grid recovery SOC value, charge to SOC lower limit +10%.
Immediate Charging		
17	SOC for Stopping Charging	Stop charging the battery once the battery SOC reaches SOC For Stopping Charging.
18	Immediate Charging Power	Indicates the percentage of the charging power to the inverter rated power when enabling Immediate Charging. For example, for an inverter with a rated power of 10kW, when set to 60, the charging power is 6kW.
19	Start	Start charging immediately.
20	Stop	Immediately stop the current charging task.

### 8.1.8.7 Setting PV Connect Mode

Select the PV connect mode based on the actual connections between the PV strings and MPPT ports of the inverter.

**Step 1 :** Tap **Home > Settings > Advanced Settings > PV Connect Mode** to set the parameters.

**Step 2 :** Set the connect mode to Independent Access, Partial Parallel Connect or Parallel Connection based on actual connections.



No.	Parameters	Description
1	Stand-alone Connect	The external PV string is connected to multi MPPT terminals of the inverter.

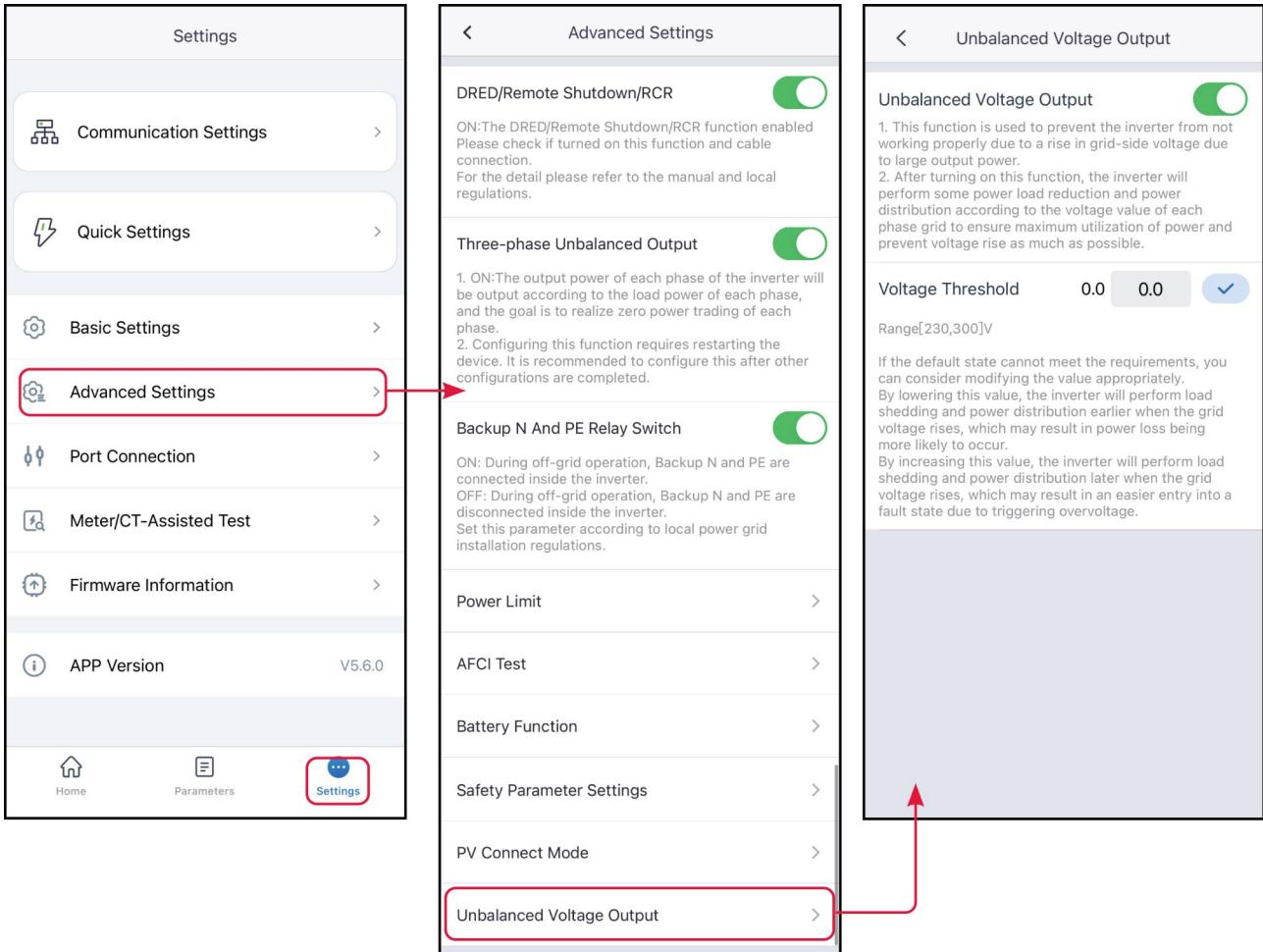
No.	Parameters	Description
2	Partial Parallel Connect	The PV strings are connected to the inverter in both stand-alone and parallel connection. For example, one PV string connect to MPPT1 and MPPT2, another PV string connect to MPPT3.
3	Parallel Connect	When an external PV string is connected to the PV input port on the inverter side, one PV string is connected to multiple PV input ports.

#### 8.1.8.8 Setting the Unbalanced Voltage Output

**Step 1** : Tap **Home > Settings > Advanced Settings > Unbalanced Voltage Output** to see the parameters.

**Step 2** : Enable or disable the function based on actual needs.

**Step 3** : After enabling the Unbalance Voltage Function, set parameters based on actual needs. And tap 'V'. The parameters are set successfully.



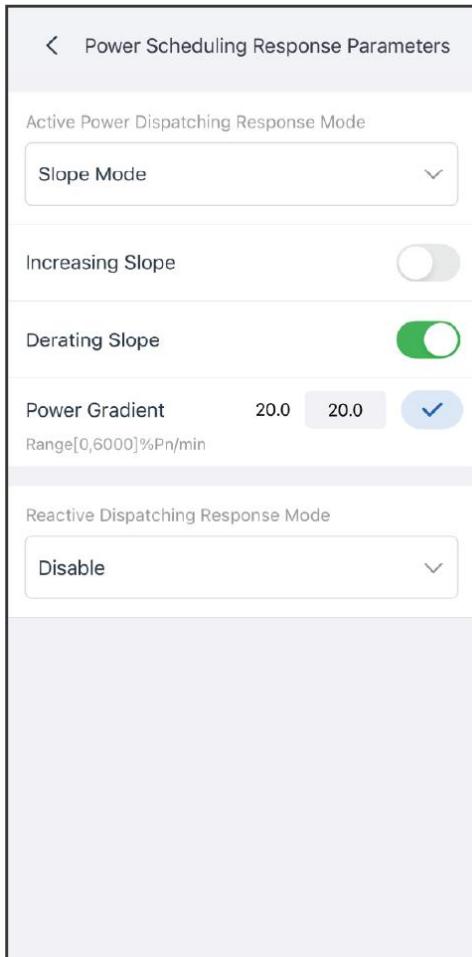
### 8.1.8.9 Setting Power Adjustment Response Parameters

**Step 1:** Go to the parameter settings page via **Home > Settings > Advanced Settings > Power Adjustment Response Parameters**.

**Step 2:** Based on actual requirements, select **Disable, Slope Adjustment, or First-Order Low-Pass Filter** Mode from the Active Power Adjustment drop-down menu. If you select slope adjustment, enter the power change gradient value; if you select first-order low-pass filter mode, enter the first-order low-pass filter time parameter value.

**Step 3:** Based on actual requirements, select **Disable, Slope Adjustment, or First-Order Low-Pass Filter** Mode from the Reactive Power Adjustment drop-down menu. If you select slope adjustment, enter the power change gradient value; if you select first-order low-pass filter mode, enter the first-order low-pass filter time parameter value.

**Step 4:** Click **✓** to save the settings.



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No.	Parameter	Description
Active Adjustment Response Mode		
1	First-order Low-pass Filter	Within the response time constant, active adjustment is implemented according to a first-order low-pass curve.
2	First-order Low-pass Filter Time Parameter	Set the time constant within which the active power changes based on the first order LPF curve.
3	Slope Adjustment	Implement active power dispatch based on the power change slope.
4	Power Change Gradient	Set the slope of active power adjustment changes.
Reactive Adjustment Response Mode		

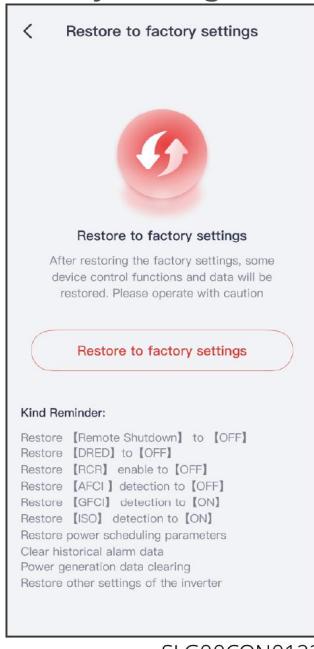
No.	Parameter	Description
5	First-order Low-pass Filter	Within the response time constant, reactive adjustment is implemented according to a first-order low-pass curve.
6	First-order Low-pass Filter Time Parameter	Set the time constant within which the reactive power changes based on the first order LPF curve.
7	Slope Adjustment	Implement reactive power dispatch based on the power change slope.
8	Power Change Gradient	Set the slope of reactive power adjustment changes.

#### 8.1.8.10 Restore Factory Settings

To restore the device to its factory default settings, perform the following steps.

**Step 1:** Go to the settings page by selecting **Home > Settings > Advanced Settings > Restore Factory Settings**.

**Step 2:** Tap **Restore Factory Settings** to restore the interface prompt section to factory settings.

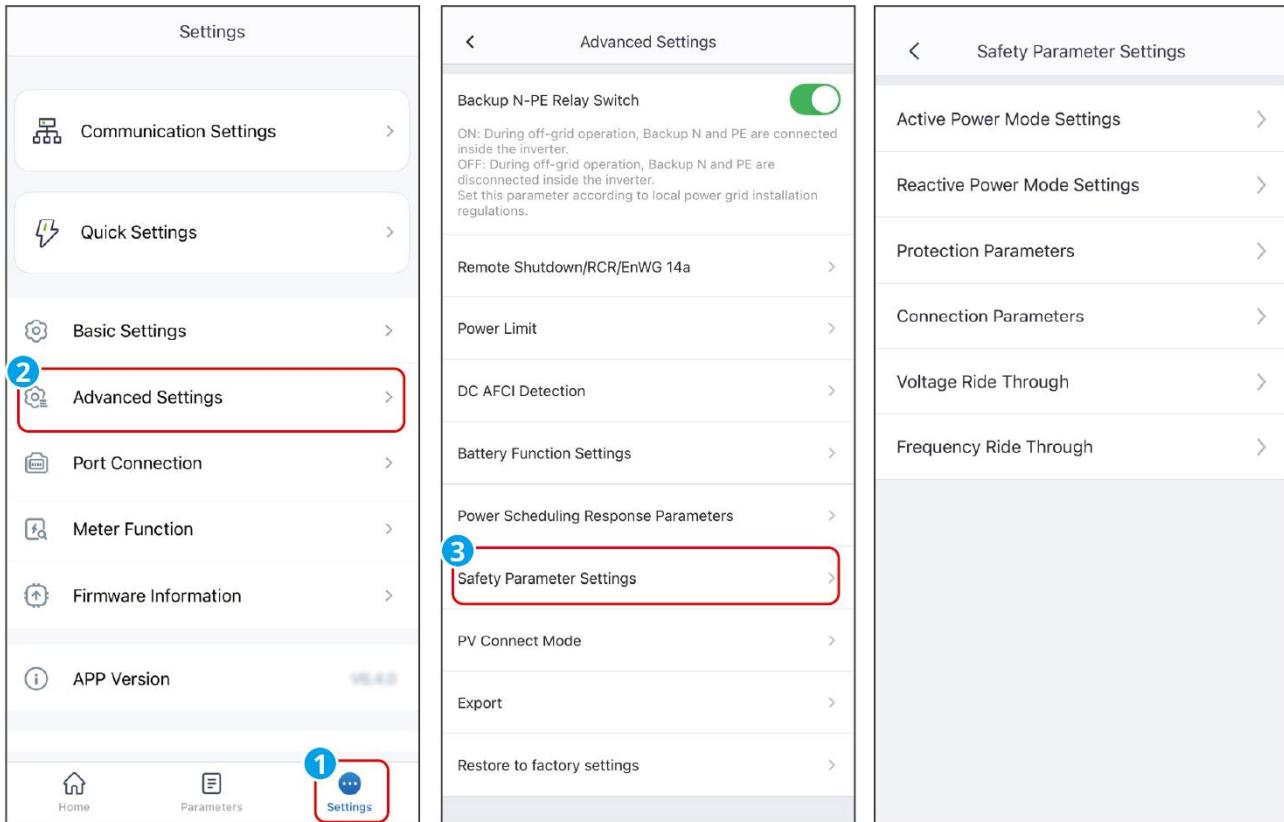


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#### 8.1.9 Setting Safety Parameters

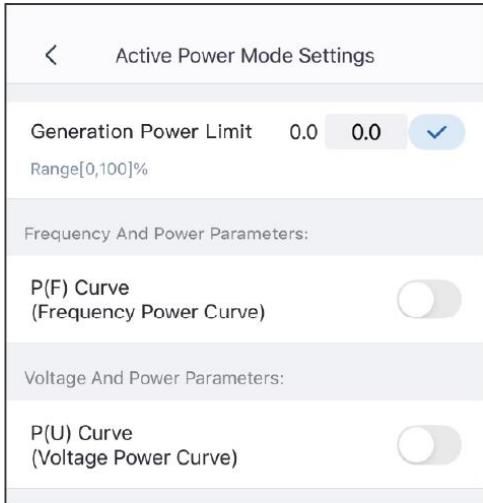
## NOTICE

Set the custom safety parameters in compliance with local requirements. Do not change the parameters without the prior consent of the grid company.



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### 8.1.9.1 Setting the Active Power Mode

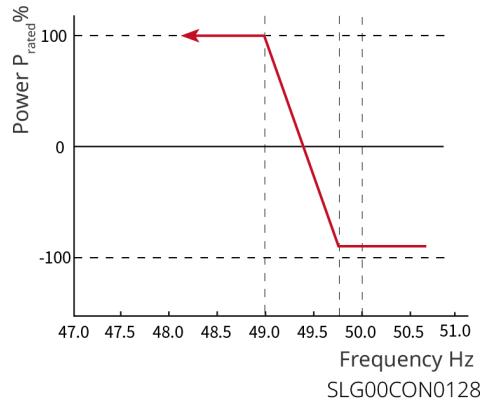
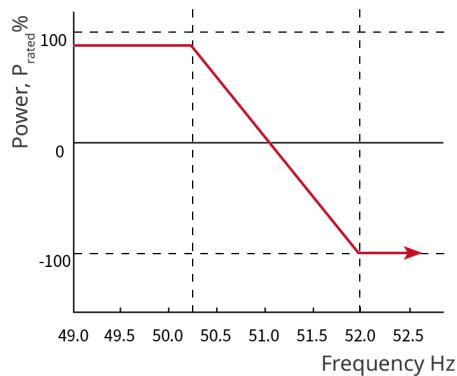


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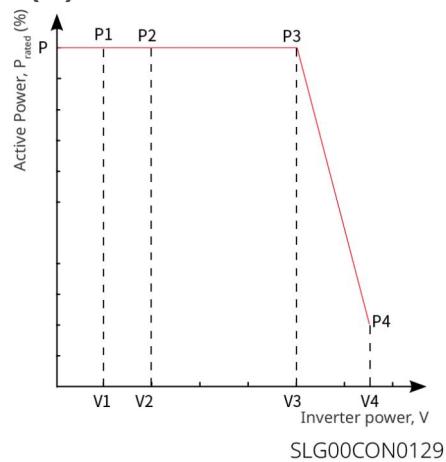
**Step 1:** Tap Home > Settings > Advanced Settings > Safety Parameter Settings > Active Power Mode Settings to set the parameters.

**Step 2:** Set the parameters based on actual needs.

### P(F) Curve



### P(U) Curve



No.	Parameters	Explanation
1	Generation Power Limit	Set the change slope when the active output power increases or decreases.
2	Power Gradient	Set the active power change slope.
Overfrequency Unloading		
1	P(F) Curve	Enable P(F) Curve when it is required by local grid standards and requirements.
2	Over-Frequency Load Shedding Mode	<p>Set the overfrequency unloading mode based on actual needs.</p> <ul style="list-style-type: none"> <li>• Slope mode: adjusts power based on the over frequency point and load reduction slope.</li> <li>• Stop mode: adjusts the power based on the over-frequency start point and over-frequency end point.</li> </ul>
3	Overfrequency Threshold	The inverter output active power will decrease when the utility grid frequency is too high. The inverter output power will decrease when the utility grid frequency is higher than <b>Overfrequency Threshold</b> .
4	Import/Export Electricity Conversion Frequency	When the set frequency value is reached, the system switches from selling electricity to buying electricity.
5	Overfrequency Endpoint	The inverter output active power will decrease when the utility grid frequency is too high. The inverter output power will stop decreasing when the utility grid frequency is higher than <b>Overfrequency Endpoint</b> .

No.	Parameter s	Explanation
6	Over-Frequency Power Slope Reference Power	Adjust the inverter output power based on Apparent Active Power, Rated Active Power, Momentary Active Power, Or Max. Active Power.
7	Power response to overfrequency gradient	The inverter output active power will increase when the utility grid frequency is too high. Indicates the slope when the inverter output power decreases.
8	Tentional Delay Ta	Indicates the delayed response time when the inverter output power is higher than the <b>Overfrequency Threshold</b> .
9	Hysteretic Function	Enable the hysteretic function.
10	Frequency Hysteresis Point	During over-frequency load reduction, if the frequency decreases, the power output is based on the lowest point of the load reduction power until the frequency is less than the hysteresis point and the power is restored.
11	Hysteresis Waiting Time	For over-frequency load reduction and frequency decrease, when the frequency is less than the hysteresis point, the power recovery waiting time, that is, it takes a certain amount of time to recover the power.
12	Hysteresis Power Recovery Slope Reference Power	For over-frequency load reduction and frequency decrease, when the frequency is less than the hysteresis point, the power recovery benchmark, that is, the power recovery is based on the recovery slope * the rate of change of the reference power. Support: Pn rated power, Ps apparent power, Pm current power, Pmax maximum power, power difference ( $\Delta P$ ).

No.	Parameters	Explanation
13	Hysteretic Power Recovery Slope	For over-frequency load reduction and frequency reduction, when the frequency is less than the hysteresis point, the power change slope when the power is restored.
Underfrequency Loading		
1	P(F) Curve	Enable P(F) Curve when it is required by local grid standards and requirements.
2	Underfrequency Load Mode	<p>Set the underfrequency unloading mode based on actual needs.</p> <ul style="list-style-type: none"> <li>• Slope mode: adjusts power based on the underfrequency point and load increase slope.</li> <li>• Stop mode: adjusts the power based on the underfrequency start point and underfrequency end point.</li> </ul>
3	Underfrequency Threshold	The inverter output active power will increase when the utility grid frequency is too low. The inverter output power will increase when the utility grid frequency is lower than <b>Underfrequency Threshold</b> .
4	Import/Export Electricity Conversion Frequency	When the set frequency value is reached, the system switches from selling electricity to buying electricity.
5	Underfrequency Endpoint	The inverter output active power will increase when the utility grid frequency is too low. The inverter output power will stop increasing when the utility grid frequency is lower than <b>Underfrequency Endpoint</b> .

No.	Parameter s	Explanation
6	Over-Frequency Power Slope Reference Power	Adjust the inverter output power based on Apparent Active Power, Rated Active Power, Momentary Active Power, Or Max. Active Power.
7	Under-Frequency Power Slope	The inverter output active power will increase when the utility grid frequency is too low. The slope of the inverter output power when it rises.
8	Tentional Delay Ta	Indicates the delayed response time when the inverter output power is lower than the <b>Underfrequency Threshold</b> .
9	Hysteretic Function	Enable the hysteretic function.
10	Frequency Hysteresis Point	During underfrequency loading, if the frequency increases, the power is output according to the lowest point of the loaded power until the frequency is higher than the hysteresis point and the power is restored.
11	Hysteresis Waiting Time	For underfrequency loading, the frequency increases, when the frequency is higher than the hysteresis point, the waiting time for power recovery, that is, it takes a certain amount of time to recover the power.
12	Hysteresis Power Recovery Slope Reference Power	For underfrequency loading, the frequency increases, when the frequency is higher than the hysteresis point, the benchmark for power recovery, that is, the power recovery is carried out according to the recovery slope * the rate of change of the benchmark power. Support: Pn rated power, Ps apparent power, Pm current power, Pmax maximum power, power difference ( $\Delta P$ ).

No.	Parameter s	Explanation
13	Hysteretic Power Recovery Slope	For under-frequency loading, frequency increase, when the frequency is higher than the hysteresis point, the power change slope when power is restored.
14	P(U) Curve	Enable P(U) Curve when it is required by local grid standards and requirements.
15	Vn Voltage	The percentage of actual voltage to the rated voltage at Vn point, n= 1, 2, 3, 4. For example, setting Vn Voltage to 90 means V/Vrated%=90%.
16	Vn Active Power	The percentage of the output active power to the apparent power at Vn point, (n= 1, 2, 3, 4). For example, setting <b>Vn Reactive Power</b> to 48.5 means P/Prated%=48.5%.
17	Output Response Mode	Set the active power output response mode. Supports: <ul style="list-style-type: none"><li>PT-1 Behavior, realize active scheduling based on the first-order LPF curve within the response time constant.</li><li>Gradient Control, realize active scheduling based on the power change slope.</li></ul>
18	Power Gradient	When the output response mode is set to Gradient Control, active power scheduling is achieved according to the power change gradient.
19	First-order Low-pass Filter Time Parameter	Set the time constant within which the active power changes based on the first order LPF curve when the Output Response Mode is set to be First-order Low-pass Filter Time Parameter.
20	Overload Function Switch	When enabled, the maximum active power output is 1.1 times the rated power; otherwise, the maximum active power output is consistent with the rated power value.

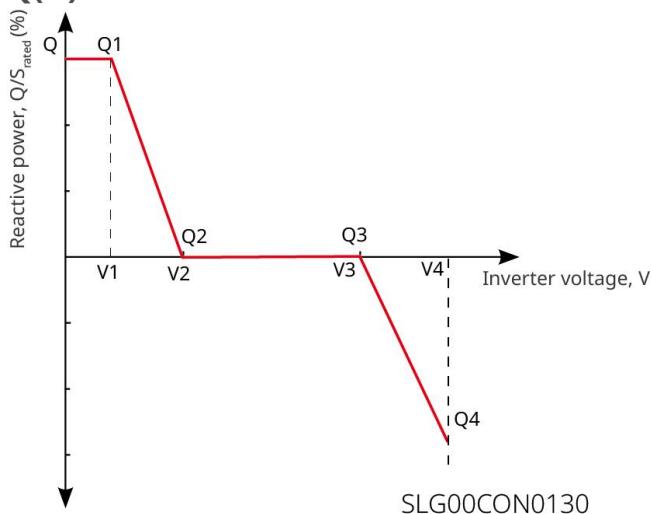
### 8.1.9.2 Setting the Reactive Power Mode

**Step 1 : Tap Home > Settings > Advanced Settings > Safety Parameter Setting >**

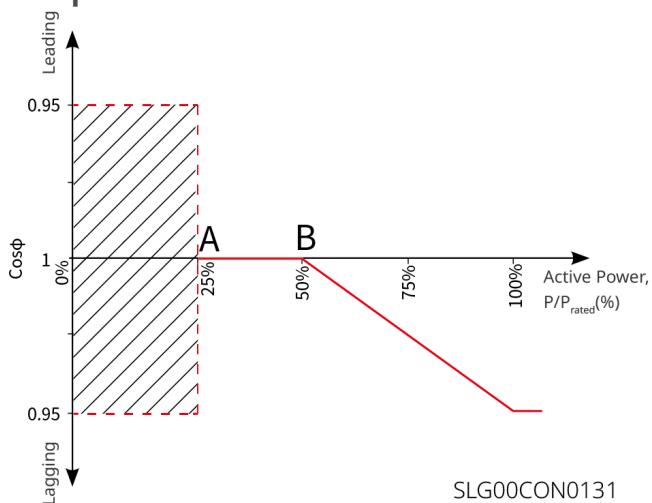
**Reactive Power Mode Settings** to set the parameters.

**Step 2** :Set the parameters based on actual needs.

### Q(U) Curve



### Cosφ Curve



No.	Parameters	Description
Fix PF		
1	Fix PF	Enable Fix PF when it is required by local grid standards and requirements. After the parameters are set successfully, the power factor remains unchanged during the operation of the inverter.
2	Under-excited	Set the power factor as lagging or leading based on actual needs and local grid standards and requirements.
3	Over-excited	

No.	Parameters	Description
4	Power Factor	Set the power factor based on actual needs. Range: 0~~0.8, or +0.8~+1.
Fix Q		
1	Fix Q	Enable Fix Q when it is required by local grid standards and requirements.
2	Over-excited/Under-excited	Set the reactive power as inductive or capacitive reactive power based on actual needs and local grid standards and requirements.
3	Reactive Power	Set the ratio of reactive power to apparent power.
Q(U) Curve		
1	Q(U) Curve	Enable Q(U) Curve when it is required by local grid standards and requirements.
2	Mode Selection	Set Q(U) curve mode, supporting basic mode and slope mode.
3	Vn Voltage	The percentage of actual voltage to the rated voltage at Vn point, n=1, 2, 3, 4. When set to 90, it means: V/Vrated% = 90%.
4	Vn Reactive Power	The percentage of the reactive output power to the apparent power at Vn point, n=1, 2, 3, 4. For example, setting <b>Vn Reactive Power</b> to 48.5 means Q/Srated%=48.5%.
5	Voltage Deadband Width	When Q(U) curve mode is set to slope mode, this parameter defines the voltage deadband range where no reactive power output is required.
6	Over-excitation Slope	(In Q(U) slope mode) Sets the positive or negative slope for reactive power variation during over-voltage conditions.
7	Under-excitation Slope	

No.	Parameters	Description
8	Vn Reactive Power	The percentage of the reactive output power to the apparent power at Vn point, n=1, 2, 3, 4. For example, setting <b>Vn Reactive Power</b> to 48.5 means Q/Srated%=48.5%.
9	Q(U) Curve Response Time Constant	The reactive power must reach 95% of the target value within 3 time constants, following a first-order low-pass filter curve.
10	Extended Function	Enable the extended function and configure the corresponding parameters.
11	Lock-In Power	When the inverter output reactive power to the rated power ratio is between the Lock-in power and Lock-out power, the ratio meets Q(U) curve requirements.
12	Lock-out Power	
Cosφ(P) Curve		
1	Cosφ(P) Curve	Enable Cosφ Curve when it is required by local grid standards and requirements.
2	Mode Selection	Set cosφ(P) Curve Mode and support basic mode and slope mode configurations.
3	N-point Power	The percentage of inverter output active power relative to rated power at the N-point. N=A, B, C, D, E.
4	N-point cosφ Value	N-point Power Factor N=A, B, C, D, E.
5	Over-excitation Slope	When cosφ(P) curve mode is set to slope mode, configures the power variation slope as either positive or negative.
6	Under-excitation Slope	
7	N-point Power	The percentage of inverter output active power relative to rated power at the N-point. N=A, B, C.
8	N-point cosφ Value	N-point Power Factor N=A, B, C.

No.	Parameters	Description
9	cosφ(P) Curve Response Time Constant	The reactive power must reach 95% of the target value within 3 time constants, following a first-order low-pass filter curve.
10	Extended Function	Enable the extended function and configure the corresponding parameters.
11	Lock-in Voltage	When the grid voltage is between Lock-in Voltage and Lock-out Voltage, the voltage meets Cosφ curve requirements.
12	Lock-out Voltage	
Q(P) Curve		
1	Q(P) Curve Function	Enable Q(P) Curve when it is required by local grid standards and requirements.
2	Mode Selection	Set Q(P) curve mode, supporting basic mode and slope mode.
3	Pn-point Power	The percentage of the output reactive power to the rated power at Pn point, n=1, 2, 3, 4, 5, 6. For example, setting to 90 means Q/Prated%=90%.
4	Pn-point Reactive Power	The percentage of the output active power to the rated power at Pn point, n=1, 2, 3, 4, 5, 6. For example, When set to 90, it means: P/Prated% = 90%.
5	Over-excitation Slope	When the Q(P) curve mode is set to slope mode, configure the power variation slope as either a positive or negative value.
6	Under-excitation Slope	
7	Pn-point Power	Ratio of reactive power to rated power at Pn points (n=1, 2, 3). For example, setting to 90 means Q/Prated%=90%.
8	Pn-point Reactive Power	Ratio of active power to rated power at Pn points (n=1, 2, 3). For example, When set to 90, it means: P/Prated% = 90%.

No.	Parameters	Description
9	Time Constant	The reactive power must reach 95% of the target value within 3 time constants, following a first-order low-pass filter curve.

### 8.1.9.3 Setting Protection Parameters

**Step 1 :** Tap **Home > Settings > Advanced Settings > Safety Parameter Settings > Protection Parameters** to set the parameters.

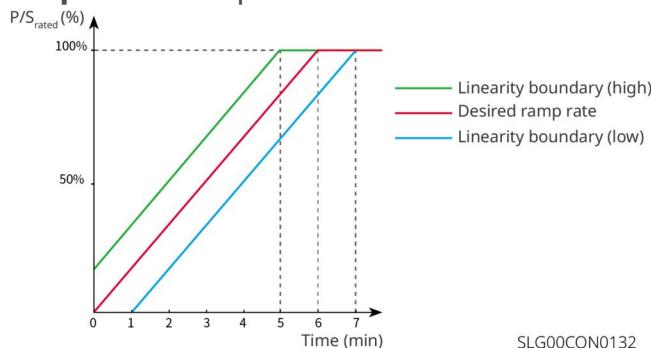
**Step 2:** Set the parameters based on actual needs.

No.	Parameters	Description
1	OV Stage n Trip Value	Set the grid overvoltage protection threshold value, n=1,2,3,4.
2	OV Stage n Trip Time	Set the grid overvoltage protection tripping time, n=1,2,3,4.
3	UV Stage n Trip Value	Set the grid undervoltage protection threshold value, n=1,2,3,4.
4	UV Stage n Trip Time	Set the grid undervoltage protection tripping time.
5	10min Overvoltage Trip Threshold	Set the 10min overvoltage protection threshold value.
6	10min Overvoltage Trip Time	Set the 10min overvoltage protection tripping time.
7	OF Stage n Trip Value	Set the grid overfrequency triggering n-th order protection point, n=1,2,3,4.
8	OF Stage n Trip Time	Set the grid overfrequency trigger n-th order trip time, n=1,2,3,4.
9	UF Stage n Trip Value	Set the grid underfrequency triggering n-th order protection point, n=1,2,3,4.
10	UF Stage n Trip Time	Set the grid underfrequency trigger n-th order trip time, n=1,2,3,4.

#### 8.1.9.4 Setting Connection Parameters

**Step 1 :** Tap Home > Settings > Advanced Settings > Safety Parameter Settings > Protection Parameters to set the parameters.

**Step 2:** Set the parameters based on actual needs.



No.	Parameters	Description
Ramp Up		
1	Upper Voltage	The inverter cannot connect to the grid if it is powered on for the first connection and the grid voltage is higher than the <b>Upper Voltage</b> .
2	Lower Voltage	The inverter cannot connect to the grid if it is powered on for the first connection and the grid voltage is lower than the <b>Lower Voltage</b> .
3	Upper Frequency	The inverter cannot connect to the grid if it is powered on for the first connection and the grid frequency is higher than the <b>Upper Frequency</b> .
4	Lower Frequency	The inverter cannot connect to the grid if it is powered on for the first connection and the grid frequency is lower than the <b>Lower Frequency</b> .
5	Observation Time	The waiting time for connecting the inverter to the grid when meeting the following requirements. 1. The inverter is powered on for the first connection. 2. The utility grid voltage and frequency meet certain requirements.

No.	Parameters	Description
6	Soft Ramp Up Gradient	Enable the start up power slope.
7	Soft Ramp Up Gradient	Indicates the percentage of incremental output power per minute based on the local requirements when the inverter is powered on for the first time.
Reconnection		
8	Upper Voltage	The inverter cannot connect to the grid if it is reconnecting due to a fault and the grid voltage is higher than the <b>Upper Voltage</b> .
9	Lower Voltage	The inverter cannot connect to the grid if it is reconnecting due to a fault and the grid voltage is lower than the <b>Lower Voltage</b> .
10	Upper Frequency	The inverter cannot connect to the grid if it is reconnecting due to a fault and the grid frequency is higher than the <b>Upper Frequency</b> .
11	Lower Frequency	The inverter cannot connect to the grid if it is reconnecting due to a fault and the grid frequency is lower than the <b>Lower Frequency</b> .
12	Observation Time	The waiting time for connecting the inverter to the grid when meeting the following requirements. 1. The inverter is reconnecting to the grid due to a fault. 2. The utility grid voltage and frequency meet certain requirements.
13	Reconnection Gradient	Enable the start up power slope.
14	Reconnection Gradient	Indicates the percentage of incremental output power per minute based on the local requirements when the inverter is powered on for the first time. For example, setting Reconnection Gradient to 10 means the reconnect slope is 10%P/Srated/min.

### 8.1.9.5 Setting Voltage Ride Through Parameters

**Step 1 :** Tap **Home > Settings > Advanced Settings > Safety Parameter Settings > Voltage Ride Through** to set the parameters.

**Step 2 :** Set the parameters based on actual needs.

No.	Parameters	Description
LVRT		
1	UVn Voltage	The ratio of the ride through voltage to the rated voltage at UVn point during LVRT. n=1,2,3,4,5,6,7.
2	UVn Time	The ride through time at UVn point during LVRT. n=1,2,3,4,5,6,7
3	Enter Into LVRT Threshold	The inverter will not be disconnected from the utility grid immediately when the grid voltage is between Enter Into LVRT Threshold and Exit LVRT Endpoint.
4	Exit LVRT Endpoint	
5	Slope K2	K-factor for reactive power during LVRT.
6	Zero Current Mode	The system outputs zero current during LVRT.
7	Entry Threshold	Set the entry threshold of zero current mode.
HVRT		
1	OVn Voltage	The ratio of the ride through voltage to the rated voltage at OVn point during HVRT. n=1,2,3,4,5,6,7.
2	OVn Time	The ride through time at OVn point during HVRT. n=1,2,3,4,5,6,7.
3	Enter High Crossing Threshold	The inverter will not be disconnected from the utility grid immediately when the grid voltage is between Enter High Crossing Threshold and Exit High Crossing Threshold.

No.	Parameters	Description
4	Exit High Crossing Threshold	
5	Slope K2	K-factor for reactive power during HVRT.
6	Zero Current Mode	The system outputs zero current during HVRT.
7	Entry Threshold	Set the entry threshold of zero current mode.

#### 8.1.9.6 Setting Frequency Ride Through Parameters

**Step 1 :** Tap **Home > Settings > Advanced Settings > Safety Parameter Settings > Frequency Ride Through** to set the parameters.

**Step 2 :** Set the parameters based on actual needs.

No.	Parameters	Description
1	UFn Frequency	The frequency at the UFn point during frequency ride through.
2	UFn Frequency	The frequency at the UFn point during frequency ride through. n=1,2,3.
3	UFn Time	The ride through duration at the UFn point during frequency ride through. n=1,2,3.
4	OFn Frequency	The frequency at the OFn point during frequency ride through. n=1,2,3.
5	OFn Time	The ride through duration at the OFn point during frequency ride through. n=1,2,3.

### 8.1.10 Setting the Wiring Method

#### NOTICE

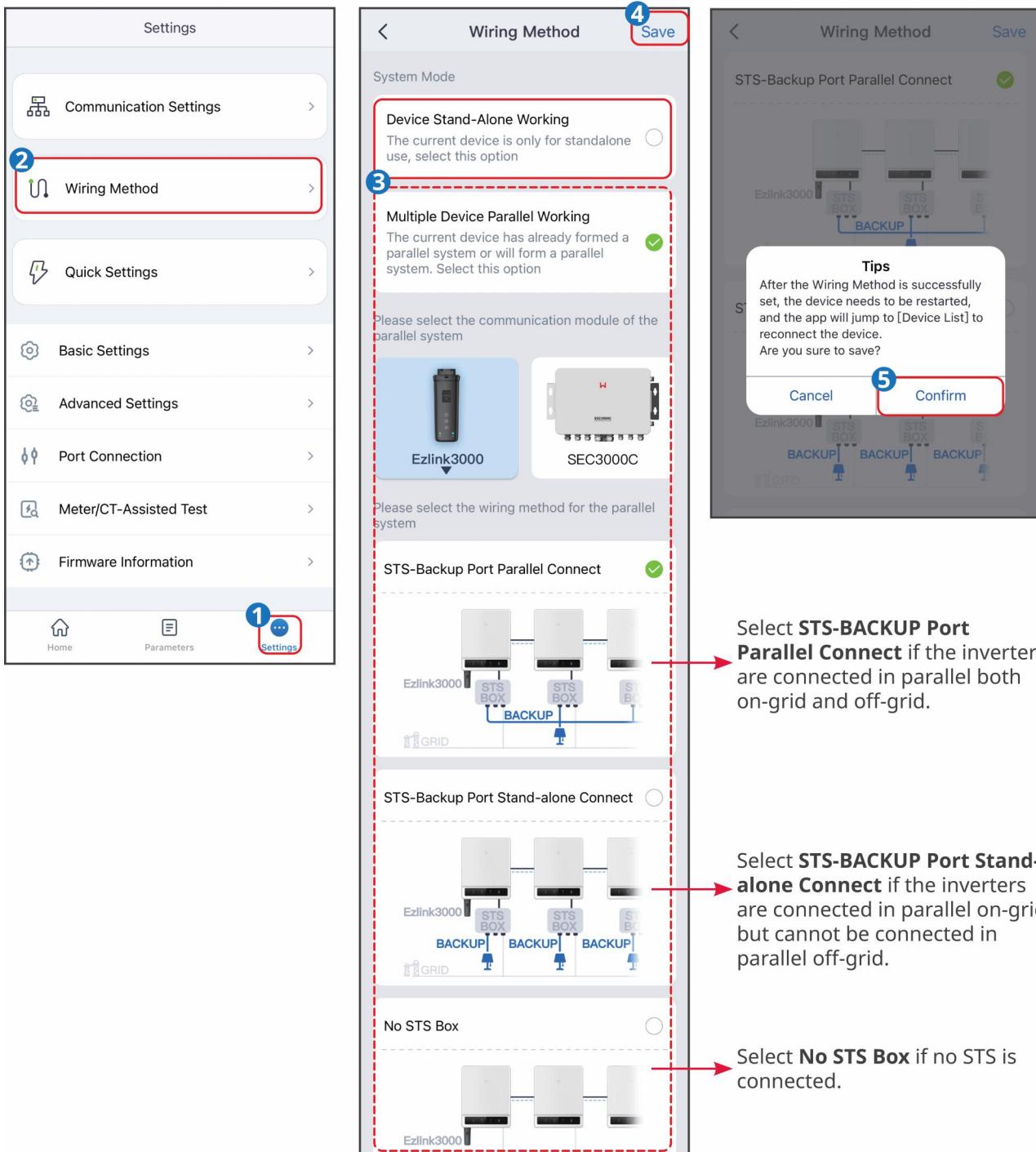
- Only for ET40-50kW series inverters.
- Do not set the Wiring Method if the inverter is installed for the first time and only one inverter is applied.

**Step 1** : Tap **Home > Settings > Wiring Method**.

**Step 2** : If the system is a single inverter system, select **Device Stand-Alone Working**. If the system is a parallel system with multiple inverters, select **Multiple Device Parallel Working**, and set the specific wiring method based on actual needs.

- When the system is both on-grid and off-grid, select **the STS-BACKUP Port Parallel Connect**.
- When the system is a grid-connected parallel system or an off-grid non-parallel system, select **the STS-BACKUP Port Stand-alone Connect**.
- When STS is not connected to the system, select **No STS Box**.

**Step 3** : Tap **Save** to complete the settings, and click **OK** in the pop-up window to restart the device.



## 8.1.11 Exporting Parameters

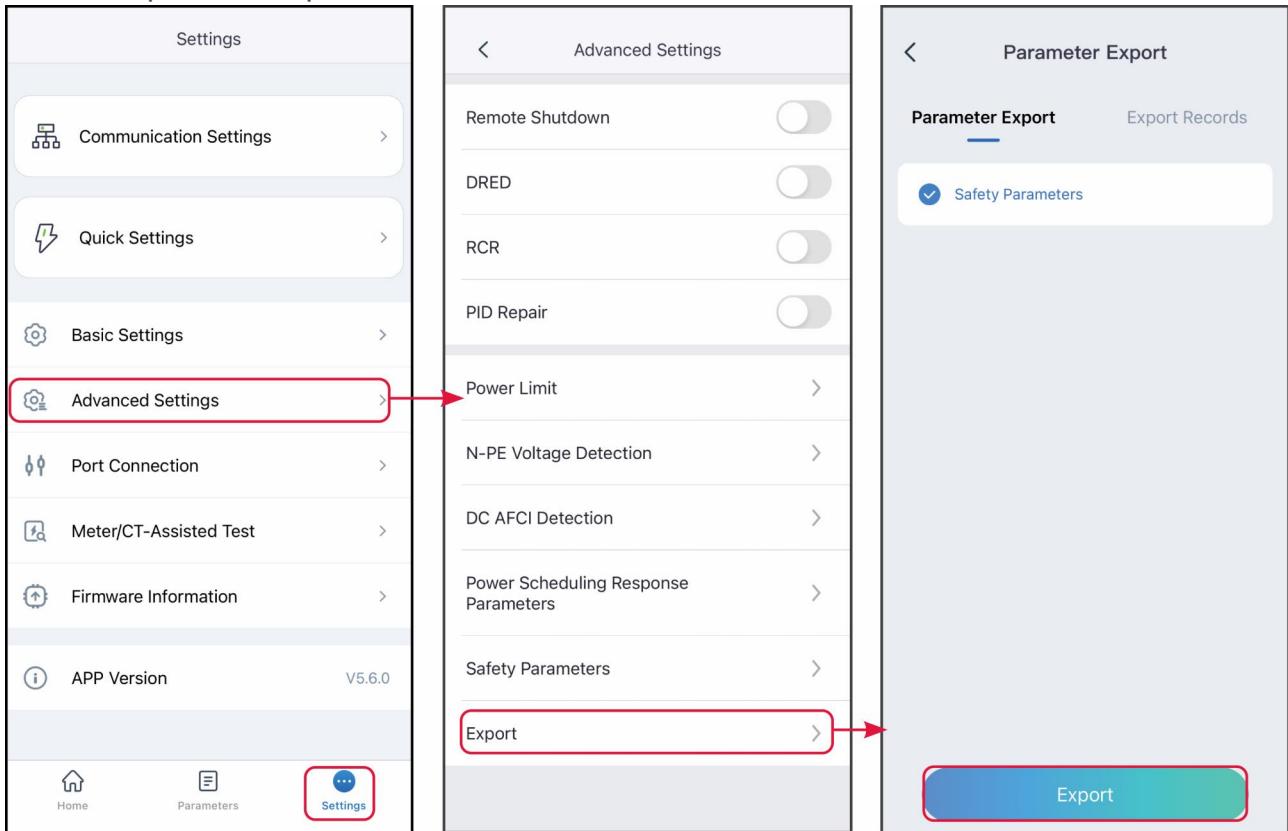
### 8.1.11.1 Exporting Safety Parameters

After selecting the safety code, some models support exporting safety parameter files.

**Step 1** : Tap **Home** > **Settings** > **Advanced Settings** > **Export** to export the

parameters.

**Step 2** : Select Safety Parameters, and tap **Export** to start downloading the current safety parameter file. When the export is complete, tap **Share** and choose how you want to open the exported file.

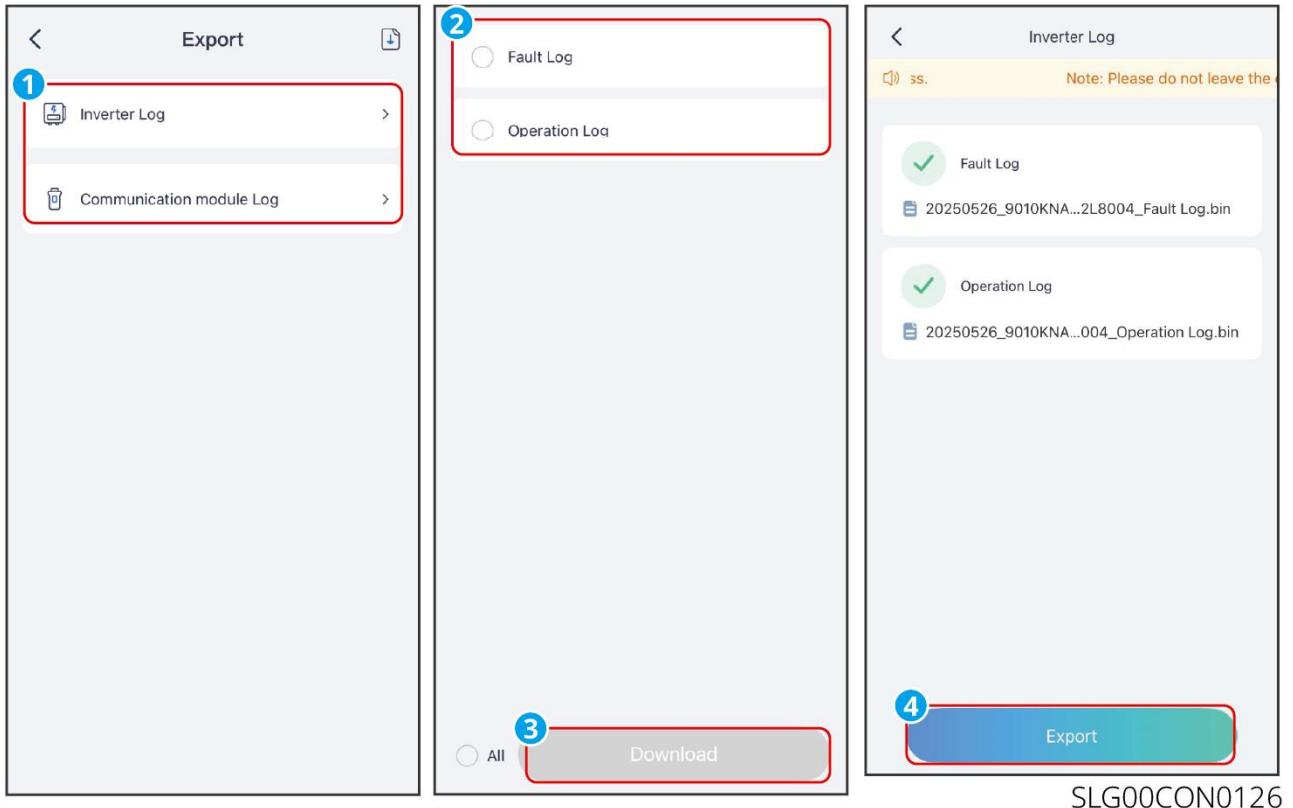


### 8.1.11.2 Exporting Log Parameters

**Step 1** : Tap **Home** > **Settings** > **Advanced Settings** > **Export**.

**Step 2** : Select the device type to export logs, such as inverter logs, communication module logs, etc.

**Step 3** : Select the log type to export, download and export the log file. After the export is complete, tap **Share** and choose how to open the exported file according to actual needs.



SLG00CON0126

## 8.1.12 Setting Generator/Load Control

### 8.1.12.1 Setting Load Control

#### NOTICE

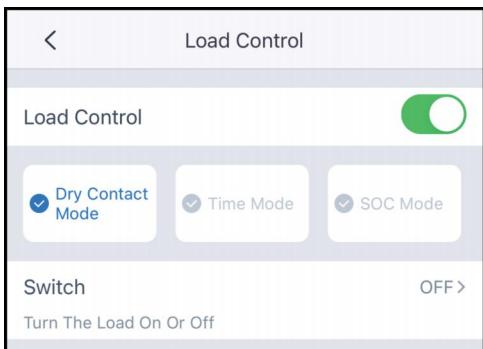
- Loads and generators can be controlled by SolarGo app when the inverter supports load control function.
- For ET40-50kW series inverters, the load control function is supported only when the inverter is used with STS. The inverter supports load control of the GENERATOR port or the BACKUP LOAD port.

**Step 1:** Tap **Home > Settings > Port Connection** to set the parameters.

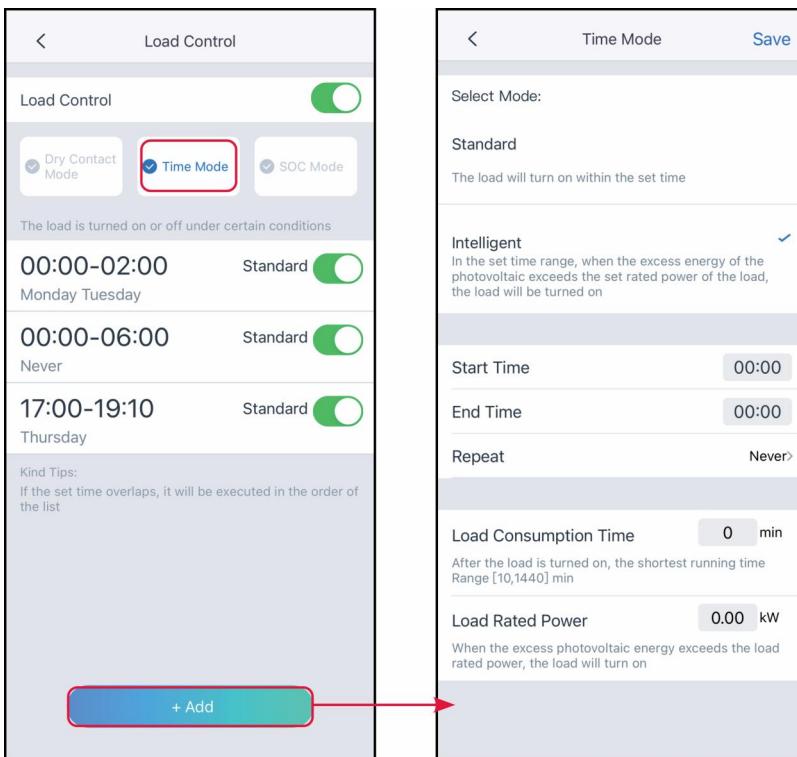
**Step 2:** Select **Generator Control** or **Load Control** based on actual needs.

- Dry Contact Mode: when the switch is ON, the loads will be powered; when the switch is OFF, the power will be cut off. Turn on or off the switch based on actual

needs.



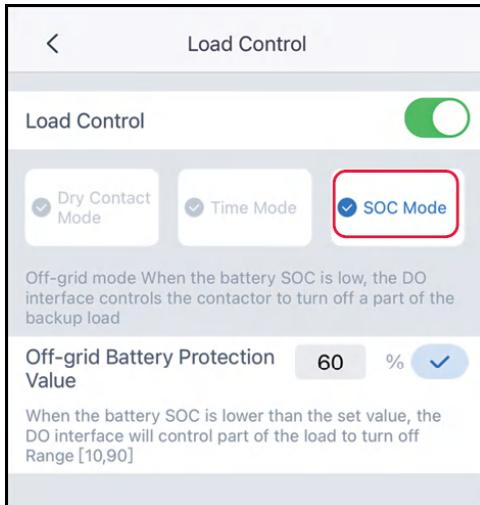
- Time Mode: set the time to enable the load, and the load will be powered automatically within the setting time period. Select standard mode or intelligent mode.



No.	Parameters	Description
1	Standard	The loads will be powered within the setting time period.
2	Intelligent	Once the excess energy of the photovoltaic exceeds the load nominal power within the time period, the loads will be powered.

No.	Parameters	Description
3	Start Time	The time mode will be on between the Start Time and End Time.
4	End Time	
5	Repeat	The repeat days.
6	Load Consumption Time	The shortest load working time after the loads been powered. The time is set to prevent the loads be turned on and off frequently when the PV power fluctuates greatly. Only for Intelligent mode.
7	Load Rated Power	The loads will be powered when the excess energy of the photovoltaic exceeds the nominal power of load. Only for Intelligent mode.

- SOC Mode: the inverter has integrated dry contact controlling port, which can control whether the load is powered or not by contactor. In off-grid mode, the load connected to the port will not be powered if the BACKUP overload is detected or the battery SOC value is lower than the Off-grid battery protection value. Set Off-grid Battery Protection Value based on actual needs.



### 8.1.12.2 Setting the Generator Parameters

## NOTICE

- When the inverter supports the generator control function, the generator can be controlled through the SolarGo App.
- For ET40-50kW series inverters, the generator can be connected and controlled only when the inverter is used with STS.

**Step 1** : Tap **Home > Settings > Port Connection** to set the parameters.

**Step 2**: Select Generator Connection or Load Connection based on actual needs.

**Step 3** : When setting the generator control function, select the generator type according to the actual access situation. Currently supported:**Not Installed, Manual Control Of Generator or Automatic Control Generator**. And set the parameters according to the selected generator type.

- Not Installed: If no generator is connected in the system, select Not Installed.
- Manual Control Of Generator(Doesn't Support Dry Node Connection): Start or stop the generator manually. The inverter cannot control the generator when Manual Control Of Generator(Doesn't Support Dry Node Connection) is selected.
- Automatic control generator (Supports dry node connection): If the generator has dry contact port and is connected to the inverter, set the generator control mode to Switch Control Mode or Automatic Control Mode based on actual needs.
  - Switch Control Mode: The generator will start working when the Generator Dry Node Switch is on, and stop automatically after reaching Run Time.
  - Automatic Control Mode: The generator will work during Run Time, but stop working during Prohibited Working Hours.

Generator Control

Generator Type:

Not Installed generator

Generator information settings

Rated Power 9.00 9.00

Range [0,650]kW

Upper Voltage 280 280

Range [80,280]V

Lower Voltage 180 180

Range [80,280]V

Upper Frequency 55.00 55.00

Range [45,65]Hz

Lower Frequency 45.00 45.00

Range [45,65]Hz

Delay Time Before Loading 10 10

Range [10,300]s  
Preheating time for no-load generator before loading

Generator To Charge The Battery

Switch

Max Charging Power (%) 1 1

% of rated power of generator

SOC for Starting Charging 20 20

Range [20,90]%

SOC For Stopping Charging 90 90

Range [40,95]%

Generator Control

Generator Type:

Manual control of generator (Doesn't support dry node connection)

Generator information settings

Rated Power 9.00 9.00

Range [0,650]kW

Upper Voltage 280 280

Range [80,280]V

Lower Voltage 180 180

Range [80,280]V

Upper Frequency 55.00 55.00

Range [45,65]Hz

Lower Frequency 45.00 45.00

Range [45,65]Hz

Delay Time Before Loading 10 10

Range [10,300]s  
Preheating time for no-load generator before loading

Generator To Charge The Battery

Switch

Max Charging Power (%) 1 1

% of rated power of generator

SOC for Starting Charging 20 20

Range [20,90]%

SOC For Stopping Charging 90 90

Range [40,95]%

Generator Control

Generator Type:

Automatic control generator (Supports dry node connection)

Startup Mode

Switch Control Mode

Automatic Control Mode

Prohibited Working Hours

00:00-00:00

Never

Generator information settings

Rated Power 9.00 9.00

Range [0,650]kW

Run time 8.0 8.0

Range [0,24]h  
The continuous operating time of the generator. After the continuous operation time ends, the generator will automatically shut down.

Upper Voltage 280 280

Range [80,280]V

Lower Voltage 180 180

Range [80,280]V

Upper Frequency 55.00 55.00

Range [45,65]Hz

Lower Frequency 45.00 45.00

Range [45,65]Hz

Delay Time Before Loading 10 10

Range [10,300]s  
Preheating time for no-load generator before loading

Generator To Charge The Battery

Switch

Max Charging Power (%) 1 1

% of rated power of generator

SOC for Starting Charging 20 20

Range [20,90]%

SOC For Stopping Charging 90 90

Range [40,95]%

Generator Control

Generator Type:

Automatic control generator (Supports dry node connection)

Startup Mode

Switch Control Mode

Automatic Control Mode

Prohibited Working Hours

00:00-00:00

Never

Generator information settings

Rated Power 9.00 9.00

Range [0,650]kW

Run time 8.0 8.0

Range [0,24]h  
The continuous operating time of the generator. After the continuous operation time ends, the generator will automatically shut down.

Upper Voltage 280 280

Range [80,280]V

Lower Voltage 180 180

Range [80,280]V

Upper Frequency 55.00 55.00

Range [45,65]Hz

Lower Frequency 45.00 45.00

Range [45,65]Hz

Delay Time Before Loading 10 10

Range [10,300]s  
Preheating time for no-load generator before loading

Generator To Charge The Battery

Switch

Max Charging Power (%) 1 1

% of rated power of generator

SOC for Starting Charging 20 20

Range [20,90]%

SOC For Stopping Charging 90 90

Range [40,95]%

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No.	Parameters	Description
1	Startup Mode	Switch Control Mode/Automatic Control Mode
Switch Control Mode		
2	Generator Dry Node Switch	Only for Switch Control Mode.
3	Run Time	Set the generator's continuous runtime, after which the generator will be turned off.
Automatic Control Mode		
4	Prohibited Working Hours	Set the time period during which the generator cannot work.

No.	Parameters	Description
5	Run Time	Set the generator's continuous runtime, after which the generator will be turned off. If the generator start-up operation time includes prohibited working time, the generator will stop running during this time period; after the prohibited working time, the generator will restart running and timing.

No.	Parameters	Description
Generator Information Settings		
1	Rated Power	Set the rated power of the generator.
2	Run Time	Set the continuous running time of the generator. The generator will be shut down after the continuous running time ends.
3	Upper Voltage	Set the operation voltage range of the generator.
4	Lower Voltage	
5	Frequency Cap	Set the operation frequency range of the generator.
6	Lower Frequency	
7	Preheating time	Set the generator no-load preheating time.
Parameter settings for generator charging batteries		
8	Switch	Select whether to use the generator to generate electricity to charge the battery.
9	Max.charging power (%)	The charging power when the generator generates electricity to charge the battery.
10	Start charging SOC	When the battery SOC is lower than this value, the generator generates electricity to charge the battery.
11	Stop charging SOC	When the battery SOC is higher than this value, stop charging the battery.

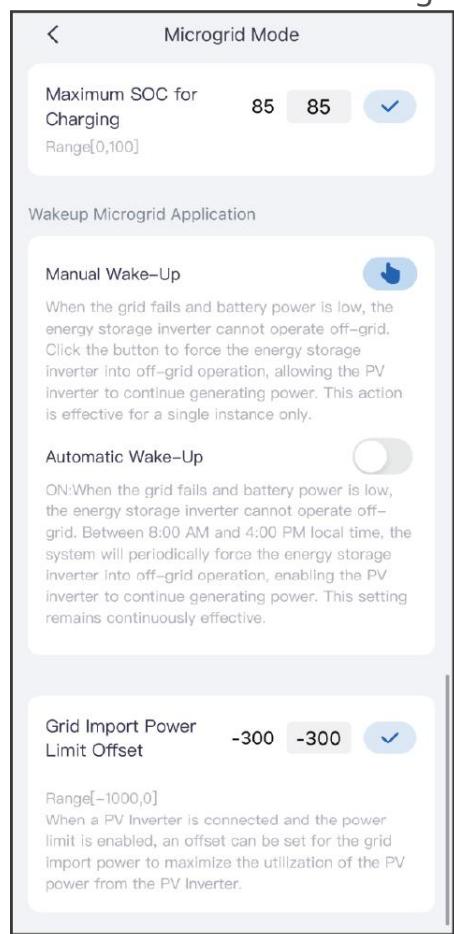
### 8.1.12.3 Setting Microgrid Parameters

## NOTICE

When the inverter supports microgrid function, you can set microgrid parameters through SolarGo App.

**Step 1** : Tap **Home > Settings > Port Connection** to set the parameters.

**Step 2** : According to the actual interface prompts, enter the microgrid control interface and set the microgrid parameters according to actual needs.



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No.	Parameters	Description
1	Maximum SOC for Charging	Set the upper limit of charging SOC, and stop charging when the upper limit is reached.

No.	Parameters	Description
2	Manual wake-up	<ul style="list-style-type: none"> <li>When the grid fails, if the battery power is low, the energy storage inverter cannot be supported to work off the grid. Click this button to force the energy storage inverter to output voltage to the grid-connected inverter, thereby starting the grid-connected inverter.</li> <li>Single effect.</li> </ul>
3	Automatic wake-up	<ul style="list-style-type: none"> <li>When the grid fails, if the battery power is low, the energy storage inverter cannot be supported to work off the grid. After enabling this function, the system will force the energy storage inverter to output voltage to the grid-connected inverter at a fixed time, thereby starting the grid-connected inverter.</li> <li>Multiple effect.</li> </ul>
4	Grid Import Power Limit Offset	Set the adjustable range of the maximum power that the device can actually buy from the grid.

## 8.1.13 Setting the Meter Parameters

### 8.1.13.1 Bind/Unbind Meter

## NOTICE

- When the PV system uses both the grid-connected inverter and the energy storage inverter to achieve coupling or microgrid functions, dual meters may be used in the system. Please set the meter binding information according to the actual usage.
- Applicable only to GoodWe meters.

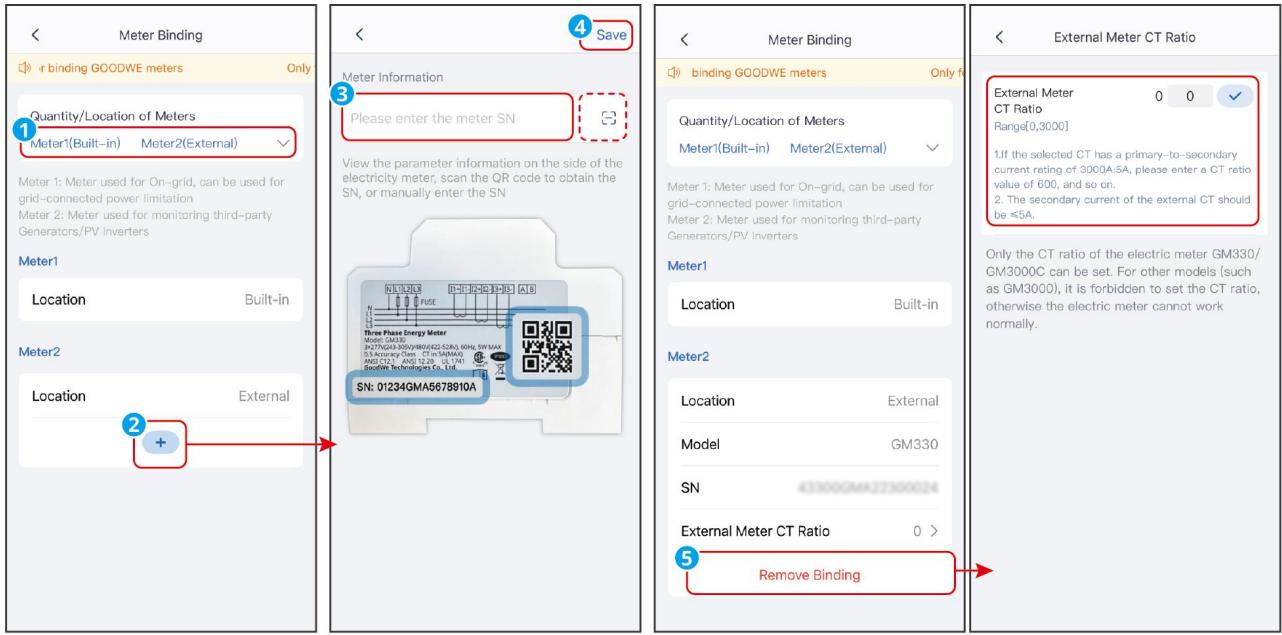
**Step 1** : Tap **Home > Settings > Meter Function > Meter Binding** to enter the binding interface.

**Step 2** : Tap **Quantity/Location of Meters** to select the actual application scenario.

Supported options: Meter 1 (built-in) No Meter 2; Meter 1 (external) No Meter 2; Meter 1 (built-in) Meter 2 (external); Meter 1 (external) Meter 2 (external). the interface of Meter 1 (built-in) Meter 2 (external) is used as an example to explain how to bind the meter.

**Step 3** : As shown in the figure below, when you choose to use an external meter, you need to manually add the external meter information. Tap  to bind the meter by manually entering the meter SN or scanning the meter SN QR code. When the bound meter model is GM330, please set the meter CT ratio according to the actual situation and click  to complete the setting. If you use other meters, you do not need to set the meter CT ratio.

**Step 4** : (Optional) If you need to unbind the external meter, please tap **Remove Binding**.



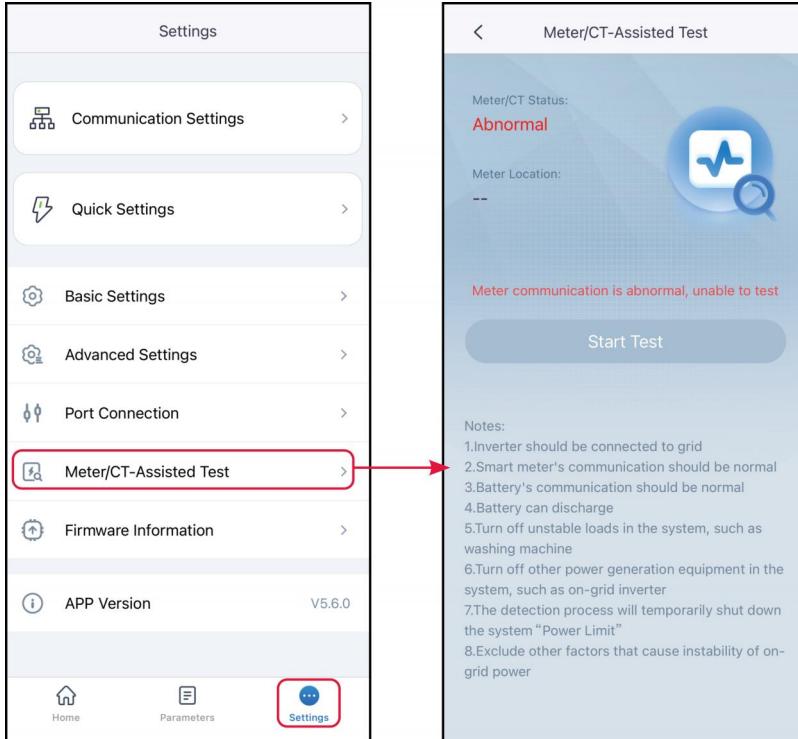
SLG00CON0123

### 8.1.13.2 Meter/CT-Assisted Test

Meter/CT-Assisted Test is used to auto-check if the Smart Meter and CT are connected in the right way and their working status.

**Step 1 :** Tap Home > Settings > Meter/CT Assisted Test to set the function.

**Step 2 :** Tap Start Test to start test. Check Test Result after test.



## 8.1.14 Equipment Maintenance

### 8.1.14.1 Checking Firmware Information/Upgrading Firmware Version

Upgrade the DSP version, ARM version, BMS version, AFCI version, or STS version of the inverter, or firmware version of the communication module. Some devices do not support upgrading the firmware version through SolarGo app.

#### NOTICE

If the Firmware Upgrade dialog box pops up once logging into the app, click **Firmware Upgrade** to directly go to the firmware information page.

#### 8.1.14.1.1 Regular Upgrade

#### NOTICE

- When there is a red dot on the right side of the firmware information, please click to view the firmware update information.
- During the upgrade process, please ensure that the network is stable and the device is connected to SolarGo, otherwise the upgrade may fail.

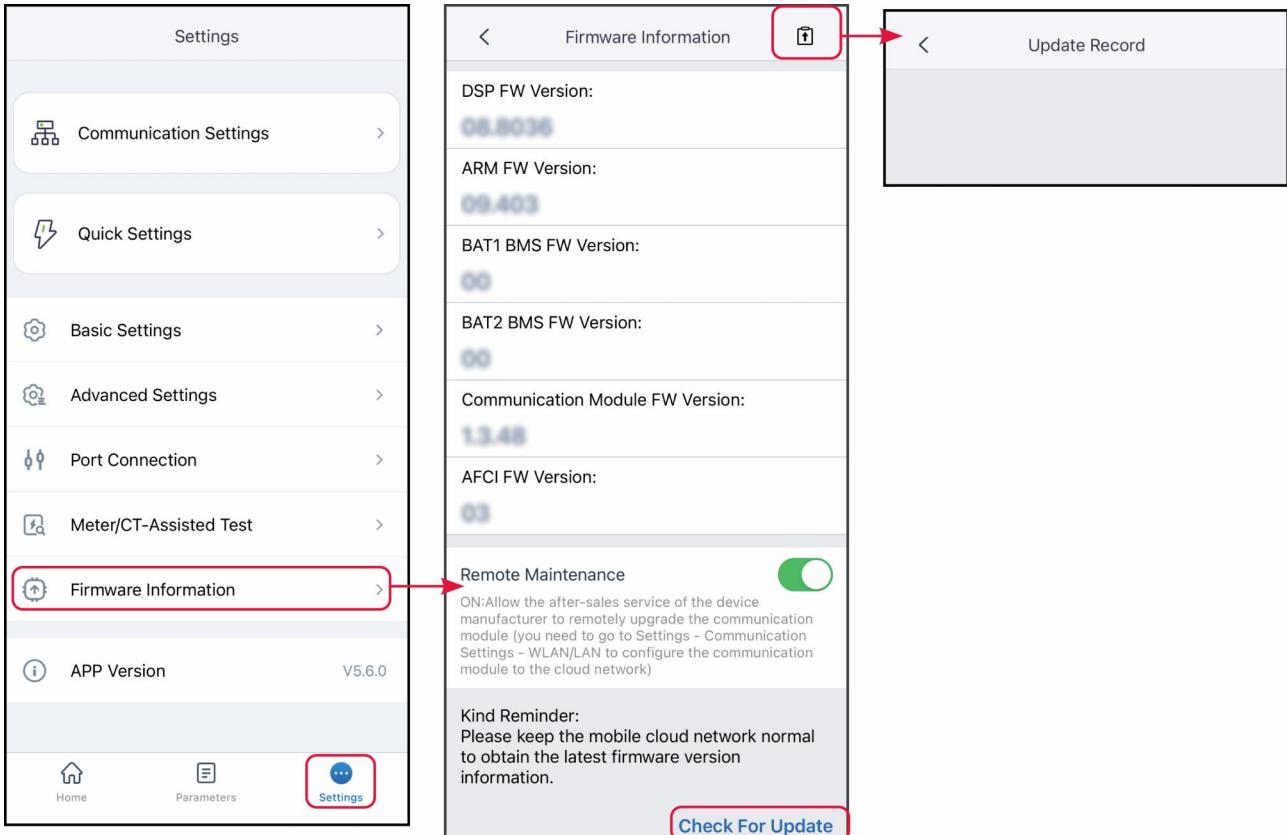
**Step 1** : Tap **Home > Settings > Firmware Information** to check the firmware version. If the firmware upgrade dialog box pops up, tap **Firmware Upgrade** and turn to the upgrade interface.

**Step 2** : (Optional) Tap **Check For Update** to confirm whether the latest firmware version is available for updating.

**Step 3**: Tap **Firmware Upgrade** to enter the firmware upgrade interface.

**Step 4** : (Optional) Tap **Learn More** to view firmware-related information, such as the current version, the latest version, firmware update records, etc.

**Step 5** : Tap **Upgrade** and complete the upgrade according to the prompts on the interface.



#### 8.1.14.1.2 One-click Upgrade

##### NOTICE

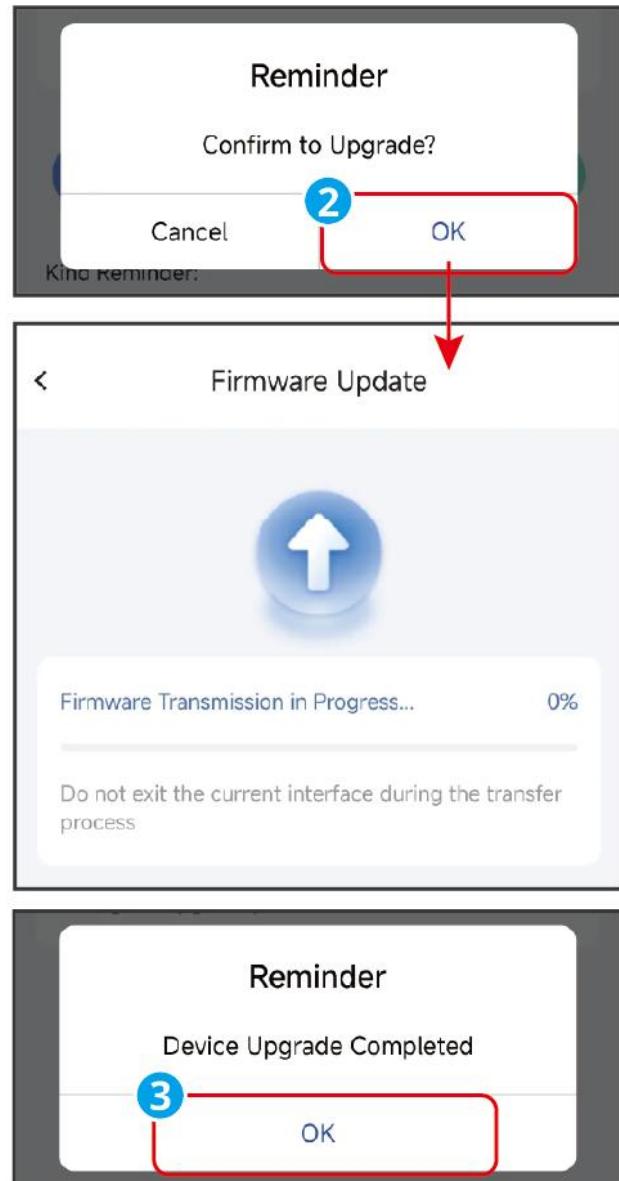
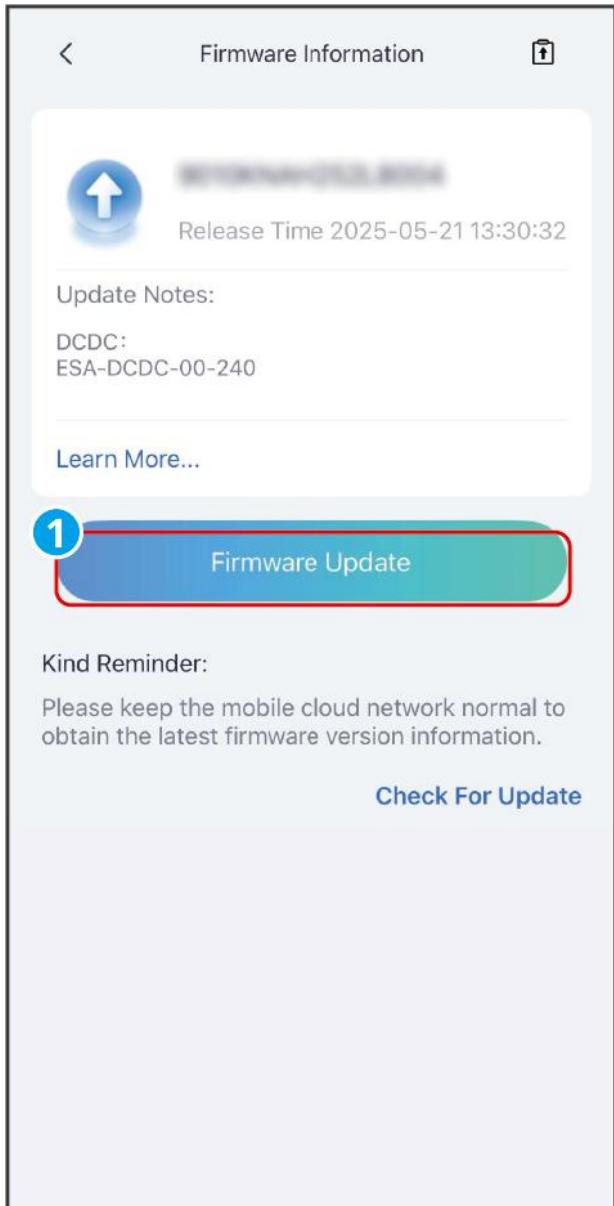
- When there is a red dot on the right side of the firmware information, please click to view the firmware update information.
- During the upgrade process, please ensure that the network is stable and the device is connected to SolarGo, otherwise the upgrade may fail.

**Step 1** : Tap **Home** > **Settings** > **Firmware Information**. Tap **Firmware Information** as prompted to enter the firmware upgrade page.

**Step 2** : Tap **Upgrade** and follow the prompts to complete the upgrading. If you only need to upgrade a specific firmware version, tap **Learn More** to check the firmware related information and tap **Firmware Upgrade** below the firmware version you want to upgrade, and follow the on-screen prompts to complete the operation.

**Step 3** : Tap **Learn More** to view all current firmware version information.

**Step 4**: (Optional)Tap , to view the version upgrade record.



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#### 8.1.14.1.3 Automatic Upgrade

## NOTICE

- When using WiFi/LAN Kit-20 or WiFi Kit-20 module communication and the module firmware version is V2.0.1 or above, the device automatic upgrade function can be enabled.
- After the device automatic upgrade function is enabled, if the module version is updated and the device has been connected to the network, the corresponding firmware version can be automatically upgraded.

**Step 1** : Tap **Home > Settings > Firmware Information**.

**Step 2** : Enable or disable the automatic device upgrade function according to actual needs.

### 8.1.14.2 Change the Login Password

## NOTICE

The login password can be changed. Keep the changed password in mind after changing it. Contact the after-sales service if you forget the password.

**Step 1** : Tap **Home > Settings > Change Login Password** to change the password.

**Step 2** : Change the password based on actual needs.



Change Login Password

Save

Please enter the new password



Please enter new password again



Note: 8-16 characters, need a combination of  
numbers and uppercase or lowercase letters  
(0-9, a-z, A-Z)

SLG00CON0088

# 9 Maintenance

## 9.1 Power OFF the System

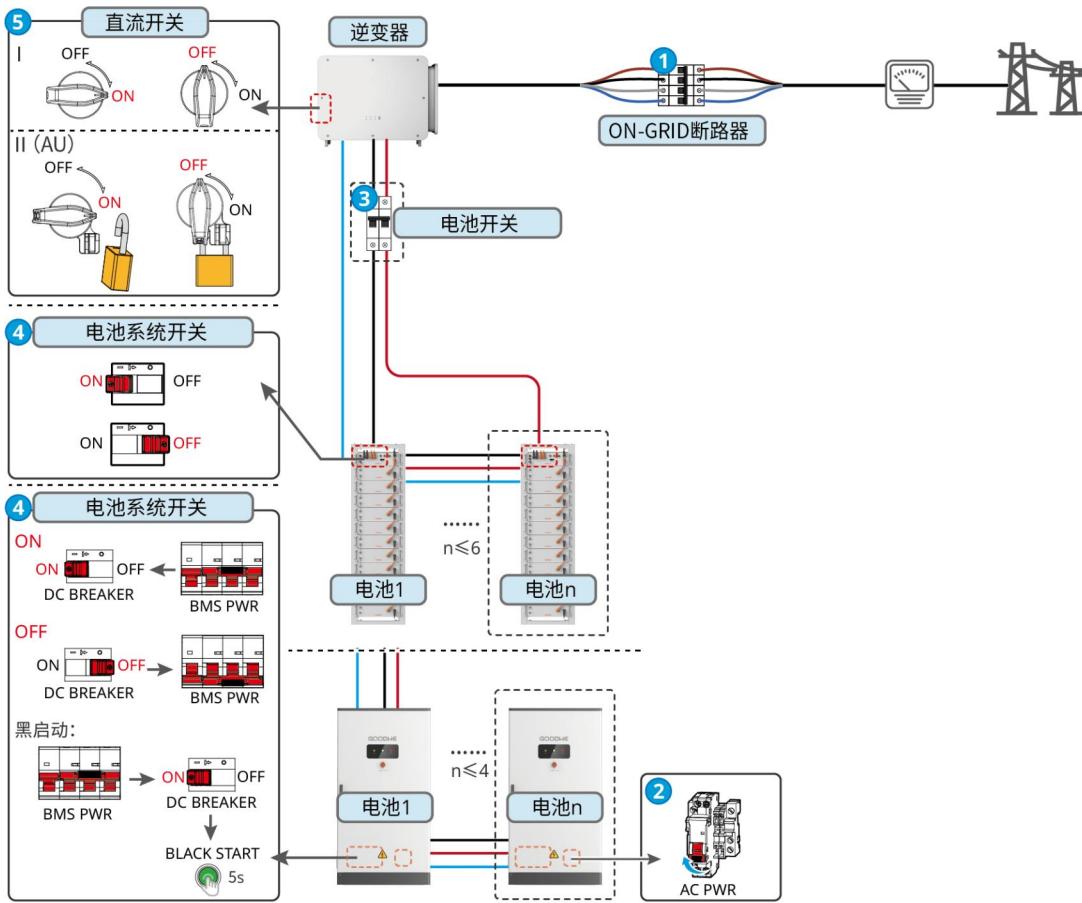
### DANGER

- When performing operation and maintenance on equipment within the system, please power down the system. Operating equipment while energized may cause equipment damage or pose an electric shock hazard.
- After the equipment is powered off, a certain amount of time is required for the internal components to discharge. Please wait until the equipment is completely discharged according to the time requirement on the label.
- When shutting down the battery system, please strictly adhere to the battery system power-down requirements to prevent damage to the battery system.
- In case of an emergency requiring the battery to be shut off, press the emergency stop switch, and the battery will power down immediately.

### NOTICE

Circuit breakers between the inverter and battery, and between battery systems, must be installed in accordance with local laws and regulations.

### 9.1.1 Single inverter, no off-grid function

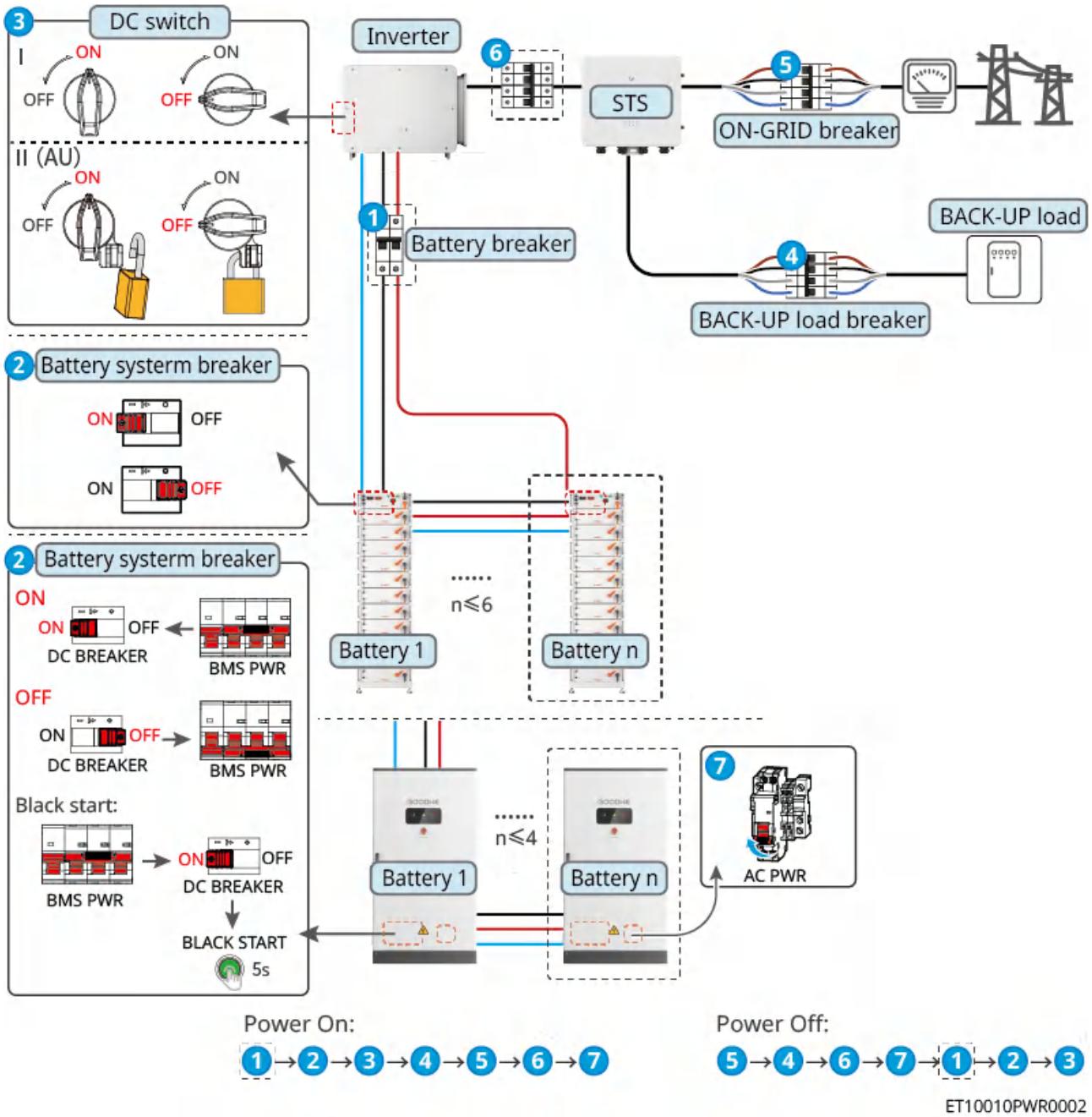


ET10010PWR0001

Power OFF the System: ① → ② → ③ → ④ → ⑤

③: Configure according to local laws and regulations.

### 9.1.2 Single Inverter with Off-Grid Function

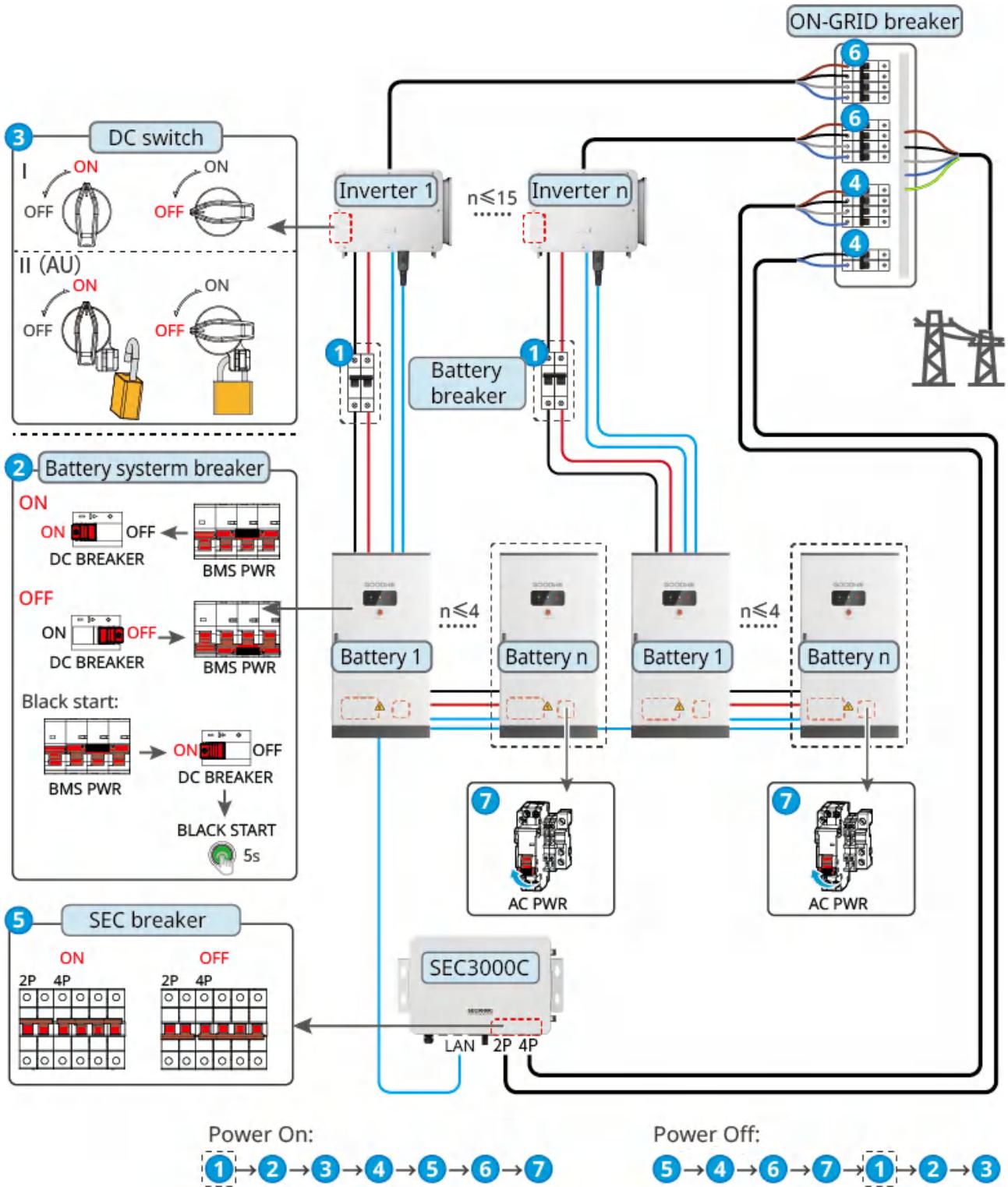


Power OFF the System: 1 → 2 → 3 → 4 → 5 → 6 → 7

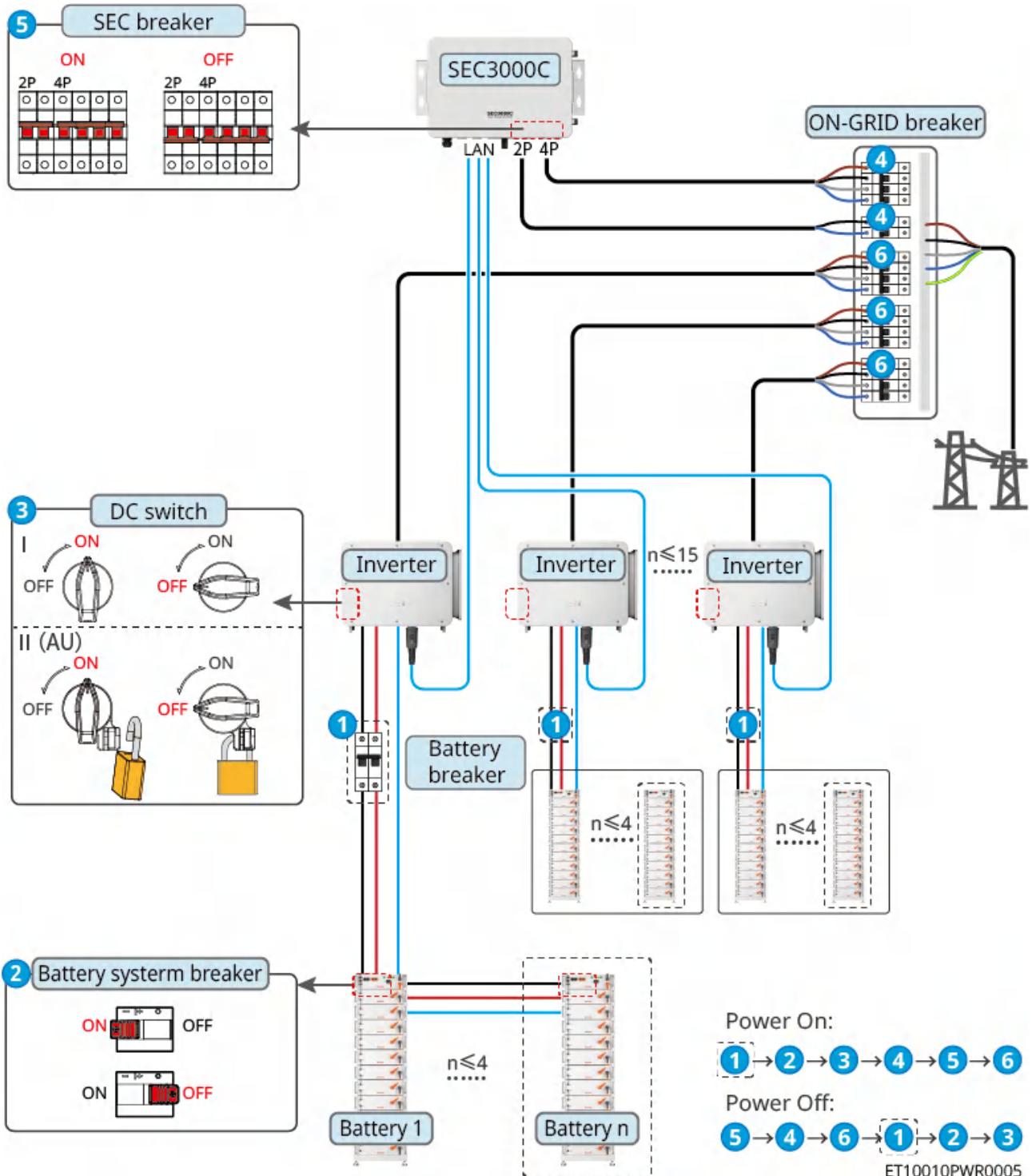
⑤: Optional based on local laws and regulations.

### 9.1.3 Multi-Inverter Pure Grid-Tied

#### Inverter with BAT 92.1-112.6 kWh Commercial and Industrial Battery System



### Inverter with BAT 25.6-56.3 kWh High Voltage Battery System



## 9.2 Removing the Equipment

## DANGER

- Ensure the equipment is powered off.
- When operating the equipment, please wear personal protective equipment.
- When dismantle PV terminals or battery terminals, please use the disassembly tool provided with the package.

## NOTICE

Unless otherwise specified, the removal steps for the device in this document are the reverse order of the installation steps.

### 9.2.1 Inverter Removal

**Step1:** Power down the system.

**Step2:** Label the cable types using tags for the connected cables in the system.

**Step3:** Disconnect the electrical connections of the inverter, STS, Battery, and BACK-UP load in the system.

**Step4:** Remove the device from the back mounting plate and dismantle the device backplate.

**Step5:** Remove the electricity meter and smart dongle.

**Step6:** Properly store the device. If it will be put into use later, ensure that the storage conditions meet the requirements.

### 9.2.2 Dismantling BAT Series 35.8-56.3kWh High-Voltage Battery

#### • Type I (Rack-mounted)

**Step 1:** Power down the battery.

**Step 2:** Remove the low-voltage communication cables.

**Step 3:** Remove the power cables.

**Step 4:** Remove the high-voltage box and the battery pack.

**Step 5:** Remove the wall-mounting bracket and adjustable feet / Unscrew the fixing screws at the bottom of the rack.

**Step 6:** Lay the rack down, and remove the screws securing the uprights to the crossbeams.

**Step 7:** Place the battery and all removed accessories back into their original packaging and store them properly.

- **Type II (Stack-mounted)**

**Step 1:** Power down the battery.

**Step 2:** Remove the low-voltage communication cables.

**Step 3:** Remove the power cables.

**Step 4:** Remove the cable protection sleeves and equipotential bonding straps.

**Step 5:** Remove the wall-mounting bracket, and sequentially take down the high-voltage box and the battery pack.

**Step 6:** Remove the floor-mounting bracket and adjustable feet.

**Step 7:** Place the battery and all removed accessories back into their original packaging and store them properly.

### **9.2.3 Dismantling BAT Series 92.1-112.6kWh Commercial & Industrial Battery System**

**Step 1:** Power OFF the System.

**Step 2:** Remove the air conditioning drain pipe and the bottom plate.

**Step 3:** Disconnect the communication cables between the battery system and the inverter, and the inter-cluster communication cables of the battery system. Remove the signal cables for the audible and visual alarm.

**Step 4:** Install protective covers for the temperature detector and smoke detector.

**Step 5:** Disconnect the air conditioning power cable.

**Step 6:** Disconnect the power cables between the battery system and the inverter, and the inter-cluster power cables of the battery system.

**Step 7:** Remove the battery system grounding cable.

**Step 8:** Close the cabinet door.

**Step 9:** Unscrew the bolts securing the battery system to the base.

**Step 10:** Move the battery system onto a pallet.

**Step 11:** Tighten the bottom screws to secure the battery system to the pallet, and install the baffle.

**Step 12:** Place the battery system and all dismantled accessories back into their original packaging and store them properly.

## **9.3 Disposing of the Equipment**

When the equipment can no longer be used and needs to be disposed of, please dispose of it according to the electrical waste disposal requirements of the regulations in the country/region where the equipment is located. The equipment must not be disposed of as general household waste.

## 9.4 Routine Maintenance

### WARNING

- If any issues are found that may affect the battery or energy storage inverter system, contact after-sales personnel. Disassembly by unauthorized personnel is prohibited.
- If exposed copper wires are found inside the conductive cables, do not touch them due to high voltage hazard. Contact after-sales personnel. Disassembly by unauthorized personnel is prohibited.
- In case of other emergencies, please contact after-sales personnel immediately. Operate only under their guidance or wait for them to perform on-site operations.

Maintenance Item	Maintenance Method	Maintenance Cycle	Maintenance Purpose
System Cleaning	Check for foreign objects or dust on heat sinks, fans, and air inlets/outlets. Check if the installation space meets requirements, and check for debris accumulation around the equipment.	Once every six months	Prevent cooling failures.
System Installation	Check if the equipment installation is secure and if fastening screws are loose. Check for damage or deformation on the equipment exterior.	Once every six months to once a year	Confirm equipment installation stability.

Maintenance Item	Maintenance Method	Maintenance Cycle	Maintenance Purpose
Electrical Connections	Check for loose electrical connections, damaged cable sheaths, or exposed copper wires.	Once every six months to once a year	Confirm reliability of electrical connections.
Sealing	Check if the sealing of equipment cable entry points meets requirements. If gaps are too large or unsealed, reseal them.	Once a year	Confirm machine sealing and intact waterproof performance.
Battery Maintenance	If the battery has not been used for a long time or is not fully charged, it is recommended to charge it regularly.	Once every 15 days	Protect battery service life.

## 9.5 Fault

### 1. Viewing Fault/Alarms Information

All detailed fault and alarm information for the energy storage system is displayed in the **[SolarGo App]**, **[SEMS Portal App]**, and the LCD screen. If your product is abnormal and you do not see related fault information in the **[SolarGo App]**, **[SEMS Portal App]**, or on the LCD screen, please contact the after-sales service center.

- **Method 1: LCD Screen**

Click or select the fault information icon  on the screen to view the energy storage system alarm or fault information.

- **Method 2: SolarGo App**

Navigate through **[Home]** > **[Parameters]** > **[Alarms]** to view the energy storage system alarm information.

- **Method 3: SEMS Portal App**

- a. Open the SEMS Portal App and log in with any account.

- b. Navigate through **[Power Station]** > **[Alarms]** to view fault information for all power stations.

- c. Click on a specific fault name to view details such as the time of occurrence, possible causes, and solutions.

## 2. Fault Information and Troubleshooting

Please troubleshoot according to the following methods. If the troubleshooting methods cannot help you, please contact the after-sales service center.

When contacting the after-sales service center, please collect the following information to facilitate a quick resolution.

- Product information, such as: serial number, software version, device installation time, fault occurrence time, fault frequency, etc.
- Device installation environment, such as: weather conditions, whether components are shaded or obstructed, etc. Providing photos, videos, or other files of the installation environment is recommended to assist in problem analysis.
- Grid conditions.

If the system experiences a problem not listed, or if following the instructions still does not stop the problem or abnormality, immediately stop system operation and contact your dealer immediately.

### 9.5.1 System Communication Failure

No.	fault	Solution
1	Cannot find the smart dongle's wireless signal	<ol style="list-style-type: none"><li>1. Ensure the smart dongle is powered on normally, with the blue indicator light blinking or steadily lit.</li><li>2. Ensure the smart device is within the communication range of the smart dongle.</li><li>3. Refresh the device list in the App again.</li><li>4. Restart the inverter.</li></ol>
2	Unable to connect to the smart dongle's wireless signal	<ol style="list-style-type: none"><li>1. Ensure no other smart device is connected to the inverter's WiFi signal.</li><li>2. Restart the inverter and reconnect to the inverter's WiFi signal.</li><li>3. If connecting via Bluetooth signal, ensure Bluetooth pairing is successful.</li></ol>

3	Cannot find the Router SSID	<ol style="list-style-type: none"> <li>1. Place the Router closer to the smart dongle, or add a WiFi repeater to enhance the WiFi signal.</li> <li>2. Reduce the number of devices connected to the Router.</li> <li>3. Confirm whether the Router is a 2.4G Router.</li> </ol>
4	After all configuration is complete, the smart dongle fails to connect to the Router	<ol style="list-style-type: none"> <li>1. Restart the inverter.</li> <li>2. Check if the network name, encryption method, and password in the WiFi configuration are the same as those of the Router.</li> <li>3. Restart the Router.</li> <li>4. Place the Router closer to the smart dongle, or add a WiFi repeater to enhance the WiFi signal.</li> </ol>
5	After all configuration is complete, the smart dongle fails to connect to the server	Restart the Router and the inverter.
6	Cannot find GSA-*** when using the 4G Kit-CN-G20 module	<ol style="list-style-type: none"> <li>1. Ensure the smart dongle on the inverter is powered on normally, with the blue indicator light blinking or steadily lit.</li> <li>2. Ensure the smart device is within the communication range of the smart dongle.</li> <li>3. Refresh the device list in the App again.</li> <li>4. Restart the inverter.</li> </ol>
7	Unable to connect to GSA-*** when using the 4G Kit-CN-G20 module	<ol style="list-style-type: none"> <li>1. Ensure Bluetooth pairing is successful.</li> <li>2. Restart the inverter and reconnect to GSA-***.</li> <li>3. Unpair from GSA-*** in the phone's Bluetooth settings, then reconnect via the App.</li> </ol>

8	 When using the 4G Kit-CN-G20 module, the indicator light blinks six times	<p>Ensure the smart dongle is properly connected to the inverter.</p>
9	The inverter cannot recognize the 4G Kit-CN-G20 smart dongle	<p>Restart the inverter.</p>

## 9.5.2 Inverter Fault

## 9.5.3 Battery Fault

### • BAT Series 35.8-56.3kWh High Voltage Battery

No.	Fault Name	Possible Causes	Troubleshooting
1	Charging Overvoltage 2	<ul style="list-style-type: none"> <li>Cell voltage/total voltage too high</li> <li>Voltage sensing wire abnormal</li> </ul>	<ol style="list-style-type: none"> <li>Power off and let it rest for 5 minutes, restart and check if the fault persists;</li> <li>If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
2	Charging Overvoltage 3	<ul style="list-style-type: none"> <li>Cell voltage/total voltage too high</li> <li>Voltage sensing wire abnormal</li> </ul>	<ol style="list-style-type: none"> <li>Power off and let it rest for 5 minutes, restart and check if the fault persists;</li> <li>If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>

No.	Fault Name	Possible Causes	Troubleshooting
3	Discharging Undervoltage 3	<ul style="list-style-type: none"> <li>• Cell voltage/total voltage too low</li> <li>• Voltage sensing wire abnormal</li> </ul>	<ol style="list-style-type: none"> <li>1. Power off and let it rest for 5 minutes, restart and check if the fault persists;</li> <li>2. Confirm the inverter working status, check if the battery is not being charged due to issues like working mode. Try charging the battery via the inverter and observe if the fault is resolved.</li> <li>3. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
4	Discharging Undervoltage 2	<ul style="list-style-type: none"> <li>• Cell voltage/total voltage too low</li> <li>• Voltage sensing wire abnormal</li> </ul>	<ol style="list-style-type: none"> <li>1. Power off and let it rest for 5 minutes, restart and check if the fault persists;</li> <li>2. Confirm the inverter working status, check if the battery is not being charged due to issues like working mode. Try charging the battery via the inverter and observe if the fault is resolved.</li> <li>3. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
5	Cell Overvoltage 2	<ul style="list-style-type: none"> <li>• Cell voltage/total voltage too high</li> <li>• Voltage sensing wire abnormal</li> </ul>	<ol style="list-style-type: none"> <li>1. Power off and let it rest for 5 minutes, restart and check if the fault persists;</li> </ol> <p>If the fault is not resolved, contact GoodWe after-sales service.</p>

No.	Fault Name	Possible Causes	Troubleshooting
6	Cell Undervoltage 2	Cell undervoltage	<ol style="list-style-type: none"> <li>1. Power off and let it rest for 5 minutes, restart and check if the fault persists;</li> <li>2. Confirm the inverter working status, check if the battery is not being charged due to issues like working mode. Try charging the battery via the inverter and observe if the fault is resolved.</li> <li>3. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
7	Large Cell Voltage Difference 2	Large cell voltage difference	<ol style="list-style-type: none"> <li>1. Restart the battery and wait for 12 hours.</li> <li>2. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
8	Charging Overcurrent 2	<ul style="list-style-type: none"> <li>• Charging current too high, battery current limiting abnormal: sudden change in temperature and voltage values</li> <li>• Inverter response abnormal</li> </ul>	<ol style="list-style-type: none"> <li>1. Power off and let it rest for 5 minutes, restart and check if the fault persists;</li> <li>2. Check if the inverter power setting is too high, causing it to exceed the battery's rated operating current;</li> <li>3. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>

No.	Fault Name	Possible Causes	Troubleshooting
9	Discharging Overcurrent 2	<ul style="list-style-type: none"> <li>• Discharging current too high, battery current limiting abnormal: sudden change in temperature and SOC values</li> <li>• Inverter response abnormal</li> </ul>	
10	Cell High Temperature 2	<ul style="list-style-type: none"> <li>• Cell temperature too high</li> <li>• Temperature sensor abnormal</li> </ul>	<ol style="list-style-type: none"> <li>1. Power off and let it rest for 30 minutes, restart and check if the fault persists;</li> <li>2. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
11	Cell Low Temperature 2	<ul style="list-style-type: none"> <li>• Ambient temperature too low</li> <li>• Temperature sensor abnormal</li> </ul>	<ol style="list-style-type: none"> <li>1. Power off and let it rest for 30 minutes, restart and check if the fault persists;</li> <li>2. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
12	Charging Over-temperature 2	<ul style="list-style-type: none"> <li>• Cell temperature too high</li> <li>• Temperature sensor abnormal</li> </ul>	<ol style="list-style-type: none"> <li>1. Power off and let it rest for 30 minutes; restart and check if the fault persists;</li> <li>2. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
13	Charging Low Temperature 2	<ul style="list-style-type: none"> <li>• Ambient temperature too low</li> <li>• Temperature sensor abnormal</li> </ul>	<ol style="list-style-type: none"> <li>1. Power off and let it rest for 30 minutes; restart and check if the fault persists;</li> <li>2. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>

No.	Fault Name	Possible Causes	Troubleshooting
14	Discharging Over-temperature 2	<ul style="list-style-type: none"> <li>Cell temperature too high</li> <li>Temperature sensor abnormal</li> </ul>	<ol style="list-style-type: none"> <li>Power off and let it rest for 30 minutes; restart and check if the fault persists;</li> <li>If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
15	Discharging Low Temperature 2	<ul style="list-style-type: none"> <li>Ambient temperature too low</li> <li>Temperature sensor abnormal</li> </ul>	<ol style="list-style-type: none"> <li>Power off and let it rest for 30 minutes; restart and check if the fault persists;</li> <li>If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
16	Large Cell Temperature Difference 2	Large cell temperature difference	<ol style="list-style-type: none"> <li>Power off and let it rest for 30 minutes; restart and check if the fault persists;</li> <li>If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
17	Precharge Disabled	Precharge mos failed to close	<ol style="list-style-type: none"> <li>Power off and let it rest for 5 minutes, restart and check if the fault persists;</li> <li>If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
18	Battery Tripping	Battery Trip	<ol style="list-style-type: none"> <li>Let it rest for 10min, then re-close to recover;</li> <li>If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>

No.	Fault Name	Possible Causes	Troubleshooting
19	Battery and Inverter Comm Failure	Battery and Inverter Comm Failure	<ol style="list-style-type: none"> <li>1. Confirm the communication cable wiring sequence and DC cables are correct, and the continuity is normal.</li> <li>2. Restart the inverter and battery.</li> <li>3. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
20	Specific Failures	Battery specific failure	Please contact the after-sales service center.
21	Cluster Fault	Slave cluster lost connection Cluster failure	<p>Check the reliability of the master-slave harness communication connection</p> <p>Please contact the after-sales service center.</p>
22	Application Software Fault	Software self-test failed	Please contact the after-sales service center
23	Microelectronics Fault	Electronic component failure	Please contact the after-sales service center
24	Master Control Overload	Exceeds power cable carrying capacity range	Stop charging, if not automatically recovered, please contact professional technicians to restart the system.
25	SN Abnormal	Batteries with identical SN exist	Please contact the after-sales service center.
26	Circuit Breaker Abnormal	Molded case circuit breaker abnormal disconnection	Replace the molded case circuit breaker.

- **BAT Series 92.1-112.6kWh Commercial & Industrial Battery System**

No.	Fault Name	Possible Cause	Troubleshooting
1	Charging Overvoltage 2	<ul style="list-style-type: none"> <li>• Cell voltage / Total voltage too high</li> <li>• Voltage sensing line abnormal</li> </ul>	<ol style="list-style-type: none"> <li>1. Power off and let it sit for 5 minutes, restart and check if the fault persists;</li> <li>2. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
2	Charging Overvoltage 3	<ul style="list-style-type: none"> <li>• Cell voltage / Total voltage too high</li> <li>• Voltage sensing line abnormal</li> </ul>	<ol style="list-style-type: none"> <li>1. Power off and let it sit for 5 minutes, restart and check if the fault persists;</li> <li>2. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
3	Discharging Undervoltage 3	<ul style="list-style-type: none"> <li>• Cell voltage / Total voltage too low</li> <li>• Voltage sensing line abnormal</li> </ul>	<ol style="list-style-type: none"> <li>1. Power off and let it sit for 5 minutes, restart and check if the fault persists;</li> <li>2. Confirm the inverter operation status, check if the battery is not being charged due to issues like operation mode, try charging the battery via the inverter and observe if the fault is resolved.</li> <li>3. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>

No.	Fault Name	Possible Cause	Troubleshooting
4	Discharging Undervoltage 2	<ul style="list-style-type: none"> <li>• Cell voltage / Total voltage too low</li> <li>• Voltage sensing line abnormal</li> </ul>	<ol style="list-style-type: none"> <li>1. Power off and let it sit for 5 minutes, restart and check if the fault persists;</li> <li>2. Confirm the inverter operation status, check if the battery is not being charged due to issues like operation mode, try charging the battery via the inverter and observe if the fault is resolved.</li> <li>3. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
5	Cell Overvoltage 2	<ul style="list-style-type: none"> <li>• Cell voltage / Total voltage too high</li> <li>• Voltage sensing line abnormal</li> </ul>	<ol style="list-style-type: none"> <li>1. Power off and let it sit for 5 minutes, restart and check if the fault persists;</li> </ol> <p>If the fault is not resolved, contact GoodWe after-sales service.</p>
6	Cell Undervoltage 2	Cell Undervoltage	<ol style="list-style-type: none"> <li>1. Power off and let it sit for 5 minutes, restart and check if the fault persists;</li> <li>2. Confirm the inverter operation status, check if the battery is not being charged due to issues like operation mode, try charging the battery via the inverter and observe if the fault is resolved.</li> <li>3. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
7	Large Cell Voltage Difference 2	Large Cell Voltage Difference	<ol style="list-style-type: none"> <li>1. Restart the battery and wait for 12 hours.</li> <li>2. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>

No.	Fault Name	Possible Cause	Troubleshooting
8	Charging Overcurrent 2	<ul style="list-style-type: none"> <li>Charging current too high, battery current limiting abnormal: sudden change in temperature and voltage values</li> <li>Inverter response abnormal</li> </ul>	<ol style="list-style-type: none"> <li>Power off and let it sit for 5 minutes, restart and check if the fault persists;</li> <li>Check if the inverter is set to excessive power, causing it to exceed the battery's rated operating current;</li> <li>If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
9	Discharging Overcurrent 2	<ul style="list-style-type: none"> <li>Discharging current too high, battery current limiting abnormal: sudden change in temperature and SOC values</li> <li>Inverter response abnormal</li> </ul>	
10	Cell High Temperature 2	<ul style="list-style-type: none"> <li>Cell temperature too high</li> <li>Temperature sensor abnormal</li> </ul>	<ol style="list-style-type: none"> <li>Power off and let it sit for 30 minutes, restart and check if the fault persists;</li> <li>If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
11	Cell Low Temperature 2	<ul style="list-style-type: none"> <li>Ambient temperature too low</li> <li>Temperature sensor abnormal</li> </ul>	<ol style="list-style-type: none"> <li>Power off and let it sit for 30 minutes, restart and check if the fault persists;</li> <li>If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>

No.	Fault Name	Possible Cause	Troubleshooting
12	Charging Over-temperature 2	<ul style="list-style-type: none"> <li>• Cell temperature too high</li> <li>• Temperature sensor abnormal</li> </ul>	<ol style="list-style-type: none"> <li>1. Power off and let it sit for 30 minutes; restart and check if the fault persists;</li> <li>2. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
13	Charging Low-temperature 2	<ul style="list-style-type: none"> <li>• Ambient temperature too low</li> <li>• Temperature sensor abnormal</li> </ul>	<ol style="list-style-type: none"> <li>1. Power off and let it sit for 30 minutes; restart and check if the fault persists;</li> <li>2. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
14	Discharging Over-temperature 2	<ul style="list-style-type: none"> <li>• Cell temperature too high</li> <li>• Temperature sensor abnormal</li> </ul>	<ol style="list-style-type: none"> <li>1. Power off and let it sit for 30 minutes; restart and check if the fault persists;</li> <li>2. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
15	Discharging Low-temperature 2	<ul style="list-style-type: none"> <li>• Ambient temperature too low</li> <li>• Temperature sensor abnormal</li> </ul>	<ol style="list-style-type: none"> <li>1. Power off and let it sit for 30 minutes; restart and check if the fault persists;</li> <li>2. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
16	Large Cell Temperature Difference 2	Large Cell Temperature Difference	<ol style="list-style-type: none"> <li>1. Power off and let it sit for 30 minutes; restart and check if the fault persists;</li> <li>2. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>

No.	Fault Name	Possible Cause	Troubleshooting
17	Precharge Disabled	Precharge mos failed to close	<ol style="list-style-type: none"> <li>1. Power off and let it sit for 5 minutes, restart and check if the fault persists;</li> <li>2. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
18	Battery Tripping	Battery Trip	<ol style="list-style-type: none"> <li>1. Let it sit for 10min, then close it again to recover;</li> <li>2. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
19	Battery and Inverter Comm Failure	Battery and Inverter Comm Failure	<ol style="list-style-type: none"> <li>1. Confirm the communication cable wiring sequence and DC cables are correct, and check if the continuity is normal.</li> <li>2. Restart the inverter and battery.</li> <li>3. If the fault is not resolved, contact GoodWe after-sales service.</li> </ol>
20	Specific Failures	Battery specific fault	Please contact the after-sales service center.
21	Cluster Parallel Fault	<p>Slave cluster lost connection</p> <p>Cluster parallel failure</p>	<p>Check the reliability of the master-slave harness communication connection</p> <p>Please contact the after-sales service center.</p>
22	Application Software Fault	Software self-test failure	Please contact the after-sales service center
23	Microelectronics Fault	Electronic component fault	Please contact the after-sales service center
24	Master Control Overload	Exceeds the power cable's carrying capacity range	Stop charging, if not automatically restored, please contact a professional technician to restart the system.

No.	Fault Name	Possible Cause	Troubleshooting
25	SN Abnormal	Batteries with identical SN exist	Please contact the after-sales service center
26	Breaker Abnormal	Molded case breaker abnormally opened	Replace the molded case breaker
27	Breaker Sticking Fault	Molded case breaker fault or auxiliary breaker fault	Replace the molded case breaker or replace the auxiliary breaker
28	Fire Protection System Triggered	Internal system thermal runaway or fire protection false trigger	Please contact the after-sales service center
29	Air Conditioner Fault	Abnormal fault occurred within the air conditioning system	Please contact the after-sales service center
30	Access Control Fault	Door abnormally opened or access control sensor damaged	Close the door or replace the access control sensor
31	Emergency Stop Triggered	Emergency stop pressed or emergency stop button damaged	Replace the emergency stop button
32	PACK Fan Fault	PACK fan not rotating or unable to operate	Replace the corresponding PACK fan

# 10 technical parameter

## 11.1 The Parameter of Inverters

	GW50K-ET-L-G10	GW75K-ET-G10	GW80K-ET-G10	GW99.99K-ET-G10	GW100K-ET-G10
Battery Side					
Battery Type	Li-Ion	Li-Ion	Li-Ion	Li-Ion	Li-Ion
Nominal Voltage (V)	400	600	600	600	600
Voltage Range (V)	300 ~ 600	300 ~ 800	300 ~ 800	300 ~ 800	300 ~ 800
Start-up Voltage (V)	300	300	300	300	300
Number of Battery Inputs	2	2	2	2	2
Max. Continuous Charging Current (A)	85×2	85×2	100×2	110×2	110×2
Max. Continuous Discharging Current (A)	85×2	85×2	100×2	110×2	110×2
Max. Charging Power (kW)	50	75	88	99.99	110

	<b>GW50K-ET-L-G10</b>	<b>GW75K-ET-G10</b>	<b>GW80K-ET-G10</b>	<b>GW99.99K-ET-G10</b>	<b>GW100K-ET-G10</b>
Max. Discharging Power (kW)	50	75	88	99.99	110
PV Side					
Max. Input Power (kW)	100	150	160	200	200
Max. Input Voltage (V) <sup>*1</sup>	850	1000	1000	1000	1000
MPPT Operating Voltage Range (V) <sup>*2</sup>	160 ~ 700	160 ~ 950	160 ~ 950	160 ~ 950	160 ~ 950
MPPT Operating Voltage Range at Nominal Power (V)	300 ~ 600	500 ~ 850	500 ~ 850	500 ~ 850	500 ~ 850
Start-up Voltage (V)	200	200	200	200	200
Nominal Input Voltage (V)	420	620	620	620	620
Max. MPPT Current (A)	42×8	42×8	42×8	42×8	42×8
Max. MPPT Short Circuit Current (A)	55×8	55×8	55×8	55×8	55×8

	GW50K-ET-L-G10	GW75K-ET-G10	GW80K-ET-G10	GW99.99K-ET-G10	GW100K-ET-G10
Max. Backfeed Current to the Array (A)	0	0	0	0	0
Number of MPPTs	8	8	8	8	8
Number of Strings per MPPT	2	2	2	2	2
AC Side (on-grid)					
Nominal Power (kW)	50	75	80	99.99	100
Max. Power (kW)	50	75	88 <sup>*5</sup>	99.99	110 <sup>*5</sup>
Nominal Apparent Power from/to Grid (kVA)	50	75	80	99.99	100
Max. Apparent Power to Grid (kVA)	50	75	88 <sup>*6</sup>	99.99	110 <sup>*6</sup>
Max. Apparent Power from Grid (kVA)	50	75	88 <sup>*6</sup>	99.99	110 <sup>*6</sup>

	<b>GW50K-ET-L-G10</b>	<b>GW75K-ET-G10</b>	<b>GW80K-ET-G10</b>	<b>GW99.99K-ET-G10</b>	<b>GW100K-ET-G10</b>
Nominal Voltage (V)	127/220, 3L/N/PE	220/380, 230/400, 240/415, 3L/N/PE	220/380, 230/400, 240/415, 3L/N/PE	220/380, 230/400, 240/415, 3L/N/PE	220/380, 230/400, 240/415, 3L/N/PE
Voltage Range (V)	114~139 (according to local standard)	180~280 (according to local standard)	180~280 (according to local standard)	180~280 (according to local standard)	180~280 (according to local standard)
Nominal Frequency (Hz)	50/60	50/60	50/60	50/60	50/60
Frequency Range (Hz)	45~55/55~65	45~55/55~65	45~55/55~65	45~55/55~65	45~55/55~65
Nominal Current from/to Grid (A)	131.3	114.0 @380Vac 108.3 @400Vac 104.4 @415Vac	121.6 @380Vac 115.5 @400Vac 111.3 @415Vac	152.0 @380Vac 144.4 @400Vac 139.2 @415Vac	152.0 @380Vac 144.4 @400Vac 139.2 @415Vac
Max. Current to Grid (A) <sup>*7</sup>	131.3	114.0 @380Vac 108.3 @400Vac 104.4 @415Vac	133.8 @380Vac 127.1 @400Vac 122.5 @415Vac	152.0 @380Vac 144.4 @400Vac 139.2 @415Vac	167.2 @380Vac 158.8 @400Vac 153.1 @415Vac
Max. Current from Grid (A) <sup>*8</sup>	131.3	114.0 @380Vac 108.3 @400Vac 104.4 @415Vac	133.8 @380Vac 127.1 @400Vac 122.5 @415Vac	152.0 @380Vac 144.4 @400Vac 139.2 @415Vac	167.2 @380Vac 158.8 @400Vac 153.1 @415Vac

	GW50K-ET-L-G10	GW75K-ET-G10	GW80K-ET-G10	GW99.99K-ET-G10	GW100K-ET-G10
Max. Output Fault Current (Peak and Duration) (A)	406 @2.3us				
Inrush Current (Peak and Duration) (A)	63.5 @20ms				
Power Factor	~1 (Adjustable from 0.8 lead to 0.8 lag)	~1 (Adjustable from 0.8 lead to 0.8 lag)	~1 (Adjustable from 0.8 lead to 0.8 lag)	~1 (Adjustable from 0.8 lead to 0.8 lag)	~1 (Adjustable from 0.8 lead to 0.8 lag)
THDi	<3%	<3%	<3%	<3%	<3%
Maximum Output Overcurrent Protection (A)	385	385	385	385	385
Type of Voltage	a.c	a.c	a.c	a.c	a.c
Backup Side*3					

	GW50K-ET-L-G10	GW75K-ET-G10	GW80K-ET-G10	GW99.99K-ET-G10	GW100K-ET-G10
Nominal Output Apparent Power (kVA)	50	75	80	99.99	100
Max. Output Apparent Power (kVA)	50	75	88	99.99	110
Peak Output Power without Grid (kW)	120% @60s 150% @10s	120% @60s 150% @10s	110% @continuous 120% @60s 150% @10s	120% @60s 150% @10s	110% @continuous 120% @60s 150% @10s
Nominal Output Voltage (V)	127/220, 3L/N/PE	220/380, 230/400, 240/415, 3L/N/PE	220/380, 230/400, 240/415, 3L/N/PE	220/380, 230/400, 240/415, 3L/N/PE	220/380, 230/400, 240/415, 3L/N/PE
Nominal Output Frequency (Hz)	50/60	50/60	50/60	50/60	50/60
Frequency Range (Hz)	45~55/55~65	45~55/55~65	45~55/55~65	45~55/55~65	45~55/55~65
Nominal Output Current (A)	131.3	114.0 @380Vac 108.3 @400Vac 104.4 @415Vac	121.6 @380Vac 115.5 @400Vac 111.3 @415Vac	152.0 @380Vac 144.4 @400Vac 139.2 @415Vac	152.0 @380Vac 144.4 @400Vac 139.2 @415Vac

	<b>GW50K-ET-L-G10</b>	<b>GW75K-ET-G10</b>	<b>GW80K-ET-G10</b>	<b>GW99.99K-ET-G10</b>	<b>GW100K-ET-G10</b>
Max. Output Current (A)	131.3	114.0 @380Vac 108.3 @400Vac 104.4 @415Vac	133.8 @380Vac 127.1 @400Vac 122.5 @415Vac	152.0 @380Vac 144.4 @400Vac 139.2 @415Vac	167.2 @380Vac 158.8 @400Vac 153.1 @415Vac
Max. Fault Current (Peak and Duration) (A)	406 @2.3us	406 @2.3us	406 @2.3us	406 @2.3us	406 @2.3us
Inrush Current (Peak and Duration) (A)	63.5 @20ms	63.5 @20ms	63.5 @20ms	63.5 @20ms	63.5 @20ms
Maximum Overcurrent Protection (A)	385	385	385	385	385
THDv (@Linear Load)	<3%	<3%	<3%	<3%	<3%
On/Off-grid Switching Time	<10ms	<10ms	<10ms	<10ms	<10ms
Generator Side*3					

	GW50K-ET-L-G10	GW75K-ET-G10	GW80K-ET-G10	GW99.99K-ET-G10	GW100K-ET-G10
Nominal Apparent Power (kVA)	50	75	80	99.99	100
Max. Apparent Power (kVA)	50	75	88	99.99	110
Nominal Voltage (V)	127/220, 3L/N/PE	220/380, 230/400, 240/415, 3L/N/PE	220/380, 230/400, 240/415, 3L/N/PE	220/380, 230/400, 240/415, 3L/N/PE	220/380, 230/400, 240/415, 3L/N/PE
Voltage Range (V)	114~139 (according to local standard)	180~280 (according to local standard)	180~280 (according to local standard)	180~280 (according to local standard)	180~280 (according to local standard)
Nominal Frequency (Hz)	50/60	50/60	50/60	50/60	50/60
Frequency Range (Hz)	45~55/55~65	45~55/55~65	45~55/55~65	45~55/55~65	45~55/55~65
Max. Current (A)	131.3	114.0 @380Vac 108.3 @400Vac 104.4 @415Vac	133.8 @380Vac 127.1 @400Vac 122.5 @415Vac	152.0 @380Vac 144.4 @400Vac 139.2 @415Vac	167.2 @380Vac 158.8 @400Vac 153.1 @415Vac
Efficiency					
Max. Efficiency	97.4%	98.1%	98.1%	98.1%	98.1%
European Efficiency	96.8%	97.7%	97.7%	97.7%	97.7%

	GW50K-ET-L-G10	GW75K-ET-G10	GW80K-ET-G10	GW99.99K-ET-G10	GW100K-ET-G10
Max. Battery to AC Efficiency	97.6%	98.2%	98.2%	98.2%	98.2%
MPPT Efficiency	99.9%	99.9%	99.9%	99.9%	99.9%
Protection					
PV String Current Monitoring	Integrated	Integrated	Integrated	Integrated	Integrated
PV Insulation Resistance Detection	Integrated	Integrated	Integrated	Integrated	Integrated
Residual Current Monitoring	Integrated	Integrated	Integrated	Integrated	Integrated
PV Reverse Polarity Protection	Integrated	Integrated	Integrated	Integrated	Integrated
Battery Reverse Polarity Protection	Integrated	Integrated	Integrated	Integrated	Integrated
Anti-islanding Protection	Integrated	Integrated	Integrated	Integrated	Integrated
AC Overcurrent Protection	Integrated	Integrated	Integrated	Integrated	Integrated

	GW50K-ET-L-G10	GW75K-ET-G10	GW80K-ET-G10	GW99.99K-ET-G10	GW100K-ET-G10
AC Short Circuit Protection	Integrated	Integrated	Integrated	Integrated	Integrated
AC Overvoltage Protection	Integrated	Integrated	Integrated	Integrated	Integrated
DC Switch	Integrated	Integrated	Integrated	Integrated	Integrated
DC Surge Protection	Type II(Type I+II Optional)				
AC Surge Protection	Type II				
AFCI*8	Optional	Optional	Optional	Optional	Optional
Rapid Shutdown	Optional	Optional	Optional	Optional	Optional
Remote Shutdown	Optional	Optional	Optional	Optional	Optional
General Data					
Operating Temperature Range (°C)	-35~+60	-35~+60	-35~+60	-35~+60	-35~+60
Operating Environment	Indoor/Outdoor	Indoor/Outdoor	Indoor/Outdoor	Indoor/Outdoor	Indoor/Outdoor
Storage Temperature (°C)	-40~70	-40~70	-40~70	-40~70	-40~70

	<b>GW50K-ET-L-G10</b>	<b>GW75K-ET-G10</b>	<b>GW80K-ET-G10</b>	<b>GW99.99K-ET-G10</b>	<b>GW100K-ET-G10</b>
Relative Humidity	0~100%	0~100%	0~100%	0~100%	0~100%
Max. Operating Altitude (m)	4000	4000	4000	4000	4000
Cooling Method	Smart Fan Cooling				
User Interface	LED, LCD (Optional), WLAN+APP				
Communication with BMS	CAN	CAN	CAN	CAN	CAN
Communication	RS485, WiFi+LAN+ Bluetooth, 4G+ Bluetooth (Optional)				
Communication Protocols	Modbus-RTU, Modbus-TCP				
Weight (kg)	97.0	97.0	97.0	97.0	97.0
Dimension (W×H×D mm)	995×758×358	995×758×358	995×758×358	995×758×358	995×758×358

	GW50K-ET-L-G10	GW75K-ET-G10	GW80K-ET-G10	GW99.99K-ET-G10	GW100K-ET-G10
Noise Emission (dB)	60	60	60	60	60
Topology	Non-isolated	Non-isolated	Non-isolated	Non-isolated	Non-isolated
Power Self-consumption at Night (W)	<15	<15	<15	<15	<15
Ingress Protection Rating	IP66	IP66	IP66	IP66	IP66
Anti-corrosion Class	C4	C4	C4	C4	C4
DC Connector	MC4 (4~6mm <sup>2</sup> )				
AC Connector	OT (max.240mm <sup>2</sup> )				
Environmental Category	4K4H	4K4H	4K4H	4K4H	4K4H
Pollution Degree	III	III	III	III	III
Overvoltage Category	DC II / AC III				
Protective Class	I	I	I	I	I

	GW50K-ET-L-G10	GW75K-ET-G10	GW80K-ET-G10	GW99.99K-ET-G10	GW100K-ET-G10
Decisive Voltage Classification (DVC)	Battery: C PV: C AC: C Com: A				
Mounting Method	Wall Mounted				
Active Anti-islanding Method	AFDPF+AQDPF <sup>*4</sup>				
Type of Electrical Supply System	TN-S, TN-C, TN-C-S, TT				
Country of Manufacture	China	China	China	China	China

\*1: For GW50K-ET-L-G10, when the input voltage ranges from 700V to 850V, the inverter will enter the standby mode, and the voltage returns to 700V to enter the normal operation state. For GW75K-ET-G10/GW80K-ET-G10/GW99.99K-ET-G10/GW100K-ET-G10, when the input voltage ranges from 950V to 1000V, the inverter will enter the standby mode, and the voltage returns to 950V to enter the normal operation state.

\*2: Please refer to the user manual for the MPPT Voltage Range at nominal Power.

\*3: The STS Box or STS Cabinet is needed.

\*4: AFDPF: Active Frequency Drift with Positive Feedback, AQDPF: Active Q Drift with Positive Feedback.

\*5: For Chile, Max. Power (kW): GW80K-ET-G10: 80kW, GW100K-ET-G10: 100kW.

\*6: For Chile, Max. Apparent Power to Grid (kVA)/Max. Apparent Power from Grid (kVA): GW80K-ET-G10: 80kVA, GW100K-ET-G10: 100kVA.

\*7: For Chile, Max. Current to Grid (A)/Max. Current from Grid (A): GW80K-ET-G10: 121.6@380Vac, 115.5@400Vac, 111.3@415Vac; GW100K-ET-G10: 152.0@380Vac,

144.4@400Vac, 139.2@415Vac.

\*8: For Brazil, AFCI: Integrated.

## 11.2 The Parameter of the STS

GW125K-STS-G10	
Grid side	
Nominal Voltage (V)	220/380/400/415, 3L/N/PE
Voltage Range (V)	114~280 (according to local standard)
Nominal Frequency (Hz)	50/60
Frequency Range (Hz)	45~55 / 55~65
Max. Current (A)	210
Rated Power (kW)	125(75@220V)
Max. Apparent Power (kVA)	137.5(75@220V)
Rated conditional short-circuit current (kA)	3
Back-up side	
Nominal Output Voltage (V)	220/380/400/415, 3L/N/PE
Output Voltage Range (V)	114~280 (according to local standard)
Nominal Output Frequency (Hz)	50/60
Frequency Range (Hz)	45~55 / 55~65
Rated Output Current(A)	210
Rated Output Power(kW)	125(75@220V)

Max. Output Apparent Power(kVA)	137.5(75@220V)
Rated Conditional Short-time Current (kA)	3
Smart Port side	
Nominal Voltage (V)	220/380/400/415, 3L/N/PE
Voltage Range (V)	114~280 (according to local standard)
Nominal Frequency (Hz)	50/60
Frequency Range (Hz)	45~55 / 55~65
Max. Current (A)	210
Rated Power (kW)	125(75@220V)
Max. Apparent Power (kVA)	137.5(75@220V)
Rated conditional short-circuit current (kA)	3
Inverter side	
Nominal Voltage (V)	220/380/400/415, 3L/N/PE
Voltage Range (V)	114~280 (according to local standard)
Nominal Frequency (Hz)	50/60
Frequency Range (Hz)	45~55 / 55~65
Max. Current (A)	210
Rated Power (kW)	125(75@220V)
Max. Apparent Power (kVA)	137.5(75@220V)
Rated conditional short-circuit current (kA)	3

General Data	
On/Off Grid Transfer Time (ms)	<10
Operating Temperature Range (°C)	-35~+60
Installation Type	Indoor/Outdoor
Storage Temperature (°C)	-40~+70
Relative Humidity	0 ~ 100%
Pollution Degree	III
Type of Electrical Supply System	TN-S, TN-C, TN-C-S, TT
Stationary or Movable	Stationary
Type Of Short-circuit Protective Device	Icc
Max. Operating Altitude (m)	4000
Cooling Method	Intelligent air cooling
Communication	RS485
Weight (kg)	21
Dimension (W×H×D mm)	680*620*165
Mounting Method	Wall Mounted
Noise Emission (dB)	45
Ingress Protection Rating	IP54

## 11.3 The Parameter of Batteries

### 11.3.1 BAT Series 35.8-56.3kWh High Voltage Battery

Technical Data	GW35.8-BAT-I-G11	GW40.9-BAT-I-G11	GW46.0-BAT-I-G11	GW51.2-BAT-I-G10	GW56.3-BAT-I-G10
<b>Battery System</b>					
Cell Type	LFP (LiFePO4)				
Capacity (Ah)	100				
Pack Type/model	GW5.1-PACK-I-G10				
Pack Nominal Energy (kWh)	5.12				
Pack Configuration	1P112S	1P128S	1P144S	1P160S	1P176S
Pack Weight (kg)	42.5				
Number of Packs	7	8	9	10	11
Nominal Energy (kWh)	35.8	40.9	46	51.2	56.3
Usable Energy (kWh) *1	35	40	45	50	55
Nominal Voltage (V)	358.4	409.6	460.8	512	563.2
Operating Voltage Range (V)	321.44~404.32	367.36~462.08	413.28~519.84	459.2~577.6	505.12~635.36
Charging Operating Temperature Range (°C)	0~+55				
Discharging Operating Temperature Range (°C)	-20~+55				
Max. Charge/ Discharge Current (A) *2	100/110				

Technical Data	GW35.8-BAT-I-G11	GW40.9-BAT-I-G11	GW46.0-BAT-I-G11	GW51.2-BAT-I-G10	GW56.3-BAT-I-G10
Max. Charge/ Discharge Rate <sup>*2</sup>	1C/1.1C				
Max. Charge/ Discharge power (kW) <sup>*2</sup>	35.8 / 19.3	40.9 / 44.9	46.0 / 50.6	51.2 / 56.3	56.3 / 61.9
Cycle Life	6000 (25±2°C, 0.5C, 90%DOD, 70%EOL)				
Depth of Discharge	100%				
<b>Efficiency</b>					
Round-trip Efficiency	96%@100%DOD, 0.2C, 25±2°C				
<b>General Data</b>					
Operating Temperature Range (°C)	0~40°C				
Storage Temperature (°C)	+35°C~+45°C(< 6 Months); -20°C~+35°C(< 1 Year)				
Relative Humidity	5 ~ 85%, No condensation				
Max. Operating Altitude (m)	3000				
Cooling Method	Natural Cooling				
User Interface	LED				
Communication	CAN (RS485 Optional)				
Weight-rack mounted (kg)	367	415	455	495	540
Weight-stacked(kg)	338	383	428	472	517
Dimension-rack mounted (W×H×D mm)	543*1815*520				

Technical Data	GW35.8-BAT-I-G11	GW40.9-BAT-I-G11	GW46.0-BAT-I-G11	GW51.2-BAT-I-G10	GW56.3-BAT-I-G10
Dimension-stacked (W×H×D mm)	481*1201 *552	481*1339 *552	481*1477 *552	481*1615 *552	481*1753 *552
Ingress Protection Rating	IP20				
Fire safety equipment	Aerosol Optional, Pack Level				
<b>Certification *3</b>					
Safety Regulation	IEC62619/IEC60730-1/EN62477-1/IEC63056				
EMC	IEC/EN61000-6-1/2/3/4				
<p>*1: Test conditions, 100% DOD, 0.2C charge &amp; discharge at <math>+25\pm2</math> °C for battery system at beginning life. System Usable Energy may vary with system configuration.</p> <p>*2: Actual Dis-/Charge Current and power derating will occur related to Cell Temperature and SOC. And, Max C-rate continuous time is affected by SOC, Cell Temperature, Atmosphere environment temperature .</p> <p>*3: Not all certifications &amp; standards listed, check the official website for detail.</p>					

### 11.3.2 BAT Series 92.1-112.6kWh C&I Battery System

Technical Data	GW92.1-BAT-AC-G10	GW102.4-BAT-AC-G10	GW112.6-BAT-AC-G10
Battery System			
Cell Type	LFP (LiFePO4)	LFP (LiFePO4)	LFP (LiFePO4)
Cell Capacity (Ah)	100	100	100
Rated Capacity (Ah)	200	200	200

Technical Data	GW92.1-BAT-AC-G10	GW102.4-BAT-AC-G10	GW112.6-BAT-AC-G10
Pack Type/model	GW10.2-PACK-ACI-G10	GW10.2-PACK-ACI-G10	GW10.2-PACK-ACI-G10
Pack Nominal Energy (kWh)	10.24	10.24	10.24
Pack Configuration	2P144S	2P160S	2P176S
Pack Weight (kg)	< 90	< 90	< 90
Number of Packs	9	10	11
Nominal Energy (kWh)	92.1	102.4	112.6
Usable Energy (kWh) *1	90	100	110
Nominal Voltage (V)	460.8	512	563.2
Operating Voltage Range (V)	413.28~519.84	459.2~577.6	505.12~635.36
Charging Operating Temperature Range (°C)	-20~+55	-20~+55	-20~+55
Discharging Operating Temperature Range (°C)	-20~+55	-20~+55	-20~+55
Max. Charge/ Discharge Current (A) *2	180/220	180/220	180/220
Max. Charge/ Discharge Rate *2	0.9C/1.1C	0.9C/1.1C	0.9C/1.1C

Technical Data	GW92.1-BAT-AC-G10	GW102.4-BAT-AC-G10	GW112.6-BAT-AC-G10
Max. Charge/Discharge power (kW) *2	82.9/101.3	92.1/112.6	101.3/123.9
Cycle Life	≥6000 times until 70% SOH under 25±2°C, 0.5C and 100% DOD		
Depth of Discharge	100%	100%	100%
Efficiency			
Round-trip Efficiency	96%@100%DOD, 0.2C, 25±2°C	96%@100%DOD, 0.2C, 25±2°C	96%@100%DOD, 0.2C, 25±2°C
General Data			
Operating Temperature Range (°C)	-20~55°C	-20~55°C	-20~55°C
Storage Temperature (°C)	+35°C~+45°C (< 6 Months); -20°C~+35°C (< 1 Year)	+35°C~+45°C (< 6 Months); -20°C~+35°C (< 1 Year)	+35°C~+45°C (< 6 Months); -20°C~+35°C (< 1 Year)
Relative Humidity	0 ~ 100% (Condensationless)	0 ~ 100% (Condensationless)	0 ~ 100% (Condensationless)
Max. Operating Altitude (m)	4000	4000	4000
Cooling Method	Air Conditioner	Air Conditioner	Air Conditioner
User Interface	LED	LED	LED
Communication	CAN (RS485 Optional)	CAN (RS485 Optional)	CAN (RS485 Optional)
Weight (kg)	< 1220	< 1310	< 1400

Technical Data	GW92.1-BAT-AC-G10	GW102.4-BAT-AC-G10	GW112.6-BAT-AC-G10
Dimension (W×H×Dmm)	1055*2000*1055	1055*2000*1055	1055*2000*1055
Noise Emission (dB)	≤70	≤70	≤70
Ingress Protection Rating	IP55	IP55	IP55
Anti-corrosion Class	C4 (C5-M Optional)		
Fire safety equipment*3	Aerosol (Pack&Cabinet Level)		
Certification *4			
Safety Regulation	IEC62619/IEC63056/IEC60730/IEC62477/VDE2510/ISO13849 IEC62040/N140/EU 2023/1542/UN38.3		
EMC	IEC/EN61000-6-1/2/3/4		
Note:	<p>1. Test conditions, 100% DOD, 0.2C charge &amp; discharge at <math>+25\pm2</math> °C for battery system at beginning life. System Usable Energy may vary with system configuration.</p> <p>2. Actual Dis-/Charge Current and power derating will occur related to Cell Temperature and SOC. And, Max C-rate continuous time is affected by SOC, Cell Temperature, Atmosphere environment temperature.</p> <p>3. Aerosol (Cabinet Level) before May 30th, Aerosol (Pack&amp;Cabinet Level) after May 30th</p> <p>4. Not all certifications &amp; standards listed, check the official website for detail.</p>		

## 11.4 The Parameter of the Smart Meter

Technical parameters		GM330
Input	Grid	Three-phase
Voltage	Nominal Voltage- Line to N (Vac)	220/230
	Nominal Voltage- Line to Line (Vac)	380/400
	Voltage Range	0.88Un-1.1Un
	Nominal AC Grid Frequency (Hz)	50/60
	Current Transformer Ratio	nA: 50A
Communication	RS485	
Communication Distance (m)	1000	
User interface	4 LED, Reset button	
Accuracy	Voltage/Current	Class 0.5
	Active Energy	Class 0.5
	Reactive Energy	Class 1
Power Consumption(W)	<5	
Mechanical	Dimensions (W×H×D mm)	72*85*72
	Weight (g)	240
	Mounting	Din rail
Environment	Ingress Protection Rating	IP20
	Operating Temperature Range (°C)	-30~70
	Storage Temperature Range(°C)	-30~70
	Relative Humidity (non-condensing)	0~95%

Technical parameters	GM330	
	Max. Operating Altitude (m)	3000

## 11.5 The Parameter of Smart Dongles

- WiFi/LAN Kit-20

Technical parameters	WiFi/LAN Kit-20	
Input voltage (V)	5	
Power Consumption (W)	≤3	
Connection Interface	USB	
Communication	Ethernet Interface	10M/100Mbps Self-adaption
	WLAN	IEEE 802.11 b/g/n @2.4 GHz
	Bluetooth	Bluetooth V4.2 BR/EDR
		Bluetooth LE Specification
Mechanical	Dimensions (W×H×D mm)	48.3*159.5*32.1
Parameters	Weight (g)	82
	Ingress Protection Rating	IP65
	Installation	Plug and Play
Operating Temperature Range (°C)	-90	
Storage Temperature Range (°C)	-110	
Relative Humidity	0-95%	
Max. Operating Altitude (m)	4000	

- **4G Kit-CN-G20, 4G Kit-CN-G21**

Technical Parameters	4G Kit-CN-G20	4G Kit-CN-G21
<b>General Data</b>		
Maximum number of supported inverters	1	1
Interface form	USB	USB
Mounting Method	Plug-and-play	Plug-and-play
Indicator	LED indicator	LED indicator
Dimension (W×H×D mm)	48.3*95.5*32.1	48.3*95.5*32.1
SIM card size (mm)	15*12	15*12
Weight (g)	87	87
Ingress Protection Rating	IP66	IP66
Power Consumption (W)	<4	<4
Ambient temperature (°C)	-30~+65	-30~+65
Storage Temperature (°C)	-40~+70	-40~+70
Relative Humidity	0-100%	0-100%
Max. Working Altitude (m)	4000	4000
<b>Wireless Parameters</b>		
LTE-FDD	B1/B3/B5/B8	B1/B3/B5/B8
LTE-TDD	B34/B39/B40/B41	B34/B39/B40/B41
GNSS positioning	/	Beidou, GPS
Bluetooth	V5.0	V5.0
Life (Year)	5	5

# 11 Appendix

## 11.1 FAQ

### 11.1.1 How to Conduct Auxiliary Detection for Smart Meters/CT?

Meter detection function, which can detect whether the CT of the meter is connected correctly and the current operation status of the meter and CT.

- Approach 1:

1. Access the detection page through **Home** > **Settings** > **Electricity Meter/ CT Auxiliary Detection**.
2. Click "Start Detection" and wait for the detection to complete. Then, view the detection results.

- Approach 2:

1. Access the detection  page through > **[System Setup]** > **[Quick Setting]** > **[Meter/CT Assisted Test]**.
2. Click "Start Detection" and wait for the detection to complete. Then, view the detection results.

### 11.1.2 How to Upgrade the Device Version

Through the firmware information, you can view or upgrade the DSP version, ARM version, BMS version, and smart dongle software version of the inverter. Some smart dongles do not support software version upgrade via SolarGo App, and the actual situation shall prevail.

- **Upgrade prompt:**

When the user opens the APP, an upgrade prompt will pop up on the homepage, and the user can choose whether to upgrade or not. If you choose to upgrade, you can complete the upgrade by following the prompts on the interface.

- **Regular upgrade:**

**Access the firmware information viewing interface through "Home" > "Settings"**

> "Firmware Information"

Click "Check for Updates". If there is a new version, complete the upgrade according to the prompts on the interface.

- **Forced Upgrade:**

The APP will push upgrade information, and users need to upgrade according to the prompts to continue using the app. You can complete the upgrade by following the prompts on the interface.

## 11.2 Abbreviations

Abbreviation	English Description	Chinese Description
Ubatt	Battery Voltage Range	电池电压范围
Ubatt,r	Nominal Battery Voltage	额定电池电压
Ibatt,max (C/D)	Max. Charging Current Max. Discharging Current	最大充/放电电流
EC,R	Rated Energy	额定能量
UDCmax	Max. Input Voltage	最大输入电压
UMPP	MPPT Operating Voltage Range	MPPT 电压范围
IDC,max	Max. Input Current per MPPT	每路 MPPT 最大输入电流
ISC PV	Max. Short Circuit Current per MPPT	每路 MPPT 最大短路电流
PAC,r	Nominal Output Power	额定输出功率
Sr (to grid)	Nominal Apparent Power Output to Utility Grid	额定并网输出视在功率
Smax (to grid)	Max. Apparent Power Output to Utility Grid	最大并网输出视在功率
Sr (from grid)	Nominal Apparent Power from Utility Grid	从电网买电额定输出视在功率
Smax (from grid)	Max. Apparent Power from Utility Grid	从电网买电最大输出视在功率
UAC,r	Nominal Output Voltage	额定输出电压
FAC,r	Nominal AC Grid Frequency	输出电压频率
IAC,max(to grid)	Max. AC Current Output to Utility Grid	最大并网输出电流

Abbreviation	English Description	Chinese Description
IAC,max(from grid)	Max. AC Current From Utility Grid	最大输入电流
P.F.	Power Factor	功率因数
S <sub>r</sub>	Back-up Nominal apparent power	离网额定视在功率
S <sub>max</sub>	Max. Output Apparent Power (VA) Max. Output Apparent Power without Grid	最大输出视在功率
IAC,max	Max. Output Current	最大输出电流
UAC,r	Nominal Output Voltage	最大输出电压
FAC,r	Nominal Output Frequency	额定输出电压频率
T <sub>operating</sub>	Operating Temperature Range	工作温度范围
IDC,max	Max. Input Current	最大输入电流
UDC	Input Voltage	输入电压
UDC,r	DC Power Supply	直流输入
UAC	Power Supply/AC Power Supply	输入电压范围/交流输入
UAC,r	Power Supply/Input Voltage Range	输入电压范围/交流输入
T <sub>operating</sub>	Operating Temperature Range	工作温度范围
P <sub>max</sub>	Max Output Power	最大功率
PRF	TX Power	发射功率
PD	Power Consumption	功耗
PAC,r	Power Consumption	功耗
F (Hz)	Frequency	频率
ISC PV	Max. Input Short Circuit Current	最大输入短路电流
Udcmin-Udcmax	Range of input Operating Voltage	工作电压范围
UAC,rang(L-N)	Power Supply Input Voltage	适配器输入电压范围
Usys,max	Max System Voltage	最大系统电压
Haltitude,max	Max. Operating Altitude	最高工作海拔高度
PF	Power Factor	功率因数

Abbreviation	English Description	Chinese Description
THDi	Total Harmonic Distortion of Current	电流谐波
THDv	Total Harmonic Distortion of Voltage	电压谐波
C&I	Commercial & Industrial	工商业
SEMS	Smart Energy Management System	智慧能源管理系统
MPPT	Maximum Power Point Tracking	最大功率点跟踪
PID	Potential-Induced Degradation	电位诱发衰减
Voc	Open-Circuit Voltage	开路电压
Anti PID	Anti-PID	防PID
PID Recovery	PID Recovery	PID修复
PLC	Power-line Commucation	电力线载波通信
Modbus TCP/IP	Modbus Transmission Control / Internet Protocol	基于TCP/IP层的modbus
Modbus RTU	Modbus Remote Terminal Unit	基于串行链路的modbus
SCR	Short-Circuit Ratio	短路比
UPS	Uninterruptable Power Supply	不间断电源
ECO mode	Economical Mode	经济模式
TOU	Time of Use	使用时间
ESS	Energy Stroage System	储能系统
PCS	Power Conversion System	电能转换系统
RSD	Rapid shutdown	快速关断
EPO	Emergency Power Off	紧急关断
SPD	Surge Protection Device	防雷保护
ARC	zero injection/zero export Power Limit / Export Power Limit	防逆流
DRED	Demand Response Enabling Device	命令响应设备
RCR	Ripple Control Receiver	-
AFCI	AFCI	AFCI直流拉弧保护
GFCI	Ground Fault Circuit Interrupter	接地故障分断器

Abbreviation	English Description	Chinese Description
RCMU	Residual Current Monitoring Unit	残余电流监控装置
FRT	Fault Ride Through	故障穿越
HVRT	High Voltage Ride Through	高电压穿越
LVRT	Low Voltage Ride Through	低电压穿越
EMS	Energy Management System	能量管理系统
BMS	Battery Management System	电池管理系统
BMU	Battery Measure Unit	电池采集单元
BCU	Battery Control Unit	电池控制单元
SOC	State of Charge	电池的荷电状态
SOH	State of Health	电池健康度
SOE	State Of Energy	电池剩余能量
SOP	State Of Power	电池充放电能力
SOF	State Of Function	电池的功能状态
SOS	State Of Safety	安全状态
DOD	Depth of discharge	放电深度

## 11.3 Explanation of Terms

- **Overvoltage Category Definition**
  - **Category I:** applies to equipment connected to a circuit where measures have been taken to reduce transient overvoltage to a low level.
  - **Category II:** applies to fixed downstream equipment. For example, appliances, portable tools and other plug-connected equipment; Voltage category III is used if there are special requirements for the reliability and suitability of such equipment.
  - **Category III:** applies to fixed downstream equipment, including the main distribution board. For example, switchgear and other equipment in an industrial installation
  - **Category IV:** applies to the upstream equipment in the power supply of the distribution device, including measuring instruments and upstream over-current protection devices.
- **Definition of Types of Damp Places**

Environmental Parameters	Level		
	3K3	4K2	4K4H

Environmental Parameters	Level		
Temperature Range	0~+40°C	-33~+40°C	-33~+40°C
Humidity Range	5% to 85%	5% to 85%	4% to 100%

- **Definition of Environmental Category:**

- **Outdoor Inverter:** The ambient air temperature range is -25 to +60°C, and it is suitable for environments with pollution degree 3.
- **Indoor Type II Inverter:** The ambient air temperature range is -25 to +40°C, and it is suitable for environments with pollution degree 3.
- **Indoor Type I Inverter:** The ambient air temperature range is 0 to +40°C, and it is suitable for environments with pollution degree 2.

- **Definition of Pollution Degree Categories:**

- **Pollution Degree 1:** No pollution or only dry non-conductive pollution.
- **Pollution Degree 2:** In general, there is only non-conductive pollution, but the transient conductive pollution caused by occasional condensation must be taken into account.
- **Pollution Degree 3:** There is conductive pollution, or the non-conductive pollution becomes conductive pollution due to condensation.
- **Pollution Degree 4:** Persistent conductive pollution, such as pollution caused by conductive dust or rain and snow.

## 11.4 Meaning of Battery SN Code

\*\*\*\*\* 2388 \*\*\*\*  
  
 11-14位

Bits 11-14 of the product SN code are the production time code.

The above picture has a production date of 2023-08-08

- The 11th and 12th digits are the last two digits of the year of production, e.g., 2023 is represented by 23
- The 13th digit is the month of production, e.g. August is denoted by 8;  
 The details are as follows:

Month	January~September	October	November	December
Month Code	1~9	A	B	C

- The 14th digit is the date of manufacture, e.g., 8th indicated by 8; Priority is given to the use of numbers, e.g. 1~9 for days 1~9, A for day 10 and so on. The letters I and O are not used to avoid confusion. The details are as follows:

Production Date	1	2	3	4	5	6	7	8	9
Code	1	2	3	4	5	6	7	8	9

Production Date	10	11	12	13	14	15	16	17	18	19	20
Code	A	B	C	D	E	F	G	H	J	K	L

Production Date	21	22	23	24	25	26	27	28	29	30	31
Code	M	N	P	Q	R	S	T	U	V	W	X

## 12 Contact Details

GoodWe Technologies Co., Ltd.  
No. 90 Zijin Rd., New District, Suzhou, China  
400-998-1212  
[www.goodwe.com](http://www.goodwe.com)  
[service@goodwe.com](mailto:service@goodwe.com)